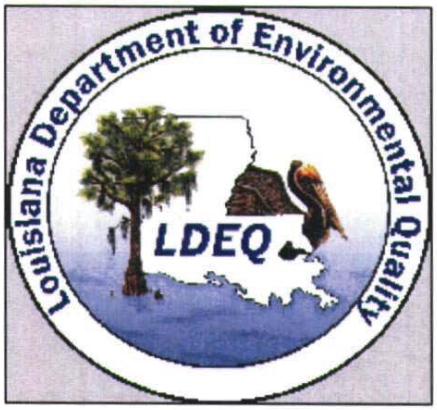
LDEQ REAP
WORKSHEET 15
GWairni
(mg/l)

Volatile releases from groundwater to ambient air-Non-industrial					Derivation of Management Option 2 RS					
Revision Date: 08/04/2003					Run date:	6/28/2011				
INPUTS TO GROUNDWATER TO AMBIENT AIR MODEL-NONINDUSTRIAL						Site-Specific				
volumetric air content in capillary fringe					nacap =	0.015	cm3-air/cm3-soil			
volumetric water content in capillary fringe					nwcap =	0.345	cm3-water/cm3-soil			
total porosity of capillary fringe soil					nc =	0.36	cm3/cm3			
thickness of capillary fringe					hcap =	5	cm			
thickness of vadose zone					hv =	295	cm			
depth to groundwater					Lgw =	300	cm			
wind speed above ground surface in ambient mixing zone					Uair =	225	cm/s			
width of source area parallel to wind					W =	4511	cm			
ambient air mixing zone height					dair =	200	cm			
Ds = Da*na^3.33/n^2+Dw*1/(H*41)*nw^3.33/n^2										
Dcap = Da*nacap^3.33/nc^2+Dw*1/(H*41)*nwcap^3.33/nc^2										
Dws = (hcap+hv)/(hcap/Dcap+hv/Ds)										
VFgwairni = (H*41*1000)/[1+(Uair*dair*Lgw)/(W*Dws)]										
Cani C-O = (TR*ATc*365*1000)/(EFni*SFi*IRAadj)										
Cani N-O = (THQ*RfDi*BWa*ATnni*365*1000)/(IRAa*EFni*EDni)										
GWairni = Cani*0.001/VFgwairni										
	Ds	Dcap	Dws	VFgwairni	Cani	Cani	GWairi	GWairi	min value	Note
COMPOUND	(cm2/s)	(cm2/s)	(cm2/s)	(mg/m3/mg/l)	C-O (ug/m3)	N-O (ug/m3)	C-O(mg/l)	N-O(mg/l)	(C or N)	
ADDITIONAL COMPOUNDS										
ORGANIC COUMPOUNDS										
Bis(2-chloroisopropyl)ether	8.69E-04	3.19E-04	8.45E-04	1.31E-06	1.90E-01	1.46E+02	1.45E+02	1.12E+05	1.4E+02	
DIPE	1.09E-03	3.40E-05	7.19E-04	1.28E-05	#DIV/0!	1.50E+01	#DIV/0!	1.17E+03	1.2E+03	
ETBE	1.09E-03	3.18E-05	7.02E-04	1.34E-05	#DIV/0!	3.14E+02	#DIV/0!	2.35E+04	2.3E+04	
TAME	1.09E-03	1.68E-05	5.27E-04	1.94E-05	#DIV/0!	4.75E+02	#DIV/0!	2.45E+04	2.5E+04	
TBA	1.80E-03	3.72E-03	1.82E-03	2.92E-07	#DIV/0!	1.97E+03	#DIV/0!	6.76E+06	6.8E+06	
Benzene	1.20E-03	1.02E-05	4.07E-04	3.09E-05	2.29E-01	3.14E+01	7.40E+00	1.02E+03	7.4E+00	
Formaldehyde	6.42E-02	3.20E-01	6.51E-02	3.03E-07	1.44E-01	7.30E+02	4.76E+02	2.41E+06	4.8E+02	
INORGANIC COMPOUNDS										
Antimony	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	1.46E+00	#VALUE!	#VALUE!	#VALUE!	
Antimony	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	1.46E+00	#VALUE!	#VALUE!	#VALUE!	
Antimony	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	1.46E+00	#VALUE!	#VALUE!	#VALUE!	

LDEQ RECAP
WORKSHEET 16
GWairi
(mg/l)

Volatile releases from groundwater to ambient air-Industrial					Derivation of Management Option 2 RS					
Revision Date: 08/04/2003					Run date:	6/28/2011				
INPUTS TO GROUNDWATER TO AMBIENT AIR MODEL-INDUSTRIAL					Site-Specific					
volumetric air content in capillary fringe				nacap =	0.015	cm3-air/cm3-soil				
volumetric water content in capillary fringe				nwcap =	0.345	cm3-water/cm3-soil				
total porosity of capillary fringe soil				nc =	0.36	cm3/cm3				
thickness of capillary fringe				hcap =	5	cm				
thickness of vadose zone				hv =	295	cm				
depth to groundwater				Lgw =	300	cm				
wind speed above ground surface in ambient mixing zone				Uair =	225	cm/s				
width of source area parallel to wind				W =	4511	cm				
ambient air mixing zone height				dair =	200	cm				
Ds = Da*na^3.33/n^2+Dw*1/(H*41)*nw^3.33/n^2										
Dcap = Da*nacap^3.33/nc^2+Dw*1/(H*41)*nwcap^3.33/nc^2										
Dws = (hcap+hv)/(hcap/Dcap+hv/Ds)										
VFgwairi = (H*41*1000)/[1+(Uair*dair*Lgw)/(W*Dws)]										
Cai C-O = (TR*BWa*ATc*365*1000)/(SFi*IRAa*EFi*EDi)										
Cai N-O = (THQ*RfDi*BWa*ATni*365*1000)/(IRAa*EFi*EDi)										
GWairi = Cai*0.001/VFgwairi										
	Ds	Dcap	Dws	VFgwairi	Cai	Cai	GWairi	GWairi	min value	Note
COMPOUND	(cm2/s)	(cm2/s)	(cm2/s)	(mg/m3/mg/l)	C-O (ug/m3)	N-O (ug/m3)	C-O(mg/l)	N-O(mg/l)	(C or N)	
Aromatics >C8-C10	1.36E-03	5.30E-06	2.59E-04	4.14E-05		2.19E+02		5.29E+03	5.3E+03	J
Aromatics >C10-C12	1.36E-03	1.66E-05	5.79E-04	2.71E-05		2.19E+02		8.09E+03	8.1E+03	J
Aromatics >C12-C16	1.37E-03	4.28E-05	9.02E-04	1.59E-05		2.19E+02		1.37E+04	1.4E+04	J
Aromatics >C16-C21										
Aromatics >C21-C35										
TPH-GRO (C6-C10)						2.19E+02			1.0E+03	
TPH-DRO (C10-C28)										
TPH-ORO (>C28)										
J - Risk-based value calculated with one of the equations EQ 56 thru 59.										
K - Louisiana Toxic Air Pollutant Ambient Air Standards (LAC 33:III.5112 Table 51.2).										
ADDITIONAL COMPOUNDS										
ORGANIC COUMPOUNDS										
Bis(2-chloroisopropyl)ether	8.69E-04	3.19E-04	8.45E-04	1.31E-06	4.09E-01	2.04E+02	3.12E+02	1.56E+05	3.1E+02	
DIPE	1.09E-03	3.40E-05	7.19E-04	1.28E-05	#DIV/0!	2.10E+01	#DIV/0!	1.64E+03	1.6E+03	
ETBE	1.09E-03	3.18E-05	7.02E-04	1.34E-05	#DIV/0!	4.39E+02	#DIV/0!	3.29E+04	3.3E+04	
TAME	1.09E-03	1.68E-05	5.27E-04	1.94E-05	#DIV/0!	6.64E+02	#DIV/0!	3.43E+04	3.4E+04	
TBA	1.80E-03	3.72E-03	1.82E-03	2.92E-07	#DIV/0!	2.76E+03	#DIV/0!	9.46E+06	9.5E+06	
Benzene	1.20E-03	1.03E-05	4.07E-04	3.09E-05	4.93E-01	4.39E+01	1.60E+01	1.42E+03	1.6E+01	
Formaldehyde	6.42E-02	3.20E-01	6.51E-02	3.03E-07	3.11E-01	1.02E+03	1.03E+03	3.37E+06	1.0E+03	

Risk Evaluation/ Corrective Action Program (RECAP)



Prepared by:
Louisiana Department of Environmental Quality
Corrective Action Group
August 4, 2003

Welcome to the **Louisiana Department of Environmental Quality's Risk Evaluation/Corrective Action Program (RECAP) workbook**. This workbook contains all of the Management Option 2 (MO-2) equations, except for the Domenico model. There is a spreadsheet for each of the MO-2 exposure pathways. Each spreadsheet lists the equations used to calculate a RECAP Standard and contains the calculations of the RECAP Standards for all of the chemicals listed in the document for that exposure pathway. Within the spreadsheets are comment boxes for each equation. The comment box contains the parameter definitions and the default values for that equation. (Point the mouse at the cell and rick click into that cell that contains the red triangle in the upper right corner and click show comment. Click the comment box to highlight the box drag the edge of the box to enlarge the cell to read the contents.)

The spreadsheets are linked together for data that is common to most of the equations (e.g., the Slope Factor (SF) and Reference dose (RfD) values are contained in one spreadsheet, "SF&RfD"). Site-specific data that can be entered under MO-2 is highlighted in blue. Site-specific input values related to a specific exposure pathway are listed in that exposure pathway spreadsheet. Site-specific values are found in the "Soil properties", "Sd & DAF Summers", "Soil-PEF", "Soiles", "GWes", and "GWair" spreadsheets. The soil properties spreadsheet is the only spreadsheet that contains site-specific input values that can be changed that will effect many of the equations. Site size can be entered as the length and width.

At the bottom of each spreadsheet are several rows highlighted in blue for additional chemicals.

LDEQ RECAP
APPENDIX H: TABLE H1
CANCER SLOPE FACTORS AND REFERENCE DOSES

COMPOUND	CAS #	SF_o	REF	SF_i	REF	RfD_o	REF	RfD_i	REF	ABS
		$(mg/kg\text{-}day)^{-1}$		$(mg/kg\text{-}day)^{-1}$		mg/kg-day		mg/kg-day		unitless
Acenaphthene	83-32-9	*******		*******		6.00E-02	I	6.00E-02	*	0
Acenaphthylene	208-96-8	*******		*******		6.00E-02	S	6.00E-02	*	0
Acetone	67-64-1	*******		*******		1.00E-01	I	1.00E-01	*	0
Aldrin	309-00-2	1.70E+01	I	1.71E+01	I	3.00E-05	I	3.00E-05	*	0.1
Aniline	62-53-3	5.70E-03	I	5.70E-03	*	7.00E-03	E	2.86E-04	I	0.1
Anthracene	120-12-7	*******		*******		3.00E-01	I	3.00E-01	*	0
Antimony	7440-36-0	*******		*******		4.00E-04	I	4.00E-04	*	0
Arsenic	7440-38-2	1.50E+00	I	1.51E+01	I	3.00E-04	I	3.00E-04	*	0.03
Barium	7440-39-3	*******		*******		7.00E-02	I	1.43E-04	H	0
Benzene	71-43-2	2.90E-02	I	2.90E-02	I	4.00E-03	I	8.60E-03	I	0
Benz(a)anthracene	56-55-3	7.30E-01	E	3.10E-01	E	*******		*******		0.13
Benzo(a)pyrene	50-32-8	7.30E+00	I	3.10E+00	E	*******		*******		0.13
Benzo(b)fluoranthene	205-99-2	7.30E-01	E	3.10E-01	E	*******		*******		0.13
Benzo(k)fluoranthene	207-08-9	7.30E-02	E	3.10E-02	E	*******		*******		0.13
Beryllium	7440-41-7	*******		8.40E+00	I	2.00E-03	I	5.70E-06	I	0
Biphenyl,1,1-	92-52-4	*******		*******		5.00E-02	I	5.00E-02	*	0
Bis(2-chloroethyl)ether	111-44-4	1.10E+00	I	1.16E+00	I	*******		*******		0
Bis(2-chloroisopropyl)ether	108-60-1	7.00E-02	H	3.50E-02	H	4.00E-02	I	4.00E-02	*	0
Bis(2-ethyl-hexyl)phthalate	117-81-7	1.40E-02	I	1.40E-02	*	2.00E-02	I	2.00E-02	*	0.1
Bromodichloromethane	75-27-4	6.20E-02	I	6.20E-02	*	2.00E-02	I	2.00E-02	*	0
Bromoform	75-25-2	7.90E-03	I	3.85E-03	I	2.00E-02	I	2.00E-02	*	0
Bromomethane	74-83-9	*******		*******		1.40E-03	I	1.43E-03	I	0
Butyl benzyl phthalate	85-68-7	*******		*******		2.00E-01	I	2.00E-01	*	0.1
Cadmium	7440-43-9	*******		6.30E+00	I	5.00E-04	I,D	5.71E-05	W	0.001
Carbon Disulfide	75-15-0	*******		*******		1.00E-01	I	2.00E-01	I	0
Carbon Tetrachloride	56-23-5	1.30E-01	I	5.25E-02	I	7.00E-04	I	5.71E-04	W	0
Chlordane	57-74-9	3.50E-01	I	3.50E-01	I	5.00E-04	I	2.00E-04	I	0.04
Chloroaniline,p-	106-47-8	*******		*******		4.00E-03	I	4.00E-03	*	0.1
Chlorobenzene	108-90-7	*******		*******		2.00E-02	I	1.70E-02	E	0
Chlorodibromomethane	124-48-1	8.40E-02	I	8.40E-02	*	2.00E-02	I	2.00E-02	*	0
Chloroethane (Ethylchloride)	75-00-3	2.90E-03	E	2.90E-03	*	4.00E-01	E	2.86E+00	I	0
Chloroform	67-66-3	6.10E-03	W	8.05E-02	I	1.00E-02	I	8.60E-05	E	0
Chloromethane	74-87-3	1.30E-02	H	6.30E-03	H	8.60E-02	#	8.60E-02	E	0

NOTE: See end of Table for designation of letters and symbols.

LDEQ RECAP
APPENDIX H: TABLE H1
CANCER SLOPE FACTORS AND REFERENCE DOSES

COMPOUND	CAS #	SF_o	REF	SF_i	REF	RfD_o	REF	RfD_i	REF	ABS
		$(mg/kg\text{-}day)^{-1}$		$(mg/kg\text{-}day)^{-1}$		mg/kg-day		mg/kg-day		unitless
Chloronaphthalene,2-	91-58-7	*******		*******		8.00E-02	I	8.00E-02	*	0
Chlorophenol,2-	95-57-8	*******		*******		5.00E-03	I	5.00E-03	*	0
Chromium(III)	16065-83-1	*******		*******		1.50E+00	I	*******		0
Chromium(VI)	18540-29-9	*******		2.90E-02	I	3.00E-03	I	*******		0
Chrysene	218-01-9	7.30E-03	E	3.10E-03	E	*******		*******		0.13
Cobalt	7440-48-4	*******		*******		6.00E-02	E	5.70E-06	W	0
Copper	7440-50-8	*******		*******		4.00E-02	H	*******		0
Cyanide (free)	57-12-5	*******		*******		2.00E-02	I	*******		0.01
DDD	72-54-8	2.40E-01	I	2.40E-01	*	*******		*******		0.03
DDE	72-55-9	3.40E-01	I	3.40E-01	*	*******		*******		0.03
DDT	50-29-3	3.40E-01	I	3.40E-01	I	5.00E-04	I	5.00E-04	*	0.03
Dibenz(a,h)anthracene	53-70-3	7.30E+00	E	3.10E+00	E	*******		*******		0.13
Dibenzofuran	132-64-9	*******		*******		4.00E-03	E	4.00E-03	*	0
Dibromo-3-chloropropane,1,2-	96-12-8	1.40E+00	H	2.42E-03	H	5.71E-05	#	5.71E-05	I	0.1
Dichlorobenzene,1,2-	95-50-1	*******		*******		9.00E-02	I	5.70E-02	H	0
Dichlorobenzene,1,3-	541-73-1	*******		*******		9.00E-04	E	9.00E-04	*	0
Dichlorobenzene,1,4-	106-46-7	2.40E-02	H	2.40E-02	*	3.00E-02	E	2.29E-01	I	0
Dichlorobenzidine,3,3-	91-94-1	4.50E-01	I	4.50E-01	*	*******		*******		0.1
Dichloroethane,1,1-	75-34-3	*******		*******		1.00E-01	H	1.43E-01	H	0
Dichloroethane,1,2-	107-06-2	9.10E-02	I	9.10E-02	I	3.00E-03	*	2.90E-03	W	0
Dichloroethene,1,1-	75-35-4	*******		*******		5.00E-02	I	5.70E-02	I	0
Dichloroethene,cis,1,2-	156-59-2	*******		*******		1.00E-02	H	1.00E-02	*	0
Dichloroethene,trans,1,2-	156-60-5	*******		*******		2.00E-02	I	2.00E-02	*	0
Dichlorophenol,2,4-	120-83-2	*******		*******		3.00E-03	I	3.00E-03	*	0.1
Dichloropropane,1,2-	78-87-5	6.80E-02	H	6.80E-02	*	1.14E-03	*	1.14E-03	I	0
Dichloropropene,1,3-	542-75-6	1.00E-01	I	1.40E-02	I	3.00E-02	I	5.71E-03	I	0
Dieldrin	60-57-1	1.60E+01	I	1.61E+01	I	5.00E-05	I	5.00E-05	*	0.1
Diethylphthalate	84-66-2	*******		*******		8.00E-01	I	8.00E-01	*	0.1
Dimethylphenol,2,4-	105-67-9	*******		*******		2.00E-02	I	2.00E-02	*	0.1
Dimethylphthalate	131-11-3	*******		*******		1.00E+01	H	1.00E+01	*	0.1
Di-n-octylphthalate	117-84-0	*******		*******		4.00E-02	E	2.00E-02	*	0.1
Dinitrobenzene,1,3-	99-65-0	*******		*******		1.00E-04	I	1.00E-04	*	0.1
Dinitrophenol,2,4-	51-28-5	*******		*******		2.00E-03	I	2.00E-03	*	0.1

NOTE: See end of Table for designation of letters and symbols.

LDEQ RECAP
APPENDIX H: TABLE H1
CANCER SLOPE FACTORS AND REFERENCE DOSES

COMPOUND	CAS #	SF_o	REF	SF_i	REF	RfD_o	REF	RfD_i	REF	ABS
		$(mg/kg\text{-}day)^{-1}$		$(mg/kg\text{-}day)^{-1}$		mg/kg-day		mg/kg-day		unitless
Dinitrotoluene,2,6-	606-20-2	*******		*******		1.00E-03	H	1.00E-03	*	0.1
Dinitrotoluene,2,4-	121-14-2	*******		*******		2.00E-03	I	2.00E-03	*	0.1
Dinoseb	88-85-7	*******		*******		1.00E-03	I	1.00E-03	*	0.1
Endosulfan	115-29-7	*******		*******		6.00E-03	I	6.00E-03	*	0.1
Endrin	72-20-8	*******		*******		3.00E-04	I	3.00E-04	*	0.1
Ethyl benzene	100-41-4	*******		*******		1.00E-01	I	2.86E-01	I	0
Fluoranthene	206-44-0	*******		*******		4.00E-02	I	4.00E-02	*	0.13
Fluorene	86-73-7	*******		*******		4.00E-02	I	4.00E-02	*	0
Heptachlor	76-44-8	4.50E+00	I	4.55E+00	I	5.00E-04	I	5.00E-04	*	0.1
Heptachlor epoxide	1024-57-3	9.10E+00	I	9.10E+00	I	1.30E-05	I	1.30E-05	*	0.1
Hexachlorobenzene	118-74-1	1.60E+00	I	1.61E+00	I	8.00E-04	I	8.00E-04	*	0
Hexachlorobutadiene	87-68-3	7.80E-02	I	7.70E-02	I	2.00E-04	H	2.00E-04	*	0.1
Hexachlorocyclohexane,alpha	319-84-6	6.30E+00	I	6.30E+00	I	*******		*******		0.04
Hexachlorocyclohexane,beta	319-85-7	1.80E+00	I	1.80E+00	I	*******		*******		0.04
Hexachlorocyclohexane,gamma	58-89-9	1.30E+00	H	1.30E+00	*	3.00E-04	I	3.00E-04	*	0.04
Hexachlorocyclopentadiene	77-47-4	*******		*******		6.00E-03	I	5.70E-05	I	0
Hexachloroethane	67-72-1	1.40E-02	I	1.40E-02	I	1.00E-03	I	1.00E-03	*	0
Indeno(1,2,3-cd)pyrene	193-39-5	7.30E-01	E	3.10E-01	E	*******		*******		0.13
Isobutyl alcohol	78-83-1	*******		*******		3.00E-01	I	3.00E-01	*	0.1
Isophorone	78-59-1	9.50E-04	I	9.50E-04	*	2.00E-01	I	2.00E-01	*	0.1
Lead (inorganic)	7439-92-1	*******		*******		*******		*******		IEUBK
Mercury (inorganic)	7487-94-7	*******		*******		3.00E-04	I	8.57E-05	I	0
Methoxychlor	72-43-5	*******		*******		5.00E-03	I	5.00E-03	*	0.1
Methylene chloride	75-09-2	7.50E-03	I	1.64E-03	I	6.00E-02	I	8.57E-01	H	0
Methyl ethyl ketone	78-93-3	*******		*******		6.00E-01	I	2.86E-01	I	0
Methyl isobutyl ketone	108-10-1	*******		*******		8.00E-02	H	8.60E-01	I	0
Methylnaphthalene,2-	91-57-6	*******		*******		2.00E-02	S	8.60E-04	S	0
MTBE (methyl tert-butyl ether)	1634-04-4	*******		*******		8.57E-01	#	8.57E-01	I	0
Naphthalene	91-20-3	*******		*******		2.00E-02	I	8.60E-04	I	0
Nickel	7440-02-0	*******		*******		2.00E-02	I	*******		0
Nitrate	14797-55-8	*******		*******		1.60E+00	I	1.60E+00	*	0
Nitrite	14797-65-0	*******		*******		1.00E-01	I	1.00E-01	*	0
Nitroaniline,2-	88-74-4	*******		*******		3.00E-03	E	2.90E-05	E	0

NOTE: See end of Table for designation of letters and symbols.

LDEQ RECAP
APPENDIX H: TABLE H1
CANCER SLOPE FACTORS AND REFERENCE DOSES

COMPOUND	CAS #	SF_o	REF	SF_i	REF	RfD_o	REF	RfD_i	REF	ABS
		$(mg/kg\text{-}day)^{-1}$		$(mg/kg\text{-}day)^{-1}$		mg/kg-day		mg/kg-day		unitless
Nitroaniline,3-	99-09-2	*******		*******		3.00E-03	O	3.00E-03	*	0
Nitroaniline,4-	100-01-6	*******		*******		3.00E-03	O	3.00E-03	*	0.1
Nitrobenzene	98-95-3	*******		*******		5.00E-04	I	5.71E-04	H	0
Nitrophenol,4-	100-02-7	*******		*******		8.00E-03	E	8.00E-03	*	0.1
Nitrosodi-n-propylamine,n-	621-64-7	7.00E+00	I	7.00E+00	*	*******		*******		0.1
N-nitrosodiphenylamine	86-30-6	4.90E-03	I	4.90E-03	*	*******		*******		0.1
Pentachlorophenol	87-86-5	1.20E-01	I	1.20E-01	*	3.00E-02	I	3.00E-02	*	0.25
Phenanthrene	85-01-8	*******		*******		3.00E-01	S	3.00E-01	*	0
Phenol	108-95-2	*******		*******		3.00E-01	I	3.00E-01	*	0
Polychlorinated biphenyls	1336-36-3	2.00E+00	I	2.00E+00	*	2.00E-05	I	2.00E-05	*	0.14
Pyrene	129-00-0	*******		*******		3.00E-02	I	3.00E-02	*	0
Selenium	7782-49-2	*******		*******		5.00E-03	I	*******		0
Silver	7440-22-4	*******		*******		5.00E-03	I	*******		0
Styrene	100-42-5	*******		*******		2.00E-01	I	2.86E-01	I	0
Tetrachlorobenzene,1,2,4,5-	95-94-3	*******		*******		3.00E-04	I	3.00E-04	*	0.1
Tetrachloroethane,1,1,1,2-	630-20-6	2.60E-02	I	2.59E-02	I	3.00E-02	I	3.00E-02	*	0
Tetrachloroethane,1,1,2,2-	79-34-5	2.00E-01	I	2.03E-01	I	6.00E-02	E	6.00E-02	*	0
Tetrachloroethylene	127-18-4	5.20E-02	E	2.03E-03	E	1.00E-02	I	1.10E-01	E	0
Tetrachlorophenol,2,3,4,6-	58-90-2	*******		*******		3.00E-02	I	3.00E-02	*	0.1
Thallium	7440-28-0	*******		*******		7.00E-05	H	*******		0
Toluene	108-88-3	*******		*******		2.00E-01	I	1.14E-01	I	0
Toxaphene	8001-35-2	1.10E+00	I	1.12E+00	I	*******		*******		0.1
Trichlorobenzene,1,2,4-	120-82-1	*******		*******		1.00E-02	I	5.70E-02	H	0
Trichloroethane,1,1,1-	71-55-6	*******		*******		3.50E-02	E	2.86E-01	E	0
Trichloroethane,1,1,2-	79-00-5	5.70E-02	I	5.60E-02	I	4.00E-03	I	4.00E-03	*	0
Trichloroethene	79-01-6	4.00E-01	E	4.00E-01	E	3.00E-04	E	1.14E-02	E	0
Trichlorofluoromethane	75-69-4	*******		*******		3.00E-01	I	2.00E-01	A	0
Trichlorophenol,2,4,5-	95-95-4	*******		*******		1.00E-01	I	1.00E-01	*	0.1
Trichlorophenol,2,4,6-	88-06-2	1.10E-02	I	1.10E-02	I	*******		*******		0.1
Vanadium	7440-62-2	*******		*******		7.00E-03	H	*******	*	0
Vinyl chloride	75-01-4	1.40E+00	I	3.10E-02	I	3.00E-03	I	2.90E-02	I	0
Xylene(mixed)	1330-20-7	*******		*******		2.00E-01	I	2.90E-02	I	0
Zinc	7440-66-6	*******		*******		3.00E-01	I	3.00E-01	*	0

NOTE: See end of Table for designation of letters and symbols.

LDEQ RECAP
APPENDIX H: TABLE H1
CANCER SLOPE FACTORS AND REFERENCE DOSES

COMPOUND	CAS #	SF_o	REF	SF_i	REF	RfD_o	REF	RfD_i	REF	ABS
		$(mg/kg\text{-}day)^{-1}$		$(mg/kg\text{-}day)^{-1}$		mg/kg-day		mg/kg-day		unitless
Aliphatics C6-C8	NA	*******		*******		5.00E+00	T	5.30E+00	T	0
Aliphatics >C8-C10	NA	*******		*******		1.00E-01	T	2.90E-01	T	0
Aliphatics >C10-C12	NA	*******		*******		1.00E-01	T	3.00E-01	T	0
Aliphatics >C12-C16	NA	*******		*******		1.00E-01	T	3.00E-01	T	0
Aliphatics >C16-C35	NA	*******		*******		2.00E+00	T	2.00E+00	*	0.1
Aromatics >C8-C10	NA	*******		*******		4.00E-02	T	6.00E-02	T	0
Aromatics >C10-C12	NA	*******		*******		4.00E-02	T	6.00E-02	T	0
Aromatics >C12-C16	NA	*******		*******		4.00E-02	T	6.00E-02	T	0
Aromatics >C16-C21	NA	*******		*******		3.00E-02	T	3.00E-02	*	0.1
Aromatics >C21-C35	NA	*******		*******		3.00E-02	T	3.00E-02	*	0.1

I = Integrated Risk Information System (IRIS), EPA.
H = Health Effects Assessment Summary Tables (HEAST), EPA.
A = Health Effects Assessment Summary Tables Alternative, EPA Region III Risk-Based Concentration Table.
E = EPA-NCEA Regional Support provisional value, EPA Region III Risk-Based Concentration Table.
* = Inhalation toxicity not available, oral toxicity value used to assess inhalation exposure.
# = Oral toxicity value not available, inhalation toxicity value used to assess oral exposure.
O = EPA Region III Risk-Based Concentration Table.
W = Withdrawn from IRIS or HEAST.
T = TPH Criteria Working Group, 1997.
IEUBK = refer to IEUBK model guidelines.
D= Dermal RfD for cadmium is 2.5E-05 mg/kg-d (based on an oral absorption efficiency of 5%; RAGS-E, EPA 1999).
S = Surrogate (Acenaphthene for Acenaphthylene; Naphthalene for Methylnaphthalene, 2-; Anthracene for Phenanthrene) .

LDEQ RECAP
APPENDIX H: TABLE H2
CHEMICAL AND PHYSICAL PARAMETERS

COMPOUND	CAS #	MOL. WT	Koc	REF	H	REF	Da	REF	Dw	REF	S	REF
		g/g-mole	cm3/g		atm-m3/mol		cm2/s		cm2/s		mg/L	
Acenaphthene	83-32-9	154.2	4.90E+03	1	1.55E-04	1	4.21E-02	1	7.69E-06	1	4.24E+00	1
Acenaphthylene	208-96-8	152.2	2.00E+03	2	1.14E-04	2	4.39E-02	3	7.53E-06	3	1.60E+01	2
Acetone	67-64-1	58.08	5.75E-01	1	3.88E-05	1	1.24E-01	1	1.14E-05	1	1.00E+06	1
Aldrin	309-00-2	364.91	4.87E+04	1	1.70E-04	1	1.32E-02	1	4.86E-06	1	1.80E-01	1
Aniline	62-53-3	93.13	2.57E+01	5	1.90E-06	2	7.00E-02	3	8.30E-06	3	3.60E+04	2
Anthracene	120-12-7	178.23	2.35E+04	1	6.50E-05	1	3.24E-02	1	7.74E-06	1	4.30E-02	1
Antimony	7440-36-0	121.75	********	********	********	********	********	********	********	********	********	********
Arsenic	7440-38-2	74.92	********	********	********	********	********	********	********	********	********	********
Barium	7440-39-3	137.33	********	********	********	********	********	********	********	********	********	********
Benzene	71-43-2	78.11	6.17E+01	1	5.55E-03	1	8.80E-02	1	9.80E-06	1	1.75E+03	1
Benz(a)anthracene	56-55-3	228.29	3.58E+05	1	3.35E-06	1	5.10E-02	1	9.00E-06	1	9.40E-03	1
Benzo(a)pyrene	50-32-8	252.32	9.69E+05	1	1.13E-06	1	4.30E-02	1	9.00E-06	1	1.60E-03	1
Benzo(b)fluoranthene	205-99-2	252.32	1.23E+06	1	1.11E-04	1	2.26E-02	1	5.56E-06	1	1.50E-03	1
Benzo(k)fluoranthene	207-08-9	252.32	1.23E+06	1	8.29E-07	1	2.26E-02	1	5.56E-06	1	8.00E-04	1
Beryllium	7440-41-7	9.01	********	********	********	********	********	********	********	********	********	********
Biphenyl,1,1-	92-52-4	154.21	5.13E+03	5	3.00E-04	2	4.04E-02	9	8.15E-06	E	7.50E+00	2
Bis(2-chloroethyl)ether	111-44-4	143.01	7.59E+01	1	1.80E-05	1	6.92E-02	1	7.53E-06	1	1.70E+04	1
Bis(2-chloroisopropyl)ether	108-60-1	171.04	6.17E+01	4	1.13E-04	4	5.95E-02	E	6.62E-06	E	1.70E+03	4
Bis(2-ethyl-hexyl)phthalate	117-81-7	390.56	1.10E+05	1	1.02E-07	1	3.51E-02	1	3.66E-06	1	3.40E-01	1
Bromodichloromethane	75-27-4	163.83	5.50E+01	1	1.60E-03	1	2.98E-02	1	1.06E-05	1	6.70E+03	1
Bromoform	75-25-2	252.73	1.26E+02	1	5.35E-04	1	1.49E-02	1	1.03E-05	1	3.10E+03	1
Bromomethane	74-83-9	94.94	9.00E+00	1	6.20E-03	2	7.28E-02	3	1.21E-05	3	1.50E+04	2
Butyl benzyl phthalate	85-68-7	312.37	1.37E+04	1	1.26E-06	1	1.74E-02	1	4.83E-06	1	2.70E+00	1
Cadmium	7440-43-9	112.41	********	********	********	********	********	********	********	********	********	********
Carbon Disulfide	75-15-0	76.14	4.57E+01	1	3.03E-02	1	1.04E-01	1	1.00E-05	1	1.19E+03	1
Carbon Tetrachloride	56-23-5	153.82	1.52E+02	1	3.04E-02	1	7.80E-02	1	8.80E-06	1	7.93E+02	1
Chlordane	57-74-9	409.78	5.13E+04	1	4.86E-05	1	1.18E-02	1	4.37E-06	1	5.60E-02	1
Chloroaniline,p-	106-47-8	127.57	6.61E+01	1	3.31E-07	1	4.83E-02	1	1.01E-05	1	5.30E+03	1
Chlorobenzene	108-90-7	112.56	2.24E+02	1	3.70E-03	1	7.30E-02	1	8.70E-06	1	4.72E+02	1
Chlorodibromomethane	124-48-1	208.28	6.31E+01	1	7.83E-04	1	1.96E-02	1	1.05E-05	1	2.60E+03	1
Chloroethane (Ethylchloride)	75-00-3	64.51	3.24E+00	4	8.80E-03	2	2.71E-01	E	1.15E-05	E	5.70E+03	2
Chloroform	67-66-3	119.38	5.25E+01	1	3.67E-03	1	1.04E-01	1	1.00E-05	1	7.92E+03	1
Chloromethane	74-87-3	50.49	2.51E+01	4	8.80E-03	2	1.26E-01	E	6.50E-06	E	5.30E+03	1
Chloronaphthalene,2-	91-58-7	162.62	8.51E+03	4	3.10E-04	2	3.47E-02	3	8.80E-06	3	1.20E+01	2

NOTE: See end of Table for designation of numbers and letter.

LDEQ RECAP
APPENDIX H: TABLE H2
CHEMICAL AND PHYSICAL PARAMETERS

COMPOUND	CAS #	MOL. WT	Koc	REF	H	REF	Da	REF	Dw	REF	S	REF
		g/g-mole	cm3/g		atm-m3/mol		cm2/s		cm2/s		mg/L	
Chlorophenol,2-	95-57-8	128.56	3.63E+02	4	3.91E-04	1	5.01E-02	1	9.46E-06	1	2.20E+04	1
Chromium(III)	16065-83-1	52	********	********	********	********	********	********	********	********	********	********
Chromium(VI)	18540-29-97	52	********	********	********	********	********	********	********	********	********	********
Chrysene	218-01-9	228.29	3.98E+05	1	9.46E-05	1	2.48E-02	1	6.21E-06	1	1.60E-03	1
Cobalt	7440-48-4	58.93	********	********	********	********	********	********	********	********	********	********
Copper	7440-50-8	63.55	********	********	********	********	********	********	********	********	********	********
Cyanide (free)	57-12-5	26.01	********	********	********	********	********	********	********	********	********	********
DDD	72-54-8	320.04	4.58E+04	1	4.00E-06	1	1.69E-02	1	4.76E-06	1	9.00E-02	1
DDE	72-55-9	318.03	8.64E+04	1	2.10E-05	1	1.44E-02	1	5.87E-06	1	1.20E-01	1
DDT	50-29-3	354.49	6.78E+05	1	8.10E-06	1	1.37E-02	1	4.95E-06	1	2.50E-02	1
Dibenz(a,h)anthracene	53-70-3	278.35	1.79E+06	1	1.47E-08	1	2.02E-02	1	5.18E-06	1	2.50E-03	1
Dibenzofuran	132-64-9	168.19	8.13E+03	4	1.30E-05	2	2.67E-02	3	6.00E-06	3	3.10E+00	2
Dibromo-3-chloropropane,1,2-	96-12-8	236.33	8.80E+01	E	1.50E-04	2	2.12E-02	3	7.00E-06	3	1.20E+03	2
Dichlorobenzene,1,2-	95-50-1	147	3.79E+02	1	1.90E-03	1	6.90E-02	1	7.90E-06	1	1.56E+02	1
Dichlorobenzene,1,3-	541-73-1	147	1.70E+03	4	3.30E-03	2	6.42E-02	E	7.10E-06	E	1.30E+02	2
Dichlorobenzene,1,4-	106-46-7	147	6.16E+02	1	2.43E-03	1	6.90E-02	1	7.90E-06	1	7.38E+01	1
Dichlorobenzidine,3,3-	91-94-1	253.13	7.24E+02	1	4.00E-09	1	1.94E-02	1	6.74E-06	1	3.10E+00	1
Dichloroethane,1,1-	75-34-3	98.96	5.34E+01	1	5.62E-03	1	7.42E-02	1	1.05E-05	1	5.06E+03	1
Dichloroethane,1,2-	107-06-2	98.96	3.80E+01	1	9.79E-04	1	1.04E-01	1	9.90E-06	1	8.52E+03	1
Dichloroethene,1,1-	75-35-4	96.94	6.50E+01	1	2.61E-02	1	9.00E-02	1	1.04E-05	1	2.25E+03	1
Dichloroethene,cis,1,2-	156-59-2	96.94	3.55E+01	1	4.08E-03	1	7.36E-02	1	1.13E-05	1	3.50E+03	1
Dichloroethene,trans,1,2-	156-60-5	96.94	3.80E+01	1	9.38E-03	1	7.07E-02	E	1.19E-05	E	6.30E+03	1
Dichlorophenol,2,4-	120-83-2	163	8.71E+02	4	3.16E-06	1	3.46E-02	1	8.77E-06	1	4.50E+03	1
Dichloropropane,1,2-	78-87-5	112.99	4.70E+01	1	2.80E-03	1	7.82E-02	1	8.73E-06	1	2.80E+03	1
Dichloropropene,1,3-	542-75-6	110.98	4.57E+01	1	1.77E-03	1	6.26E-02	1	1.00E-05	1	2.80E+03	1
Dieldrin	60-57-1	380.91	2.55E+04	1	1.51E-05	1	1.25E-02	1	4.74E-06	1	1.95E-01	1
Diethylphthalate	84-66-2	222.24	8.22E+01	1	4.50E-07	1	2.56E-02	1	6.35E-06	1	1.08E+03	1
Dimethylphenol,2,4-	105-67-9	122.17	2.09E+02	1	2.00E-06	1	5.84E-02	1	8.69E-06	1	7.87E+03	1
Dimethylphthalate	131-11-3	194.19	4.26E+01	4	1.10E-07	2	5.68E-02	3	6.30E-06	3	4.00E+03	2
Di-n-octylphthalate	117-84-0	390.56	8.32E+07	1	6.68E-05	1	1.51E-02	1	3.58E-06	1	2.00E-02	1
Dinitrobenzene,1,3-	99-65-0	168.11	1.51E+02	5	3.70E-07	2	2.79E-01	3	9.10E-06	3	5.30E+02	2
Dinitrophenol,2,4-	51-28-5	184.11	1.78E+01	4	4.43E-07	1	2.73E-02	1	9.06E-06	1	2.79E+03	1
Dinitrotoluene,2,6-	606-20-2	182.14	6.92E+01	1	7.47E-07	1	3.27E-02	1	7.26E-06	1	1.82E+02	1
Dinitrotoluene,2,4-	121-14-2	182.14	9.55E+01	1	9.26E-08	1	2.03E-01	1	7.06E-06	1	2.70E+02	1

NOTE: See end of Table for designation of numbers and letter.

LDEQ RECAP
APPENDIX H: TABLE H2
CHEMICAL AND PHYSICAL PARAMETERS

COMPOUND	CAS #	MOL. WT	Koc	REF	H	REF	Da	REF	Dw	REF	S	REF
		g/g-mole	cm3/g		atm-m3/mol		cm2/s		cm2/s		mg/L	
Dinoseb	88-85-7	240.22	1.24E+02	8	4.60E-07	2	5.00E-02	E	5.60E-06	E	5.20E+01	2
Endosulfan	115-29-7	406.93	2.04E+03	1	1.12E-05	1	1.15E-02	1	4.55E-06	1	5.10E-01	1
Endrin	72-20-8	380.93	1.08E+04	1	7.52E-06	1	1.25E-02	1	4.74E-06	1	2.50E-01	1
Ethyl benzene	100-41-4	106.17	2.04E+02	1	7.88E-03	1	7.50E-02	1	7.80E-06	1	1.69E+02	1
Fluoranthene	206-44-0	202.26	4.91E+04	1	1.61E-05	1	3.02E-02	1	6.35E-06	1	2.06E-01	1
Fluorene	86-73-7	166.22	7.71E+03	1	6.36E-05	1	3.63E-02	1	7.88E-06	1	1.98E+00	1
Heptachlor	76-44-8	373.32	9.53E+03	1	1.48E+00	1	1.12E-02	1	5.69E-06	1	1.80E-01	1
Heptachlor epoxide	1024-57-3	389.32	8.32E+04	1	9.50E-06	1	1.32E-02	1	4.23E-06	1	2.00E-01	1
Hexachlorobenzene	118-74-1	284.78	8.00E+04	1	1.32E-03	1	5.42E-02	1	5.91E-06	1	6.20E+00	1
Hexachlorobutadiene	87-68-3	260.76	5.37E+04	1	8.15E-03	1	5.61E-02	1	6.16E-06	1	3.23E+00	1
Hexachlorocyclohexane,alpha	319-84-6	290.83	1.76E+03	1	1.06E-05	1	1.42E-02	1	7.34E-06	1	2.00E+00	1
Hexachlorocyclohexane,beta	319-85-7	290.83	2.14E+03	1	7.43E-07	1	1.42E-02	1	7.34E-06	1	2.40E-01	1
Hexachlorocyclohexane,gamma	58-89-9	290.83	1.35E+03	1	1.40E-05	1	1.42E-02	1	7.34E-06	1	6.80E+00	1
Hexachlorocyclopentadiene	77-47-4	272.77	2.00E+05	1	2.70E-02	1	1.61E-02	1	7.21E-06	1	1.80E+00	1
Hexachloroethane	67-72-1	236.74	1.78E+03	1	3.89E-03	1	2.50E-03	1	6.80E-06	1	5.00E+00	1
Indeno(1,2,3-cd)pyrene	193-39-5	276.34	3.47E+06	1	1.60E-06	1	1.90E-02	1	5.66E-06	1	2.20E-05	1
Isobutyl alcohol	78-83-1	74.12	2.20E+00	1	1.20E-05	2	9.00E-02	E	1.00E-05	E	8.50E+04	2
Isophorone	78-59-1	138.21	4.68E+01	1	6.64E-06	1	6.23E-02	1	6.76E-06	1	1.20E+04	1
Lead (inorganic)	7439-92-1	207.2	********	********	********	********	********	********	********	********	********	********
Mercury (inorganic)	7487-94-7	200.59	********	********	********	********	********	********	********	********	********	********
Methoxychlor	72-43-5	345.65	8.00E+04	1	1.58E-05	1	1.56E-02	1	4.46E-06	1	4.50E-02	1
Methylene chloride	75-09-2	84.93	6.16E+00	1	2.19E-03	1	1.01E-01	1	1.17E-05	1	1.30E+04	1
Methyl ethyl ketone	78-93-3	72.11	1.23E+00	4	5.60E-05	2	8.08E-02	E	9.80E-06	E	2.20E+05	2
Methyl isobutyl ketone	108-10-1	100.16	6.20E+00	4	1.40E-04	2	7.50E-02	3	7.80E-06	3	1.90E+04	2
Methylnaphthalene,2-	91-57-6	142.2	2.24E+03	3	5.80E-05	3	4.80E-02	3	7.84E-06	3	2.46E+01	2
MTBE (methyl tert-butyl ether)	1634-04-4	83.1	1.12E+01	6	5.87E-04	6	1.02E-01	3	1.05E-05	3	5.10E+04	6
Naphthalene	91-20-3	128.17	1.19E+03	1	4.83E-04	1	5.90E-02	1	7.50E-06	1	3.10E+01	1
Nickel	7440-02-0	58.69	********	********	********	********	********	********	********	********	********	********
Nitrate	14797-55-8	62	********	********	********	********	********	********	********	********	********	********
Nitrite	14797-65-0	46	********	********	********	********	********	********	********	********	********	********
Nitroaniline,2-	88-74-4	138.13	1.70E+01	4	9.72E-05	4	6.60E-02	E	7.40E-06	E	1.26E+03	4
Nitroaniline,3-	99-09-2	138.13	1.82E+01	4	1.47E-07	2	6.60E-02	E	7.40E-06	E	1.20E+03	2
Nitroaniline,4-	100-01-6	138.13	1.20E+01	4	2.10E-09	2	4.73E-02	E	8.58E-06	E	7.30E+02	2
Nitrobenzene	98-95-3	123.11	1.19E+02	1	2.40E-05	1	7.60E-02	1	8.60E-06	1	2.09E+03	1

NOTE: See end of Table for designation of numbers and letter.

LDEQ RECAP
APPENDIX H: TABLE H2
CHEMICAL AND PHYSICAL PARAMETERS

COMPOUND	CAS #	MOL. WT	Koc	REF	H	REF	Da	REF	Dw	REF	S	REF
		g/g-mole	cm3/g		atm-m3/mol		cm2/s		cm2/s		mg/L	
Nitrophenol,4-	100-02-7	139.11	5.50E+01	4	4.20E-10	2	4.30E-02	3	9.60E-06	3	1.20E+04	2
Nitrosodi-n-propylamine,n-	621-64-7	130.19	2.40E+01	1	2.25E-06	1	5.45E-02	1	8.17E-06	1	9.89E+03	1
N-nitrosodiphenylamine	86-30-6	198.22	1.29E+03	1	5.00E-06	1	3.12E-02	1	6.35E-06	1	3.51E+01	1
Pentachlorophenol	87-86-5	266.34	8.91E+02	4	2.44E-08	1	5.60E-02	1	6.10E-06	1	1.95E+03	1
Phenanthrene	85-01-8	178.24	4.80E+03	2	2.33E-05	2	3.24E-02	E	7.74E-06	E	1.15E+00	2
Phenol	108-95-2	94.11	2.88E+01	1	3.97E-07	1	8.20E-02	1	9.10E-06	1	8.28E+04	1
Polychlorinated biphenyls	1336-36-3	290	3.09E+05	1	1.10E-03	2	4.56E-02	E	5.09E-06	E	3.10E-02	2
Pyrene	129-00-0	202.26	6.80E+04	1	1.10E-05	1	2.72E-02	1	7.24E-06	1	1.35E-01	1
Selenium	7782-49-2	78.96	********	********	********	********	********	********	********	********	********	********
Silver	7440-22-4	107.87	********	********	********	********	********	********	********	********	********	********
Styrene	100-42-5	104.15	9.12E+02	1	2.75E-03	1	7.10E-02	1	8.00E-06	1	3.10E+02	1
Tetrachlorobenzene,1,2,4,5-	95-94-3	215.89	5.25E+03	5	2.60E-03	2	2.11E-02	3	8.80E-06	3	6.00E-01	2
Tetrachloroethane,1,1,1,2-	630-20-6	167.85	5.40E+01	7	2.40E-03	7	6.00E-02	E	6.70E-06	E	1.10E+03	2
Tetrachloroethane,1,1,2,2-	79-34-5	167.85	7.90E+01	1	3.45E-04	1	7.10E-02	1	7.90E-06	1	2.97E+03	1
Tetrachloroethylene	127-18-4	165.83	2.65E+02	1	1.84E-02	1	7.20E-02	1	8.20E-06	1	2.00E+02	1
Tetrachlorophenol,2,3,4,6-	58-90-2	231.89	2.13E+02	1	4.40E-06	2	2.17E-02	1	7.10E-06	1	1.00E+03	2
Thallium	7440-28-0	204.38	********	********	********	********	********	********	********	********	********	********
Toluene	108-88-3	92.14	1.40E+02	1	6.64E-03	1	8.70E-02	1	8.60E-06	1	5.26E+02	1
Toxaphene	8001-35-2	413.2	9.58E+04	1	6.00E-06	1	1.16E-02	1	4.34E-06	1	7.40E-01	1
Trichlorobenzene,1,2,4-	120-82-1	181.45	1.66E+03	1	1.42E-03	1	3.00E-02	1	8.23E-06	1	3.00E+02	1
Trichloroethane,1,1,1-	71-55-6	133.4	1.35E+02	1	1.72E-02	1	7.80E-02	1	8.80E-06	1	1.33E+03	1
Trichloroethane,1,1,2-	79-00-5	133.4	7.50E+01	1	9.13E-04	1	7.80E-02	1	8.80E-06	1	4.42E+03	1
Trichloroethene	79-01-6	131.39	9.43E+01	1	1.03E-02	1	7.90E-02	1	9.10E-06	1	1.10E+03	1
Trichlorofluoromethane	75-69-4	137.37	1.59E+02	4	9.70E-02	2	8.70E-02	3	9.70E-06	3	1.10E+03	2
Trichlorophenol,2,4,5-	95-95-4	197.45	7.08E+02	4	4.33E-06	1	2.91E-02	1	7.03E-06	1	1.20E+03	1
Trichlorophenol,2,4,6-	88-06-2	197.45	1.07E+03	4	7.80E-06	1	3.18E-02	1	6.25E-06	1	8.00E+02	1
Vanadium	7440-62-2	50.94	********	********	********	********	********	********	********	********	********	********
Vinyl chloride	75-01-4	62.5	1.86E+01	1	2.70E-02	1	1.06E-01	1	1.23E-06	1	2.76E+03	1
Xylene(mixed)	1330-20-7	106.17	1.29E+02	4	7.60E-03	1	7.00E-02	1	7.80E-06	1	1.60E+02	1
Zinc	7440-66-6	65.38	********	********	********	********	********	********	********	********	********	********
Aliphatics C6-C8	NA	100	3.98E+03	10	1.22E+00	10	1.00E-01	10	1.00E-05	10	********	********
Aliphatics >C8-C10	NA	130	3.16E+04	10	1.95E+00	10	1.00E-01	10	1.00E-05	10	********	********
Aliphatics >C10-C12	NA	160	2.51E+05	10	2.93E+00	10	1.00E-01	10	1.00E-05	10	********	********
Aliphatics >C12-C16	NA	200	5.01E+06	10	1.27E+01	10	1.00E-01	10	1.00E-05	10	********	********

NOTE: See end of Table for designation of numbers and letter.

LDEQ RECAP
APPENDIX H: TABLE H2
CHEMICAL AND PHYSICAL PARAMETERS

COMPOUND	CAS #	MOL. WT	Koc	REF	H	REF	Da	REF	Dw	REF	S	REF
		g/g-mole	cm3/g		atm-m3/mol		cm2/s		cm2/s		mg/L	
Aliphatics >C16-C35	NA	270	6.31E+08	10	1.20E+02	10	1.00E-01	10	1.00E-05	10	********	*******
Aromatics >C8-C10	NA	120	1.58E+03	10	1.17E-02	10	1.00E-01	10	1.00E-05	10	********	*******
Aromatics >C10-C12	NA	130	2.51E+03	10	3.41E-03	10	1.00E-01	10	1.00E-05	10	********	*******
Aromatics >C12-C16	NA	150	5.01E+03	10	1.29E-03	10	1.00E-01	10	1.00E-05	10	********	*******
Aromatics >C16-C21	NA	190	1.58E+04	10	3.17E-04	10	1.00E-01	10	1.00E-05	10	********	*******
Aromatics >C21-C35	NA	240	1.26E+05	10	1.63E-05	10	1.00E-01	10	1.00E-05	10	********	*******

* If data on more than one isomer is available; then used most protective. If data available on only one isomer; then used that data.

1. Soil Screening Guidance, 1996.
2. Superfund Chemical Data Matrix, June 1996.
3. Air Emissions Models for Waste and Wastewater, EPA-453/R-94-080A, 1994.
4. Groundwater Chemicals Desk Reference, Montgomery, J. H., et.al., 1990.
5. Groundwater Chemicals Desk Reference, vol. II, Montgomery, J. H., et.al., 1991.
6. Handbook of Environmental Fate and Exposure Data for Organic Chemicals, vol. IV, 1991.
7. Handbook of Environmental Fate and Exposure Data for Organic Chemicals, vol. II, 1991.
8. Soil Chemistry of Hazardous Materials, 1988.
9. CHEMDAT 8, November, 1994.
10. Total Petroleum Hydrocarbon Criteria Workgroup, 1996.

E - Estimated.

LDEQ RECAP
APPENDIX H
TABLE H-4
QUANTITATION LIMITS USED IN RECAP

COMPOUND	Soil	GW
	mg/kg	mg/l
Acenaphthene		1.0E-02
Acenaphthylene		
Acetone		1.0E-01
Aldrin		1.9E-03
Aniline		1.0E-02
Anthracene		1.0E-02
Antimony		
Arsenic		
Barium		
Benzene		
Benz(a)anthracene		7.8E-03
Benzo(a)pyrene	3.3E-01	
Benzo(b)fluoranthene		4.8E-03
Benzo(k)fluoranthene		2.5E-03
Beryllium		
Biphenyl,1,1-		1.0E-04
Bis(2-chloroethyl)ether	3.3E-01	5.7E-03
Bis(2-chloroisopropyl)ether	8.0E-01	5.7E-03
Bis(2-ethyl-hexyl)phthalate		
Bromodichloromethane		
Bromoform		
Bromomethane		1.0E-02
Butyl benzyl phthalate		1.0E-02
Cadmium		
Carbon Disulfide		5.0E-03
Carbon Tetrachloride		
Chlordane		
Chloroaniline,p-		2.0E-02
Chlorobenzene		
Chlorodibromomethane		
Chloroethane (Ethylchloride)		1.0E-02
Chloroform		
Chloromethane	1.0E-01	1.0E-02
Chloronaphthalene,2-		1.0E-02
Chlorophenol,2-		1.0E-02
Chromium(III)		
Chromium(VI)		
Chrysene		1.5E-03
Cobalt		
Copper		
Cyanide (free)		
DDD		1.2E-05
DDE		5.0E-05
DDT		3.0E-04
Dibenz(a,h)anthracene	3.3E-01	2.5E-03
Dibenzofuran		1.0E-02
Dibromo-3-chloropropane,1,2-	1.0E-02	
Dichlorobenzene,1,2-		

LDEQ RECAP
APPENDIX H
TABLE H-4
QUANTITATION LIMITS USED IN RECAP

COMPOUND	Soil	GW
	mg/kg	mg/l
Dichlorobenzene,1,3-		1.0E-02
Dichlorobenzene,1,4-		
Dichlorobenzidine,3,3-		2.0E-02
Dichloroethane,1,1-		5.0E-03
Dichloroethane,1,2-		
Dichloroethene,1,1-		
Dichloroethene,cis,1,2-		
Dichloroethene,trans,1,2-		
Dichlorophenol,2,4-		1.0E-02
Dichloropropane,1,2-		
Dichloropropene,1,3-		5.0E-03
Dieldrin		2.5E-03
Diethylphthalate		1.0E-02
Dimethylphenol,2,4-		1.0E-02
Dimethylphthalate		1.0E-02
Di-n-octylphthalate		2.5E-03
Dinitrobenzene,1,3-	2.5E-01	1.0E-02
Dinitrophenol,2,4-	1.7E+00	5.0E-02
Dinitrotoluene,2,6-		1.0E-02
Dinitrotoluene,2,4-		1.0E-02
Dinoseb	1.4E-01	
Endosulfan		1.2E-04
Endrin		
Ethyl benzene		
Fluoranthene		1.0E-02
Fluorene		1.0E-02
Heptachlor		
Heptachlor epoxide		
Hexachlorobenzene	3.3E-01	
Hexachlorobutadiene		6.0E-04
Hexachlorocyclohexane,alpha		3.0E-05
Hexachlorocyclohexane,beta		6.0E-05
Hexachlorocyclohexane,gamma		
Hexachlorocyclopentadiene		
Hexachloroethane		1.0E-02
Indeno(1,2,3-cd)pyrene		3.7E-03
Isobutyl alcohol		
Isophorone		1.0E-02
Lead (inorganic)		
Mercury (inorganic)		
Methoxychlor		
Methylene chloride		
Methyl ethyl ketone		1.0E-01
Methyl isobutyl ketone		5.0E-02
Methylnaphthalene,2-		
MTBE (methyl tert-butyl ether)		
Naphthalene		1.0E-02
Nickel		1.5E-02

LDEQ RECAP
APPENDIX H
TABLE H-4
QUANTITATION LIMITS USED IN RECAP

COMPOUND	Soil	GW
	mg/kg	mg/l
Nitrate		
Nitrite		
Nitroaniline,2-	1.7E+00	5.0E-02
Nitroaniline,3-	1.7E+00	5.0E-02
Nitroaniline,4-	1.7E+00	5.0E-02
Nitrobenzene	3.3E-01	1.9E-03
Nitrophenol,4-		5.0E-02
Nitrosodi-n-propylamine,n-	3.3E-01	1.0E-02
N-nitrosodiphenylamine		1.0E-02
Pentachlorophenol	1.7E+00	
Phenanthrene		
Phenol		1.0E-02
Polychlorinated biphenyls		
Pyrene		1.0E-02
Selenium		
Silver		7.0E-03
Styrene		
Tetrachlorobenzene,1,2,4,5-		
Tetrachloroethane,1,1,1,2-		5.0E-03
Tetrachloroethane,1,1,2,2-		5.0E-04
Tetrachloroethylene		
Tetrachlorophenol,2,3,4,6-		
Thallium		
Toluene		
Toxaphene		
Trichlorobenzene,1,2,4-		
Trichloroethane,1,1,1-		
Trichloroethane,1,1,2-		
Trichloroethene		
Trichlorofluoromethane		
Trichlorophenol,2,4,5-		1.0E-02
Trichlorophenol,2,4,6-		1.0E-02
Vanadium		
Vinyl chloride		
Xylene(mixed)		
Zinc		2.0E-02
Aliphatics C6-C8		1.5E-01
Aliphatics >C8-C10		1.5E-01
Aliphatics >C10-C12		1.5E-01
Aliphatics >C12-C16		1.5E-01
Aliphatics >C16-C35		1.5E-01
Aromatics >C8-C10		1.5E-01
Aromatics >C10-C12		1.5E-01
Aromatics >C12-C16		1.5E-01
Aromatics >C16-C21		1.5E-01
Aromatics >C21-C35		1.5E-01

Soil properties		Management Option 2						
Revision Date: 08/04/2003								
Run date:	6/28/2011							
*****calculation inputs*****								
1.7	g/cm3		pb = dry soil bulk density					
0.358491	Lpore/Lsoil		n = total soil porosity					
0.21	Lwater/Lsoil		nw = water-filled soil porosity					
0.148491	Lair/Lsoil		na = air-filled soil porosity					
2.65	g/cm3		ps = soil particle density					
0.006	g/g		foc = fractional organic carbon in soil					
30	(ft) = L = length of the source at the water table							
30	(ft) = W = width of impacted area perpendicular to flow direction of aquifer							
0.0	Acres		AOI site area - input into Q/C equation below					
143.5317	g/m2-s per kg/m3		Q/C = inverse of mean concentration at center of square source					
Q/C Table								
site size	148*148	209*209	295*295	467*467	660*660	1143*1143		
site size	0.5 acre	1 acre	2 acre	5 acre	10 acre	30 acre		
Q/C value	76.3062	67.4304	59.872	51.4648	46.1707	39.2329		

Sd eqn & Summer's Model DAF	
Revision Date: 08/04/2003	
Run date: 6/28/2011	
Sd = hadv + hdisp = thickness of the mixing zone	
3.2	(ft)
hadv = B*[1 - exp((-I*L)/(B*Dv))]	
0.17	(ft) = hadv = advective component of the plume depth
0.33	(ft/ft) = I = infiltration rate
60.00	(ft/yr) = Dv = horizontal Darcy velocity
20.90	(ft) = B = thickness of the shallow water bearing zone
30.00	(ft) = L = length of the source at the water table
hdisp = (2*Az*L)	
3.00	(ft) = hdisp = dispersive component of the plume depth
0.15	(ft) = Az = vertical dispersivity
30.00	(ft) = L = length of the source at the water table
Summer's Model DAF	
DAF = Cl/Cgw = (Qa+Qp)/Qp	
20.0	unitless
Qa = Dv*Sd*W	
5699	(ft3/yr) = Qa = volumetric flow rate of groundwater
60.00	(ft/yr) = Dv = horizontal Darcy velocity
3.17	(ft) = Sd = hadv + hdisp = thickness of the mixing zone
30.00	(ft) = W = width of impacted area perpendicular to flow direction of aquifer
Qp = I*A	
300.00	(ft3/yr) = Qp = volumetric flow rate of infiltration (soil pore water) into the aquifer
0.33	(ft/yr) = I = infiltration rate
900.00	(ft2) = A = area of the source
Max DF Domenico	440
(for use with SoilGW and GW values)	

LDEQ RECAP
WORKSHEET 2
GW 3NDW
(mg/l)

Derivation of Management Option 1, 2, & 3 **Groundwater Classification 3-Non-Drinking Water**
Revision Date: 08/04/2003 Run date: 6/28/2011

C (mg/l) GW3NDW = (TR*BWa) / (SFo*(IRWndw+BCF*IRF))
N (mg/l) GW3NDW = (THQ*RfDo*BWa) / (IRWndw+BCF*IRF)

COMPOUND	LAC 33:IX. 1113(HHNDW) (mg/L)	LAC 33:IX. 1113(HHDW) (mg/L)	MCL (mg/l)	BCF (l/kg)	C (mg/l)	N (mg/l)	LAC(NDW) or max (LAC,MCL, (MIN C, N)) (mg/l)	
Acenaphthene				3.87E+02	NA	5.36E-01	5.4E-01	(*2)N
Acenaphthylene				2.69E+02	NA	7.68E-01	7.7E-01	(*2)N
Acetone				3.87E-01	NA	7.24E+01	7.2E+01	(*2)N
Aldrin	4.00E-08	4.00E-08					4.0E-08	(*1)LAC(NDW)
Aniline				3.27E+00	7.95E-02	3.17E+00	8.0E-02	(*2)C
Anthracene				9.20E+03	NA	1.14E-01	1.1E-01	(*2)N
Antimony			6.00E-03	9.00E-01	NA	2.62E-01	2.6E-01	(*2)N
Arsenic		5.00E-02	1.00E-02	4.00E+00	2.76E-04	1.24E-01	5.0E-02	LAC(DW)
Barium			2.00E+00	1.00E+00	NA	4.50E+01	4.5E+01	(*2)N
Benzene	1.25E-02	1.10E-03	5.00E-03				1.3E-02	(*1)LAC(NDW)
Benz(a)anthracene				1.26E+04	3.80E-07	NA	3.8E-07	(*2)C
Benzo(a)pyrene			2.00E-04	8.29E+04	5.78E-09	NA	2.0E-04	MCL
Benzo(b)fluoranthene				3.03E+04	1.58E-07	NA	1.6E-07	(*2)C
Benzo(k)fluoranthene				3.03E+04	1.58E-06	NA	1.6E-06	(*2)C
Beryllium			4.00E-03	1.90E+01	NA	2.99E-01	3.0E-01	(*2)N
Biphenyl,1,1-				6.46E+02	NA	2.69E-01	2.7E-01	(*2)N
Bis(2-chloroethyl)ether				1.10E+01	2.06E-04	NA	2.1E-04	(*2)C
Bis(2-chloroisopropyl)ether				5.57E+01	8.31E-04	2.33E+00	8.3E-04	(*2)C
Bis(2-ethyl-hexyl)phthalate			6.00E-03	2.15E+04	1.16E-05	3.26E-03	6.0E-03	MCL
Bromodichloromethane	3.30E-03	2.00E-04	1.00E-01				3.3E-03	(*1)LAC(NDW)
Bromoform	3.47E-02	3.90E-03	1.00E-01				3.5E-02	(*1)LAC(NDW)
Bromomethane				4.81E+00	NA	5.29E-01	5.3E-01	(*2)N
Butyl benzyl phthalate				6.63E+02	NA	1.05E+00	1.0E+00	(*2)N
Cadmium		1.00E-02	5.00E-03	3.77E+03	NA	4.64E-04	1.0E-02	LAC(DW)
Carbon Disulfide				1.95E+01	NA	1.46E+01	1.5E+01	(*2)N
Carbon Tetrachloride	1.20E-03	2.20E-04	5.00E-03				1.2E-03	(*1)LAC(NDW)
Chlordane	1.90E-07	1.90E-07	2.00E-03				1.9E-07	(*1)LAC(NDW)
Chloroaniline,p-				1.64E+01	NA	6.71E-01	6.7E-01	(*2)N

LDEQ RECAP
WORKSHEET 2
GW 3NDW
(mg/l)

Derivation of Management Option 1, 2, & 3 **Groundwater Classification 3-Non-Drinking Water**
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Chlorobenzene			1.00E-01	9.42E+01	NA	7.10E-01	7.1E-01	(*2)N
Chlorodibromomethane	5.08E-03	3.90E-04	1.00E-01				5.1E-03	(*1)LAC(NDW)
Chloroethane (Ethylchloride)				6.82E+00	NA	1.24E+02	1.2E+02	(*2)N
Chloroform	7.00E-02	5.30E-03	1.00E-01				7.0E-02	(*1)LAC(NDW)
Chloromethane				2.89E+00	3.67E-02	NA	3.7E-02	(*2)C
Chloronaphthalene,2-				7.69E+02	NA	3.62E-01	3.6E-01	(*2)N
Chlorophenol,2-	1.26E-01	1.00E-04					1.3E-01	(*1)LAC(NDW)
Chromium(III)		5.00E-02	1.00E-01	1.00E+00	NA	9.63E+02	9.6E+02	(*2)N
Chromium(VI)		5.00E-02	1.00E-01	1.00E+00	NA	1.93E+00	1.9E+00	(*2)N
Chrysene				1.26E+04	3.80E-05	NA	3.8E-05	(*2)C
Cobalt				1.00E+00	NA	3.85E+01	3.9E+01	(*2)N
Copper		1.00E+00	1.30E+00	2.26E+04	NA	6.19E-03	1.3E+00	MCL
Cyanide (free)	1.28E+01	6.64E-01	2.00E-01				1.3E+01	(*1)LAC(NDW)
DDD	2.70E-07	2.70E-07					2.7E-07	(*1)LAC(NDW)
DDE	1.90E-07	1.90E-07					1.9E-07	(*1)LAC(NDW)
DDT	1.90E-07	1.90E-07					1.9E-07	(*1)LAC(NDW)
Dibenz(a,h)anthracene				7.28E+04	6.59E-09	NA	6.6E-09	(*2)C
Dibenzofuran				9.16E+02	NA	1.52E-02	1.5E-02	(*2)N
Dibromo-3-chloropropane,1,2-			2.00E-04	3.30E+01	6.68E-05	5.34E-03	2.0E-04	MCL
Dichlorobenzene,1,2-			6.00E-01	8.90E+01	NA	3.37E+00	3.4E+00	(*2)N
Dichlorobenzene,1,3-				6.60E+01	NA	4.47E-02	4.5E-02	(*2)N
Dichlorobenzene,1,4-			7.50E-02	6.00E+01	2.26E-03	1.63E+00	7.5E-02	MCL
Dichlorobenzidine,3,3-				5.07E+02	1.52E-05	NA	1.5E-05	(*2)C
Dichloroethane,1,1-				1.37E+01	NA	1.93E+01	1.9E+01	(*2)N
Dichloroethane,1,2-	6.80E-03	3.60E-04	5.00E-03				6.8E-03	(*1)LAC(NDW)
Dichloroethene,1,1-	5.80E-04	5.00E-05	7.00E-03				5.8E-04	(*1)LAC(NDW)
Dichloroethene,cis,1,2-			7.00E-02	1.64E+01	NA	1.68E+00	1.7E+00	(*2)N
Dichloroethene,trans,1,2-			1.00E-01	2.32E+01	NA	2.53E+00	2.5E+00	(*2)N
Dichlorophenol,2,4-	2.33E-01	3.00E-04					2.3E-01	(*1)LAC(NDW)
Dichloropropane,1,2-			5.00E-03	1.95E+01	2.15E-03	1.67E-01	5.0E-03	MCL
Dichloropropene,1,3-	1.63E-01	9.86E-03					1.6E-01	(*1)LAC(NDW)
Dieldrin	5.00E-08	5.00E-08					5.0E-08	(*1)LAC(NDW)
Diethylphthalate				1.17E+02	NA	2.31E+01	2.3E+01	(*2)N
Dimethylphenol,2,4-				1.50E+02	NA	4.53E-01	4.5E-01	(*2)N

LDEQ RECAP
WORKSHEET 2
GW 3NDW
(mg/l)

Derivation of Management Option 1, 2, & 3 **Groundwater Classification 3-Non-Drinking Water**
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Dimethylphthalate				5.70E+01	NA	5.70E+02	5.7E+02	(*2)N
Di-n-octylphthalate				1.13E+02	NA	1.19E+00	1.2E+00	(*2)N
Dinitrobenzene,1,3-				8.13E+00	NA	2.78E-02	2.8E-02	(*2)N
Dinitrophenol,2,4-				9.68E+00	NA	4.95E-01	5.0E-01	(*2)N
Dinitrotoluene,2,6-				1.64E+01	NA	1.68E-01	1.7E-01	(*2)N
Dinitrotoluene,2,4-				1.95E+01	NA	2.92E-01	2.9E-01	(*2)N
Dinoseb			7.00E-03	1.34E+02	NA	2.53E-02	2.5E-02	(*2)N
Endosulfan	6.40E-04	4.70E-04					6.4E-04	(*1)LAC(NDW)
Endrin	2.60E-04	2.60E-04	2.00E-03				2.6E-04	(*1)LAC(NDW)
Ethyl benzene	8.10E+00	2.39E+00	7.00E-01				8.1E+00	(*1)LAC(NDW)
Fluoranthene				4.43E+03	NA	3.16E-02	3.2E-02	(*2)N
Fluorene				1.80E+03	NA	7.76E-02	7.8E-02	(*2)N
Heptachlor	7.00E-08	7.00E-08	4.00E-04				7.0E-08	(*1)LAC(NDW)
Heptachlor epoxide			2.00E-04	2.33E+00	5.67E-05	6.71E-03	2.0E-04	MCL
Hexachlorobenzene	2.50E-07	2.50E-07	1.00E-03				2.5E-07	(*1)LAC(NDW)
Hexachlorobutadiene	1.10E-04	9.00E-05					1.1E-04	(*1)LAC(NDW)
Hexachlorocyclohexane,alpha				2.12E+02	2.57E-06	NA	2.6E-06	(*2)C
Hexachlorocyclohexane,beta				2.93E+02	6.54E-06	NA	6.5E-06	(*2)C
Hexachlorocyclohexane,gamma	2.00E-04	1.10E-04	2.00E-04				2.0E-04	(*1)LAC(NDW)
Hexachlorocyclopentadiene			5.00E-02	7.48E+03	NA	2.81E-03	5.0E-02	MCL
Hexachloroethane				1.39E+02	1.74E-03	2.44E-02	1.7E-03	(*2)C
Indeno(1,2,3-cd)pyrene				7.28E+04	6.59E-08	NA	6.6E-08	(*2)C
Isobutyl alcohol				2.19E+00	NA	1.58E+02	1.6E+02	(*2)N
Isophorone				7.00E+00	3.22E-01	6.11E+01	3.2E-01	(*2)C
Lead (inorganic)		5.00E-02	1.50E-02		NA	NA	5.0E-02	LAC(DW)
Mercury (inorganic)		2.00E-03	2.00E-03	8.57E+04	NA	1.23E-05	2.0E-03	LAC(DW)
Methoxychlor			4.00E-02	7.07E+04	NA	2.48E-04	4.0E-02	MCL
Methylene chloride	8.70E-02	4.40E-03	5.00E-03				8.7E-02	(*1)LAC(NDW)
Methyl ethyl ketone				9.61E-01	NA	3.88E+02	3.9E+02	(*2)N
Methyl isobutyl ketone				4.81E+00	NA	3.02E+01	3.0E+01	(*2)N
Methylnaphthalene,2-				2.60E+03	NA	2.69E-02	2.7E-02	(*2)N
MTBE (methyl tert-butyl ether)			2.00E-02	1.00E+00	NA	5.50E+02	5.5E+02	(*2)N
Naphthalene				3.10E+02	NA	2.23E-01	2.2E-01	(*2)N
Nickel				8.00E-01	NA	1.33E+01	1.3E+01	(*2)N

LDEQ RECAP
WORKSHEET 2
GW 3NDW
(mg/l)

Derivation of Management Option 1, 2, & 3 **Groundwater Classification 3-Non-Drinking Water**
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Nitrate			1.00E+01	1.00E+00	NA	1.03E+03	1.0E+03	(*2)N
Nitrite			1.00E+00	1.00E+00	NA	6.42E+01	6.4E+01	(*2)N
Nitroaniline,2-				1.64E+01	NA	5.04E-01	5.0E-01	(*2)N
Nitroaniline,3-				6.82E+00	NA	9.32E-01	9.3E-01	(*2)N
Nitroaniline,4-				6.82E+00	NA	9.32E-01	9.3E-01	(*2)N
Nitrobenzene				1.37E+01	NA	9.64E-02	9.6E-02	(*2)N
Nitrophenol,4-				1.64E+01	NA	1.34E+00	1.3E+00	(*2)N
Nitrosodi-n-propylamine,n-				6.82E+00	4.44E-05	NA	4.4E-05	(*2)C
N-nitrosodiphenylamine				2.17E+02	3.23E-03	NA	3.2E-03	(*2)C
Pentachlorophenol			1.00E-03	6.40E+02	4.53E-05	1.63E-01	1.0E-03	MCL
Phenanthrene				5.10E+03	NA	2.06E-01	2.1E-01	(*2)N
Phenol				8.13E+00	NA	8.35E+01	8.3E+01	(*2)N
Polychlorinated biphenyls	1.00E-08	1.00E-08	5.00E-04				1.0E-08	(*1)LAC(NDW)
Pyrene				6.90E+01	NA	1.43E+00	1.4E+00	(*2)N
Selenium			5.00E-02	5.69E+03	NA	3.07E-03	5.0E-02	MCL
Silver				2.80E+01	NA	5.39E-01	5.4E-01	(*2)N
Styrene			1.00E-01	9.42E+01	NA	7.10E+00	7.1E+00	(*2)N
Tetrachlorobenzene,1,2,4,5-				1.85E+03	NA	5.66E-04	5.7E-04	(*2)N
Tetrachloroethane,1,1,1,2-				5.57E+01	2.24E-03	1.75E+00	2.2E-03	(*2)C
Tetrachloroethane,1,1,2,2-	1.80E-03	1.60E-04					1.8E-03	(*1)LAC(NDW)
Tetrachloroethylene	2.50E-03	6.50E-04	5.00E-03				2.5E-03	(*1)LAC(NDW)
Tetrachlorophenol,2,3,4,6-				5.88E+02	NA	1.77E-01	1.8E-01	(*2)N
Thallium			2.00E-03	1.30E+02	NA	1.82E-03	2.0E-03	MCL
Toluene	4.62E+01	6.10E+00	1.00E+00				4.6E+01	(*1)LAC(NDW)
Toxaphene	2.40E-07	2.40E-07	3.00E-03				2.4E-07	(*1)LAC(NDW)
Trichlorobenzene,1,2,4-			7.00E-02	1.82E+02	NA	1.88E-01	1.9E-01	(*2)N
Trichloroethane,1,1,1-		2.00E-01	2.00E-01	9.00E+00	NA	9.11E+00	9.1E+00	(*2)N
Trichloroethane,1,1,2-	6.90E-03	5.60E-04	5.00E-03				6.9E-03	(*1)LAC(NDW)
Trichloroethene	2.10E-02	2.80E-03	5.00E-03				2.1E-02	(*1)LAC(NDW)
Trichlorofluoromethane				4.68E+01	NA	2.05E+01	2.0E+01	(*2)N
Trichlorophenol,2,4,5-				5.42E+02	NA	6.40E-01	6.4E-01	(*2)N
Trichlorophenol,2,4,6-				3.82E+02	8.23E-04	NA	8.2E-04	(*2)C
Vanadium				1.00E+00	NA	4.50E+00	4.5E+00	(*2)N
Vinyl chloride	3.58E-02	1.90E-03	2.00E-03				3.6E-02	(*1)LAC(NDW)

LDEQ RECAP
WORKSHEET 2
GW 3NDW
(mg/l)

Derivation of Management Option 1, 2, & 3 **Groundwater Classification 3-Non-Drinking Water**
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Xylene(mixed)			1.00E+01	1.59E+02	NA	4.28E+00	1.0E+01	MCL
Zinc		5.00E+00		1.26E+02	NA	8.05E+00	8.0E+00	(*2)N
Aliphatics C6-C8				0.00E+00	NA	3.93E+03	3.9E+03	(*2)N
Aliphatics >C8-C10				0.00E+00	NA	7.87E+01	7.9E+01	(*2)N
Aliphatics >C10-C12				0.00E+00	NA	7.87E+01	7.9E+01	(*2)N
Aliphatics >C12-C16				0.00E+00	NA	7.87E+01	7.9E+01	(*2)N
Aliphatics >C16-C35				0.00E+00	NA	1.57E+03	1.6E+03	(*2)N
Aromatics >C8-C10				0.00E+00	NA	3.15E+01	3.1E+01	(*2)N
Aromatics >C10-C12				0.00E+00	NA	3.15E+01	3.1E+01	(*2)N
Aromatics >C12-C16				0.00E+00	NA	3.15E+01	3.1E+01	(*2)N
Aromatics >C16-C21				0.00E+00	NA	2.36E+01	2.4E+01	(*2)N
Aromatics >C21-C35				0.00E+00	NA	2.36E+01	2.4E+01	(*2)N
TPH-GRO (C6-C10)							3.1E+01	
TPH-DRO (C10-C28)							2.4E+01	
TPH-ORO (>C28)							2.4E+01	

References: Data hierarchy is based on (*1) then (*2).

(*1) Louisiana Administrative Code 33.IX.1113, Table 1 (HHNDW)

(*2) The maximum value of LAC 33.IX1113 (DW), MCL, or the minimum of human health non-drinking water criteria calculated in accordance with "Human Health Numerical Criteria Derivations for Toxic Substances", LDEQ-OWR, June 23, 1994; (N=non-carcinogen, C=carcinogen)

Notes:

* BCF values from the Superfund Chemical Data Matrix, June 1996

* BCF values not found in the Superfund Chemical Data Matrix are estimated below

*MTBE - The value listed in the MCL column is the EPA taste/odor advisory value.

LDEQ RECAP
WORKSHEET 2
GW 3NDW
(mg/l)

Derivation of Management Option 1, 2, & 3 **Groundwater Classification 3-Non-Drinking Water**
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Estimation of BCF from Kow:
log BCF = 0.76 log Kow - 0.23
(from the Handbook of Chemical Property Estimation Methods, Lyman, Reehl, and Rosenblatt, American Chemical Society, Washington, DC, 1990)

					log Kow	log BCF	BCF	
Acenaphthylene					3.5	2.43	2.69E+02	
Acetone					-2.4E-01	-0.4124	3.87E-01	
Aniline					9.8E-01	0.5148	3.27E+00	
Barium (ionic)							1.00E+00	(1)
Benz(a)anthracene					5.7E+00	4.102	1.26E+04	
Benzo(b)fluoranthene					6.2E+00	4.482	3.03E+04	
Benzo(k)fluoranthene					6.2E+00	4.482	3.03E+04	
Biphenyl, 1,1-					4.0E+00	2.81	6.46E+02	
Bis(2-chloroisopropyl)ether					2.6E+00	1.746	5.57E+01	
Bromomethane					1.2E+00	0.682	4.81E+00	
Carbon disulfide					2.0E+00	1.29	1.95E+01	
Chloroaniline, p-					1.9E+00	1.214	1.64E+01	
Chlorobenzene					2.9E+00	1.974	9.42E+01	
Chloroethane (ethylchloride)					1.4E+00	0.834	6.82E+00	
Chloromethane(Methyl chloride)					9.1E-01	0.4616	2.89E+00	
Chloronaphthalene, 2-					4.1E+00	2.886	7.69E+02	
Chromium (III)							1.00E+00	(1)
Chromium (VI)							1.00E+00	(1)
Chrysene					5.7E+00	4.102	1.26E+04	
Cobalt							1.00E+00	(1)
Dibenz(a,h)anthracene					6.7E+00	4.862	7.28E+04	
Dibenzofuran					4.2E+00	2.962	9.16E+02	
Dibromo-3-chloropropane,1,2-					2.3E+00	1.518	3.30E+01	
Dichloroethane, 1,1-					1.8E+00	1.138	1.37E+01	
Dichloroethene, cis, 1,2-					1.9E+00	1.214	1.64E+01	
Dichloroethene, trans, 1,2-					2.1E+00	1.366	2.32E+01	

LDEQ RECAP
WORKSHEET 2
GW 3NDW
(mg/l)

Derivation of Management Option 1, 2, & 3 **Groundwater Classification 3-Non-Drinking Water**
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Dichloropropane, 1,2-					2.0E+00	1.29	1.95E+01	
Dinitrobenzene, 1,3-					1.5E+00	0.91	8.13E+00	
Dinitrophenol, 2,4-					1.6E+00	0.986	9.68E+00	
Dinitrotoluene, 2,6-					1.9E+00	1.214	1.64E+01	
Dinitrotoluene, 2,4-					2.0E+00	1.29	1.95E+01	
Dinoseb					3.1E+00	2.126	1.34E+02	
Fluroanthene					5.1E+00	3.646	4.43E+03	
Hexachlorocyclopentadiene					5.4E+00	3.874	7.48E+03	
Indeno(1,2,3-cd)pyrene					6.7E+00	4.862	7.28E+04	
Isobutyl alcohol					7.5E-01	0.34	2.19E+00	
Methyl ethyl ketone					2.8E-01	-0.0172	9.61E-01	
Methyl isobutyl ketone					1.2E+00	0.682	4.81E+00	
MTBE							1.00E+00	(1)
Nitrate							1.00E+00	(1)
Nitrite							1.00E+00	(1)
Nitroaniline, 2-					1.9E+00	1.214	1.64E+01	
Nitroaniline, 3-					1.4E+00	0.834	6.82E+00	
Nitroaniline, 4-					1.4E+00	0.834	6.82E+00	
Nitrobenzene					1.8E+00	1.138	1.37E+01	
Nitrophenol, 4-					1.9E+00	1.214	1.64E+01	
Nitrosodi-n-propylamine, n-					1.4E+00	0.834	6.82E+00	
Phenol					1.5E+00	0.91	8.13E+00	
Styrene					2.9E+00	1.974	9.42E+01	
Tetrachlorobenzene,1,2,4,5-					4.6E+00	3.266	1.85E+03	
Tetrachloroethane,1,1,1,2-					2.6E+00	1.746	5.57E+01	
Trichlorofluoromethane					2.5E+00	1.67	4.68E+01	
Trichlorophenol, 2,4,5-					3.9E+00	2.734	5.42E+02	
Trichlorophenol, 2,4,6-					3.7E+00	2.582	3.82E+02	
Vanadium							1.00E+00	(1)
Xylene (mixed)					3.2E+00	2.202	1.59E+02	
Aliphatics C6-C8							0.00E+00	(2)
Aliphatics >C8-C10							0.00E+00	(2)
Aliphatics >C10-C12							0.00E+00	(2)
Aliphatics >C12-C16							0.00E+00	(2)

LDEQ RECAP
WORKSHEET 2
GW 3NDW
(mg/l)

Derivation of Management Option 1, 2, & 3 **Groundwater Classification 3-Non-Drinking Water**
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Aliphatics >C16-C35							0.00E+00	(2)
Aromatics >C8-C10							0.00E+00	(2)
Aromatics >C10-C12							0.00E+00	(2)
Aromatics >C12-C16							0.00E+00	(2)
Aromatics >C16-C21							0.00E+00	(2)
Aromatics >C21-C35							0.00E+00	(2)

Notes:

log Kow values from the Superfund Data Matrix, June 1996

(1) Data on this chemical could not be found. Therefore, assume BCF = 1

Xylene (mixed) Kow is the highest value of m,o,p xylene Kow values.

(2) Research has shown that this chemical does not bioconcentrate.

Estimation of Kow from Koc:

log Koc = 0.0784 + (0.7919 * log Kow)

(p 141 Soil Screening Guidance: Technical Background Document, May 1996)

LDEQ RECAP
WORKSHEET 4
SOILni
(mg/kg)

Derivation of Management Option 1 & 2 **Soil-Nonindustrial**
Revision Date: 08/04/2003 Run date: 6/28/2011

DA = ((na^(10/3)*Da*H*41+nw^(10/3)*Dw)/n^2)/(pb*Koc*foc+nw+na*H*41)
VFnic = (Q\C*1e-4*(3.14*DA*Tnic)^0.5)/(2*pb*DA)
VFnia = (Q\C*1e-4*(3.14*DA*Tnia)^0.5)/(2*pb*DA)

Soilni-C-O = (TR*ATc*365)/(EFni*(SFo*1e-6*IRSadj+SFi*(IRAadj/VFnia)+SFo*1e-6*ABS*IRDadj))
Soilni-C-I = (TR*ATc*365)/(EFni*(SFo*1e-6*IRSadj+SFo*1e-6*ABS*IRDadj))
Soilni-N-O = (THQ*BWc*ATnc*365)/(EFni*EDc*((IRSc/RfDo)*1e-6+(IRAc/RfDi)*(1/VFnic)+(SAc/RfDo)*AFc*ABS*1e-6))
Soilni-N-I = (THQ*BWc*ATnc*365)/(EFni*EDc*((IRSc/RfDo)*1e-6+(SAc/RfDo)*AFc*ABS*1e-6)))

COMPOUND	DA (cm2/s)	VFnic (m3/kg)	VFnia (m3/kg)	Soilni C-O (mg/kg)	Soilni C-I (mg/kg)	Soilni N-O (mg/kg)	Soilni N-I (mg/kg)	min value (C or N)	Soilni (mg/kg)	
Acenaphthene	7.85E-08	3.67E+05		NA		4.13E+03		4.1E+03	4.1E+03	N
Acenaphthylene	1.50E-07	2.66E+05		NA		3.95E+03		3.9E+03	3.9E+03	N
Acetone	1.46E-05	2.70E+04		NA		2.74E+03		2.7E+03	2.7E+03	N
Aldrin	2.92E-09	1.91E+06	4.27E+06	2.81E-02		1.80E+00		2.8E-02	2.8E-02	C
Aniline	9.09E-07	1.08E+05	2.42E+05	6.55E+01		4.34E+01		4.3E+01	4.3E+01	N
Anthracene	6.24E-09	1.30E+06		NA		2.26E+04		2.3E+04	2.3E+04	N
Antimony	NA	NA			NA		3.13E+01	3.1E+01	3.1E+01	N
Arsenic	NA	NA			3.90E-01		2.16E+01	3.9E-01	3.9E-01	C
Barium	NA	NA			NA		5.48E+03	5.5E+03	5.5E+03	N
Benzene	3.10E-04	5.85E+03	1.31E+04	2.64E+00		6.29E+01		2.6E+00	2.6E+00	C
Benz(a)anthracene	1.31E-10	8.98E+06	2.01E+07	6.21E-01		NA		6.2E-01	6.2E-01	C
Benzo(a)pyrene	4.17E-11	1.59E+07	3.57E+07	6.21E-02		NA		6.2E-02	3.3E-01	Q
Benzo(b)fluoranthene	1.30E-10	9.04E+06	2.03E+07	6.21E-01		NA		6.2E-01	6.2E-01	C
Benzo(k)fluoranthene	1.98E-11	2.31E+07	5.18E+07	6.22E+00		NA		6.2E+00	6.2E+00	C
Beryllium					NA		1.56E+02	1.6E+02	1.6E+02	N
Biphenyl,1,1-	1.34E-07	2.81E+05		NA		3.32E+03		3.3E+03	3.3E+03	N
Bis(2-chloroethyl)ether	1.03E-06	1.02E+05	2.27E+05	4.02E-01		NA		4.0E-01	4.0E-01	C
Bis(2-chloroisopropyl)ether	4.76E-06	4.72E+04	1.06E+05	6.28E+00		1.52E+03		6.3E+00	6.3E+00	C
Bis(2-ethyl-hexyl)phthalate	1.41E-10	8.65E+06	1.94E+07	3.46E+01		1.22E+03		3.5E+01	3.5E+01	C
Bromodichloromethane	3.44E-05	1.76E+04	3.93E+04	2.99E+00		4.07E+02		3.0E+00	3.0E+00	C
Bromoform	3.24E-06	5.72E+04	1.28E+05	5.93E+01		8.35E+02		5.9E+01	5.9E+01	C
Bromomethane	7.37E-04	3.79E+03		NA		7.87E+00		7.9E+00	7.9E+00	N

LDEQ RECAP
WORKSHEET 4
SOILni
(mg/kg)

Derivation of Management Option 1 & 2 **Soil-Nonindustrial**
Revision Date: 08/04/2003 Run date: 6/28/2011

DA = ((na^(10/3)*Da*H*41+nw^(10/3)*Dw)/n^2)/(pb*Koc*foc+nw+na*H*41)
VFnic = (Q\C*1e-4*(3.14*DA*Tnic)^0.5)/(2*pb*DA)
VFnia = (Q\C*1e-4*(3.14*DA*Tnia)^0.5)/(2*pb*DA)

Soilni-C-O = (TR*ATc*365)/(EFni*(SFo*1e-6*IRSadj+SFi*(IRAadj/VFnia)+SFo*1e-6*ABS*IRDadj))
Soilni-C-I = (TR*ATc*365)/(EFni*(SFo*1e-6*IRSadj+SFo*1e-6*ABS*IRDadj))
Soilni-N-O = (THQ*BWc*ATnc*365)/(EFni*EDc*((IRSc/RfDo)*1e-6+(IRAc/RfDi)*(1/VFnic)+(SAc/RfDo)*AFc*ABS*1e-6))
Soilni-N-I = (THQ*BWc*ATnc*365)/(EFni*EDc*((IRSc/RfDo)*1e-6+(SAc/RfDo)*AFc*ABS*1e-6)))

COMPOUND	DA (cm2/s)	VFnic (m3/kg)	VFnia (m3/kg)	Soilni C-O (mg/kg)	Soilni C-I (mg/kg)	Soilni N-O (mg/kg)	Soilni N-I (mg/kg)	min value (C or N)	Soilni (mg/kg)	
Butyl benzyl phthalate	1.56E-09	2.60E+06		NA		1.20E+04		1.2E+04	1.2E+04	N
Cadmium	NA	NA			NA		3.90E+01	3.9E+01	3.9E+01	N
Carbon Disulfide	2.03E-03	2.29E+03		NA		6.56E+02		6.6E+02	6.6E+02	N
Carbon Tetrachloride	6.74E-04	3.96E+03	8.88E+03	9.14E-01		3.33E+00		9.1E-01	9.1E-01	C
Chlordane	9.64E-10	3.32E+06	7.43E+06	1.61E+00		3.40E+01		1.6E+00	1.6E+00	C
Chloroaniline,p-	4.99E-07	1.46E+05		NA		1.93E+02		1.9E+02	1.9E+02	N
Chlorobenzene	5.95E-05	1.33E+04		NA		2.89E+02		2.9E+02	2.9E+02	N
Chlorodibromomethane	1.04E-05	3.19E+04	7.15E+04	3.24E+00		6.09E+02		3.2E+00	3.2E+00	C
Chloroethane (Ethylchloride)	4.45E-03	1.54E+03	3.46E+03	7.64E+00		5.66E+03		7.6E+00	7.6E+00	C
Chloroform	2.76E-04	6.20E+03	1.39E+04	1.13E+00		8.33E-01		8.3E-01	8.3E-01	N
Chloromethane	1.18E-03	3.00E+03	6.71E+03	6.18E+00		3.80E+02		6.2E+00	6.2E+00	C
Chloronaphthalene,2-	7.27E-08	3.82E+05		NA		5.53E+03		5.5E+03	5.5E+03	N
Chlorophenol,2-	2.87E-06	6.07E+04		NA		2.15E+02		2.1E+02	2.1E+02	N
Chromium(III)	NA	NA			NA		1.17E+05	1.2E+05	1.2E+05	N
Chromium(VI)	NA	NA			NA		2.35E+02	2.3E+02	2.3E+02	N
Chrysene	3.85E-10	5.24E+06	1.17E+07	6.20E+01		NA		6.2E+01	6.2E+01	C
Cobalt	NA	NA			NA		4.69E+03	4.7E+03	4.7E+03	N
Copper	NA	NA			NA		3.13E+03	3.1E+03	3.1E+03	N
Cyanide (free)	NA	NA			NA		1.52E+03	1.5E+03	1.5E+03	N
DDD	5.16E-10	4.53E+06	1.01E+07	2.42E+00		NA		2.4E+00	2.4E+00	C
DDE	4.75E-10	4.72E+06	1.06E+07	1.71E+00		NA		1.7E+00	1.7E+00	C

LDEQ RECAP
WORKSHEET 4
SOILni
(mg/kg)

Derivation of Management Option 1 & 2 **Soil-Nonindustrial**
Revision Date: 08/04/2003 Run date: 6/28/2011

DA = ((na^(10/3)*Da*H*41+nw^(10/3)*Dw)/n^2)/(pb*Koc*foc+nw+na*H*41)
VFnic = (Q\C*1e-4*(3.14*DA*Tnic)^0.5)/(2*pb*DA)
VFnia = (Q\C*1e-4*(3.14*DA*Tnia)^0.5)/(2*pb*DA)

Soilni-C-O = (TR*ATc*365)/(EFni*(SFo*1e-6*IRSadj+SFi*(IRAadj/VFnia)+SFo*1e-6*ABS*IRDadj))
Soilni-C-I = (TR*ATc*365)/(EFni*(SFo*1e-6*IRSadj+SFo*1e-6*ABS*IRDadj))
Soilni-N-O = (THQ*BWc*ATnc*365)/(EFni*EDc*((IRSc/RfDo)*1e-6+(IRAc/RfDi)*(1/VFnic)+(SAc/RfDo)*AFc*ABS*1e-6))
Soilni-N-I = (THQ*BWc*ATnc*365)/(EFni*EDc*((IRSc/RfDo)*1e-6+(SAc/RfDo)*AFc*ABS*1e-6)))

COMPOUND	DA (cm2/s)	VFnic (m3/kg)	VFnia (m3/kg)	Soilni C-O (mg/kg)	Soilni C-I (mg/kg)	Soilni N-O (mg/kg)	Soilni N-I (mg/kg)	min value (C or N)	Soilni (mg/kg)	
DDT	3.95E-11	1.64E+07	3.67E+07	1.72E+00		3.60E+01		1.7E+00	1.7E+00	C
Dibenz(a,h)anthracene	1.22E-11	2.95E+07	6.61E+07	6.22E-02		NA		6.2E-02	3.3E-01	Q
Dibenzofuran	5.40E-09	1.40E+06		NA		3.02E+02		3.0E+02	3.0E+02	N
Dibromo-3-chloropropane,1,2-	1.86E-06	7.55E+04	1.69E+05	3.47E-01		2.30E+00		3.5E-01	3.5E-01	C
Dichlorobenzene,1,2-	1.78E-05	2.44E+04		NA		1.66E+03		1.7E+03	1.7E+03	N
Dichlorobenzene,1,3-	6.69E-06	3.98E+04		NA		3.12E+01		3.1E+01	3.1E+01	N
Dichlorobenzene,1,4-	1.43E-05	2.72E+04	6.10E+04	1.03E+01		1.89E+03		1.0E+01	1.0E+01	C
Dichlorobenzidine,3,3-	3.80E-08	5.28E+05	1.18E+06	1.02E+00		NA		1.0E+00	1.0E+00	C
Dichloroethane,1,1-	2.93E-04	6.01E+03		NA		1.15E+03		1.1E+03	1.1E+03	N
Dichloroethane,1,2-	9.40E-05	1.06E+04	2.38E+04	1.39E+00		4.00E+01		1.4E+00	1.4E+00	C
Dichloroethene,1,1-	1.26E-03	2.90E+03	6.50E+03	NA		2.43E+02		2.4E+02	2.4E+02	N
Dichloroethene,cis,1,2-	2.79E-04	6.16E+03		NA		8.58E+01		8.6E+01	8.6E+01	N
Dichloroethene,trans,1,2-	5.61E-04	4.35E+03		NA		1.25E+02		1.3E+02	1.3E+02	N
Dichlorophenol,2,4-	4.80E-08	4.70E+05		NA		1.69E+02		1.7E+02	1.7E+02	N
Dichloropropane,1,2-	1.72E-04	7.85E+03	1.76E+04	1.45E+00		1.21E+01		1.5E+00	1.5E+00	C
Dichloropropene,1,3-	8.98E-05	1.09E+04	2.43E+04	4.12E+00		9.31E+01		4.1E+00	4.1E+00	C
Dieldrin	1.18E-09	3.00E+06	6.71E+06	3.01E-02		3.02E+00		3.0E-02	3.0E-02	C
Diethylphthalate	2.65E-07	2.00E+05		NA		4.09E+04		4.1E+04	4.1E+04	N
Dimethylphenol,2,4-	1.87E-07	2.38E+05		NA		1.05E+03		1.1E+03	1.1E+03	N
Dimethylphthalate	4.24E-07	1.58E+05		NA		4.90E+05		4.9E+05	4.9E+05	N
Di-n-octylphthalate	8.38E-13	1.12E+08		NA		2.44E+03		2.4E+03	2.4E+03	N

LDEQ RECAP
WORKSHEET 4
SOILni
(mg/kg)

Derivation of Management Option 1 & 2 **Soil-Nonindustrial**
Revision Date: 08/04/2003 Run date: 6/28/2011

DA = ((na^(10/3)*Da*H*41+nw^(10/3)*Dw)/n^2)/(pb*Koc*foc+nw+na*H*41)
VFnic = (Q\C*1e-4*(3.14*DA*Tnic)^0.5)/(2*pb*DA)
VFnia = (Q\C*1e-4*(3.14*DA*Tnia)^0.5)/(2*pb*DA)

Soilni-C-O = (TR*ATc*365)/(EFni*(SFo*1e-6*IRSadj+SFi*(IRAadj/VFnia)+SFo*1e-6*ABS*IRDadj))
Soilni-C-I = (TR*ATc*365)/(EFni*(SFo*1e-6*IRSadj+SFo*1e-6*ABS*IRDadj))
Soilni-N-O = (THQ*BWc*ATnc*365)/(EFni*EDc*((IRSc/RfDo)*1e-6+(IRAc/RfDi)*(1/VFnic)+(SAc/RfDo)*AFc*ABS*1e-6))
Soilni-N-I = (THQ*BWc*ATnc*365)/(EFni*EDc*((IRSc/RfDo)*1e-6+(SAc/RfDo)*AFc*ABS*1e-6)))

COMPOUND	DA (cm2/s)	VFnic (m3/kg)	VFnia (m3/kg)	Soilni C-O (mg/kg)	Soilni C-I (mg/kg)	Soilni N-O (mg/kg)	Soilni N-I (mg/kg)	min value (C or N)	Soilni (mg/kg)	
Dinitrobenzene,1,3-	2.55E-07	2.04E+05		NA		5.13E+00		5.1E+00	5.1E+00	N
Dinitrophenol,2,4-	1.01E-06	1.03E+05		NA		8.85E+01		8.8E+01	8.8E+01	N
Dinitrotoluene,2,6-	3.54E-07	1.73E+05		NA		4.98E+01		5.0E+01	5.0E+01	N
Dinitrotoluene,2,4-	2.64E-07	2.00E+05		NA		1.02E+02		1.0E+02	1.0E+02	N
Dinoseb	1.71E-07	2.49E+05		NA		5.28E+01		5.3E+01	5.3E+01	N
Endosulfan	1.27E-08	9.15E+05		NA		3.52E+02		3.5E+02	3.5E+02	N
Endrin	2.31E-09	2.14E+06		NA		1.80E+01		1.8E+01	1.8E+01	N
Ethyl benzene	1.40E-04	8.70E+03		NA		2.60E+03		2.6E+03	2.6E+03	N
Fluoranthene	1.08E-09	3.13E+06		NA		2.27E+03		2.3E+03	2.3E+03	N
Fluorene	2.05E-08	7.19E+05		NA		2.93E+03		2.9E+03	2.9E+03	N
Heptachlor	8.62E-05	1.11E+04	2.48E+04	2.71E-02		6.76E+00		2.7E-02	2.7E-02	C
Heptachlor epoxide	2.95E-10	5.99E+06	1.34E+07	5.32E-02		7.89E-01		5.3E-02	5.3E-02	C
Hexachlorobenzene	4.88E-08	4.66E+05	1.04E+06	3.66E-01		5.65E+01		3.7E-01	3.7E-01	C
Hexachlorobutadiene	4.62E-07	1.51E+05	3.39E+05	5.14E+00		9.72E+00		5.1E+00	5.1E+00	C
Hexachlorocyclohexane,alpha	2.19E-08	6.96E+05	1.56E+06	8.55E-02		NA		8.6E-02	8.6E-02	C
Hexachlorocyclohexane,beta	1.45E-08	8.54E+05	1.91E+06	3.02E-01		NA		3.0E-01	3.0E-01	C
Hexachlorocyclohexane,gamma	3.04E-08	5.91E+05	1.32E+06	4.11E-01		1.96E+01		4.1E-01	4.1E-01	C
Hexachlorocyclopentadiene	1.18E-07	3.00E+05		NA		2.53E+01		2.5E+01	2.5E+01	N
Hexachloroethane	3.08E-07	1.85E+05	4.15E+05	3.71E+01		6.16E+01		3.7E+01	3.7E+01	C
Indeno(1,2,3-cd)pyrene	7.32E-12	3.80E+07	8.52E+07	6.22E-01		NA		6.2E-01	6.2E-01	C
Isobutyl alcohol	4.41E-06	4.90E+04		NA		1.02E+04		1.0E+04	1.0E+04	N

LDEQ RECAP
WORKSHEET 4
SOILni
(mg/kg)

Derivation of Management Option 1 & 2 **Soil-Nonindustrial**
Revision Date: 08/04/2003 Run date: 6/28/2011

DA = ((na^(10/3)*Da*H*41+nw^(10/3)*Dw)/n^2)/(pb*Koc*foc+nw+na*H*41)
VFnic = (Q\C*1e-4*(3.14*DA*Tnic)^0.5)/(2*pb*DA)
VFnia = (Q\C*1e-4*(3.14*DA*Tnia)^0.5)/(2*pb*DA)

Soilni-C-O = (TR*ATc*365)/(EFni*(SFo*1e-6*IRSadj+SFi*(IRAadj/VFnia)+SFo*1e-6*ABS*IRDadj))
Soilni-C-I = (TR*ATc*365)/(EFni*(SFo*1e-6*IRSadj+SFo*1e-6*ABS*IRDadj))
Soilni-N-O = (THQ*BWc*ATnc*365)/(EFni*EDc*((IRSc/RfDo)*1e-6+(IRAc/RfDi)*(1/VFnic)+(SAc/RfDo)*AFc*ABS*1e-6))
Soilni-N-I = (THQ*BWc*ATnc*365)/(EFni*EDc*((IRSc/RfDo)*1e-6+(SAc/RfDo)*AFc*ABS*1e-6)))

COMPOUND	DA (cm2/s)	VFnic (m3/kg)	VFnia (m3/kg)	Soilni C-O (mg/kg)	Soilni C-I (mg/kg)	Soilni N-O (mg/kg)	Soilni N-I (mg/kg)	min value (C or N)	Soilni (mg/kg)	
Isophorone	7.54E-07	1.19E+05	2.66E+05	4.01E+02		9.19E+03		4.0E+02	4.0E+02	C
Lead (inorganic)	NA	NA		NA	NA	NA	NA	NA	NA	
Mercury (inorganic)	NA	NA			NA		2.35E+01	2.3E+01	2.3E+01	N
Methoxychlor	4.01E-10	5.14E+06		NA		3.03E+02		3.0E+02	3.0E+02	N
Methylene chloride	4.29E-04	4.97E+03	1.11E+04	2.95E+01		2.75E+03		2.9E+01	2.9E+01	C
Methyl ethyl ketone	1.31E-05	2.84E+04		NA		1.00E+04		1.0E+04	1.0E+04	N
Methyl isobutyl ketone	2.24E-05	2.17E+04		NA		5.15E+03		5.2E+03	5.2E+03	N
Methylnaphthalene,2-	8.13E-08	3.61E+05		NA		3.71E+02		3.7E+02	3.7E+02	N
MTBE (methyl tert-butyl ether)	1.02E-04	1.02E+04		NA		1.13E+04		1.1E+04	1.1E+04	N
Naphthalene	1.30E-06	9.02E+04		NA		1.13E+02		1.1E+02	1.1E+02	N
Nickel	NA	NA			NA		1.56E+03	1.6E+03	1.6E+03	N
Nitrate	NA	NA			NA		1.25E+05	1.3E+05	1.3E+05	N
Nitrite	NA	NA			NA		7.82E+03	7.8E+03	7.8E+03	N
Nitroaniline,2-	1.01E-05	3.24E+04		NA		1.46E+00		1.5E+00	1.7E+00	Q
Nitroaniline,3-	8.15E-07	1.14E+05		NA		1.63E+02		1.6E+02	1.6E+02	N
Nitroaniline,4-	1.11E-06	9.79E+04		NA		1.31E+02		1.3E+02	1.3E+02	N
Nitrobenzene	9.67E-07	1.05E+05		NA		2.76E+01		2.8E+01	2.8E+01	N
Nitrophenol,4-	5.33E-07	1.41E+05		NA		3.83E+02		3.8E+02	3.8E+02	N
Nitrosodi-n-propylamine,n-	9.19E-07	1.07E+05	2.41E+05	5.33E-02		NA		5.3E-02	3.3E-01	Q
N-nitrosodiphenylamine	2.68E-08	6.29E+05	1.41E+06	9.44E+01		NA		9.4E+01	9.4E+01	C
Pentachlorophenol	2.82E-08	6.13E+05	1.37E+06	2.87E+00		1.32E+03		2.9E+00	2.9E+00	C

LDEQ RECAP
WORKSHEET 4
SOILni
(mg/kg)

Derivation of Management Option 1 & 2 **Soil-Nonindustrial**
Revision Date: 08/04/2003 Run date: 6/28/2011

DA = ((na^(10/3)*Da*H*41+nw^(10/3)*Dw)/n^2)/(pb*Koc*foc+nw+na*H*41)
VFnic = (Q\C*1e-4*(3.14*DA*Tnic)^0.5)/(2*pb*DA)
VFnia = (Q\C*1e-4*(3.14*DA*Tnia)^0.5)/(2*pb*DA)

Soilni-C-O = (TR*ATc*365)/(EFni*(SFo*1e-6*IRSadj+SFi*(IRAadj/VFnia)+SFo*1e-6*ABS*IRDadj))
Soilni-C-I = (TR*ATc*365)/(EFni*(SFo*1e-6*IRSadj+SFo*1e-6*ABS*IRDadj))
Soilni-N-O = (THQ*BWc*ATnc*365)/(EFni*EDc*((IRSc/RfDo)*1e-6+(IRAc/RfDi)*(1/VFnic)+(SAc/RfDo)*AFc*ABS*1e-6))
Soilni-N-I = (THQ*BWc*ATnc*365)/(EFni*EDc*((IRSc/RfDo)*1e-6+(SAc/RfDo)*AFc*ABS*1e-6)))

COMPOUND	DA (cm2/s)	VFnic (m3/kg)	VFnia (m3/kg)	Soilni C-O (mg/kg)	Soilni C-I (mg/kg)	Soilni N-O (mg/kg)	Soilni N-I (mg/kg)	min value (C or N)	Soilni (mg/kg)	
Phenanthrene	1.52E-08	8.34E+05		NA		2.21E+04		2.2E+04	2.2E+04	N
Phenol	8.09E-07	1.14E+05		NA		1.63E+04		1.6E+04	1.6E+04	N
Polychlorinated biphenyls	8.87E-09	1.09E+06	2.45E+06	2.16E-01		1.09E+00		2.2E-01	2.2E-01	C
Pyrene	6.85E-10	3.93E+06		NA		2.32E+03		2.3E+03	2.3E+03	N
Selenium	NA	NA			NA		3.91E+02	3.9E+02	3.9E+02	N
Silver	NA	NA			NA		3.91E+02	3.9E+02	3.9E+02	N
Styrene	1.14E-05	3.05E+04		NA		7.29E+03		7.3E+03	7.3E+03	N
Tetrachlorobenzene,1,2,4,5-	5.71E-07	1.36E+05		NA		1.42E+01		1.4E+01	1.4E+01	N
Tetrachloroethane,1,1,1,2-	1.03E-04	1.01E+04	2.27E+04	4.71E+00		3.96E+02		4.7E+00	4.7E+00	C
Tetrachloroethane,1,1,2,2-	1.36E-05	2.79E+04	6.24E+04	1.25E+00		1.68E+03		1.2E+00	1.2E+00	C
Tetrachloroethylene	2.42E-04	6.61E+03	1.48E+04	9.82E+00		4.64E+02		9.8E+00	9.8E+00	C
Tetrachlorophenol,2,3,4,6-	1.50E-07	2.66E+05		NA		1.60E+03		1.6E+03	1.6E+03	N
Thallium	NA	NA			NA		5.48E+00	5.5E+00	5.5E+00	N
Toluene	1.91E-04	7.46E+03		NA		1.23E+03		1.2E+03	1.2E+03	N
Toxaphene	2.30E-10	6.79E+06	1.52E+07	4.40E-01		NA		4.4E-01	4.4E-01	C
Trichlorobenzene,1,2,4-	1.39E-06	8.72E+04		NA		7.11E+02		7.1E+02	7.1E+02	N
Trichloroethane,1,1,1-	4.39E-04	4.91E+03		NA		1.22E+03		1.2E+03	1.2E+03	N
Trichloroethane,1,1,2-	4.06E-05	1.62E+04	3.62E+04	3.10E+00		7.64E+01		3.1E+00	3.1E+00	C
Trichloroethene	3.65E-04	5.39E+03	1.21E+04	1.78E-01		1.89E+01		1.8E-01	1.8E-01	C
Trichlorofluoromethane	1.93E-03	2.34E+03		NA		7.11E+02		7.1E+02	7.1E+02	N
Trichlorophenol,2,4,5-	4.99E-08	4.61E+05		NA		5.63E+03		5.6E+03	5.6E+03	N

LDEQ RECAP
WORKSHEET 4
SOILni
(mg/kg)

Derivation of Management Option 1 & 2 **Soil-Nonindustrial**
Revision Date: 08/04/2003 Run date: 6/28/2011

DA = ((na^(10/3)*Da*H*41+nw^(10/3)*Dw)/n^2)/(pb*Koc*foc+nw+na*H*41)
VFnic = (Q\C*1e-4*(3.14*DA*Tnic)^0.5)/(2*pb*DA)
VFnia = (Q\C*1e-4*(3.14*DA*Tnia)^0.5)/(2*pb*DA)

Soilni-C-O = (TR*ATc*365)/(EFni*(SFo*1e-6*IRSadj+SFi*(IRAadj/VFnia)+SFo*1e-6*ABS*IRDadj))
Soilni-C-I = (TR*ATc*365)/(EFni*(SFo*1e-6*IRSadj+SFo*1e-6*ABS*IRDadj))
Soilni-N-O = (THQ*BWc*ATnc*365)/(EFni*EDc*((IRSc/RfDo)*1e-6+(IRAc/RfDi)*(1/VFnic)+(SAc/RfDo)*AFc*ABS*1e-6))
Soilni-N-I = (THQ*BWc*ATnc*365)/(EFni*EDc*((IRSc/RfDo)*1e-6+(SAc/RfDo)*AFc*ABS*1e-6)))

COMPOUND	DA (cm2/s)	VFnic (m3/kg)	VFnia (m3/kg)	Soilni C-O (mg/kg)	Soilni C-I (mg/kg)	Soilni N-O (mg/kg)	Soilni N-I (mg/kg)	min value (C or N)	Soilni (mg/kg)	
Trichlorophenol,2,4,6-	3.64E-08	5.40E+05	1.21E+06	4.17E+01		NA		4.2E+01	4.2E+01	C
Vanadium	NA	NA			NA		5.48E+02	5.5E+02	5.5E+02	N
Vinyl chloride	2.81E-03	1.94E+03	4.35E+03	3.07E-01		NA		3.1E-01	3.1E-01	C
Xylene(mixed)	1.87E-04	7.52E+03		NA		3.34E+02		3.3E+02	3.3E+02	N
Zinc	NA	NA			NA		2.35E+04	2.3E+04	2.3E+04	N
Aliphatics C6-C8	1.40E-03	2.75E+03		NA		2.16E+04		2.2E+04	1.0E+04	O,T
Aliphatics >C8-C10	3.22E-04	5.73E+03		NA		1.95E+03		2.0E+03	2.0E+03	N
Aliphatics >C10-C12	6.28E-05	1.30E+04		NA		3.43E+03		3.4E+03	3.4E+03	N
Aliphatics >C12-C16	1.37E-05	2.78E+04		NA		4.89E+03		4.9E+03	4.9E+03	N
Aliphatics >C16-C35	1.03E-06	1.02E+05		NA		8.83E+04		8.8E+04	1.0E+04	O,T
Aromatics >C8-C10	3.94E-05	1.64E+04		NA		1.03E+03		1.0E+03	1.0E+03	N
Aromatics >C10-C12	7.31E-06	3.81E+04		NA		1.67E+03		1.7E+03	1.7E+03	N
Aromatics >C12-C16	1.40E-06	8.71E+04		NA		2.26E+03		2.3E+03	2.3E+03	N
Aromatics >C16-C21	1.11E-07	3.09E+05		NA		1.63E+03		1.6E+03	1.6E+03	N
Aromatics >C21-C35	1.04E-09	3.20E+06		NA		1.81E+03		1.8E+03	1.8E+03	N
TPH-GRO (C6-C10)								1.0E+03	1.0E+03	
TPH-DRO (C10-C28)								1.0E+03	1.0E+03	
TPH-ORO (>C28)								1.8E+03	1.8E+03	

LDEQ RECAP
WORKSHEET 5
SOILi
(mg/kg)

Derivation of Management Option 1 & 2 **Soil-Industrial**
Revision Date: 08/04/2003 Run date: 6/28/2011

DA = ((na^(10/3)*Da*H*41+nw^(10/3)*Dw)/n^2)/(pb*Koc*foc+nw+na*H*41)
VFi = (Q\C*1e-4*(3.14*DA*Ti)^0.5)/(2*pb*DA)

Soili-C-O = (TR*BWa*ATc*365)/(EFi*EDi*(SFo*1e-6*IRSi+SFi*(IRAa/VFi)+SFo*SAai*AFai*ABS*1e-6))
Soili-C-I = (TR*BWa*ATc*365)/(EFi*EDi*(SFo*1e-6*IRSi+SFo*SAai*AFai*ABS*1e-6))
Soili-N-O = (THQ*BWa*ATni*365)/(EFi*EDi*((IRSi/RfDo)*1e-6+(IRAa/RfDi)*(1/VFi)+(SAai/RfDo)*AFai*ABS*1e-6))
Soili-N-I = (THQ*BWa*ATni*365)/(EFi*EDi*((IRSi/RfDo)*1e-6+(SAai/RfDo)*AFai*ABS*1e-6)))

	DA	VFi	Soili	Soili	Soili	Soili	min value	Soili	
COMPOUND	**(cm2/s)**	**(m3/kg)**	**C-O (mg/kg)**	**C-I (mg/kg)**	**N-O (mg/kg)**	**N-I (mg/kg)**	**(C or N)**	**(mg/kg)**	
Acenaphthene	7.85E-08	7.51E+05	NA		8.00E+04		8.0E+04	8.0E+04	N
Acenaphthylene	1.50E-07	5.43E+05	NA		7.06E+04		7.1E+04	7.1E+04	N
Acetone	1.46E-05	5.51E+04	NA		2.47E+04		2.5E+04	2.5E+04	N
Aldrin	2.92E-09	3.89E+06	1.39E-01		2.53E+01		1.4E-01	1.4E-01	C
Aniline	9.09E-07	2.21E+05	2.43E+02		3.06E+02		2.4E+02	2.4E+02	C
Anthracene	6.24E-09	2.66E+06	NA		5.33E+05		5.3E+05	5.3E+05	N
Antimony	NA	NA		NA		8.18E+02	8.2E+02	8.2E+02	N
Arsenic	NA	NA		2.73E+00		4.39E+02	2.7E+00	2.7E+00	C
Barium	NA	NA		NA		1.43E+05	1.4E+05	1.4E+05	N
Benzene	3.10E-04	1.19E+04	5.72E+00		4.93E+02		5.7E+00	5.7E+00	C
Benz(a)anthracene	1.31E-10	1.83E+07	2.88E+00		NA		2.9E+00	2.9E+00	C
Benzo(a)pyrene	4.17E-11	3.26E+07	2.88E-01		NA		2.9E-01	3.3E-01	Q
Benzo(b)fluoranthene	1.30E-10	1.85E+07	2.88E+00		NA		2.9E+00	2.9E+00	C
Benzo(k)fluoranthene	1.98E-11	4.72E+07	2.88E+01		NA		2.9E+01	2.9E+01	C
Beryllium	NA	NA		NA		4.09E+03	4.1E+03	4.1E+03	N
Biphenyl,1,1-	1.34E-07	5.74E+05	NA		6.02E+04		6.0E+04	6.0E+04	N
Bis(2-chloroethyl)ether	1.03E-06	2.07E+05	1.72E+00		NA		1.7E+00	1.7E+00	C
Bis(2-chloroisopropyl)ether	4.76E-06	9.63E+04	2.66E+01		1.59E+04		2.7E+01	2.7E+01	C
Bis(2-ethyl-hexyl)phthalate	1.41E-10	1.77E+07	1.75E+02		1.75E+04		1.7E+02	1.7E+02	C
Bromodichloromethane	3.44E-05	3.59E+04	7.60E+00		3.36E+03		7.6E+00	7.6E+00	C
Bromoform	3.24E-06	1.17E+05	2.72E+02		9.24E+03		2.7E+02	2.7E+02	C
Bromomethane	7.37E-04	7.75E+03	NA		5.55E+01		5.6E+01	5.6E+01	N

LDEQ RECAP
WORKSHEET 5
SOILi
(mg/kg)

Derivation of Management Option 1 & 2 **Soil-Industrial**
Revision Date: 08/04/2003 Run date: 6/28/2011

DA = ((na^(10/3)*Da*H*41+nw^(10/3)*Dw)/n^2)/(pb*Koc*foc+nw+na*H*41)
VFi = (Q\C*1e-4*(3.14*DA*Ti)^0.5)/(2*pb*DA)

Soili-C-O = (TR*BWa*ATc*365)/(EFi*EDi*(SFo*1e-6*IRSi+SFi*(IRAa/VFi)+SFo*SAai*AFai*ABS*1e-6))
Soili-C-I = (TR*BWa*ATc*365)/(EFi*EDi*(SFo*1e-6*IRSi+SFo*SAai*AFai*ABS*1e-6))
Soili-N-O = (THQ*BWa*ATni*365)/(EFi*EDi*((IRSi/RfDo)*1e-6+(IRAa/RfDi)*(1/VFi)+(SAai/RfDo)*AFai*ABS*1e-6))
Soili-N-I = (THQ*BWa*ATni*365)/(EFi*EDi*((IRSi/RfDo)*1e-6+(SAai/RfDo)*AFai*ABS*1e-6)))

	DA	VFi	Soili	Soili	Soili	Soili	min value	Soili	
COMPOUND	**(cm2/s)**	**(m3/kg)**	**C-O (mg/kg)**	**C-I (mg/kg)**	**N-O (mg/kg)**	**N-I (mg/kg)**	**(C or N)**	**(mg/kg)**	
Butyl benzyl phthalate	1.56E-09	5.31E+06	NA		1.71E+05		1.7E+05	1.7E+05	N
Cadmium	NA	NA		NA		1.01E+03	1.0E+03	1.0E+03	N
Carbon Disulfide	2.03E-03	4.67E+03	NA		4.67E+03		4.7E+03	4.7E+03	N
Carbon Tetrachloride	6.74E-04	8.10E+03	2.10E+00		2.32E+01		2.1E+00	2.1E+00	C
Chlordane	9.64E-10	6.77E+06	1.03E+01		6.10E+02		1.0E+01	1.0E+01	C
Chloroaniline,p-	4.99E-07	2.98E+05	NA		2.23E+03		2.2E+03	2.2E+03	N
Chlorobenzene	5.95E-05	2.73E+04	NA		2.24E+03		2.2E+03	2.2E+03	N
Chlorodibromomethane	1.04E-05	6.52E+04	9.54E+00		5.73E+03		9.5E+00	9.5E+00	C
Chloroethane (Ethylchloride)	4.45E-03	3.15E+03	1.54E+01		4.36E+04		1.5E+01	1.5E+01	C
Chloroform	2.76E-04	1.27E+04	2.25E+00		5.57E+00		2.2E+00	2.2E+00	C
Chloromethane	1.18E-03	6.12E+03	1.35E+01		2.65E+03		1.3E+01	1.3E+01	C
Chloronaphthalene,2-	7.27E-08	7.80E+05	NA		1.08E+05		1.1E+05	1.1E+05	N
Chlorophenol,2-	2.87E-06	1.24E+05	NA		2.42E+03		2.4E+03	2.4E+03	N
Chromium(III)				NA		3.07E+06	3.1E+06	1.0E+06	O
Chromium(VI)				NA		6.13E+03	6.1E+03	6.1E+03	N
Chrysene	3.85E-10	1.07E+07	2.87E+02		NA		2.9E+02	2.9E+02	C
Cobalt	NA	NA		NA		1.23E+05	1.2E+05	1.2E+05	N
Copper	NA	NA		NA		8.18E+04	8.2E+04	8.2E+04	N
Cyanide (free)	NA	NA		NA		3.61E+04	3.6E+04	3.6E+04	N
DDD	5.16E-10	9.25E+06	1.66E+01		NA		1.7E+01	1.7E+01	C
DDE	4.75E-10	9.65E+06	1.17E+01		NA		1.2E+01	1.2E+01	C
DDT	3.95E-11	3.34E+07	1.20E+01		7.26E+02		1.2E+01	1.2E+01	C

LDEQ RECAP
WORKSHEET 5
SOILi
(mg/kg)

Derivation of Management Option 1 & 2 **Soil-Industrial**
Revision Date: 08/04/2003 Run date: 6/28/2011

DA = ((na^(10/3)*Da*H*41+nw^(10/3)*Dw)/n^2)/(pb*Koc*foc+nw+na*H*41)
VFi = (Q\C*1e-4*(3.14*DA*Ti)^0.5)/(2*pb*DA)

Soili-C-O = (TR*BWa*ATc*365)/(EFi*EDi*(SFo*1e-6*IRSi+SFi*(IRAa/VFi)+SFo*SAai*AFai*ABS*1e-6))
Soili-C-I = (TR*BWa*ATc*365)/(EFi*EDi*(SFo*1e-6*IRSi+SFo*SAai*AFai*ABS*1e-6))
Soili-N-O = (THQ*BWa*ATni*365)/(EFi*EDi*((IRSi/RfDo)*1e-6+(IRAa/RfDi)*(1/VFi)+(SAai/RfDo)*AFai*ABS*1e-6))
Soili-N-I = (THQ*BWa*ATni*365)/(EFi*EDi*((IRSi/RfDo)*1e-6+(SAai/RfDo)*AFai*ABS*1e-6)))

COMPOUND	DA (cm2/s)	VFi (m3/kg)	Soili C-O (mg/kg)	Soili C-I (mg/kg)	Soili N-O (mg/kg)	Soili N-I (mg/kg)	min value (C or N)	Soili (mg/kg)	
Dibenz(a,h)anthracene	1.22E-11	6.03E+07	2.88E-01		NA		2.9E-01	3.3E-01	Q
Dibenzofuran	5.40E-09	2.86E+06	NA		7.17E+03		7.2E+03	7.2E+03	N
Dibromo-3-chloropropane,1,2-	1.86E-06	1.54E+05	1.76E+00		2.38E+01		1.8E+00	1.8E+00	C
Dichlorobenzene,1,2-	1.78E-05	4.98E+04	NA		1.34E+04		1.3E+04	1.3E+04	N
Dichlorobenzene,1,3-	6.69E-06	8.13E+04	NA		3.11E+02		3.1E+02	3.1E+02	N
Dichlorobenzene,1,4-	1.43E-05	5.56E+04	2.91E+01		3.16E+04		2.9E+01	2.9E+01	C
Dichlorobenzidine,3,3-	3.80E-08	1.08E+06	4.73E+00		NA		4.7E+00	4.7E+00	C
Dichloroethane,1,1-	2.93E-04	1.23E+04	NA		8.60E+03		8.6E+03	8.6E+03	N
Dichloroethane,1,2-	9.40E-05	2.17E+04	3.23E+00		3.05E+02		3.2E+00	3.2E+00	C
Dichloroethene,1,1-	1.26E-03	5.92E+03	NA		1.70E+03		1.7E+03	1.7E+03	N
Dichloroethene,cis,1,2-	2.79E-04	1.26E+04	NA		6.24E+02		6.2E+02	6.2E+02	N
Dichloroethene,trans,1,2-	5.61E-04	8.88E+03	NA		8.87E+02		8.9E+02	8.9E+02	N
Dichlorophenol,2,4-	4.80E-08	9.60E+05	NA		2.24E+03		2.2E+03	2.2E+03	N
Dichloropropane,1,2-	1.72E-04	1.60E+04	3.24E+00		8.98E+01		3.2E+00	3.2E+00	C
Dichloropropene,1,3-	8.98E-05	2.22E+04	1.62E+01		6.40E+02		1.6E+01	1.6E+01	C
Dieldrin	1.18E-09	6.12E+06	1.50E-01		4.28E+01		1.5E-01	1.5E-01	C
Diethylphthalate	2.65E-07	4.08E+05	NA		4.95E+05		5.0E+05	5.0E+05	N
Dimethylphenol,2,4-	1.87E-07	4.87E+05	NA		1.30E+04		1.3E+04	1.3E+04	N
Dimethylphthalate	4.24E-07	3.23E+05	NA		5.74E+06		5.7E+06	1.0E+06	O
Di-n-octylphthalate	8.38E-13	2.30E+08	NA		3.52E+04		3.5E+04	3.5E+04	N
Dinitrobenzene,1,3-	2.55E-07	4.16E+05	NA		6.23E+01		6.2E+01	6.2E+01	N
Dinitrophenol,2,4-	1.01E-06	2.09E+05	NA		9.66E+02		9.7E+02	9.7E+02	N

LDEQ RECAP
WORKSHEET 5
SOILi
(mg/kg)

Derivation of Management Option 1 & 2 **Soil-Industrial**
Revision Date: 08/04/2003 Run date: 6/28/2011

DA = ((na^(10/3)*Da*H*41+nw^(10/3)*Dw)/n^2)/(pb*Koc*foc+nw+na*H*41)
VFi = (Q\C*1e-4*(3.14*DA*Ti)^0.5)/(2*pb*DA)

Soili-C-O = (TR*BWa*ATc*365)/(EFi*EDi*(SFo*1e-6*IRSi+SFi*(IRAa/VFi)+SFo*SAai*AFai*ABS*1e-6))
Soili-C-I = (TR*BWa*ATc*365)/(EFi*EDi*(SFo*1e-6*IRSi+SFo*SAai*AFai*ABS*1e-6))
Soili-N-O = (THQ*BWa*ATni*365)/(EFi*EDi*((IRSi/RfDo)*1e-6+(IRAa/RfDi)*(1/VFi)+(SAai/RfDo)*AFai*ABS*1e-6))
Soili-N-I = (THQ*BWa*ATni*365)/(EFi*EDi*((IRSi/RfDo)*1e-6+(SAai/RfDo)*AFai*ABS*1e-6)))

	DA	VFi	Soili	Soili	Soili	Soili	min value	Soili	
COMPOUND	**(cm2/s)**	**(m3/kg)**	**C-O (mg/kg)**	**C-I (mg/kg)**	**N-O (mg/kg)**	**N-I (mg/kg)**	**(C or N)**	**(mg/kg)**	
Dinitrotoluene,2,6-	3.54E-07	3.53E+05	NA		5.92E+02		5.9E+02	5.9E+02	N
Dinitrotoluene,2,4-	2.64E-07	4.09E+05	NA		1.24E+03		1.2E+03	1.2E+03	N
Dinoseb	1.71E-07	5.08E+05	NA		6.58E+02		6.6E+02	6.6E+02	N
Endosulfan	1.27E-08	1.87E+06	NA		4.84E+03		4.8E+03	4.8E+03	N
Endrin	2.31E-09	4.37E+06	NA		2.54E+02		2.5E+02	2.5E+02	N
Ethyl benzene	1.40E-04	1.78E+04	NA		2.30E+04		2.3E+04	2.3E+04	N
Fluoranthene	1.08E-09	6.40E+06	NA		2.94E+04		2.9E+04	2.9E+04	N
Fluorene	2.05E-08	1.47E+06	NA		6.43E+04		6.4E+04	6.4E+04	N
Heptachlor	8.62E-05	2.27E+04	6.30E-02		5.12E+01		6.3E-02	6.3E-02	C
Heptachlor epoxide	2.95E-10	1.22E+07	2.67E-01		1.13E+01		2.7E-01	2.7E-01	C
Hexachlorobenzene	4.88E-08	9.52E+05	2.51E+00		1.15E+03		2.5E+00	2.5E+00	C
Hexachlorobutadiene	4.62E-07	3.09E+05	2.04E+01		1.13E+02		2.0E+01	2.0E+01	C
Hexachlorocyclohexane,alpha	2.19E-08	1.42E+06	5.02E-01		NA		5.0E-01	5.0E-01	C
Hexachlorocyclohexane,beta	1.45E-08	1.74E+06	1.81E+00		NA		1.8E+00	1.8E+00	C
Hexachlorocyclohexane,gamma	3.04E-08	1.21E+06	2.37E+00		3.30E+02		2.4E+00	2.4E+00	C
Hexachlorocyclopentadiene	1.18E-07	6.12E+05	NA		1.76E+02		1.8E+02	1.8E+02	N
Hexachloroethane	3.08E-07	3.79E+05	1.99E+02		9.94E+02		2.0E+02	2.0E+02	C
Indeno(1,2,3-cd)pyrene	7.32E-12	7.77E+07	2.88E+00		NA		2.9E+00	2.9E+00	C
Isobutyl alcohol	4.41E-06	1.00E+05	NA		9.71E+04		9.7E+04	9.7E+04	N
Isophorone	7.54E-07	2.42E+05	1.52E+03		1.03E+05		1.5E+03	1.5E+03	C
Lead (inorganic)	NA	NA	NA	NA	NA	NA	NA	0.0E+00	Q
Mercury (inorganic)	NA	NA		NA		6.13E+02	6.1E+02	6.1E+02	N

LDEQ RECAP
WORKSHEET 5
SOILi
(mg/kg)

Derivation of Management Option 1 & 2 **Soil-Industrial**
Revision Date: 08/04/2003 Run date: 6/28/2011

DA = ((na^(10/3)*Da*H*41+nw^(10/3)*Dw)/n^2)/(pb*Koc*foc+nw+na*H*41)
VFi = (Q\C*1e-4*(3.14*DA*Ti)^0.5)/(2*pb*DA)

Soili-C-O = (TR*BWa*ATc*365)/(EFi*EDi*(SFo*1e-6*IRSi+SFi*(IRAa/VFi)+SFo*SAai*AFai*ABS*1e-6))
Soili-C-I = (TR*BWa*ATc*365)/(EFi*EDi*(SFo*1e-6*IRSi+SFo*SAai*AFai*ABS*1e-6))
Soili-N-O = (THQ*BWa*ATni*365)/(EFi*EDi*((IRSi/RfDo)*1e-6+(IRAa/RfDi)*(1/VFi)+(SAai/RfDo)*AFai*ABS*1e-6))
Soili-N-I = (THQ*BWa*ATni*365)/(EFi*EDi*((IRSi/RfDo)*1e-6+(SAai/RfDo)*AFai*ABS*1e-6)))

	DA	VFi	Soili	Soili	Soili	Soili	min value	Soili	
COMPOUND	**(cm2/s)**	**(m3/kg)**	**C-O (mg/kg)**	**C-I (mg/kg)**	**N-O (mg/kg)**	**N-I (mg/kg)**	**(C or N)**	**(mg/kg)**	
Methoxychlor	4.01E-10	1.05E+07	NA		4.33E+03		4.3E+03	4.3E+03	N
Methylene chloride	4.29E-04	1.01E+04	7.93E+01		3.26E+04		7.9E+01	7.9E+01	C
Methyl ethyl ketone	1.31E-05	5.81E+04	NA		7.94E+04		7.9E+04	7.9E+04	N
Methyl isobutyl ketone	2.24E-05	4.44E+04	NA		8.90E+04		8.9E+04	8.9E+04	N
Methylnaphthalene,2-	8.13E-08	7.37E+05	NA		3.00E+03		3.0E+03	3.0E+03	N
MTBE (methyl tert-butyl ether)	1.02E-04	2.08E+04	NA		8.65E+04		8.6E+04	8.6E+04	N
Naphthalene	1.30E-06	1.84E+05	NA		7.94E+02		7.9E+02	7.9E+02	N
Nickel	NA	NA		NA		4.09E+04	4.1E+04	4.1E+04	N
Nitrate	NA	NA		NA		3.27E+06	3.3E+06	1.0E+06	O
Nitrite	NA	NA		NA		2.04E+05	2.0E+05	2.0E+05	N
Nitroaniline,2-	1.01E-05	6.63E+04	NA		9.80E+00		9.8E+00	9.8E+00	N
Nitroaniline,3-	8.15E-07	2.33E+05	NA		2.26E+03		2.3E+03	2.3E+03	N
Nitroaniline,4-	1.11E-06	2.00E+05	NA		1.42E+03		1.4E+03	1.4E+03	N
Nitrobenzene	9.67E-07	2.14E+05	NA		3.87E+02		3.9E+02	3.9E+02	N
Nitrophenol,4-	5.33E-07	2.88E+05	NA		4.41E+03		4.4E+03	4.4E+03	N
Nitrosodi-n-propylamine,n-	9.19E-07	2.19E+05	1.97E-01		NA		2.0E-01	3.3E-01	Q
N-nitrosodiphenylamine	2.68E-08	1.28E+06	4.44E+02		NA		4.4E+02	4.4E+02	C
Pentachlorophenol	2.82E-08	1.25E+06	1.03E+01		1.33E+04		1.0E+01	1.0E+01	C
Phenanthrene	1.52E-08	1.70E+06	NA		4.97E+05		5.0E+05	5.0E+05	N
Phenol	8.09E-07	2.34E+05	NA		2.26E+05		2.3E+05	2.3E+05	N
Polychlorinated biphenyls	8.87E-09	2.23E+06	9.45E-01		1.35E+01		9.5E-01	9.5E-01	C
Pyrene	6.85E-10	8.03E+06	NA		5.84E+04		5.8E+04	5.8E+04	N

LDEQ RECAP
WORKSHEET 5
SOILi
(mg/kg)

Derivation of Management Option 1 & 2 **Soil-Industrial**
Revision Date: 08/04/2003 Run date: 6/28/2011

DA = ((na^(10/3)*Da*H*41+nw^(10/3)*Dw)/n^2)/(pb*Koc*foc+nw+na*H*41)
VFi = (Q\C*1e-4*(3.14*DA*Ti)^0.5)/(2*pb*DA)

Soili-C-O = (TR*BWa*ATc*365)/(EFi*EDi*(SFo*1e-6*IRSi+SFi*(IRAa/VFi)+SFo*SAai*AFai*ABS*1e-6))
Soili-C-I = (TR*BWa*ATc*365)/(EFi*EDi*(SFo*1e-6*IRSi+SFo*SAai*AFai*ABS*1e-6))
Soili-N-O = (THQ*BWa*ATni*365)/(EFi*EDi*((IRSi/RfDo)*1e-6+(IRAa/RfDi)*(1/VFi)+(SAai/RfDo)*AFai*ABS*1e-6))
Soili-N-I = (THQ*BWa*ATni*365)/(EFi*EDi*((IRSi/RfDo)*1e-6+(SAai/RfDo)*AFai*ABS*1e-6)))

	DA	VFi	Soili	Soili	Soili	Soili	min value	Soili	
COMPOUND	**(cm2/s)**	**(m3/kg)**	**C-O (mg/kg)**	**C-I (mg/kg)**	**N-O (mg/kg)**	**N-I (mg/kg)**	**(C or N)**	**(mg/kg)**	
Selenium	NA	NA		NA		1.02E+04	1.0E+04	1.0E+04	N
Silver	NA	NA		NA		1.02E+04	1.0E+04	1.0E+04	N
Styrene	1.14E-05	6.24E+04	NA		7.45E+04		7.5E+04	7.5E+04	N
Tetrachlorobenzene,1,2,4,5-	5.71E-07	2.78E+05	NA		1.63E+02		1.6E+02	1.6E+02	N
Tetrachloroethane,1,1,1,2-	1.03E-04	2.07E+04	1.09E+01		3.02E+03		1.1E+01	1.1E+01	C
Tetrachloroethane,1,1,2,2-	1.36E-05	5.69E+04	3.52E+00		1.53E+04		3.5E+00	3.5E+00	C
Tetrachloroethylene	2.42E-04	1.35E+04	5.10E+01		5.54E+03		5.1E+01	5.1E+01	C
Tetrachlorophenol,2,3,4,6-	1.50E-07	5.43E+05	NA		2.01E+04		2.0E+04	2.0E+04	N
Thallium	NA	NA		NA		1.43E+02	1.4E+02	1.4E+02	N
Toluene	1.91E-04	1.52E+04	NA		8.68E+03		8.7E+03	8.7E+03	N
Toxaphene	2.30E-10	1.39E+07	2.21E+00		NA		2.2E+00	2.2E+00	C
Trichlorobenzene,1,2,4-	1.39E-06	1.78E+05	NA		1.47E+04		1.5E+04	1.5E+04	N
Trichloroethane,1,1,1-	4.39E-04	1.00E+04	NA		1.22E+04		1.2E+04	1.2E+04	N
Trichloroethane,1,1,2-	4.06E-05	3.30E+04	7.78E+00		6.23E+02		7.8E+00	7.8E+00	C
Trichloroethene	3.65E-04	1.10E+04	3.83E-01		3.13E+02		3.8E-01	3.8E-01	C
Trichlorofluoromethane	1.93E-03	4.79E+03	NA		4.86E+03		4.9E+03	4.9E+03	N
Trichlorophenol,2,4,5-	4.99E-08	9.41E+05	NA		7.45E+04		7.4E+04	7.4E+04	N
Trichlorophenol,2,4,6-	3.64E-08	1.10E+06	1.94E+02		NA		1.9E+02	1.9E+02	C
Vanadium	NA	NA		NA		1.43E+04	1.4E+04	1.4E+04	N
Vinyl chloride	2.81E-03	3.97E+03	1.26E+00		NA		1.3E+00	1.3E+00	C
Xylene(mixed)	1.87E-04	1.54E+04	NA		2.26E+03		2.3E+03	2.3E+03	N
Zinc	NA	NA		NA		6.13E+05	6.1E+05	6.1E+05	N

LDEQ RECAP
WORKSHEET 5
SOILi
(mg/kg)

Derivation of Management Option 1 & 2 **Soil-Industrial**
Revision Date: 08/04/2003 Run date: 6/28/2011

DA = ((na^(10/3)*Da*H*41+nw^(10/3)*Dw)/n^2)/(pb*Koc*foc+nw+na*H*41)
VFi = (Q\C*1e-4*(3.14*DA*Ti)^0.5)/(2*pb*DA)

Soili-C-O = (TR*BWa*ATc*365)/(EFi*EDi*(SFo*1e-6*IRSi+SFi*(IRAa/VFi)+SFo*SAai*AFai*ABS*1e-6))
Soili-C-I = (TR*BWa*ATc*365)/(EFi*EDi*(SFo*1e-6*IRSi+SFo*SAai*AFai*ABS*1e-6))
Soili-N-O = (THQ*BWa*ATni*365)/(EFi*EDi*((IRSi/RfDo)*1e-6+(IRAa/RfDi)*(1/VFi)+(SAai/RfDo)*AFai*ABS*1e-6))
Soili-N-I = (THQ*BWa*ATni*365)/(EFi*EDi*((IRSi/RfDo)*1e-6+(SAai/RfDo)*AFai*ABS*1e-6)))

	DA	VFi	Soili	Soili	Soili	Soili	min value	Soili	
COMPOUND	**(cm2/s)**	**(m3/kg)**	**C-O (mg/kg)**	**C-I (mg/kg)**	**N-O (mg/kg)**	**N-I (mg/kg)**	**(C or N)**	**(mg/kg)**	
Aliphatics C6-C8	1.40E-03	5.62E+03	NA		1.50E+05		1.5E+05	1.0E+04	O,T
Aliphatics >C8-C10	3.22E-04	1.17E+04	NA		1.60E+04		1.6E+04	1.0E+04	O,T
Aliphatics >C10-C12	6.28E-05	2.65E+04	NA		3.39E+04		3.4E+04	1.0E+04	O,T
Aliphatics >C12-C16	1.37E-05	5.68E+04	NA		6.10E+04		6.1E+04	1.0E+04	O,T
Aliphatics >C16-C35	1.03E-06	2.07E+05	NA		9.62E+05		9.6E+05	1.0E+04	O,T
Aromatics >C8-C10	3.94E-05	3.35E+04	NA		9.13E+03		9.1E+03	9.1E+03	N
Aromatics >C10-C12	7.31E-06	7.78E+04	NA		1.85E+04		1.8E+04	1.0E+04	O,T
Aromatics >C12-C16	1.40E-06	1.78E+05	NA		3.27E+04		3.3E+04	1.0E+04	O,T
Aromatics >C16-C21	1.11E-07	6.31E+05	NA		2.08E+04		2.1E+04	1.0E+04	O,T
Aromatics >C21-C35	1.04E-09	6.53E+06	NA		2.58E+04		2.6E+04	1.0E+04	O,T
TPH-GRO (C6-C10)							9.1E+03	9.1E+03	
TPH-DRO (C10-C28)							9.1E+03	9.1E+03	
TPH-ORO (>C28)							2.6E+04	1.0E+04	

LDEQ RECAP
WORKSHEET 6
SOILGW and SOILsat
(mg/kg)

Derivation of Management Option 1 & 2 **SoilGW & Soilsat**
Revision Date: 08/04/2003 Run date: 6/28/2011

SoilGW1 = DFsummers*(GW1*(pb*Koc*foc+nw+na*H*41))/(pb)
SoilGW2 = DFsummers*(GW2*(pb*Koc*foc+nw+na*H*41))/(pb)
SoilGW3NDW =DFsummers* (GW3NDW*(pb*Koc*foc+nw+na*H*41))/(pb)
SoilGW3DW =DFsummers* (GW3DW*(pb*Koc*foc+nw+na*H*41))/(pb)

Soilsat = S*(Koc*foc*pb+nw+H*41*na)/pb

	SoilGW1	SoilGW2	SoilGW3DW	SoilGW3NDW	Soilsat
COMPOUND	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
Acenaphthene	2.2E+02	2.2E+02	2.5E+02	3.2E+02	NA
Acenaphthylene	8.8E+01	8.8E+01	1.4E+02	1.9E+02	NA
Acetone	1.5E+00	1.5E+00	8.5E+00	1.8E+02	1.3E+05
Aldrin	1.1E+01	1.1E+01	1.1E+01	1.1E+01	NA
Aniline	6.5E-02	6.5E-02	3.2E-02	4.4E-01	1.0E+04
Anthracene	1.2E+02	1.2E+02	1.2E+02	1.2E+02	NA
Antimony	NA	NA	NA	NA	NA
Arsenic	NA	NA	NA	NA	NA
Barium	NA	NA	NA	NA	NA
Benzene	5.1E-02	5.1E-02	1.1E-02	1.3E-01	9.0E+02
Benz(a)anthracene	3.4E+02	3.9E+00	1.6E-02	1.6E-02	NA
Benzo(a)pyrene	2.3E+01	2.3E+01	2.3E+01	2.3E+01	NA
Benzo(b)fluoranthene	2.2E+02	1.3E+01	1.3E+01	1.3E+01	NA
Benzo(k)fluoranthene	1.2E+02	1.2E+02	1.2E+02	1.2E+02	NA
Beryllium	NA	NA	NA	NA	NA
Biphenyl,1,1-	1.9E+02	1.9E+02	1.4E+02	1.7E+02	2.3E+02
Bis(2-chloroethyl)ether	6.6E-02	6.6E-02	3.2E-04	2.4E-03	9.8E+03
Bis(2-chloroisopropyl)ether	5.6E-02	2.7E-03	3.1E-03	8.2E-03	8.4E+02
Bis(2-ethyl-hexyl)phthalate	7.9E+01	7.9E+01	7.9E+01	7.9E+01	2.2E+02
Bromodichloromethane	9.2E-01	9.2E-01	9.2E-01	3.0E-02	3.1E+03
Bromoform	1.8E+00	1.8E+00	6.9E-02	6.1E-01	2.7E+03
Bromomethane	4.0E-02	3.5E-02	1.8E-01	2.1E+00	3.0E+03
Butyl benzyl phthalate	4.4E+03	4.4E+03	1.5E+03	1.7E+03	2.2E+02

LDEQ RECAP
WORKSHEET 6
SOILGW and SOILsat
(mg/kg)

Derivation of Management Option 1 & 2 **SoilGW & Soilsat**
Revision Date: 08/04/2003 Run date: 6/28/2011

SoilGW1 = DFsummers*(GW1*(pb*Koc*foc+nw+na*H*41))/(pb)
SoilGW2 = DFsummers*(GW2*(pb*Koc*foc+nw+na*H*41))/(pb)
SoilGW3NDW =DFsummers* (GW3NDW*(pb*Koc*foc+nw+na*H*41))/(pb)
SoilGW3DW =DFsummers* (GW3DW*(pb*Koc*foc+nw+na*H*41))/(pb)

Soilsat = S*(Koc*foc*pb+nw+H*41*na)/pb

COMPOUND	SoilGW1 (mg/kg)	SoilGW2 (mg/kg)	SoilGW3DW (mg/kg)	SoilGW3NDW (mg/kg)	Soilsat (mg/kg)
Cadmium	NA	NA	NA	NA	NA
Carbon Disulfide	1.1E+01	1.1E+01	2.9E+01	1.5E+02	6.0E+02
Carbon Tetrachloride	1.1E-01	1.1E-01	5.0E-03	2.7E-02	9.1E+02
Chlordane	1.2E+01	1.2E+01	1.2E+01	1.2E+01	NA
Chloroaniline,p-	1.5E+00	1.5E+00	1.2E+00	7.0E+00	NA
Chlorobenzene	3.0E+00	3.0E+00	3.0E+00	2.1E+01	7.0E+02
Chlorodibromomethane	1.0E+00	1.0E+00	3.9E-03	5.1E-02	1.3E+03
Chloroethane (Ethylchloride)	3.5E-02	1.3E-02	4.4E+01	4.3E+02	9.9E+02
Chloroform	9.0E-01	9.0E-01	4.8E-02	6.3E-01	3.6E+03
Chloromethane	6.1E-02	9.1E-03	1.5E-02	2.2E-01	1.6E+03
Chloronaphthalene,2-	5.0E+02	5.0E+02	3.3E+02	3.7E+02	NA
Chlorophenol,2-	1.4E+00	1.4E+00	4.6E-03	5.8E+00	5.1E+04
Chromium(III)	NA	NA	NA	NA	NA
Chromium(VI)	NA	NA	NA	NA	NA
Chrysene	7.6E+01	7.6E+01	1.8E+00	1.8E+00	NA
Cobalt	NA	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA
Cyanide (free)	NA	NA	NA	NA	NA
DDD	1.5E+00	1.5E+00	1.5E+00	1.5E+00	NA
DDE	2.0E+00	2.0E+00	2.0E+00	2.0E+00	NA
DDT	2.4E+01	1.6E+01	1.6E+01	1.6E+01	NA
Dibenz(a,h)anthracene	5.4E+02	2.0E+00	2.0E+00	2.0E+00	NA
Dibenzofuran	2.4E+01	2.4E+01	1.3E+01	1.5E+01	1.5E+02

LDEQ RECAP
WORKSHEET 6
SOILGW and SOILsat
(mg/kg)

Derivation of Management Option 1 & 2 **SoilGW & Soilsat**
Revision Date: 08/04/2003 Run date: 6/28/2011

SoilGW1 = DFsummers*(GW1*(pb*Koc*foc+nw+na*H*41))/(pb)
SoilGW2 = DFsummers*(GW2*(pb*Koc*foc+nw+na*H*41))/(pb)
SoilGW3NDW =DFsummers* (GW3NDW*(pb*Koc*foc+nw+na*H*41))/(pb)
SoilGW3DW =DFsummers* (GW3DW*(pb*Koc*foc+nw+na*H*41))/(pb)

Soilsat = S*(Koc*foc*pb+nw+H*41*na)/pb

COMPOUND	SoilGW1 (mg/kg)	SoilGW2 (mg/kg)	SoilGW3DW (mg/kg)	SoilGW3NDW (mg/kg)	Soilsat (mg/kg)
Dibromo-3-chloropropane,1,2-	2.6E-03	2.6E-03	2.6E-03	2.6E-03	7.8E+02
Dichlorobenzene,1,2-	2.9E+01	2.9E+01	2.9E+01	1.6E+02	3.8E+02
Dichlorobenzene,1,3-	2.1E+00	1.1E+00	3.8E+00	9.2E+00	1.3E+03
Dichlorobenzene,1,4-	5.7E+00	5.7E+00	5.7E+00	5.7E+00	NA
Dichlorobenzidine,3,3-	1.8E+00	1.3E-02	1.1E-03	1.4E-03	NA
Dichloroethane,1,1-	7.5E+00	7.5E+00	2.7E+01	1.8E+02	2.3E+03
Dichloroethane,1,2-	3.5E-02	3.5E-02	2.6E-03	4.8E-02	3.0E+03
Dichloroethene,1,1-	8.5E-02	8.5E-02	6.1E-04	7.0E-03	1.4E+03
Dichloroethene,cis,1,2-	4.9E-01	4.9E-01	4.9E-01	1.2E+01	1.2E+03
Dichloroethene,trans,1,2-	7.7E-01	7.7E-01	7.7E-01	1.9E+01	2.4E+03
Dichlorophenol,2,4-	1.2E+01	1.2E+01	3.2E-02	2.5E+01	NA
Dichloropropane,1,2-	4.2E-02	4.2E-02	4.2E-02	4.2E-02	1.2E+03
Dichloropropene,1,3-	4.0E-02	3.2E-03	8.0E-02	1.3E+00	1.1E+03
Dieldrin	7.7E+00	7.7E+00	7.7E+00	7.7E+00	NA
Diethylphthalate	3.6E+02	3.6E+02	1.6E+02	2.8E+02	6.7E+02
Dimethylphenol,2,4-	2.0E+01	2.0E+01	7.6E+00	1.2E+01	NA
Dimethylphthalate	2.8E+03	2.8E+03	1.6E+03	4.3E+03	1.5E+03
Di-n-octylphthalate	2.0E+05	2.0E+05	2.0E+05	2.0E+05	1.0E+04
Dinitrobenzene,1,3-	2.1E-01	7.5E-02	6.4E-02	5.7E-01	5.5E+02
Dinitrophenol,2,4-	3.4E-01	3.4E-01	2.8E-01	2.3E+00	NA
Dinitrotoluene,2,6-	3.9E-01	3.9E-01	3.1E-01	1.8E+00	NA
Dinitrotoluene,2,4-	1.0E+00	1.0E+00	7.9E-01	4.1E+00	NA
Dinoseb	1.2E-01	1.2E-01	1.2E-01	4.4E-01	NA

LDEQ RECAP
WORKSHEET 6
SOILGW and SOILsat
(mg/kg)

Derivation of Management Option 1 & 2 **SoilGW & Soilsat**
Revision Date: 08/04/2003 Run date: 6/28/2011

SoilGW1 = DFsummers*(GW1*(pb*Koc*foc+nw+na*H*41))/(pb)
SoilGW2 = DFsummers*(GW2*(pb*Koc*foc+nw+na*H*41))/(pb)
SoilGW3NDW =DFsummers* (GW3NDW*(pb*Koc*foc+nw+na*H*41))/(pb)
SoilGW3DW =DFsummers* (GW3DW*(pb*Koc*foc+nw+na*H*41))/(pb)

Soilsat = S*(Koc*foc*pb+nw+H*41*na)/pb

	SoilGW1	SoilGW2	SoilGW3DW	SoilGW3NDW	Soilsat
COMPOUND	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
Endosulfan	5.4E+01	5.4E+01	5.4E+01	1.6E-01	NA
Endrin	2.6E+00	2.6E+00	3.4E-01	3.4E-01	NA
Ethyl benzene	1.9E+01	1.9E+01	6.6E+01	2.2E+02	2.3E+02
Fluoranthene	1.2E+03	1.2E+03	1.8E+02	1.9E+02	NA
Fluorene	2.3E+02	2.3E+02	6.8E+01	7.2E+01	NA
Heptachlor	5.0E-01	5.0E-01	5.0E-01	5.0E-01	NA
Heptachlor epoxide	2.0E+00	2.0E+00	2.0E+00	2.0E+00	NA
Hexachlorobenzene	9.6E+00	9.6E+00	9.6E+00	9.6E+00	NA
Hexachlorobutadiene	5.5E+00	5.5E+00	5.8E-01	7.1E-01	1.0E+03
Hexachlorocyclohexane,alpha	6.4E-03	2.3E-03	3.8E-04	5.5E-04	NA
Hexachlorocyclohexane,beta	1.6E-02	9.6E-03	1.3E-03	1.7E-03	NA
Hexachlorocyclohexane,gamma	3.3E-02	3.3E-02	1.8E-02	3.3E-02	NA
Hexachlorocyclopentadiene	1.2E+03	1.2E+03	1.2E+03	1.2E+03	2.2E+03
Hexachloroethane	2.2E+00	1.7E-01	2.2E-01	3.8E-01	NA
Indeno(1,2,3-cd)pyrene	9.2E+00	9.2E+00	9.2E+00	9.2E+00	NA
Isobutyl alcohol	3.0E+01	3.0E+01	2.7E+01	4.3E+02	1.2E+04
Isophorone	5.6E-01	5.6E-01	2.7E-01	2.6E+00	4.9E+03
Lead (inorganic)	NA	NA	NA	NA	NA
Mercury (inorganic)	NA	NA	NA	NA	NA
Methoxychlor	3.8E+02	3.8E+02	3.8E+02	3.8E+02	NA
Methylene chloride	1.7E-02	1.7E-02	1.5E-02	2.9E-01	2.2E+03
Methyl ethyl ketone	5.0E+00	5.0E+00	5.2E+01	1.0E+03	2.9E+04
Methyl isobutyl ketone	6.4E+00	6.4E+00	8.3E+00	9.7E+01	3.1E+03

LDEQ RECAP
WORKSHEET 6
SOILGW and SOILsat
(mg/kg)

Derivation of Management Option 1 & 2 **SoilGW & Soilsat**
Revision Date: 08/04/2003 Run date: 6/28/2011

SoilGW1 = DFsummers*(GW1*(pb*Koc*foc+nw+na*H*41))/(pb)
SoilGW2 = DFsummers*(GW2*(pb*Koc*foc+nw+na*H*41))/(pb)
SoilGW3NDW =DFsummers* (GW3NDW*(pb*Koc*foc+nw+na*H*41))/(pb)
SoilGW3DW =DFsummers* (GW3DW*(pb*Koc*foc+nw+na*H*41))/(pb)

Soilsat = S*(Koc*foc*pb+nw+H*41*na)/pb

COMPOUND	SoilGW1 (mg/kg)	SoilGW2 (mg/kg)	SoilGW3DW (mg/kg)	SoilGW3NDW (mg/kg)	Soilsat (mg/kg)
Methylnaphthalene,2-	1.7E+00	1.7E+00	7.0E+00	7.3E+00	NA
MTBE (methyl tert-butyl ether)	7.7E-02	7.7E-02	7.7E-02	2.1E+03	9.8E+03
Naphthalene	1.5E+00	9.0E-01	2.5E+01	3.2E+01	NA
Nickel	NA	NA	NA	NA	NA
Nitrate	NA	NA	NA	NA	NA
Nitrite	NA	NA	NA	NA	NA
Nitroaniline,2-	2.3E-01	9.5E-04	3.9E-01	2.3E+00	2.8E+02
Nitroaniline,3-	2.3E-01	8.5E-02	4.4E-01	4.3E+00	2.8E+02
Nitroaniline,4-	4.3E-01	4.3E-01	3.7E-01	3.6E+00	1.4E+02
Nitrobenzene	5.7E-02	5.7E-02	2.5E-01	1.6E+00	1.8E+03
Nitrophenol,4-	2.6E+00	2.6E+00	2.1E+00	1.2E+01	5.4E+03
Nitrosodi-n-propylamine,n-	5.3E-02	5.3E-02	5.3E-02	2.4E-04	NA
N-nitrosodiphenylamine	2.1E+00	2.1E+00	3.5E-01	5.1E-01	NA
Pentachlorophenol	1.1E-01	1.1E-01	1.1E-01	1.1E-01	NA
Phenanthrene	6.7E+02	6.7E+02	1.2E+02	1.2E+02	NA
Phenol	1.1E+01	1.1E+01	5.5E+01	4.9E+02	NA
Polychlorinated biphenyls	1.9E+01	1.9E+01	1.9E+01	1.9E+01	5.7E+01
Pyrene	1.1E+03	1.1E+03	1.1E+03	1.1E+03	NA
Selenium	NA	NA	NA	NA	NA
Silver	NA	NA	NA	NA	NA
Styrene	1.1E+01	1.1E+01	1.1E+01	8.0E+02	1.7E+03
Tetrachlorobenzene,1,2,4,5-	6.9E+00	6.9E+00	3.4E-01	3.6E-01	1.9E+01
Tetrachloroethane,1,1,1,2-	4.6E-02	3.9E-03	7.7E-03	2.0E-02	5.0E+02

LDEQ RECAP
WORKSHEET 6
SOILGW and SOILsat
(mg/kg)

Derivation of Management Option 1 & 2 **SoilGW & Soilsat**
Revision Date: 08/04/2003 Run date: 6/28/2011

SoilGW1 = DFsummers*(GW1*(pb*Koc*foc+nw+na*H*41))/(pb)
SoilGW2 = DFsummers*(GW2*(pb*Koc*foc+nw+na*H*41))/(pb)
SoilGW3NDW =DFsummers* (GW3NDW*(pb*Koc*foc+nw+na*H*41))/(pb)
SoilGW3DW =DFsummers* (GW3DW*(pb*Koc*foc+nw+na*H*41))/(pb)

Soilsat = S*(Koc*foc*pb+nw+H*41*na)/pb

COMPOUND	SoilGW1 (mg/kg)	SoilGW2 (mg/kg)	SoilGW3DW (mg/kg)	SoilGW3NDW (mg/kg)	Soilsat (mg/kg)
Tetrachloroethane,1,1,2,2-	6.0E-03	6.5E-04	1.9E-03	2.2E-02	1.8E+03
Tetrachloroethylene	1.8E-01	1.8E-01	2.3E-02	8.9E-02	3.6E+02
Tetrachlorophenol,2,3,4,6-	3.1E+01	3.1E+01	4.2E+00	5.0E+00	1.4E+03
Thallium	NA	NA	NA	NA	NA
Toluene	2.0E+01	2.0E+01	1.2E+02	9.1E+02	5.2E+02
Toxaphene	3.4E+01	3.4E+01	3.4E+01	3.4E+01	NA
Trichlorobenzene,1,2,4-	1.4E+01	1.4E+01	1.4E+01	3.8E+01	NA
Trichloroethane,1,1,1-	4.0E+00	4.0E+00	4.0E+00	1.8E+02	1.3E+03
Trichloroethane,1,1,2-	5.8E-02	5.8E-02	6.5E-03	8.0E-02	2.5E+03
Trichloroethene	7.3E-02	7.3E-02	4.1E-02	3.0E-01	8.0E+02
Trichlorofluoromethane	3.7E+01	3.7E+01	2.0E+02	5.8E+02	1.6E+03
Trichlorophenol,2,4,5-	3.2E+02	3.2E+02	4.7E+01	5.6E+01	NA
Trichlorophenol,2,4,6-	1.3E+00	7.9E-01	8.6E-02	1.1E-01	NA
Vanadium	NA	NA	NA	NA	NA
Vinyl chloride	1.3E-02	1.3E-02	1.3E-02	2.4E-01	9.2E+02
Xylene(mixed)	1.8E+02	1.8E+02	1.8E+02	1.8E+02	1.5E+02
Zinc	NA	NA	NA	NA	NA
Aliphatics C6-C8	1.8E+04	1.8E+04	9.5E+04	2.2E+06	NA
Aliphatics >C8-C10	5.3E+03	5.3E+03	1.3E+04	3.1E+05	NA
Aliphatics >C10-C12	4.2E+04	4.2E+04	1.0E+05	2.4E+06	NA
Aliphatics >C12-C16	8.2E+05	8.2E+05	2.0E+06	4.7E+07	NA
Aliphatics >C16-C35	5.5E+09	5.5E+09	5.1E+09	1.2E+11	NA
Aromatics >C8-C10	6.5E+01	6.5E+01	2.6E+02	6.1E+03	NA

LDEQ RECAP
WORKSHEET 6
SOILGW and SOILsat
(mg/kg)

Derivation of Management Option 1 & 2 **SoilGW & Soilsat**
Revision Date: 08/04/2003 Run date: 6/28/2011

SoilGW1 = DFsummers*(GW1*(pb*Koc*foc+nw+na*H*41))/(pb)
SoilGW2 = DFsummers*(GW2*(pb*Koc*foc+nw+na*H*41))/(pb)
SoilGW3NDW =DFsummers* (GW3NDW*(pb*Koc*foc+nw+na*H*41))/(pb)
SoilGW3DW =DFsummers* (GW3DW*(pb*Koc*foc+nw+na*H*41))/(pb)

Soilsat = S*(Koc*foc*pb+nw+H*41*na)/pb

	SoilGW1	SoilGW2	SoilGW3DW	SoilGW3NDW	Soilsat
COMPOUND	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
Aromatics >C10-C12	1.0E+02	1.0E+02	4.1E+02	9.6E+03	NA
Aromatics >C12-C16	2.0E+02	2.0E+02	8.1E+02	1.9E+04	NA
Aromatics >C16-C21	2.1E+03	2.1E+03	1.9E+03	4.5E+04	NA
Aromatics >C21-C35	1.7E+04	1.7E+04	1.5E+04	3.6E+05	NA
TPH-GRO (C6-C10)	6.5E+01	6.5E+01	2.6E+02	6.1E+03	
TPH-DRO (C10-C28)	6.5E+01	6.5E+01	2.6E+02	6.1E+03	
TPH-ORO (>C28)	1.7E+04	1.7E+04	1.5E+04	3.6E+05	

LDEQ REAP
WORKSHEET 15
GWairni
(mg/l)

Volatile releases from groundwater to ambient air-Non-industrial					Derivation of Management Option 2 RS					
Revision Date: 08/04/2003					Run date:	6/28/2011				
INPUTS TO GROUNDWATER TO AMBIENT AIR MODEL-NONINDUSTRIAL						Site-Specific				
volumetric air content in capillary fringe					nacap =	0.015	cm3-air/cm3-soil			
volumetric water content in capillary fringe					nwcap =	0.345	cm3-water/cm3-soil			
total porosity of capillary fringe soil					nc =	0.36	cm3/cm3			
thickness of capillary fringe					hcap =	5	cm			
thickness of vadose zone					hv =	295	cm			
depth to groundwater					Lgw =	300	cm			
wind speed above ground surface in ambient mixing zone					Uair =	225	cm/s			
width of source area parallel to wind					W =	4511	cm			
ambient air mixing zone height					dair =	200	cm			
Ds = Da*na^3.33/n^2+Dw*1/(H*41)*nw^3.33/n^2										
Dcap = Da*nacap^3.33/nc^2+Dw*1/(H*41)*nwcap^3.33/nc^2										
Dws = (hcap+hv)/(hcap/Dcap+hv/Ds)										
VFgwairni = (H*41*1000)/[1+(Uair*dair*Lgw)/(W*Dws)]										
Cani C-O = (TR*ATc*365*1000)/(EFni*SFi*IRAadj)										
Cani N-O = (THQ*RfDi*BWa*ATnni*365*1000)/(IRAa*EFni*EDni)										
GWairni = Cani*0.001/VFgwairni										
	Ds	Dcap	Dws	VFgwairni	Cani	Cani	GWairi	GWairi	min value	Note
COMPOUND	(cm2/s)	(cm2/s)	(cm2/s)	(mg/m3/mg/l)	C-O (ug/m3)	N-O (ug/m3)	C-O(mg/l)	N-O(mg/l)	(C or N)	
Acenaphthene	6.24E-04	2.70E-04	6.10E-04	1.30E-06	#VALUE!	2.19E+02	#VALUE!	1.69E+05	1.7E+05	J
Acenaphthylene	6.65E-04	3.60E-04	6.56E-04	1.02E-06	#VALUE!	2.19E+02	#VALUE!	2.14E+05	2.1E+05	J
Acetone	1.99E-03	1.60E-03	1.98E-03	1.05E-06	#VALUE!	3.65E+02	#VALUE!	3.46E+05	3.5E+05	J
Aldrin										
Aniline										
Anthracene	5.65E-04	6.48E-04	5.66E-04	5.04E-07	#VALUE!	1.10E+03	#VALUE!	2.17E+06	2.2E+06	J
Antimony										
Arsenic										
Barium										
Benzene	1.20E-03	1.02E-05	4.07E-04	3.09E-05	1.20E+01		3.88E+02		3.9E+02	K
Benz(a)anthracene										
Benzo(a)pyrene										
Benzo(b)fluoranthene										
Benzo(k)fluoranthene										
Beryllium										
Biphenyl,1,1-	5.77E-04	1.48E-04	5.50E-04	2.26E-06		2.38E+01		1.05E+04	1.1E+04	K
Bis(2-chloroethyl)ether	1.38E-03	2.28E-03	1.39E-03	3.42E-07	3.00E-01		8.76E+02		8.8E+02	K
Bis(2-chloroisopropyl)ether	8.69E-04	3.19E-04	8.45E-04	1.31E-06	1.90E-01	1.46E+02	1.45E+02	1.12E+05	1.4E+02	J
Bis(2-ethyl-hexyl)phthalate										
Bromodichloromethane	4.12E-04	3.62E-05	3.51E-04	7.69E-06	1.07E-01	7.30E+01	1.39E+01	9.49E+03	1.4E+01	J
Bromoform	2.23E-04	1.05E-04	2.18E-04	1.60E-06	1.72E+00	7.30E+01	1.08E+03	4.56E+04	1.1E+03	J
Bromomethane	9.90E-04	1.11E-05	4.01E-04	3.40E-05	#VALUE!	5.22E+00	#VALUE!	1.53E+02	1.5E+02	J
Butyl benzyl phthalate										
Cadmium										
Carbon Disulfide	1.41E-03	2.47E-06	1.34E-04	5.58E-05		7.14E+01		1.28E+03	1.3E+03	K
Carbon Tetrachloride	1.06E-03	2.08E-06	1.12E-04	4.66E-05	6.67E+00		1.43E+02		1.4E+02	K
Chlordane										
Chloroaniline,p-										
Chlorobenzene	9.94E-04	1.33E-05	4.45E-04	2.26E-05		1.10E+03		4.87E+04	4.9E+04	K
Chlorodibromomethane	2.80E-04	7.31E-05	2.68E-04	2.87E-06	7.90E-02	7.30E+01	2.75E+01	2.54E+04	2.8E+01	J
Chloroethane (Ethylchloride)	3.68E-03	8.87E-06	4.66E-04	5.62E-05		6.29E+04		1.12E+06	1.1E+06	K
Chloroform	1.41E-03	1.55E-05	5.65E-04	2.84E-05	4.30E+00		1.51E+02		1.5E+02	K
Chloromethane	1.71E-03	4.84E-06	2.49E-04	3.00E-05	5.56E+01		1.85E+03		1.9E+03	K

LDEQ REAP
WORKSHEET 15
GWairni
(mg/l)

Volatile releases from groundwater to ambient air-Non-industrial					Derivation of Management Option 2 RS					
Revision Date: 08/04/2003					Run date:	6/28/2011				
INPUTS TO GROUNDWATER TO AMBIENT AIR MODEL-NONINDUSTRIAL						Site-Specific				
volumetric air content in capillary fringe					nacap =	0.015	cm3-air/cm3-soil			
volumetric water content in capillary fringe					nwcap =	0.345	cm3-water/cm3-soil			
total porosity of capillary fringe soil					nc =	0.36	cm3/cm3			
thickness of capillary fringe					hcap =	5	cm			
thickness of vadose zone					hv =	295	cm			
depth to groundwater					Lgw =	300	cm			
wind speed above ground surface in ambient mixing zone					Uair =	225	cm/s			
width of source area parallel to wind					W =	4511	cm			
ambient air mixing zone height					dair =	200	cm			
Ds = Da*na^3.33/n^2+Dw*1/(H*41)*nw^3.33/n^2										
Dcap = Da*nacap^3.33/nc^2+Dw*1/(H*41)*nwcap^3.33/nc^2										
Dws = (hcap+hv)/(hcap/Dcap+hv/Ds)										
VFgwairni = (H*41*1000)/[1+(Uair*dair*Lgw)/(W*Dws)]										
Cani C-O = (TR*ATc*365*1000)/(EFni*SFi*IRAadj)										
Cani N-O = (THQ*RfDi*BWa*ATnni*365*1000)/(IRAa*EFni*EDni)										
GWairni = Cani*0.001/VFgwairni										
	Ds	Dcap	Dws	VFgwairni	Cani	Cani	GWairi	GWairi	min value	Note
COMPOUND	(cm2/s)	(cm2/s)	(cm2/s)	(mg/m3/mg/l)	C-O (ug/m3)	N-O (ug/m3)	C-O(mg/l)	N-O(mg/l)	(C or N)	
Chloronaphthalene,2-	5.01E-04	1.55E-04	4.83E-04	2.05E-06	#VALUE!	2.92E+02	#VALUE!	1.42E+05	1.4E+05	J
Chlorophenol,2-	7.06E-04	1.32E-04	6.58E-04	3.52E-06	#VALUE!	1.83E+01	#VALUE!	5.18E+03	5.2E+03	J
Chromium(III)										
Chromium(VI)										
Chrysene										
Cobalt										
Copper										
Cyanide (free)										
DDD										
DDE										
DDT										
Dibenz(a,h)anthracene										
Dibenzofuran	8.47E-04	2.51E-03	8.57E-04	1.53E-07	#VALUE!	1.46E+01	#VALUE!	9.57E+04	9.6E+04	J
Dibromo-3-chloropropane,1,2-										
Dichlorobenzene,1,2-	9.41E-04	2.31E-05	5.66E-04	1.47E-05	#VALUE!	2.08E+02	#VALUE!	1.41E+04	1.4E+04	J
Dichlorobenzene,1,3-	8.74E-04	1.21E-05	4.00E-04	1.81E-05	#VALUE!	3.29E+00	#VALUE!	1.82E+02	1.8E+02	J
Dichlorobenzene,1,4-	9.40E-04	1.81E-05	5.09E-04	1.69E-05		1.43E+03		8.44E+04	8.4E+04	K
Dichlorobenzidine,3,3-										
Dichloroethane,1,1-	1.01E-03	1.06E-05	3.94E-04	3.03E-05	#VALUE!	5.22E+02	#VALUE!	1.72E+04	1.7E+04	J
Dichloroethane,1,2-	1.42E-03	5.57E-05	1.01E-03	1.35E-05	3.85E+00		2.84E+02		2.8E+02	K
Dichloroethene,1,1-	1.22E-03	2.75E-06	1.46E-04	5.21E-05	#VALUE!	2.08E+02	#VALUE!	3.99E+03	4.0E+03	J
Dichloroethene,cis,1,2-	1.00E-03	1.55E-05	4.87E-04	2.72E-05	#VALUE!	3.65E+01	#VALUE!	1.34E+03	1.3E+03	J
Dichloroethene,trans,1,2-	9.61E-04	7.36E-06	3.04E-04	3.91E-05	#VALUE!	7.30E+01	#VALUE!	1.87E+03	1.9E+03	J
Dichlorophenol,2,4-										
Dichloropropane,1,2-	1.06E-03	1.75E-05	5.33E-04	2.04E-05		8.26E+03		4.04E+05	4.0E+05	K
Dichloropropene,1,3-	8.56E-04	3.11E-05	5.94E-04	1.44E-05		1.07E+02		7.43E+03	7.4E+03	K
Dieldrin										
Diethylphthalate										
Dimethylphenol,2,4-										
Dimethylphthalate										
Di-n-octylphthalate										
Dinitrobenzene,1,3-										
Dinitrophenol,2,4-										

LDEQ REAP
WORKSHEET 15
GWairni
(mg/l)

Volatile releases from groundwater to ambient air-Non-industrial					Derivation of Management Option 2 RS					
Revision Date: 08/04/2003					Run date:	6/28/2011				
INPUTS TO GROUNDWATER TO AMBIENT AIR MODEL-NONINDUSTRIAL						Site-Specific				
volumetric air content in capillary fringe					nacap =	0.015	cm3-air/cm3-soil			
volumetric water content in capillary fringe					nwcap =	0.345	cm3-water/cm3-soil			
total porosity of capillary fringe soil					nc =	0.36	cm3/cm3			
thickness of capillary fringe					hcap =	5	cm			
thickness of vadose zone					hv =	295	cm			
depth to groundwater					Lgw =	300	cm			
wind speed above ground surface in ambient mixing zone					Uair =	225	cm/s			
width of source area parallel to wind					W =	4511	cm			
ambient air mixing zone height					dair =	200	cm			
Ds = Da*na^3.33/n^2+Dw*1/(H*41)*nw^3.33/n^2										
Dcap = Da*nacap^3.33/nc^2+Dw*1/(H*41)*nwcap^3.33/nc^2										
Dws = (hcap+hv)/(hcap/Dcap+hv/Ds)										
VFgwairni = (H*41*1000)/[1+(Uair*dair*Lgw)/(W*Dws)]										
Cani C-O = (TR*ATc*365*1000)/(EFni*SFi*IRAadj)										
Cani N-O = (THQ*RfDi*BWa*ATnni*365*1000)/(IRAa*EFni*EDni)										
GWairni = Cani*0.001/VFgwairni										
	Ds	Dcap	Dws	VFgwairni	Cani	Cani	GWairi	GWairi	min value	Note
COMPOUND	(cm2/s)	(cm2/s)	(cm2/s)	(mg/m3/mg/l)	C-O (ug/m3)	N-O (ug/m3)	C-O(mg/l)	N-O(mg/l)	(C or N)	
Dinitrotoluene,2,6-										
Dinitrotoluene,2,4-										
Dinoseb										
Endosulfan										
Endrin										
Ethyl benzene	1.02E-03	5.87E-06	2.63E-04	2.84E-05		1.03E+04		3.63E+05	3.6E+05	K
Fluoranthene										
Fluorene	6.23E-04	6.74E-04	6.24E-04	5.43E-07	#VALUE!	1.46E+02	#VALUE!	2.69E+05	2.7E+05	J
Heptachlor										
Heptachlor epoxide										
Hexachlorobenzene	7.41E-04	2.47E-05	4.99E-04	9.03E-06	2.00E-01		2.21E+01		2.2E+01	K
Hexachlorobutadiene										
Hexachlorocyclohexane,alpha										
Hexachlorocyclohexane,beta										
Hexachlorocyclohexane,gamma										
Hexachlorocyclopentadiene	2.19E-04	1.56E-06	6.58E-05	2.43E-05	#VALUE!	2.08E-01	#VALUE!	8.55E+00	8.5E+00	J
Hexachloroethane	3.58E-05	9.52E-06	3.42E-05	1.82E-06	2.50E+01		1.37E+04		1.4E+04	K
Indeno(1,2,3-cd)pyrene										
Isobutyl alcohol										
Isophorone										
Lead (inorganic)										
Mercury (inorganic)										
Methoxychlor										
Methylene chloride	1.38E-03	2.97E-05	7.84E-04	2.35E-05	2.13E+02		9.04E+03		9.0E+03	K
Methyl ethyl ketone	1.28E-03	9.52E-04	1.27E-03	9.77E-07		1.40E+04		1.43E+07	1.4E+07	K
Methyl isobutyl ketone	1.08E-03	3.04E-04	1.03E-03	1.98E-06		4.88E+03		2.46E+06	2.5E+06	K
Methylnaphthalene,2-	7.94E-04	7.36E-04	7.93E-04	6.30E-07	#VALUE!	3.14E+00	#VALUE!	4.98E+03	5.0E+03	J
MTBE (methyl tert-butyl ether)	1.40E-03	9.80E-05	1.15E-03	9.24E-06	#VALUE!	3.13E+03	#VALUE!	3.39E+05	3.4E+05	J
Naphthalene	8.17E-04	8.48E-05	7.15E-04	4.73E-06	#VALUE!	3.14E+00	#VALUE!	6.64E+02	6.6E+02	J
Nickel										
Nitrate										
Nitrite										
Nitroaniline,2-	9.76E-04	4.15E-04	9.54E-04	1.27E-06	#VALUE!	1.06E-01	#VALUE!	8.33E+01	8.3E+01	J

LDEQ REAP
WORKSHEET 15
GWairni
(mg/l)

Volatile releases from groundwater to ambient air-Non-industrial					Derivation of Management Option 2 RS					
Revision Date: 08/04/2003					Run date:	6/28/2011				
INPUTS TO GROUNDWATER TO AMBIENT AIR MODEL-NONINDUSTRIAL						Site-Specific				
volumetric air content in capillary fringe					nacap =	0.015	cm3-air/cm3-soil			
volumetric water content in capillary fringe					nwcap =	0.345	cm3-water/cm3-soil			
total porosity of capillary fringe soil					nc =	0.36	cm3/cm3			
thickness of capillary fringe					hcap =	5	cm			
thickness of vadose zone					hv =	295	cm			
depth to groundwater					Lgw =	300	cm			
wind speed above ground surface in ambient mixing zone					Uair =	225	cm/s			
width of source area parallel to wind					W =	4511	cm			
ambient air mixing zone height					dair =	200	cm			
Ds = Da*na^3.33/n^2+Dw*1/(H*41)*nw^3.33/n^2										
Dcap = Da*nacap^3.33/nc^2+Dw*1/(H*41)*nwcap^3.33/nc^2										
Dws = (hcap+hv)/(hcap/Dcap+hv/Ds)										
VFgwairni = (H*41*1000)/[1+(Uair*dair*Lgw)/(W*Dws)]										
Cani C-O = (TR*ATc*365*1000)/(EFni*SFi*IRAadj)										
Cani N-O = (THQ*RfDi*BWa*ATnni*365*1000)/(IRAa*EFni*EDni)										
GWairni = Cani*0.001/VFgwairni										
	Ds	Dcap	Dws	VFgwairni	Cani	Cani	GWairi	GWairi	min value	Note
COMPOUND	(cm2/s)	(cm2/s)	(cm2/s)	(mg/m3/mg/l)	C-O (ug/m3)	N-O (ug/m3)	C-O(mg/l)	N-O(mg/l)	(C or N)	
Nitroaniline,3-	5.38E-02	2.74E-01	5.45E-02	1.10E-07	#VALUE!	1.10E+01	#VALUE!	9.98E+04	1.0E+05	J
Nitroaniline,4-										
Nitrobenzene	1.41E-03	1.95E-03	1.41E-03	4.65E-07		1.19E+02		2.56E+05	2.6E+05	K
Nitrophenol,4-										
Nitrosodi-n-propylamine,n-										
N-nitrosodiphenylamine										
Pentachlorophenol										
Phenanthrene	7.89E-04	1.81E-03	7.96E-04	2.54E-07	#VALUE!	1.10E+03	#VALUE!	4.31E+06	4.3E+06	J
Phenol	2.52E-02	1.25E-01	2.55E-02	1.39E-07	#VALUE!	1.10E+03	#VALUE!	7.89E+06	7.9E+06	J
Polychlorinated biphenyls										
Pyrene	1.06E-03	3.58E-03	1.07E-03	1.62E-07	#VALUE!	1.10E+02	#VALUE!	6.77E+05	6.8E+05	J
Selenium										
Silver										
Styrene	9.67E-04	1.63E-05	4.90E-04	1.85E-05		1.00E+03		5.42E+04	5.4E+04	K
Tetrachlorobenzene,1,2,4,5-										
Tetrachloroethane,1,1,1,2-	8.18E-04	1.56E-05	4.40E-04	1.45E-05	1.00E-01		6.91E+00		6.9E+00	K
Tetrachloroethane,1,1,2,2-	9.88E-04	1.25E-04	8.86E-04	4.19E-06	1.70E+00		4.06E+02		4.1E+02	K
Tetrachloroethylene	9.78E-04	2.89E-06	1.48E-04	3.73E-05	1.10E+02		2.95E+03		3.0E+03	K
Tetrachlorophenol,2,3,4,6-										
Thallium										
Toluene	1.18E-03	7.61E-06	3.31E-04	3.01E-05		4.00E+02		1.33E+04	1.3E+04	K
Toxaphene										
Trichlorobenzene,1,2,4-	4.13E-04	3.17E-05	3.44E-04	6.70E-06	#VALUE!	2.08E+02	#VALUE!	3.11E+04	3.1E+04	J
Trichloroethane,1,1,1-	1.06E-03	3.29E-06	1.67E-04	3.93E-05	#VALUE!	1.04E+03	#VALUE!	2.65E+04	2.7E+04	J
Trichloroethane,1,1,2-	1.07E-03	5.29E-05	8.10E-04	1.01E-05	6.30E+00		6.22E+02		6.2E+02	K
Trichloroethene	1.07E-03	5.32E-06	2.47E-04	3.49E-05	5.90E+01		1.69E+03		1.7E+03	K
Trichlorofluoromethane	1.18E-03	1.11E-06	6.31E-05	8.39E-05	#VALUE!	7.30E+02	#VALUE!	8.70E+03	8.7E+03	J
Trichlorophenol,2,4,5-										
Trichlorophenol,2,4,6-										
Vanadium										
Vinyl chloride	1.44E-03	9.38E-07	5.42E-05	2.01E-05	1.20E+00		5.98E+01		6.0E+01	K
Xylene(mixed)	9.51E-04	6.04E-06	2.64E-04	2.74E-05	#VALUE!	1.06E+02	#VALUE!	3.86E+03	3.9E+03	J
Zinc										

LDEQ REAP
WORKSHEET 15
GWairni
(mg/l)

Volatile releases from groundwater to ambient air-Non-industrial					Derivation of Management Option 2 RS					
Revision Date: 08/04/2003					Run date:	6/28/2011				
INPUTS TO GROUNDWATER TO AMBIENT AIR MODEL-NONINDUSTRIAL						Site-Specific				
volumetric air content in capillary fringe					nacap =	0.015	cm3-air/cm3-soil			
volumetric water content in capillary fringe					nwcap =	0.345	cm3-water/cm3-soil			
total porosity of capillary fringe soil					nc =	0.36	cm3/cm3			
thickness of capillary fringe					hcap =	5	cm			
thickness of vadose zone					hv =	295	cm			
depth to groundwater					Lgw =	300	cm			
wind speed above ground surface in ambient mixing zone					Uair =	225	cm/s			
width of source area parallel to wind					W =	4511	cm			
ambient air mixing zone height					dair =	200	cm			
Ds = Da*na^3.33/n^2+Dw*1/(H*41)*nw^3.33/n^2										
Dcap = Da*nacap^3.33/nc^2+Dw*1/(H*41)*nwcap^3.33/nc^2										
Dws = (hcap+hv)/(hcap/Dcap+hv/Ds)										
VFgwairni = (H*41*1000)/[1+(Uair*dair*Lgw)/(W*Dws)]										
Cani C-O = (TR*ATc*365*1000)/(EFni*SFi*IRAadj)										
Cani N-O = (THQ*RfDi*BWa*ATnni*365*1000)/(IRAa*EFni*EDni)										
GWairni = Cani*0.001/VFgwairni										
	Ds	Dcap	Dws	VFgwairni	Cani	Cani	GWairi	GWairi	min value	Note
COMPOUND	(cm2/s)	(cm2/s)	(cm2/s)	(mg/m3/mg/l)	C-O (ug/m3)	N-O (ug/m3)	C-O(mg/l)	N-O(mg/l)	(C or N)	
Aliphatics C6-C8	1.36E-03	6.96E-07	4.05E-05	6.77E-04		1.93E+04		2.86E+04	2.9E+04	J
Aliphatics >C8-C10	1.36E-03	6.79E-07	3.96E-05	1.06E-03		1.06E+03		1.00E+03	1.0E+03	J
Aliphatics >C10-C12	1.36E-03	6.70E-07	3.91E-05	1.57E-03		1.10E+03		6.98E+02	7.0E+02	J
Aliphatics >C12-C16	1.36E-03	6.56E-07	3.82E-05	6.65E-03		1.10E+03		1.65E+02	1.6E+02	J
Aliphatics >C16-C35										
Aromatics >C8-C10	1.36E-03	5.30E-06	2.59E-04	4.14E-05		2.19E+02		5.29E+03	5.3E+03	J
Aromatics >C10-C12	1.36E-03	1.66E-05	5.79E-04	2.71E-05		2.19E+02		8.09E+03	8.1E+03	J
Aromatics >C12-C16	1.37E-03	4.28E-05	9.02E-04	1.59E-05		2.19E+02		1.37E+04	1.4E+04	J
Aromatics >C16-C21										
Aromatics >C21-C35										
TPH-GRO (C6-C10)						2.19E+02			1.0E+03	
TPH-DRO (C10-C28)										
TPH-ORO (>C28)										
J - Risk-based value calculated with one of the equations EQ 56 thru 59.										
K - Louisiana Toxic Air Pollutant Ambient Air Standards (LAC 33:III.5112 Table 51.2).										

LDEQ RECAP
WORKSHEET 16
GWairi
(mg/l)

Volatile releases from groundwater to ambient air-Industrial					Derivation of Management Option 2 RS					
Revision Date: 08/04/2003					Run date:	6/28/2011				
INPUTS TO GROUNDWATER TO AMBIENT AIR MODEL-INDUSTRIAL					Site-Specific					
volumetric air content in capillary fringe				nacap =	0.015	cm3-air/cm3-soil				
volumetric water content in capillary fringe				nwcap =	0.345	cm3-water/cm3-soil				
total porosity of capillary fringe soil				nc =	0.36	cm3/cm3				
thickness of capillary fringe				hcap =	5	cm				
thickness of vadose zone				hv =	295	cm				
depth to groundwater				Lgw =	300	cm				
wind speed above ground surface in ambient mixing zone				Uair =	225	cm/s				
width of source area parallel to wind				W =	4511	cm				
ambient air mixing zone height				dair =	200	cm				
Ds = Da*na^3.33/n^2+Dw*1/(H*41)*nw^3.33/n^2										
Dcap = Da*nacap^3.33/nc^2+Dw*1/(H*41)*nwcap^3.33/nc^2										
Dws = (hcap+hv)/(hcap/Dcap+hv/Ds)										
VFgwairi = (H*41*1000)/[1+(Uair*dair*Lgw)/(W*Dws)]										
Cai C-O = (TR*BWa*ATc*365*1000)/(SFi*IRAa*EFi*EDi)										
Cai N-O = (THQ*RfDi*BWa*ATni*365*1000)/(IRAa*EFi*EDi)										
GWairi = Cai*0.001/VFgwairi										
	Ds	Dcap	Dws	VFgwairi	Cai	Cai	GWairi	GWairi	min value	Note
COMPOUND	(cm2/s)	(cm2/s)	(cm2/s)	(mg/m3/mg/l)	C-O (ug/m3)	N-O (ug/m3)	C-O(mg/l)	N-O(mg/l)	(C or N)	
Acenaphthene	6.24E-04	2.70E-04	6.10E-04	1.30E-06	#VALUE!	3.07E+02	#VALUE!	2.37E+05	2.4E+05	J
Acenaphthylene	6.65E-04	3.60E-04	6.56E-04	1.02E-06	#VALUE!	3.07E+02	#VALUE!	2.99E+05	3.0E+05	J
Acetone	1.99E-03	1.60E-03	1.98E-03	1.05E-06	#VALUE!	5.11E+02	#VALUE!	4.85E+05	4.8E+05	J
Aldrin										
Aniline										
Anthracene	5.65E-04	6.48E-04	5.66E-04	5.04E-07	#VALUE!	1.53E+03	#VALUE!	3.04E+06	3.0E+06	J
Antimony										
Arsenic										
Barium										
Benzene	1.20E-03	1.02E-05	4.07E-04	3.09E-05	1.20E+01		3.88E+02		3.9E+02	K
Benz(a)anthracene										
Benzo(a)pyrene										
Benzo(b)fluoranthene										
Benzo(k)fluoranthene										
Beryllium										
Biphenyl,1,1-	5.77E-04	1.48E-04	5.50E-04	2.26E-06		2.38E+01		1.05E+04	1.1E+04	K
Bis(2-chloroethyl)ether	1.38E-03	2.28E-03	1.39E-03	3.42E-07	3.00E-01		8.76E+02		8.8E+02	K
Bis(2-chloroisopropyl)ether	8.69E-04	3.19E-04	8.45E-04	1.31E-06	4.09E-01	2.04E+02	3.12E+02	1.56E+05	3.1E+02	J
Bis(2-ethyl-hexyl)phthalate										
Bromodichloromethane	4.12E-04	3.62E-05	3.51E-04	7.69E-06	2.31E-01	1.02E+02	3.00E+01	1.33E+04	3.0E+01	J
Bromoform	2.23E-04	1.05E-04	2.18E-04	1.60E-06	3.72E+00	1.02E+02	2.32E+03	6.38E+04	2.3E+03	J
Bromomethane	9.90E-04	1.11E-05	4.01E-04	3.40E-05	#VALUE!	7.31E+00	#VALUE!	2.15E+02	2.1E+02	J
Butyl benzyl phthalate										
Cadmium										
Carbon Disulfide	1.41E-03	2.47E-06	1.34E-04	5.58E-05		7.14E+01		1.28E+03	1.3E+03	K
Carbon Tetrachloride	1.06E-03	2.08E-06	1.12E-04	4.66E-05	6.67E+00		1.43E+02		1.4E+02	K
Chlordane										
Chloroaniline,p-										
Chlorobenzene	9.94E-04	1.33E-05	4.45E-04	2.26E-05		1.10E+03		4.87E+04	4.9E+04	K
Chlorodibromomethane	2.80E-04	7.31E-05	2.68E-04	2.87E-06	1.70E-01	1.02E+02	5.93E+01	3.56E+04	5.9E+01	J
Chloroethane (Ethylchloride)	3.68E-03	8.87E-06	4.66E-04	5.62E-05		6.29E+04		1.12E+06	1.1E+06	K
Chloroform	1.41E-03	1.55E-05	5.65E-04	2.84E-05	4.30E+00		1.51E+02		1.5E+02	K
Chloromethane	1.71E-03	4.84E-06	2.49E-04	3.00E-05	5.56E+01		1.85E+03		1.9E+03	K

LDEQ RECAP
WORKSHEET 16
GWairi
(mg/l)

Volatile releases from groundwater to ambient air-Industrial					Derivation of Management Option 2 RS					
Revision Date: 08/04/2003					Run date:	6/28/2011				
INPUTS TO GROUNDWATER TO AMBIENT AIR MODEL-INDUSTRIAL					Site-Specific					
volumetric air content in capillary fringe				nacap =	0.015	cm3-air/cm3-soil				
volumetric water content in capillary fringe				nwcap =	0.345	cm3-water/cm3-soil				
total porosity of capillary fringe soil				nc =	0.36	cm3/cm3				
thickness of capillary fringe				hcap =	5	cm				
thickness of vadose zone				hv =	295	cm				
depth to groundwater				Lgw =	300	cm				
wind speed above ground surface in ambient mixing zone				Uair =	225	cm/s				
width of source area parallel to wind				W =	4511	cm				
ambient air mixing zone height				dair =	200	cm				
Ds = Da*na^3.33/n^2+Dw*1/(H*41)*nw^3.33/n^2										
Dcap = Da*nacap^3.33/nc^2+Dw*1/(H*41)*nwcap^3.33/nc^2										
Dws = (hcap+hv)/(hcap/Dcap+hv/Ds)										
VFgwairi = (H*41*1000)/[1+(Uair*dair*Lgw)/(W*Dws)]										
Cai C-O = (TR*BWa*ATc*365*1000)/(SFi*IRAa*EFi*EDi)										
Cai N-O = (THQ*RfDi*BWa*ATni*365*1000)/(IRAa*EFi*EDi)										
GWairi = Cai*0.001/VFgwairi										
	Ds	Dcap	Dws	VFgwairi	Cai	Cai	GWairi	GWairi	min value	Note
COMPOUND	(cm2/s)	(cm2/s)	(cm2/s)	(mg/m3/mg/l)	C-O (ug/m3)	N-O (ug/m3)	C-O(mg/l)	N-O(mg/l)	(C or N)	
Chloronaphthalene,2-	5.01E-04	1.55E-04	4.83E-04	2.05E-06	#VALUE!	4.09E+02	#VALUE!	1.99E+05	2.0E+05	J
Chlorophenol,2-	7.06E-04	1.32E-04	6.58E-04	3.52E-06	#VALUE!	2.56E+01	#VALUE!	7.25E+03	7.2E+03	J
Chromium(III)										
Chromium(VI)										
Chrysene										
Cobalt										
Copper										
Cyanide (free)										
DDD										
DDE										
DDT										
Dibenz(a,h)anthracene										
Dibenzofuran	8.47E-04	2.51E-03	8.57E-04	1.53E-07	#VALUE!	2.04E+01	#VALUE!	1.34E+05	1.3E+05	J
Dibromo-3-chloropropane,1,2-										
Dichlorobenzene,1,2-	9.41E-04	2.31E-05	5.66E-04	1.47E-05	#VALUE!	2.91E+02	#VALUE!	1.98E+04	2.0E+04	J
Dichlorobenzene,1,3-	8.74E-04	1.21E-05	4.00E-04	1.81E-05	#VALUE!	4.60E+00	#VALUE!	2.54E+02	2.5E+02	J
Dichlorobenzene,1,4-	9.40E-04	1.81E-05	5.09E-04	1.69E-05		1.43E+03		8.44E+04	8.4E+04	K
Dichlorobenzidine,3,3-										
Dichloroethane,1,1-	1.01E-03	1.06E-05	3.94E-04	3.03E-05	#VALUE!	7.31E+02	#VALUE!	2.41E+04	2.4E+04	J
Dichloroethane,1,2-	1.42E-03	5.57E-05	1.01E-03	1.35E-05	3.85E+00		2.84E+02		2.8E+02	K
Dichloroethene,1,1-	1.22E-03	2.75E-06	1.46E-04	5.21E-05	#VALUE!	2.91E+02	#VALUE!	5.59E+03	5.6E+03	J
Dichloroethene,cis,1,2-	1.00E-03	1.55E-05	4.87E-04	2.72E-05	#VALUE!	5.11E+01	#VALUE!	1.88E+03	1.9E+03	J
Dichloroethene,trans,1,2-	9.61E-04	7.36E-06	3.04E-04	3.91E-05	#VALUE!	1.02E+02	#VALUE!	2.61E+03	2.6E+03	J
Dichlorophenol,2,4-										
Dichloropropane,1,2-	1.06E-03	1.75E-05	5.33E-04	2.04E-05		8.26E+03		4.04E+05	4.0E+05	K
Dichloropropene,1,3-	8.56E-04	3.11E-05	5.94E-04	1.44E-05		1.07E+02		7.43E+03	7.4E+03	K
Dieldrin										
Diethylphthalate										
Dimethylphenol,2,4-										
Dimethylphthalate										
Di-n-octylphthalate										
Dinitrobenzene,1,3-										
Dinitrophenol,2,4-										

LDEQ RECAP
WORKSHEET 16
GWairi
(mg/l)

Volatile releases from groundwater to ambient air-Industrial					Derivation of Management Option 2 RS					
Revision Date: 08/04/2003					Run date:	6/28/2011				
INPUTS TO GROUNDWATER TO AMBIENT AIR MODEL-INDUSTRIAL					Site-Specific					
volumetric air content in capillary fringe				nacap =	0.015	cm3-air/cm3-soil				
volumetric water content in capillary fringe				nwcap =	0.345	cm3-water/cm3-soil				
total porosity of capillary fringe soil				nc =	0.36	cm3/cm3				
thickness of capillary fringe				hcap =	5	cm				
thickness of vadose zone				hv =	295	cm				
depth to groundwater				Lgw =	300	cm				
wind speed above ground surface in ambient mixing zone				Uair =	225	cm/s				
width of source area parallel to wind				W =	4511	cm				
ambient air mixing zone height				dair =	200	cm				
Ds = Da*na^3.33/n^2+Dw*1/(H*41)*nw^3.33/n^2										
Dcap = Da*nacap^3.33/nc^2+Dw*1/(H*41)*nwcap^3.33/nc^2										
Dws = (hcap+hv)/(hcap/Dcap+hv/Ds)										
VFgwairi = (H*41*1000)/[1+(Uair*dair*Lgw)/(W*Dws)]										
Cai C-O = (TR*BWa*ATc*365*1000)/(SFi*IRAa*EFi*EDi)										
Cai N-O = (THQ*RfDi*BWa*ATni*365*1000)/(IRAa*EFi*EDi)										
GWairi = Cai*0.001/VFgwairi										
	Ds	Dcap	Dws	VFgwairi	Cai	Cai	GWairi	GWairi	min value	Note
COMPOUND	(cm2/s)	(cm2/s)	(cm2/s)	(mg/m3/mg/l)	C-O (ug/m3)	N-O (ug/m3)	C-O(mg/l)	N-O(mg/l)	(C or N)	
Dinitrotoluene,2,6-										
Dinitrotoluene,2,4-										
Dinoseb										
Endosulfan										
Endrin										
Ethyl benzene	1.02E-03	5.87E-06	2.63E-04	2.84E-05		1.03E+04		3.63E+05	3.6E+05	K
Fluoranthene										
Fluorene	6.23E-04	6.74E-04	6.24E-04	5.43E-07	#VALUE!	2.04E+02	#VALUE!	3.76E+05	3.8E+05	J
Heptachlor										
Heptachlor epoxide										
Hexachlorobenzene	7.41E-04	2.47E-05	4.99E-04	9.03E-06	2.00E-01		2.21E+01		2.2E+01	K
Hexachlorobutadiene										
Hexachlorocyclohexane,alpha										
Hexachlorocyclohexane,beta										
Hexachlorocyclohexane,gamma										
Hexachlorocyclopentadiene	2.19E-04	1.56E-06	6.58E-05	2.43E-05	#VALUE!	2.91E-01	#VALUE!	1.20E+01	1.2E+01	J
Hexachloroethane	3.58E-05	9.52E-06	3.42E-05	1.82E-06	2.50E+01		1.37E+04		1.4E+04	K
Indeno(1,2,3-cd)pyrene										
Isobutyl alcohol										
Isophorone										
Lead (inorganic)										
Mercury (inorganic)										
Methoxychlor										
Methylene chloride	1.38E-03	2.97E-05	7.84E-04	2.35E-05	2.13E+02		9.04E+03		9.0E+03	K
Methyl ethyl ketone	1.28E-03	9.52E-04	1.27E-03	9.77E-07		1.40E+04		1.43E+07	1.4E+07	K
Methyl isobutyl ketone	1.08E-03	3.04E-04	1.03E-03	1.98E-06		4.88E+03		2.46E+06	2.5E+06	K
Methylnaphthalene,2-	7.94E-04	7.36E-04	7.93E-04	6.30E-07	#VALUE!	4.39E+00	#VALUE!	6.98E+03	7.0E+03	J
MTBE (methyl tert-butyl ether)	1.40E-03	9.80E-05	1.15E-03	9.24E-06	#VALUE!	4.38E+03	#VALUE!	4.74E+05	4.7E+05	J
Naphthalene	8.17E-04	8.48E-05	7.15E-04	4.73E-06	#VALUE!	4.39E+00	#VALUE!	9.29E+02	9.3E+02	J
Nickel										
Nitrate										
Nitrite										
Nitroaniline,2-	9.76E-04	4.15E-04	9.54E-04	1.27E-06	#VALUE!	1.48E-01	#VALUE!	1.17E+02	1.2E+02	J

LDEQ RECAP
WORKSHEET 16
GWairi
(mg/l)

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total porosity of capillary fringe soil				nc =	0.36	cm3/cm3				
thickness of capillary fringe				hcap =	5	cm				
thickness of vadose zone				hv =	295	cm				
depth to groundwater				Lgw =	300	cm				
wind speed above ground surface in ambient mixing zone				Uair =	225	cm/s				
width of source area parallel to wind				W =	4511	cm				
ambient air mixing zone height				dair =	200	cm				
Ds = Da*na^3.33/n^2+Dw*1/(H*41)*nw^3.33/n^2										
Dcap = Da*nacap^3.33/nc^2+Dw*1/(H*41)*nwcap^3.33/nc^2										
Dws = (hcap+hv)/(hcap/Dcap+hv/Ds)										
VFgwairi = (H*41*1000)/[1+(Uair*dair*Lgw)/(W*Dws)]										
Cai C-O = (TR*BWa*ATc*365*1000)/(SFi*IRAa*EFi*EDi)										
Cai N-O = (THQ*RfDi*BWa*ATni*365*1000)/(IRAa*EFi*EDi)										
GWairi = Cai*0.001/VFgwairi										
	Ds	Dcap	Dws	VFgwairi	Cai	Cai	GWairi	GWairi	min value	Note
COMPOUND	(cm2/s)	(cm2/s)	(cm2/s)	(mg/m3/mg/l)	C-O (ug/m3)	N-O (ug/m3)	C-O(mg/l)	N-O(mg/l)	(C or N)	
Nitroaniline,3-	5.38E-02	2.74E-01	5.45E-02	1.10E-07	#VALUE!	1.53E+01	#VALUE!	1.40E+05	1.4E+05	J
Nitroaniline,4-										
Nitrobenzene	1.41E-03	1.95E-03	1.41E-03	4.65E-07		1.19E+02		2.56E+05	2.6E+05	K
Nitrophenol,4-										
Nitrosodi-n-propylamine,n-										
N-nitrosodiphenylamine										
Pentachlorophenol										
Phenanthrene	7.89E-04	1.81E-03	7.96E-04	2.54E-07	#VALUE!	1.53E+03	#VALUE!	6.03E+06	6.0E+06	J
Phenol	2.52E-02	1.25E-01	2.55E-02	1.39E-07	#VALUE!	1.53E+03	#VALUE!	1.10E+07	1.1E+07	J
Polychlorinated biphenyls										
Pyrene	1.06E-03	3.58E-03	1.07E-03	1.62E-07	#VALUE!	1.53E+02	#VALUE!	9.48E+05	9.5E+05	J
Selenium										
Silver										
Styrene	9.67E-04	1.63E-05	4.90E-04	1.85E-05		1.00E+03		5.42E+04	5.4E+04	K
Tetrachlorobenzene,1,2,4,5-										
Tetrachloroethane,1,1,1,2-	8.18E-04	1.56E-05	4.40E-04	1.45E-05	1.00E-01		6.91E+00		6.9E+00	K
Tetrachloroethane,1,1,2,2-	9.88E-04	1.25E-04	8.86E-04	4.19E-06	1.70E+00		4.06E+02		4.1E+02	K
Tetrachloroethylene	9.78E-04	2.89E-06	1.48E-04	3.73E-05	1.10E+02		2.95E+03		3.0E+03	K
Tetrachlorophenol,2,3,4,6-										
Thallium										
Toluene	1.18E-03	7.61E-06	3.31E-04	3.01E-05		4.00E+02		1.33E+04	1.3E+04	K
Toxaphene										
Trichlorobenzene,1,2,4-	4.13E-04	3.17E-05	3.44E-04	6.70E-06	#VALUE!	2.91E+02	#VALUE!	4.35E+04	4.3E+04	J
Trichloroethane,1,1,1-	1.06E-03	3.29E-06	1.67E-04	3.93E-05	#VALUE!	1.46E+03	#VALUE!	3.72E+04	3.7E+04	J
Trichloroethane,1,1,2-	1.07E-03	5.29E-05	8.10E-04	1.01E-05	6.30E+00		6.22E+02		6.2E+02	K
Trichloroethene	1.07E-03	5.32E-06	2.47E-04	3.49E-05	5.90E+01		1.69E+03		1.7E+03	K
Trichlorofluoromethane	1.18E-03	1.11E-06	6.31E-05	8.39E-05	#VALUE!	1.02E+03	#VALUE!	1.22E+04	1.2E+04	J
Trichlorophenol,2,4,5-										
Trichlorophenol,2,4,6-										
Vanadium										
Vinyl chloride	1.44E-03	9.38E-07	5.42E-05	2.01E-05	1.20E+00		5.98E+01		6.0E+01	K
Xylene(mixed)	9.51E-04	6.04E-06	2.64E-04	2.74E-05	#VALUE!	1.48E+02	#VALUE!	5.40E+03	5.4E+03	J
Zinc										

LDEQ RECAP
WORKSHEET 16
GWairi
(mg/l)

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Dcap = Da*nacap^3.33/nc^2+Dw*1/(H*41)*nwcap^3.33/nc^2										
Dws = (hcap+hv)/(hcap/Dcap+hv/Ds)										
VFgwairi = (H*41*1000)/[1+(Uair*dair*Lgw)/(W*Dws)]										
Cai C-O = (TR*BWa*ATc*365*1000)/(SFi*IRAa*EFi*EDi)										
Cai N-O = (THQ*RfDi*BWa*ATni*365*1000)/(IRAa*EFi*EDi)										
GWairi = Cai*0.001/VFgwairi										
	Ds	Dcap	Dws	VFgwairi	Cai	Cai	GWairi	GWairi	min value	Note
COMPOUND	(cm2/s)	(cm2/s)	(cm2/s)	(mg/m3/mg/l)	C-O (ug/m3)	N-O (ug/m3)	C-O(mg/l)	N-O(mg/l)	(C or N)	
Aliphatics C6-C8	1.36E-03	6.96E-07	4.05E-05	6.77E-04		1.93E+04		2.86E+04	2.9E+04	J
Aliphatics >C8-C10	1.36E-03	6.79E-07	3.96E-05	1.06E-03		1.06E+03		1.00E+03	1.0E+03	J
Aliphatics >C10-C12	1.36E-03	6.70E-07	3.91E-05	1.57E-03		1.10E+03		6.98E+02	7.0E+02	J
Aliphatics >C12-C16	1.36E-03	6.56E-07	3.82E-05	6.65E-03		1.10E+03		1.65E+02	1.6E+02	J
Aliphatics >C16-C35										
Aromatics >C8-C10	1.36E-03	5.30E-06	2.59E-04	4.14E-05		2.19E+02		5.29E+03	5.3E+03	J
Aromatics >C10-C12	1.36E-03	1.66E-05	5.79E-04	2.71E-05		2.19E+02		8.09E+03	8.1E+03	J
Aromatics >C12-C16	1.37E-03	4.28E-05	9.02E-04	1.59E-05		2.19E+02		1.37E+04	1.4E+04	J
Aromatics >C16-C21										
Aromatics >C21-C35										
TPH-GRO (C6-C10)						2.19E+02			1.0E+03	
TPH-DRO (C10-C28)										
TPH-ORO (>C28)										
J - Risk-based value calculated with one of the equations EQ 56 thru 59.										
K - Louisiana Toxic Air Pollutant Ambient Air Standards (LAC 33:III.5112 Table 51.2).										

APPENDIX E

ECOLOGICAL CHECKLIST – RECAP FORM 18

RECAP FORM 18
ECOLOGICAL CHECKLIST

Section 1 - Facility Information

1. Name of facility: Former Shell Retail Station No. 142059

2. Location of facility: 2300 S. Acadian Thruway
   Baton Rouge, LA

   Parish: East Baton Rouge Parish

3. Mailing address: P.O. Box 1087
   Huffman, TX 77336

4. Type of facility and/or operations associated with AOC: Gasoline Retail Facility

5. Name of AOC or AOI: AOI-1

6. If available, attach a USGS topographic map of the facility and/or aerial or other photographs of the release site and surrounding areas. See Figures 1 and 2, Appendix A

Section 2 - Land Use Information

1. Describe land use at and in the vicinity of the AOC/AOI: Currently the site is an active retail gasoline facility operated by Circle K. The area immediately surrounding the site consists of commercial to the south and east with residential on the north and west.

2. Describe land use adjacent to the facility: Land use surrounding the facility is primarily commercial and residential.

3. Provide the following information regarding the nearest surface water body which has been impacted or has the potential to be impacted by COC migrating from the AOC/AOC:

a) Name of the surface water body: Dawson Creek

b) Type of surface water body:

   [ ] freshwater river or stream
   [ ] freshwater swamp/marsh/wetland
   [ ] saltwater or brackish swamp/marsh/wetland
   [ ] lake or pond
   [ ] bayou or estuary
   [X] drainage ditch
   [ ] other:

c) Designated use of the segment/subsegment of the surface water body (LAC 33:IX): (041302) Primary and Secondary Contact Recreation and Propogation of Fish and Wildlife

d) Distance from the AOC/AOI to nearest surface water body: 115 feet

4. Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site, e.g., federal and state parks, national and state monuments, wetlands, etc? [ ] Yes [X] No

If yes, explain:

Section 3 - Release Information

1. Nature of the release: Presumed gasoline release from underground storage tank (UST) System

2. Location of the release (within the facility): Petroleum hydrocarbon impact detected in the vicinity of the UST system.

3. Location of the release with respect to the facility property boundaries: Release occurred from the UST system located in the northwestern portion of the property.

4. Constituents known or suspected have been released: Gasoline constituents

5. Indicate which media are known or suspected to be impacted and if sampling data are available:

[ ]	soil 0 - 3 feet bgs	[ ] yes [ ] no
[X]	soil 0 - 15 feet bgs	[X] yes [ ] no
[ ]	soil >15 feet bgs	[ ] yes [ ] no
[X]	groundwater	[X] yes [ ] no
[ ]	surface water/sediment	[ ] yes [ ] no

6. Has migration occurred outside the facility property boundaries? [ ] yes [X] no

   If yes, describe the designated use of the offsite land impacted:

Section 4 - Criteria for Further Assessment

If the AOI meets **all** of the criteria presented below, then typically no further ecological evaluation shall be required. If the AOI **does not** meet **all** of the criteria, then a screening level ecological risk shall be conducted. The Submitter should make the initial decision regarding whether or not a screening level ecological risk assessment is warranted based on compliance of the AOI with criteria listed below. After review of the ecological checklist and other available site information, the Department will make a final determination on the need for a screening level ecological risk assessment. If site conditions at the AOI change such that one or more of the criteria are not met, then a screening level ecological risk assessment shall be conducted. Answers shall be based on current site conditions (i.e., shall not consider future remedial actions or institutional or engineering controls).

Indicate if the AOI meets the following criteria:

(1) The area of impacted soil is approximately 5 acres or less in size (based on the AOI identified for the human health assessment) and it is not expected that the COC will migrate such that the soil AOI becomes greater than 5 acres in size. [X] yes [ ] no

(2) There is no current release or demonstrable long-term threat of release (via runoff or groundwater discharge) of COC from the AOI to a surface water body. [X] yes [ ] no

(3) Recreational species, commercial species, threatened or endangered species, and/or their habitats are not currently being exposed, or expected to be exposed, to COC present at or migrating from the AOI.
[X] yes [ ] no

(4) There are no obvious impacts to ecological receptors or their habitats and none are expected in the future.
[X] yes [ ] no

Is further ecological evaluation required at this AOI? [ ] yes [X] no

This determination is subject to Department concurrence.

Section 5 - Site Summary

The ecological checklist submittal shall include a site summary that presents sufficient information to verify that the AOI meets or does not meet the criteria for further assessment.

Section 6 - Submitter Information

Date: June 26, 2011

Name of person submitting this checklist: Larry Braud, P.G.

Affiliation: Groundwater & Environmental Services, Inc.

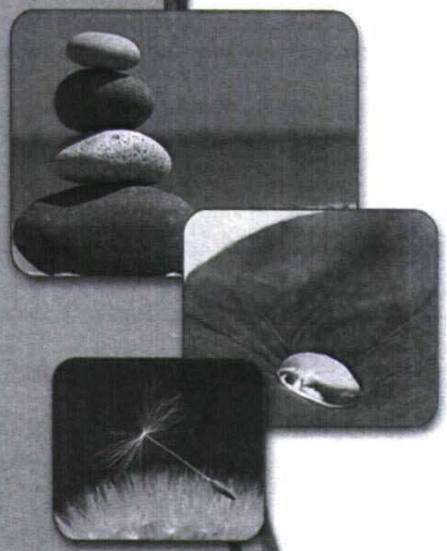
Signature: 

Date: 6/26/2011

Additional Preparers: Ryan Francis

APPENDIX F

ANALYTICAL LABORATORY REPORT AND FIELD SAMPLING DATA SHEET



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THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Nashville
2960 Foster Creighton Road
Nashville, TN 37204
Tel: 800-765-0980

TestAmerica Job ID: NUE2850
Client Project/Site: SAP 137475
Client Project Description:
2300 S Acadian Thruway, Baton Rouge

For:
GES (Baton Rouge) / Shell
307 France Street, Suite B
Baton Rouge, LA 70802

Attn: Lawrence Braud

Authorized for release by:
06/01/2011 03:54:17 PM

Leah R. Klingensmith
Senior Project Management
leah.klingensmith@testamericainc.com

Sample Summary

Client: GES (Baton Rouge) / Shell
Project/Site: SAP 137475

TestAmerica Job ID: NUE2850

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
NUE2850-01	RW-1	Water	05/16/11 11:10	05/17/11 09:15
NUE2850-02	DUP	Water	05/16/11 00:01	05/17/11 09:15
NUE2850-03	FB-1	Water	05/16/11 11:30	05/17/11 09:15
NUE2850-04	RINSATE	Water	05/16/11 11:10	05/17/11 09:15
NUE2850-05	TB	Water	05/16/11 00:01	05/17/11 09:15

Client: GES (Baton Rouge) / Shell
Project/Site: SAP 137475

TestAmerica Job ID: NUE2850

Client Sample ID: RW-1
Date Collected: 05/16/11 11:10
Date Received: 05/17/11 09:15

Lab Sample ID: NUE2850-01
Matrix: Water

Method: SW846 8260B - Volatile Organic Compounds by EPA Method 8260B - RE1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.800		0.100		mg/L		05/19/11 10:07	05/19/11 17:48	100

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4	*90*		*63 - 140*	*05/19/11 10:07*	*05/19/11 17:48*	*100*
Dibromofluoromethane	*98*		*73 - 131*	*05/19/11 10:07*	*05/19/11 17:48*	*100*
Toluene-d8	*101*		*80 - 120*	*05/19/11 10:07*	*05/19/11 17:48*	*100*
4-Bromofluorobenzene	*98*		*79 - 125*	*05/19/11 10:07*	*05/19/11 17:48*	*100*

Client: GES (Baton Rouge) / Shell
Project/Site: SAP 137475

TestAmerica Job ID: NUE2850

Client Sample ID: FB-1
Date Collected: 05/16/11 11:30
Date Received: 05/17/11 09:15

Lab Sample ID: NUE2850-03
Matrix: Water

Method: SW846 8260B - Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND	L	0.00100		mg/L		05/18/11 21:12	05/19/11 00:41	1.00

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4	*89*		*63 - 140*	*05/18/11 21:12*	*05/19/11 00:41*	*1.00*
Dibromofluoromethane	*98*		*73 - 131*	*05/18/11 21:12*	*05/19/11 00:41*	*1.00*
Toluene-d8	*101*		*80 - 120*	*05/18/11 21:12*	*05/19/11 00:41*	*1.00*
4-Bromofluorobenzene	*102*		*79 - 125*	*05/18/11 21:12*	*05/19/11 00:41*	*1.00*

Client: GES (Baton Rouge) / Shell
Project/Site: SAP 137475

TestAmerica Job ID: NUE2850

Client Sample ID: TB
Date Collected: 05/16/11 00:01
Date Received: 05/17/11 09:15

Lab Sample ID: NUE2850-05
Matrix: Water

Method: SW846 8260B - Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND	L	0.00100		mg/L		05/18/11 21:12	05/19/11 00:14	1.00

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4	*89*		*63 - 140*	*05/18/11 21:12*	*05/19/11 00:14*	*1.00*
Dibromofluoromethane	*97*		*73 - 131*	*05/18/11 21:12*	*05/19/11 00:14*	*1.00*
Toluene-d8	*100*		*80 - 120*	*05/18/11 21:12*	*05/19/11 00:14*	*1.00*
4-Bromofluorobenzene	*99*		*79 - 125*	*05/18/11 21:12*	*05/19/11 00:14*	*1.00*

Method: SW846 8260B - Volatile Organic Compounds by EPA Method 8260B (Continued)

Lab Sample ID: 11E4559-MS1
Matrix: Water
Analysis Batch: U008882

Client Sample ID: RW-1
Prep Type: Total
Prep Batch: 11E4559_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	% Rec	% Rec. Limits
Ethylbenzene	0.0659		0.0500	0.134		mg/L		136	68 - 157
Toluene	0.0352		0.0500	0.0995		mg/L		129	61 - 153
Xylenes, total	0.0301		0.150	0.210		mg/L		120	68 - 158

Surrogate	*Matrix Spike % Recovery*	*Matrix Spike Qualifier*	*Limits*
1,2-Dichloroethane-d4	*101*		*63 - 140*
Dibromofluoromethane	*93*		*73 - 131*
Toluene-d8	*101*		*80 - 120*
4-Bromofluorobenzene	*102*		*79 - 125*

Lab Sample ID: 11E4559-MSD1
Matrix: Water
Analysis Batch: U008882

Client Sample ID: RW-1
Prep Type: Total
Prep Batch: 11E4559_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Dup Result	Matrix Spike Dup Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Benzene	1.12		0.0500	1.19		mg/L		128	65 - 151	0.6	12
Ethylbenzene	0.0659		0.0500	0.136		mg/L		140	68 - 157	1	12
Toluene	0.0352		0.0500	0.105		mg/L		139	61 - 153	5	35
Xylenes, total	0.0301		0.150	0.225		mg/L		130	68 - 158	7	18

Surrogate	*Matrix Spike Dup % Recovery*	*Matrix Spike Dup Qualifier*	*Limits*
1,2-Dichloroethane-d4	*84*		*63 - 140*
Dibromofluoromethane	*94*		*73 - 131*
Toluene-d8	*99*		*80 - 120*
4-Bromofluorobenzene	*101*		*79 - 125*

Lab Sample ID: 11E5337-BLK1
Matrix: Water
Analysis Batch: U008967

Client Sample ID: 11E5337-BLK1
Prep Type: Total
Prep Batch: 11E5337_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00100		mg/L		05/19/11 10:07	05/19/11 13:26	1.00
Ethylbenzene	ND		0.00100		mg/L		05/19/11 10:07	05/19/11 13:26	1.00
Toluene	ND		0.00100		mg/L		05/19/11 10:07	05/19/11 13:26	1.00
Xylenes, total	ND		0.00300		mg/L		05/19/11 10:07	05/19/11 13:26	1.00

Surrogate	*Blank % Recovery*	*Blank Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4	*89*		*63 - 140*	*05/19/11 10:07*	*05/19/11 13:26*	*1.00*
Dibromofluoromethane	*96*		*73 - 131*	*05/19/11 10:07*	*05/19/11 13:26*	*1.00*
Toluene-d8	*100*		*80 - 120*	*05/19/11 10:07*	*05/19/11 13:26*	*1.00*
4-Bromofluorobenzene	*100*		*79 - 125*	*05/19/11 10:07*	*05/19/11 13:26*	*1.00*

Lab Sample ID: 11E5337-BS1
Matrix: Water
Analysis Batch: U008967

Client Sample ID: 11E5337-BS1
Prep Type: Total
Prep Batch: 11E5337_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Benzene	50.0	50.2		ug/L		100	80 - 121
Ethylbenzene	50.0	50.6		ug/L		101	78 - 133

Method: SW846 8260B - Volatile Organic Compounds by EPA Method 8260B (Continued)

Lab Sample ID: 11E5337-MSD1
Matrix: Water
Analysis Batch: U008967

Client Sample ID: RW-1
Prep Type: Total
Prep Batch: 11E5337_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Dup Result	Matrix Spike Dup Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Xylenes, total	ND		15.0	17.8	R2	mg/L		118	68 - 158	32	18

Surrogate	*Matrix Spike Dup % Recovery*	*Matrix Spike Dup Qualifier*	*Limits*
1,2-Dichloroethane-d4	*92*		*63 - 140*
Dibromofluoromethane	*99*		*73 - 131*
Toluene-d8	*103*		*80 - 120*
4-Bromofluorobenzene	*98*		*79 - 125*

Lab Chronicle

Client: GES (Baton Rouge) / Shell
Project/Site: SAP 137475

TestAmerica Job ID: NUE2850

Client Sample ID: RW-1

Lab Sample ID: NUE2850-01
Matrix: Water

Date Collected: 05/16/11 11:10
Date Received: 05/17/11 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total	Prep	EPA 5030B	RE1	1.00	11E5337_P	05/19/11 10:07	TSP	TAL NSH
Total	Analysis	SW846 8260B	RE1	100	U008967	05/19/11 17:48	MLG	TAL NSH
Total	Analysis	SW846 8260B		1.00	U008882	05/19/11 05:02		TAL NSH

Client Sample ID: DUP

Lab Sample ID: NUE2850-02
Matrix: Water

Date Collected: 05/16/11 00:01
Date Received: 05/17/11 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total	Prep	EPA 5030B	RE1	1.00	11E5337_P	05/19/11 10:07	TSP	TAL NSH
Total	Analysis	SW846 8260B	RE1	100	U008967	05/19/11 18:14	MLG	TAL NSH

Client Sample ID: FB-1

Lab Sample ID: NUE2850-03
Matrix: Water

Date Collected: 05/16/11 11:30
Date Received: 05/17/11 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total	Prep	EPA 5030B		1.00	11E4559_P	05/18/11 21:12	TSP	TAL NSH
Total	Analysis	SW846 8260B		1.00	U008882	05/19/11 00:41	MLG	TAL NSH

Client Sample ID: RINSATE

Lab Sample ID: NUE2850-04
Matrix: Water

Date Collected: 05/16/11 11:10
Date Received: 05/17/11 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total	Prep	EPA 5030B		1.00	11E4559_P	05/18/11 21:12	TSP	TAL NSH
Total	Analysis	SW846 8260B		1.00	U008882	05/19/11 02:51	MLG	TAL NSH

Client Sample ID: TB

Lab Sample ID: NUE2850-05
Matrix: Water

Date Collected: 05/16/11 00:01
Date Received: 05/17/11 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total	Prep	EPA 5030B		1.00	11E4559_P	05/18/11 21:12	TSP	TAL NSH
Total	Analysis	SW846 8260B		1.00	U008882	05/19/11 00:14	MLG	TAL NSH

Laboratory References:
TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Road, Nashville, TN 37204, TEL 800-765-0980

Certification Summary

Client: GES (Baton Rouge) / Shell
Project/Site: SAP 137475

TestAmerica Job ID: NUE2850

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Nashville		AIHA		100790
TestAmerica Nashville		USDA		S-48469
TestAmerica Nashville	A2LA	ISO/IEC 17025	0	0453.07
TestAmerica Nashville	A2LA	WY UST	0	453.07
TestAmerica Nashville	Alabama	State Program	4	41150
TestAmerica Nashville	Alaska	Alaska UST	10	UST-087
TestAmerica Nashville	Arizona	State Program	9	AZ0473
TestAmerica Nashville	Arkansas	State Program	6	88-0737
TestAmerica Nashville	CALA	CALA	0	3744
TestAmerica Nashville	California	NELAC	9	1168CA
TestAmerica Nashville	Colorado	State Program	8	N/A
TestAmerica Nashville	Connecticut	State Program	1	PH-0220
TestAmerica Nashville	Florida	NELAC	4	E87358
TestAmerica Nashville	Illinois	NELAC	5	200010
TestAmerica Nashville	Iowa	State Program	7	131
TestAmerica Nashville	Kansas	NELAC	7	E-10229
TestAmerica Nashville	Kentucky	Kentucky UST	4	19
TestAmerica Nashville	Kentucky	State Program	4	90038
TestAmerica Nashville	Louisiana	NELAC	6	LA100011
TestAmerica Nashville	Louisiana	NELAC	6	30613
TestAmerica Nashville	Maryland	State Program	3	316
TestAmerica Nashville	Massachusetts	State Program	1	M-TN032
TestAmerica Nashville	Minnesota	NELAC	5	047-999-345
TestAmerica Nashville	Mississippi	State Program	4	N/A
TestAmerica Nashville	Montana	MT DEQ UST	8	NA
TestAmerica Nashville	Nevada	State Program	9	TN00032
TestAmerica Nashville	New Hampshire	NELAC	1	2963
TestAmerica Nashville	New Jersey	NELAC	2	TN965
TestAmerica Nashville	New York	NELAC	2	11342
TestAmerica Nashville	North Carolina	North Carolina DENR	4	387
TestAmerica Nashville	North Dakota	State Program	8	R-146
TestAmerica Nashville	Ohio	OVAP	5	CL0033
TestAmerica Nashville	Oklahoma	State Program	6	9412
TestAmerica Nashville	Oregon	NELAC	10	TN200001
TestAmerica Nashville	Pennsylvania	NELAC	3	68-00585
TestAmerica Nashville	Rhode Island	State Program	1	LAO00268
TestAmerica Nashville	South Carolina	State Program	4	84009
TestAmerica Nashville	South Carolina	State Program	4	84009
TestAmerica Nashville	Tennessee	State Program	4	2008
TestAmerica Nashville	Texas	NELAC	6	T104704077-09-TX
TestAmerica Nashville	Utah	NELAC	8	TAN
TestAmerica Nashville	Virginia	State Program	3	00323
TestAmerica Nashville	Washington	State Program	10	C789
TestAmerica Nashville	West Virginia	West Virginia DEP	3	219
TestAmerica Nashville	Wisconsin	State Program	5	998020430

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

LAB (LOC NUE2850
06/01/11 23:59

☐ XENCO (_____)
☐ CALSCIENCE (_____)
☑ TEST AMERICA (_____)
☐ SPL (_____)
☐ OTHER (_____)

Shell Oil Products Chain Of Custody Record

06/01/2011

Please Check Appropriate Box:

☐ ENV. SERVICES	☐ MOTIVA RETAIL	☐ SHELL RETAIL
☐ MOTIVA SD&CM	☑ CONSULTANT	☐ LUBES
☐ SHELL PIPELINE	☐ OTHER _____	

Print Bill To Contact Name: LARRY BRAUD

INCIDENT # (ENV SERVICES): 9 7 4 0 8 6 0 9 ☐ CHECK IF NO INCIDENT # APPLIES

PO #:

SAP #: 1 3 7 4 7 5

DATE: 12/230/10

PAGE: _____ of _____

CONSULTANT COMPANY: GES

ADDRESS: 307 FRANCE ST., SUITE B

CITY: BATON ROUGE, LA 70802

TELEPHONE: 504-331-7810 | FAX: | E-MAIL: Lbraud@gesonline.com

SITE ADDRESS (Street, City and State): 2300 S. ACADIAN THRUWAY, BATON ROUGE, LA

CONSULTANT PROJECT CONTACT (Report to): LARRY BRAUD

CONSULTANT PROJECT NO.:

SAMPLER NAME(S) (Print): RYAN FRANCIS

LAB USE ONLY

TURNAROUND TIME (CALENDAR DAYS): ☑ STANDARD (14 DAY) ☐ 5 DAYS ☐ 3 DAYS ☐ 2 DAYS ☐ 24 HOURS ☐ RESULTS NEEDED ON WEEKEND

DELIVERABLES: ☐ LEVEL 1 ☑ LEVEL 2 ☐ LEVEL 3 ☐ LEVEL 4 ☐ OTHER (SPECIFY) _____

TEMPERATURE ON RECEIPT C°: Cooler #1 | Cooler #2 | Cooler #3

SPECIAL INSTRUCTIONS OR NOTES :

X Louisiana RECAP Standards Apply

SPECIFIED PAHS BY METHOD 8270 SIM

☐ SHELL CONTRACT RATE APPLIES
☑ STATE REIMBURSEMENT RATE APPLIES
☐ PROVIDE LEDD DISK

REQUESTED ANALYSIS

LAB USE ONLY	Field Sample Identification	SAMPLING DATE 2010	SAMPLING TIME	MATRIX	PRESERVATIVE HCL	HNO3	H2SO4	NONE	OTHER	NO. OF CONT.	BENZENE (8260)	MS/MSD	Container PID Readings or Laboratory Notes
	RW-1	5/16	1112	W	X					9	X	X	-01
	DUP	5/16	—	W	X					3	X		-07
	~~EB~~ FB-1	5/16	1135	W	X					3	X		-03
	RINSATE	5/16	1110	W	X					3	X		-04
	TB	5/16	—	W	X					3	X		-05

Relinquished by: (Signature)

Received by: (Signature)

Date:

Time:

BOBBY JINDAL
GOVERNOR

PEGGY M. HATCH
SECRETARY

State of Louisiana

DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF ENVIRONMENTAL COMPLIANCE

JAN 15 2013

CERTIFIED – RETURN RECEIPT REQUESTED 7005 0390 0001 6875 3798

Shell Oil Product U.S.
Attn: Ken Springer
PO Box 1087
Huffman, TX 77336

RE: No Further Action Notification
Former Shell #142059 (Circle K #9730); **AI Number 71560**
UST FID No. 17-008376; UST Incident No. 86368
2300 S. Acadian Thruway
Baton Rouge, East Baton Rouge Parish, Louisiana

Dear Mr. Springer:

The Louisiana Department of Environmental Quality – Underground Storage Tank and Remediation Division (LDEQ-USTRD) has completed its review of your Risk Evaluation/Corrective Action Program (RECAP) Report, dated June 26, 2011, for the above referenced area of investigation located at 2300 S. Acadian Thruway in East Baton Rouge Parish. Based on our review of this document and all previously submitted information, we have determined that no further action is necessary at this time. The Basis of Decision for this notification is attached.

No soils may be removed from this site without prior approval from LDEQ unless they are removed and disposed at a permitted disposal facility. Prior to the construction of enclosed structures over any portion of the impacted area, further evaluation and approval from LDEQ is warranted.

If you have any questions or need further information, please call Alan S. Karr at (225) 219-3440. Thank you for your cooperation in addressing this area.

Sincerely,

Thomas F. Harris, Administrator
Underground Storage Tank and Remediation Division—Remediation Process

ask

Attachment Basis of Decision

c: Imaging Operations – UST
Larry Braud – GES, Inc.
Terri Gibson – USTRD
Melissa Vizinat – MFTF
Jeff Baker – MFTF

Post Office Box 4312 • Baton Rouge, Louisiana 70821-4312 • Phone 225-219-3715 • Fax 225-219-3708
www.deq.louisiana.gov

BASIS OF DECISION FOR NO FURTHER ACTION

Former Shell #142059 (Circle K #9730)
AI #71560

The Louisiana Department of Environmental Quality – Underground Storage Tank and Remediation Division—Remediation Process (LDEQ-USTRD-RP) has determined that Former Shell #142059, currently Circle K #9730, requires No Further Action - At This Time.

The 0.47 acre property is used as a gasoline refueling station as well as a convenience store. In February, 2006, CRA completed a divestment investigation on the behalf of Motiva. Five (5) soil borings were installed with analytical results indicating elevated Benzene in one soil boring and subsequent groundwater sampling event. In October, 2006, the facility was transferred to a different consultant firm, URS Corporation. In January, 2009, URS performed a limited groundwater investigation in the vicinity of the previous elevated soil boring. The results indicated the need to install a permanent/recovery well in the vicinity of the elevated Benzene to compare to a MO-2 established standard used at a facility within a 1 mile radius of this site. In November, 2009, the additional groundwater investigation was performed along with a slug test to determine actual site-specific groundwater classification. Delta Consultants became the contractor of record in August, 2010, and submitted a RECAP Input Parameter form, which was approved in October, 2010. In the mean time, Motiva contracted with Groundwater & Environmental Services to complete the project. In April, 2011, GES submitted a groundwater sampling plan to further evaluate inconsistent dissolved Benzene concentrations at the permanent/recovery well location. The results were included in the RECAP evaluation submitted for this No Further Action – At This Time.

Groundwater flow direction is to the north and northwest towards Dawson Creek, approximately 115 feet to the west. The uppermost groundwater aquifer lies at 400 feet below ground surface (bgs). Baton Rouge obtains its water from an aquifer which lays 1,200 feet bgs. From the November, 2009 slug test, the groundwater has a yield of 115 gallons per day (gpd), therefore the groundwater classification is designated as 3A non-drinking water (GW3ndw).

Remedial standards were developed for this property using LDEQ's RECAP Screening, Management Option 1 and Management Option 2 standards. The standards that were applied to this site are listed in the table that appears at the end of this BOD.

Sampling has confirmed that constituents of concern concentrations do not exceed the established site-specific remediation standards, so no remedial action was required. No Further Action - At This Time is granted when contamination is confirmed to exist at concentrations that do not exceed the established standards.

There are no institutional controls on this property.

An inspection of the site was performed on April 10, 2012, at the time of the plugging & abandonment of the monitoring well. No investigation derived waste (IDW) remains on site.

The impacted media, constituents of concern, maximum concentration remaining on site and limiting RECAP standard established for this site are listed in the following table:

Medium	Constituent of Concern	Maximum Remaining Concentration ppm	Limiting LRS (Management Option) ppm
Soil	Benzene	0.468	0.53 (MO-1)[1]
	TPH-GRO	728	9100 (MO-2)[2]
	TBA	10.4	2,788 (MO-1)[3]
GW	Benzene	1.2	5.72 (MO-2)*
	Ethylbenzene	2.43	33.21 (MO-1)*
	MTBE	1.12	2.255 (MO-1)*
	TPH-GRO	87.3	127.1 (MO-1)*
	DIPE	1.34	7.79 (MO-1)*
	ETBE	0.153	1.353 (MO-1)*
	~~TAME~~	~~0.22~~	~~2.17.3 (MO-1)*~~
	TBA	41	1025 (MO-1)*

Notes: Non-industrial Standards are 1.5[1], 1000[2], and 7000[3] (all ppm)
* GW3ndw

Additional information on the details of the investigation and evaluation of this site may be obtained from LDEQ's Public Records Center located in the Galvez Building, Room 127, 602 N. Fifth Street, Baton Rouge, LA 70802. Additional information regarding the Public Records may be obtained by calling (225) 219-3168 or by emailing publicrecords@la.gov.

LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY
FIELD INTERVIEW FORM

AGENCY INTEREST#: 71560 INSPECTION DATE: 4/10/12 TIME OF ARRIVAL: 1245
ALTERNATE ID#: 17-008376 (ID Type/Number) DEPARTURE DATE: 4/10/12 TIME OF DEPARTURE: 1530
FACILITY NAME: Circle K (Former Shell #142058) SH#:
LOCATION: 2300 S. Acadian Thruway
BR LA PARISH NAME: EBR
RECEIVING STREAM (BASIN/SUBSEGMENT):

MAILING ADDRESS: (Street/P.O. Box) (City) (State) (ZIP)
FACILITY REPRESENTATIVE: TITLE:
FACILITY REPRESENTATIVE PHONE NUMBER:
NAME, TITLE, ADDRESS and TELEPHONE of RESPONSIBLE OFFICIAL (if different from above):

INSPECTION TYPE: P+A PROGRAM: AIR (UST) WASTE WATER OTHER

INSPECTOR'S OBSERVATIONS: (e.g. AREAS AND EQUIPMENT INSPECTED, PROBLEMS, DEFICIENCIES, REMARKS, VERBAL COMMITMENTS FROM FACILITY REPRESENTATIVES)

GES & Singley Env. Svc on-site to P+A 2 wells prior to NFA issuance. MW-1 & RW-1 both pulled and holes grouted to surface. Vault of RW-1 filled with concrete. All of RW-1 4" screen + pipe came out of hole. Pipe from MW-1 came out (screen broke off)
Await P+A report to complete NFA-BOI

AREAS OF CONCERN:

REGULATION	EXPLANATION	CORRECTED?
		YES NO
		YES NO

PHOTOS TAKEN: ☐ YES ☐ NO SAMPLES TAKEN: ☐ YES ☐ NO (Attach Chain-of-custody)

RECEIVED BY: SIGNATURE:
PRINT NAME: Ryan Fruge
(NOTE: SIGNATURE DOES NOT NECESSARILY INDICATE AGREEMENT WITH INSPECTOR'S STATED OBSERVATIONS)

INSPECTOR(S): Alan Karr CROSS REFERENCE:
ATTACHMENTS:
REVIEWER:

NOTE: The information contained on this form reflects only the preliminary observations of the inspector(s). It should not be interpreted as a final determination by the Department of Environmental Quality or any of its officers or personnel as to any matter, including, but not limited to, a determination of compliance or lack thereof by the facility operator with any requirements of statutes regulations or permits. Each day of non-compliance constitutes a separate violation of the regulations and/or the Louisiana Environmental Quality Act.

OFFICE OF ENVIRONMENTAL COMPLIANCE
UNDERGROUND STORAGE TANK & REMEDIATION DIVISION
Routing/Approval Slip

WF 2335

DEQ LOUISIANA

AI No.	71560	Facility:	Former Shell #	Date Routed:	12/26/12
Other ID No.		Location:	BR, LA		
Activity No.		Originator:	Alan Karr		
Section/Group:	USTRD/G2	Attachments:			
Description/Type of Document(s):	NFA w/ BOD				

Closure ☐ Comfort Letter ☐ Correspondence ☐ Corrective Action ☐ Conveyance Notice ☐

NFA ☒ NOD ☐ Personnel ☐ Other ☐

Technical Review	Req'd.	Initials	Date	Return to Originator?	Comments
Environmental Scientist	☐			☐Y ☐N	
Geology	☐			☐Y ☐N	
Legal	☐			☐Y ☐N	
Technical Advisor	☐			☐Y ☐N	
Other (_____)	☐			☐Y ☐N	
Additional Comments					

Management Review	Req'd.	Initials	Date	Return to Originator?	Comments
Supervisor	☐			☐Y ☐N	
Blanchard Manager	☑	KSB	1/3/13	☐Y ☐N	
Harris Administrator	☑	TH	1/14/13	☐Y ☐N	
Assistant Secretary	☐			☐Y ☐N	
Deputy Secretary	☐			☐Y ☐N	
Secretary	☐			☐Y ☐N	
Other (_____)	☐			☐Y ☐N	
Additional Comments					

☐ TEMPO Data Entry Completed (Date Document Completed): _____

Revised 11/3010

Chevron

RECEIVED
SEP 09 1998
UNDERGROUND STORAGE TANK DIVISION

September 3, 1998

Chevron Sales East
2300 Windy Ridge Pkwy, Suite 800
Atlanta, Ga 30339
P O Box 1706
Atlanta, Ga 30301

Harold Crouther
TIP Coordinator
770 984 4148

UST Division
Louisiana Dept. of Environmental Quality
Box 82178
Baton Rouge, LA 70884-2178

RE: Confirmed Leak
Chevron Facility #109060
2929 College Drive & I10
Baton Rouge, LA
Facility ID# 17-001998

Dear Ms/Sir,

This letter in to inform you that a leak was confirmed at the above referenced facility. Mr. Michael Picou of LDEQ was notified verbally and with a fax of the Notification Requirement on 9/3/98.

If you have any questions specific to this report please contact me at (770) 984-4148 or at the letterhead address above.

Sincerely,

Harold Crouther

Harold Crouther
TIP Coordinator

cc: Michael Picou - LDEQ
Kent Roussell - TM
Allysia Kizzee – SAR

Attachment:

INCIDENT # _____

LOUISIANA NOTIFICATION REQUIREMENTS

This form should be completed and submitted to the Underground Storage Tank Division within seven (7) calendar days after verbal notification.

If mailed, submittal date will be the postmark date of the written notification. Forward to:

LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY
Administrator
Underground Storage Tank Division
P. O. Box 82178
Baton Rouge, Louisiana 70884-2178

- -

1. **Name of person, company or other party who is filing the written report.** Harold Crouther
Chevron Products Co

2. **Time and date of verbal notification, name of person making the notification and identification of the site or facility. (Name and address).** 9-3-98 @ 11:00 AM
Harold Crouther
Chevron Fac # 109060
2929 College Dr & I-10
Baton Rouge, LA
LDEQ FAC ID# 17-001998

3. **Release date and time.**
9-2-98 Approx 2:00 PM

4. **Incident details and/or emergency condition.**
Contractor was well Pointing to relieve the high water table around the tank for planned Tank upgrade. Tank was fractured by the well pointing process. Tank was gaged by delivery driver on 9-2-98 & the driver observed water in the tank. Contractor checked the tank and determine tank was leaking in the area around the well pointing. Product Probably Escaped when the tank was checked by the Contractor. Tank was Pumped until product was below the fracture.

Tank repair is schedule to begin today (9-3-98) with Fluid Containment Doing the repair. Product Tank was the Plus tank.

5. **Product released and estimated quantity released in gallons.** Est 15-20 Gallons - Possibly Much Less.

6. **Surface or groundwater impact.**
Soil around the Plus tank near the fracture is impacted.

7. **Action taken to stop release.**
Product was pumped out until product level was below the fracture. Soil will be removed when the tank repair is done. Expect to start Repair by 9-3-98.

8. **Measures taken to prevent recurrence of the incident.**
C & M will advise P&T Contractor of Tank Dia. in order to Estimate tank Location from above the ground.

9. **Is the U.S.T. System registered?**

YES ✓ U.S.T. ID# 6537
NO _____

ANSWER THE FOLLOWING ONLY IF GROUNDWATER CONTAMINATION IS CONFIRMED

1. **Reporting party status (owner, operator, consultant, etc.)**

2. **Attach groundwater contamination data and/or analytical results.**

3. **Possible routes of migration.**

4. **List all abandoned or active water wells within the immediate area.**

5. **Names of all other responsible parties.**

BASELINE SITE ASSESSMENT

Chevron Service Station No. 60109060
2929 College Drive
Baton Rouge, Louisiana

for

Chevron Environmental Management Company
Houston, Texas

May 2003
Ref. 27453-00 (2)

Conestoga-Rovers & Associates
4915 S. Sherwood Forest Blvd.
Baton Rouge, LA 70816
(225)292-9007 Office; (225)292-3614 Fax

NFA Late 1997 - Early 1998 ?

Remediation Services Division
Manager:
Team Leader:
AI #:
TEMPO Task #:
Desk Copy File Room:

BASELINE SITE ASSESSMENT

Chevron Service Station No. 60109060
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May 2003
Ref. 27453-00 (2)

Conestoga-Rovers & Associates
4915 S. Sherwood Forest Blvd.
Baton Rouge, LA 70816
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EXECUTIVE SUMMARY

Conestoga-Rovers & Associates (CRA) has completed a Baseline Site Assessment for Chevron Environmental Management Company (Chevron) at Chevron Service Station No. 60109060 located at 2929 College Drive in Baton Rouge, East Baton Rouge Parish, Louisiana. This assessment was conducted in order to determine if service station operations have adversely impacted the subsurface media (soil and groundwater). A summary of CRA's work and findings follows:

- The site is an active service station located in an area of primarily commercial development.
- Six soil exploration borings (SB-01 through SB-06) were installed to a maximum depth of 16 feet.
- Soil and groundwater samples were collected from each boring and were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX); methyl tertiary-butyl ether (MTBE); and total petroleum hydrocarbons-gasoline range organics (TPH-GRO).
- Analytical results indicated hydrocarbon concentrations above the Louisiana Department of Environmental Quality's (LDEQ) Risk Evaluation/Corrective Action Program (RECAP) Screening Option Screening standards as published in the June 20, 2000, version of the document, in soil and groundwater in the vicinity of the dispenser islands. Highest soil and groundwater concentrations were found in boring SB-01, which was located near the southwest dispenser island.
- Verbal notification of a suspected hydrocarbon release was made to the LDEQ/Single Point of Contact on April 14, 2003, and was followed by a written notification within seven calendar days.

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1.0 INTRODUCTION

1.1 GENERAL

At the request of Chevron Environmental Management Company (Chevron), Conestoga-Rovers & Associates (CRA) has conducted a Baseline Site Assessment at Chevron Service Station No. 60109060 located at 2929 College Drive in Baton Rouge, East Baton Rouge Parish, Louisiana. The site is an active Chevron service station.

1.2 PURPOSE AND SCOPE

The purpose of this baseline assessment was to determine if service station operations have adversely impacted the subsurface media (soil and groundwater).

In an effort to assess subsurface conditions and potential hydrocarbon impact, CRA's scope of work included the following:

- Installing six soil exploration borings (SB-01 through SB-06) to a maximum depth of 16 feet using direct-push technology.
- Collecting representative soil samples continuously (2-foot intervals) for inspection and characterization of soil types and stratigraphy from the borings.
- Inspecting and classifying soil samples in the field and conducting headspace screening of the soil samples for petroleum hydrocarbon vapors using a portable photoionization detector (PID).
- Submitting a minimum of two soil samples from each soil boring to Pace Analytical Laboratory (Pace) of St. Rose, Louisiana for analyses of benzene, toluene, ethylbenzene, and xylenes (BTEX), methyl tertiary-butyl ether (MTBE), and total petroleum hydrocarbons-gasoline range organics (TPH-GRO).
- Purging and sampling groundwater from all borings for submittal to Pace for laboratory analyses of BTEX, MTBE, and TPH-GRO.
- Evaluating and compiling field observations and laboratory analytical data into a report documenting boring installations, soil and groundwater sampling, and analytical data.

2.0 SITE CHARACTERISTICS

2.1 SITE AND SURROUNDING LAND USE DESCRIPTIONS

The site is an active self-service motor fuel retail facility located on the southeast corner of the intersection of College Drive and I-10 Frontage Road. The approximate 0.7 acre site consists of a station building, a car wash, and three dispenser islands covered by a canopy. Four underground storage tanks (USTs), reportedly containing gasoline, are located on the northern portion of the site. Figure 1 is a site plan depicting the layout of the facility and soil boring locations.

Surrounding land use consists of predominantly commercial development

2.2 TOPOGRAPHY, GEOLOGY, HYDROGEOLOGY

Topography. The site is located on the Prairie Terrace, which is a Pleistocene alluvial and deltaic landform on the Gulf Coastal Plain. The site is slightly elevated above the nearby flood plain of the Mississippi River, approximately 3 miles to the northeast and is approximately 35 feet above mean sea level (NGVD). Natural drainage appears to be toward Dawson Creek, which flows to Bayou Duplanier and eventually into the University Lake.

Geology. Surface soils at the site consist of up to 500 feet of Pleistocene alluvial and deltaic deposits predominantly composed of clays and silty clays with lenses of silts and sands. Sand units from the shallow Pleistocene thicken to the west toward the Mississippi River. Underlying, older Pleistocene deposits consist of thick, widespread fine to coarse sand and gravel layers, separated by laterally continuous clay horizons. Beneath the Pleistocene deposits are similar deltaic deposits of Pliocene and Miocene age.

Hydrogeology. The shallow Pleistocene deposits contain only minor water-bearing deposits of discontinuous lenses of silt and sand, although the strata thicken to the west where they form the "University Aquifer". The units in the site vicinity are not typically used for water supply because of limited availability and variable quality. The uppermost aquifer of concern is the "400-foot" aquifer which occurs in the uppermost, widespread Pleistocene deltaic sand, and is a main source of groundwater for drinking and industrial use in the area. The "400-foot" aquifer sands typically occur within 500 feet of the ground surface and range from 100 to 200 feet in thickness. The "400-foot" aquifer is underlain by equivalents of the "600-foot" and deeper sands from the north Baton Rouge area. These aquifers contain brackish water in the site vicinity. The deeper Pliocene and Miocene deposits also contain aquifer sands but are saline in the site vicinity.

The information presented in this section is derived from inspection of USGS topographic maps of the area, the Geologic Map of Louisiana by J. Snead and R. McCulloh (1984), the Louisiana Hydrologic Atlas Map No. 2, U.S. Geological Survey Water-Resources Investigations Report 86-4150, (1986), by C.W. Smoot, "Ground-Water conditions in the Baton Rouge Area, 1954-59", Water Resources Bulletin No. 2, by C.O. Morgan, (1961), and "Maps of the "400-foot," "600-foot," and Adjacent Aquifers and Confining Beds, Baton Rouge Area, Louisiana", Water Resources Technical Report No. 48, by E.K. Kuniansky, D.C. Dial, and D.A. Trudeau (1989).

3.0 SOIL AND GROUNDWATER ENVIRONMENTAL ASSESSMENT

3.1 DRILLING AND SOIL SAMPLING

Six soil borings (SB-01 through SB-06) were installed on March 27, 2003, to assess subsurface conditions at the site. The boring locations are shown on the site plan (Figure 1). Prior to installation, each boring location was cleared of subsurface utilities to a depth of four feet using a hand probe. All borings were installed by CRA's subcontractor, Walker-Hill Environmental, Inc. of Columbia, Mississippi. Borings located in paved areas were initiated with a concrete core drill operated by CRA's subcontractor, A & A Enterprises, Inc. of Kenner, Louisiana. The borings were advanced using a track-mounted hydraulically advanced sampling probe. Prior to the initiation of the borings, the drilling and sampling equipment were thoroughly cleaned.

Soil samples were collected at two-foot intervals from the surface to the completion depth of each boring using the hydraulically advanced barrel sampler with new, clean, disposable acetate liners. The soil borings were advanced to a maximum total depth of 16 feet below ground surface (bgs) or until groundwater was encountered. Upon collection, soil samples were visually and manually inspected. Using new, clean, latex gloves, CRA personnel examined the samples for soil characteristics. No visible evidence of phase-separated hydrocarbons (PSH) was observed during the installation and sampling of the borings.

A portion of each sample was collected for organic vapor screening using glass jars covered with aluminum foil. These samples were allowed to stabilize at ambient air temperature for approximately one hour, and the headspace in each container was then analyzed with a PID (Photovac Model 2020). The results of the PID screening of the soil samples from the borings are included on the boring logs in Appendix A.

Immediately upon collection, a portion of each soil sample was placed in laboratory supplied vials utilizing US Environmental Protection Agency (EPA) Method 5035 for soil sampling and preserved on ice for possible laboratory analytical testing. Two soil samples were selected from each soil boring for laboratory analyses. Soil samples were selected for laboratory analyses based on the following considerations: 1) highest PID value, 2) first-encountered groundwater, and/or 3) total depth of the boring.

The soil sampling procedures and documentation were performed in compliance with CRA's standard sampling protocol, which is based upon EPA guidelines applicable to this type of project. The soil samples selected for analyses were preserved on ice and subsequently delivered to Pace by CRA personnel, following proper chain-of-custody procedures. The soil samples were analyzed for BTEX and MTBE by EPA Method 8021B and TPH-GRO by EPA Method 8015B. The analytical laboratory results for the soil samples are summarized on Table 1. The soil sample analytical laboratory report and chain-of-custody document are included in Appendix B.

3.2 GROUNDWATER SAMPLING

Upon reaching the total depth, a temporary well (slotted well screen and casing assembly) was installed in borings SB-01 through SB-06 for the collection of groundwater samples. The groundwater sampling procedures and documentation were performed in compliance with CRA's standard sampling protocol, which is based upon EPA guidelines applicable to this type of project. Each temporary well was purged dry using a peristaltic pump. Upon completion, the temporary wells were allowed to recharge and water samples were then collected using new, clean, disposable PVC bailers.

Groundwater samples collected from the borings were placed in appropriate laboratory supplied sample containers and were subsequently stored on ice and delivered by CRA personnel, following proper chain-of-custody procedures, to Pace for analyses. Samples collected from the temporary wells were analyzed for BTEX, MTBE, and TPH-GRO by the aforementioned methods. Groundwater analytical laboratory results are summarized on Table 2. The analytical laboratory report and chain-of-custody document for the groundwater-sampling event is included in Appendix B.

Upon completion of sample collection, the screen/casing assembly was removed from each boring and the borehole was abandoned by grouting with a cement-bentonite mixture from total depth to the ground surface. For borings located in paved areas, each boring was surface completed with concrete.

3.3 HYDROCARBON CONSTITUENT DISTRIBUTION

In order to determine if impact has occurred, analytical results were compared to the Louisiana Department of Environmental Quality's (LDEQ) Risk Evaluation/Corrective Action Program (RECAP) Screening Option Screening Standards (SS) published in the June 20, 2000, version of the document.

Analytical results for soil samples reported detectable concentrations of benzene in soil samples SB-01 (2' - 4') and SB-04 (0' - 2') with concentrations of 0.331 milligrams per kilogram (mg/kg) and 0.0786 mg/kg, respectively. Detectable TPH-GRO concentrations ranged from 5.8 mg/kg in SB-05 (0' - 2') to 207 mg/kg in SB-01 (2' - 4').

When compared to the RECAP SS, two soil samples exceed the SS for benzene and one soil sample exceeded the SS for TPH-GRO. All other constituents analyzed showed results below the analytical reporting limits or below their respective RECAP SS. Soil sample analytical results are shown on Table 1, along with RECAP SS comparisons.

Groundwater analytical results revealed benzene detectable concentrations in groundwater samples SB-01 and SB-02 with concentrations of 0.141 milligrams per liter (mg/L) and 0.0018 mg/L, respectively. Detectable TPH-GRO concentrations ranged from 0.0693 mg/L in SB-06 to 11.1 mg/L in SB-01.

When compared to the groundwater RECAP SS, one sample exceeded the SS for benzene and four samples exceeded the SS for TPH-GRO. Additionally, one sample exceeded the RECAP SS for ethylbenzene and one sample exceeded the SS for MTBE. All other constituents analyzed showed results below the analytical reporting limits or below their respective RECAP SS. Groundwater sample analytical results are shown on Table 2, along with RECAP SS comparisons.

3.4 LDEQ NOTIFICATION

On, April 14, 2003, Seth P. Domangue with CRA contacted LDEQ/Single Point of Contact (SPOC) to provide verbal notification of a suspected hydrocarbon release based on the investigation analytical results. Verbal notification was made within 24 hours of the receipt of the signed laboratory report from the analytical laboratory. Written notification was submitted within seven calendar days of verbal notification as required by the LDEQ Notification Requirements for Unauthorized Discharge (LAC 33, Part I, Chapter 39). A copy of the written notification form is included as Appendix C.

4.0 SUMMARY OF FINDINGS

4.1 FINDINGS

Based on the scope of work performed, CRA presents the following summary of findings:

- The site is an active Chevron Service Station located in a developed area of predominantly commercial properties.
- Six soil exploration borings (SB-01 through SB-06) were installed to a maximum depth of 16 feet. Soil and groundwater samples from the soil borings/temporary wells were analyzed for BTEX, MTBE, and TPH-GRO.
- Analytical results for soil samples indicated hydrocarbon concentrations above the RECAP SS in the vicinity of the dispenser islands. The highest soil concentrations were found in boring SB-01, located near the southeast dispenser islands.
- Groundwater analytical results also revealed hydrocarbon concentrations above the RECAP SS in the vicinity of the dispenser islands. The highest BTEX and TPH-GRO concentrations in groundwater samples collected from boring SB-01 located near the southwest dispenser island.
- A verbal notification of a suspected hydrocarbon release was submitted to the LDEQ/SPOC on April 14, 2003, followed by a written notification.

If you have any questions concerning this submittal, please call CRA. CRA appreciates the opportunity to be of continued service to Chevron Environmental Management Company.

All of Which is Respectfully Submitted,
CONESTOGA-ROVERS & ASSOCIATES

Seth P. Domangue
Project Geologist

Thomas B. Powers, PG
Project Manager

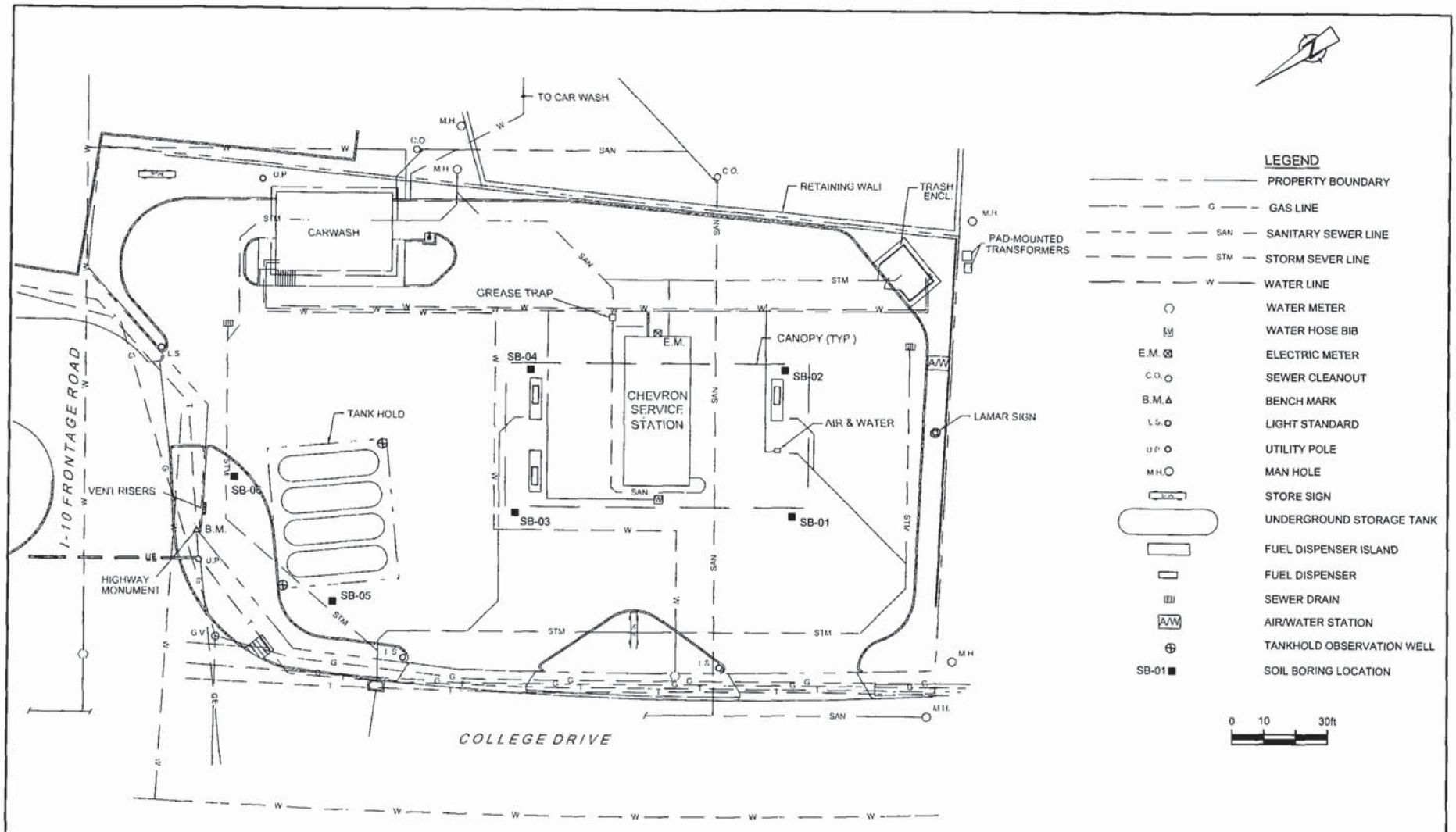

Figure 1

SITE PLAN
CHEVRON SERVICE STATION NO. 60109060
2929 COLLEGE DRIVE, BATON ROUGE, LOUISIANA
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY, HOUSTON, TEXAS

RE: ADAPTED FROM MORRIS & ASSOCIATES, INC. FIGURE CCA242U4, "EXTERIOR PIPING & ELECTRICAL PLAN".

27453-00(002)GN-BR001 MAY 22/2003

Reference Sheet

REF+156674

Printed: 07/31/2003 3:33 pm

TABLE 1

SOIL SAMPLE ANALYTICAL LABORATORY DATA
CHEVRON SERVICE STATION NO. 60109060
2929 COLLEGE DRIVE
BATON ROUGE, LOUISIANA

Boring (depth, ft.)	Sample Date	Parameter					
		Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	MTBE (mg/kg)	TPH-GRO (mg/kg)
		0.051*	20*	19*	150*	20*	65*
SB-01 (2' - 4')	03/27/03	**0.331**	<0.0216	9.42	1.05	<0.0216	207
SB-01 (12' - 14')	03/27/03	<0.0226	<0.0226	1.11	<0.0226	0.064	63.7
SB-02 (2' - 4')	03/27/03	<0.0238	<0.0238	0.0812	<0.0238	<0.0238	10.8
SB-02 (10' - 12')	03/27/03	<0.0239	<0.0239	<0.0239	<0.0239	<0.0239	<2.39
SB-03 (0' - 2')	03/27/03	<0.0264	<0.0264	<0.0264	<0.0264	<0.0264	7.59
SB-03 (10' - 12')	03/27/03	<0.0298	<0.0298	<0.0298	<0.0298	<0.0298	<2.975
SB-04 (0' - 2')	03/27/03	**0.0786**	0.122	0.177	0.1652	<0.0239	7.33
SB-04 (10' - 12')	03/27/03	<0.0238	<0.0238	<0.0238	<0.0238	0.23	<2.375
SB-05 (0' - 2')	03/27/03	<0.0236	<0.0236	<0.0236	<0.0236	<0.0236	5.8
SB-05 (10' - 12')	03/27/03	<0.0262	<0.0262	<0.0262	<0.0262	<0.0262	<2.62
SB-06 (0' - 2')	03/27/03	<0.0221	<0.0221	<0.0221	<0.0221	<0.0221	<2.215
SB-06 (10' - 12')	03/27/03	<0.0239	<0.0239	<0.0239	<0.0239	<0.0239	<2.385

MTBE = methyl tertiary butyl ether
TPH-GRO = Total Petroleum Hydrocarbons-Gasoline Range Organics
mg/kg = Milligrams per kilogram, which is equivalent to parts per million (ppm).
* Screening Standards specified in the LDEQ's June 20, 2000, RECAP Table 1 - Screening Option, Screening Standards for Soil and Groundwater.
NOTES: Bold font with shading indicates result exceeds RECAP Screening Standard.

TABLE 2

GROUNDWATER SAMPLE ANALYTICAL LABORATORY DATA
CHEVRON SERVICE STATION NO. 60109060
2929 COLLEGE DRIVE
BATON ROUGE, LOUISIANA

Boring	Sample Date	Parameter					
		Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	MTBE (mg/L)	TPH-GRO (mg/L)
		0.005*	1.0*	0.7*	10*	0.52*	0.15*
SB-01	03/27/03	**0.141**	0.0161	**0.854**	0.259	0.395	**11.1**
SB-02	03/27/03	0.0018	0.00087	0.0066	0.0017	0.0252	**0.256**
SB-03	03/27/03	<0.0005	<0.0005	<0.0005	<0.0005	0.046	**0.767**
SB-04	03/27/03	<0.0005	<0.0005	<0.0005	<0.0005	**0.737**	**0.482**
SB-05	03/27/03	<0.0005	<0.0005	<0.0005	<0.0005	0.0052	0.0883
SB-06	03/27/03	<0.0005	0.0012	0.0035	0.0117	0.0142	0.0693

MTBE = methyl tertiary butyl ether
TPH-GRO = Total Petroleum Hydrocarbons-Gasoline Range Organics
mg/L = Milligrams per liter, which is equivalent to parts per million (ppm).
* Screening Standards specified in the LDEQ's June 20, 2000, RECAP Table 1 - Screening Option, Screening Standards for Soil and Groundwater.
NOTES: Bold font with shading indicates result exceeds RECAP Screening Standard.

APPENDIX A

SOIL BORING LOGS

BORING LOG

Project: Baseline Site Assessment
Chevron Service Station No. 60109060
2929 College Drive
Baton Rouge, Louisiana

Client: Chevron Environmental Management Company
Houston, Texas

No. SB-01

File No.: 27453-00
Date: 03/27/03
Drilling Co.: Walker-Hill Environmental, Inc
Supervisor: Jody Neal
Type Rig: Geoprobe 54
Logged by: TAR/DPD

LABORATORY TEST DATA					FIELD DATA					BORING DATA	
Moisture Content (%)	Atterberg Test: Liquid Limit (%)	Atterberg Test: Plastic Index (%)	% Finer than #200 Sieve	Other	Organic Vapor Meter (1) (ppm)	Penetrometer (Tons/Sq.ft) or Std Pen. Test (blows/foot)	Sampling	Depth (feet)	Water Level	Screen Interval	Hand probed: 0' to 4' Direct push technology (2" O.D.): 0' to 16' Start Time: 0905 Finish Time: 0945
					1,740	2.0					6" Concrete Gray silty CLAY (CL), strong hydrocarbon odor
					1,890	1.0					
					485	1.0		5			
					3.7	1.5					-- brown, tan
					174	1.0					
					2.8	2.0		10			-- gray
					221	2.0					
					2.1	2.5		15	▽		
											Boring terminated at 16' and grouted to the surface with a thick cement-bentonite mixture.

▽ Water First Noted

Shelby Tube

Direct Push Sampler

Auger Cuttings

No Recovery

(1)Photovac 20/20

Stratification is Inferred And May Not be Exact.
Soil Classification Based on Visual-Manual Procedure

Conestoga-Rovers & Associates

BORING LOG

Project: Baseline Site Assessment
Chevron Service Station No. 60109060
2929 College Drive
Baton Rouge, Louisiana

Client: Chevron Environmental Management Company
Houston, Texas

No. SB-02

File No.: 27453-00
Date: 03/27/03
Drilling Co.: Walker-Hill Environmental, Inc.
Supervisor: Jody Neal
Type Rig: Geoprobe 54
Logged by: TAR/DPD

LABORATORY TEST DATA					FIELD DATA					BORING DATA	
Moisture Content (%)	Atterberg Test: Liquid Limit (%)	Atterberg Test: Plastic Index (%)	% Finer than #200 Sieve	Other	Organic Vapor Meter (1) (ppm)	Penetrometer (Tons/Sq.ft) or Std Pen. Test (blows/foot)	Sampling	Depth (feet)	Water Level	Screen Interval	Hand probed: 0' to 4' Direct push technology (2" O.D.): 0' to 12' Start Time: 0950 Finish Time: 1020
					21.4	1.0					6" Concrete Gray, silty CLAY (CL), slight hydrocarbon odor
					127	1.5					
					82	*		5			
					86	1.0					Gray SAND (SC)
					3.4	*					Gray, silty CLAY (CL)
					<1.0	2.0		10	▽		-- brown/tan
											Boring terminated at 12' and grouted to the surface with a thick cement-bentonite mixture.
								15			

Shelby Tube

Direct Push Sampler

Auger Cuttings

No Recovery

(1)Photovac 20/20

▽ Water First Noted

Stratification is Inferred And May Not be Exact.
Soil Classification Based on Visual-Manual Procedure

Conestoga-Rovers & Associates

* No Penetrometer or SPT Value

BORING LOG

Project: Baseline Site Assessment
Chevron Service Station No. 60109060
2929 College Drive
Baton Rouge, Louisiana

Client: Chevron Environmental Management Company
Houston, Texas

No. SB-03

File No.: 27453-00
Date: 03/27/03
Drilling Co.: Walker-Hill Environmental, Inc.
Supervisor: Jody Neal
Type Rig: Geoprobe 54
Logged by: TAR/DPD

LABORATORY TEST DATA					FIELD DATA					BORING DATA	
Moisture Content (%)	Atterberg Test: Liquid Limit (%)	Atterberg Test: Plastic Index (%)	% Finer than #200 Sieve	Other	Organic Vapor Meter (1) (ppm)	Penetrometer (Tons/Sq.ft) or Std Pen. Test (blows/foot)	Sampling	Depth (feet)	Water Level	Screen Interval	Hand probed: 0' to 4' Direct push technology (2" O.D.): 0' to 12' Start Time: 1100 Finish Time: 1115
					14.8	1.5					6" Concrete Gray silty CLAYwith some SAND (FILL)
					4.7	*					
					4.9	2.0		5			Gray, silty CLAY (CL)
					8.7	1.5					
					<1.0	2.0					– moist
					6.5	1.0		10			
					6.0	2.0					Boring terminated at 12' and grouted to the surface with a thick cement-bentonite mixture.
								15			

Shelby Tube

Direct Push Sampler

Auger Cuttings

No Recovery

(1)Photovac 20/20

Water First Noted

Stratification is Inferred And May Not be Exact.
Soil Classification Based on Visual-Manual Procedure

Conestoga-Rovers & Associates

* No Penetrometer or SPT Value

BORING LOG

Project: Baseline Site Assessment
Chevron Service Station No. 60109060
2929 College Drive
Baton Rouge, Louisiana

Client: Chevron Environmental Management Company
Houston, Texas

No. SB-04

File No.: 27453-00
Date: 03/27/03
Drilling Co.: Walker-Hill Environmental, Inc.
Supervisor: Jody Neal
Type Rig: Geoprobe 54
Logged by: TAR/DPD

LABORATORY TEST DATA					FIELD DATA					BORING DATA	
Moisture Content (%)	Atterberg Test: Liquid Limit (%)	Atterberg Test: Plastic Index (%)	% Finer than #200 Sieve	Other	Organic Vapor Meter (1) (ppm)	Penetrometer (Tons/Sq.ft) or Std Pen. Test (blows/foot)	Sampling	Depth (feet)	Water Level	Screen Interval	Hand probed: 0' to 4' Direct push technology (2" O.D.): 0' to 12' Start Time: 1015 Finish Time: 1055
					16.1	1.0					6" Concrete Gray, silty CLAY (CL)
					1.9	2.5					
					13.2	1.0		5			– wet
					<1.0	2.0					– brown/tan
					<1.0	1.0		10	▽		
					<1.0	1.5					Boring terminated at 12' and grouted to the surface with a thick cement-bentonite mixture.
								15			

Shelby Tube
Direct Push Sampler
Auger Cuttings
No Recovery

(1)Photovac 20/20

▽ Water First Noted

Stratification is Inferred And May Not be Exact.
Soil Classification Based on Visual-Manual Procedure

Conestoga-Rovers & Associates

BORING LOG

Project: Baseline Site Assessment
Chevron Service Station No. 60109060
2929 College Drive
Baton Rouge, Louisiana

Client: Chevron Environmental Management Company
Houston, Texas

No. SB-05

File No.: 27453-00
Date: 03/27/03
Drilling Co.: Walker-Hill Environmental, Inc.
Supervisor: Jody Neal
Type Rig: Geoprobe 54
Logged by: TAR/DPD

LABORATORY TEST DATA					FIELD DATA					BORING DATA	
Moisture Content (%)	Atterberg Test: Liquid Limit (%)	Atterberg Test: Plastic Index (%)	% Finer than #200 Sieve	Other	Organic Vapor Meter (1) (ppm)	Penetrometer (Tons/Sq.ft) or Std Pen. Test (blows/foot)	Sampling	Depth (feet)	Water Level	Screen Interval	Hand probed: 0' to 4' Direct push technology (2" O.D.): 0' to 12' Start Time: 1125 Finish Time: 1150
					2.9	1.5					6" Concrete Tan, silty CLAY with gravel (FILL)
					<1.0	2.5					Gray, silty CLAY (CL)
					<1.0	2.5		5			
					<1.0	2.0					-- moist
					<1.0	2.5			▽		
					<1.0	2.5		10			-- brown/tan
											Boring terminated at 12' and grouted to the surface with a thick cement-bentonite mixture.
								15			

Shelby Tube

Direct Push Sampler

Auger Cuttings

No Recovery

▽ Water First Noted

(1)Photovac 20/20

Stratification is Inferred And May Not be Exact.
Soil Classification Based on Visual-Manual Procedure

Conestoga-Rovers & Associates

BORING LOG

Project: Baseline Site Assessment
Chevron Service Station No. 60109060
2929 College Drive
Baton Rouge, Louisiana

Client: Chevron Environmental Management Company
Houston, Texas

No. SB-06

File No.: 27453-00
Date: 03/27/03
Drilling Co.: Walker-Hill Environmental, Inc.
Supervisor: Jody Neal
Type Rig: Geoprobe 54
Logged by: TAR/DPD

LABORATORY TEST DATA					FIELD DATA					BORING DATA	
Moisture Content (%)	Atterberg Test: Liquid Limit (%)	Atterberg Test: Plastic Index (%)	% Finer than #200 Sieve	Other	Organic Vapor Meter (1) (ppm)	Penetrometer (Tons/Sq.ft) or Std Pen. Test (blows/foot)	Sampling	Depth (feet)	Water Level	Screen Interval	Hand probed: 0' to 4' Direct push technology (2" O.D.): 0' to 12' Start Time: 1320 Finish Time: 1350
					<1.0	1.0					Brown, tan with silty clay, some sand and gravel (FILL)
					<1.0	*					
						1.5					Gray, silty CLAY (CL)
					<1.0	2.0		5			
					<1.0	1.0					-- moist
					<1.0	1.5		10	▽		-- brown, tan
					<1.0	2.0					Boring terminated at 12' and grouted to the surface with a thick cement-bentonite mixture.
								15			

Shelby Tube

Direct Push Sampler

Auger Cuttings

No Recovery

(1)Photovac 20/20

▽ Water First Noted

Stratification is Inferred And May Not be Exact.
Soil Classification Based on Visual-Manual Procedure

Conestoga-Rovers & Associates

* No Penetrometer or SPT Value

APPENDIX B

SOIL AND GROUNDWATER ANALYTICAL LABORATORY REPORT

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
1000 Riverbend Blvd., Suite F
St. Rose, LA 70087
Phone: 504.469.0333
Fax: 504.469.0555

April 08, 2003

Mr. Bill DeLange
CHEVRON PRODUCTS CO.
5959 Corporate Dr.
Houston, TX 77036

RE: Lab Project Number: 2017720
Client Project ID: 60109060

Dear Mr. DeLange:

Enclosed are the analytical results for sample(s) received by the laboratory March 27, 2003through March 28, 2003 Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Cindy Olavesen

Cindy Olavesen
cindy.olavesen@pacelabs.com
Project Manager

Enclosures

Pace Analytical™
New Orleans Laboratory

Sample Cross Reference Report

www.pacelabs.com

Pace Analytical Services, Inc.
1000 Riverbend Blvd, Suite F
Saint Rose, LA 70087

Phone: 504.469.0333
Fax: 504.469.0555

Client: CHEVRON PRODUCTS CO.

Project: 60109060

Project No.: 2017720

Sample ID	Lab ID	Matrix	Collection Date/Time		Received Date/Time	
SB01	20145482	Water	03/27/2003	14:10	03/27/2003	15:15
SB01-(12-14)	20145489	Soil	03/27/2003	09:40	03/28/2003	15:15
SB01-(2-4)	20145488	Soil	03/27/2003	09:15	03/28/2003	15:15
SB02	20145483	Water	03/27/2003	14:20	03/27/2003	15:15
SB02-(10-12)	20145491	Soil	03/27/2003	10:15	03/28/2003	15:15
SB02-(2-4)	20145490	Soil	03/27/2003	09:55	03/28/2003	15:15
SB03	20145484	Water	03/27/2003	14:40	03/27/2003	15:15
SB03-(0-2)	20145492	Soil	03/27/2003	10:55	03/28/2003	15:15
SB03-(10-12)	20145493	Soil	03/27/2003	11:20	03/28/2003	15:15
SB04	20145485	Water	03/27/2003	14:25	03/27/2003	15:15
SB04-(0-2)	20145494	Soil	03/27/2003	10:25	03/28/2003	15:15
SB04-(10-12)	20145495	Soil	03/27/2003	10:50	03/28/2003	15:15
SB05	20145486	Water	03/27/2003	14:35	03/27/2003	15:15
SB05-(0-2)	20145496	Soil	03/27/2003	11:25	03/28/2003	15:15
SB05-(10-12)	20145497	Soil	03/27/2003	11:50	03/28/2003	15:15
SB06	20145487	Water	03/27/2003	14:50	03/27/2003	15:15
SB06-(0-2)	20145498	Soil	03/27/2003	13:25	03/28/2003	15:15
SB06-(10-12)	20145499	Soil	03/27/2003	13:50	03/28/2003	15:15

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Phone: 504.469.0333
Fax: 504.469.0555

Client ID: SB01
Project: 60109060
Lab ID: 20145482
Description: None

Client: CHEVRON PRODUCTS CO.
Site: None
Project No.: 2017720 **Prep Factor:** 1
Collected: 03/27/03 **Received:** 03/27/03
Matrix: Water **%Moisture:**

ParameterName	Method	Batch	DF	Result	Qu	Units	Reporting Limit	Prep.	Analysis	Reg. Limit
TPH - Gasoline Range O	Louisiana TPH	24950	10	11100	D1	ug/L	500.		02-Apr-03 00:27	
Benzene	SW 8021 Arom	24955	10	141.	D1	ug/L	5.00		02-Apr-03 00:13	
Ethylbenzene	SW 8021 Arom	24955	10	854.	D1	ug/L	5.00		02-Apr-03 00:13	
Methyl tert-butyl ether (	SW 8021 Arom	24955	10	395.	D1	ug/L	5.00		02-Apr-03 00:13	
Toluene	SW 8021 Arom	24955	10	16.1	Ph D1	ug/L	5.00		02-Apr-03 00:13	
m,p-Xylene	SW 8021 Arom	24955	10	259.	D1	ug/L	5.00		02-Apr-03 00:13	
o-Xylene	SW 8021 Arom	24955	10	ND	D1	ug/L	5.00		02-Apr-03 00:13	

7 parameter(s) reported

Client ID: SB02
Project: 60109060
Lab ID: 20145483
Description: None

Client: CHEVRON PRODUCTS CO.
Site: None
Project No.: 2017720 **Prep Factor:** 1
Collected: 03/27/03 **Received:** 03/27/03
Matrix: Water **%Moisture:**

ParameterName	Method	Batch	DF	Result	Qu	Units	Reporting Limit	Prep.	Analysis	Reg. Limit
TPH - Gasoline Range O	Louisiana TPH	25079	1	256.		ug/L	50.0		04-Apr-03 13:06	
Benzene	SW 8021 Arom	25080	1	1.80		ug/L	0.500		04-Apr-03 04:51	
Ethylbenzene	SW 8021 Arom	25080	1	6.60	Ph	ug/L	0.500		04-Apr-03 04:51	
Methyl tert-butyl ether (	SW 8021 Arom	25080	1	25.2		ug/L	0.500		04-Apr-03 04:51	
Toluene	SW 8021 Arom	25080	1	0.870		ug/L	0.500		04-Apr-03 04:51	
m,p-Xylene	SW 8021 Arom	25080	1	1.70		ug/L	0.500		04-Apr-03 04:51	
o-Xylene	SW 8021 Arom	25080	1	ND		ug/L	0.500		04-Apr-03 04:51	

7 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of final sample. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

4-9-2003 05:29:25

Laboratory Certifications: Puerto Rico - 3449
Louisiana Dept. of Health and Hospitals (ELAP)/Drinking Water -LA000006
Florida Dept. of Health/Hazardous Waste (NELAC) - E87595
Kansas Dept. of Health & Environment/ELW/HW - E-10266
New Jersey DEPE/Wastewater - 58002
LA Dept. of Environmental Quality (LELAP) - 02006
U.S. Dept. of Agriculture Animal & Plant Health Inspection Services -
USDA Foreign Soil Import (U.S. Territories) - S-47270

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Phone: 504.469.0333
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Client ID: SB03 **Client:** CHEVRON PRODUCTS CO.
Project: 60109060 **Site:** None
Lab ID: 20145484 **Project No.:** 2017720 **Prep Factor:** 1
Description: None **Collected:** 03/27/03 **Received:** 03/27/03
Matrix: Water **%Moisture:**

ParameterName	Method	Batch	DF	Result	Qu	Units	Reporting Limit	Prep.	Analysis	Reg. Limit
TPH - Gasoline Range O	Louisiana TPH	25079	1	767.		ug/L	50.0		04-Apr-03 05:26	
Benzene	SW 8021 Arom	25080	1	ND		ug/L	0.500		04-Apr-03 05:12	
Ethylbenzene	SW 8021 Arom	25080	1	ND		ug/L	0.500		04-Apr-03 05:12	
Methyl tert-butyl ether (	SW 8021 Arom	25080	1	46.0		ug/L	0.500		04-Apr-03 05:12	
Toluene	SW 8021 Arom	25080	1	ND		ug/L	0.500		04-Apr-03 05:12	
m,p-Xylene	SW 8021 Arom	25080	1	ND		ug/L	0.500		04-Apr-03 05:12	
o-Xylene	SW 8021 Arom	25080	1	ND		ug/L	0.500		04-Apr-03 05:12	

7 parameter(s) reported

Client ID: SB04 **Client:** CHEVRON PRODUCTS CO.
Project: 60109060 **Site:** None
Lab ID: 20145485 **Project No.:** 2017720 **Prep Factor:** 1
Description: None **Collected:** 03/27/03 **Received:** 03/27/03
Matrix: Water **%Moisture:**

ParameterName	Method	Batch	DF	Result	Qu	Units	Reporting Limit	Prep.	Analysis	Reg. Limit
TPH - Gasoline Range O	Louisiana TPH	25079	1	482.		ug/L	50.0		04-Apr-03 05:47	
Benzene	SW 8021 Arom	25080	1	ND		ug/L	0.500		04-Apr-03 05:33	
Ethylbenzene	SW 8021 Arom	25080	1	ND		ug/L	0.500		04-Apr-03 05:33	
Methyl tert-butyl ether (	SW 8021 Arom	25080	1	737.		ug/L	0.500		04-Apr-03 05:33	
Toluene	SW 8021 Arom	25080	1	ND		ug/L	0.500		04-Apr-03 05:33	
m,p-Xylene	SW 8021 Arom	25080	1	ND		ug/L	0.500		04-Apr-03 05:33	
o-Xylene	SW 8021 Arom	25080	1	ND		ug/L	0.500		04-Apr-03 05:33	

7 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit.
denotes Dilution Factor of final sample. The Prep Factor accounts for a non-routine sample size.
porting Limit is corrected for sample size, dilution and moisture content if applicable.
lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

4 9 2003 05:29:29

Laboratory Certifications: Puerto Rico - 3449
Louisiana Dept. of Health and Hospitals (ELAP)/Drinking Water -LA000006
Florida Dept. of Health/Hazardous Waste (NELAC) - E87595
Kansas Dept. of Health & Environment/ELWHW - E-10266
New Jersey DEPE/Wastewater - 58002
LA Dept. of Environmental Quality (LELAP) - 02006
U.S. Dept. of Agriculture Animal & Plant Health Inspection Services -
USDA Foreign Soil Import (U.S. Territories) - S-47270

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Phone: 504.469.0333
Fax: 504.469.0555

Client ID: SB05 **Client:** CHEVRON PRODUCTS CO.
Project: 60109060 **Site:** None
Lab ID: 20145486 **Project No.:** 2017720 **Prep Factor:** 1
Description: None **Collected:** 03/27/03 **Received:** 03/27/03
Matrix: Water **%Moisture:**

ParameterName	Method	Batch	DF	Result	Qu	Units	Reporting Limit	Prep.	Analysis	Reg. Limit
TPH - Gasoline Range O	Louisiana TPH	25079	1	88.3		ug/L	50.0		04-Apr-03 06:08	
Benzene	SW 8021 Arom	25080	1	ND		ug/L	0.500		04-Apr-03 05:54	
Ethylbenzene	SW 8021 Arom	25080	1	ND		ug/L	0.500		04-Apr-03 05:54	
Methyl tert-butyl ether (	SW 8021 Arom	25080	1	5.20		ug/L	0.500		04-Apr-03 05:54	
Toluene	SW 8021 Arom	25080	1	ND		ug/L	0.500		04-Apr-03 05:54	
m,p-Xylene	SW 8021 Arom	25080	1	ND		ug/L	0.500		04-Apr-03 05:54	
o-Xylene	SW 8021 Arom	25080	1	ND		ug/L	0.500		04-Apr-03 05:54	

7 parameter(s) reported

Client ID: SB06 **Client:** CHEVRON PRODUCTS CO.
Project: 60109060 **Site:** None
Lab ID: 20145487 **Project No.:** 2017720 **Prep Factor:** 1
Description: None **Collected:** 03/27/03 **Received:** 03/27/03
Matrix: Water **%Moisture:**

ParameterName	Method	Batch	DF	Result	Qu	Units	Reporting Limit	Prep.	Analysis	Reg. Limit
TPH - Gasoline Range O	Louisiana TPH	25079	1	69.3		ug/L	50.0		04-Apr-03 06:29	
Benzene	SW 8021 Arom	25080	1	ND		ug/L	0.500		04-Apr-03 06:15	
Ethylbenzene	SW 8021 Arom	25080	1	3.50		ug/L	0.500		04-Apr-03 06:15	
Methyl tert-butyl ether (	SW 8021 Arom	25080	1	14.2		ug/L	0.500		04-Apr-03 06:15	
Toluene	SW 8021 Arom	25080	1	1.20		ug/L	0.500		04-Apr-03 06:15	
m,p-Xylene	SW 8021 Arom	25080	1	9.60		ug/L	0.500		04-Apr-03 06:15	
o-Xylene	SW 8021 Arom	25080	1	2.10		ug/L	0.500		04-Apr-03 06:15	

7 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit.
F denotes Dilution Factor of final sample. The Prep Factor accounts for a non-routine sample size.
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Lists qualifiers. Specific qualifiers are defined at the end of the report.
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Louisiana Dept. of Health and Hospitals (ELAP)/Drinking Water -LA000006
Florida Dept. of Health/Hazardous Waste (NELAC) - E87595
Kansas Dept. of Health & Environment/ELW/HW - E-10266
New Jersey DEPE/Wastewater - 58002
LA Dept. of Environmental Quality (LELAP) - 02006
U.S. Dept. of Agriculture Animal & Plant Health Inspection Services -
USDA Foreign Soil Import (U.S. Territories) - S-47270

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Saint Rose, LA 70087

Phone: 504.469.0333
Fax: 504.469.0555

Client ID: SB01-(2-4)
Project: 60109060
Lab ID: 20145488
Description: None

Client: CHEVRON PRODUCTS CO.
Site: None
Project No.: 2017720 **Prep Factor:** 1
Collected: 03/27/03 **Received:** 03/28/03
Matrix: Soil **%Moisture:**

ParameterName	Method	Batch	DF	Result	Qu	Units	Reporting Limit	Prep.	Analysis	Reg. Limit
TPH - Gasoline Range O	Louisiana TPH	25085	10	207000	D1	ug/kg	21600	03-Apr-03	07-Apr-03 21:46	
Benzene	SW 8021 Arom	25084	1	331.	Ph	ug/kg	21.6	03-Apr-03	04-Apr-03 17:51	
Ethylbenzene	SW 8021 Arom	25084	1	9420		ug/kg	21.6	03-Apr-03	04-Apr-03 17:51	
Methyl tert-butyl ether (	SW 8021 Arom	25084	1	ND		ug/kg	21.6	03-Apr-03	04-Apr-03 17:51	
Toluene	SW 8021 Arom	25084	1	ND		ug/kg	21.6	03-Apr-03	04-Apr-03 17:51	
m,p-Xylene	SW 8021 Arom	25084	1	1050	Ph	ug/kg	21.6	03-Apr-03	04-Apr-03 17:51	
o-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	21.6	03-Apr-03	04-Apr-03 17:51	

7 parameter(s) reported

Client ID: SB01-(12-14)
Project: 60109060
Lab ID: 20145489
Description: None

Client: CHEVRON PRODUCTS CO.
Site: None
Project No.: 2017720 **Prep Factor:** 1
Collected: 03/27/03 **Received:** 03/28/03
Matrix: Soil **%Moisture:**

ParameterName	Method	Batch	DF	Result	Qu	Units	Reporting Limit	Prep.	Analysis	Reg. Limit
TPH - Gasoline Range O	Louisiana TPH	25085	1	63700		ug/kg	2255	03-Apr-03	07-Apr-03 22:07	
Benzene	SW 8021 Arom	25084	1	ND		ug/kg	22.6	03-Apr-03	04-Apr-03 18:12	
Ethylbenzene	SW 8021 Arom	25084	1	1110	Ph	ug/kg	22.6	03-Apr-03	04-Apr-03 18:12	
Methyl tert-butyl ether (	SW 8021 Arom	25084	1	64.0		ug/kg	22.6	03-Apr-03	04-Apr-03 18:12	
Toluene	SW 8021 Arom	25084	1	ND		ug/kg	22.6	03-Apr-03	04-Apr-03 18:12	
m,p-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	22.6	03-Apr-03	04-Apr-03 18:12	
o-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	22.6	03-Apr-03	04-Apr-03 18:12	

7 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of final sample. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

4-9 2003 08:29:30

Laboratory Certifications: Puerto Rico - 3449
Louisiana Dept. of Health and Hospitals (ELAP)/Drinking Water -LA000006
Florida Dept. of Health/Hazardous Waste (NELAC) - E87595
Kansas Dept. of Health & Environment/ELW/HW - E-10256
New Jersey DEPE/Wastewater - 58002
LA Dept. of Environmental Quality (LELAP) - 02006
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Phone: 504.469.0333
Fax: 504.469.0555

Client ID: SB02-(2-4) **Client:** CHEVRON PRODUCTS CO.
Project: 60109060 **Site:** None
Lab ID: 20145490 **Project No.:** 2017720 **Prep Factor:** 1
Description: None **Collected:** 03/27/03 **Received:** 03/28/03
Matrix: Soil **%Moisture:**

ParameterName	Method	Batch	DF	Result	Qu	Units	Reporting Limit	Prep.	Analysis	Reg. Limit
TPH - Gasoline Range O	Louisiana TPH	25085	1	10800		ug/kg	2375	03-Apr-03	07-Apr-03 22:28	
Benzene	SW 8021 Arom	25084	1	ND		ug/kg	23.8	03-Apr-03	04-Apr-03 18:33	
Ethylbenzene	SW 8021 Arom	25084	1	81.2	Ph	ug/kg	23.8	03-Apr-03	04-Apr-03 18:33	
Methyl tert-butyl ether (	SW 8021 Arom	25084	1	ND		ug/kg	23.8	03-Apr-03	04-Apr-03 18:33	
Toluene	SW 8021 Arom	25084	1	ND		ug/kg	23.8	03-Apr-03	04-Apr-03 18:33	
m,p-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	23.8	03-Apr-03	04-Apr-03 18:33	
o-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	23.8	03-Apr-03	04-Apr-03 18:33	

7 parameter(s) reported

Client ID: SB02-(10-12) **Client:** CHEVRON PRODUCTS CO.
Project: 60109060 **Site:** None
Lab ID: 20145491 **Project No.:** 2017720 **Prep Factor:** 1
Description: None **Collected:** 03/27/03 **Received:** 03/28/03
Matrix: Soil **%Moisture:**

ParameterName	Method	Batch	DF	Result	Qu	Units	Reporting Limit	Prep.	Analysis	Reg. Limit
TPH - Gasoline Range O	Louisiana TPH	25085	1	ND		ug/kg	2390	03-Apr-03	04-Apr-03 19:08	
Benzene	SW 8021 Arom	25084	1	ND		ug/kg	23.9	03-Apr-03	04-Apr-03 18:54	
Ethylbenzene	SW 8021 Arom	25084	1	ND		ug/kg	23.9	03-Apr-03	04-Apr-03 18:54	
Methyl tert-butyl ether (	SW 8021 Arom	25084	1	ND		ug/kg	23.9	03-Apr-03	04-Apr-03 18:54	
Toluene	SW 8021 Arom	25084	1	ND		ug/kg	23.9	03-Apr-03	04-Apr-03 18:54	
m,p-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	23.9	03-Apr-03	04-Apr-03 18:54	
o-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	23.9	03-Apr-03	04-Apr-03 18:54	

7 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of final sample. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and mouture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

4 9 2003 08:29 31

Laboratory Certifications: Puerto Rico - 3449
Louisiana Dept. of Health and Hospitals (ELAP)/Drinking Water LA000006
Florida Dept. of Health/Hazardous Waste (NELAC) - E87595
Kansas Dept. of Health & Environment/ELW/HW - E-10266
New Jersey DEPE/Wastewater - 58002
LA Dept. of Environmental Quality (LELAP) - 02006
U.S. Dept. of Agriculture Animal & Plant Health Inspection Services -
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Phone: 504.469.0333
Fax: 504.469.0555

Client ID: SB03-(0-2)
Project: 60109060
Lab ID: 20145492
Description: None

Client: CHEVRON PRODUCTS CO.
Site: None
Project No.: 2017720 **Prep Factor:** 1
Collected: 03/27/03 **Received:** 03/28/03
Matrix: Soil **%Moisture:**

ParameterName	Method	Batch	DF	Result	Qu	Units	Reporting Limit	Prep. Analysis	Reg. Limit
TPH - Gasoline Range O	Louisiana TPH	25085	1	7590		ug/kg	2635	03-Apr-03 04-Apr-03 19:29	
Benzene	SW 8021 Arom	25084	1	ND		ug/kg	26.4	03-Apr-03 04-Apr-03 19:15	
Ethylbenzene	SW 8021 Arom	25084	1	ND		ug/kg	26.4	03-Apr-03 04-Apr-03 19:15	
Methyl tert-butyl ether (	SW 8021 Arom	25084	1	ND		ug/kg	26.4	03-Apr-03 04-Apr-03 19:15	
Toluene	SW 8021 Arom	25084	1	ND		ug/kg	26.4	03-Apr-03 04-Apr-03 19:15	
m,p-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	26.4	03-Apr-03 04-Apr-03 19:15	
o-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	26.4	03-Apr-03 04-Apr-03 19:15	

7 parameter(s) reported

Client ID: SB03-(10-12)
Project: 60109060
Lab ID: 20145493
Description: None

Client: CHEVRON PRODUCTS CO.
Site: None
Project No.: 2017720 **Prep Factor:** 1
Collected: 03/27/03 **Received:** 03/28/03
Matrix: Soil **%Moisture:**

ParameterName	Method	Batch	DF	Result	Qu	Units	Reporting Limit	Prep. Analysis	Reg. Limit
TPH - Gasoline Range O	Louisiana TPH	25085	1	ND		ug/kg	2975	03-Apr-03 04-Apr-03 19:50	
Benzene	SW 8021 Arom	25084	1	ND		ug/kg	29.8	03-Apr-03 04-Apr-03 19:36	
Ethylbenzene	SW 8021 Arom	25084	1	ND		ug/kg	29.8	03-Apr-03 04-Apr-03 19:36	
Methyl tert-butyl ether (	SW 8021 Arom	25084	1	ND		ug/kg	29.8	03-Apr-03 04-Apr-03 19:36	
Toluene	SW 8021 Arom	25084	1	ND		ug/kg	29.8	03-Apr-03 04-Apr-03 19:36	
m,p-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	29.8	03-Apr-03 04-Apr-03 19:36	
o-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	29.8	03-Apr-03 04-Apr-03 19:36	

7 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of final sample. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

4 9:2003 08 29.32

Laboratory Certifications: Puerto Rico - 3449
Louisiana Dept. of Health and Hospitals (ELAP)/Drinking Water -LA000006
Florida Dept. of Health/Hazardous Waste (NELAC) - E87595
Kansas Dept. of Health & Environment/ELW/HW - E-10266
New Jersey DEPE/Wastewater - 58002
LA Dept. of Environmental Quality (LELAP) - 02006
U.S. Dept. of Agriculture Animal & Plant Health Inspection Services -
USDA Foreign Soil Import (U.S. Territories) - S-47270

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Phone: 504.469.0333
Fax: 504.469.0555

Client ID: SB04-(0-2) **Client:** CHEVRON PRODUCTS CO.
Project: 60109060 **Site:** None
Lab ID: 20145494 **Project No.:** 2017720 **Prep Factor:** 1
Description: None **Collected:** 03/27/03 **Received:** 03/28/03
Matrix: Soil **%Moisture:**

ParameterName	Method	Batch	DF	Result	Qu	Units	Reporting Limit	Prep.	Analysis	Reg. Limit
TPH - Gasoline Range O	Louisiana TPH	25085	1	7330		ug/kg	2395	03-Apr-03	04-Apr-03 22:18	
Benzene	SW 8021 Arom	25084	1	78.6		ug/kg	23.9	03-Apr-03	04-Apr-03 22:03	
Ethylbenzene	SW 8021 Arom	25084	1	177.		ug/kg	23.9	03-Apr-03	04-Apr-03 22:03	
Methyl tert-butyl ether (	SW 8021 Arom	25084	1	ND		ug/kg	23.9	03-Apr-03	04-Apr-03 22:03	
Toluene	SW 8021 Arom	25084	1	122.	Ph	ug/kg	23.9	03-Apr-03	04-Apr-03 22:03	
m,p-Xylene	SW 8021 Arom	25084	1	94.8		ug/kg	23.9	03-Apr-03	04-Apr-03 22:03	
o-Xylene	SW 8021 Arom	25084	1	70.4		ug/kg	23.9	03-Apr-03	04-Apr-03 22:03	

7 parameter(s) reported

Client ID: SB04-(10-12) **Client:** CHEVRON PRODUCTS CO.
Project: 60109060 **Site:** None
Lab ID: 20145495 **Project No.:** 2017720 **Prep Factor:** 1
Description: None **Collected:** 03/27/03 **Received:** 03/28/03
Matrix: Soil **%Moisture:**

ParameterName	Method	Batch	DF	Result	Qu	Units	Reporting Limit	Prep.	Analysis	Reg. Limit
TPH - Gasoline Range O	Louisiana TPH	25085	1	ND		ug/kg	2375	03-Apr-03	04-Apr-03 22:39	
Benzene	SW 8021 Arom	25084	1	ND		ug/kg	23.8	03-Apr-03	04-Apr-03 22:24	
Ethylbenzene	SW 8021 Arom	25084	1	ND		ug/kg	23.8	03-Apr-03	04-Apr-03 22:24	
Methyl tert-butyl ether (	SW 8021 Arom	25084	1	230.		ug/kg	23.8	03-Apr-03	04-Apr-03 22:24	
Toluene	SW 8021 Arom	25084	1	ND		ug/kg	23.8	03-Apr-03	04-Apr-03 22:24	
m,p-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	23.8	03-Apr-03	04-Apr-03 22:24	
o-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	23.8	03-Apr-03	04-Apr-03 22:24	

7 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of final sample. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

Laboratory Certifications: Puerto Rico - 3449
Louisiana Dept. of Health and Hospitals (ELAP)/Drinking Water -LA000006
Florida Dept. of Health/Hazardous Waste (NELAC) - E87595
Kansas Dept. of Health & Environment/ELW/HW - E-10266
New Jersey DEPE/Wastewater - 58002
LA Dept. of Environmental Quality (LELAP) - 02006
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Phone: 504.469.0333
Fax: 504.469.0555

Client ID: SB05-(0-2)
Project: 60109060
Lab ID: 20145496
Description: None

Client: CHEVRON PRODUCTS CO.
Site: None
Project No.: 2017720 **Prep Factor:** 1
Collected: 03/27/03 **Received:** 03/28/03
Matrix: Soil **%Moisture:**

ParameterName	Method	Batch	DF	Result	Qu	Units	Reporting Limit	Prep.	Analysis	Reg. Limit
TPH - Gasoline Range O	Louisiana TPH	25085	1	5800		ug/kg	2360	03-Apr-03	04-Apr-03 23:00	
Benzene	SW 8021 Arom	25084	1	ND		ug/kg	23.6	03-Apr-03	04-Apr-03 22:45	
Ethylbenzene	SW 8021 Arom	25084	1	ND		ug/kg	23.6	03-Apr-03	04-Apr-03 22:45	
Methyl tert-butyl ether (	SW 8021 Arom	25084	1	ND		ug/kg	23.6	03-Apr-03	04-Apr-03 22:45	
Toluene	SW 8021 Arom	25084	1	ND		ug/kg	23.6	03-Apr-03	04-Apr-03 22:45	
m,p-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	23.6	03-Apr-03	04-Apr-03 22:45	
o-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	23.6	03-Apr-03	04-Apr-03 22:45	

7 parameter(s) reported

Client ID: SB05-(10-12)
Project: 60109060
Lab ID: 20145497
Description: None

Client: CHEVRON PRODUCTS CO.
Site: None
Project No.: 2017720 **Prep Factor:** 1
Collected: 03/27/03 **Received:** 03/28/03
Matrix: Soil **%Moisture:**

ParameterName	Method	Batch	DF	Result	Qu	Units	Reporting Limit	Prep.	Analysis	Reg. Limit
TPH - Gasoline Range O	Louisiana TPH	25085	1	ND		ug/kg	2620	03-Apr-03	04-Apr-03 23:21	
Benzene	SW 8021 Arom	25084	1	ND		ug/kg	26.2	03-Apr-03	04-Apr-03 23:06	
Ethylbenzene	SW 8021 Arom	25084	1	ND		ug/kg	26.2	03-Apr-03	04-Apr-03 23:06	
Methyl tert-butyl ether (	SW 8021 Arom	25084	1	ND		ug/kg	26.2	03-Apr-03	04-Apr-03 23:06	
Toluene	SW 8021 Arom	25084	1	ND		ug/kg	26.2	03-Apr-03	04-Apr-03 23:06	
m,p-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	26.2	03-Apr-03	04-Apr-03 23:06	
o-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	26.2	03-Apr-03	04-Apr-03 23:06	

7 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of final sample. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

4-9 2003 08:29:33

Laboratory Certifications: Puerto Rico - 3449
Louisiana Dept. of Health and Hospitals (ELAP)/Drinking Water -LA000006
Florida Dept. of Health/Hazardous Waste (NELAC) - E87595
Kansas Dept. of Health & Environment/ELWHW - E-10266
New Jersey DEPE/Wastewater - 58002
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Phone: 504.469.0333
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Client ID: SB06-(0-2)
Project: 60109060
Lab ID: 20145498
Description: None

Client: CHEVRON PRODUCTS CO.
Site: None
Project No.: 2017720 **Prep Factor:** 1
Collected: 03/27/03 **Received:** 03/28/03
Matrix: Soil **%Moisture:**

ParameterName	Method	Batch	DF	Result	Qu	Units	Reporting Limit	Prep.	Analysis	Reg. Limit
TPH - Gasoline Range O	Louisiana TPH	25085	1	ND		ug/kg	2215	03-Apr-03	04-Apr-03 23:41	
Benzene	SW 8021 Arom	25084	1	ND		ug/kg	22.1	03-Apr-03	04-Apr-03 23:27	
Ethylbenzene	SW 8021 Arom	25084	1	ND		ug/kg	22.1	03-Apr-03	04-Apr-03 23:27	
Methyl tert-butyl ether (	SW 8021 Arom	25084	1	ND		ug/kg	22.1	03-Apr-03	04-Apr-03 23:27	
Toluene	SW 8021 Arom	25084	1	ND		ug/kg	22.1	03-Apr-03	04-Apr-03 23:27	
m,p-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	22.1	03-Apr-03	04-Apr-03 23:27	
o-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	22.1	03-Apr-03	04-Apr-03 23:27	

7 parameter(s) reported

Client ID: SB06-(10-12)
Project: 60109060
Lab ID: 20145499
Description: None

Client: CHEVRON PRODUCTS CO.
Site: None
Project No.: 2017720 **Prep Factor:** 1
Collected: 03/27/03 **Received:** 03/28/03
Matrix: Soil **%Moisture:**

ParameterName	Method	Batch	DF	Result	Qu	Units	Reporting Limit	Prep.	Analysis	Reg. Limit
TPH - Gasoline Range O	Louisiana TPH	25085	1	ND		ug/kg	2385	03-Apr-03	05-Apr-03 00:02	
Benzene	SW 8021 Arom	25084	1	ND		ug/kg	23.9	03-Apr-03	04-Apr-03 23:48	
Ethylbenzene	SW 8021 Arom	25084	1	ND		ug/kg	23.9	03-Apr-03	04-Apr-03 23:48	
Methyl tert-butyl ether (	SW 8021 Arom	25084	1	ND		ug/kg	23.9	03-Apr-03	04-Apr-03 23:48	
Toluene	SW 8021 Arom	25084	1	ND		ug/kg	23.9	03-Apr-03	04-Apr-03 23:48	
m,p-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	23.9	03-Apr-03	04-Apr-03 23:48	
o-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	23.9	03-Apr-03	04-Apr-03 23:48	

7 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of final sample. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

4 9 2003 08:29 34

Laboratory Certifications: Puerto Rico - 3449
Louisiana Dept. of Health and Hospitals (ELAP)/Drinking Water -LA000026
Florida Dept. of Health/Hazardous Waste (NELAC) - E87595
Kansas Dept. of Health & Environment/ELW/HW - E-10266
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Saint Rose, LA 70087

Phone. 504.469.0333
Fax: 504.469.0555

Method: Water GC Organics

Project No.: 2017720

Batch: 24950

Units: ug/L

Parameter Name	LCS Spike	LCS %Rec	LCSD %Rec	LCS RPD	MS Spike	MS %Rec	MSD %Rec	(1)MS RPD	DUP RPD	QC Limits LCS	QC Limits MS/MSD	Max RPD	Qu
TPH - Gasoline Range Organics	500.00	109			500.00	95	100	5		50 - 150	50 - 150	25	

1 compound(s) reported

* denotes recovery outside of QC limits.
MS spike concentrations are not corrected for moisture content of the spiked sample.
(1) MS RPD is calculated via SW-846 rules: on the basis of spiked sample concentrations rather than spike recoveries.

4/8/2003 16:14:49

Laboratory Certifications:
Louisiana Dept. of Health and Hospitals (ELAP)/Drinking Water -LA000006
Florida Dept. of Health/Hazardous Waste - E87595
Kansas Dept. of Health & Environment/ELW/HW - E-10266
New Jersey DEPE/Wastewater - 58002
Tennessee Dept. of Environment & Conservation/Div or UST (File)
U.S. Dept. of Agriculture Animal & Plant Health Inspection Services - Foreign Soil Import (U.S. Territories)

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Saint Rose, LA 70087

Phone: 504.469.0333
Fax: 504.469.0555

Method: Water GC Organics

Project No.: 2017720

Batch: 25079

Units: ug/L

Parameter Name	LCS Spike	LCS %Rec	LCSD %Rec	LCS RPD	MS Spike	MS %Rec	MSD %Rec	(1)MS RPD	DUP RPD	QC Limits LCS	QC Limits MS/MSD	Max RPD	Qu
TPH - Gasoline Range Organics	500.00	107			500.00	77	76	1		50 - 150	50 - 150	25	

1 compound(s) reported

* denotes recovery outside of QC limits.
MS spike concentrations are not corrected for moisture content of the spiked sample.
(1) MS RPD is calculated via SW-846 rules: on the basis of spiked sample concentrations rather than spike recoveries.

4 8 2003 16:14:48

Laboratory Certifications:
Louisiana Dept. of Health and Hospitals (ELAP)/Drinking Water -LA000006
Florida Dept. of Health/Hazardous Waste - E87595
Kansas Dept. of Health & Environment/ELW/HW - E-10266
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Saint Rose, LA 70087

Phone: 504.469.0333
Fax: 504.469.0555

Method: Med Soil GC Organics

Project No.: 2017720

Batch: 25085

Units: ug/kg

Parameter Name	LCS Spike	LCS %Rec	LCSD %Rec	LCS RPD	MS Spike	MS %Rec	MSD %Rec	(1)MS RPD	DUP RPD	QC Limits LCS	QC Limits MS/MSD	Max RPD	Qu
TPH - Gasoline Range Organics	25000.00	95	95	0	25000.00					50 - 150	50 - 150	50	

1 compound(s) reported

* denotes recovery outside of QC limits.
MS spike concentrations are not corrected for moisture content of the spiked sample.
(1) MS RPD is calculated via SW-846 rules: on the basis of spiked sample concentrations rather than spike recoveries.

4/8/2003 16:14:48

Laboratory Certifications:
Louisiana Dept. of Health and Hospitals (ELAP)/Drinking Water -LA000006
Florida Dept. of Health/Hazardous Waste - E87595
Kansas Dept. of Health & Environment/ELWHW - E-10256
New Jersey DEPE/Wastewater - 58002
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Phone: 504.469.0333
Fax: 504.469.0555

Method: Water 8021

Project No.: 2017720

Batch: 24955

Units: ug/L

Parameter Name	LCS Spike	LCS %Rec	LCSD %Rec	LCS RPD	MS Spike	MS %Rec	MSD %Rec	(1)MS RPD	DUP RPD	QC Limits LCS	QC Limits MS/MSD	Max RPD	Qu
Benzene	20.00	111			20.00	104	107	2		39 - 150	39 - 150	25	
Benzene	20.00	113			20.00					39 - 150	39 - 150	25	
Ethylbenzene	20.00	111			20.00	99	101	2		32 - 160	32 - 160	25	
Ethylbenzene	20.00	112			20.00					32 - 160	32 - 160	25	
Methyl tert-butyl ether (MTBE)	20.00	109			20.00	106	105	0		27 - 151	0 - 190	25	
Methyl tert-butyl ether (MTBE)	20.00	109			20.00					27 - 151	0 - 190	25	
Toluene	20.00	109			20.00	101	104	3		46 - 148	46 - 148	25	
Toluene	20.00	112			20.00					46 - 148	46 - 148	25	
m,p-Xylene	40.00	114			40.00	101	103	2		50 - 132	46 - 134	25	
m,p-Xylene	40.00	118			40.00					50 - 132	46 - 134	25	
o-Xylene	20.00	112			20.00	99	101	2		51 - 135	43 - 139	25	
o-Xylene	20.00	113			20.00					51 - 135	43 - 139	25	

12 compound(s) reported

* denotes recovery outside of QC limits.
MS spike concentrations are not corrected for moisture content of the spiked sample.
(1) MS RPD is calculated via SW-846 rules: on the basis of spiked sample concentrations rather than spike recoveries.

4/8/2003 16:14:48

Laboratory Certifications:
Louisiana Dept. of Health and Hospitals (ELAP)/Drinking Water -LA000006
Florida Dept. of Health/Hazardous Waste - E87595
Kansas Dept. of Health & Environment/ELW/HW - E-10256
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Phone: 504.469.0333
Fax: 504.469.0555

Project No.: 2017720

Method: Water 8021 **Batch:** 25080 **Units:** ug/L

Parameter Name	LCS Spike	LCS %Rec	LCSD %Rec	LCS RPD	MS Spike	MS %Rec	MSD %Rec	(1)MS RPD	DUP RPD	QC Limits LCS	QC Limits MS/MSD	Max RPD	Qu
Benzene	20.00	114			20.00	112	112	0		39 - 150	39 - 150	25	
Ethylbenzene	20.00	112			20.00	105	104	1		32 - 160	32 - 160	25	
Methyl tert-butyl ether (MTBE)	20.00	120			20.00	121	121	0		27 - 151	0 - 190	25	
Toluene	20.00	113			20.00	111	110	1		46 - 148	46 - 148	25	
m,p-Xylene	40.00	118			40.00	108	106	1		50 - 132	46 - 134	25	
o-Xylene	20.00	114			20.00	107	105	1		51 - 135	43 - 139	25	

6 compound(s) reported

* denotes recovery outside of QC limits.
MS spike concentrations are not corrected for moisture content of the spiked sample.
(1) MS RPD is calculated via SW-846 rules: on the basis of spiked sample concentrations rather than spike recoveries.

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Laboratory Certifications:
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Kansas Dept. of Health & Environment/ELWHW - E-10266
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Phone: 504.469.0333
Fax: 504.469.0555

Method: Med Soil 8021

Project No.: 2017720

Batch: 25084

Units: ug/kg

Parameter Name	LCS Spike	LCS %Rec	LCSD %Rec	LCS RPD	MS Spike	MS %Rec	MSD %Rec	(1)MS RPD	DUP RPD	QC Limits LCS	QC Limits MS/MSD	Max RPD	Qu
Benzene	1000.00	107	108	1	1000.00					30 - 137	17 - 144	50	
Ethylbenzene	1000.00	107	108	1	1000.00					53 - 124	38 - 135	50	
Methyl tert-butyl ether (MTBE)	1000.00	104	107	3	1000.00					50 - 150	24 - 147	50	
Toluene	1000.00	106	107	1	1000.00					54 - 130	40 - 137	50	
m,p-Xylene	2000.00	112	112	0	2000.00					52 - 135	32 - 154	50	
o-Xylene	1000.00	107	108	1	1000.00					53 - 140	36 - 156	50	

6 compound(s) reported

* denotes recovery outside of QC limits.
MS spike concentrations are not corrected for moisture content of the spiked sample.
(1) MS RPD is calculated via SW-846 rules: on the basis of spiked sample concentrations rather than spike recoveries.

4-8 2003 16:14:49

Laboratory Certifications:
Louisiana Dept. of Health and Hospitals (ELAP)/Drinking Water -LA000006
Florida Dept. of Health/Hazardous Waste - E87595
Kansas Dept. of Health & Environment/EL/WHW - E-10266
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Report of Batch Surrogate Recovery

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Phone: 504.469.0333
Fax: 504.469.0555

Report: 2017720

Method: Water GC Organics

Batch: 24950

Lab ID	Type and Qualifiers	Sur 1 %Rec	Sur 2 %Rec	Sur 3 %Rec	Sur 4 %Rec	Sur 5 %Rec	Sur 6 %Rec	Sur 7 %Rec	Sur 8 %Rec
20144976	Sample	79							
20144977	Sample	72							
20144978	Sample	74							
20144979	Sample	58							
20145042	Sample	88							
20145043	Sample	91							
20145044	Sample	94							
20145085	Sample	92							
20145113	Sample	68							
20145114	Sample	79							
20145382	Sample	79							
20145383	Sample	74							
20145384	Sample	75							
20145386	Sample	72							
20145400	Sample	35*							
20145401	Sample	56							
20145402	Sample	67							
20145403	Sample	69							
20145416	Sample	86							
20145482	Sample	94							
24950B1	Blank	95							
24950B2	Blank	95							
24950B3	Blank	99							
24950MS	Spike	93							
24950MSD	Spike Dup	91							
24950S1	LCS	94							
QC limits:		39-145							

Sur 1: 1,2,4-Trichlorobenzene (S)

* denotes surrogate recovery outside of QC limits.
D denotes surrogate recovery is outside of QC limits due to sample dilution, and is not considered an excursion.
A Lab ID consisting of a batch number with a B suffix is a method blank.
A Lab ID consisting of a batch number with a S suffix is an LCS.
A Lab ID with a MS suffix is a matrix spike.
A Lab ID with a MSD suffix is a matrix spike duplicate.

4/8/2003 16:14:50

Laboratory Certifications:
Louisiana Dept. of Health and Hospitals (ELAP)/Drinking Water -LA000006
Florida Dept. of Health/Hazardous Waste - E87595
Kansas Dept. of Health & Environment/EL/WHW - E-10266
New Jersey DEPE/Wastewater - 58002
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Report of Batch Surrogate Recovery

Report: 2017720

Method: Water 8021

Batch: 24955

Lab ID	Type and Qualifiers	Sur 1 %Rec	Sur 2 %Rec	Sur 3 %Rec	Sur 4 %Rec	Sur 5 %Rec	Sur 6 %Rec	Sur 7 %Rec	Sur 8 %Rec
20144976	Sample	91	93						
20144977	Sample	88	84						
20144978	Sample	87	90						
20144979	Sample	91	93						
20144980	Sample	96	100						
20145042	Sample	100	100						
20145043	Sample	100	101						
20145085	Sample	102	101						
20145113	Sample	93	94						
20145114	Sample	89	92						
20145382	Sample	98	92						
20145383	Sample	98	97						
20145384	Sample	99	96						
20145386	Sample	98	97						
20145400	Sample	86	83						
20145401	Sample	81	81						
20145402	Sample	94	91						
20145403	Sample	87	92						
20145416	Sample	96	97						
20145482	Sample	98	94						
24955B1	Blank	95	98						
24955B2	Blank	94	95						
24955B3	Blank	96	94						
24955B4	Blank	92	93						
24955MS	Spike	90	89						
24955MSD	Spike Dup	92	92						
24955S1	LCS	100	101						
24955S2	LCS	101	96						
QC limits:		63-125	64-125						

Sur 1: 4-Bromofluorobenzene (PID) (S)
Sur 2: 4-Bromofluorobenzene (PID confirmat

* denotes surrogate recovery outside of QC limits.
denotes surrogate recovery is outside of QC limits due to sample dilution, and is not considered an excursion.
Lab ID consisting of a batch number with a B suffix is a method blank.
Lab ID consisting of a batch number with a S suffix is an LCS.
A Lab ID with a MS suffix is a matrix spike.
A Lab ID with a MSD suffix is a matrix spike duplicate.

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Laboratory Certifications:
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1000 Riverbend Blvd, Suite F
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Phone: 504.469.0333
Fax: 504.469.0555

Report: 2017720

Method: Water GC Organics

Batch: 25079

Lab ID	Type and Qualifiers	Sur 1 %Rec	Sur 2 %Rec	Sur 3 %Rec	Sur 4 %Rec	Sur 5 %Rec	Sur 6 %Rec	Sur 7 %Rec	Sur 8 %Rec
20145483	Sample	66							
20145484	Sample	95							
20145485	Sample	91							
20145486	Sample	88							
20145487	Sample	76							
20145547	Sample	69							
20145548	Sample	89							
20145549	Sample	87							
20145711	Sample	101							
20145781	Sample	100							
20145952	Sample	82							
20145953	Sample	89							
20145954	Sample	88							
20145955	Sample	88							
20145956	Sample	89							
20145957	Sample	98							
20146096	Sample	94							
20146097	Sample	85							
20146098	Sample	84							
20146099	Sample	63							
25079B1	Blank	95							
25079B2	Blank	96							
25079B3	Blank	101							
25079MS	Spike	66							
25079MSD	Spike Dup	65							
25079S1	LCS	101							
QC limits:		39-145							

Sur 1: 1,2,4-Trichlorobenzene (S)

* denotes surrogate recovery outside of QC limits.
denotes surrogate recovery is outside of QC limits due to sample dilution, and is not considered an excursion.
Lab ID consisting of a batch number with a B suffix is a method blank.
Lab ID consisting of a batch number with a S suffix is an LCS.
A Lab ID with a MS suffix is a matrix spike.
A Lab ID with a MSD suffix is a matrix spike duplicate.

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Phone: 504.469.0333
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Report: 2017720

Method: Water 8021

Batch: 25080

Lab ID	Type and Qualifiers	Sur 1 %Rec	Sur 2 %Rec	Sur 3 %Rec	Sur 4 %Rec	Sur 5 %Rec	Sur 6 %Rec	Sur 7 %Rec	Sur 8 %Rec
20145483	Sample	88	85						
20145484	Sample	102	91						
20145485	Sample	97	94						
20145486	Sample	99	99						
20145487	Sample	95	95						
20145547	Sample	96	95						
20145548	Sample	94	85						
20145548DL	Dilution	96	89						
20145549	Sample	93	84						
20145549DL	Dilution	93	88						
20145952	Sample	96	94						
20145953	Sample	96	89						
20145954	Sample	93	89						
20145955	Sample	96	90						
20145956	Sample	95	90						
20145957	Sample	95	95						
20146096	Sample	101	93						
20146097	Sample	97	87						
20146098	Sample	99	90						
20146099	Sample	95	92						
25080B1	Blank	98	96						
25080B2	Blank	95	93						
25080B3	Blank	96	93						
25080MS	Spike	96	89						
25080MSD	Spike Dup	94	89						
25080S1	LCS	103	95						
QC limits:		63-125	64-125						

Sur 1: 4-Bromofluorobenzene (PID) (S)
Sur 2: 4-Bromofluorobenzene (PID confirmat

* denotes surrogate recovery outside of QC limits.
I denotes surrogate recovery is outside of QC limits due to sample dilution, and is not considered an excursion.
B Lab ID consisting of a batch number with a B suffix is a method blank.
S Lab ID consisting of a batch number with a S suffix is an LCS.
M Lab ID with a MS suffix is a matrix spike.
D Lab ID with a MSD suffix is a matrix spike duplicate.

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Phone: 504.469.0333
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Report: 2017720

Method: Med Soil 8021

Batch: 25084

Lab ID	Type and Qualifiers	Sur 1 %Rec	Sur 2 %Rec	Sur 3 %Rec	Sur 4 %Rec	Sur 5 %Rec	Sur 6 %Rec	Sur 7 %Rec	Sur 8 %Rec
20145488	Sample G1	161*	106						
20145489	Sample	120	111						
20145490	Sample	87	80						
20145491	Sample	77	77						
20145492	Sample	90	86						
20145493	Sample	78	79						
20145494	Sample	76	73						
20145495	Sample	81	80						
20145496	Sample	84	83						
20145497	Sample	85	84						
20145498	Sample	79	78						
20145499	Sample	83	83						
20145533	Sample	92	82						
20145536	Sample	76	75						
20145537	Sample	83	83						
20146064	Sample	78	76						
25084B1	Blank	92	93						
25084S1	LCS	97	92						
25084S2	LCS	98	94						
QC limits:		34-142	24-165						

Sur 1: 4-Bromofluorobenzene (PID) (S)
Sur 2: 4-Bromofluorobenzene (PID confirmat

* denotes surrogate recovery outside of QC limits.
\# denotes surrogate recovery is outside of QC limits due to sample dilution, and is not considered an excursion.
Lab ID consisting of a batch number with a B suffix is a method blank.
Lab ID consisting of a batch number with a S suffix is an LCS.
A Lab ID with a MS suffix is a matrix spike.
A Lab ID with a MSD suffix is a matrix spike duplicate.

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Phone: 504.469.0333
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Report: 2017720

Method: Med Soil GC Organics

Batch: 25085

Lab ID	Type and Qualifiers	Sur 1 %Rec	Sur 2 %Rec	Sur 3 %Rec	Sur 4 %Rec	Sur 5 %Rec	Sur 6 %Rec	Sur 7 %Rec	Sur 8 %Rec
20145488	Sample	76							
20145489	Sample	69							
20145490	Sample	87							
20145491	Sample	74							
20145492	Sample	83							
20145493	Sample	75							
20145494	Sample	62							
20145495	Sample	76							
20145496	Sample	81							
20145497	Sample	81							
20145498	Sample	74							
20145499	Sample	80							
20145533	Sample	73							
20145534	Sample	76							
20145535	Sample	75							
20145536	Sample	73							
20145537	Sample	81							
20145538	Sample	51							
20145539	Sample	81							
25085B1	Blank	89							
25085S1	LCS	89							
25085S2	LCS	87							
QC limits:		36-160							

Sur 1: 1,2,4-Trichlorobenzene (S)

* denotes surrogate recovery outside of QC limits.
denotes surrogate recovery is outside of QC limits due to sample dilution, and is not considered an excursion.
Lab ID consisting of a batch number with a B suffix is a method blank.
Lab ID consisting of a batch number with a S suffix is an LCS.
Lab ID with a MS suffix is a matrix spike.
Lab ID with a MSD suffix is a matrix spike duplicate.

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Phone: 504.469.0333
Fax: 504.469.0555

Lab ID: 24950B1

Description: Water Method Blank **Project No.:** 2017720

Method: Water GC Organics **Batch:** 24950 **Units:** ug/L

Prep Factor: 1 **Leached:** **Prepared:** **Analyzed:** 01-Apr-03 10:00 CCW

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
	TPH - Gasoline Range Organics	1	ND		50.0

1 compound(s) reported

ND denotes Not Detected at or above the reporting limit.
DF denotes Dilution Factor.
RL denotes sample Reporting Limit.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.

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Laboratory Certifications:
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Phone: 504.469.0333
Fax: 504.469.0555

Lab ID: 24950B2

Description: Water Method Blank **Project No.:** 2017720

Method: Water GC Organics **Batch:** 24950 **Units:** ug/L

Prep Factor: 1 **Leached:** **Prepared:** **Analyzed:** 01-Apr-03 22:21 CCW

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
	TPH - Gasoline Range Organics	1	ND		50.0

1 compound(s) reported

ND denotes Not Detected at or above the reporting limit.
DF denotes Dilution Factor.
RL denotes sample Reporting Limit.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.

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Laboratory Certifications:
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Phone: 504.469.0333
Fax: 504.469.0555

Lab ID: 24950B3
Description: Water Method Blank **Project No.:** 2017720
Method: Water GC Organics **Batch:** 24950 **Units:** ug/L

Prep Factor: 1 **Leached:** **Prepared:** **Analyzed:** 02-Apr-03 06:45 CCW

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
	TPH - Gasoline Range Organics	1	ND		50.0

1 compound(s) reported

ND denotes Not Detected at or above the reporting limit.
DF denotes Dilution Factor.
RL denotes sample Reporting Limit.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.

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Phone: 504.469.0333
Fax: 504.469.0555

Lab ID: 24955B1

Description: Water Method Blank **Project No.:** 2017720

Method: Water 8021 **Batch:** 24955 **Units:** ug/L

Prep Factor: 1 **Leached:** **Prepared:** **Analyzed:** 01-Apr-03 03:41 CCW

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
71-43-2	Benzene	1	ND		0.500
100-41-4	Ethylbenzene	1	ND		0.500
1634-04-4	Methyl tert-butyl ether (MTBE)	1	ND		0.500
108-88-3	Toluene	1	ND		0.500
1330-20-7	m,p-Xylene	1	ND		0.500
95-47-6	o-Xylene	1	ND		0.500

6 compound(s) reported

ND denotes Not Detected at or above the reporting limit.
DF denotes Dilution Factor.
RL denotes sample Reporting Limit.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.

4/8/2003 16:14:54

Laboratory Certifications:
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Saint Rose, LA 70087

Phone: 504.469.0333
Fax: 504.469.0555

Lab ID: 24955B2

Description: Water Method Blank **Project No.:** 2017720

Method: Water 8021 **Batch:** 24955 **Units:** ug/L

Prep Factor: 1 **Leached:** **Prepared:** **Analyzed:** 01-Apr-03 09:46 CCW

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
71-43-2	Benzene	1	ND		0.500
100-41-4	Ethylbenzene	1	ND		0.500
1634-04-4	Methyl tert-butyl ether (MTBE)	1	ND		0.500
108-88-3	Toluene	1	ND		0.500
1330-20-7	m,p-Xylene	1	ND		0.500
95-47-6	o-Xylene	1	ND		0.500

6 compound(s) reported

ND denotes Not Detected at or above the reporting limit.
DF denotes Dilution Factor.
RL denotes sample Reporting Limit.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.

4/8/2003 16:14:54

Laboratory Certifications:
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Kansas Dept. of Health & Environment/EL/WHW - E-10266
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Phone: 504.469.0333
Fax: 504.469.0555

Lab ID: 24955B3

Description: Water Method Blank **Project No.:** 2017720

Method: Water 8021 **Batch:** 24955 **Units:** ug/L

Prep Factor: 1 **Leached:** **Prepared:** **Analyzed:** 01-Apr-03 22:07 CCW

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
71-43-2	Benzene	1	ND		0.500
100-41-4	Ethylbenzene	1	ND		0.500
1634-04-4	Methyl tert-butyl ether (MTBE)	1	ND		0.500
108-88-3	Toluene	1	ND		0.500
1330-20-7	m,p-Xylene	1	ND		0.500
95-47-6	o-Xylene	1	ND		0.500

6 compound(s) reported

ND denotes Not Detected at or above the reporting limit.
DF denotes Dilution Factor.
RL denotes sample Reporting Limit.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.

4-8 2003 16:14:54

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Phone: 504.469.0333
Fax: 504.469.0555

Lab ID: 24955B4

Description: Water Method Blank **Project No.:** 2017720

Method: Water 8021 **Batch:** 24955 **Units:** ug/L

Prep Factor: 1 **Leached:** **Prepared:** **Analyzed:** 02-Apr-03 06:30 CCW

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
71-43-2	Benzene	1	ND		0.500
100-41-4	Ethylbenzene	1	ND		0.500
1634-04-4	Methyl tert-butyl ether (MTBE)	1	ND		0.500
108-88-3	Toluene	1	ND		0.500
1330-20-7	m,p-Xylene	1	ND		0.500
95-47-6	o-Xylene	1	ND		0.500

6 compound(s) reported

ND denotes Not Detected at or above the reporting limit.
DF denotes Dilution Factor.
RL denotes sample Reporting Limit.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.

4/8/2003 16:14:54

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Phone: 504.469.0333
Fax: 504.469.0555

Lab ID: 25079B1
Description: Water Method Blank **Project No.:** 2017720
Method: Water GC Organics **Batch:** 25079 **Units:** ug/L

Prep Factor: 1 **Leached:** **Prepared:** **Analyzed:** 03-Apr-03 19:39 CCW

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
	TPH - Gasoline Range Organics	1	ND		50.0
	TPH - Gasoline Range Organics	1	ND		50.0

2 compound(s) reported

ND denotes Not Detected at or above the reporting limit.
DF denotes Dilution Factor.
RL denotes sample Reporting Limit.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.

4 8 2003 16:14:55

Laboratory Certifications:
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Phone: 504.469.0333
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Lab ID: 25079B2
Description: Water Method Blank
Method: Water GC Organics
Project No.: 2017720
Batch: 25079
Units: ug/L

Prep Factor: 1 **Leached:** **Prepared:** **Analyzed:** 04-Apr-03 03:00 CCW

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
	TPH - Gasoline Range Organics	1	ND		50.0
	TPH - Gasoline Range Organics	1	ND		50.0

2 compound(s) reported

ND denotes Not Detected at or above the reporting limit.
DF denotes Dilution Factor.
RL denotes sample Reporting Limit.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.

4/5 2003 16:14:55

Laboratory Certifications:
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Phone: 504.469.0333
Fax: 504.469.0555

Lab ID: 25079B3
Description: Water Method Blank **Project No.:** 2017720
Method: Water GC Organics **Batch:** 25079 **Units:** ug/L

Prep Factor: 1 **Leached:** **Prepared:** **Analyzed:** 04-Apr-03 07:53 CCW

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
	TPH - Gasoline Range Organics	1	ND		50.0
	TPH - Gasoline Range Organics	1	ND		50.0

2 compound(s) reported

ND denotes Not Detected at or above the reporting limit.
DF denotes Dilution Factor.
RL denotes sample Reporting Limit.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.

4/8/2003 16:14:55

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Saint Rose, LA 70087

Phone: 504.469.0333
Fax: 504.469.0555

Lab ID: 25080B1
Description: Water Method Blank
Method: Water 8021

Project No.: 2017720
Batch: 25080
Units: ug/L

Prep Factor: 1
Leached:
Prepared:
Analyzed: 03-Apr-03 19:24 CCW

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
71-43-2	Benzene	1	ND		0.500
100-41-4	Ethylbenzene	1	ND		0.500
1634-04-4	Methyl tert-butyl ether (MTBE)	1	ND		0.500
108-88-3	Toluene	1	ND		0.500
1330-20-7	m,p-Xylene	1	ND		0.500
95-47-6	o-Xylene	1	ND		0.500

6 compound(s) reported

ND denotes Not Detected at or above the reporting limit.
DF denotes Dilution Factor.
RL denotes sample Reporting Limit.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.

4/8 2003 16:14 55

Laboratory Certifications:
Louisiana Dept. of Health and Hospitals (ELAP)/Drinking Water -LA000006
Florida Dept. of Health/Hazardous Waste - E87595
Kansas Dept. of Health & Environment/ELW/HW - E-10266
New Jersey DEPE/Wastewater - 58007
Tennessee Dept. of Environment & Conservation/Div of UST (File)
U.S. Dept. of Agriculture Animal & Plant Health Inspection Services - Foreign Soil Import (U.S. Territories)

Pace Analytical™
New Orleans Laboratory

Report of Method Blank

www.pacelabs.com

Pace Analytical Services, Inc.
1000 Riverbend Blvd, Suite F
Saint Rose, LA 70087

Phone: 504.469.0333
Fax: 504.469.0555

Lab ID: 25080B2

Description: Water Method Blank **Project No.:** 2017720

Method: Water 8021 **Batch:** 25080 **Units:** ug/L

Prep Factor: 1 **Leached:** **Prepared:** **Analyzed:** 04-Apr-03 02:45 CCW

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
71-43-2	Benzene	1	ND		0.500
100-41-4	Ethylbenzene	1	ND		0.500
1634-04-4	Methyl tert-butyl ether (MTBE)	1	ND		0.500
108-88-3	Toluene	1	ND		0.500
1330-20-7	m,p-Xylene	1	ND		0.500
95-47-6	o-Xylene	1	ND		0.500

6 compound(s) reported

ND denotes Not Detected at or above the reporting limit.
DF denotes Dilution Factor.
RL denotes sample Reporting Limit.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.

4/8/2003 16:14:56

Laboratory Certifications:
Louisiana Dept. of Health and Hospitals (ELAP)/Drinking Water -LA000006
Florida Dept. of Health/Hazardous Waste - E87595
Kansas Dept. of Health & Environment/ELW/HW - E-10266
New Jersey DEPE/Wastewater - 58002
Tennessee Dept. of Environment & Conservation/Div of UST (File)
U.S. Dept. of Agriculture Animal & Plant Health Inspection Services - Foreign Soil Import (U.S. Territories)

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New Orleans Laboratory

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Pace Analytical Services, Inc.
1000 Riverbend Blvd, Suite F
Saint Rose, LA 70087

Phone: 504.469.0333
Fax: 504.469.0555

Lab ID: 25080B3

Description: Water Method Blank **Project No.:** 2017720

Method: Water 8021 **Batch:** 25080 **Units:** ug/L

Prep Factor: 1 **Leached:** **Prepared:** **Analyzed:** 04-Apr-03 07:39 CCW

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
71-43-2	Benzene	1	ND		0.500
100-41-4	Ethylbenzene	1	ND		0.500
1634-04-4	Methyl tert-butyl ether (MTBE)	1	ND		0.500
108-88-3	Toluene	1	ND		0.500
1330-20-7	m,p-Xylene	1	ND		0.500
95-47-6	o-Xylene	1	ND		0.500

6 compound(s) reported

ND denotes Not Detected at or above the reporting limit.
DF denotes Dilution Factor.
RL denotes sample Reporting Limit.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.

4/8/2003 16:14:56

Laboratory Certifications:
Louisiana Dept. of Health and Hospitals (ELAP)/Drinking Water -LA000006
Florida Dept. of Health/Hazardous Waste - E87595
Kansas Dept. of Health & Environment/ELW/HW - E-10266
New Jersey DEPE/Wastewater - 56002
Tennessee Dept. of Environment & Conservation/Div of UST (File)
U.S. Dept. of Agriculture Animal & Plant Health Inspection Services - Foreign Soil Import (U.S. Territories)

Pace Analytical™
New Orleans Laboratory

Report of Method Blank

www.pacelabs.com

Pace Analytical Services, Inc.
1000 Riverbend Blvd, Suite F
Saint Rose, LA 70087

Phone: 504.469.0333
Fax: 504.469.0555

Lab ID: 25084B1

Description: Med Soil Method Blan **Project No.:** 2017720

Method: Med Soil 8021 **Batch:** 25084 **Units:** ug/kg

Prep Factor: 1 **Leached:** **Prepared:** 03-Apr-03 **Analyzed:** 04-Apr-03 16:28 CCW

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
71-43-2	Benzene	1	ND		25.0
100-41-4	Ethylbenzene	1	ND		25.0
1634-04-4	Methyl tert-butyl ether (MTBE)	1	ND		25.0
108-88-3	Toluene	1	ND		25.0
1330-20-7	m,p-Xylene	1	ND		25.0
95-47-6	o-Xylene	1	ND		25.0

6 compound(s) reported

ND denotes Not Detected at or above the reporting limit.
DF denotes Dilution Factor.
RL denotes sample Reporting Limit.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.

4/8/2003 16:14:56

Laboratory Certifications:
Louisiana Dept. of Health and Hospitals (ELAP)/Drinking Water -LA000006
Florida Dept. of Health/Hazardous Waste - E87595
Kansas Dept. of Health & Environment/EL/WHW - E-10266
New Jersey DEPE/Wastewater - 58002
Tennessee Dept. of Environment & Conservation/Div of UST (File)
U.S. Dept. of Agriculture Animal & Plant Health Inspection Services - Foreign Soil Import (U.S. Territories)

Pace Analytical™
New Orleans Laboratory

Report of Method Blank

www.pacelabs.com

Pace Analytical Services, Inc.
1000 Riverbend Blvd, Suite F
Saint Rose, LA 70087

Phone: 504.469.0333
Fax: 504.469.0555

Lab ID: 25085B1
Description: Med Soil Method Blan
Method: Med Soil GC Organics
Project No.: 2017720
Batch: 25085
Units: ug/kg

Prep Factor: 1 **Leached:** **Prepared:** 03-Apr-03 **Analyzed:** 04-Apr-03 16:42 CCW

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
	TPH - Gasoline Range Organics	1	ND		2500

1 compound(s) reported

ND denotes Not Detected at or above the reporting limit.
DF denotes Dilution Factor.
RL denotes sample Reporting Limit.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.

4/8/2003 16:14:56

Laboratory Certifications:
Louisiana Dept. of Health and Hospitals (ELAP)/Drinking Water -LA000006
Florida Dept. of Health/Hazardous Waste - E87595
Kansas Dept. of Health & Environment/ELW/HW - E-10266
New Jersey DEPE/Wastewater - 58002
Tennessee Dept. of Environment & Conservation/Div or UST (File)
U.S. Dept. of Agriculture Animal & Plant Health Inspection Services -
Foreign Soil Import (U.S. Territories)

Pace Analytical™
New Orleans Laboratory

Report Qualifiers

www.pacelabs.com

Pace Analytical Services, Inc.
1000 Riverbend Blvd, Suite F
Saint Rose, LA 70087

Phone: 504.469.0333
Fax: 504.469.0555

Project No.: 2017720

Analyte Qualifiers

Qualifier	Qualifier Description
G1	Interferences are present which caused poor surrogate recovery.
Ph	The relative percent difference between the two detectors is greater than 40%, indicating interference on one or more detectors. The higher of the two values is reported.

General Qualifiers

Qualifier	Qualifier Description
D1	The analysis was performed at a dilution due to the high analyte concentration.

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Pace Analytical
www.pacelabs.com

739206

Page: 1 of 2

Section A — Required Client Information:

Company: Chevron
Address: P.O. Box 4256
Houston, TX 77210
Phone: 713 219 5249 Fax:

Section B — Required Client Information:

Report To: Seth Demangue (CRA)
Copy To: BILL DELANGE (CHEVRON)
Invoice To: Bill Delange (CHEVRON)
PO:
Project Name: 2929 COLLEGE DR., BTR, LA
Project Number: SS # 60109060

Client Information (Check quote/contract):
Requested Due Date: TAT: STD

* Turn around times less than 14 days subject to laboratory and contractual obligations and may result in a Rush Turnaround Surcharge.
Turn Around Time (TAT) in calendar days

Section C — To Be Completed by Pace Analytical and Client

Quote Reference:
Project Manager:
Project #:
Profile #:
Requested Analysis: BTEX/MTBE 8021B; TPH-GRO 8015B

Section D — Required Client Information:

SAMPLE ID
One character per box.
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes: MATRIX / CODE — WATER WT; SOIL SL; OIL OL; WIPE WP; AIR AR; TISSUE TS; OTHER OT

ITEM #	SAMPLE ID	MATRIX CODE	DATE COLLECTED (mm/dd/yy)	TIME COLLECTED (hh:mm a/p)	# Containers	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Remarks / Lab ID
1	SB01-(2-4)	SL	3/27/03	0915a										5035
2	SB01-(12-14)	SL	3-27-03	0940a										
3	SB02-(2-4)			0955a										
4	SB02-(10-12)			1015										
5	SB03-(0-2)			1000a										
6	SB03-(10-12)			1120a										
7	SB04-(0-2)			1025a										
8	SB04-(10-12)			1050a										
9	SB05-(0-2)			1125a										
10	SB05-(10-12)			1150a										
11	SB06-(0-2)			1325p										
12	SB06-(10-12)	SL	3/27/03	1350										5035

SHIPMENT METHOD	AIRBILL NO.	SHIPPING DATE	NO. OF COOLERS
			1

ITEM NUMBER	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
	David Dickey CRA			Fimin Pace	3/28	10:00
	Fimin	3/28/03	1615	Anna W Nash Pace	3/28/03	15:15

SAMPLE CONDITION

Temp in °C	3.9
Received on Ice	(Y)N
Sealed Cooler	(Y)N
Samples Intact	Y/N

Additional Comments:

SAMPLE NOTES

*Please dispose of all samples not listed on COC.

CRA # 29453-00

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: David Dickey
SIGNATURE of SAMPLER: David Dickey
DATE Signed (MM/DD/YY): 3/27/03

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Pace Analytical
www.pacelabs.com

739207

Page: 2 of 2

Section A — Required Client Information:

Company: Chevron
Address: P.O. Box 4256
Houston, Tx 77210
Phone: 713 219 5219 Fax:

Section B — Required Client Information:

Report To: Seth Domangre (CRA)
Copy To: BILL DELANGE (CHEVRON)
Invoice To: Bill Delonge (CHEVRON)
PO:
Project Name: 2929 COLLEGE DR, BTR, LA
Project Number: SAP# 60109060

Client Information (Check quote/contract):
Requested Due Date: TAT: STD

* Turn around times less than 14 days subject to laboratory and contractual obligations and may result in a Rush Turnaround Surcharge.
Turn Around Time (TAT) in calendar days

Section C — To Be Completed by Pace Analytical and Client

Quote Reference:
Project Manager:
Project #:
Profile #:

Requested Analysis: BTEX/MTBE 8021B; TPH-GRO 8015B

Section D — Required Client Information.

Valid Matrix Codes

MATRIX	CODE
WATER	WT
SOIL	SL
OIL	OL
WIPE	WP
AIR	AR
TISSUE	TS
OTHER	OT

ITEM #	SAMPLE ID (One character per box. (A–Z, 0–9 / -) Sample IDs MUST BE UNIQUE)	MATRIX CODE	DATE COLLECTED (mm / dd / yy)	TIME COLLECTED (hh:mm a/p)	# Containers	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Remarks / Lab ID
1	SB01	WT	3/27/03	1410	4				X					
2	SB02			1420	4				X					
3	SB03			1440	4				X					
4	SB04			1425	4				X					
5	SB05			1435	4				X					
6	SB06	WT	3/27/03	1450	3				X					
7														
8														
9														
10														
11														
12														

SHIPMENT METHOD	AIRBILL NO.	SHIPPING DATE	NO. OF COOLERS
			1

ITEM NUMBER	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
	David Dickey			Fermin Pace	3/28	1000
	Fermin	3/28/03	15:15	Annie Wilson Pace	3/28/03	15:15

SAMPLE CONDITION

Temp in °C	3.9
Received on Ice	Y/N
Sealed Cooler	Y/N
Samples Intact	Y/N

SAMPLE NOTES

CRA# 27453-00

Additional Comments:

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: David Dickey
SIGNATURE of SAMPLER: David Dickey
DATE Signed: (MM / DD / YY) 03.27.03

APPENDIX C

LDEQ NOTIFICATION FORM

INCIDENT # _____

DATE 04/14/03

LOUISIANA NOTIFICATION REQUIREMENTS

This form should be completed and submitted to the Underground Storage Tank Division within seven (7) calendar days after verbal notification.

If mailed, submittal date will be the postmark date of the written notification. Forward to:

LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY
P. O. Box 82215
Baton Rouge, LA 70884-2215
Attention: SURVEILLANCE DIVISION – SPOC
"UNAUTHORIZED DISCHARGE NOTIFICATION REPORT"

1. Name of person, company, or other party who is filing the written report.

   CRA, Inc., Baton Rouge, Louisiana, as environmental consultant for Chevron Environmental Management Company; represented by Bill Delange; P.O. Box 4256, Houston, TX 77210

2. Time and date of verbal notification, name of person making the notification, and identification of the site or facility. (Name and address)

   April 14, 2003, 3:05 p.m., to Jessica Troxclair, LDEQ/SPOC, Baton Rouge; Seth P. Domangue, CRA, Inc., Baton Rouge, LA;

   Chevron Service Station No. 60109060
   2929 College Drive
   Baton Rouge, LA

3. Release date and time.

   Unknown

4. Incident details and/or emergency condition.

   Analytical results for several soil and groundwater samples collected during site assessment activities showed hydrocarbon concentrations above the LDEQ RECAP Screening Standards (SS). No emergency conditions existed.

5. Product released and estimated quantity released in gallons.

   Gasoline - Quantity released is unknown.

6. Surface or groundwater impact.

   Groundwater benzene, ethylbenzene, MTBE, and TPH-GRO concentrations above RECAP SS were detected.

7. Action taken to stop release.

   Not Applicable.

8. Measures taken to prevent recurrence of the incident.

   Tank tightness tests and inventory data record review ordered by Chevron.

9. Is the U.S.T. system registered?

   YES __X__ U.S.T. ID# __unknown__

   NO _____

ANSWER THE FOLLOWING ONLY IF GROUNDWATER CONTAMINATION IS CONFIRMED

1. Reporting party status (owner, operator, consultant, etc.).

   Environmental consultant for Chevron Environmental Mgmt. Company.

2. Attach groundwater contamination data and/or analytical results.

   Tables summarizing soil and groundwater analytical results, a copy of the analytical laboratory report and soil boring logs are attached.

3. Possible routes of migration.

   Groundwater, underground utility corridors

4. List all abandoned or active water wells within the immediate area.

   N/A

5. Names of all other responsible parties.

   N/A

June 30, 2003

Facility: Chevron # 109060
Location: 2929 College Drive
Baton Rouge, LA 70808

Inspection Date: 06/24/03

Facility ID No.: 17-001988

Parish: East Baton Rouge
Phone Number: (225) 216-1333
Agency Interest No.: 20619

Tank Owner: Chevron Products Company
5959 Corporate Drive
Houston, TX 77036
ATTN: David Gardner
Phone Number: (713) 219-5223

Owner ID No.: 00061700

Inspection Contact: David Pool.

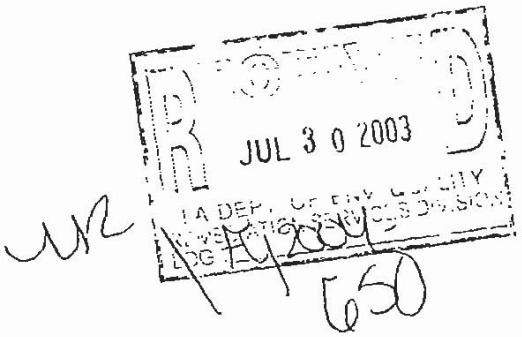
Inspection By: Charles Melchior CM

Environmental Contact: David Gardner

Pursuant to a site assessment, submitted by CRA Services, which showed concentrations above RECAP Screening Standards, I went to the referenced site on June 24, 2003. There are four 10,000-gallon gasoline USTs at this facility. The tank numbers are 6536, 6537, 6538, and 6539. The brand of products there are Premium, Plus, and two USTs for Regular Unleaded. Both the tanks and lines are made of fiberglass reinforced plastic and the system is pressurized, with automatic flow restrictors in each sump. Spill and overfill containment was installed for each tank on September 9, 1998, and overfill protection is by ball floats for each tank. All piping entering the sumps and dispensers are cathodically protected, with sacrificial anodes used for each sump. Mr. Pool told me that the sumps were pumped out on June 19, 2003, and when I arrived they were full of water due to the recent rains. He called US Filters and while we were at another Chevron site, the sumps were pumped out.

No areas of concern were observed during the inspection. Tank and line tightness testing does not indicate a release.

If you have any questions, please contact me.



REMEDIATION SERVICES DIVISION
Manager: Hall
Team Leader: _____
File Room: _____ AI #: 20619
Log Number: _____

Source of release: UST system, may be residuals from old release, closed under old matrix.
Sampling Data Exists? Yes ☒ **(attach results)** No ☐
Samples taken by: PRP ☐ LDEQ ☐ Other ☒
Explain other: CRA, Inc.

Media Sampled: Soil and groundwater

Parameters Analyzed: BTEX, TPH-GRO, and MTBE.

Constituents of Concern Detected: In the soils, benzene and TPH-GRO and in the groundwater, benzene, ethylbenzene, MTBE, and TPH-GRO.

Sampling Details (media, locations, depths, etc. Attach diagram if available): samples taken during a site assessment.

☐ **Samples not collected due to visual evidence of a release and/or process knowledge.**
Explain:

Summary of Discovery: Soil and groundwater contamination discovered during a site assessment..

Description of actions taken in response to Discovery: Reported to LDEQ.

Evidence of impact or imminent threat to sensitive receptors? ☒ **No** ☐ **Yes**
Details for yes:

Basis for Referral to the RSD: Soil samples were above RECAP SS for benzene and TPH-GRO and ground water samples were above RECAP SS for benzene, ethylbenzene, MTBE, and TPH-GRO.

Referred By: Charles J. Melchior

Date: 6/30/03

Phone Number: (225) 765-2311

LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY
FIELD INTERVIEW FORM

AGENCY INTEREST#: 20619 INSPECTION DATE: 6/24/03 TIME OF ARRIVAL: 8:56 AM
ALTERNATE ID#: 17-001998 (ID Type/Number) DEPARTURE DATE: 6/24/03 TIME OF DEPARTURE: 11:20 AM
FACILITY NAME: Chevron #109060 PH #: (225) 216-1333
LOCATION: 2929 College Drive, Baton Rouge, LA 70808 PARISH NAME: EBR
RECEIVING STREAM (BASIN/SUBSEGMENT): —
MAILING ADDRESS: P.O. Box 6004 (Street/P.O. Box) San Ramon (City) CA (State) 94583-0904 (ZIP)
FACILITY REPRESENTATIVE: David Pool TITLE: ES&H
FACILITY REPRESENTATIVE PHONE NUMBER: (281) 347-7665
NAME, TITLE, ADDRESS and TELEPHONE of RESPONSIBLE OFFICIAL (if different from above): Mr Pool, 5959 Corporate Drive, Houston TX 77036
INSPECTION TYPE: Compliance PROGRAM INVOLVED: AIR (WASTE) WATER OTHER UST

INSPECTOR'S OBSERVATIONS: (e.g. AREAS AND EQUIPMENT INSPECTED, PROBLEMS, DEFICIENCIES, REMARKS, VERBAL COMMITMENTS FROM FACILITY REPRESENTATIVES)

Pursuant to a site assessment performed by CRA Services, a compliance inspection was performed at the referenced facility. Mr. Pool provided all records and reports necessary for this inspection and accompanied me on the facility tour. During the inspection, the following was observed.

- All records and reports were satisfactory.

AREAS OF CONCERN:

REGULATION	EXPLANATION	CORRECTED?
	N/A	YES NO
		YES NO

PHOTOS TAKEN: ☐ YES ☒ NO SAMPLES TAKEN: ☐ YES ☒ NO (Attach Chain-of-custody)

RECEIVED BY: SIGNATURE: [signature]
PRINT NAME: J. David Pool
(NOTE: SIGNATURE DOES NOT NECESSARILY INDICATE AGREEMENT WITH INSPECTOR'S STATED OBSERVATIONS)

INSPECTOR(S): Charles Melchior CROSS REFERENCE:
ATTACHMENTS: Inspection report, Narrative, & Photos
REVIEWER: Evita N. Fagard

NOTE: The Information contained on this form reflects only the preliminary observations of the inspector(s). It should not be interpreted as a final determination by the Department of Environmental Quality or any of its officers or personnel as to any matter, including, but not limited to, a determination of compliance or lack thereof by the facility operator with any requirements of statutes regulations or permits. Each day of non-compliance constitutes a separate violation of the regulations and/or the Louisiana Environmental Quality Act.

Compliance Inspection Checklist
for
Underground Storage Tanks

Facility ID # **17-001998**

Incident Log # **N/A**

Inspection Date **06/24/03**

Arrival Time **8:36 AM** Departure Time **11:20 AM**

Inspector **Charles J. Melchior**

Facility Representative **David Pool**

Facility	**Chevron # 109060**	Owner	**Chevron Products Company**
Street	**2929 College Drive**	Street	**5959 Corporate Drive**
City	**Baton Rouge, LA**	City	**Houston**
Zip Code	**70808**	State	**Texas**
Parish	**East Baton Rouge**	Zip Code	**77036**
Telephone	**(225) 216-1333**	Telephone	**(713) 219-5223**

		6536	6537	6538	6539
Current registration certificate posted		X	X	X	X
Date of tank installation or upgrade		1/1/91	1/1/91	1/1/91	1/1/91
Method of Release Detection for Tanks (one required for each column)					
Interstitial monitoring at least monthly	LAC 33.XI.701.A.6 703.B.1				
Automatic tank gauging at least monthly	701.A.4 703.B.1	X	X	X	X
Vapor monitoring at least monthly	701.A.5.b 703.B.1				
Groundwater monitoring at least monthly	701.A.5.c 703.B.1				
Manual tank gauging alone at least weekly (only for tanks <551 gallons)	701.A.2 703.B.1.c				
Manual tank gauging monthly and tank tightness testing (only for tanks 551-2000 gallons and 10 year maximum use)	701.A.2 703.B.1.a				
Inventory control monthly and tank tightness testing (10 year maximum use)	701.A.1 703.B.1.a				
Other approved method (specify on an attached "Comments" page)	701.A.7				
Release Detection Devices for All Piping (one required for each column)					
Automatic flow restrictor (example: red jacket LLD on pressure piping)	701.B.1	X	X	X	X
Automatic shut-off device (example: check valve on suction piping)	701.B.1				
Audible or visual alarm	701.B.1				
Additional Release Detection Methods for Pressurized Piping (one required for each column)					
Annual line tightness testing	701.B.2 703.B.2.a	X	X	X	X
Monthly monitoring	701.B.3 703.B.2.a				

Facility ID # 17-001998 Date 06/24/03

Additional Release Detection Methods for Suction Piping (one required for each column)					
Monthly monitoring	LAC 33:XI.701.B.3 703.B.2.b				
Line tightness testing every 3 years	701.B.2 703.B.2.b				
Piping does not require additional release detection	703.B.2.b				
Release Detection Records (all required for each column)					
All records of sampling, testing, and monitoring are retained for at least one year	705.B	Yes	Yes	Yes	Yes
All records of calibration, maintenance, or repairs on release detection equipment retained for at least one year	705.C	Yes	Yes	Yes	Yes
All schedules of required calibration and maintenance of release detection equipment retained for 5 years	705.C	Yes	Yes	Yes	Yes
Tank tightness testing records are retained until next test is conducted	705.B	Yes	Yes	Yes	Yes
All written performance claims and documentation provided By the release detection system vendor are maintained	705.A	Yes	Yes	Yes	Yes
Corrosion Protection of Tanks (one required for each column)					
Fiberglass reinforced plastic tank	303.A.1.a	X	X	X	X
Coated and cathodically protected steel tank	303.A.1.b				
Steel tank clad or jacketed with dielectric material	303.A.1.c				
Tank retrofitted with cathodic protection	303.B.2.b				
Tank retrofitted with interior lining	303.B.2.a				
Other corrosion protection (specify on an attached "Comments" page)					
Corrosion Protection of Piping (one required for each column)					
Fiberglass reinforced plastic piping	303.A.2.a	X	X	X	X
Coated and cathodically protected steel piping	303.A.2.b				
Piping retrofitted with cathodic protection	303.B.3				
Other corrosion protection (specify on an attached "Comments" page)					
Cathodic Protection Records (as applicable for each column)					
Cathodic protection systems are inspected by qualified testers at the required frequency	503.B.1				
Results of the last two inspections are retained	503.D.2				
If an impressed current cathodic protection system is used, results of the last three inspections are retained	503.D.1				
Spill Prevention Equipment (required for each column)					
Spill prevention equipment will prevent release of product when transfer hose is detached from fill pipe	303.A.3.a	X	X	X	X
Overfill Prevention Equipment (one required for each column)					
Overfill equipment will automatically shut off flow to tank when tank is no more than 95% full (butterfly)	303.A 3.a				
Overfill equipment will automatically alert the transfer operator when tank is no more than 90% full (alarm)	303.A.3.a				
Overfill equipment will restrict flow 30 minutes prior to overfilling or alert operator one minute before overfilling (ball float)	303.A.3 a	X	X	X	X
Other Requirements for Entire Facility					
All notification forms have been filed with the appropriate authority	LAC 33.XI.509.A				Yes
All records of UST system repairs have been retained for the operating life of the UST system	507.G.3				Yes
The requirements for the permanent closure of any USTs have been satisfied, and site assessment results are retained for 3 years	905 509.A.4,5				Yes
The requirements for any temporarily closed USTs have been satisfied	903				N/A
Evidence of "Financial Responsibility" is available	1102 1121.B				Yes

Compliance Inspection Checklist
for
Underground Storage Tanks

Facility ID # **17-001998** Incident Log # **60402**

Inspection Date **06/24/03** Arrival Time **8:36 AM** Departure Time **11:20 AM**

Inspector **Charles J. Melchior** Facility Representative **David Pool**

Facility	**Chevron # 109060**	Owner	**Chevron Products Company**
Street	**2929 College Drive**	Street	**5959 Corporate Drive**
City	**Baton Rouge, LA**	City	**Houston**
Zip Code	**70808**	State	**Texas**
Parish	**East Baton Rouge**	Zip Code	**77036**
Telephone	**(225) 216-1333**	Telephone	**(713) 219-5223**

		6536	6537	6538	6539
Current registration certificate posted		X	X	X	X
Date of tank installation or upgrade		1/1/91	1/1/91	1/1/91	1/1/91
Method of Release Detection for Tanks (one required for each column)					
Interstitial monitoring at least monthly	LAC 33.XI.701.A.6 703.B.1				
Automatic tank gauging at least monthly	701.A.4 703.B.1	X	X	X	X
Vapor monitoring at least monthly	701.A.5.b 703.B.1				
Groundwater monitoring at least monthly	701.A.5.c 703.B.1				
Manual tank gauging alone at least weekly (only for tanks <551 gallons)	701.A.2 703.B.1.c				
Manual tank gauging monthly and tank tightness testing (only for tanks 551-2000 gallons and 10 year maximum use)	701.A.2 703.B.1.a				
Inventory control monthly and tank tightness testing (10 year maximum use)	701.A.1 703.B.1.a				
Other approved method (specify on an attached "Comments" page)	701.A.7				
Release Detection Devices for All Piping (one required for each column)					
Automatic flow restrictor (example: red jacket LLD on pressure piping)	701.B.1	X	X	X	X
Automatic shut-off device (example: check valve on suction piping)	701.B.1				
Audible or visual alarm	701.B.1				
Additional Release Detection Methods for Pressurized Piping (one required for each column)					
Annual line tightness testing	701.B.2 703.B.2.a	X	X	X	X
Monthly monitoring	701.B.3 703.B.2.a				

S03-1364 AI 20619
T 60402
INCIDENT # Evita Lagard ICR

DATE 4/14/03

LOUISIANA NOTIFICATION REQUIREMENTS

This form should be completed and submitted to the Underground Storage Tank Division within seven (7) calendar days after verbal notification.

If mailed, submittal date will be the postmark date of the written notification. Forward to:

LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY
P. O. Box 82215
Baton Rouge, LA 70884-2215
Attention: SURVEILLANCE DIVISION – SPOC
"UNAUTHORIZED DISCHARGE NOTIFICATION REPORT"

1. Name of person, company, or other party who is filing the written report.

   CRA, Inc., Baton Rouge, Louisiana, as environmental consultant for Chevron Environmental Management Company; represented by Bill Delange; P.O. Box 4256, Houston, TX 77210

2. Time and date of verbal notification, name of person making the notification, and identification of the site or facility. (Name and address)

   April 14, 2003, 3:05 p.m., to Jessica Troxclair, LDEQ/SPOC, Baton Rouge; Seth P. Domangue, CRA, Inc., Baton Rouge, LA;

   Chevron Facility No. 60109060
   2929 College Dr.
   Baton Rouge, LA

RECEIVED
APR 22 2003
DEQ
Single Point of Contact

3. Release date and time.

   Unknown

4. Incident details and/or emergency condition.

   Analytical results for several soil and groundwater samples collected during site assessment activities showed hydrocarbon concentrations above the LDEQ RECAP Screening Standards (SS). No emergency conditions existed.

5. Product released and estimated quantity released in gallons.

   Gasoline - Quantity released is unknown.

6. Surface or groundwater impact.

   Groundwater benzene, ethylbenzene, MTBE, and TPH-GRO concentrations above RECAP SS were detected.

7. Action taken to stop release.

   Not Applicable.

8. Measures taken to prevent recurrence of the incident.

   Tank tightness tests and inventory data record review ordered by Chevron.

9. Is the U.S.T. system registered?

   YES __X__ U.S.T. ID# __unknown__

   NO _____

ANSWER THE FOLLOWING ONLY IF GROUNDWATER CONTAMINATION IS CONFIRMED

1. Reporting party status (owner, operator, consultant, etc.).

   Environmental consultant for Chevron Environmental Mgmt. Company.

2. Attach groundwater contamination data and/or analytical results.

Tables summarizing soil and groundwater analytical results, a copy of the analytical laboratory report and soil boring logs are attached.

3. Possible routes of migration.

   Groundwater, underground utility corridors

4. List all abandoned or active water wells within the immediate area.

   N/A

5. Names of all other responsible parties.

   N/A

TABLES

TABLE 1

SOIL SAMPLE ANALYTICAL LABORATORY DATA
CHEVRON FACILITY NO. 60109060
2929 COLLEGE DRIVE
BATON ROUGE, LOUISIANA

Boring (depth)	Sample Date	Parameter					
		Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	MTBE (mg/kg)	TPH-GRO (mg/kg)
		0.051*	20*	19*	150*	20*	65*
SB-01 (2' - 4')	03/27/03	**0.331**	<0.0216	9.42	1.05	<0.0216	**207**
SB-01 (12' - 14')	03/27/03	<0.0226	<0.0226	1.110	<0.0226	0.064	63.7
SB-02 (2' - 4')	03/27/03	<0.0238	<0.0238	0.0812	<0.0238	<0.0238	10.8
SB-02 (10' - 12')	03/27/03	<0.0239	<0.0239	<0.0239	<0.0239	<0.0239	<2.39
SB-03 (0' - 2')	03/27/03	<0.0264	<0.0264	<0.0264	<0.0264	<0.0264	7.59
SB-03 (10' - 12')	03/27/03	<0.0298	<0.0298	<0.0298	<0.0298	<0.0298	<2.975
SB-04 (0' - 2')	03/27/03	**0.0786**	0.122	0.177	0.1652	<0.0239	7.33
SB-04 (10' - 12')	03/27/03	<0.0238	<0.0238	<0.0238	<0.0238	0.23	<2.375
SB-05 (0' - 2')	03/27/03	<0.0236	<0.0236	<0.0236	<0.0236	<0.0236	5.8
SB-05 (10' - 12')	03/27/03	<0.0262	<0.0262	<0.0262	<0.0262	<0.0262	<2.62
SB-06 (0' - 2')	03/27/03	<0.0221	<0.0221	<0.0221	<0.0221	<0.0221	<2.215
SB-06 (10' - 12')	03/27/03	<0.0239	<0.0239	<0.0239	<0.0239	<0.0239	<2.385

MTBE = methyl tertiary butyl ether
TPH-GRO = Total Petroleum Hydrocarbons-Gasoline Range Organics
mg/kg – Milligrams per kilogram, which is equivalent to parts per million (ppm).
* Screening standards specified in the LDEQ's June 20, 2000, RECAP Table 1 - Screening Option, Screening Standards for Soil and Groundwater.
NOTES: Bolded and Shaded figures indicate RECAP Screening Standard exceedences.

TABLE 2

GROUNDWATER SAMPLE ANALYTICAL LABORATORY DATA
CHEVRON FACILITY NO. 60109060
2929 COLLEGE DRIVE
BATON ROUGE, LOUISIANA

Sample Location	Sample Date	Parameter					
		Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	MTBE (mg/L)	TPH-GRO (mg/L)
		*0.005**	*1.0**	*0.7**	*10**	*0.52**	*0.15**
SB-01	03/27/03	**0.141**	0.0161	**0.854**	0.259	**0.395**	**11.1**
SB-02	03/27/03	0.0018	0.00087	0.0066	0.0017	0.0252	**0.256**
SB-03	03/27/03	<0.0005	<0.0005	<0.0005	<0.0005	0.046	**0.767**
SB-04	03/27/03	<0.0005	<0.0005	<0.0005	<0.0005	**0.737**	**0.482**
SB-05	03/27/03	<0.0005	<0.0005	<0.0005	<0.0005	0.0052	0.0883
SB-06	03/27/03	<0.0005	0.0012	0.0035	0.0117	0.0142	0.0693

MTBE = methyl tertiary butyl ether
TPH-GRO = Total Petroleum Hydrocarbons-Gasoline Range Organics
mg/L = Milligrams per liter, which is equivalent to parts per million (ppm).
* Screening standards specified in the LDEQ RECAP Table 1 - Screening Option, Screening Standards for Soil and Groundwater.
NOTES: Bolded and Shaded figures indicate RECAP Screening Standard exceedences.

SOIL AND GROUNDWATER ANALYTICAL LABORATORY REPORT

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
1000 Riverbend Blvd., Suite F
St. Rose, LA 70087
Phone: 504.469.0333
Fax: 504.469.0555

April 08, 2003

Mr. Bill DeLange
CHEVRON PRODUCTS CO.
5959 Corporate Dr.
Houston, TX 77036

RE: Lab Project Number: 2017720
Client Project ID: 60109060

Dear Mr. DeLange:

Enclosed are the analytical results for sample(s) received by the laboratory March 27, 2003through March 28, 2003 Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Cindy Olavesen

Cindy Olavesen
cindy.olavesen@pacelabs.com
Project Manager

Enclosures

Pace Analytical™
New Orleans Laboratory

Sample Cross Reference Report

www.pacelabs.com

Pace Analytical Services, Inc.
1000 Riverbend Blvd, Suite F
Saint Rose, LA 70087

Phone: 504.469.0333
Fax: 504.469.0555

Client: CHEVRON PRODUCTS CO.

Project: 60109060

Project No.: 2017720

Sample ID	Lab ID	Matrix	Collection Date/Time		Received Date/Time	
SB01	20145482	Water	03/27/2003	14:10	03/27/2003	15:15
SB01-(12-14)	20145489	Soil	03/27/2003	09:40	03/28/2003	15:15
SB01-(2-4)	20145488	Soil	03/27/2003	09:15	03/28/2003	15:15
SB02	20145483	Water	03/27/2003	14:20	03/27/2003	15:15
SB02-(10-12)	20145491	Soil	03/27/2003	10:15	03/28/2003	15:15
SB02-(2-4)	20145490	Soil	03/27/2003	09:55	03/28/2003	15:15
SB03	20145484	Water	03/27/2003	14:40	03/27/2003	15:15
SB03-(0-2)	20145492	Soil	03/27/2003	10:55	03/28/2003	15:15
SB03-(10-12)	20145493	Soil	03/27/2003	11:20	03/28/2003	15:15
SB04	20145485	Water	03/27/2003	14:25	03/27/2003	15:15
SB04-(0-2)	20145494	Soil	03/27/2003	10:25	03/28/2003	15:15
SB04-(10-12)	20145495	Soil	03/27/2003	10:50	03/28/2003	15:15
SB05	20145486	Water	03/27/2003	14:35	03/27/2003	15:15
SB05-(0-2)	20145496	Soil	03/27/2003	11:25	03/28/2003	15:15
SB05-(10-12)	20145497	Soil	03/27/2003	11:50	03/28/2003	15:15
SB06	20145487	Water	03/27/2003	14:50	03/27/2003	15:15
SB06-(0-2)	20145498	Soil	03/27/2003	13:25	03/28/2003	15:15
SB06-(10-12)	20145499	Soil	03/27/2003	13:50	03/28/2003	15:15

Laboratory Certifications:
Louisiana Dept. of Health and Hospitals (ELAP)/Drinking Water - LA000006
Florida Dept. of Health/Hazardous Waste - E87595
Kansas Dept. of Health & Environment/ELWHW - E-10266
New Jersey DEPE/Wastewater - 58002
Tennessee Dept. of Environment & Conservation/Div or UST (File)
U.S. Dept. of Agriculture Animal & Plant Health Inspection Services - Foreign Soil Import (U.S. Territories)

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1000 Riverbend Blvd, Suite F
Saint Rose, LA 70087

Phone: 504.469.0333
Fax: 504.469.0555

Client ID: SB01 **Client:** CHEVRON PRODUCTS CO.
Project: 60109060 **Site:** None
Lab ID: 20145482 **Project No.:** 2017720 **Prep Factor:** 1
Description: None **Collected:** 03/27/03 **Received:** 03/27/03
Matrix: Water **%Moisture:**

ParameterName	Method	Batch	DF	Result	Qu	Units	Reporting Limit	Prep. Analysis	Reg. Limit
TPH - Gasoline Range O	Louisiana TPH	24950	10	11100	D1	ug/L	500.	02-Apr-03 00:27	
Benzene	SW 8021 Arom	24955	10	141.	D1	ug/L	5.00	02-Apr-03 00:13	
Ethylbenzene	SW 8021 Arom	24955	10	854.	D1	ug/L	5.00	02-Apr-03 00:13	
Methyl tert-butyl ether (	SW 8021 Arom	24955	10	395.	D1	ug/L	5.00	02-Apr-03 00:13	
Toluene	SW 8021 Arom	24955	10	16.1	Ph D1	ug/L	5.00	02-Apr-03 00:13	
m,p-Xylene	SW 8021 Arom	24955	10	259.	D1	ug/L	5.00	02-Apr-03 00:13	
o-Xylene	SW 8021 Arom	24955	10	ND	D1	ug/L	5.00	02-Apr-03 00:13	

7 parameter(s) reported

Client ID: SB02 **Client:** CHEVRON PRODUCTS CO.
Project: 60109060 **Site:** None
Lab ID: 20145483 **Project No.:** 2017720 **Prep Factor:** 1
Description: None **Collected:** 03/27/03 **Received:** 03/27/03
Matrix: Water **%Moisture:**

ParameterName	Method	Batch	DF	Result	Qu	Units	Reporting Limit	Prep. Analysis	Reg. Limit
TPH - Gasoline Range O	Louisiana TPH	25079	1	256.		ug/L	50.0	04-Apr-03 13:06	
Benzene	SW 8021 Arom	25080	1	1.80		ug/L	0.500	04-Apr-03 04:51	
Ethylbenzene	SW 8021 Arom	25080	1	6.60	Ph	ug/L	0.500	04-Apr-03 04:51	
Methyl tert-butyl ether (	SW 8021 Arom	25080	1	25.2		ug/L	0.500	04-Apr-03 04:51	
Toluene	SW 8021 Arom	25080	1	0.870		ug/L	0.500	04-Apr-03 04:51	
m,p-Xylene	SW 8021 Arom	25080	1	1.70		ug/L	0.500	04-Apr-03 04:51	
o-Xylene	SW 8021 Arom	25080	1	ND		ug/L	0.500	04-Apr-03 04:51	

7 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of final sample. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

4-9-2003 05:29:28

Laboratory Certifications: Puerto Rico - 3449
Louisiana Dept. of Health and Hospitals (ELAP)/Drinking Water -LA000006
Florida Dept. of Health/Hazardous Waste (NELAC) - E87595
Kansas Dept. of Health & Environment/ELW/HW - E-10266
New Jersey DEPE/Wastewater - 58002
LA Dept. of Environmental Quality (LELAP) - 02006
U.S. Dept. of Agriculture Animal & Plant Health Inspection Services -
USDA Foreign Soil Import (U.S. Territories) - S-47270

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Pace Analytical Services, Inc.
1000 Riverbend Blvd, Suite F
Saint Rose, LA 70087

Phone: 504.469.0333
Fax: 504.469.0555

Client ID: SB03 **Client:** CHEVRON PRODUCTS CO.
Project: 60109060 **Site:** None
Lab ID: 20145484 **Project No.:** 2017720 **Prep Factor:** 1
Description: None **Collected:** 03/27/03 **Received:** 03/27/03
Matrix: Water **%Moisture:**

ParameterName	Method	Batch	DF	Result	Qu	Units	Reporting Limit	Prep.	Analysis	Reg. Limit
TPH - Gasoline Range O	Louisiana TPH	25079	1	767.		ug/L	50.0		04-Apr-03 05:26	
Benzene	SW 8021 Arom	25080	1	ND		ug/L	0.500		04-Apr-03 05:12	
Ethylbenzene	SW 8021 Arom	25080	1	ND		ug/L	0.500		04-Apr-03 05:12	
Methyl tert-butyl ether (	SW 8021 Arom	25080	1	46.0		ug/L	0.500		04-Apr-03 05:12	
Toluene	SW 8021 Arom	25080	1	ND		ug/L	0.500		04-Apr-03 05:12	
m,p-Xylene	SW 8021 Arom	25080	1	ND		ug/L	0.500		04-Apr-03 05:12	
o-Xylene	SW 8021 Arom	25080	1	ND		ug/L	0.500		04-Apr-03 05:12	

7 parameter(s) reported

Client ID: SB04 **Client:** CHEVRON PRODUCTS CO.
Project: 60109060 **Site:** None
Lab ID: 20145485 **Project No.:** 2017720 **Prep Factor:** 1
Description: None **Collected:** 03/27/03 **Received:** 03/27/03
Matrix: Water **%Moisture:**

ParameterName	Method	Batch	DF	Result	Qu	Units	Reporting Limit	Prep.	Analysis	Reg. Limit
TPH - Gasoline Range O	Louisiana TPH	25079	1	482.		ug/L	50.0		04-Apr-03 05:47	
Benzene	SW 8021 Arom	25080	1	ND		ug/L	0.500		04-Apr-03 05:33	
Ethylbenzene	SW 8021 Arom	25080	1	ND		ug/L	0.500		04-Apr-03 05:33	
Methyl tert-butyl ether (	SW 8021 Arom	25080	1	737.		ug/L	0.500		04-Apr-03 05:33	
Toluene	SW 8021 Arom	25080	1	ND		ug/L	0.500		04-Apr-03 05:33	
m,p-Xylene	SW 8021 Arom	25080	1	ND		ug/L	0.500		04-Apr-03 05:33	
o-Xylene	SW 8021 Arom	25080	1	ND		ug/L	0.500		04-Apr-03 05:33	

7 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of final sample. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

Laboratory Certifications: Puerto Rico - 3449
Louisiana Dept. of Health and Hospitals (ELAP)/Drinking Water - LA000006
Florida Dept. of Health/Hazardous Waste (NELAC) - E87595
Kansas Dept. of Health & Environment/ELWHW - E-10266
New Jersey DEPE/Wastewater - 58002
LA Dept. of Environmental Quality (LELAP) - 02006
U.S. Dept. of Agriculture Animal & Plant Health Inspection Services - USDA Foreign Soil Import (U.S. Territories) - S-47270

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1000 Riverbend Blvd, Suite F
Saint Rose, LA 70087

Phone: 504.469.0333
Fax: 504.469.0555

Client ID: SB05 **Client:** CHEVRON PRODUCTS CO.
Project: 60109060 **Site:** None
Lab ID: 20145486 **Project No.:** 2017720 **Prep Factor:** 1
Description: None **Collected:** 03/27/03 **Received:** 03/27/03
Matrix: Water **%Moisture:**

ParameterName	Method	Batch	DF	Result	Qu	Units	Reporting Limit	Prep. Analysis	Reg. Limit
TPH - Gasoline Range O	Louisiana TPH	25079	1	88.3		ug/L	50.0	04-Apr-03 06:08	
Benzene	SW 8021 Arom	25080	1	ND		ug/L	0.500	04-Apr-03 05:54	
Ethylbenzene	SW 8021 Arom	25080	1	ND		ug/L	0.500	04-Apr-03 05:54	
Methyl tert-butyl ether (	SW 8021 Arom	25080	1	5.20		ug/L	0.500	04-Apr-03 05:54	
Toluene	SW 8021 Arom	25080	1	ND		ug/L	0.500	04-Apr-03 05:54	
m,p-Xylene	SW 8021 Arom	25080	1	ND		ug/L	0.500	04-Apr-03 05:54	
o-Xylene	SW 8021 Arom	25080	1	ND		ug/L	0.500	04-Apr-03 05:54	

7 parameter(s) reported

Client ID: SB06 **Client:** CHEVRON PRODUCTS CO.
Project: 60109060 **Site:** None
Lab ID: 20145487 **Project No.:** 2017720 **Prep Factor:** 1
Description: None **Collected:** 03/27/03 **Received:** 03/27/03
Matrix: Water **%Moisture:**

ParameterName	Method	Batch	DF	Result	Qu	Units	Reporting Limit	Prep. Analysis	Reg. Limit
TPH - Gasoline Range O	Louisiana TPH	25079	1	69.3		ug/L	50.0	04-Apr-03 06:29	
Benzene	SW 8021 Arom	25080	1	ND		ug/L	0.500	04-Apr-03 06:15	
Ethylbenzene	SW 8021 Arom	25080	1	3.50		ug/L	0.500	04-Apr-03 06:15	
Methyl tert-butyl ether (	SW 8021 Arom	25080	1	14.2		ug/L	0.500	04-Apr-03 06:15	
Toluene	SW 8021 Arom	25080	1	1.20		ug/L	0.500	04-Apr-03 06:15	
m,p-Xylene	SW 8021 Arom	25080	1	9.60		ug/L	0.500	04-Apr-03 06:15	
o-Xylene	SW 8021 Arom	25080	1	2.10		ug/L	0.500	04-Apr-03 06:15	

7 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of final sample. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

4 9 2003 08 29.30

Laboratory Certifications: Puerto Rico - 3449
Louisiana Dept. of Health and Hospitals (ELAP)/Drinking Water -LA000006
Florida Dept. of Health/Hazardous Waste (NELAC) - E87595
Kansas Dept. of Health & Environment/ELWHW - E-10266
New Jersey DEPE/Wastewater - 58002
LA Dept. of Environmental Quality (LELAP) - 02006
U.S. Dept. of Agriculture Animal & Plant Health Inspection Services -
USDA Foreign Soil Import (U.S. Territories) - S-47270

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Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
Saint Rose, LA 70087

Phone: 504.469.0333
Fax: 504.469.0555

Client ID: SB01-(2-4) **Client:** CHEVRON PRODUCTS CO.
Project: 60109060 **Site:** None
Lab ID: 20145488 **Project No.:** 2017720 **Prep Factor:** 1
Description: None **Collected:** 03/27/03 **Received:** 03/28/03
Matrix: Soil **%Moisture:**

ParameterName	Method	Batch	DF	Result	Qu	Units	Reporting Limit	Prep. Analysis	Reg. Limit
TPH - Gasoline Range O	Louisiana TPH	25085	10	207000	D1	ug/kg	21600	03-Apr-03 07-Apr-03 21:46	
Benzene	SW 8021 Arom	25084	1	331.	Ph	ug/kg	21.6	03-Apr-03 04-Apr-03 17:51	
Ethylbenzene	SW 8021 Arom	25084	1	9420		ug/kg	21.6	03-Apr-03 04-Apr-03 17:51	
Methyl tert-butyl ether (	SW 8021 Arom	25084	1	ND		ug/kg	21.6	03-Apr-03 04-Apr-03 17:51	
Toluene	SW 8021 Arom	25084	1	ND		ug/kg	21.6	03-Apr-03 04-Apr-03 17:51	
m,p-Xylene	SW 8021 Arom	25084	1	1050	Ph	ug/kg	21.6	03-Apr-03 04-Apr-03 17:51	
o-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	21.6	03-Apr-03 04-Apr-03 17:51	

7 parameter(s) reported

Client ID: SB01-(12-14) **Client:** CHEVRON PRODUCTS CO.
Project: 60109060 **Site:** None
Lab ID: 20145489 **Project No.:** 2017720 **Prep Factor:** 1
Description: None **Collected:** 03/27/03 **Received:** 03/28/03
Matrix: Soil **%Moisture:**

ParameterName	Method	Batch	DF	Result	Qu	Units	Reporting Limit	Prep. Analysis	Reg. Limit
TPH - Gasoline Range O	Louisiana TPH	25085	1	63700		ug/kg	2255	03-Apr-03 07-Apr-03 22:07	
Benzene	SW 8021 Arom	25084	1	ND		ug/kg	22.6	03-Apr-03 04-Apr-03 18:12	
Ethylbenzene	SW 8021 Arom	25084	1	1110	Ph	ug/kg	22.6	03-Apr-03 04-Apr-03 18:12	
Methyl tert-butyl ether (	SW 8021 Arom	25084	1	64.0		ug/kg	22.6	03-Apr-03 04-Apr-03 18:12	
Toluene	SW 8021 Arom	25084	1	ND		ug/kg	22.6	03-Apr-03 04-Apr-03 18:12	
m,p-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	22.6	03-Apr-03 04-Apr-03 18:12	
o-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	22.6	03-Apr-03 04-Apr-03 18:12	

7 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of final sample. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

Laboratory Certifications: Puerto Rico - 3449
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New Jersey DEPE/Wastewater - 58002
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U.S. Dept. of Agriculture Animal & Plant Health Inspection Services -
USDA Foreign Soil Import (U.S. Territories) - S-47270

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Client ID: SB02-(2-4) **Client:** CHEVRON PRODUCTS CO.
Project: 60109060 **Site:** None
Lab ID: 20145490 **Project No.:** 2017720 **Prep Factor:** 1
Description: None **Collected:** 03/27/03 **Received:** 03/28/03
Matrix: Soil **%Moisture:**

ParameterName	Method	Batch	DF	Result	Qu	Units	Reporting Limit	Prep. Analysis	Reg. Limit
TPH - Gasoline Range O	Louisiana TPH	25085	1	10800		ug/kg	2375	03-Apr-03 07-Apr-03 22:28	
Benzene	SW 8021 Arom	25084	1	ND		ug/kg	23.8	03-Apr-03 04-Apr-03 18:33	
Ethylbenzene	SW 8021 Arom	25084	1	81.2	Ph	ug/kg	23.8	03-Apr-03 04-Apr-03 18:33	
Methyl tert-butyl ether (	SW 8021 Arom	25084	1	ND		ug/kg	23.8	03-Apr-03 04-Apr-03 18:33	
Toluene	SW 8021 Arom	25084	1	ND		ug/kg	23.8	03-Apr-03 04-Apr-03 18:33	
m,p-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	23.8	03-Apr-03 04-Apr-03 18:33	
o-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	23.8	03-Apr-03 04-Apr-03 18:33	

7 parameter(s) reported

Client ID: SB02-(10-12) **Client:** CHEVRON PRODUCTS CO.
Project: 60109060 **Site:** None
Lab ID: 20145491 **Project No.:** 2017720 **Prep Factor:** 1
Description: None **Collected:** 03/27/03 **Received:** 03/28/03
Matrix: Soil **%Moisture:**

ParameterName	Method	Batch	DF	Result	Qu	Units	Reporting Limit	Prep. Analysis	Reg. Limit
TPH - Gasoline Range O	Louisiana TPH	25085	1	ND		ug/kg	2390	03-Apr-03 04-Apr-03 19:08	
Benzene	SW 8021 Arom	25084	1	ND		ug/kg	23.9	03-Apr-03 04-Apr-03 18:54	
Ethylbenzene	SW 8021 Arom	25084	1	ND		ug/kg	23.9	03-Apr-03 04-Apr-03 18:54	
Methyl tert-butyl ether (	SW 8021 Arom	25084	1	ND		ug/kg	23.9	03-Apr-03 04-Apr-03 18:54	
Toluene	SW 8021 Arom	25084	1	ND		ug/kg	23.9	03-Apr-03 04-Apr-03 18:54	
m,p-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	23.9	03-Apr-03 04-Apr-03 18:54	
o-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	23.9	03-Apr-03 04-Apr-03 18:54	

7 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of final sample. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

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Client ID: SB03-(0-2) **Client:** CHEVRON PRODUCTS CO.
Project: 60109060 **Site:** None
Lab ID: 20145492 **Project No.:** 2017720 **Prep Factor:** 1
Description: None **Collected:** 03/27/03 **Received:** 03/28/03
Matrix: Soil **%Moisture:**

ParameterName	Method	Batch	DF	Result	Qu	Units	Reporting Limit	Prep.	Analysis	Reg. Limit
TPH - Gasoline Range O	Louisiana TPH	25085	1	7590		ug/kg	2635	03-Apr-03	04-Apr-03 19:29	
Benzene	SW 8021 Arom	25084	1	ND		ug/kg	26.4	03-Apr-03	04-Apr-03 19:15	
Ethylbenzene	SW 8021 Arom	25084	1	ND		ug/kg	26.4	03-Apr-03	04-Apr-03 19:15	
Methyl tert-butyl ether (	SW 8021 Arom	25084	1	ND		ug/kg	26.4	03-Apr-03	04-Apr-03 19:15	
Toluene	SW 8021 Arom	25084	1	ND		ug/kg	26.4	03-Apr-03	04-Apr-03 19:15	
m,p-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	26.4	03-Apr-03	04-Apr-03 19:15	
o-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	26.4	03-Apr-03	04-Apr-03 19:15	

7 parameter(s) reported

Client ID: SB03-(10-12) **Client:** CHEVRON PRODUCTS CO.
Project: 60109060 **Site:** None
Lab ID: 20145493 **Project No.:** 2017720 **Prep Factor:** 1
Description: None **Collected:** 03/27/03 **Received:** 03/28/03
Matrix: Soil **%Moisture:**

ParameterName	Method	Batch	DF	Result	Qu	Units	Reporting Limit	Prep.	Analysis	Reg. Limit
TPH - Gasoline Range O	Louisiana TPH	25085	1	ND		ug/kg	2975	03-Apr-03	04-Apr-03 19:50	
Benzene	SW 8021 Arom	25084	1	ND		ug/kg	29.8	03-Apr-03	04-Apr-03 19:36	
Ethylbenzene	SW 8021 Arom	25084	1	ND		ug/kg	29.8	03-Apr-03	04-Apr-03 19:36	
Methyl tert-butyl ether (	SW 8021 Arom	25084	1	ND		ug/kg	29.8	03-Apr-03	04-Apr-03 19:36	
Toluene	SW 8021 Arom	25084	1	ND		ug/kg	29.8	03-Apr-03	04-Apr-03 19:36	
m,p-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	29.8	03-Apr-03	04-Apr-03 19:36	
o-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	29.8	03-Apr-03	04-Apr-03 19:36	

7 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of final sample. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

4 9 2003 08:29:32

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Client ID: SB04-(0-2) **Client:** CHEVRON PRODUCTS CO.
Project: 60109060 **Site:** None
Lab ID: 20145494 **Project No.:** 2017720 **Prep Factor:** 1
Description: None **Collected:** 03/27/03 **Received:** 03/28/03
Matrix: Soil **%Moisture:**

ParameterName	Method	Batch	DF	Result	Qu	Units	Reporting Limit	Prep. Analysis	Reg. Limit
TPH - Gasoline Range O	Louisiana TPH	25085	1	7330		ug/kg	2395	03-Apr-03 04-Apr-03 22:18	
Benzene	SW 8021 Arom	25084	1	78.6		ug/kg	23.9	03-Apr-03 04-Apr-03 22:03	
Ethylbenzene	SW 8021 Arom	25084	1	177.		ug/kg	23.9	03-Apr-03 04-Apr-03 22:03	
Methyl tert-butyl ether (	SW 8021 Arom	25084	1	ND		ug/kg	23.9	03-Apr-03 04-Apr-03 22:03	
Toluene	SW 8021 Arom	25084	1	122.	Ph	ug/kg	23.9	03-Apr-03 04-Apr-03 22:03	
m,p-Xylene	SW 8021 Arom	25084	1	94.8		ug/kg	23.9	03-Apr-03 04-Apr-03 22:03	
o-Xylene	SW 8021 Arom	25084	1	70.4		ug/kg	23.9	03-Apr-03 04-Apr-03 22:03	

7 parameter(s) reported

Client ID: SB04-(10-12) **Client:** CHEVRON PRODUCTS CO.
Project: 60109060 **Site:** None
Lab ID: 20145495 **Project No.:** 2017720 **Prep Factor:** 1
Description: None **Collected:** 03/27/03 **Received:** 03/28/03
Matrix: Soil **%Moisture:**

ParameterName	Method	Batch	DF	Result	Qu	Units	Reporting Limit	Prep. Analysis	Reg. Limit
TPH - Gasoline Range O	Louisiana TPH	25085	1	ND		ug/kg	2375	03-Apr-03 04-Apr-03 22:39	
Benzene	SW 8021 Arom	25084	1	ND		ug/kg	23.8	03-Apr-03 04-Apr-03 22:24	
Ethylbenzene	SW 8021 Arom	25084	1	ND		ug/kg	23.8	03-Apr-03 04-Apr-03 22:24	
Methyl tert-butyl ether (	SW 8021 Arom	25084	1	230.		ug/kg	23.8	03-Apr-03 04-Apr-03 22:24	
Toluene	SW 8021 Arom	25084	1	ND		ug/kg	23.8	03-Apr-03 04-Apr-03 22:24	
m,p-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	23.8	03-Apr-03 04-Apr-03 22:24	
o-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	23.8	03-Apr-03 04-Apr-03 22:24	

7 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of final sample. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
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Client ID: SB05-(0-2) **Client:** CHEVRON PRODUCTS CO.
Project: 60109060 **Site:** None
Lab ID: 20145496 **Project No.:** 2017720 **Prep Factor:** 1
Description: None **Collected:** 03/27/03 **Received:** 03/28/03
Matrix: Soil **%Moisture:**

ParameterName	Method	Batch	DF	Result	Qu	Units	Reporting Limit	Prep. Analysis	Reg. Limit
TPH - Gasoline Range O	Louisiana TPH	25085	1	5800		ug/kg	2360	03-Apr-03 04-Apr-03 23:00	
Benzene	SW 8021 Arom	25084	1	ND		ug/kg	23.6	03-Apr-03 04-Apr-03 22:45	
Ethylbenzene	SW 8021 Arom	25084	1	ND		ug/kg	23.6	03-Apr-03 04-Apr-03 22:45	
Methyl tert-butyl ether (	SW 8021 Arom	25084	1	ND		ug/kg	23.6	03-Apr-03 04-Apr-03 22:45	
Toluene	SW 8021 Arom	25084	1	ND		ug/kg	23.6	03-Apr-03 04-Apr-03 22:45	
m,p-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	23.6	03-Apr-03 04-Apr-03 22:45	
o-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	23.6	03-Apr-03 04-Apr-03 22:45	

7 parameter(s) reported

Client ID: SB05-(10-12) **Client:** CHEVRON PRODUCTS CO.
Project: 60109060 **Site:** None
Lab ID: 20145497 **Project No.:** 2017720 **Prep Factor:** 1
Description: None **Collected:** 03/27/03 **Received:** 03/28/03
Matrix: Soil **%Moisture:**

ParameterName	Method	Batch	DF	Result	Qu	Units	Reporting Limit	Prep. Analysis	Reg. Limit
TPH - Gasoline Range O	Louisiana TPH	25085	1	ND		ug/kg	2620	03-Apr-03 04-Apr-03 23:21	
Benzene	SW 8021 Arom	25084	1	ND		ug/kg	26.2	03-Apr-03 04-Apr-03 23:06	
Ethylbenzene	SW 8021 Arom	25084	1	ND		ug/kg	26.2	03-Apr-03 04-Apr-03 23:06	
Methyl tert-butyl ether (	SW 8021 Arom	25084	1	ND		ug/kg	26.2	03-Apr-03 04-Apr-03 23:06	
Toluene	SW 8021 Arom	25084	1	ND		ug/kg	26.2	03-Apr-03 04-Apr-03 23:06	
m,p-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	26.2	03-Apr-03 04-Apr-03 23:06	
o-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	26.2	03-Apr-03 04-Apr-03 23:06	

7 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of final sample. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

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Client ID: SB06-(0-2) **Client:** CHEVRON PRODUCTS CO.
Project: 60109060 **Site:** None
Lab ID: 20145498 **Project No.:** 2017720 **Prep Factor:** 1
Description: None **Collected:** 03/27/03 **Received:** 03/28/03
Matrix: Soil **%Moisture:**

ParameterName	Method	Batch	DF	Result	Qu	Units	Reporting Limit	Prep.	Analysis	Reg. Limit
TPH - Gasoline Range O	Louisiana TPH	25085	1	ND		ug/kg	2215	03-Apr-03	04-Apr-03 23:41	
Benzene	SW 8021 Arom	25084	1	ND		ug/kg	22.1	03-Apr-03	04-Apr-03 23:27	
Ethylbenzene	SW 8021 Arom	25084	1	ND		ug/kg	22.1	03-Apr-03	04-Apr-03 23:27	
Methyl tert-butyl ether (	SW 8021 Arom	25084	1	ND		ug/kg	22.1	03-Apr-03	04-Apr-03 23:27	
Toluene	SW 8021 Arom	25084	1	ND		ug/kg	22.1	03-Apr-03	04-Apr-03 23:27	
m,p-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	22.1	03-Apr-03	04-Apr-03 23:27	
o-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	22.1	03-Apr-03	04-Apr-03 23:27	

7 parameter(s) reported

Client ID: SB06-(10-12) **Client:** CHEVRON PRODUCTS CO.
Project: 60109060 **Site:** None
Lab ID: 20145499 **Project No.:** 2017720 **Prep Factor:** 1
Description: None **Collected:** 03/27/03 **Received:** 03/28/03
Matrix: Soil **%Moisture:**

ParameterName	Method	Batch	DF	Result	Qu	Units	Reporting Limit	Prep.	Analysis	Reg. Limit
TPH - Gasoline Range O	Louisiana TPH	25085	1	ND		ug/kg	2385	03-Apr-03	05-Apr-03 00:02	
Benzene	SW 8021 Arom	25084	1	ND		ug/kg	23.9	03-Apr-03	04-Apr-03 23:48	
Ethylbenzene	SW 8021 Arom	25084	1	ND		ug/kg	23.9	03-Apr-03	04-Apr-03 23:48	
Methyl tert-butyl ether (	SW 8021 Arom	25084	1	ND		ug/kg	23.9	03-Apr-03	04-Apr-03 23:48	
Toluene	SW 8021 Arom	25084	1	ND		ug/kg	23.9	03-Apr-03	04-Apr-03 23:48	
m,p-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	23.9	03-Apr-03	04-Apr-03 23:48	
o-Xylene	SW 8021 Arom	25084	1	ND		ug/kg	23.9	03-Apr-03	04-Apr-03 23:48	

7 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of final sample. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

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Phone: 504.469.0333
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Project No.: 2017720

Method: Water GC Organics

Batch: 24950 **Units:** ug/L

Parameter Name	LCS Spike	LCS %Rec	LCSD %Rec	LCS RPD	MS Spike	MS %Rec	MSD %Rec	(1)MS RPD	DUP RPD	QC Limits LCS	QC Limits MS/MSD	Max RPD	Qu
TPH - Gasoline Range Organics	500.00	109			500.00	95	100	5		50 - 150	50 - 150	25	

1 compound(s) reported

* denotes recovery outside of QC limits.
MS spike concentrations are not corrected for moisture content of the spiked sample.
(1) MS RPD is calculated via SW-846 rules: on the basis of spiked sample concentrations rather than spike recoveries.

4/8/2003 16:14:48

Laboratory Certifications:
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Project No.: 2017720

Method: Water GC Organics **Batch:** 25079 **Units:** ug/L

Parameter Name	LCS Spike	LCS %Rec	LCSD %Rec	LCS RPD	MS Spike	MS %Rec	MSD %Rec	(1)MS RPD	DUP RPD	QC Limits LCS	QC Limits MS/MSD	Max RPD	Qu
TPH - Gasoline Range Organics	500.00	107			500.00	77	76	1		50 - 150	50 - 150	25	

1 compound(s) reported

* denotes recovery outside of QC limits.
MS spike concentrations are not corrected for moisture content of the spiked sample.
(1) MS RPD is calculated via SW-846 rules: on the basis of spiked sample concentrations rather than spike recoveries.

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Laboratory Certifications:
Louisiana Dept. of Health and Hospitals (ELAP)/Drinking Water -LA000006
Florida Dept. of Health/Hazardous Waste - E87595
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Phone: 504.469.0333
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Project No.: 2017720

Method: Med Soil GC Organics **Batch:** 25085 **Units:** ug/kg

Parameter Name	LCS Spike	LCS %Rec	LCSD %Rec	LCS RPD	MS Spike	MS %Rec	MSD %Rec	(1)MS RPD	DUP RPD	QC Limits LCS	QC Limits MS/MSD	Max RPD	Qu
TPH - Gasoline Range Organics	25000.00	95	95	0	25000.00					50 - 150	50 - 150	50	

1 compound(s) reported

* denotes recovery outside of QC limits.
MS spike concentrations are not corrected for moisture content of the spiked sample.
(1) MS RPD is calculated via SW-846 rules: on the basis of spiked sample concentrations rather than spike recoveries.

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Laboratory Certifications:
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Project No.: 2017720

Method: Water 8021 **Batch:** 24955 **Units:** ug/L

Parameter Name	LCS Spike	LCS %Rec	LCSD %Rec	LCS RPD	MS Spike	MS %Rec	MSD %Rec	(1)MS RPD	DUP RPD	QC Limits LCS	QC Limits MS/MSD	Max RPD	Qu
Benzene	20.00	111			20.00	104	107	2		39 - 150	39 - 150	25	
Benzene	20.00	113			20.00					39 - 150	39 - 150	25	
Ethylbenzene	20.00	111			20.00	99	101	2		32 - 160	32 - 160	25	
Ethylbenzene	20.00	112			20.00					32 - 160	32 - 160	25	
Methyl tert-butyl ether (MTBE)	20.00	109			20.00	106	105	0		27 - 151	0 - 190	25	
Methyl tert-butyl ether (MTBE)	20.00	109			20.00					27 - 151	0 - 190	25	
Toluene	20.00	109			20.00	101	104	3		46 - 148	46 - 148	25	
Toluene	20.00	112			20.00					46 - 148	46 - 148	25	
m,p-Xylene	40.00	114			40.00	101	103	2		50 - 132	46 - 134	25	
m,p-Xylene	40.00	118			40.00					50 - 132	46 - 134	25	
o-Xylene	20.00	112			20.00	99	101	2		51 - 135	43 - 139	25	
o-Xylene	20.00	113			20.00					51 - 135	43 - 139	25	

12 compound(s) reported

* denotes recovery outside of QC limits.
MS spike concentrations are not corrected for moisture content of the spiked sample.
(1) MS RPD is calculated via SW-846 rules: on the basis of spiked sample concentrations rather than spike recoveries.

4/3/2003 16:14:48

Laboratory Certifications:
Louisiana Dept. of Health and Hospitals (ELAP)/Drinking Water -LA000006
Florida Dept. of Health/Hazardous Waste - E87595
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Saint Rose, LA 70087

Phone: 504.469.0333
Fax: 504.469.0555

Project No.: 2017720

Method: Water 8021 **Batch:** 25080 **Units:** ug/L

Parameter Name	LCS Spike	LCS %Rec	LCSD %Rec	LCS RPD	MS Spike	MS %Rec	MSD %Rec	(1)MS RPD	DUP RPD	QC Limits LCS	QC Limits MS/MSD	Max RPD	Qu
Benzene	20.00	114			20.00	112	112	0		39 - 150	39 - 150	25	
Ethylbenzene	20.00	112			20.00	105	104	1		32 - 160	32 - 160	25	
Methyl tert-butyl ether (MTBE)	20.00	120			20.00	121	121	0		27 - 151	0 - 190	25	
Toluene	20.00	113			20.00	111	110	1		46 - 148	46 - 148	25	
m,p-Xylene	40.00	118			40.00	108	106	1		50 - 132	46 - 134	25	
o-Xylene	20.00	114			20.00	107	105	1		51 - 135	43 - 139	25	

6 compound(s) reported

* denotes recovery outside of QC limits.
MS spike concentrations are not corrected for moisture content of the spiked sample.
(1) MS RPD is calculated via SW-846 rules: on the basis of spiked sample concentrations rather than spike recoveries.

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Phone: 504.469.0333
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Project No.: 2017720

Method: Med Soil 8021 **Batch:** 25084 **Units:** ug/kg

Parameter Name	LCS Spike	LCS %Rec	LCSD %Rec	LCS RPD	MS Spike	MS %Rec	MSD %Rec	(1)MS RPD	DUP RPD	QC Limits LCS	QC Limits MS/MSD	Max RPD	Qu
Benzene	1000.00	107	108	1	1000.00					30 - 137	17 - 144	50	
Ethylbenzene	1000.00	107	108	1	1000.00					53 - 124	38 - 135	50	
Methyl tert-butyl ether (MTBE)	1000.00	104	107	3	1000.00					50 - 150	24 - 147	50	
Toluene	1000.00	106	107	1	1000.00					54 - 130	40 - 137	50	
m,p-Xylene	2000.00	112	112	0	2000.00					52 - 135	32 - 154	50	
o-Xylene	1000.00	107	108	1	1000.00					53 - 140	36 - 156	50	

6 compound(s) reported

* denotes recovery outside of QC limits.
MS spike concentrations are not corrected for moisture content of the spiked sample.
(1) MS RPD is calculated via SW-846 rules: on the basis of spiked sample concentrations rather than spike recoveries.

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Phone: 504.469.0333
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Report: 2017720

Method: Water GC Organics

Batch: 24950

Lab ID	Type and Qualifiers	Sur 1 %Rec	Sur 2 %Rec	Sur 3 %Rec	Sur 4 %Rec	Sur 5 %Rec	Sur 6 %Rec	Sur 7 %Rec	Sur 8 %Rec
20144976	Sample	79							
20144977	Sample	72							
20144978	Sample	74							
20144979	Sample	58							
20145042	Sample	88							
20145043	Sample	91							
20145044	Sample	94							
20145085	Sample	92							
20145113	Sample	68							
20145114	Sample	79							
20145382	Sample	79							
20145383	Sample	74							
20145384	Sample	75							
20145386	Sample	72							
20145400	Sample	35*							
20145401	Sample	56							
20145402	Sample	67							
20145403	Sample	69							
20145416	Sample	86							
20145482	Sample	94							
24950B1	Blank	95							
24950B2	Blank	95							
24950B3	Blank	99							
24950MS	Spike	93							
24950MSD	Spike Dup	91							
24950S1	LCS	94							
QC limits:		39-145							

Sur 1: 1,2,4-Trichlorobenzene (S)

* denotes surrogate recovery outside of QC limits.
D denotes surrogate recovery is outside of QC limits due to sample dilution, and is not considered an excursion.
A Lab ID consisting of a batch number with a B suffix is a method blank.
A Lab ID consisting of a batch number with a S suffix is an LCS.
A Lab ID with a MS suffix is a matrix spike.
A Lab ID with a MSD suffix is a matrix spike duplicate.

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Phone: 504.469.0333
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Report: 2017720

Method: Water 8021

Batch: 24955

Lab ID	Type and Qualifiers	Sur 1 %Rec	Sur 2 %Rec	Sur 3 %Rec	Sur 4 %Rec	Sur 5 %Rec	Sur 6 %Rec	Sur 7 %Rec	Sur 8 %Rec
20144976	Sample	91	93						
20144977	Sample	88	84						
20144978	Sample	87	90						
20144979	Sample	91	93						
20144980	Sample	96	100						
20145042	Sample	100	100						
20145043	Sample	100	101						
20145085	Sample	102	101						
20145113	Sample	93	94						
20145114	Sample	89	92						
20145382	Sample	98	92						
20145383	Sample	98	97						
20145384	Sample	99	96						
20145386	Sample	98	97						
20145400	Sample	86	83						
20145401	Sample	81	81						
20145402	Sample	94	91						
20145403	Sample	87	92						
20145416	Sample	96	97						
20145482	Sample	98	94						
24955B1	Blank	95	98						
24955B2	Blank	94	95						
24955B3	Blank	96	94						
24955B4	Blank	92	93						
24955MS	Spike	90	89						
24955MSD	Spike Dup	92	92						
24955S1	LCS	100	101						
24955S2	LCS	101	96						
QC limits:		63-125	64-125						

Sur 1: 4-Bromofluorobenzene (PID) (S)
Sur 2: 4-Bromofluorobenzene (PID confirmat

* denotes surrogate recovery outside of QC limits.
D denotes surrogate recovery is outside of QC limits due to sample dilution, and is not considered an excursion.
A Lab ID consisting of a batch number with a B suffix is a method blank.
A Lab ID consisting of a batch number with a S suffix is an LCS.
A Lab ID with a MS suffix is a matrix spike.
A Lab ID with a MSD suffix is a matrix spike duplicate.

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Phone: 504.469.0333
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Report: 2017720

Method: Water GC Organics

Batch: 25079

Lab ID	Type and Qualifiers	Sur 1 %Rec	Sur 2 %Rec	Sur 3 %Rec	Sur 4 %Rec	Sur 5 %Rec	Sur 6 %Rec	Sur 7 %Rec	Sur 8 %Rec
20145483	Sample	66							
20145484	Sample	95							
20145485	Sample	91							
20145486	Sample	88							
20145487	Sample	76							
20145547	Sample	69							
20145548	Sample	89							
20145549	Sample	87							
20145711	Sample	101							
20145781	Sample	100							
20145952	Sample	82							
20145953	Sample	89							
20145954	Sample	88							
20145955	Sample	88							
20145956	Sample	89							
20145957	Sample	98							
20146096	Sample	94							
20146097	Sample	85							
20146098	Sample	84							
20146099	Sample	63							
25079B1	Blank	95							
25079B2	Blank	96							
25079B3	Blank	101							
25079MS	Spike	66							
25079MSD	Spike Dup	65							
25079S1	LCS	101							
QC limits:		39-145							

Sur 1: 1,2,4-Trichlorobenzene (S)

* denotes surrogate recovery outside of QC limits.
D denotes surrogate recovery is outside of QC limits due to sample dilution, and is not considered an excursion.
A Lab ID consisting of a batch number with a B suffix is a method blank.
A Lab ID consisting of a batch number with a S suffix is an LCS.
A Lab ID with a MS suffix is a matrix spike.
A Lab ID with a MSD suffix is a matrix spike duplicate.

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Laboratory Certifications:
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Phone: 504.469.0333
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Report: 2017720

Method: Water 8021

Batch: 25080

Lab ID	Type and Qualifiers	Sur 1 %Rec	Sur 2 %Rec	Sur 3 %Rec	Sur 4 %Rec	Sur 5 %Rec	Sur 6 %Rec	Sur 7 %Rec	Sur 8 %Rec
20145483	Sample	88	85						
20145484	Sample	102	91						
20145485	Sample	97	94						
20145486	Sample	99	99						
20145487	Sample	95	95						
20145547	Sample	96	95						
20145548	Sample	94	85						
20145548DL	Dilution	96	89						
20145549	Sample	93	84						
20145549DL	Dilution	93	88						
20145952	Sample	96	94						
20145953	Sample	96	89						
20145954	Sample	93	89						
20145955	Sample	96	90						
20145956	Sample	95	90						
20145957	Sample	95	95						
20146096	Sample	101	93						
20146097	Sample	97	87						
20146098	Sample	99	90						
20146099	Sample	95	92						
25080B1	Blank	98	96						
25080B2	Blank	95	93						
25080B3	Blank	96	93						
25080MS	Spike	96	89						
25080MSD	Spike Dup	94	89						
25080S1	LCS	103	95						
QC limits:		63-125	64-125						

Sur 1: 4-Bromofluorobenzene (PID) (S)
Sur 2: 4-Bromofluorobenzene (PID confirmat

* denotes surrogate recovery outside of QC limits.
D denotes surrogate recovery is outside of QC limits due to sample dilution, and is not considered an excursion.
A Lab ID consisting of a batch number with a B suffix is a method blank.
A Lab ID consisting of a batch number with a S suffix is an LCS.
A Lab ID with a MS suffix is a matrix spike.
A Lab ID with a MSD suffix is a matrix spike duplicate.

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Report: 2017720

Method: Med Soil 8021

Batch: 25084

Lab ID	Type and Qualifiers	Sur 1 %Rec	Sur 2 %Rec	Sur 3 %Rec	Sur 4 %Rec	Sur 5 %Rec	Sur 6 %Rec	Sur 7 %Rec	Sur 8 %Rec
20145488	Sample G1	161*	106						
20145489	Sample	120	111						
20145490	Sample	87	80						
20145491	Sample	77	77						
20145492	Sample	90	86						
20145493	Sample	78	79						
20145494	Sample	76	73						
20145495	Sample	81	80						
20145496	Sample	84	83						
20145497	Sample	85	84						
20145498	Sample	79	78						
20145499	Sample	83	83						
20145533	Sample	92	82						
20145536	Sample	76	75						
20145537	Sample	83	83						
20146064	Sample	78	76						
25084B1	Blank	92	93						
25084S1	LCS	97	92						
25084S2	LCS	98	94						
QC limits:		34-142	24-165						

Sur 1: 4-Bromofluorobenzene (PID) (S)
Sur 2: 4-Bromofluorobenzene (PID confirmat

* denotes surrogate recovery outside of QC limits.
D denotes surrogate recovery is outside of QC limits due to sample dilution, and is not considered an excursion.
\ Lab ID consisting of a batch number with a B suffix is a method blank.
A Lab ID consisting of a batch number with a S suffix is an LCS.
A Lab ID with a MS suffix is a matrix spike.
A Lab ID with a MSD suffix is a matrix spike duplicate.

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Report: 2017720

Method: Med Soil GC Organics

Batch: 25085

Lab ID	Type and Qualifiers	Sur 1 %Rec	Sur 2 %Rec	Sur 3 %Rec	Sur 4 %Rec	Sur 5 %Rec	Sur 6 %Rec	Sur 7 %Rec	Sur 8 %Rec
20145488	Sample	76							
20145489	Sample	69							
20145490	Sample	87							
20145491	Sample	74							
20145492	Sample	83							
20145493	Sample	75							
20145494	Sample	62							
20145495	Sample	76							
20145496	Sample	81							
20145497	Sample	81							
20145498	Sample	74							
20145499	Sample	80							
20145533	Sample	73							
20145534	Sample	76							
20145535	Sample	75							
20145536	Sample	73							
20145537	Sample	81							
20145538	Sample	51							
20145539	Sample	81							
25085B1	Blank	89							
25085S1	LCS	89							
25085S2	LCS	87							
QC limits:		36-160							

Sur 1: 1,2,4-Trichlorobenzene (S)

* denotes surrogate recovery outside of QC limits.
D denotes surrogate recovery is outside of QC limits due to sample dilution, and is not considered an excursion.
A Lab ID consisting of a batch number with a B suffix is a method blank.
A Lab ID consisting of a batch number with a S suffix is an LCS.
A Lab ID with a MS suffix is a matrix spike.
A Lab ID with a MSD suffix is a matrix spike duplicate.

4.8.2003 16.14.52

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Phone: 504.469.0333
Fax: 504.469.0555

Lab ID: 24950B1

Description: Water Method Blank **Project No.:** 2017720

Method: Water GC Organics **Batch:** 24950 **Units:** ug/L

Prep Factor: 1 **Leached:** **Prepared:** **Analyzed:** 01-Apr-03 10:00 CCW

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
	TPH - Gasoline Range Organics	1	ND		50.0

1 compound(s) reported

ND denotes Not Detected at or above the reporting limit.
DF denotes Dilution Factor.
RL denotes sample Reporting Limit.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.

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Laboratory Certifications:
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Phone: 504.469.0333
Fax: 504.469.0555

Lab ID: 24950B2

Description: Water Method Blank **Project No.:** 2017720

Method: Water GC Organics **Batch:** 24950 **Units:** ug/L

Prep Factor: 1 **Leached:** **Prepared:** **Analyzed:** 01-Apr-03 22:21 CCW

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
	TPH - Gasoline Range Organics	1	ND		50.0

1 compound(s) reported

ND denotes Not Detected at or above the reporting limit.
DF denotes Dilution Factor.
RL denotes sample Reporting Limit.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.

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Laboratory Certifications:
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Phone: 504.469.0333
Fax: 504.469.0555

Lab ID: 24950B3
Description: Water Method Blank **Project No.:** 2017720
Method: Water GC Organics **Batch:** 24950 **Units:** ug/L

Prep Factor: 1 **Leached:** **Prepared:** **Analyzed:** 02-Apr-03 06:45 CCW

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
	TPH - Gasoline Range Organics	1	ND		50.0

1 compound(s) reported

ND denotes Not Detected at or above the reporting limit.
DF denotes Dilution Factor.
RL denotes sample Reporting Limit.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.

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Laboratory Certifications:
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Phone: 504.469.0333
Fax: 504.469.0555

Lab ID: 24955B1

Description: Water Method Blank **Project No.:** 2017720

Method: Water 8021 **Batch:** 24955 **Units:** ug/L

Prep Factor: 1 **Leached:** **Prepared:** **Analyzed:** 01-Apr-03 03:41 CCW

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
71-43-2	Benzene	1	ND		0.500
100-41-4	Ethylbenzene	1	ND		0.500
1634-04-4	Methyl tert-butyl ether (MTBE)	1	ND		0.500
108-88-3	Toluene	1	ND		0.500
1330-20-7	m,p-Xylene	1	ND		0.500
95-47-6	o-Xylene	1	ND		0.500

6 compound(s) reported

ND denotes Not Detected at or above the reporting limit.
DF denotes Dilution Factor.
RL denotes sample Reporting Limit.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.

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Laboratory Certifications:
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Phone: 504.469.0333
Fax: 504.469.0555

Lab ID: 24955B2

Description: Water Method Blank **Project No.:** 2017720

Method: Water 8021 **Batch:** 24955 **Units:** ug/L

Prep Factor: 1 **Leached:** **Prepared:** **Analyzed:** 01-Apr-03 09:46 CCW

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
71-43-2	Benzene	1	ND		0.500
100-41-4	Ethylbenzene	1	ND		0.500
1634-04-4	Methyl tert-butyl ether (MTBE)	1	ND		0.500
108-88-3	Toluene	1	ND		0.500
1330-20-7	m,p-Xylene	1	ND		0.500
95-47-6	o-Xylene	1	ND		0.500

6 compound(s) reported

ND denotes Not Detected at or above the reporting limit.
DF denotes Dilution Factor.
RL denotes sample Reporting Limit.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.

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Laboratory Certifications:
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Phone: 504.469.0333
Fax: 504.469.0555

Lab ID: 24955B3
Description: Water Method Blank
Method: Water 8021
Project No.: 2017720
Batch: 24955
Units: ug/L

Prep Factor: 1 **Leached:** **Prepared:** **Analyzed:** 01-Apr-03 22:07 CCW

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
71-43-2	Benzene	1	ND		0.500
100-41-4	Ethylbenzene	1	ND		0.500
1634-04-4	Methyl tert-butyl ether (MTBE)	1	ND		0.500
108-88-3	Toluene	1	ND		0.500
1330-20-7	m,p-Xylene	1	ND		0.500
95-47-6	o-Xylene	1	ND		0.500

6 compound(s) reported

ND denotes Not Detected at or above the reporting limit.
DF denotes Dilution Factor.
RL denotes sample Reporting Limit.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.

4-8 2003 16:14:54

Laboratory Certifications:
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Florida Dept. of Health/Hazardous Waste - E87595
Kansas Dept. of Health & Environment/ELWHW - E-10266
New Jersey DEPE/Wastewater - 58002
Tennessee Dept. of Environment & Conservation/Div of UST (File)
U.S. Dept. of Agriculture Animal & Plant Health Inspection Services - Foreign Soil Import (U.S. Territories)

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New Orleans Laboratory

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Saint Rose, LA 70087

Phone: 504.469.0333
Fax: 504.469.0555

Lab ID: 24955B4

Description: Water Method Blank **Project No.:** 2017720

Method: Water 8021 **Batch:** 24955 **Units:** ug/L

Prep Factor: 1 **Leached:** **Prepared:** **Analyzed:** 02-Apr-03 06:30 CCW

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
71-43-2	Benzene	1	ND		0.500
100-41-4	Ethylbenzene	1	ND		0.500
1634-04-4	Methyl tert-butyl ether (MTBE)	1	ND		0.500
108-88-3	Toluene	1	ND		0.500
1330-20-7	m,p-Xylene	1	ND		0.500
95-47-6	o-Xylene	1	ND		0.500

6 compound(s) reported

ND denotes Not Detected at or above the reporting limit.
DF denotes Dilution Factor.
RL denotes sample Reporting Limit.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.

4/8/2003 16:14:54

Laboratory Certifications:
Louisiana Dept. of Health and Hospitals (ELAP)/Drinking Water -LA000006
Florida Dept. of Health/Hazardous Waste - E87595
Kansas Dept. of Health & Environment/ELWHW - E-10266
New Jersey DEPE/Wastewater - 58002
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Phone: 504.469.0333
Fax: 504.469.0555

Lab ID: 25079B1
Description: Water Method Blank **Project No.:** 2017720
Method: Water GC Organics **Batch:** 25079 **Units:** ug/L

Prep Factor: 1 **Leached:** **Prepared:** **Analyzed:** 03-Apr-03 19:39 CCW

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
	TPH - Gasoline Range Organics	1	ND		50.0
	TPH - Gasoline Range Organics	1	ND		50.0

2 compound(s) reported

ND denotes Not Detected at or above the reporting limit.
DF denotes Dilution Factor.
RL denotes sample Reporting Limit.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.

4/8/2003 16:14:55

Laboratory Certifications:
Louisiana Dept. of Health and Hospitals (ELAP)/Drinking Water -LA000006
Florida Dept. of Health/Hazardous Waste - E87595
Kansas Dept. of Health & Environment/ELW/HW - E-10266
New Jersey DEPE/Wastewater - 58002
Tennessee Dept. of Environment & Conservation/Div or UST (File)
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Phone: 504.469.0333
Fax: 504.469.0555

Lab ID: 25079B2

Description: Water Method Blank **Project No.:** 2017720

Method: Water GC Organics **Batch:** 25079 **Units:** ug/L

Prep Factor: 1 **Leached:** **Prepared:** **Analyzed:** 04-Apr-03 03:00 CCW

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
	TPH - Gasoline Range Organics	1	ND		50.0
	TPH - Gasoline Range Organics	1	ND		50.0

2 compound(s) reported

ND denotes Not Detected at or above the reporting limit.
DF denotes Dilution Factor.
RL denotes sample Reporting Limit.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.

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Phone: 504.469.0333
Fax: 504.469.0555

Lab ID: 25079B3

Description: Water Method Blank **Project No.:** 2017720

Method: Water GC Organics **Batch:** 25079 **Units:** ug/L

Prep Factor: 1 **Leached:** **Prepared:** **Analyzed:** 04-Apr-03 07:53 CCW

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
	TPH - Gasoline Range Organics	1	ND		50.0
	TPH - Gasoline Range Organics	1	ND		50.0

2 compound(s) reported

ND denotes Not Detected at or above the reporting limit.
DF denotes Dilution Factor.
RL denotes sample Reporting Limit.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.

4/8/2003 16:14:55

Laboratory Certifications:
Louisiana Dept. of Health and Hospitals (ELAP)/Drinking Water -LA000006
Florida Dept. of Health/Hazardous Waste - E87595
Kansas Dept. of Health & Environment/ELW/HW - E-10266
New Jersey DEPE/Wastewater - 58002
Tennessee Dept. of Environment & Conservation/Div or UST (File)
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Phone: 504.469.0333
Fax: 504.469.0555

Lab ID: 25080B1
Description: Water Method Blank
Method: Water 8021
Project No.: 2017720
Batch: 25080
Units: ug/L

Prep Factor: 1 **Leached:** **Prepared:** **Analyzed:** 03-Apr-03 19:24 CCW

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
71-43-2	Benzene	1	ND		0.500
100-41-4	Ethylbenzene	1	ND		0.500
1634-04-4	Methyl tert-butyl ether (MTBE)	1	ND		0.500
108-88-3	Toluene	1	ND		0.500
1330-20-7	m,p-Xylene	1	ND		0.500
95-47-6	o-Xylene	1	ND		0.500

6 compound(s) reported

ND denotes Not Detected at or above the reporting limit.
DF denotes Dilution Factor.
RL denotes sample Reporting Limit.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.

4-8-2003 16:14:55

Laboratory Certifications:
Louisiana Dept. of Health and Hospitals (ELAP)/Drinking Water -LA000006
Florida Dept. of Health/Hazardous Waste - E87595
Kansas Dept. of Health & Environment/ELWHW - E-10266
New Jersey DEPE/Wastewater - 58002
Tennessee Dept. of Environment & Conservation/Div or UST (File)
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Phone: 504.469.0333
Fax: 504.469.0555

Lab ID: 25080B2

Description: Water Method Blank **Project No.:** 2017720

Method: Water 8021 **Batch:** 25080 **Units:** ug/L

Prep Factor: 1 **Leached:** **Prepared:** **Analyzed:** 04-Apr-03 02:45 CCW

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
71-43-2	Benzene	1	ND		0.500
100-41-4	Ethylbenzene	1	ND		0.500
1634-04-4	Methyl tert-butyl ether (MTBE)	1	ND		0.500
108-88-3	Toluene	1	ND		0.500
1330-20-7	m,p-Xylene	1	ND		0.500
95-47-6	o-Xylene	1	ND		0.500

6 compound(s) reported

ND denotes Not Detected at or above the reporting limit.
DF denotes Dilution Factor.
RL denotes sample Reporting Limit.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.

4-8-2003 16:14:56

Laboratory Certifications:
Louisiana Dept. of Health and Hospitals (ELAP)/Drinking Water -LA000006
Florida Dept. of Health/Hazardous Waste - E87595
Kansas Dept. of Health & Environment/ELW/HW - E-10266
New Jersey DEPE/Wastewater - 58002
Tennessee Dept. of Environment & Conservation/Div of UST (File)
U.S. Dept. of Agriculture Animal & Plant Health Inspection Services -
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Phone: 504.469.0333
Fax: 504.469.0555

Lab ID: 25080B3

Description: Water Method Blank **Project No.:** 2017720

Method: Water 8021 **Batch:** 25080 **Units:** ug/L

Prep Factor: 1 **Leached:** **Prepared:** **Analyzed:** 04-Apr-03 07:39 CCW

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
71-43-2	Benzene	1	ND		0.500
100-41-4	Ethylbenzene	1	ND		0.500
1634-04-4	Methyl tert-butyl ether (MTBE)	1	ND		0.500
108-88-3	Toluene	1	ND		0.500
1330-20-7	m,p-Xylene	1	ND		0.500
95-47-6	o-Xylene	1	ND		0.500

6 compound(s) reported

ND denotes Not Detected at or above the reporting limit.
DF denotes Dilution Factor.
RL denotes sample Reporting Limit.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.

4/8/2003 16:14:56

Laboratory Certifications:
Louisiana Dept. of Health and Hospitals (ELAP)/Drinking Water -LA000006
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Kansas Dept. of Health & Environment/ELWHW - E-10266
New Jersey DEPE/Wastewater - 56002
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Phone: 504.469.0333
Fax: 504.469.0555

Lab ID: 25084B1

Description: Med Soil Method Blan **Project No.:** 2017720

Method: Med Soil 8021 **Batch:** 25084 **Units:** ug/kg

Prep Factor: 1 **Leached:** **Prepared:** 03-Apr-03 **Analyzed:** 04-Apr-03 16:28 CCW

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
71-43-2	Benzene	1	ND		25.0
100-41-4	Ethylbenzene	1	ND		25.0
1634-04-4	Methyl tert-butyl ether (MTBE)	1	ND		25.0
108-88-3	Toluene	1	ND		25.0
1330-20-7	m,p-Xylene	1	ND		25.0
95-47-6	o-Xylene	1	ND		25.0

6 compound(s) reported

ND denotes Not Detected at or above the reporting limit.
DF denotes Dilution Factor.
RL denotes sample Reporting Limit.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.

4-8 2003 16:14:55

Laboratory Certifications:
Louisiana Dept. of Health and Hospitals (ELAP)/Drinking Water -LA000006
Florida Dept. of Health/Hazardous Waste - E87595
Kansas Dept. of Health & Environment/ELW/HW - E-10266
New Jersey DEPE/Wastewater - 58002
Tennessee Dept. of Environment & Conservation/Div or UST (File)
U.S. Dept. of Agriculture Animal & Plant Health Inspection Services - Foreign Soil Import (U.S. Territories)