

GW - 40

INSPECTIONS & DATA

Alluvial Wells Area 2 wells with Chlorinated Organics

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↑ Landfill wells ↓	BLM-17	PCE (1987)					
	BLM-42	1,1,1 TCA, 1,1 DCE	cis 1,2 DCE	1,2 DCE	PCE	TCE (93)	
	BLM-43	"	"	"	"	" (93)	
	BLM-45	1,1,1 TCA	1,1 DCA	1,1 DCE	PCE	TCE (93)	
	BLM-46	1,1 DCA	PCE	TCE (93)			
	BLM-48	1,1,1 TCA	1,1 DCE	PCE	TCE (93)		
	BLM-49	1,1,1 TCA ⁽⁹³⁾	1,1 DCA ⁽⁹³⁾	1,1 DCE ⁽⁹³⁾	TCE ⁽⁹³⁾	PCE (93) ⁽⁹⁰⁾	
	BLM-51	1,1,1 TCA	1,1 DCE	PCE	TCE (93)		
	BLM-52	PCE (93)					
	BLM-55	1,1 DCA (91,93)	cis 1,2 DCE (93)	1,2 DCE (93,93)	trans 1,2 DCE (3-91, 2-92)		
		PCE (4-90, 2-91, 2-92, 2-93)	TCE (2-90, 1-92, 2-93)				
	BLM-56	1,1 DCA (1-90, 2-91, 1-93)	PCE	TCE (93)			
	BLM-57	1,1,1 TCA (93)	1,1 DCA (4-90, 3-91, 92, 2-93)	1,1 DCE (93)			
		cis 1,2 DCE (93)	trans 1,2 DCE (2-91)	PCE (93)	TCE (2-90, 93)		
	BLM-60	1,1,1 TCA ⁽⁹³⁾	1,1 DCE ⁽⁹³⁾	cis 1,2 DCE ⁽⁹³⁾	1,2 DCE ⁽⁹³⁾	PCE (2-93)	TCE (93)
	BLM-68	1,1 DCA (5-91, 2-92, 2-93)	cis 1,2 DCE (93)	1,2 DCE (2-93)			
		trans 1,2 DCE (5-91, 2-92)	PCE (5-91, 2-92, 2-93)	TCE (5-91, 2-92, 2-93)			
	BLM-69	TCE (93)					
	BLM-70	1,1 DCA (2-93)	cis 1,2 DCE (93)	1,2 DCE (2-93)			
		trans 1,2 DCE (4-91, 2-92)	PCE (4-91, 2-92, 2-93)	TCE (4-91, 2-92, 2-93)			
	BLM-71	PCE (93)	TCE (93)				
	BLM-72	PCE	TCE (93)				
	BLM-73	1,2 DCE (93)	trans 1,2 DCE (4-91)				
		PCE (2-91, 1-93)	TCE (93)				
	BLM-74	1,1 DCA (93)	1,2 DCE (93)	trans 1,2 DCE (4-91, 92)			
		PCE (4-91, 92, 93)	TCE (4-91, 93)				

Alluvial Wells
Area 2 wells with Chlorinated Organics

BLM-75 1,2 cis DCE 1,2 DCE (93) PCE (2-93) TCE (93)
BLM-76 1,1,1 TCA (93) 1,1 DCE (2-93) cis 1,2 DCE (93) 1,2 DCE (2-93)
trans 1,2 DCE (4-91, 92) PCE (4-91, 92, 92-93) TCE (4-91, 2-93)
BLM-77 1,2 DCE (93) trans 1,2 DCE (3-91, 92) PCE TCE (93)
BLM-79 PCE (2-93) TCE (93)
GBR-17 1,1,1 TCA (91) 1,1 DCA (93) cis 1,2 DCE (93) 1,2 DCE (93)
TCE 93
GBR-32 1,1,1 ~~TCA~~ TCA (2-90) 1,1 DCA (5-90, 5-91, 2-92, 2-93) cis 1,2 DCE (2-93)
1,2 DCE (88, 90, 2-93) trans 1,2 DCE (5-91, 3-94) ~~PCE~~
PCE (88, 5-90, 5-91, 2-92, 2-93) TCE (88, 5-90, 5-91, 2-92, 2-93)
GBR-48 1,1,1 TCA (3-90, 3-91) 1,1 DCA (4-90, 6-91, 92, 93) cis 1,2 DCE (93)
1,2 DCE (90, 2-93) trans 1,2 DCE (6-91, 2-94)
PCE (5-90, 6-91, 92, 2-93) TCE (5-90, 6-91, 92, 2-93)
GBR-49 1,1 DCA (4-90, 3-91, 92, 2-93) cis 1,2 DCE (2-93) 1,2 DCE (90, 2-93)
trans 1,2 DCE (3-91, 92) PCE (4-90, 3-91, 92, 2-93)
TCE (4-90, 3-91, 92, 2-93)
GBR-50 1,1 DCA (91) 1,2 DCE (93) trans 1,2 DCE (91) PCE (93) TCE (93)

Alluvial Wells

Area 2 wells with BTEX

Landfill
wells

BLM-17	E - (1989)	T (93)	X (93)
BLM-18	Ethylbenzene + Toluene (2/46/90)	X - (89-90)	
BLM-20	T - (90,93)		
BLM-21	1,3 Dichlorobenzene (88)		
BLM-42	E (93)	B (90)	T (93) X (93)
BLM-43	BTEX (93)		
BLM-45	ETX (93)		
BLM-46	TEX (93)		
BLM-48	TEX (93)		
BLM-49	TEX (93)	B (90)	
BLM-51	E (93)	T (90, 3-93)	X (90, 93)
BLM-52	BTX (90)		
BLM-55	TEX (93)		
BLM-56	T (91, 2-93)	E (2-93)	X (2-93)
BLM-57	BTX (93)	T (2-93)	
BLM-60	T (1-90, 2-93)	E (2-93)	X (1-90, 2-93)
BLM-62	TX (93)		
BLM-68	TEX (93)		
BLM-69	TEX (93)		
BLM-70	TEX (93)		
BLM-71	TEX (93)		
BLM-72	TEX (93)		
BLM-75	EX (93)	T (2-93)	
BLM-76	EX (93)	T (2-93)	
BLM-77	T (93)		
BLM-79	TEX (93)		
GAR-17	EX (93)	T (2-91, 93)	

GAR-32 B (4-90) T (90)
X (90, 93)

GAR-48 B (3-90) ETX (93)

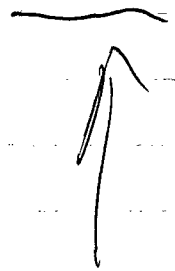
GAR-49 B (2-9, 93) ET (90)
X (2-90)

GAR-50 BTX (90)

Bedrock Wells
Area 2 wells with Chlorinated Organics

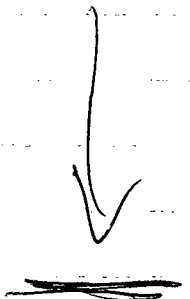
↑	BLM - 23	PCE (93)				
	BLM - 33	cis 1,2 DCE (93)	PCE	TCE (93)		
Landfill	BLM - 41	1,1,1 TCA	1,1 DCE	PCE	TCE (93)	
↓	BLM - 47	1,1,1 TCA	1,1 DCE	PCE	TCE (93)	4,4 DDT (90)
	BLM - 54	1,2 DCE	PCE (93)			
	BLM - 63	1,1,1 TCA (90)				
	BLM - 64	1,1,1 TCA (90)	PCE	TCE (93)		

Bedrock Wells
Area 2 wells with BTEX



BLM-19	T(88,90,93) E(90) X(89,90)
BLM-22	B(90) T(88,90,93) X(90)
BLM-23	BTX(90)
BLM-33	T(2-93) E(93) X(2-89,93)
BLM-34	X(2-89)
BLM-41	T(2-93) E(93) X(90,93)
BLM-44	T(93)
BLM-47	B(90) TEX(93)
BLM-53	T(90,93)
BLM-54	X(90)
BLM-59	TEX T(90,91) X(90)
BLM-61	XT(90,93) E(93)
BLM-64	TE(93) X(90,92)
QGBR-18	BTX(90)

Landfill



Alluvial Wells
Area 3 wells with Chlorinated Organics
(except 1,2 DCA)

BLM - 25

PCE (90)

BLM - 27

1,1 DCA (6-88, 89) 1,2 DCE (88)

BLM - 28

1,1,1 TCA (90)

Alluvial Wells
Area 1 wells with Chlorinated Organics

BLM-14 TCE (88)

BLM-15 1,1,1 TCA 1,1 DCE PCE (93) TCE (87, 88, 93)

BLM-35 1,1,1 TCA 1,1 DCE PCE TCE (93)

Alluvial Wells
Area 1 wells with BTEX

BLM-14 B(88) T(87,88,90,93) X(2-89)

BLM-15 B(88) T(88, 3-93) E(93) X(2-89, 93)

BLM-39 B(90) T(3-93) EX(93)

Balrock Wells
Area 1 wells with Chlorinated Organics

BLM-16

1,1,1 TCA 1,1 DCE cis 1,2 DCE TCE (93)
PCE (89, 93)

BLM-40

1,1,1 TCA 1,1 DCE PCE TCE (93)

Bedrock Well
Area 1 wells with BT EX

BLM-16 BEX (93) Folium (2-88, 2-93)

BLM-40 EX (93) T (2-93)

FIGURE #13
GIANT BLOOMFIELD REFINERY
SAMPLE MATRIX

<u>Location</u>	<u>Monthly</u>	<u>Quarterly</u>	<u>Semi Annually</u>	<u>Annual</u>
Stripper Influent		601	601	601
		602	602	602
		GWC	GWC	GWC
System Effluent		601	601	601
		602	602	602
		GWC	GWC	GWC
		PAH	PAH	Metals PAH
GRW-3				601
				602
				GWC
				PAH
GRW-6				601
				602
				GWC
				PAH
GRW-13				601
				602
				GWC
				PAH
GBR-15			601	601
			602	602
				GWC
GBR-17			601	601
			602	602
				GWC
				PAH
GBR-24D			601	601
			602	602
			PAH	GWC
				PAH

GIANT BLOOMFIELD REFINERY
SAMPLE MATRIX

<u>Location</u>	<u>Monthly</u>	<u>Quarterly</u>	<u>Semi Annually</u>	<u>Annual</u>
GBR-30			601 602	601 602 GWC PAH
GBR-31		601 602	601 602	601 602 GWC PAH
SHS-3			601 602	601 602 GWC
SHS-4			601 602	601 602 GWC
SHS-6				601 602 GWC
SHS-10		601 602	601 602	601 602 GWC
SHS-12		601 602	601 602	601 602 GWC
SHS-13		601 602	601 602	601 602 GWC
SHS-14				601 602 GWC

GIANT BLOOMFIELD REFINERY
SAMPLE MATRIX

<u>Location</u>	<u>Monthly</u>	<u>Quarterly</u>	<u>Semi Annually</u>	<u>Annual</u>
SHS-15			601 602	601 602 GWC
SHS-16		601 602	601 602	601 602 GWC
SHS-17		601 602	601 602	601 602 GWC
SHS-7				601 602 GWC
SHS-9				601 602 GWC
SHS-18				601 602 GWC
GBR-51				601 602 GWC
GBR-52				601 602 GWC
GBR-32			601 602 GWC Metals	601 602 GWC Metals

GIANT BLOOMFIELD REFINERY
SAMPLE MATRIX

<u>Location</u>	<u>Monthly</u>	<u>Quarterly</u>	<u>Semi Annually</u>	<u>Annual</u>
GBR-48			601	601
			602	602
			GWC	GWC
			Metals	Metals
GBR-49			601	601
			602	602
			GWC	GWC
			Metals	Metals
GBR-50			601	601
			602	602
			GWC	GWC
			Metals	Metals

Notes

All wells will have water and free product elevations determined on a monthly basis.

Wells exhibiting free product will not be sampled.

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-5

<u>SAMPLER</u>	GIANT	OCD	OCD
<u>DATE</u>	<u>3/13/86</u>	<u>6/9/86</u>	<u>11/20/86</u>
<u>PARAMETER</u>			
DETECTION LIMIT	1.0	50.0	10.0
BENZENE	830.0	530.0	210.0
BROMODICHLOROMETHANE	NA	ND	ND
BROMOFORM	NA	ND	ND
BROMOMETHANE	NA	ND	ND
CARBON TETRACHLORIDE	NA	ND	ND
CHLOROBENZENE	NA	ND	ND
CHLOROETHANE	NA	ND	ND
CHLOROFORM	NA	ND	ND
CHLOROMETHANE	NA	ND	ND
DIBROMOCHLOROMETHANE	NA	ND	ND
1,2-DICHLOROBENZENE	NA	ND	ND
1,3-DICHLOROBENZENE	NA	ND	ND
1,4-DICHLOROBENZENE	NA	ND	ND
DICHLORODIFLUOROMETHANE	NA	ND	ND
1,1-DICHLOROETHANE	NA	ND	ND
1,2-DICHLOROETHANE	NA	ND	ND
1,1-DICHLOROETHENE	NA	ND	ND
CIS-1,2-DICHLOROETHENE	NA	ND	ND
TRANS-1,2-DICHLOROETHENE	NA	ND	ND
DICHLOROMETHANE	NA	ND	ND
1,2-DICHLOROPROPANE	NA	ND	ND
ETHYLBENZENE	299.0	1,000	700.0
METHYLENE CHLORIDE	NA	ND	ND
1,1,2,2-TETRACHLOROETHANE	NA	ND	ND
TETRACHLOROETHENE	NA	ND	ND
TOLUENE	638.0	200.0	31.0
1,1,1-TRICHLOROETHANE	NA	ND	ND
1,1,2-TRICHLOROETHANE	NA	ND	ND
TRICHLOROETHENE	NA	ND	ND
TRICHLOROFLUOROMETHANE	NA	ND	ND
VINYL CHLORIDE	NA	ND	ND
TOTAL XYLENES	2,204	4,600	2,701

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-6

<u>SAMPLER</u>	OCD	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>11/20/86</u>	<u>9/10/87</u>	<u>10/6/87</u>	<u>11/11/87</u>	<u>12/7/88</u>
<u>PARAMETER</u>					
DETECTION LIMIT	1.0	<1.0	(BELOW)	(BELOW)	(BELOW)
BENZENE	70.0	101.0	85.0	75.0	740.0
BROMODICHLOROMETHANE	ND	ND	ND(<1.0)	ND(2.0)	ND(<1.0)
BROMOFORM	ND	ND	ND(<1.0)	ND(2.0)	ND(<1.0)
BROMOMETHANE	ND	ND	ND(<1.0)	ND(2.0)	ND(1.2)
CARBON TETRACHLORIDE	ND	ND	ND(<1.0)	ND(2.0)	ND(<1.0)
CHLOROBENZENE	ND	ND	ND(<1.0)	ND(5.0)	ND(300.0)
CHLOROETHANE	ND	ND	ND(1.0)	ND(2.0)	ND(<1.0)
CHLOROFORM	ND	ND	ND(<1.0)	ND(2.0)	ND(<1.0)
CHLOROMETHANE	ND	ND	ND(<1.0)	ND(2.0)	ND(<1.0)
DIBROMOCHLOROMETHANE	ND	ND	ND(<1.0)	ND(2.0)	ND(<1.0)
1,2-DICHLOROBENZENE	ND	ND	ND(4.0)	ND(5.0)	ND(400.0)
1,3-DICHLOROBENZENE	ND	ND	ND(4.0)	ND(5.0)	ND(400.0)
1,4-DICHLOROBENZENE	ND	ND	ND(6.0)	ND(5.0)	ND(300.0)
DICHLORODIFLUOROMETHANE	ND	ND	ND(<1.0)	ND(2.0)	ND(<1.0)
1,1-DICHLOROETHANE	ND	0.9	ND(<1.0)	ND(2.0)	ND(<1.0)
1,2-DICHLOROETHANE	3.0	2.6	ND(<1.0)	ND(2.0)	1.7
1,1-DICHLOROETHENE	ND	ND	ND(<1.0)	ND(2.0)	ND(<1.0)
CIS-1,2-DICHLOROETHENE	ND	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	ND	ND	ND(<1.0)	ND(2.0)	ND(<1.0)
1,2-DICHLOROPROPANE	ND	ND	ND(<1.0)	ND(2.0)	ND(<1.0)
ETHYLBENZENE	ND	74.4	169.0	240.0	25,000
METHYLENE CHLORIDE	ND	ND	ND(<1.0)	ND(2.0)	ND(<1.0)
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND(<1.0)	ND(2.0)	ND(<1.0)
TETRACHLOROETHENE	TR	0.3	ND(<1.0)	ND(2.0)	0.6
TOLUENE	ND	8.0	ND(4.0)	ND(10.0)	ND(200.0)
1,1,1-TRICHLOROETHANE	ND	ND	ND(<1.0)	ND(2.0)	ND(<1.0)
1,1,2-TRICHLOROETHANE	ND	ND	ND(<1.0)	ND(2.0)	ND(<1.0)
TRICHLOROETHENE	ND	ND	ND(<1.0)	ND(2.0)	ND(<1.0)
TRICHLOROFLUOROMETHANE	ND	ND	ND(<1.0)	ND(20.0)	ND(<1.0)
VINYL CHLORIDE	ND	ND	ND(<1.0)	ND(2.0)	ND(<1.0)
TOTAL XYLENES	1,240	190.8	46.3	190.0	31,000

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-6

<u>SAMPLER</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>
<u>DATE</u>	<u>3/15/89</u>	<u>6/13/89</u>	<u>9/12/89</u>	<u>12/13/89</u>
<u>PARAMETER</u>				
DETECTION LIMIT	(BELOW)	(BELOW)	(BELOW)	(BELOW)
BENZENE	222.0	136.0	200.0	110.0
BROMODICHLOROMETHANE	ND (<1.0)	ND (10.0)	ND (25.0)	ND (<1.0)
BROMOFORM	ND (<1.0)	ND (10.0)	ND (500.0)	ND (<1.0)
BROMOMETHANE	ND (1.0)	ND (10.0)	ND (250.0)	ND (1.2)
CARBON TETRACHLORIDE	ND (<1.0)	ND (10.0)	ND (50.0)	ND (<1.0)
CHLOROBENZENE	ND (<1.0)	ND (<1.0)	ND (25.0)	ND (10.0)
CHLOROETHANE	ND (1.0)	ND (10.0)	ND (130.0)	ND (<1.0)
CHLOROFORM	ND (<1.0)	ND (10.0)	ND (25.0)	ND (<1.0)
CHLOROMETHANE	ND (1.0)	ND (10.0)	ND (134.0)	ND (<1.0)
DIBROMOCHLOROMETHANE	ND (<1.0)	ND (10.0)	ND (50.0)	ND (<1.0)
1,2-DICHLOROBENZENE	ND (<1.0)	ND (<1.0)	ND (50.0)	ND (20.0)
1,3-DICHLOROBENZENE	ND (<1.0)	ND (<1.0)	ND (100.0)	ND (20.0)
1,4-DICHLOROBENZENE	ND (<1.0)	ND (<1.0)	ND (50.0)	ND (15.0)
DICHLORODIFLUOROMETHANE	ND (1.0)	ND (10.0)	NA	ND (<1.0)
1,1-DICHLOROETHANE	ND (<1.0)	ND (10.0)	ND (25.0)	ND (<1.0)
1,2-DICHLOROETHANE	ND (<1.0)	ND (10.0)	ND (25.0)	1.2
1,1-DICHLOROETHENE	ND (<1.0)	ND (10.0)	ND (25.0)	ND (<1.0)
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	ND (<1.0)	ND (10.0)	NA	ND (<1.0)
TOTAL 1,2-DICHLOROETHENE	NA	NA	ND (25.0)	NA
DICHLOROMETHANE	ND (<1.0)	ND (10.0)	NA	ND (<1.0)
1,2-DICHLOROPROPANE	ND (<1.0)	ND (10.0)	ND (25.0)	ND (<1.0)
ETHYLBENZENE	323.0	149.0	860.0	85.0
METHYLENE CHLORIDE	2.0	ND (10.0)	ND (100.0)	ND (<1.0)
1,1,2,2-TETRACHLOROETHANE	ND (<1.0)	ND (10.0)	ND (50.0)	ND (<1.0)
TETRACHLOROETHENE	ND (<1.0)	ND (10.0)	ND (25.0)	ND (<1.0)
TOLUENE	ND (2.0)	ND (<1.0)	ND (75.0)	ND (10.0)
1,1,1-TRICHLOROETHANE	ND (<1.0)	ND (10.0)	ND (50.0)	ND (<1.0)
1,1,2-TRICHLOROETHANE	ND (<1.0)	ND (10.0)	ND (50.0)	ND (<1.0)
TRICHLOROETHENE	ND (<1.0)	ND (10.0)	ND (50.0)	ND (<1.0)
TRICHLOROFLUOROMETHANE	ND (<1.0)	ND (10.0)	ND (25.0)	ND (<1.0)
VINYL CHLORIDE	ND (1.0)	ND (10.0)	ND (50.0)	ND (<1.0)
TOTAL XYLENES	432.0	206.0	4,100	140.0
TR -	TRACE			
ND -	NOT DETECTED			
NA -	NOT ANALYZED			
* -	DUPLICATE ANALYSIS			

VOLATILE ORGANIC CONCENTRATIONS (ppb)
IN GROUND WATER, GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-7

<u>SAMPLER</u>	<u>GIANT</u>	<u>OCD</u>
<u>DATE</u>	<u>10/17/86</u>	<u>11/20/86</u>
<u>PARAMETER</u>		
DETECTION LIMIT	1.0	10.0
BENZENE	8.0	21.0
BROMODICHLOROMETHANE	NA	ND
BROMOFORM	NA	ND
BROMOMETHANE	NA	ND
CARBON TETRACHLORIDE	NA	ND
CHLOROBENZENE	NA	ND
CHLOROETHANE	NA	ND
CHLOROFORM	NA	ND
CHLOROMETHANE	NA	ND
DIBROMOCHLOROMETHANE	NA	ND
1,2-DICHLOROBENZENE	NA	ND
1,3-DICHLOROBENZENE	NA	ND
1,4-DICHLOROBENZENE	NA	ND
DICHLORODIFLUOROMETHANE	NA	ND
1,1-DICHLOROETHANE	NA	ND
1,2-DICHLOROETHANE	NA	ND
1,1-DICHLOROETHENE	NA	ND
CIS-1,2-DICHLOROETHENE	NA	ND
TRANS-1,2-DICHLOROETHENE	NA	ND
DICHLOROMETHANE	NA	ND
1,2-DICHLOROPROPANE	NA	ND
ETHYLBENZENE	11.0	ND
METHYLENE CHLORIDE	NA	ND
1,1,2,2-TETRACHLOROETHANE	NA	ND
TETRACHLOROETHENE	NA	ND
TOLUENE	10.0	ND
1,1,1-TRICHLOROETHANE	NA	ND
1,1,2-TRICHLOROETHANE	NA	ND
TRICHLOROETHENE	NA	ND
TRICHLOROFLUOROMETHANE	NA	ND
VINYL CHLORIDE	NA	ND
TOTAL XYLENES	33.0	29.0
TR -	TRACE	
ND -	NOT DETECTED	
NA -	NOT ANALYZED	
-	DUPLICATE ANALYSIS	

VOLATILE ORGANIC CONCENTRATIONS (ppb)
IN GROUND WATER, GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-8

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>10/17/86</u>	<u>10/6/87</u>	<u>11/11/87</u>	<u>12/7/88</u>	<u>1/20/89</u>
<u>PARAMETER</u>					
DETECTION LIMIT	1.0	(BELOW)	(BELOW)	(BELOW)	(BELOW)
BENZENE	2670.0	7750.0	6500.0	570.0	1000.0
BROMODICHLOROMETHANE	NA	ND (4.0)	ND (10.0)	ND (<1.0)	ND (20.0)
BROMOFORM	NA	ND (9.0)	ND (10.0)	ND (<1.0)	ND (50.0)
BROMOMETHANE	NA	ND (6.0)	ND (10.0)	ND (1.2)	ND (20.0)
CARBON TETRACHLORIDE	NA	ND (8.0)	ND (10.0)	ND (<1.0)	ND (20.0)
CHLOROBENZENE	NA	ND (16.0)	ND (25.0)	ND (150.0)	ND (50.0)
CHLOROETHANE	NA	ND (10.0)	ND (10.0)	ND (<1.0)	ND (20.0)
CHLOROFORM	NA	ND (5.0)	12.0	ND (<1.0)	ND (20.0)
CHLOROMETHANE	NA	ND (2.0)	ND (10.0)	ND (<1.0)	ND (20.0)
DIBROMOCHLOROMETHANE	NA	ND (7.0)	ND (10.0)	ND (<1.0)	ND (20.0)
1,2-DICHLOROBENZENE	NA	ND (40.0)	ND (25.0)	ND (200.0)	ND (50.0)
1,3-DICHLOROBENZENE	NA	ND (40.0)	ND (25.0)	ND (200.0)	ND (50.0)
1,4-DICHLOROBENZENE	NA	ND (60.0)	ND (25.0)	ND (150.0)	ND (50.0)
DICHLORODIFLUOROMETHANE	NA	ND (4.0)	ND (10.0)	ND (<1.0)	ND (20.0)
1,1-DICHLOROETHANE	NA	ND (5.0)	ND (10.0)	ND (<1.0)	ND (20.0)
1,2-DICHLOROETHANE	NA	ND (7.0)	32.0	ND (<1.0)	ND (20.0)
1,1-DICHLOROETHENE	NA	ND (7.0)	ND (10.0)	ND (<1.0)	ND (20.0)
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	ND (9.0)	16.0	ND (<1.0)	ND (20.0)
1,2-DICHLOROPROPANE	NA	ND (3.0)	ND (10.0)	ND (<1.0)	ND (20.0)
ETHYLBENZENE	1890.0	1320.0	1200.0	1800.0	1000.0
METHYLENE CHLORIDE	NA	ND (2.0)	ND (2.0)	ND (<1.0)	ND (200.0)
1,1,2,2-TETRACHLOROETHANE	NA	ND (3.0)	ND (10.0)	ND (<1.0)	ND (20.0)
TETRACHLOROETHENE	NA	ND (3.0)	ND (10.0)	ND (<1.0)	ND (20.0)
TOLUENE	1460.0	1160.0	820.0	470.0	940.0
1,1,1-TRICHLOROETHANE	NA	ND (3.0)	ND (10.0)	ND (<1.0)	ND (20.0)
1,1,2-TRICHLOROETHANE	NA	ND (3.0)	ND (10.0)	ND (<1.0)	ND (20.0)
TRICHLOROETHENE	NA	ND (6.0)	ND (10.0)	ND (<1.0)	ND (20.0)
TRICHLOROFLUOROMETHANE	NA	ND (7.0)	ND (2.0)	ND (<1.0)	ND (200.0)
VINYL CHLORIDE	NA	ND (5.0)	ND (10.0)	ND (<1.0)	ND (20.0)
TOTAL XYLENES	6980.0	5600.0	3600.0	9000.0	3700.0

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS (ppb)
IN GROUND WATER, GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-8

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>3/15/89</u>	<u>6/12/89</u>	<u>9/12/89</u>	<u>12/12/89</u>
<u>PARAMETER</u>				
DETECTION LIMIT	(BELOW)	(BELOW)	(BELOW)	(BELOW)
BENZENE	5184.0	4400.0	2200.0	2000.0
BROMODICHLOROMETHANE	ND(<1.0)	ND(50.0)	ND(25.0)	ND(<1.0)
BROMOFORM	ND(<1.0)	ND(50.0)	ND(500.0)	ND(<1.0)
BROMOMETHANE	ND(1.0)	ND(50.0)	ND(250.0)	ND(1.2)
CARBON TETRACHLORIDE	ND(<1.0)	ND(50.0)	ND(50.0)	ND(<1.0)
CHLOROBENZENE	ND(<1.0)	ND(20.0)	ND(25.0)	ND(50.0)
CHLOROETHANE	ND(1.0)	ND(50.0)	ND(130.0)	1.3
CHLOROFORM	ND(<1.0)	ND(50.0)	ND(25.0)	ND(<1.0)
CHLOROMETHANE	ND(1.0)	ND(50.0)	ND(130.0)	ND(<1.0)
DIBROMOCHLOROMETHANE	ND(<1.0)	ND(50.0)	ND(50.0)	ND(<1.0)
1,2-DICHLOROBENZENE	ND(<1.0)	ND(20.0)	ND(50.0)	0.84
1,3-DICHLOROBENZENE	ND(<1.0)	ND(20.0)	ND(100.0)	ND(<1.0)
1,4-DICHLOROBENZENE	ND(<1.0)	ND(20.0)	ND(50.0)	ND(<1.0)
DICHLORODIFLUOROMETHANE	ND(1.0)	ND(50.0)	ND(25.0)	ND(<1.0)
1,1-DICHLOROETHANE	3.2	ND(50.0)	ND(25.0)	5.3
1,2-DICHLOROETHANE	5.7	ND(50.0)	ND(25.0)	4.7
1,1-DICHLOROETHENE	ND(<1.0)	ND(50.0)	ND(25.0)	ND(<1.0)
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA(<1.0)
TRANS-1,2-DICHLOROETHENE	ND(<1.0)	ND(50.0)	ND(25.0)	20.0
1,2-DICHLOROPROPANE	ND(<1.0)	ND(50.0)	ND(25.0)	ND(<1.0)
ETHYLBENZENE	1341.0	2130.0	1400.0	560.0
METHYLENE CHLORIDE	10.7	ND(50.0)	ND(100.0)	ND(<1.0)
1,1,2,2-TETRACHLOROETHANE	ND(<1.0)	ND(50.0)	ND(50.0)	ND(<1.0)
TETRACHLOROETHENE	ND(<1.0)	ND(50.0)	ND(25.0)	ND(<1.0)
TOLUENE	172.0	560.0	180.0	ND(50.0)
1,1,1-TRICHLOROETHANE	ND(<1.0)	ND(50.0)	ND(50.0)	ND(<1.0)
1,1,2-TRICHLOROETHANE	ND(<1.0)	ND(50.0)	ND(50.0)	ND(<1.0)
TRICHLOROETHENE	1.4	ND(50.0)	ND(50.0)	2.3
TRICHLOROFLUOROMETHANE	ND(<1.0)	ND(50.0)	ND(25.0)	ND(<1.0)
VINYL CHLORIDE	ND(1.0)	ND(50.0)	ND(50.0)	ND(<1.0)
TOTAL XYLENES	2664.0	7010.0	4400.0	2200.0

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-9

<u>SAMPLER</u>	GIANT	OCD	GIANT	GIANT	GIANT
<u>DATE</u>	<u>10/17/86</u>	<u>11/21/86</u>	<u>9/10/87</u>	<u>10/7/87</u>	<u>8/25/88</u>
<u>PARAMETER</u>					
DETECTION LIMIT	1.0	1.0	<1.0	<1.0	(BELOW)
BENZENE	41.0	49.0	60.9	29.3	ND(0.5)
BROMODICHLOROMETHANE	NA	ND	ND	ND	ND(0.2)
BROMOFORM	NA	ND	ND	ND	ND(0.2)
BROMOMETHANE	NA	ND	ND	ND	ND(0.2)
CARBON TETRACHLORIDE	NA	ND	ND	ND	ND(0.2)
CHLOROBENZENE	NA	ND	ND	ND	ND(0.5)
CHLOROETHANE	NA	ND	ND	ND	ND(0.2)
CHLOROFORM	NA	ND	ND	ND	ND(0.2)
CHLOROMETHANE	NA	ND	ND	ND	ND(0.2)
DIBROMOCHLOROMETHANE	NA	ND	ND	ND	ND(0.2)
1,2-DICHLOROBENZENE	NA	ND	ND	ND	ND(0.5)
1,3-DICHLOROBENZENE	NA	ND	ND	ND	ND(0.5)
1,4-DICHLOROBENZENE	NA	TR	ND	ND	ND(0.5)
DICHLORODIFLUOROMETHANE	NA	ND	ND	ND	ND(0.2)
1,1-DICHLOROETHANE	NA	4.0	8.0	9.4	3.3
1,2-DICHLOROETHANE	NA	6.0	23.3	28.6	5.1
1,1-DICHLOROETHENE	NA	ND	0.4	0.6	0.6
CIS-1,2-DICHLOROETHENE	NA	TR	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	ND	1.3	1.8	NA
TOTAL 1,2-DICHLOROETHENE	NA	NA	NA	NA	2.3
1,2-DICHLOROPROPANE	NA	ND	ND	ND	ND(0.2)
ETHYLBENZENE	54.0	ND	9.5	6.4	ND(0.5)
METHYLENE CHLORIDE	NA	ND	ND	ND	ND(2.0)
1,1,2,2-TETRACHLOROETHANE	NA	ND	ND	ND	ND(0.2)
TETRACHLOROETHENE	NA	TR	ND	ND	0.9
TOLUENE	66.0	ND	4.0	5.1	ND(0.5)
1,1,1-TRICHLOROETHANE	NA	TR	0.7	0.3	1.3
1,1,2-TRICHLOROETHANE	NA	ND	ND	ND	ND(0.2)
TRICHLOROETHENE	NA	TR	2.6	4.1	2.5
TRICHLOROFLUOROMETHANE	NA	ND	ND	ND	ND(2.0)
VINYL CHLORIDE	NA	ND	ND	ND	ND(0.2)
TOTAL XYLENES	138.0	2.0	53.6	44.1	ND
TR -	TRACE				
ND -	NOT DETECTED				
NA -	NOT ANALYZED				
* -	DUPLICATE ANALYSIS				

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-9

SAMPLER

EID

DATE

8/25/88

PARAMETER

DETECTION LIMIT	0.5
BENZENE	1.3
BROMODICHLOROMETHANE	ND
BROMOFORM	ND
BROMOMETHANE	ND
CARBON TETRACHLORIDE	ND
CHLOROBENZENE	ND
CHLOROETHANE	ND
CHLOROFORM	ND
CHLOROMETHANE	ND
DIBROMOCHLOROMETHANE	ND
1,2-DICHLOROBENZENE	ND
1,3-DICHLOROBENZENE	ND
1,4-DICHLOROBENZENE	ND
DICHLORODIFLUOROMETHANE	ND
1,1-DICHLOROETHANE	3.4
1,2-DICHLOROETHANE	3.5
1,1-DICHLOROETHENE	1.5
CIS-1,2-DICHLOROETHENE	2.3
TRANS-1,2-DICHLOROETHENE	ND
DICHLOROMETHANE	1.2
1,2-DICHLOROPROPANE	ND
ETHYLBENZENE	ND
METHYLENE CHLORIDE	ND
1,1,2,2-TETRACHLOROETHANE	ND
TETRACHLOROETHENE	0.7
TOLUENE	ND
1,1,1-TRICHLOROETHANE	1.3
1,1,2-TRICHLOROETHANE	ND
TRICHLOROETHENE	3.5
TRICHLOROFLUOROMETHANE	0.5
VINYL CHLORIDE	ND
TOTAL XYLENES	ND

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
*	-	DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-10

<u>SAMPLER</u>	<u>OCD</u>
<u>DATE</u>	<u>11/21/86</u>
<u>PARAMETER</u>	
DETECTION LIMIT	50.0
BENZENE	9,500
BROMODICHLOROMETHANE	ND
BROMOFORM	ND
BROMOMETHANE	ND
CARBON TETRACHLORIDE	ND
CHLOROBENZENE	ND
CHLOROETHANE	ND
CHLOROFORM	ND
CHLOROMETHANE	ND
DIBROMOCHLOROMETHANE	ND
1,2-DICHLOROBENZENE	ND
1,3-DICHLOROBENZENE	TR
1,4-DICHLOROBENZENE	ND
DICHLORODIFLUOROMETHANE	ND
1,1-DICHLOROETHANE	ND
1,2-DICHLOROETHANE	150.0
1,1-DICHLOROETHENE	ND
CIS-1,2-DICHLOROETHENE	ND
TRANS-1,2-DICHLOROETHENE	ND
DICHLOROMETHANE	ND
1,2-DICHLOROPROPANE	ND
ETHYLBENZENE	670.0
METHYLENE CHLORIDE	ND
1,1,2,2-TETRACHLOROETHANE	ND
TETRACHLOROETHENE	ND
TOLUENE	1,100
1,1,1-TRICHLOROETHANE	ND
1,1,2-TRICHLOROETHANE	ND
TRICHLOROETHENE	ND
TRICHLOROFLUOROMETHANE	ND
VINYL CHLORIDE	ND
TOTAL XYLENES	3,130
TR -	TRACE
ND -	NOT DETECTED
NA -	NOT ANALYZED
* -	DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-11

<u>SAMPLER</u>	<u>GIANT</u>	<u>OCD</u>	<u>OCD</u>
<u>DATE</u>	<u>5/29/86</u>	<u>6/5/86</u>	<u>11/20/86</u>
<u>PARAMETER</u>			
DETECTION LIMIT	1.0	50.0	50.0
BENZENE	9,025	4,600	6,500
BROMODICHLOROMETHANE	NA	ND	ND
BROMOFORM	NA	ND	ND
BROMOMETHANE	NA	ND	ND
CARBON TETRACHLORIDE	NA	ND	ND
CHLOROBENZENE	NA	ND	ND
CHLOROETHANE	NA	ND	ND
CHLOROFORM	NA	ND	ND
CHLOROMETHANE	NA	ND	ND
DIBROMOCHLOROMETHANE	NA	ND	ND
1,2-DICHLOROBENZENE	NA	ND	ND
1,3-DICHLOROBENZENE	NA	ND	ND
1,4-DICHLOROBENZENE	NA	ND	ND
DICHLORODIFLUOROMETHANE	NA	ND	ND
1,1-DICHLOROETHANE	NA	ND	ND
1,2-DICHLOROETHANE	NA	140.0	ND
1,1-DICHLOROETHENE	NA	ND	ND
CIS-1,2-DICHLOROETHENE	NA	ND	ND
TRANS-1,2-DICHLOROETHENE	NA	ND	ND
DICHLOROMETHANE	NA	ND	ND
1,2-DICHLOROPROPANE	NA	ND	ND
ETHYLBENZENE	NA	960.0	680.0
METHYLENE CHLORIDE	NA	ND	ND
1,1,2,2-TETRACHLOROETHANE	NA	ND	ND
TETRACHLOROETHENE	NA	ND	TR
TOLUENE	3,088	3,100	2,800
1,1,1-TRICHLOROETHANE	NA	ND	ND
1,1,2-TRICHLOROETHANE	NA	ND	ND
TRICHLOROETHENE	NA	ND	TR
TRICHLOROFLUOROMETHANE	NA	ND	ND
VINYL CHLORIDE	NA	ND	ND
TOTAL XYLENES	6,981	4,200	1,780
TR -	TRACE		
ND -	NOT DETECTED		
NA -	NOT ANALYZED		
* -	DUPLICATE ANALYSIS		

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-13

<u>SAMPLER</u>	GIANT	GIANT	OCD	OCD	EID
<u>DATE</u>	<u>4/15/85</u>	<u>5/9/86</u>	<u>6/5/86</u>	<u>11/20/86</u>	<u>8/5/87</u>
<u>PARAMETER</u>					
DETECTION LIMIT	10.0	1.0	10.0	5.0	25.0
BENZENE	42.0	129.0	1,300	2,900	1,050
BROMODICHLOROMETHANE	NA	NA	ND	ND	ND
BROMOFORM	NA	NA	ND	ND	ND
BROMOMETHANE	NA	NA	ND	ND	ND
CARBON TETRACHLORIDE	NA	NA	ND	ND	ND
CHLOROBENZENE	NA	NA	ND	ND	ND
CHLOROETHANE	NA	NA	ND	ND	ND
CHLOROFORM	NA	NA	ND	ND	ND
CHLOROMETHANE	NA	NA	ND	ND	ND
DIBROMOCHLOROMETHANE	NA	NA	ND	ND	ND
1,2-DICHLOROBENZENE	NA	NA	ND	ND	ND
1,3-DICHLOROBENZENE	NA	NA	ND	ND	ND
1,4-DICHLOROBENZENE	NA	NA	ND	ND	ND
DICHLORODIFLUOROMETHANE	NA	NA	ND	ND	ND
1,1-DICHLOROETHANE	NA	NA	25.0	44.0	TR
1,2-DICHLOROETHANE	NA	NA	58.0	32.0	TR
1,1-DICHLOROETHENE	NA	NA	ND	ND	ND
CIS-1,2-DICHLOROETHENE	NA	NA	NA	23.0	25.0
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	ND	ND
TOTAL 1,2 DICHLOROETHENE	NA	NA	10.0	NA	NA
DICHLOROMETHANE	NA	NA	25.0	ND	ND
1,2-DICHLOROPROPANE	NA	NA	ND	ND	ND
ETHYLBENZENE	11.0	3.0	130.0	520.0	275.0
METHYLENE CHLORIDE	NA	NA	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	NA	NA	ND	ND	ND
TETRACHLOROETHENE	NA	NA	TR	19.0	ND
TOLUENE	25.0	32.0	12.0	1,800	390.0
1,1,1-TRICHLOROETHANE	NA	NA	23.0	16.0	TR
1,1,2-TRICHLOROETHANE	NA	NA	ND	ND	ND
TRICHLOROETHENE	NA	NA	TR	12.0	TR
TRICHLOROFLUOROMETHANE	NA	NA	ND	ND	ND
VINYL CHLORIDE	NA	NA	ND	ND	ND
TOTAL XYLENES	99.0	105.0	731.0	2870.0	1125.0
TR -	TRACE				
ND -	NOT DETECTED				
NA -	NOT ANALYZED				
* -	DUPLICATE ANALYSIS				

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-13

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>9/10/87</u>	<u>10/7/87</u>	<u>11/11/87</u>	<u>12/7/88</u>	<u>3/16/89</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	(BELOW)	(BELOW)	(BELOW)	(BELOW)
BENZENE	2,470	1,130	4,500	390.0	309.0
BROMODICHLOROMETHANE	ND(2.0)	ND(2.0)	ND(10.0)	ND(<1.0)	ND(<1.0)
BROMOFORM	ND(4.5)	ND(4.5)	ND(10.0)	ND(<1.0)	ND(<1.0)
BROMOMETHANE	ND(3.0)	ND(3.0)	ND(10.0)	ND(1.2)	ND(1.0)
CARBON TETRACHLORIDE	ND(4.0)	ND(4.0)	ND(10.0)	ND(<1.0)	ND(<1.0)
CHLOROBENZENE	ND(8.0)	ND(8.0)	ND(25.0)	ND(7.5)	ND(<1.0)
CHLOROETHANE	ND(50.0)	ND(50.0)	ND(10.0)	ND(<1.0)	ND(1.0)
CHLOROFORM	ND(2.5)	ND(2.5)	17.0	ND(<1.0)	ND(<1.0)
CHLOROMETHANE	ND(1.0)	ND(1.0)	ND(10.0)	ND(<1.0)	ND(1.0)
DIBROMOCHLOROMETHANE	ND(3.5)	ND(3.5)	ND(10.0)	ND(<1.0)	ND(<1.0)
1,2-DICHLOROBENZENE	ND(20.0)	ND(20.0)	ND(25.0)	ND(10.0)	ND(<1.0)
1,3-DICHLOROBENZENE	ND(20.0)	ND(20.0)	ND(25.0)	ND(10.0)	ND(<1.0)
1,4-DICHLOROBENZENE	ND(30.0)	ND(30.0)	ND(25.0)	ND(7.5)	ND(<1.0)
DICHLORODIFLUOROMETHANE	ND(2.0)	ND(2.0)	ND(10.0)	ND(<1.0)	ND(1.0)
1,1-DICHLOROETHANE	58.9	60.0	ND(10.0)	5.2	4.3
1,2-DICHLOROETHANE	41.8	34.0	35.0	9.0	4.4
1,1-DICHLOROETHENE	ND(3.5)	ND(3.5)	ND(10.0)	ND(<1.0)	ND(<1.0)
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	44.7	55.0	29.0	14.0	ND(<1.0)
1,2-DICHLOROPROPANE	ND(1.5)	ND(1.5)	ND(10.0)	ND(<1.0)	ND(<1.0)
ETHYLBENZENE	797.0	495.0	1,700	330.0	166.0
METHYLENE CHLORIDE	ND(1.0)	ND(1.0)	ND(2.0)	1.6	30.8
1,1,2,2-TETRACHLOROETHANE	ND(1.5)	ND(1.5)	ND(10.0)	ND(<1.0)	ND(<1.0)
TETRACHLOROETHENE	ND(1.5)	ND(1.5)	ND(10.0)	ND(<1.0)	ND(<1.0)
TOLUENE	1,240	288.0	3,000	78.0	24.3
1,1,1-TRICHLOROETHANE	11.7	ND(1.5)	ND(10.0)	1.8	ND(<1.0)
1,1,2-TRICHLOROETHANE	ND(1.5)	ND(1.5)	ND(10.0)	ND(<1.0)	ND(<1.0)
TRICHLOROETHENE	ND(3.0)	15.0	ND(10.0)	4.8	3.6
TRICHLOROFLUOROMETHANE	ND(3.5)	ND(3.5)	ND(2.0)	0.6	ND(<1.0)
VINYL CHLORIDE	ND(2.5)	ND(2.5)	ND(10.0)	ND(<1.0)	ND(1.0)
TOTAL XYLENES	3,790	1,715	5,200	1,530	132.9

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-13

<u>SAMPLER</u>	GIANT	GIANT	GIANT
<u>DATE</u>	<u>6/12/89</u>	<u>9/12/89</u>	<u>12/12/89</u>
<u>PARAMETER</u>			
DETECTION LIMIT	(BELOW)	(BELOW)	(BELOW)
BENZENE	1,600	1,700	710.0
BROMODICHLOROMETHANE	ND(100.0)	ND(5.0)	ND(<1.0)
BROMOFORM	ND(100.0)	ND(100.0)	ND(<1.0)
BROMOMETHANE	ND(100.0)	ND(50.0)	ND(1.2)
CARBON TETRACHLORIDE	ND(100.0)	ND(10.0)	ND(<1.0)
CHLOROBENZENE	ND(20.0)	ND(5.0)	ND(100.0)
CHLOROETHANE	ND(100.0)	ND(25.0)	ND(<1.0)
CHLOROFORM	ND(100.0)	ND(5.0)	ND(<1.0)
CHLOROMETHANE	ND(100.0)	ND(25.0)	ND(<1.0)
DIBROMOCHLOROMETHANE	ND(100.0)	ND(10.0)	ND(<1.0)
1,2-DICHLOROBENZENE	ND(20.0)	ND(10.0)	ND(200.0)
1,3-DICHLOROBENZENE	ND(20.0)	ND(20.0)	ND(200.0)
1,4-DICHLOROBENZENE	ND(20.0)	ND(10.0)	ND(150.0)
DICHLORODIFLUOROMETHANE	ND(100.0)	NA	NA
1,1-DICHLOROETHANE	ND(100.0)	ND(5.0)	4.9
1,2-DICHLOROETHANE	ND(100.0)	ND(5.0)	7.4
1,1-DICHLOROETHENE	ND(100.0)	ND(5.0)	ND(<1.0)
CIS-1,2-DICHLOROETHENE	ND(100.0)	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	25.0
TOTAL 1,2-DICHLOROETHENE	NA	57.0	NA
1,2-DICHLOROPROPANE	ND(100.0)	ND(5.0)	ND(<1.0)
ETHYLBENZENE	620.0	540.0	820.0
METHYLENE CHLORIDE	ND(100.0)	ND(20.0)	1.3
1,1,2,2-TETRACHLOROETHANE	ND(100.0)	ND(10.0)	ND(<1.0)
TETRACHLOROETHENE	ND(100.0)	ND(5.0)	ND(<1.0)
TOLUENE	840.0	200.0	130.0
1,1,1-TRICHLOROETHANE	ND(100.0)	ND(10.0)	0.9
1,1,2-TRICHLOROETHANE	ND(100.0)	ND(10.0)	ND(<1.0)
TRICHLOROETHENE	ND(100.0)	13.0	4.0
TRICHLOROFLUOROMETHANE	ND(100.0)	ND(5.0)	ND(<1.0)
VINYL CHLORIDE	ND(100.0)	ND(10.0)	ND(<1.0)
TOTAL XYLENES	2,060	1,900	3,100

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-14/GRW-13

<u>SAMPLER</u>	GIANT	OCD	OCD	GIANT	GIANT
<u>DATE</u>	<u>10/17/86</u>	<u>11/21/86</u>	<u>6/8/88</u>	<u>12/7/88</u>	<u>3/14/89</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	1.0	0.5	<1.0	(BELOW)
BENZENE	ND (1.0)	ND	TR	ND	ND (<1.0)
BROMODICHLOROMETHANE	ND (5.0)	ND	ND	ND	ND (<1.0)
BROMOFORM	ND (5.0)	ND	ND	ND	ND (<1.0)
BROMOMETHANE	NA	ND	ND	ND	ND (1.0)
CARBON TETRACHLORIDE	ND (5.0)	ND	ND	ND	ND (<1.0)
CHLOROBENZENE	NA	ND	ND	ND	ND (<1.0)
CHLOROETHANE	ND (5.0)	ND	ND	ND	ND (1.0)
CHLOROFORM	ND (5.0)	ND	ND	ND	ND (<1.0)
CHLOROMETHANE	NA	ND	ND	ND	ND (1.0)
DIBROMOCHLOROMETHANE	ND (5.0)	ND	ND	ND	ND (<1.0)
1,2-DICHLOROBENZENE	NA	ND	ND	ND	ND (<1.0)
1,3-DICHLOROBENZENE	NA	ND	ND	ND	ND (<1.0)
1,4-DICHLOROBENZENE	NA	ND	ND	ND	ND (<1.0)
DICHLORODIFLUOROMETHANE	NA	ND	ND	ND	ND (1.0)
1,1-DICHLOROETHANE	ND (5.0)	ND	ND	ND	ND (<1.0)
1,2-DICHLOROETHANE	ND (5.0)	9.0	2.5	3.4	2.1
1,1-DICHLOROETHENE	ND (5.0)	ND	ND	ND	ND (<1.0)
CIS-1,2-DICHLOROETHENE	NA	ND	ND	ND	NA (<1.0)
TRANS-1,2-DICHLOROETHENE	ND (5.0)	ND	ND	ND	ND (<1.0)
1,2-DICHLOROPROPANE	ND (5.0)	ND	ND	ND	ND (<1.0)
ETHYLBENZENE	ND (1.0)	ND	ND	ND	ND (<1.0)
METHYLENE CHLORIDE	ND (5.0)	ND	ND	ND	2.0
1,1,2,2-TETRACHLOROETHANE	ND (5.0)	ND	ND	ND	ND (<1.0)
TETRACHLOROETHENE	ND (5.0)	ND	ND	ND	ND (<1.0)
TOLUENE	ND (1.0)	ND	ND	ND	ND (<1.0)
1,1,1-TRICHLOROETHANE	ND (5.0)	ND	ND	ND	ND (<1.0)
1,1,2-TRICHLOROETHANE	ND (5.0)	ND	ND	ND	ND (<1.0)
TRICHLOROETHENE	ND (5.0)	ND	ND	ND	ND (<1.0)
TRICHLOROFLUOROMETHANE	NA	ND	ND	ND	ND (<1.0)
VINYL CHLORIDE	ND (5.0)	ND	ND	ND	ND (1.0)
TOTAL XYLENES	ND (1.0)	ND	ND	ND	ND (<1.0)

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-14/GRW-13

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>6/13/89</u>	<u>9/13/89</u>	<u>12/12/89</u>	<u>4/2/90</u>	<u>7/17/90</u>
<u>PARAMETER</u>					
DETECTION LIMIT	1.0	<1.0	<1.0	<1.0	<1.0
BENZENE	ND	ND	ND	ND	ND
BROMODICHLOROMETHANE	ND	ND	ND	ND	ND
BROMOFORM	ND	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND	ND
CHLOROFORM	ND	ND	ND	ND	ND
CHLOROMETHANE	ND	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	4.3	12.0	1.1	4.5	4.8
1,1-DICHLOROETHENE	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	NA	NA	NA	ND	ND
TRANS-1,2-DICHLOROETHENE	ND	NA	ND	ND	ND
TOTAL 1,2-DICHLOROETHENE	NA	ND	NA	NA	NA
1,2-DICHLOROPROPANE	ND	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	ND	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND	ND
TETRACHLOROETHENE	ND	ND	ND	ND	ND
TOLUENE	ND	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	0.29	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND	ND
TRICHLOROETHENE	ND	ND	ND	ND	3.0
TRICHLOROFLUOROMETHANE	ND	2.0	ND	ND	0.25
VINYL CHLORIDE	ND	ND	ND	ND	ND
TOTAL XYLENES	ND	4.7	ND	ND	ND
TR -	TRACE				
ND -	NOT DETECTED				
NA -	NOT ANALYZED				
* -	DUPLICATE ANALYSIS				

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-14/GRW-13

<u>SAMPLER</u>	GIANT	GIANT	GIANT
<u>DATE</u>	<u>10/1/91</u>	<u>1/7/92</u>	<u>4/9/92</u>
<u>PARAMETER</u>			
DETECTION LIMIT	<1.0	<1.0	<1.0
BENZENE	15.5	2.4	ND
BROMODICHLOROMETHANE	ND	ND	NA
BROMOFORM	ND	ND	NA
BROMOMETHANE	ND	ND	NA
CARBON TETRACHLORIDE	ND	ND	NA
CHLOROBENZENE	ND	ND	NA
CHLOROETHANE	ND	ND	NA
CHLOROFORM	ND	ND	NA
CHLOROMETHANE	ND	ND	NA
DIBROMOCHLOROMETHANE	ND	ND	NA
1,2-DICHLOROBENZENE	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	NA
1,1-DICHLOROETHANE	ND	ND	NA
1,2-DICHLOROETHANE	ND	6.6	NA
1,1-DICHLOROETHENE	ND	ND	NA
TOTAL 1,2-DICHLOROETHENE	ND	ND	NA
1,2-DICHLOROPROPANE	ND	ND	NA
ETHYLBENZENE	ND	ND	ND
METHYLENE CHLORIDE	ND	ND	NA
1,1,2,2-TETRACHLOROETHANE	ND	ND	NA
TETRACHLOROETHENE	ND	ND	NA
TOLUENE	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND	NA
1,1,2-TRICHLOROETHANE	ND	ND	NA
TRICHLOROETHENE	ND	ND	NA
TRICHLOROFLUOROMETHANE	ND	ND	NA
VINYL CHLORIDE	ND	ND	NA
TOTAL XYLENES	ND	0.6	ND

TR - TRACE
 ND - NOT DETECTED
 NA - NOT ANALYZED
 ** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-14/GRW-13

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>9/4/90</u>	<u>10/4/90</u>	<u>1/25/92</u>	<u>4/8/91</u>	<u>7/3/91</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	<1.0	<1.0	<1.0	<1.0
BENZENE	ND	ND	ND	16.0	25.0
BROMODICHLOROMETHANE	NA	ND	ND	ND	ND
BROMOFORM	NA	ND	ND	ND	ND
BROMOMETHANE	NA	ND	ND	ND	ND
CARBON TETRACHLORIDE	NA	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND	ND
CHLOROETHANE	NA	ND	ND	ND	ND
CHLOROFORM	NA	ND	ND	ND	ND
CHLOROMETHANE	NA	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	NA	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	NA	ND	ND	ND	ND
1,2-DICHLOROETHANE	NA	4.1	ND	6.8	10.0
1,1-DICHLOROETHENE	NA	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	NA	ND	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	ND	NA	NA	NA
TOTAL 1,2-DICHLOROETHENE	NA	NA	ND	ND	ND
1,2-DICHLOROPROPANE	NA	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	NA	0.52 X	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	NA	ND	ND	ND	ND
TETRACHLOROETHENE	NA	ND	ND	ND	ND
TOLUENE	ND	2.0 X	ND	ND	ND
1,1,1-TRICHLOROETHANE	NA	0.62 X	ND	ND	ND
1,1,2-TRICHLOROETHANE	NA	ND	ND	ND	ND
TRICHLOROETHENE	NA	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	NA	0.2 X	ND	ND	ND
VINYL CHLORIDE	NA	ND	ND	ND	ND
TOTAL XYLENES	ND	ND	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE
X - PRESENCE NOT CONFIRMED

VOLATILE ORGANIC CONCENTRATIONS IN GROUND
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-14/GRW-13

<u>SAMPLER</u>	GIANT	GIANT	GIANT
<u>DATE</u>	<u>10/1/91</u>	<u>1/7/92</u>	<u>4/9/92</u>
<u>PARAMETER</u>			
DETECTION LIMIT	<1.0	<1.0	<1.0
BENZENE	15.5	2.4	ND
BROMODICHLOROMETHANE	ND	ND	NA
BROMOFORM	ND	ND	NA
BROMOMETHANE	ND	ND	NA
CARBON TETRACHLORIDE	ND	ND	NA
CHLOROBENZENE	ND	ND	NA
CHLOROETHANE	ND	ND	NA
CHLOROFORM	ND	ND	NA
CHLOROMETHANE	ND	ND	NA
DIBROMOCHLOROMETHANE	ND	ND	NA
1,2-DICHLOROBENZENE	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	NA
1,1-DICHLOROETHANE	ND	ND	NA
1,2-DICHLOROETHANE	ND	6.6	NA
1,1-DICHLOROETHENE	ND	ND	NA
TOTAL 1,2-DICHLOROETHENE	ND	ND	NA
1,2-DICHLOROPROPANE	ND	ND	NA
ETHYLBENZENE	ND	ND	ND
METHYLENE CHLORIDE	ND	ND	NA
1,1,2,2-TETRACHLOROETHANE	ND	ND	NA
TETRACHLOROETHENE	ND	ND	NA
TOLUENE	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND	NA
1,1,2-TRICHLOROETHANE	ND	ND	NA
TRICHLOROETHENE	ND	ND	NA
TRICHLOROFLUOROMETHANE	ND	ND	NA
VINYL CHLORIDE	ND	ND	NA
TOTAL XYLENES	ND	0.6	ND

TR - TRACE
 ND - NOT DETECTED
 NA - NOT ANALYZED
 ** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER(ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-15

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>10/17/86</u>	<u>9/10/87</u>	<u>10/7/87</u>	<u>11/11/87</u>	<u>1/20/88</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	<1.0	<1.0	(BELOW)	(BELOW)
BENZENE	334.0	100.0	70.5	114.0	106.0
BROMODICHLOROMETHANE	ND(5.0)	ND	ND	ND(<1.0)	ND(2.0)
BROMOFORM	ND(5.0)	ND	ND	ND(<1.0)	ND(5.0)
BROMOMETHANE	NA	ND	ND	ND(<1.0)	ND(2.0)
CARBON TETRACHLORIDE	ND(5.0)	ND	ND	ND(<1.0)	ND(2.0)
CHLOROBENZENE	NA	ND	ND	ND(<1.0)	ND(5.0)
CHLOROETHANE	ND(5.0)	ND	ND	ND(<1.0)	ND(2.0)
CHLOROFORM	ND(5.0)	ND	ND	ND(<1.0)	ND(2.0)
CHLOROMETHANE	NA	ND	ND	ND(<1.0)	ND(2.0)
DIBROMOCHLOROMETHANE	ND(5.0)	ND	ND	ND(<1.0)	ND(2.0)
1,2-DICHLOROBENZENE	NA	ND	ND	ND(<1.0)	ND(5.0)
1,3-DICHLOROBENZENE	NA	ND	ND	ND(<1.0)	ND(5.0)
1,4-DICHLOROBENZENE	NA	ND	ND	ND(<1.0)	ND(5.0)
DICHLORODIFLUOROMETHANE	NA	ND	ND	ND(<1.0)	ND(2.0)
1,1-DICHLOROETHANE	ND(5.0)	0.9	ND	ND(<1.0)	ND(2.0)
1,2-DICHLOROETHANE	78.0	51.4	68.7	53.4	54.0
1,1-DICHLOROETHENE	ND(5.0)	ND	ND	ND(<1.0)	ND(2.0)
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	ND(5.0)	ND	ND	ND(<1.0)	ND(2.0)
1,2-DICHLOROPROPANE	ND(5.0)	ND	ND	ND(<1.0)	ND(2.0)
ETHYLBENZENE	209.0	ND	1.9	2.1	ND(5.0)
METHYLENE CHLORIDE	ND(5.0)	ND	ND	ND(2.0)	ND(20.0)
1,1,2,2-TETRACHLOROETHANE	ND(5.0)	ND	ND	ND(<1.0)	ND(2.0)
TETRACHLOROETHENE	ND(5.0)	ND	ND	ND(<1.0)	ND(2.0)
TOLUENE	52.0	2.4	1.5	1.7	ND(5.0)
1,1,1-TRICHLOROETHANE	ND(5.0)	ND	ND	ND(<1.0)	ND(2.0)
1,1,2-TRICHLOROETHANE	ND(5.0)	ND	ND	ND(<1.0)	ND(2.0)
TRICHLOROETHENE	ND(5.0)	ND	ND	ND(<1.0)	ND(2.0)
TRICHLOROFLUOROMETHANE	NA	ND	ND	ND(2.0)	ND(20.0)
VINYL CHLORIDE	ND(5.0)	ND	ND	ND(<1.0)	ND(2.0)
TOTAL XYLENES	772.0	15.9	7.9	ND(<1.0)	ND(5.0)

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-15

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>12/7/88</u>	<u>3/14/89</u>	<u>6/12/89</u>	<u>9/13/89</u>	<u>12/13/89</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	(BELOW)	(BELOW)	(BELOW)	<1.0
BENZENE	ND(<1.0)	32.6	23.7	33.0	63.0
BROMODICHLOROMETHANE	ND(<1.0)	ND(<1.0)	ND(1.0)	ND(<1.0)	ND
BROMOFORM	ND(1.5)	ND(<1.0)	ND(1.0)	ND(10.0)	ND
BROMOMETHANE	ND(6.0)	ND(1.0)	ND(1.0)	ND(5.0)	ND
CARBON TETRACHLORIDE	ND(<1.0)	ND(<1.0)	ND(1.0)	ND(1.0)	ND
CHLOROBENZENE	ND(1.5)	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND
CHLOROETHANE	ND(2.5)	ND(1.0)	ND(1.0)	ND(2.5)	ND
CHLOROFORM	ND(<1.0)	ND(<1.0)	ND(1.0)	ND(<1.0)	ND
CHLOROMETHANE	ND(1.5)	ND(1.0)	ND(1.0)	ND(2.5)	ND
DIBROMOCHLOROMETHANE	ND(1.0)	ND(<1.0)	ND(1.0)	ND(1.0)	ND
1,2-DICHLOROBENZENE	ND(2.5)	ND(<1.0)	ND(<1.0)	ND(1.0)	ND
1,3-DICHLOROBENZENE	ND(1.5)	ND(<1.0)	ND(<1.0)	ND(2.0)	ND
1,4-DICHLOROBENZENE	ND(2.0)	ND(<1.0)	ND(<1.0)	ND(1.0)	ND
DICHLORODIFLUOROMETHANE	ND(<1.0)	ND(1.0)	ND(1.0)	NA	ND
1,1-DICHLOROETHANE	ND(<1.0)	0.1	ND(1.0)	ND(<1.0)	ND
1,2-DICHLOROETHANE	51.0	16.9	10.7	77.0	ND
1,1-DICHLOROETHENE	ND(<1.0)	ND(<1.0)	ND(1.0)	ND(<1.0)	ND
CIS-1,2-DICHLOROETHENE	NA	NA	NA(1.0)	NA	NA
TRANS-1,2-DICHLOROETHENE	ND(1.0)	ND(<1.0)	ND(1.0)	NA	ND
TOTAL 1,2-DICHLOROETHENE	NA	NA	NA	ND(<1.0)	NA
1,2-DICHLOROPROPANE	ND(<1.0)	ND(<1.0)	ND(1.0)	ND(<1.0)	ND
ETHYLBENZENE	1.3	2.9	ND(<1.0)	ND(<1.0)	2.8
METHYLENE CHLORIDE	ND(1.5)	1.2	ND(1.0)	6.7	ND
1,1,2,2-TETRACHLOROETHANE	ND(<1.0)	ND(<1.0)	ND(1.0)	ND(1.0)	ND
TETRACHLOROETHENE	ND(<1.0)	ND(<1.0)	ND(1.0)	ND(<1.0)	ND
TOLUENE	ND(<1.0)	2.1	ND(<1.0)	ND(1.5)	ND
1,1,1-TRICHLOROETHANE	ND(<1.0)	ND(<1.0)	ND(1.0)	ND(1.0)	ND
1,1,2-TRICHLOROETHANE	ND(<1.0)	ND(<1.0)	ND(1.0)	ND(1.0)	ND
TRICHLOROETHENE	ND(1.0)	ND(<1.0)	ND(1.0)	ND(1.0)	ND
TRICHLOROFLUOROMETHANE	ND(<1.0)	ND(<1.0)	ND(1.0)	ND(<1.0)	ND
VINYL CHLORIDE	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND
TOTAL XYLENES	2.5	ND(<1.0)	ND(<1.0)	ND(1.0)	ND
TR	-	TRACE			
ND	-	NOT DETECTED			
NA	-	NOT ANALYZED			
*	-	DUPLICATE ANALYSIS			

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-15

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>4/3/90</u>	<u>7/17/90</u>	<u>10/4/90</u>	<u>1/22/91</u>	<u>4/2/91</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	<1.0	(BELOW)	<1.0	<1.0
BENZENE	110.0	39.0	87.0	59.4	5.2
BROMODICHLOROMETHANE	ND (2.0)	ND	ND (1.0)	ND	ND
BROMOFORM	ND (10.0)	ND	ND (5.0)	ND	ND
BROMOMETHANE	ND (24.0)	ND	ND (12.0)	ND	ND
CARBON TETRACHLORIDE	ND (2.4)	ND	ND (1.2)	ND	ND
CHLOROBENZENE	ND (4.0)	ND	ND (2.0)	ND	ND
CHLOROETHANE	ND (10.0)	ND	ND (5.2)	ND	ND
CHLOROFORM	ND (2.0)	ND	ND (1.0)	ND	ND
CHLOROMETHANE	ND (6.0)	ND	ND (3.0)	ND	ND
DIBROMOCHLOROMETHANE	ND (4.0)	ND	ND (2.0)	ND	ND
1,2-DICHLOROBENZENE	ND (8.0)	ND	ND (4.0)	ND	ND
1,3-DICHLOROBENZENE	ND (8.0)	ND	ND (4.0)	ND	ND
1,4-DICHLOROBENZENE	ND (6.0)	ND	ND (3.0)	ND	ND
1,1-DICHLOROETHANE	84.0	ND	ND (5.0)	ND	ND
1,2-DICHLOROETHANE	ND (2.0)	33.0	52.0	21.4	14.0
1,1-DICHLOROETHENE	ND (4.0)	ND	ND (2.0)	ND	ND
CIS-1,2-DICHLOROETHENE	ND (4.0)	ND	ND (2.0)	NA	NA
TRANS-1,2-DICHLOROETHENE	ND (4.0)	0.45	ND (2.0)	NA	NA
TOTAL 1,2-DICHLOROETHENE	NA	NA	NA	ND	ND
1,2-DICHLOROPROPANE	ND (2.0)	ND	ND (1.0)	ND	ND
ETHYLBENZENE	ND (4.0)	ND	ND (2.0)	0.8	ND
METHYLENE CHLORIDE	ND (8.0)	ND	ND (4.0)	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND (3.0)	ND	ND (1.5)	ND	ND
TETRACHLOROETHENE	ND (2.0)	ND	ND (1.0)	ND	ND
TOLUENE	ND (4.0)	ND	ND (2.0)	ND	ND
1,1,1-TRICHLOROETHANE	ND (4.0)	ND	ND (2.0)	ND	ND
1,1,2-TRICHLOROETHANE	ND (4.0)	ND	ND (2.0)	ND	ND
TRICHLOROETHENE	ND (4.0)	ND	ND (2.0)	ND	ND
TRICHLOROFLUOROMETHANE	ND (4.0)	ND	ND (2.0)	ND	ND
VINYL CHLORIDE	ND (4.0)	ND	ND (2.0)	ND	ND
TOTAL XYLENES	ND (4.0)	ND	ND (2.0)	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (pbb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-15

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>7/2/91</u>	<u>10/1/91</u>	<u>1/8/92</u>	<u>4/9/92</u>	<u>7/7/92</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	<1.0	<1.0	<1.0	<1.0
BENZENE	1.0	3.0	0.6	3.5	2.5
BROMODICHLOROMETHANE	ND	ND	ND	NA	ND
BROMOFORM	ND	ND	ND	NA	ND
BROMOMETHANE	ND	ND	ND	NA	ND
CARBON TETRACHLORIDE	ND	ND	ND	NA	ND
CHLOROBENZENE	ND	ND	ND	NA	ND
CHLOROETHANE	ND	ND	ND	NA	ND
CHLOROFORM	ND	ND	ND	NA	ND
CHLOROMETHANE	ND	ND	ND	NA	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	NA	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND	NA	ND
1,1-DICHLOROETHANE	10.3	0.2	ND	NA	ND
1,2-DICHLOROETHANE	ND	ND	16.0	NA	23.3
1,1-DICHLOROETHENE	ND	ND	ND	NA	ND
TOTAL 1,2-DICHLOROETHENE	ND	ND	ND	NA	ND
1,2-DICHLOROPROPANE	ND	ND	ND	NA	ND
ETHYLBENZENE	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	ND	ND	ND	NA	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	NA	ND
TETRACHLOROETHENE	ND	ND	ND	NA	ND
TOLUENE	ND	2.3	2.4	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND	ND	NA	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	NA	ND
TRICHLOROETHENE	ND	ND	ND	NA	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	NA	ND
VINYL CHLORIDE	ND	ND	ND	NA	ND
TOTAL XYLENES	ND	ND	ND	ND	ND

TR - TRACE
 ND - NOT DETECTED
 NA - NOT ANALYZED
 ** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-17

<u>SAMPLER</u>	<u>GIANT</u>	<u>OCD</u>	<u>GIANT</u>	<u>OCD</u>	<u>EID</u>
<u>DATE</u>	<u>5/29/86</u>	<u>6/5/86</u>	<u>7/15/86</u>	<u>11/21/86</u>	<u>8/5/87</u>
<u>PARAMETER</u>					
DETECTION LIMIT	1.0	2.0	1.0	(BELOW)	1.0
BENZENE	ND	ND	ND	TR(1.0)	ND
BROMODICHLOROMETHANE	NA	ND	NA	ND(20.0)	ND
BROMOFORM	NA	ND	NA	ND(20.0)	ND
BROMOMETHANE	NA	ND	NA	ND(20.0)	ND
CARBON TETRACHLORIDE	NA	ND	ND	ND(20.0)	ND
CHLOROBENZENE	NA	ND	NA	ND(20.0)	ND
CHLOROETHANE	NA	ND	NA	ND(20.0)	ND
CHLOROFORM	NA	ND	ND	ND(20.0)	ND
CHLOROMETHANE	NA	ND	NA	ND(20.0)	ND
DIBROMOCHLOROMETHANE	NA	ND	NA	ND(20.0)	ND
1,2-DICHLOROBENZENE	NA	ND	NA	ND(20.0)	ND
1,3-DICHLOROBENZENE	NA	ND	NA	ND(20.0)	ND
1,4-DICHLOROBENZENE	NA	ND	NA	ND(20.0)	ND
DICHLORODIFLUOROMETHANE	NA	ND	NA	ND(20.0)	ND
1,1-DICHLOROETHANE	NA	20.0	ND	6.0	TR
1,2-DICHLOROETHANE	NA	ND	ND	ND(20.0)	ND
1,1-DICHLOROETHENE	NA	ND	ND	ND(20.0)	ND
CIS-1,2-DICHLOROETHENE	NA	ND	NA	ND(20.0)	ND
TRANS-1,2-DICHLOROETHENE	NA	ND	ND	ND(20.0)	ND
DICHLOROMETHANE	NA	15.0	NA	TR(20.0)	ND
1,2-DICHLOROPROPANE	NA	ND	NA	ND(20.0)	ND
ETHYLBENZENE	ND	ND	NA	ND(1.0)	ND
METHYLENE CHLORIDE	NA	ND	NA	ND(20.0)	ND
1,1,2,2-TETRACHLOROETHANE	NA	ND	ND	ND(20.0)	ND
TETRACHLOROETHENE	NA	1.0	ND	TR(20.0)	TR
TOLUENE	ND	ND	ND	ND(1.0)	ND
1,1,1-TRICHLOROETHANE	NA	14.0	ND	7.0	4.0
1,1,2-TRICHLOROETHANE	NA	ND	ND	ND(20.0)	ND
TRICHLOROETHENE	NA	1.0	ND	TR(20.0)	TR
TRICHLOROFLUOROMETHANE	NA	ND	NA	ND(20.0)	ND
VINYL CHLORIDE	NA	ND	NA	ND(20.0)	ND
TOTAL XYLENES	ND	ND	ND	ND(1.0)	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-17

<u>SAMPLER</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>	<u>EID</u>	<u>GIANT</u>
<u>DATE</u>	<u>10/7/87</u>	<u>11/12/87</u>	<u>4/20/88</u>	<u>4/20/88</u>	<u>6/2/88</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	(BELOW)	0.5	0.5	(BELOW)
BENZENE	ND	ND (<1.0)	ND	ND	ND (0.5)
BROMODICHLOROMETHANE	ND	ND (<1.0)	ND	ND	ND (0.5)
BROMOFORM	ND	ND (<1.0)	ND	ND	ND (0.5)
BROMOMETHANE	ND	ND (<1.0)	ND	ND	ND (0.5)
CARBON TETRACHLORIDE	ND	ND (<1.0)	ND	ND	ND (0.5)
CHLOROBENZENE	ND	ND (<1.0)	ND	ND	ND (0.5)
CHLOROETHANE	ND	ND (<1.0)	ND	ND	ND (0.5)
CHLOROFORM	ND	1.3	ND	ND	ND (0.5)
CHLOROMETHANE	ND	ND (<1.0)	ND	ND	ND (0.5)
DIBROMOCHLOROMETHANE	ND	ND (<1.0)	ND	ND	ND (0.5)
1,2-DICHLOROBENZENE	ND	ND (<1.0)	ND	ND	ND (0.5)
1,3-DICHLOROBENZENE	ND	ND (<1.0)	ND	ND	ND (0.5)
1,4-DICHLOROBENZENE	ND	ND (<1.0)	ND	ND	ND (0.2)
DICHLORODIFLUOROMETHANE	ND	ND (<1.0)	ND	ND	ND (0.5)
1,1-DICHLOROETHANE	3.3	4.0	ND	TR	ND (0.5)
1,2-DICHLOROETHANE	ND	ND (<1.0)	ND	ND	ND (0.5)
1,1-DICHLOROETHENE	ND	ND (<1.0)	ND	TR	ND (0.2)
CIS-1,2-DICHLOROETHENE	NA	NA	ND	ND	NA
TRANS-1,2-DICHLOROETHENE	1.2	0.9	ND	ND	ND (0.5)
DICHLOROMETHANE	ND	ND (<1.0)	ND	ND	ND (0.5)
1,2-DICHLOROPROPANE	ND	ND (<1.0)	ND	ND	ND (0.5)
ETHYLBENZENE	ND	ND (<1.0)	ND	ND	ND (0.5)
METHYLENE CHLORIDE	ND	ND (2.0)	ND	ND	ND (0.5)
1,1,2,2-TETRACHLOROETHANE	ND	ND (<1.0)	ND	ND	ND (0.5)
TETRACHLOROETHENE	0.4	0.6	ND	TR	ND (0.5)
TOLUENE	ND	ND (1.0)	ND	ND	ND (0.5)
1,1,1-TRICHLOROETHANE	4.0	2.1	4.4	2.4	3.1
1,1,2-TRICHLOROETHANE	ND	ND (<1.0)	ND	ND	ND (0.5)
TRICHLOROETHENE	0.4	0.5	ND	TR	ND (0.5)
TRICHLOROFLUOROMETHANE	ND	ND (2.0)	ND	TR	ND (0.5)
VINYL CHLORIDE	ND	ND (<1.0)	ND	ND	ND (1.0)
TOTAL XYLENES	ND	ND (<1.0)	ND	ND	ND (0.5)
TR -	TRACE				
ND -	NOT DETECTED				
NA -	NOT ANALYZED				
* -	DUPLICATE ANALYSIS				

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-17

<u>SAMPLER</u>	<u>GIANT</u>	<u>EID</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>
<u>DATE</u>	<u>8/24/88</u>	<u>8/24/88</u>	<u>9/1/88</u>	<u>12/7/89</u>	<u>3/14/89</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	0.5		<1.0	(BELOW)
BENZENE	ND (<1.0)	ND	ND	ND	ND (<1.0)
BROMODICHLOROMETHANE	ND (<1.0)	ND	ND	ND	ND (<1.0)
BROMOFORM	ND (<1.0)	ND	ND	ND	ND (<1.0)
BROMOMETHANE	ND (<1.0)	ND	ND	ND	ND (1.0)
CARBON TETRACHLORIDE	ND (<1.0)	ND	ND	ND	ND (<1.0)
CHLOROBENZENE	ND (<1.0)	ND	ND	ND	ND (<1.0)
CHLOROETHANE	ND (<1.0)	ND	ND	ND	ND (1.0)
CHLOROFORM	ND (<1.0)	TR	ND	ND	ND (<1.0)
CHLOROMETHANE	ND (<1.0)	ND	ND	ND	ND (1.0)
DIBROMOCHLOROMETHANE	ND (<1.0)	ND	ND	ND	ND (<1.0)
1,2-DICHLOROBENZENE	ND (<1.0)	ND	ND	ND	ND (<1.0)
1,3-DICHLOROBENZENE	ND (<1.0)	ND	ND	ND	ND (<1.0)
1,4-DICHLOROBENZENE	ND (<1.0)	ND	ND	ND	ND (<1.0)
DICHLORODIFLUOROMETHANE	ND (<1.0)	ND	ND	ND	ND (1.0)
1,1-DICHLOROETHANE	ND (<1.0)	TR	ND	0.8	ND (<1.0)
1,2-DICHLOROETHANE	ND (<1.0)	ND	ND	ND	ND (<1.0)
1,1-DICHLOROETHENE	ND (<1.0)	ND	ND	ND	ND (<1.0)
CIS-1,2-DICHLOROETHENE	NA	ND	ND	ND	NA
TRANS-1,2-DICHLOROETHENE	NA	ND	ND	ND	ND (<1.0)
TOTAL 1,2-DICHLOROETHENE	ND (<1.0)	NA	ND	NA	NA
DICHLOROMETHANE	NA	TR	NA	NA	NA
1,2-DICHLOROPROPANE	ND (<1.0)	ND	ND	ND	ND (<1.0)
ETHYLBENZENE	ND (<1.0)	ND	ND	ND	ND (<1.0)
METHYLENE CHLORIDE	ND (2.0)	ND	ND	ND	1.8
1,1,2,2-TETRACHLOROETHANE	ND (<1.0)	ND	ND	ND	ND (<1.0)
TETRACHLOROETHENE	ND (<1.0)	TR	ND	0.7	ND (<1.0)
TOLUENE	ND (<1.0)	ND	ND	ND	ND (<1.0)
1,1,1-TRICHLOROETHANE	2.4	1.2	2.4	2.0	0.85
1,1,2-TRICHLOROETHANE	ND (<1.0)	ND	ND	ND	ND (<1.0)
TRICHLOROETHENE	ND (<1.0)	TR	TR	ND	ND (<1.0)
TRICHLOROFLUOROMETHANE	ND (2.0)	ND	ND	0.6	ND (<1.0)
VINYL CHLORIDE	ND (<1.0)	ND	ND	ND	ND (1.0)
TOTAL XYLENES	ND (<1.0)	ND	ND	ND	ND (<1.0)

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-17

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>6/14/89</u>	<u>9/13/89</u>	<u>12/12/89</u>	<u>4/3/90</u>	<u>7/17/90</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	<1.0	<1.0	<1.0	<1.0
BENZENE	ND (<1.0)	ND	ND	ND	ND
BROMODICHLOROMETHANE	ND (1.0)	ND	ND	ND	ND
BROMOFORM	ND (1.0)	ND	ND	ND	ND
BROMOMETHANE	ND (1.0)	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND (1.0)	ND	ND	ND	ND
CHLOROBENZENE	ND (<1.0)	ND	ND	ND	ND
CHLOROETHANE	ND (1.0)	ND	ND	ND	ND
CHLOROFORM	ND (1.0)	ND	ND	ND	ND
CHLOROMETHANE	ND (1.0)	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND (1.0)	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND (<1.0)	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND (<1.0)	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND (<1.0)	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND (1.0)	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND (1.0)	0.89	ND	ND	ND
1,2-DICHLOROETHANE	ND (1.0)	ND	ND	ND	ND
1,1-DICHLOROETHENE	ND (1.0)	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	NA	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	ND (1.0)	ND	ND	ND	ND
1,2-DICHLOROPROPANE	ND (1.0)	ND	ND	ND	ND
ETHYLBENZENE	ND (<1.0)	ND	ND	ND	ND
METHYLENE CHLORIDE	ND (1.0)	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND (1.0)	ND	ND	ND	ND
TETRACHLOROETHENE	ND (1.0)	0.21	0.13	0.37	0.19
TOLUENE	ND (<1.0)	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	1.4	0.96	1.0	1.7	0.3
1,1,2-TRICHLOROETHANE	ND (1.0)	ND	ND	ND	ND
TRICHLOROETHENE	ND (1.0)	ND	ND	ND	1.5
TRICHLOROFLUOROMETHANE	ND (1.0)	3.0	ND	ND	ND
VINYL CHLORIDE	ND (1.0)	ND	ND	ND	ND
TOTAL XYLENES	ND (<1.0)	ND	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-17

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>10/4/90</u>	<u>1/22/91</u>	<u>4/2/91</u>	<u>7/2/91</u>	<u>10/1/91</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	<1.0	<1.0	<1.0	<1.0
BENZENE	4.6 X	ND	ND	ND	ND
BROMODICHLOROMETHANE	9.4 X	ND	ND	ND	ND
BROMOFORM	21.0 X	ND	ND	ND	ND
BROMOMETHANE	ND(12.0)	ND	ND	ND	ND
CARBON TETRACHLORIDE	14.0 X	ND	ND	ND	ND
CHLOROBENZENE	13.0 X	ND	ND	ND	ND
CHLOROETHANE	ND(5.2)	ND	ND	ND	ND
CHLOROFORM	8.2 X	ND	ND	ND	ND
CHLOROMETHANE	ND(3.0)	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	13.0	ND	ND	ND	ND
1,2-DICHLOROBENZENE	4.1 X	ND	ND	ND	ND
1,3-DICHLOROBENZENE	19.0 X	ND	ND	ND	ND
1,4-DICHLOROBENZENE	11.0 X	ND	ND	ND	ND
1,1-DICHLOROETHANE	11.0 X	ND	ND	ND	ND
1,2-DICHLOROETHANE	10.0 X	ND	ND	ND	ND
1,1-DICHLOROETHENE	11.0 X	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	11.0 X	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	ND(2.0)	NA	NA	NA	NA
TOTAL 1,2-DICHLOROETHENE	NA	ND	ND	ND	ND
1,2-DICHLOROPROPANE	5.6 X	ND	ND	ND	ND
ETHYLBENZENE	7.8 X	ND	ND	ND	ND
METHYLENE CHLORIDE	11.0 X	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND(1.5)	ND	ND	ND	ND
TETRACHLOROETHENE	15.0 X	ND	ND	ND	ND
TOLUENE	7.2	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	17.0 X	0.9	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND(2.0)	ND	ND	ND	ND
TRICHLOROETHENE	9.5 X	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	18.0 X	ND	ND	ND	ND
VINYL CHLORIDE	ND(2.0)	ND	ND	ND	ND
TOTAL XYLENES	35.0 X	ND	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE
X - PRESENCE NOT CONFIRMED

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-17

<u>SAMPLER</u>	GIANT	GIANT	GIANT
<u>DATE</u>	<u>1/8/92</u>	<u>4/9/92</u>	<u>7/7/92</u>
<u>PARAMETER</u>			
DETECTION LIMIT	<1.0	<1.0	<1.0
BENZENE	ND	0.8	ND
BROMODICHLOROMETHANE	ND	NA	ND
BROMOFORM	ND	NA	ND
BROMOMETHANE	ND	NA	ND
CARBON TETRACHLORIDE	ND	NA	ND
CHLOROBENZENE	ND	NA	ND
CHLOROETHANE	ND	NA	ND
CHLOROFORM	ND	NA	ND
CHLOROMETHANE	ND	NA	ND
DIBROMOCHLOROMETHANE	ND	NA	ND
1,2-DICHLOROBENZENE	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	NA	ND
1,1-DICHLOROETHANE	ND	NA	ND
1,2-DICHLOROETHANE	ND	NA	ND
1,1-DICHLOROETHENE	ND	NA	ND
TOTAL 1,2-DICHLOROETHENE	ND	NA	ND
1,2-DICHLOROPROPANE	ND	NA	ND
ETHYLBENZENE	ND	ND	ND
METHYLENE CHLORIDE	ND	NA	ND
1,1,2,2-TETRACHLOROETHANE	ND	NA	ND
TETRACHLOROETHENE	ND	NA	ND
TOLUENE	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	NA	ND
1,1,2-TRICHLOROETHANE	ND	NA	ND
TRICHLOROETHENE	ND	NA	ND
TRICHLOROFLUOROMETHANE	ND	NA	ND
VINYL CHLORIDE	ND	NA	ND
TOTAL XYLENES	ND	ND	ND

TR - TRACE
 ND - NOT DETECTED
 NA - NOT ANALYZED
 ** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-18

<u>SAMPLER</u>	GIANT	OCD	OCD	OCD*	OCD
<u>DATE</u>	<u>5/9/86</u>	<u>6/5/86</u>	<u>7/8/86</u>	<u>7/8/86</u>	<u>11/21/86</u>
<u>PARAMETER</u>					
DETECTION LIMIT	1.0	2.0	2.0	1.0	5.0
BENZENE	ND	50.0	ND	ND	ND
BROMODICHLOROMETHANE	NA	ND	ND	ND	ND
BROMOFORM	NA	ND	ND	ND	ND
BROMOMETHANE	NA	ND	ND	ND	ND
CARBON TETRACHLORIDE	NA	ND	ND	ND	ND
CHLOROBENZENE	NA	ND	ND	ND	ND
CHLOROETHANE	NA	ND	ND	ND	ND
CHLOROFORM	NA	ND	ND	ND	ND
CHLOROMETHANE	NA	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	NA	ND	ND	ND	ND
1,2-DICHLOROBENZENE	NA	ND	ND	ND	ND
1,3-DICHLOROBENZENE	NA	ND	ND	ND	ND
1,4-DICHLOROBENZENE	NA	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	NA	ND	ND	ND	ND
1,1-DICHLOROETHANE	NA	ND	ND	ND	ND
1,2-DICHLOROETHANE	NA	ND	ND	ND	ND
1,1-DICHLOROETHENE	NA	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	NA	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	NA	ND	ND	ND	ND
1,2-DICHLOROPROPANE	NA	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	NA	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	NA	ND	ND	ND	ND
TETRACHLOROETHENE	NA	ND	ND	ND	ND
TOLUENE	ND	11.0	ND	1.0	ND
1,1,1-TRICHLOROETHANE	NA	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	NA	ND	ND	ND	ND
TRICHLOROETHENE	NA	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	NA	ND	ND	ND	ND
VINYL CHLORIDE	NA	ND	ND	ND	ND
TOTAL XYLENES	ND	4.0	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-19

<u>SAMPLER</u>	GIANT	OCD	GIANT	EID	GIANT
<u>DATE</u>	<u>10/17/86</u>	<u>11/21/86</u>	<u>4/20/88</u>	<u>4/20/88</u>	<u>8/25/88</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	5.0	<1.0	100.0	(BELOW)
BENZENE	112.0	200.0	26.0	ND	ND (5.0)
BROMODICHLOROMETHANE	ND (5.0)	ND	ND	ND	ND (2.0)
BROMOFORM	ND (5.0)	ND	ND	ND	ND (2.0)
BROMOMETHANE	NA	ND	ND	ND	ND (2.0)
CARBON TETRACHLORIDE	ND (5.0)	ND	ND	ND	ND (2.0)
CHLOROBENZENE	NA	ND	ND	ND	ND (5.0)
CHLOROETHANE	ND (5.0)	ND	ND	ND	ND (2.0)
CHLOROFORM	ND (5.0)	ND	ND	ND	ND (2.0)
CHLOROMETHANE	NA	ND	ND	ND	ND (2.0)
DIBROMOCHLOROMETHANE	ND (5.0)	ND	ND	ND	ND (2.0)
1,2-DICHLOROBENZENE	NA	TR	ND	ND	ND (5.0)
1,3-DICHLOROBENZENE	NA	ND	ND	ND	ND (5.0)
1,4-DICHLOROBENZENE	NA	ND	ND	ND	ND (5.0)
DICHLORODIFLUOROMETHANE	NA	ND	ND	ND	ND (2.0)
1,1-DICHLOROETHANE	12.0	4.0	5.9	ND	6.0
1,2-DICHLOROETHANE	5.9	10.0	5.0	ND	ND (2.0)
1,1-DICHLOROETHENE	ND (5.0)	ND	ND	ND	ND (2.0)
CIS-1,2-DICHLOROETHENE	NA	4.0	ND	ND	ND (2.0)
TRANS-1,2-DICHLOROETHENE	14.0	ND	35.0	ND	ND (2.0)
TOTAL 1,2-DICHLOROETHENE	NA	NA	NA	NA	33.0
1,2-DICHLOROPROPANE	ND (5.0)	ND	ND	ND	ND (2.0)
ETHYLBENZENE	111.0	270.0	17.0	ND	ND (5.0)
METHYLENE CHLORIDE	ND (5.0)	ND	ND	ND	ND (20.0)
1,1,2,2-TETRACHLOROETHANE	ND (5.0)	ND	ND	ND	ND (2.0)
TETRACHLOROETHENE	ND (5.0)	TR	1.0	ND	8.0
TOLUENE	105.0	18.0	3.3	ND	ND (5.0)
1,1,1-TRICHLOROETHANE	ND (5.0)	ND	ND	ND	ND (2.0)
1,1,2-TRICHLOROETHANE	ND (5.0)	ND	ND	ND	ND (2.0)
TRICHLOROETHENE	9.3	11.0	7.2	ND	5.0
TRICHLOROFLUOROMETHANE	NA	ND	ND	ND	ND (20.0)
VINYL CHLORIDE	ND (5.0)	ND	ND	ND	ND (2.0)
TOTAL XYLENES	306.0	274.0	120.0	ND	ND (5.0)
TR	-	TRACE			
ND	-	NOT DETECTED			
NA	-	NOT ANALYZED			
**	-	DUPLICATE ANALYSIS			

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-19

<u>SAMPLER</u>	<u>EID</u>	<u>GIANT</u>
<u>DATE</u>	<u>8/25/88</u>	<u>10/8/92</u>
<u>PARAMETER</u>		
DETECTION LIMIT	50.0	<1.0
BENZENE	ND	28.1
BROMODICHLOROMETHANE	ND	ND
BROMOFORM	ND	ND
BROMOMETHANE	ND	ND
CARBON TETRACHLORIDE	ND	ND
CHLOROBENZENE	ND	ND
CHLOROETHANE	ND	ND
CHLOROFORM	ND	ND
CHLOROMETHANE	ND	ND
DIBROMOCHLOROMETHANE	ND	ND
1,2-DICHLOROBENZENE	ND	ND
1,3-DICHLOROBENZENE	ND	ND
1,4-DICHLOROBENZENE	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND
1,1-DICHLOROETHANE	ND	0.8
1,2-DICHLOROETHANE	ND	2.7
1,1-DICHLOROETHENE	ND	ND
CIS-1,2-DICHLOROETHENE	ND	NA
TRANS-1,2-DICHLOROETHENE	ND	NA
TOTAL 1,2-DICHLOROETHENE	NA	2.7
1,2-DICHLOROPROPANE	ND	ND
ETHYLBENZENE	ND	0.9
METHYLENE CHLORIDE	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND
TETRACHLOROETHENE	ND	ND
TOLUENE	ND	2.5
1,1,1-TRICHLOROETHANE	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND
TRICHLOROETHENE	ND	1.0
TRICHLOROFLUOROMETHANE	ND	ND
VINYL CHLORIDE	ND	ND
TOTAL XYLENES	ND	ND

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-20

<u>SAMPLER</u>	<u>GIANT</u>	<u>OCD</u>	<u>OCD</u>
<u>DATE</u>	<u>5/9/86</u>	<u>6/5/86</u>	<u>11/20/86</u>
<u>PARAMETER</u>			
DETECTION LIMIT	1.0	2.0	5.0
BENZENE	ND	4.0	41.0
BROMODICHLOROMETHANE	NA	ND	ND
BROMOFORM	NA	ND	ND
BROMOMETHANE	NA	ND	ND
CARBON TETRACHLORIDE	NA	ND	ND
CHLOROBENZENE	NA	ND	ND
CHLOROETHANE	NA	ND	ND
CHLOROFORM	NA	ND	ND
CHLOROMETHANE	NA	ND	ND
DIBROMOCHLOROMETHANE	NA	ND	ND
1,2-DICHLOROBENZENE	NA	ND	ND
1,3-DICHLOROBENZENE	NA	ND	ND
1,4-DICHLOROBENZENE	NA	ND	ND
DICHLORODIFLUOROMETHANE	NA	ND	ND
1,1-DICHLOROETHANE	NA	ND	ND
1,2-DICHLOROETHANE	NA	TR	ND
1,1-DICHLOROETHENE	NA	ND	ND
CIS-1,2-DICHLOROETHENE	NA	ND	ND
TRANS-1,2-DICHLOROETHENE	NA	ND	ND
DICHLOROMETHANE	NA	ND	ND
1,2-DICHLOROPROPANE	NA	ND	ND
ETHYLBENZENE	ND	TR	ND
METHYLENE CHLORIDE	NA	ND	ND
1,1,2,2-TETRACHLOROETHANE	NA	ND	ND
TETRACHLOROETHENE	NA	ND	TR
TOLUENE	ND	ND	ND
1,1,1-TRICHLOROETHANE	NA	ND	ND
1,1,2-TRICHLOROETHANE	NA	ND	ND
TRICHLOROETHENE	NA	ND	TR
TRICHLOROFLUOROMETHANE	NA	ND	ND
VINYL CHLORIDE	NA	ND	ND
TOTAL XYLENES	ND	ND	50.0
TR -	TRACE		
ND -	NOT DETECTED		
NA -	NOT ANALYZED		
* -	DUPLICATE ANALYSIS		

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-21

<u>SAMPLER</u>	<u>GIANT</u>
<u>DATE</u>	<u>5/9/88</u>
<u>PARAMETER</u>	
DETECTION LIMIT	1.0
BENZENE	ND
BROMODICHLOROMETHANE	NA
BROMOFORM	NA
BROMOMETHANE	NA
CARBON TETRACHLORIDE	NA
CHLOROBENZENE	NA
CHLOROETHANE	NA
CHLOROFORM	NA
CHLOROMETHANE	NA
DIBROMOCHLOROMETHANE	NA
1,2-DICHLOROBENZENE	NA
1,3-DICHLOROBENZENE	NA
1,4-DICHLOROBENZENE	NA
DICHLORODIFLUOROMETHANE	NA
1,1-DICHLOROETHANE	NA
1,2-DICHLOROETHANE	NA
1,1-DICHLOROETHENE	NA
CIS-1,2-DICHLOROETHENE	NA
TRANS-1,2-DICHLOROETHENE	NA
1,2-DICHLOROPROPANE	NA
ETHYLBENZENE	2.0
METHYLENE CHLORIDE	NA
1,1,2,2-TETRACHLOROETHANE	NA
TETRACHLOROETHENE	NA
TOLUENE	22.0
1,1,1-TRICHLOROETHANE	NA
1,1,2-TRICHLOROETHANE	NA
TRICHLOROETHENE	NA
TRICHLOROFLUOROMETHANE	NA
VINYL CHLORIDE	NA
TOTAL XYLENES	234.0

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
*	-	DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-24D

<u>SAMPLER</u>	OCD	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>11/21/86</u>	<u>9/10/87</u>	<u>10/7/87</u>	<u>11/12/87</u>	<u>6/1/88</u>
<u>PARAMETER</u>					
DETECTION LIMIT	5.0	<1.0	(BELOW)	(BELOW)	<1.0
BENZENE	230.0	100.0	100.0	1,200	63.0
BROMODICHLOROMETHANE	ND	ND	ND(<1.0)	ND(2.0)	ND
BROMOFORM	ND	ND	ND(<1.0)	ND(2.0)	ND
BROMOMETHANE	ND	ND	ND(<1.0)	ND(2.0)	ND
CARBON TETRACHLORIDE	ND	ND	ND(<1.0)	ND(2.0)	ND
CHLOROBENZENE	ND	ND	ND(1.6)	ND(5.0)	ND
CHLOROETHANE	ND	ND	ND(1.0)	ND(2.0)	ND
CHLOROFORM	ND	ND	ND(<1.0)	23.0	ND
CHLOROMETHANE	ND	ND	ND(<1.0)	ND(2.0)	ND
DIBROMOCHLOROMETHANE	ND	ND	ND(<1.0)	ND(2.0)	ND
1,2-DICHLOROBENZENE	TR	1.9	ND(4.0)	ND(5.0)	ND
1,3-DICHLOROBENZENE	ND	ND	ND(4.0)	ND(5.0)	1.3
1,4-DICHLOROBENZENE	ND	ND	ND(6.0)	ND(5.0)	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND(<1.0)	ND(2.0)	ND
1,1-DICHLOROETHANE	ND	ND	ND(<1.0)	ND(2.0)	ND
1,2-DICHLOROETHANE	69.0	44.7	35.0	34.0	55.0
1,1-DICHLOROETHENE	ND	ND	ND(<1.0)	ND(2.0)	ND
CIS-1,2-DICHLOROETHENE	ND	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	ND	ND	ND(<1.0)	ND(2.0)	ND
1,2-DICHLOROPROPANE	ND	ND	ND(<1.0)	ND(2.0)	ND
ETHYLBENZENE	180.0	211.0	181.0	1,100	73.0
METHYLENE CHLORIDE	ND	ND	ND(<1.0)	ND(20.0)	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND(<1.0)	ND(2.0)	ND
TETRACHLOROETHENE	TR	1.1	ND(<1.0)	2.9	0.69
TOLUENE	5.0	47.7	35.0	22.0	11.0
1,1,1-TRICHLOROETHANE	ND	ND	ND(<1.0)	ND(2.0)	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND(<1.0)	ND(2.0)	ND
TRICHLOROETHENE	ND	ND	ND(<1.0)	2.0	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND(<1.0)	ND(20.0)	ND
VINYL CHLORIDE	ND	ND	ND(<1.0)	ND(2.0)	ND
TOTAL XYLENES	147.0	246.1	165.0	55.0	40.0

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
IN GROUND WATER, GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-24D

<u>SAMPLER</u>	GIANT	OCD**	GIANT	GIANT	GIANT
<u>DATE</u>	<u>8/25/88</u>	<u>8/25/88</u>	<u>12/7/88</u>	<u>3/14/89</u>	<u>6/13/89</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	5.0	<1.0	(BELOW)	1.0
BENZENE	39.1	27.0	28.0	28.7	19.4
BROMODICHLOROMETHANE	ND	ND	ND	ND(<1.0)	ND
BROMOFORM	ND	ND	ND	ND(<1.0)	ND
BROMOMETHANE	ND	ND	ND	ND(1.0)	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND(<1.0)	ND
CHLOROBENZENE	ND	ND	ND	ND(<1.0)	ND
CHLOROETHANE	ND	ND	ND	ND(1.0)	ND
CHLOROFORM	ND	ND	ND	ND(<1.0)	ND
CHLOROMETHANE	ND	ND	ND	ND(1.0)	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND(<1.0)	ND
1,2-DICHLOROBENZENE	1.1	ND	ND	ND(<1.0)	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND(<1.0)	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND(<1.0)	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND	ND(1.0)	ND
1,1-DICHLOROETHANE	ND	ND	ND	ND(<1.0)	ND
1,2-DICHLOROETHANE	25.7	6.0	21.0	6.8	13.1
1,1-DICHLOROETHENE	ND	ND	ND	ND(<1.0)	ND
CIS-1,2-DICHLOROETHENE	NA	ND	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	ND	ND	ND(<1.0)	ND
TOTAL 1,2-DICHLOROETHENE	ND	NA	NA	NA	NA
1,2-DICHLOROPROPANE	ND	ND	ND	ND(<1.0)	ND
ETHYLBENZENE	87.3	55.0	45.0	58.9	34.0
METHYLENE CHLORIDE	ND	ND	ND	ND(<1.0)	4.3
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND(<1.0)	ND
TETRACHLOROETHENE	0.6	ND	ND	ND(<1.0)	ND
TOLUENE	6.5	TR	4.8	8.9	6.9
1,1,1-TRICHLOROETHANE	ND	ND	ND	ND(<1.0)	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND(<1.0)	ND
TRICHLOROETHENE	ND	ND	ND	ND(<1.0)	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND(<1.0)	ND
VINYL CHLORIDE	ND	ND	ND	ND(1.0)	ND
TOTAL XYLENES	30.4	10.0	25.0	18.9	10.6
TR -	TRACE				
ND -	NOT DETECTED				
NA -	NOT ANALYZED				
** -	SPLIT SAMPLE				

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-24D

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>9/13/89</u>	<u>12/12/89</u>	<u>4/3/90</u>	<u>7/18/90</u>	<u>10/8/90</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	(BELOW)	<1.0	(BELOW)	(BELOW)
BENZENE	12.0	21.0	31.0	39.0	25.0
BROMODICHLOROMETHANE	ND	ND(<1.0)	ND	ND(<1.0)	ND(0.1)
BROMOFORM	ND	ND(<1.0)	ND	ND(2.5)	ND(0.5)
BROMOMETHANE	ND	ND(<1.0)	ND	ND(5.9)	ND(5.9)
CARBON TETRACHLORIDE	ND	ND(<1.0)	ND	ND(<1.0)	ND(0.12)
CHLOROBENZENE	0.47	ND(2.0)	ND	16.0	ND(1.0)
CHLOROETHANE	ND	ND(<1.0)	ND	ND(2.6)	ND(2.6)
CHLOROFORM	ND	ND(<1.0)	ND	ND(<1.0)	ND(0.5)
CHLOROMETHANE	ND	ND(<1.0)	ND	ND(1.5)	ND(1.5)
DIBROMOCHLOROMETHANE	ND	ND(<1.0)	ND	ND(1.0)	ND(1.0)
1,2-DICHLOROBENZENE	ND	0.6	ND	ND(2.0)	ND(2.0)
1,3-DICHLOROBENZENE	ND	ND(<1.0)	ND	ND(2.0)	ND(2.0)
1,4-DICHLOROBENZENE	ND	ND(<1.0)	ND	ND(1.5)	1.7 X
1,1-DICHLOROETHANE	ND	ND(<1.0)	ND	ND(2.5)	ND(2.5)
1,2-DICHLOROETHANE	18.0	18.0	16.0	57.0	44.0
1,1-DICHLOROETHENE	ND	ND(<1.0)	ND	ND(1.0)	ND(1.0)
CIS-1,2-DICHLOROETHENE	ND	NA	ND	ND(1.0)	ND(1.0)
TRANS-1,2-DICHLOROETHENE	ND	ND(<1.0)	ND	ND(1.0)	ND(1.0)
1,2-DICHLOROPROPANE	ND	ND(<1.0)	ND	ND(<1.0)	ND(0.5)
ETHYLBENZENE	18.0	27.0	13.0	28.0	29.0
METHYLENE CHLORIDE	0.5	ND(<1.0)	ND	ND(2.0)	ND(2.0)
1,1,2,2-TETRACHLOROETHANE	ND	ND(<1.0)	ND	ND(<1.0)	ND(0.15)
TETRACHLOROETHENE	ND	ND(<1.0)	0.21	4.0	ND(0.5)
TOLUENE	2.8	ND(2.0)	2.3	4.8	4.8
1,1,1-TRICHLOROETHANE	ND	ND(<1.0)	ND	6.8	ND(1.0)
1,1,2-TRICHLOROETHANE	ND	ND(<1.0)	ND	ND(1.0)	ND(1.0)
TRICHLOROETHENE	ND	ND(<1.0)	ND	56.0	ND(1.0)
TRICHLOROFLUOROMETHANE	2.5	ND(<1.0)	ND	ND(1.0)	ND(1.0)
VINYL CHLORIDE	ND	ND(<1.0)	ND	ND(1.0)	ND(1.0)
TOTAL XYLENES	19.0	6.9	6.7	8.8	16.0

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS
X - PRESENCE NOT CONFIRMED

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-24D

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>1/22/91</u>	<u>4/2/91</u>	<u>7/3/91</u>	<u>10/1/91</u>	<u>1/8/92</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	(BELOW)	<1.0	<1.0	<1.0
BENZENE	16.6	190.0	45.0	100.0	47.0
BROMODICHLOROMETHANE	ND	ND (4.0)	ND	ND	ND
BROMOFORM	ND	ND (4.0)	ND	ND	ND
BROMOMETHANE	ND	ND (4.0)	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND (4.0)	ND	ND	ND
CHLOROBENZENE	ND	ND (10.0)	ND	ND	ND
CHLOROETHANE	ND	ND (4.0)	ND	ND	ND
CHLOROFORM	ND	ND (4.0)	ND	ND	ND
CHLOROMETHANE	ND	ND (4.0)	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND (6.0)	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND (10.0)	ND	1.0	ND
1,3-DICHLOROBENZENE	ND	ND (10.0)	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND (10.0)	ND	1.0	ND
DICHLORODIFLUOROMETHANE	ND	ND (6.0)	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND (4.0)	ND	0.5	ND
1,2-DICHLOROETHANE	23.9	26.0	6.0	34.0	14.0
1,1-DICHLOROETHENE	ND	ND (4.0)	ND	ND	ND
TOTAL 1,2-DICHLOROETHENE	ND	ND (4.0)	ND	ND	ND
1,2-DICHLOROPROPANE	ND	ND (4.0)	ND	ND	ND
ETHYLBENZENE	9.1	100.0	10.0	24.0	13.0
METHYLENE CHLORIDE	ND	ND (40.0)	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND (4.0)	ND	ND	ND
TETRACHLOROETHENE	ND	ND (4.0)	ND	0.6	0.3
TOLUENE	2.4	15.0	2.0	10.0	3.5
1,1,1-TRICHLOROETHANE	ND	ND (4.0)	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND (4.0)	ND	ND	ND
TRICHLOROETHENE	ND	ND (4.0)	ND	0.4	0.3
TRICHLOROFLUOROMETHANE	ND	ND (10.0)	ND	ND	ND
VINYL CHLORIDE	ND	ND (4.0)	ND	ND	ND
TOTAL XYLENES	15.9	ND (20.0)	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-24D

<u>SAMPLER</u>	GIANT	GIANT
<u>DATE</u>	<u>4/9/92</u>	<u>7/7/92</u>
<u>PARAMETER</u>		
DETECTION LIMIT	2.5	<1.0
BENZENE	24.0	47.6
BROMODICHLOROMETHANE	NA	ND
BROMOFORM	NA	ND
BROMOMETHANE	NA	ND
CARBON TETRACHLORIDE	NA	ND
CHLOROBENZENE	NA	ND
CHLOROETHANE	NA	ND
CHLOROFORM	NA	ND
CHLOROMETHANE	NA	ND
DIBROMOCHLOROMETHANE	NA	ND
1,2-DICHLOROBENZENE	ND	1.4
1,3-DICHLOROBENZENE	ND	ND
1,4-DICHLOROBENZENE	ND	1.4
DICHLORODIFLUOROMETHANE	NA	ND
1,1-DICHLOROETHANE	NA	0.8
1,2-DICHLOROETHANE	NA	36.6
1,1-DICHLOROETHENE	NA	ND
TOTAL 1,2-DICHLOROETHENE	NA	ND
1,2-DICHLOROPROPANE	NA	ND
ETHYLBENZENE	7.0	5.8
METHYLENE CHLORIDE	NA	ND
1,1,2,2-TETRACHLOROETHANE	NA	ND
TETRACHLOROETHENE	NA	0.5
TOLUENE	ND	2.6
1,1,1-TRICHLOROETHANE	NA	ND
1,1,2-TRICHLOROETHANE	NA	ND
TRICHLOROETHENE	NA	0.3
TRICHLOROFLUOROMETHANE	NA	ND
VINYL CHLORIDE	NA	ND
TOTAL XYLENES	ND	ND

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
**	-	SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-24S

<u>SAMPLER</u>	GIANT	OCD	OCD
<u>DATE</u>	<u>5/9/86</u>	<u>6/5/86</u>	<u>11/21/86</u>
<u>PARAMETER</u>			
DETECTION LIMIT	1.0	10.0	10.0
BENZENE	1,154	680.0	580.0
BROMODICHLOROETHANE	NA	TR	ND
BROMOFORM	NA	ND	ND
BROMOMETHANE	NA	ND	ND
CARBON TETRACHLORIDE	NA	ND	ND
CHLOROBENZENE	NA	ND	ND
CHLOROETHANE	NA	ND	ND
CHLOROFORM	NA	ND	ND
CHLOROMETHANE	NA	ND	ND
DIBROMOCHLOROMETHANE	NA	ND	ND
1,2-DICHLOROBENZENE	NA	ND	TR
1,3-DICHLOROBENZENE	NA	ND	ND
1,4-DICHLOROBENZENE	NA	ND	ND
DICHLORODIFLUOROMETHANE	NA	ND	ND
1,1-DICHLOROETHANE	NA	ND	ND
1,2-DICHLOROETHANE	NA	TR	60.0
1,1-DICHLOROETHENE	NA	ND	ND
CIS-1,2-DICHLOROETHENE	NA	ND	ND
TRANS-1,2-DICHLOROETHENE	NA	ND	ND
1,2-DICHLOROPROPANE	NA	ND	ND
ETHYLBENZENE	147.0	140.0	300.0
METHYLENE CHLORIDE	NA	ND	ND
1,1,2,2-TETRACHLOROETHANE	NA	ND	ND
TETRACHLOROETHENE	NA	TR	ND
TOLUENE	803.0	690.0	200.0
1,1,1-TRICHLOROETHANE	NA	ND	ND
1,1,2-TRICHLOROETHANE	NA	ND	ND
TRICHLOROETHENE	NA	TR	ND
TRICHLOROFLUOROMETHANE	NA	ND	ND
VINYL CHLORIDE	NA	ND	ND
TOTAL XYLENES	1,020	890.0	495.0

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS

GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-25

<u>SAMPLER</u>	<u>GIANT</u>
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100	100

DATE 5/9/86

PARAMETER

DETECTION LIMIT 1.0

BENZENE	ND
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BROMODICHLOROMETHANE NA

BROMOFORM NA

BROMOMETHANE NA

CARBON TETRACHLORIDE NA

CHLOROBENZENE NA

CHLOROETHANE NA

CHLOROFORM NA

CHLOROMETHANE NA

DIBROMOCHLOROMETHANE NA

1,2-DICHLOROBENZENE NA

1,3-DICHLOROBENZENE NA

1,4-DICHLOROBENZENE NA

DICHLORODIFLUOROMETHANE NA

1,1-DICHLOROETHANE NA

1,2-DICHLOROETHANE NA

1,1-DICHLOROETHENE NA

CIS-1,2-DICHLOROETHENE NA

TRANS-1,2-DICHLOROETHENE NA

1,2-DICHLOROPROPANE NA

ETHYLBENZENE	ND
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METHYLENE CHLORIDE NA

1,1,2,2-TETRACHLOROETHANE	NA
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TETRACHLOROETHENE NA

TOLUENE	ND
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1,1,1-TRICHLOROETHANE	NA
-----------------------	----

1,1,2-TRICHLOROETHANE	NA
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TRICHLOROETHENE NA

TRICHLOROFLUOROMETHANE NA

VINYL CHLORIDE

TOTAL XYLENES	ND
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TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
*	-	DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-26

<u>SAMPLER</u>	<u>GIANT</u>	<u>GIANT</u>
<u>DATE</u>	<u>5/9/86</u>	<u>10/17/86</u>
<u>PARAMETER</u>		
DETECTION LIMIT	1.0	(BELOW)
BENZENE	ND	5,280
BROMODICHLOROMETHANE	NA	ND (5.0)
BROMOFORM	NA	ND (5.0)
BROMOMETHANE	NA	NA
CARBON TETRACHLORIDE	NA	ND (5.0)
CHLOROBENZENE	NA	NA
CHLOROETHANE	NA	ND (5.0)
CHLOROFORM	NA	ND (5.0)
CHLOROMETHANE	NA	NA
DIBROMOCHLOROMETHANE	NA	ND (5.0)
1,2-DICHLOROBENZENE	NA	NA
1,3-DICHLOROBENZENE	NA	NA
1,4-DICHLOROBENZENE	NA	NA
DICHLORODIFLUOROMETHANE	NA	NA
1,1-DICHLOROETHANE	NA	ND (5.0)
1,2-DICHLOROETHANE	NA	66.0
1,1-DICHLOROETHENE	NA	ND (5.0)
CIS-1,2-DICHLOROETHENE	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	ND (5.0)
1,2-DICHLOROPROPANE	NA	ND (5.0)
ETHYLBENZENE	ND	54.0
METHYLENE CHLORIDE	NA	ND (5.0)
1,1,2,2-TETRACHLOROETHANE	NA	ND (5.0)
TETRACHLOROETHENE	NA	ND (5.0)
TOLUENE	ND	119.0
1,1,1-TRICHLOROETHANE	NA	ND (5.0)
1,1,2-TRICHLOROETHANE	NA	ND (5.0)
TRICHLOROETHENE	NA	ND (5.0)
TRICHLOROFLUOROMETHANE	NA	NA
VINYL CHLORIDE	NA	ND (5.0)
TOTAL XYLENES	ND	1,140

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
*	-	DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-27/GRW-11

<u>SAMPLER</u>	<u>GIANT</u>	<u>OCD</u>	<u>OCD*</u>	<u>OCD</u>	<u>GIANT</u>
<u>DATE</u>	<u>5/18/86</u>	<u>6/5/86</u>	<u>6/5/86</u>	<u>11/21/86</u>	<u>10/7/87</u>
<u>PARAMETER</u>					
DETECTION LIMIT	1.0	50.0	5.0	5.0	<1.0
BENZENE	ND	410.0	50.0	ND	70.5
BROMODICHLOROMETHANE	NA	ND	ND	ND	ND
BROMOFORM	NA	ND	ND	ND	ND
BROMOMETHANE	NA	ND	ND	ND	ND
CARBON TETRACHLORIDE	NA	ND	ND	ND	ND
CHLOROBENZENE	NA	ND	ND	ND	ND
CHLOROETHANE	NA	ND	ND	ND	ND
CHLOROFORM	NA	ND	ND	ND	ND
CHLOROMETHANE	NA	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	NA	ND	ND	ND	ND
1,2-DICHLOROBENZENE	NA	ND	ND	ND	ND
1,3-DICHLOROBENZENE	NA	ND	ND	ND	ND
1,4-DICHLOROBENZENE	NA	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	NA	ND	ND	ND	ND
1,1-DICHLOROETHANE	NA	ND	ND	ND	ND
1,2-DICHLOROETHANE	NA	TR	6.0	5.0	68.7
1,1-DICHLOROETHENE	NA	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	NA	ND	ND	ND	NA
TRANS-1,2-DICHLOROETHENE	NA	ND	ND	ND	ND
1,2-DICHLOROPROPANE	NA	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	12.0	ND	1.9
METHYLENE CHLORIDE	NA	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	NA	ND	ND	ND	ND
TETRACHLOROETHENE	NA	ND	ND	ND	ND
TOLUENE	ND	120.0	74.0	ND	1.5
1,1,1-TRICHLOROETHANE	NA	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	NA	ND	ND	ND	ND
TRICHLOROETHENE	NA	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	NA	ND	ND	ND	ND
VINYL CHLORIDE	NA	ND	ND	ND	ND
TOTAL XYLENES	ND	506.0	457.0	ND	7.9

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-28/GRW-12

<u>SAMPLER</u>	GIANT	GIANT	OCD	GIANT
<u>DATE</u>	<u>5/29/86</u>	<u>7/15/86</u>	<u>6/8/88</u>	<u>9/4/90</u>
<u>PARAMETER</u>				
DETECTION LIMIT	1.0	1.0	100.0	(BELOW)
BENZENE	2,419	319.0	1,060	1400.0
BROMODICHLOROMETHANE	NA	NA	ND	NA
BROMOFORM	NA	NA	ND	NA
BROMOMETHANE	NA	NA	ND	NA
CARBON TETRACHLORIDE	NA	ND	ND	NA
CHLOROBENZENE	NA	NA	ND	ND(1.0)
CHLOROETHANE	NA	NA	ND	NA
CHLOROFORM	NA	ND	ND	NA
CHLOROMETHANE	NA	NA	ND	NA
DIBROMOCHLOROMETHANE	NA	NA	ND	NA
1,2-DICHLOROBENZENE	NA	NA	ND	ND(2.0)
1,3-DICHLOROBENZENE	NA	NA	ND	ND(2.0)
1,4-DICHLOROBENZENE	NA	NA	ND	ND(1.5)
1,1-DICHLOROETHANE	NA	ND	ND	NA
1,2-DICHLOROETHANE	NA	ND	ND	NA
1,1-DICHLOROETHENE	NA	ND	ND	NA
CIS-1,2-DICHLOROETHENE	NA	NA	ND	NA
TRANS-1,2-DICHLOROETHENE	NA	ND	ND	NA
1,2-DICHLOROPROPANE	NA	NA	ND	NA
ETHYLBENZENE	NA	NA	TR	52.0
METHYLENE CHLORIDE	NA	NA	ND	NA
1,1,2,2-TETRACHLOROETHANE	NA	ND	ND	NA
1,1,1,2-TETRACHLOROETHANE	NA	ND	ND	NA
TETRACHLOROETHENE	NA	ND	ND	NA
TOLUENE	819.0	143.0	TR	2.2
1,1,1-TRICHLOROETHANE	NA	ND	ND	NA
1,1,2-TRICHLOROETHANE	NA	ND	ND	NA
TRICHLOROETHENE	NA	ND	ND	NA
TRICHLOROFLUOROMETHANE	NA	NA	ND	NA
VINYL CHLORIDE	NA	NA	ND	NA
TOTAL XYLENES	4,019	224.0	270.0	66.0

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-29/GRW-3

<u>SAMPLER</u>	GIANT	GIANT	OCD**	OCD	OCD
<u>DATE</u>	<u>5/30/86</u>	<u>6/5/86</u>	<u>6/5/86</u>	<u>11/20/86</u>	<u>6/8/88</u>
<u>PARAMETER</u>					
DETECTION LIMIT	1.0	1.0	10.0	10.0	100.0
BENZENE	388.0	3,818	2,600	240.0	3,500
BROMODICHLOROMETHANE	NA	NA	ND	ND	ND
BROMOFORM	NA	NA	ND	ND	ND
BROMOMETHANE	NA	NA	ND	ND	ND
CARBON TETRACHLORIDE	NA	NA	ND	ND	ND
CHLOROBENZENE	NA	NA	ND	ND	ND
CHLOROETHANE	NA	NA	ND	ND	ND
CHLOROFORM	NA	NA	ND	ND	ND
CHLOROMETHANE	NA	NA	ND	ND	ND
DIBROMOCHLOROMETHANE	NA	NA	ND	ND	ND
1,2-DICHLOROBENZENE	NA	NA	ND	ND	ND
1,3-DICHLOROBENZENE	NA	NA	ND	ND	ND
1,4-DICHLOROBENZENE	NA	NA	ND	ND	ND
DICHLORODIFLUOROMETHANE	NA	NA	ND	ND	ND
1,1-DICHLOROETHANE	NA	NA	30.0	34.0	ND
1,2-DICHLOROETHANE	NA	NA	36.0	28.0	ND
1,1-DICHLOROETHENE	NA	NA	ND	ND	ND
CIS-1,2-DICHLOROETHENE	NA	NA	NA	14.0	ND
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	ND	ND
TOTAL 1,2 DICHLOROETHENE	NA	NA	30.0	NA	NA
DICHLOROMETHANE	NA	NA	ND	TR	ND
1,2-DICHLOROPROPANE	NA	NA	ND	ND	ND
ETHYLBENZENE	NA	NA	600.0	98.0	800.0
METHYLENE CHLORIDE	NA	NA	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	NA	NA	ND	ND	ND
TETRACHLOROETHENE	NA	NA	ND	ND	ND
TOLUENE	643.0	3,338	3,000	72.0	320.0
1,1,1-TRICHLOROETHANE	NA	NA	TR	8.0	ND
1,1,2-TRICHLOROETHANE	NA	NA	ND	ND	ND
TRICHLOROETHENE	NA	NA	TR	12.0	ND
TRICHLOROFLUOROMETHANE	NA	NA	ND	ND	ND
VINYL CHLORIDE	NA	NA	ND	ND	ND
TOTAL XYLENES	2,000	5,210	2,870	1,400	1,880
TR -	TRACE				
ND -	NOT DETECTED				
NA -	NOT ANALYZED				
** -	SPLIT SAMPLE				

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-29/GRW-3

<u>SAMPLER</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>
<u>DATE</u>	<u>4/2/90</u>	<u>7/17/90</u>	<u>9/4/90</u>	<u>10/4/90</u>	<u>1/25/91</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	(BELOW)	(BELOW)	(BELOW)	(BELOW)
BENZENE	280.0	380.0	460.0	490.0	350.0
BROMODICHLOROMETHANE	ND (1.0)	ND (5.0)	NA	ND (2.0)	<5.0
BROMOFORM	ND (5.0)	ND (25.0)	NA	ND (10.0)	<5.0
BROMOMETHANE	ND (12.0)	ND (59.0)	NA	ND (24.0)	<5.0
CARBON TETRACHLORIDE	ND (1.2)	ND (6.0)	NA	ND (2.4)	<5.0
CHLOROBENZENE	ND (2.5)	ND (10.0)	ND (2.0)	5.8 X	<12.5
CHLOROETHANE	ND (5.2)	ND (12.0)	NA	ND (10.0)	<5.0
CHLOROFORM	ND (1.0)	ND (5.0)	NA	ND (2.0)	<5.0
CHLOROMETHANE	ND (3.0)	ND (15.0)	NA	ND (6.0)	<5.0
DIBROMOCHLOROMETHANE	ND (2.0)	ND (10.0)	NA	ND (4.0)	<5.0
1,2-DICHLOROBENZENE	ND (4.0)	ND (20.0)	ND (4.0)	ND (8.0)	<12.5
1,3-DICHLOROBENZENE	ND (4.0)	ND (20.0)	ND (4.0)	ND (8.0)	<12.5
1,4-DICHLOROBENZENE	ND (3.0)	ND (15.0)	ND (3.0)	290.0	<12.5
1,1-DICHLOROETHANE	ND (5.0)	ND (25.0)	NA	ND (10.0)	<5.0
1,2-DICHLOROETHANE	ND (1.0)	ND (5.0)	NA	4.3 X	<5.0
1,1-DICHLOROETHENE	ND (2.0)	ND (10.0)	NA	ND (4.0)	<5.0
CIS-1,2-DICHLOROETHENE	14.0	22.0	NA	17.0	NA
TRANS-1,2-DICHLOROETHENE	ND (2.0)	ND (10.0)	NA	ND (4.0)	NA
TOTAL 1,2-DICHLOROETHENE	NA	NA	NA	NA	<5.0
1,2-DICHLOROPROPANE	ND (1.0)	ND (5.0)	NA	ND (2.0)	<5.0
ETHYLBENZENE	98.0	160.0	450.0	420.0	160.0
METHYLENE CHLORIDE	ND (4.0)	ND (20.0)	NA	ND (8.0)	<50.0
1,1,2,2-TETRACHLOROETHANE	ND (1.5)	ND (7.5)	NA	ND (3.0)	<5.0
TETRACHLOROETHENE	ND (1.0)	ND (5.0)	NA	ND (2.0)	<5.0
TOLUENE	ND (2.0)	ND (10.0)	5.2	ND (4.0)	<12.5
1,1,1-TRICHLOROETHANE	ND (2.0)	ND (10.0)	NA	ND (4.0)	<5.0
1,1,2-TRICHLOROETHANE	ND (2.0)	ND (10.0)	NA	ND (4.0)	<5.0
TRICHLOROETHENE	ND (2.0)	ND (10.0)	NA	ND (4.0)	<5.0
TRICHLOROFLUOROMETHANE	ND (2.0)	ND (10.0)	NA	ND (4.0)	<12.5
VINYL CHLORIDE	ND (2.0)	ND (10.0)	NA	ND (4.0)	<5.0
TOTAL XYLENES	33.0	57.0	970.0	710.0	80.0
TR -	TRACE				
ND -	NOT DETECTED				
NA -	NOT ANALYZED				
* -	DUPLICATE ANALYSIS				
X -	PRESENCE NOT CONFIRMED				

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-29/RW-3

<u>SAMPLER</u>	GIANT	GIANT	GIANT
<u>DATE</u>	<u>10/1/91</u>	<u>1/7/92</u>	<u>4/8/92</u>
<u>PARAMETER</u>			
DETECTION LIMIT	<1.0	(BELOW)	<1.0
BENZENE	89.9	27.0	27.0
BROMODICHLOROMETHANE	ND	ND (1.0)	ND
BROMOFORM	ND	ND (1.0)	ND
BROMOMETHANE	ND	ND (1.0)	ND
CARBON TETRACHLORIDE	ND	ND (1.0)	ND
CHLOROBENZENE	ND	ND (2.5)	ND
CHLOROETHANE	ND	ND (1.0)	ND
CHLOROFORM	0.4	ND (1.0)	ND
CHLOROMETHANE	ND	ND (1.0)	ND
DIBROMOCHLOROMETHANE	ND	ND (1.0)	ND
1,2-DICHLOROBENZENE	ND	ND (2.5)	ND
1,3-DICHLOROBENZENE	ND	ND (2.5)	ND
1,4-DICHLOROBENZENE	ND	ND (2.5)	ND
DICHLORODIFLUOROMETHANE	ND	ND (1.0)	ND
1,1-DICHLOROETHANE	1.0	ND (1.0)	0.8
1,2-DICHLOROETHANE	ND	ND (1.0)	0.5
1,1-DICHLOROETHENE	ND	ND (1.0)	ND
TOTAL 1,2-DICHLOROETHENE	1.0	ND (1.0)	0.5
1,2-DICHLOROPROPANE	ND	ND (1.0)	ND
ETHYLBENZENE	57.0	17.0	44.0
METHYLENE CHLORIDE	ND	ND (10.0)	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND (1.0)	ND
TETRACHLOROETHENE	ND	ND (1.0)	ND
TOLUENE	7.0	ND (2.5)	0.7
1,1,1-TRICHLOROETHANE	ND	ND (1.0)	ND
1,1,2-TRICHLOROETHANE	ND	ND (1.0)	ND
TRICHLOROETHENE	ND	ND (1.0)	ND
TRICHLOROFLUOROMETHANE	ND	ND (2.5)	ND
VINYL CHLORIDE	ND	ND (1.0)	ND
TOTAL XYLENES	11.0	4.0	10.0

TR - TRACE
 ND - NOT DETECTED
 NA - NOT ANALYZED
 ** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-30

<u>SAMPLER</u>	<u>GIANT</u>	<u>OCD</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>
<u>DATE</u>	<u>10/17/86</u>	<u>11/21/86</u>	<u>6/1/88</u>	<u>12/7/88</u>	<u>3/14/89</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	5.0	<1.0	<1.0	(BELOW)
BENZENE	ND (1.0)	ND	ND	ND	1.9
BROMODICHLOROMETHANE	ND (5.0)	ND	ND	ND	ND (<1.0)
BROMOFORM	ND (5.0)	ND	ND	ND	ND (<1.0)
BROMOMETHANE	NA	ND	ND	ND	ND (1.0)
CARBON TETRACHLORIDE	ND (5.0)	ND	ND	ND	ND (<1.0)
CHLOROBENZENE	NA	ND	ND	ND	ND (<1.0)
CHLOROETHANE	ND (5.0)	ND	ND	ND	ND (1.0)
CHLOROFORM	ND (5.0)	ND	ND	ND	ND (<1.0)
CHLOROMETHANE	NA	ND	ND	ND	ND (1.0)
DIBROMOCHLOROMETHANE	ND (5.0)	ND	ND	ND	ND (<1.0)
1,2-DICHLOROBENZENE	NA	ND	ND	ND	ND (<1.0)
1,3-DICHLOROBENZENE	NA	ND	ND	ND	ND (<1.0)
1,4-DICHLOROBENZENE	NA	ND	ND	ND	ND (<1.0)
DICHLORODIFLUOROMETHANE	NA	ND	ND	ND	ND (1.0)
1,1-DICHLOROETHANE	ND (5.0)	ND	0.98	0.5	0.08
1,2-DICHLOROETHANE	ND (5.0)	ND	ND	1.1	0.1
1,1-DICHLOROETHENE	ND (5.0)	ND	ND	ND	ND (<1.0)
CIS-1,2-DICHLOROETHENE	NA	ND	ND	ND	NA
TRANS-1,2-DICHLOROETHENE	ND (5.0)	ND	1.0	ND	ND (<1.0)
1,2-DICHLOROPROPANE	ND (5.0)	ND	ND	ND	ND (<1.0)
ETHYLBENZENE	ND (1.0)	ND	ND	2.4	3.5
METHYLENE CHLORIDE	ND (5.0)	ND	ND	ND	1.0
1,1,2,2-TETRACHLOROETHANE	ND (5.0)	ND	ND	ND	ND (<1.0)
TETRACHLOROETHENE	ND (5.0)	TR	0.61	ND	ND (<1.0)
TOLUENE	ND (1.0)	ND	ND	ND	5.3
1,1,1-TRICHLOROETHANE	ND (5.0)	ND	ND	ND	ND (<1.0)
1,1,2-TRICHLOROETHANE	ND (5.0)	ND	ND	ND	ND (<1.0)
TRICHLOROETHENE	ND (5.0)	TR	0.52	ND	ND (<1.0)
TRICHLOROFLUOROMETHANE	NA	ND	ND	0.6	ND (<1.0)
VINYL CHLORIDE	ND (5.0)	ND	ND	ND	ND (1.0)
TOTAL XYLENES	ND (1.0)	89.0	20.0	13.6	11.6

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-30

<u>SAMPLER</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>
<u>DATE</u>	<u>6/13/89</u>	<u>9/13/89</u>	<u>12/13/89</u>	<u>4/3/90</u>	<u>7/18/90</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	(BELOW)	<1.0	<1.0	<1.0
BENZENE	ND(<1.0)	0.96	1.1	ND	ND
BROMODICHLOROMETHANE	ND(1.0)	ND(<1.0)	ND	ND	ND
BROMOFORM	ND(1.0)	ND(4.0)	ND	ND	ND
BROMOMETHANE	ND(1.0)	ND(2.0)	ND	ND	ND
CARBON TETRACHLORIDE	ND(1.0)	ND(<1.0)	ND	ND	ND
CHLOROBENZENE	ND(<1.0)	2.7	ND	ND	1.8
CHLOROETHANE	ND(1.0)	ND(1.0)	ND	ND	ND
CHLOROFORM	ND(1.0)	ND(<1.0)	ND	ND	ND
CHLOROMETHANE	ND(1.0)	ND(1.0)	ND	ND	ND
DIBROMOCHLOROMETHANE	ND(1.0)	ND(<1.0)	ND	ND	ND
1,2-DICHLOROBENZENE	ND(<1.0)	35.0	ND	ND	ND
1,3-DICHLOROBENZENE	ND(<1.0)	17.0	ND	ND	ND
1,4-DICHLOROBENZENE	ND(<1.0)	40.0	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND(1.0)	ND(<1.0)	ND	ND	ND
1,1-DICHLOROETHANE	ND(1.0)	0.88	ND	ND	0.67
1,2-DICHLOROETHANE	ND(1.0)	9.6	0.94	ND	0.75
1,1-DICHLOROETHENE	ND(1.0)	ND(<1.0)	ND	ND	ND
CIS-1,2-DICHLOROETHENE	NA	NA	NA	ND	5.6
TRANS-1,2-DICHLOROETHENE	ND(1.0)	NA	ND	ND	ND
TOTAL 1,2-DICHLOROETHENE	NA	ND(<1.0)	NA	NA	NA
1,2-DICHLOROPROPANE	ND(1.0)	ND(<1.0)	ND	ND	ND
ETHYLBENZENE	ND(<1.0)	11.0	ND	2.0	0.55
METHYLENE CHLORIDE	ND(1.0)	ND(<1.0)	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND(1.0)	ND(<1.0)	ND	ND	ND
TETRACHLOROETHENE	ND(1.0)	ND(<1.0)	ND	ND	0.44
TOLUENE	ND(<1.0)	4.3	0.28	3.1	ND
1,1,1-TRICHLOROETHANE	ND(1.0)	ND(<1.0)	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND(1.0)	ND(<1.0)	ND	ND	ND
TRICHLOROETHENE	ND(1.0)	ND(<1.0)	ND	ND	0.44
TRICHLOROFLUOROMETHANE	ND(1.0)	0.91	ND	ND	ND
VINYL CHLORIDE	ND(1.0)	ND(<1.0)	ND	ND	ND
TOTAL XYLENES	4.3	44.0	1.3	ND	2.4
TR -	TRACE				
ND -	NOT DETECTED				
NA -	NOT ANALYZED				
* -	DUPLICATE ANALYSIS				

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-30

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>10/8/90</u>	<u>1/22/91</u>	<u>4/2/91</u>	<u>7/2/91</u>	<u>10/1/91</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	<1.0	<1.0	<1.0	<1.0
BENZENE	ND	ND	ND	ND	ND
BROMODICHLOROMETHANE	ND	ND	ND	ND	ND
BROMOFORM	ND	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND	ND
CHLOROFORM	ND	ND	ND	ND	ND
CHLOROMETHANE	ND	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	0.86 X	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	2.6	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	0.18	ND	ND	ND	ND
1,1-DICHLOROETHENE	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	ND	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	ND	NA	NA	NA	NA
TOTAL 1,2-DICHLOROETHENE	NA	ND	ND	ND	ND
1,2-DICHLOROPROPANE	ND	ND	ND	ND	ND
ETHYLBENZENE	1.6	25.9	1.1	ND	ND
METHYLENE CHLORIDE	ND	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND	ND
TETRACHLOROETHENE	ND	ND	ND	ND	ND
TOLUENE	1.2	5.7	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND	ND
TRICHLOROETHENE	ND	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND	ND
TOTAL XYLENES	3.5	39.9	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE
X - PRESENCE NOT CONFIRMED

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-30

<u>SAMPLER</u>	GIANT	GIANT	GIANT
<u>DATE</u>	<u>1/8/92</u>	<u>4/9/92</u>	<u>7/7/92</u>
<u>PARAMETER</u>			
DETECTION LIMIT	<1.0	<1.0	<1.0
BENZENE	ND	ND	ND
BROMODICHLOROMETHANE	ND	NA	ND
BROMOFORM	ND	NA	ND
BROMOMETHANE	ND	NA	ND
CARBON TETRACHLORIDE	ND	NA	ND
CHLOROBENZENE	ND	NA	ND
CHLOROETHANE	ND	NA	ND
CHLOROFORM	ND	NA	ND
CHLOROMETHANE	ND	NA	ND
DIBROMOCHLOROMETHANE	ND	NA	ND
1,2-DICHLOROBENZENE	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	NA	ND
1,1-DICHLOROETHANE	ND	NA	ND
1,2-DICHLOROETHANE	ND	NA	ND
1,1-DICHLOROETHENE	ND	NA	ND
TOTAL 1,2-DICHLOROETHENE	ND	NA	ND
1,2-DICHLOROPROPANE	ND	NA	ND
ETHYLBENZENE	ND	ND	ND
METHYLENE CHLORIDE	ND	NA	ND
1,1,2,2-TETRACHLOROETHANE	ND	NA	ND
TETRACHLOROETHENE	ND	NA	ND
TOLUENE	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	NA	ND
1,1,2-TRICHLOROETHANE	ND	NA	ND
TRICHLOROETHENE	ND	NA	ND
TRICHLOROFLUOROMETHANE	ND	NA	ND
VINYL CHLORIDE	ND	NA	ND
TOTAL XYLENES	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-31

<u>SAMPLER</u>	GIANT	OCD	GIANT	EID**	GIANT
<u>DATE</u>	<u>10/17/86</u>	<u>11/21/86</u>	<u>4/20/88</u>	<u>4/20/88</u>	<u>6/2/88</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	1.0	<1.0	0.5	<1.0
BENZENE	4.0	ND	ND	ND	ND
BROMODICHLOROETHANE	ND (5.0)	10.0	ND	ND	ND
BROMOFORM	ND (5.0)	ND	ND	ND	ND
BROMOMETHANE	NA	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND (5.0)	ND	ND	ND	ND
CHLOROBENZENE	NA	ND	ND	ND	ND
CHLOROETHANE	ND (5.0)	ND	ND	ND	ND
CHLOROFORM	ND (5.0)	ND	ND	TR	ND
CHLOROMETHANE	NA	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND (5.0)	ND	0.76	ND	ND
1,2-DICHLOROETHANE	NA	ND	ND	ND	ND
1,3-DICHLOROETHANE	NA	ND	ND	ND	ND
1,4-DICHLOROETHANE	NA	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	NA	ND	ND	ND	ND
1,1-DICHLOROETHANE	11.0	22.0	4.8	3.5	4.6
1,2-DICHLOROETHANE	ND (5.0)	TR	ND	ND	ND
1,1-DICHLOROETHENE	ND (5.0)	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	NA	23.0	ND	29.0	ND
TRANS-1,2-DICHLOROETHENE	21.0	ND	58.0	ND	53.0
DICHLOROMETHANE	NA	ND	NA	ND	
1,2-DICHLOROPROPANE	NA	TR	ND	ND	ND
ETHYLBENZENE	ND (1.0)	ND	ND	ND	ND
METHYLENE CHLORIDE	7.0	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND (5.0)	ND	ND	ND	ND
TETRACHLOROETHENE	11.0	16.0	ND	8.3	5.0
TOLUENE	6.0	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	7.3	12.0	2.9	0.8	1.8
1,1,2-TRICHLOROETHANE	ND (5.0)	ND	ND	ND	ND
TRICHLOROETHENE	ND (5.0)	12.0	7.3	5.4	7.6
TRICHLOROFLUOROMETHANE	NA	ND	ND	0.7	ND
VINYL CHLORIDE	ND (5.0)	ND	ND	ND	ND
TOTAL XYLENES	14.0	ND	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-31

<u>SAMPLER</u>	<u>GIANT</u>	<u>EID**</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>
<u>DATE</u>	<u>8/25/88</u>	<u>8/25/88</u>	<u>12/07/88</u>	<u>3/15/89</u>	<u>6/13/89</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	0.5	<1.0	(BELOW)	(BELOW)
BENZENE	ND	ND	ND	12.6	ND(0.2)
BROMODICHLOROMETHANE	ND	ND	ND	ND(<1.0)	ND(1.0)
BROMOFORM	ND	ND	ND	ND(<1.0)	ND(1.0)
BROMOMETHANE	ND	ND	ND	ND(1.0)	ND(1.0)
CARBON TETRACHLORIDE	ND	ND	ND	ND(<1.0)	ND(1.0)
CHLOROBENZENE	ND	ND	ND	ND(<1.0)	ND(0.2)
CHLOROETHANE	ND	ND	ND	ND(1.0)	ND(1.0)
CHLOROFORM	ND	ND	ND	ND(<1.0)	1.9
CHLOROMETHANE	ND	ND	ND	ND(1.0)	ND(1.0)
DIBROMOCHLOROMETHANE	ND	ND	ND	ND(<1.0)	ND(1.0)
1,2-DICHLOROBENZENE	ND	ND	ND	ND(<1.0)	ND(0.2)
1,3-DICHLOROBENZENE	ND	ND	ND	ND(<1.0)	ND(0.2)
1,4-DICHLOROBENZENE	ND	ND	ND	ND(<1.0)	ND(0.2)
DICHLORODIFLUOROMETHANE	ND	ND	ND	ND(1.0)	ND(1.0)
1,1-DICHLOROETHANE	ND	ND	0.9	0.18	5.7
1,2-DICHLOROETHANE	1.8	0.6	0.8	0.84	ND(1.0)
1,1-DICHLOROETHENE	ND	ND	ND	ND(<1.0)	ND(1.0)
CIS-1,2-DICHLOROETHENE	NA	ND	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	ND	4.5	ND(<1.0)	ND(1.0)
TOTAL 1,2-DICHLOROETHENE	ND	NA	NA	NA	NA
1,2-DICHLOROPROPANE	ND	ND	ND	ND(<1.0)	ND(1.0)
ETHYLBENZENE	ND	ND	ND	16.3	ND(0.2)
METHYLENE CHLORIDE	ND	ND	0.3	3.2	ND(1.0)
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND(<1.0)	ND(1.0)
TETRACHLOROETHENE	0.3	TR	3.9	0.17	17.2
TOLUENE	ND	ND	ND	3.3	ND(0.2)
1,1,1-TRICHLOROETHANE	ND	ND	0.7	ND(<1.0)	1.6
1,1,2-TRICHLOROETHANE	ND	ND	1.1	ND(<1.0)	ND(1.0)
TRICHLOROETHENE	ND	ND	ND	ND(<1.0)	10.8
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND(<1.0)	ND(1.0)
VINYL CHLORIDE	ND	ND	ND	ND(1.0)	ND(1.0)
TOTAL XYLENES	ND	ND	ND	18.3	ND(0.2)
TR -	TRACE				
ND -	NOT DETECTED				
NA -	NOT ANALYZED				
** -	SPLIT SAMPLE				

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-31

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>9/13/89</u>	<u>12/13/89</u>	<u>4/4/89</u>	<u>7/18/90</u>	<u>10/8/90</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	<1.0	<1.0	(BELOW)	<1.0
BENZENE	0.38	ND	0.98	ND (2.0)	ND
BROMODICHLOROMETHANE	ND (<1.0)	ND	ND	ND (1.0)	ND
BROMOFORM	ND (2.0)	ND	ND	ND (5.0)	ND
BROMOMETHANE	ND (1.0)	ND	ND	ND (12.0)	ND
CARBON TETRACHLORIDE	ND (<1.0)	ND	ND	ND (1.2)	ND
CHLOROBENZENE	ND (<1.0)	ND	ND	ND (2.0)	0.34 X
CHLOROETHANE	ND (<1.0)	ND	ND	ND (5.2)	ND
CHLOROFORM	ND (<1.0)	ND	ND	ND (1.0)	ND
CHLOROMETHANE	ND (<1.0)	ND	ND	ND (3.0)	ND
DIBROMOCHLOROMETHANE	ND (<1.0)	ND	ND	ND (2.0)	ND
1,2-DICHLOROBENZENE	ND (<1.0)	ND	ND	ND (4.0)	1.2 X
1,3-DICHLOROBENZENE	ND (<1.0)	ND	ND	ND (4.0)	1.8 X
1,4-DICHLOROBENZENE	ND (<1.0)	ND	ND	ND (3.0)	1.5 X
DICHLORODIFLUOROMETHANE	ND (<1.0)	NA	NA	NA	NA
1,1-DICHLOROETHANE	2.8	3.4	ND	5.5	ND
1,2-DICHLOROETHANE	1.8	2.0	1.0	ND (1.0)	ND
1,1-DICHLOROETHENE	ND (<1.0)	ND	ND	ND (2.0)	ND
CIS-1,2-DICHLOROETHENE	NA	NA	6.2	81.0	13.0
TRANS-1,2-DICHLOROETHENE	NA	44.0	ND	ND (2.0)	ND
TOTAL 1,2-DICHLOROETHENE	23.0	NA	NA	NA	NA
1,2-DICHLOROPROPANE	ND (<1.0)	ND	ND	ND (1.0)	ND
ETHYLBENZENE	ND (<1.0)	ND	ND	ND (2.0)	ND
METHYLENE CHLORIDE	0.71	1.1	ND	ND (4.0)	ND
1,1,2,2-TETRACHLOROETHANE	ND (<1.0)	ND	ND	ND (1.5)	ND
TETRACHLOROETHENE	4.7	12.0	0.64	12.0	2.8
TOLUENE	ND (<1.0)	ND	ND	ND (2.0)	0.98
1,1,1-TRICHLOROETHANE	0.65	1.4	ND	15.0	ND
1,1,2-TRICHLOROETHANE	ND (<1.0)	ND	ND	ND (2.0)	ND
TRICHLOROETHENE	ND (<1.0)	7.9	0.86	34.0	0.47
TRICHLOROFLUOROMETHANE	3.6	ND	ND	ND (2.0)	ND
VINYL CHLORIDE	ND (<1.0)	ND	ND	ND (2.0)	ND
TOTAL XYLENES	ND (<1.0)	ND	6.0	ND (2.0)	0.45 X
TR	-	TRACE			
ND	-	NOT DETECTED			
NA	-	NOT ANALYZED			
*	-	DUPLICATE ANALYSIS			
X	-	PRESENCE NOT CONFIRMED			

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-31

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>1/23/91</u>	<u>4/2/91</u>	<u>7/3/91</u>	<u>10/1/91</u>	<u>1/8/92</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	<1.0	<1.0	<1.0	<1.0
BENZENE	ND	ND	ND	ND	ND
BROMODICHLOROMETHANE	ND	ND	ND	ND	ND
BROMOFORM	ND	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND	ND
CHLOROFORM	ND	ND	ND	ND	ND
CHLOROMETHANE	90.0	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND	2.4	0.2	ND
1,2-DICHLOROETHANE	ND	ND	ND	ND	0.2
1,1-DICHLOROETHENE	ND	ND	0.2	ND	ND
TOTAL 1,2-DICHLOROETHENE	2.1	0.66	57.0	2.7	2.7
1,2-DICHLOROPROPANE	ND	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	ND	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND	ND
TETRACHLOROETHENE	0.5	ND	6.0	0.5	0.3
TOLUENE	ND	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND	0.5	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND	ND
TRICHLOROETHENE	0.4	ND	4.2	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND	ND
TOTAL XYLENES	ND	ND	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-31

<u>SAMPLER</u>	<u>GIANT</u>	<u>GIANT</u>
<u>DATE</u>	<u>4/10/92</u>	<u>7/7/92</u>
<u>PARAMETER</u>		
DETECTION LIMIT	<1.0	<1.0
BENZENE	ND	ND
BROMODICHLOROMETHANE	NA	ND
BROMOFORM	NA	ND
BROMOMETHANE	NA	ND
CARBON TETRACHLORIDE	NA	ND
CHLOROBENZENE	NA	ND
CHLOROETHANE	NA	ND
CHLOROFORM	NA	ND
CHLOROMETHANE	NA	ND
DIBROMOCHLOROMETHANE	NA	ND
1,2-DICHLOROBENZENE	ND	ND
1,3-DICHLOROBENZENE	ND	ND
1,4-DICHLOROBENZENE	ND	ND
DICHLORODIFLUOROMETHANE	NA	ND
1,1-DICHLOROETHANE	NA	ND
1,2-DICHLOROETHANE	NA	ND
1,1-DICHLOROETHENE	NA	ND
TOTAL 1,2-DICHLOROETHENE	NA	ND
1,2-DICHLOROPROPANE	NA	ND
ETHYLBENZENE	ND	ND
METHYLENE CHLORIDE	NA	ND
1,1,2,2-TETRACHLOROETHANE	NA	ND
TETRACHLOROETHENE	NA	ND
TOLUENE	ND	ND
1,1,1-TRICHLOROETHANE	NA	ND
1,1,2-TRICHLOROETHANE	NA	ND
TRICHLOROETHENE	NA	ND
TRICHLOROFLUOROMETHANE	NA	ND
VINYL CHLORIDE	NA	ND
TOTAL XYLENES	ND	ND

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
**	-	SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-32

<u>SAMPLER</u>	<u>EID</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>	<u>EID**</u>
<u>DATE</u>	<u>8/5/87</u>	<u>10/7/87</u>	<u>11/12/87</u>	<u>4/20/88</u>	<u>4/20/88</u>
<u>PARAMETER</u>					
DETECTION LIMIT	1.0	<1.0	(BELOW)	<1.0	0.5
BENZENE	ND	ND	ND (<1.0)	ND	ND
BROMODICHLOROMETHANE	ND	ND	ND (<1.0)	ND	ND
BROMOFORM	ND	ND	ND (<1.0)	ND	ND
BROMOMETHANE	ND	ND	ND (<1.0)	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND (<1.0)	ND	ND
CHLOROBENZENE	ND	ND	ND (<1.0)	ND	ND
CHLOROETHANE	ND	ND	ND (<1.0)	ND	ND
CHLOROFORM	ND	ND	11.0	1.1	0.9
CHLOROMETHANE	ND	ND	ND (<1.0)	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND (<1.0)	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND (<1.0)	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND (<1.0)	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND (<1.0)	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND (<1.0)	ND	ND
1,1-DICHLOROETHANE	3.0	10.4	10.7	5.7	8.5
1,2-DICHLOROETHANE	ND	ND	ND (<1.0)	ND	ND
1,1-DICHLOROETHENE	ND	ND	106.0	ND	ND
CIS-1,2-DICHLOROETHENE	79.0	NA	NA	NA	88.0
TRANS-1,2-DICHLOROETHENE	ND	35.0	ND (<1.0)	160.0	ND
1,2-DICHLOROPROPANE	ND	0.5	ND (<1.0)	ND	ND
ETHYLBENZENE	ND	ND	ND (<1.0)	ND	ND
METHYLENE CHLORIDE	ND	ND	ND (2.0)	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND (<1.0)	ND	ND
TETRACHLOROETHENE	19.0	16.6	15.3	17.0	18.0
TOLUENE	ND	ND	ND (1.0)	ND	ND
1,1,1-TRICHLOROETHANE	3.0	3.3	2.3	1.9	1.0
1,1,2-TRICHLOROETHANE	ND	ND	ND (<1.0)	ND	ND
TRICHLOROETHENE	17.0	13.4	11.4	16.0	14.0
TRICHLOROFLUOROMETHANE	ND	ND	ND (2.0)	ND	2.0
VINYL CHLORIDE	ND	ND	ND (<1.0)	ND	ND
TOTAL XYLENES	ND	ND	ND (<1.0)	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-32

<u>SAMPLER</u>	<u>GIANT</u>	<u>EID**</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>
<u>DATE</u>	<u>8/24/88</u>	<u>8/24/88</u>	<u>11/8/88</u>	<u>3/14/89</u>	<u>6/13/89</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	0.5	(BELOW)	(BELOW)	(BELOW)
BENZENE	ND (5.0)	ND	ND (<1.0)	0.81	ND (<1.0)
BROMODICHLOROMETHANE	ND (2.0)	ND	NA	ND	ND (1.0)
BROMOFORM	ND (2.0)	ND	ND (3.0)	ND	ND (1.0)
BROMOMETHANE	ND (2.0)	ND	ND (12.0)	ND (1.0)	ND (1.0)
CARBON TETRACHLORIDE	ND (2.0)	ND	ND (1.0)	ND	ND (1.0)
CHLOROBENZENE	ND (5.0)	ND	ND (<1.0)	ND	ND (<1.0)
CHLOROETHANE	ND (2.0)	ND	ND (5.0)	ND (1.0)	ND (1.0)
CHLOROFORM	ND (2.0)	3.9	8.2	0.4	3.0
CHLOROMETHANE	ND (2.0)	ND	ND (3.0)	ND (1.0)	ND (1.0)
DIBROMOCHLOROMETHANE	ND (2.0)	ND	ND (2.0)	ND (<1.0)	ND (1.0)
1,2-DICHLOROBENZENE	ND (5.0)	ND	ND (<1.0)	ND (<1.0)	ND (<1.0)
1,3-DICHLOROBENZENE	ND (5.0)	ND	ND (<1.0)	ND (<1.0)	ND (<1.0)
1,4-DICHLOROBENZENE	ND (5.0)	ND	ND (<1.0)	ND (<1.0)	ND (<1.0)
DICHLORODIFLUOROMETHANE	ND (2.0)	ND	NA	ND (1.0)	ND (1.0)
1,1-DICHLOROETHANE	6.0	3.6	5.8	3.1	3.9
1,2-DICHLOROETHANE	ND (2.0)	ND	ND (<1.0)	ND (<1.0)	ND (1.0)
1,1-DICHLOROETHENE	ND (2.0)	ND	ND (1.0)	ND (<1.0)	ND (1.0)
CIS-1,2-DICHLOROETHENE	NA	97.0	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	ND	120.0	ND (<1.0)	ND (1.0)
TOTAL 1,2-DICHLOROETHENE	100.0	NA	NA	NA	NA
DICHLOROMETHANE	NA	TR	NA	NA	NA
1,2-DICHLOROPROPANE	ND (2.0)	ND	ND (1.0)	ND (<1.0)	ND (1.0)
ETHYLBENZENE	ND (5.0)	ND	ND (<1.0)	ND (<1.0)	ND (<1.0)
METHYLENE CHLORIDE	ND (20.0)	ND	ND (3.0)	10.8	ND (1.0)
1,1,2,2-TETRACHLOROETHANE	ND (2.0)	ND	ND (1.2)	ND (<1.0)	ND (1.0)
TETRACHLOROETHENE	9.0	24.0	20.0	11.7	17.3
TOLUENE	ND (5.0)	ND	ND (<1.0)	1.1	ND (<1.0)
1,1,1-TRICHLOROETHANE	ND (2.0)	4.5	6.6	0.78	1.5
1,1,2-TRICHLOROETHANE	ND (2.0)	ND	ND (<1.0)	ND (<1.0)	ND (1.0)
TRICHLOROETHENE	8.0	16.0	13.0	8.1	12.2
TRICHLOROFLUOROMETHANE	ND (20.0)	0.8	ND (1.0)	ND (<1.0)	ND (1.0)
VINYL CHLORIDE	ND (2.0)	ND	ND (2.0)	ND (1.0)	ND (1.0)
TOTAL XYLENES	ND (5.0)	ND	ND (<1.0)	ND (<1.0)	ND (<1.0)
TR -	TRACE				
ND -	NOT DETECTED				
NA -	NOT ANALYZED				
** -	SPLIT SAMPLE				

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-32

<u>SAMPLER</u>	GIANT	GIANT	OCD	GIANT	GIANT
<u>DATE</u>	<u>12/11/89</u>	<u>12/18/89</u>	<u>4/9/90</u>	<u>6/18/90</u>	<u>12/16/91</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	<1.0	1.0	(BELOW)	<1.0
BENZENE	96.0	ND	ND	ND (5.0)	ND
BROMODICHLOROMETHANE	ND	ND	ND	ND (2.5)	ND
BROMOFORM	ND	ND	ND	ND (13.0)	ND
BROMOMETHANE	ND	ND	ND	ND (30.0)	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND (3.0)	ND
CHLOROBENZENE	ND	ND	ND	ND (5.0)	ND
CHLOROETHANE	ND	ND	ND	ND (13.0)	ND
CHLOROFORM	ND	ND	ND	ND (2.5)	ND
CHLOROMETHANE	ND	ND	ND	ND (7.5)	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND (5.0)	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND (10.0)	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND (10.0)	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND (7.5)	ND
1,1-DICHLOROETHANE	3.0	2.8	1.5	ND (13.0)	ND
1,2-DICHLOROETHANE	ND	ND	ND	ND (2.5)	ND
1,1-DICHLOROETHENE	ND	ND	ND	ND (5.0)	1.6
CIS-1,2-DICHLOROETHENE	NA	NA	88.3	160.0	NA
TRANS-1,2-DICHLOROETHENE	140.0	160.0	ND	ND (5.0)	NA
1,2-DICHLOROPROPANE	ND	ND	ND	ND (2.5)	49.0
ETHYLBENZENE	ND	ND	ND	ND (5.0)	ND
METHYLENE CHLORIDE	1.2	1.1	ND	10.0	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND (3.8)	ND
TETRACHLOROETHENE	17.0	22.0	15.0	23.0	5.2
TOLUENE	ND	ND	ND	ND (5.0)	ND
1,1,1-TRICHLOROETHANE	1.3	1.5	ND	ND (5.0)	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND (5.0)	ND
TRICHLOROETHENE	10.0	12.0	10.9	17.0	2.5
TRICHLOROFLUOROMETHANE	ND	1.1	ND	ND (5.0)	0.3
VINYL CHLORIDE	ND	ND	ND	ND (5.0)	ND
TOTAL XYLENES	ND	ND	ND	ND (5.0)	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-32

SAMPLER

GIANT

DATE

7/15/92

PARAMETER

DETECTION LIMIT	<1.0
BENZENE	ND
BROMODICHLOROMETHANE	ND
BROMOFORM	ND
BROMOMETHANE	ND
CARBON TETRACHLORIDE	ND
CHLOROBENZENE	ND
CHLOROETHANE	ND
CHLOROFORM	ND
CHLOROMETHANE	ND
DIBROMOCHLOROMETHANE	ND
1,2-DICHLOROBENZENE	ND
1,3-DICHLOROBENZENE	ND
1,4-DICHLOROBENZENE	ND
DICHLORODIFLUOROMETHANE	ND
1,1-DICHLOROETHANE	3.7
1,2-DICHLOROETHANE	ND
1,1-DICHLOROETHENE	ND
TOTAL 1,2-DICHLOROETHENE	100.0
1,2-DICHLOROPROPANE	ND
ETHYLBENZENE	ND
METHYLENE CHLORIDE	ND
1,1,2,2-TETRACHLOROETHANE	ND
TETRACHLOROETHENE	5.6
TOLUENE	ND
1,1,1-TRICHLOROETHANE	0.3
1,1,2-TRICHLOROETHANE	ND
TRICHLOROETHENE	4.2
TRICHLOROFLUOROMETHANE	ND
VINYL CHLORIDE	ND
TOTAL XYLENES	ND

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
**	-	SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-33

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>9/9/87</u>	<u>10/7/87</u>	<u>12/7/89</u>	<u>3/15/89</u>	<u>6/13/89</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	(BELOW)	(BELOW)	(BELOW)	(BELOW)
BENZENE	764.0	503.0	130.0	0.3	32.6
BROMODICHLOROMETHANE	ND	ND(2.0)	ND(<1.0)	ND(<1.0)	ND(1.0)
BROMOFORM	ND	ND(4.5)	ND(<1.0)	ND(<1.0)	ND(1.0)
BROMOMETHANE	ND	ND(3.0)	ND(1.2)	ND(1.0)	ND(1.0)
CARBON TETRACHLORIDE	ND	ND(4.0)	ND(<1.0)	ND(<1.0)	ND(1.0)
CHLOROBENZENE	ND	ND(8.0)	ND(3.0)	ND(<1.0)	ND(<1.0)
CHLOROETHANE	0.4	ND(50.0)	ND(<1.0)	ND(1.0)	ND(1.0)
CHLOROFORM	ND	ND(2.5)	ND(<1.0)	ND(<1.0)	ND(1.0)
CHLOROMETHANE	ND	ND(1.0)	ND(<1.0)	ND(1.0)	ND(1.0)
DIBROMOCHLOROMETHANE	ND	ND(3.5)	ND(<1.0)	ND(<1.0)	ND(1.0)
1,2-DICHLOROBENZENE	1.1	ND(20.0)	ND(4.0)	ND(<1.0)	ND(<1.0)
1,3-DICHLOROBENZENE	ND	ND(20.0)	ND(4.0)	ND(<1.0)	ND(<1.0)
1,4-DICHLOROBENZENE	ND	ND(30.0)	ND(3.0)	ND(<1.0)	ND(<1.0)
DICHLORODIFLUOROMETHANE	ND	ND(2.0)	ND(<1.0)	ND(1.0)	ND(1.0)
1,1-DICHLOROETHANE	1.0	ND(2.5)	0.5	1.4	ND(1.0)
1,2-DICHLOROETHANE	22.8	ND(3.5)	4.3	0.33	1.8
1,1-DICHLOROETHENE	ND	ND(3.5)	ND(<1.0)	ND(<1.0)	ND(1.0)
CIS-1,2-DICHLOROETHENE	ND	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	3.4	ND(4.5)	1.7	ND(<1.0)	ND(1.0)
1,2-DICHLOROPROPANE	ND	ND(1.5)	ND(<1.0)	ND(<1.0)	ND(1.0)
ETHYLBENZENE	1120.0	370.0	80.0	ND(<1.0)	76.0
METHYLENE CHLORIDE	ND	ND(1.0)	ND(<1.0)	5.8	ND(1.0)
1,1,2,2-TETRACHLOROETHANE	ND	ND(1.5)	ND(<1.0)	ND(<1.0)	ND(1.0)
TETRACHLOROETHENE	0.4	ND(1.5)	0.7	1.4	ND(1.0)
TOLUENE	188.0	136.0	9.9	ND(<1.0)	11.3
1,1,1-TRICHLOROETHANE	ND	ND(1.5)	ND(<1.0)	0.32	ND(1.0)
1,1,2-TRICHLOROETHANE	ND	ND(1.5)	ND(<1.0)	ND(<1.0)	ND(1.0)
TRICHLOROETHENE	0.4	37.0	0.5	1.1	ND(1.0)
TRICHLOROFLUOROMETHANE	ND	ND(3.5)	0.8	ND(<1.0)	ND(1.0)
VINYL CHLORIDE	ND	ND(2.5)	ND(<1.0)	ND(1.0)	ND(1.0)
TOTAL XYLENES	1393.0	1332.0	172.0	ND(<1.0)	74.1

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER(ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-33

<u>SAMPLER</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>
<u>DATE</u>	<u>9/12/89</u>	<u>12/13/89</u>	<u>4/4/90</u>	<u>7/18/90</u>	<u>10/8/90</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	(BELOW)	<1.0	<1.0	(BELOW)
BENZENE	ND(<1.0)	73.0	ND	ND	4.6
BROMODICHLOROMETHANE	ND(<1.0)	ND(<1.0)	ND	ND	ND(1.0)
BROMOFORM	ND(10.0)	ND(<1.0)	ND	ND	ND(5.0)
BROMOMETHANE	ND(5.0)	ND(1.2)	ND	ND	ND(12.0)
CARBON TETRACHLORIDE	ND(1.0)	ND(<1.0)	ND	ND	ND(1.2)
CHLOROBENZENE	ND(<1.0)	ND(5.0)	ND	2.5	11.0
CHLOROETHANE	ND(2.5)	ND(<1.0)	ND	ND	ND(5.2)
CHLOROFORM	ND(<1.0)	ND(<1.0)	ND	ND	ND(1.0)
CHLOROMETHANE	ND(2.5)	ND(<1.0)	ND	ND	ND(3.0)
DIBROMOCHLOROMETHANE	ND(1.0)	ND(<1.0)	ND	ND	ND(2.0)
1,2-DICHLOROBENZENE	ND(1.0)	ND(10.0)	ND	ND	ND(4.0)
1,3-DICHLOROBENZENE	ND(2.0)	ND(10.0)	ND	ND	61.0 X
1,4-DICHLOROBENZENE	ND(1.0)	ND(7.5)	ND	12.0	68.0
1,1-DICHLOROETHANE	ND(<1.0)	ND(<1.0)	1.3	ND	ND(5.0)
1,2-DICHLOROETHANE	0.97	4.0	0.21	0.28	ND(1.0)
1,1-DICHLOROETHENE	ND(<1.0)	ND(<1.0)	ND	ND	ND(2.0)
CIS-1,2-DICHLOROETHENE	NA	NA	12.0	4.9	38.0
TRANS-1,2-DICHLOROETHENE	NA	1.1	ND	ND	ND(2.0)
TOTAL 1,2-DICHLOROETHENE	2.5	NA	NA	ND	NA
1,2-DICHLOROPROPANE	ND(<1.0)	ND(<1.0)	ND	ND	ND(1.0)
ETHYLBENZENE	7.9	120.0	ND	3.7	220.0
METHYLENE CHLORIDE	ND(2.0)	ND(<1.0)	ND	ND	ND(4.0)
1,1,2,2-TETRACHLOROETHANE	ND(1.0)	ND(<1.0)	ND	ND	ND(1.5)
TETRACHLOROETHENE	ND(<1.0)	ND(<1.0)	2.5	0.6	ND(1.0)
TOLUENE	ND(1.5)	ND(5.0)	ND	0.35	8.3
1,1,1-TRICHLOROETHANE	ND(1.0)	ND(<1.0)	0.24	ND	ND(2.0)
1,1,2-TRICHLOROETHANE	ND(1.0)	ND(<1.0)	ND	ND	ND(2.0)
TRICHLOROETHENE	ND(1.0)	ND(<1.0)	1.1	3.2	ND(2.0)
TRICHLOROFLUOROMETHANE	ND(<1.0)	ND(<1.0)	ND	0.28	ND(2.0)
VINYL CHLORIDE	ND(1.0)	ND(<1.0)	ND	ND	ND(2.0)
TOTAL XYLENES	17.0	170.0	ND	6.6	310.0

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS
X - PRESENCE NOT CONFIRMED

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-36/GRW-10

<u>SAMPLER</u>	OCD	GIANT
<u>DATE</u>	<u>6/8/88</u>	<u>9/4/90</u>
<u>PARAMETER</u>		
DETECTION LIMIT	(BELOW)	<1.0
BENZENE	15.0	2.2
BROMODICHLOROMETHANE	ND(<1.0)	ND
BROMOFORM	ND(<1.0)	ND
BROMOMETHANE	ND(<1.0)	ND
CARBON TETRACHLORIDE	ND(<1.0)	ND
CHLOROBENZENE	ND(<1.0)	ND
CHLOROETHANE	ND(<1.0)	ND
CHLOROFORM	ND(<1.0)	ND
CHLOROMETHANE	ND(<1.0)	ND
DIBROMOCHLOROMETHANE	ND(<1.0)	ND
1,2-DICHLOROBENZENE	ND(<1.0)	ND
1,3-DICHLOROBENZENE	ND(<1.0)	ND
1,4-DICHLOROBENZENE	ND(<1.0)	ND
1,1-DICHLOROETHANE	9.6	ND
1,2-DICHLOROETHANE	3.5	ND
1,1-DICHLOROETHENE	ND(<1.0)	ND
CIS-1,2-DICHLOROETHENE	80.0	ND
TRANS-1,2-DICHLOROETHENE	ND(<1.0)	ND
DICHLOROMETHANE	6.3	ND
1,2-DICHLOROPROPANE	ND(<1.0)	ND
ETHYLBENZENE	TR(12.5)	5.3
METHYLENE CHLORIDE	ND(<1.0)	ND
1,1,2,2-TETRACHLOROETHANE	ND(<1.0)	ND
TETRACHLOROETHENE	17.0	ND
TOLUENE	ND(12.5)	0.33 X
1,1,1-TRICHLOROETHANE	10.0	ND
1,1,2-TRICHLOROETHANE	ND(<1.0)	ND
TRICHLOROETHENE	10.0	ND
TRICHLOROFLUOROMETHANE	ND(<1.0)	ND
VINYL CHLORIDE	ND(<1.0)	ND
TOTAL XYLENES	12.5	19.0

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS
X - PRESENCE NOT CONFIRMED

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-37/GRW-5

<u>SAMPLER</u>	<u>OCD</u>	<u>GIANT</u>
<u>DATE</u>	<u>6/8/88</u>	<u>9/4/90</u>
<u>PARAMETER</u>		
DETECTION LIMIT	0.5	(BELOW)
BENZENE	68.0	140.0
BROMODICHLOROMETHANE	ND	NA
BROMOFORM	ND	NA
BROMOMETHANE	ND	NA
CARBON TETRACHLORIDE	ND	NA
CHLOROBENZENE	ND	ND (2.0)
CHLOROETHANE	ND	NA
CHLOROFORM	ND	NA
CHLOROMETHANE	ND	NA
DIBROMOCHLOROMETHANE	ND	NA
1,2-DICHLOROBENZENE	ND	ND (4.0)
1,3-DICHLOROBENZENE	ND	ND (4.0)
1,4-DICHLOROBENZENE	ND	ND (3.0)
DICHLORODIFLUOROMETHANE	ND	NA
1,1-DICHLOROETHANE	2.5	NA
1,2-DICHLOROETHANE	4.0	NA
1,1-DICHLOROETHENE	ND	NA
CIS-1,2-DICHLOROETHENE	7.0	NA
TRANS-1,2-DICHLOROETHENE	ND	NA
DICHLOROMETHANE	1.7	NA
1,2-DICHLOROPROPANE	ND	NA
ETHYLBENZENE	61.0	120.0
METHYLENE CHLORIDE	ND	NA
1,1,2,2-TETRACHLOROETHANE	ND	NA
TETRACHLOROETHENE	2.3	NA
TOLUENE	2.0	ND (2.0)
1,1,1-TRICHLOROETHANE	1.5	NA
1,1,2-TRICHLOROETHANE	ND	NA
TRICHLOROETHENE	2.4	NA
TRICHLOROFLUOROMETHANE	ND	NA
VINYL CHLORIDE	ND	NA
TOTAL XYLENES	43.0	14.0

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
*	-	DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-38/GRW-1

<u>SAMPLER</u>	OCD	GIANT
<u>DATE</u>	<u>6/8/88</u>	<u>9/4/90</u>
<u>PARAMETER</u>		
DETECTION LIMIT	0.5	<1.0
BENZENE	ND	ND
BROMODICHLOROMETHANE	ND	NA
BROMOFORM	ND	NA
BROMOMETHANE	ND	NA
CARBON TETRACHLORIDE	ND	NA
CHLOROBENZENE	ND	ND
CHLOROETHANE	ND	NA
CHLOROFORM	ND	NA
CHLOROMETHANE	ND	NA
DIBROMOCHLOROMETHANE	ND	NA
1,2-DICHLOROBENZENE	ND	ND
1,3-DICHLOROBENZENE	ND	ND
1,4-DICHLOROBENZENE	ND	ND
DICHLORODIFLUOROMETHANE	ND	NA
1,1-DICHLOROETHANE	ND	NA
1,2-DICHLOROETHANE	ND	NA
1,1-DICHLOROETHENE	ND	NA
CIS-1,2-DICHLOROETHENE	ND	NA
TRANS-1,2-DICHLOROETHENE	ND	NA
1,2 DICHLOROPROPANE	ND	NA
ETHYLBENZENE	ND	ND
METHYLENE CHLORIDE	ND	NA
1,1,2,2-TETRACHLOROETHANE	ND	NA
TETRACHLOROETHENE	ND	NA
TOLUENE	ND	ND
1,1,1-TRICHLOROETHANE	ND	NA
1,1,2-TRICHLOROETHANE	ND	NA
TRICHLOROETHENE	ND	NA
TRICHLOROFLUOROMETHANE	ND	NA
VINYL CHLORIDE	ND	NA
TOTAL XYLENES	ND	ND

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
**	-	SPLIT SAMPLE

MONITOR WELL GBR-40

OCD

6/8/88

0.5

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
**	-	SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-41

SAMPLER

OCD

DATE

6/8/88

PARAMETER

DETECTION LIMIT	5.0
BENZENE	25.0
BROMODICHLOROMETHANE	ND
BROMOFORM	ND
BROMOMETHANE	ND
CARBON TETRACHLORIDE	ND
CHLOROBENZENE	ND
CHLOROETHANE	ND
CHLOROFORM	ND
CHLOROMETHANE	ND
DIBROMOCHLOROMETHANE	ND
1,2-DICHLOROBENZENE	ND
1,3-DICHLOROBENZENE	ND
1,4-DICHLOROBENZENE	ND
DICHLORODIFLUOROMETHANE	ND
1,1-DICHLOROETHANE	ND
1,2-DICHLOROETHANE	ND
1,1-DICHLOROETHENE	ND
CIS-1,2-DICHLOROETHENE	ND
TRANS-1,2-DICHLOROETHENE	ND
1,2-DICHLOROPROPANE	ND
ETHYLBENZENE	474.0
METHYLENE CHLORIDE	ND
1,1,2,2-TETRACHLOROETHANE	ND
TETRACHLOROETHENE	ND
TOLUENE	16.0
1,1,1-TRICHLOROETHANE	ND
1,1,2-TRICHLOROETHANE	ND
TRICHLOROETHENE	ND
TRICHLOROFLUOROMETHANE	ND
VINYL CHLORIDE	ND
TOTAL XYLENES	224.0

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
**	-	SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-42/GRW-2

<u>SAMPLER</u>	GIANT	GIANT
<u>DATE</u>	<u>9/7/89</u>	<u>9/4/90</u>
<u>PARAMETER</u>		
DETECTION LIMIT	(BELOW)	<1.0
BENZENE	0.26	ND
BROMODICHLOROMETHANE	ND(<1.0)	NA
BROMOFORM	ND(2.0)	NA
BROMOMETHANE	ND(1.0)	NA
CARBON TETRACHLORIDE	ND(<1.0)	NA
CHLOROBENZENE	ND(<1.0)	ND
CHLOROETHANE	ND(<1.0)	NA
CHLOROFORM	ND(<1.0)	NA
CHLOROMETHANE	ND(<1.0)	NA
DIBROMOCHLOROMETHANE	ND(<1.0)	NA
1,2-DICHLOROBENZENE	ND(<1.0)	ND
1,3-DICHLOROBENZENE	ND(<1.0)	ND
1,4-DICHLOROBENZENE	ND(<1.0)	ND
DICHLORODIFLUOROMETHANE	NA	NA
1,1-DICHLOROETHANE	ND(<1.0)	NA
1,2-DICHLOROETHANE	0.36	NA
1,1-DICHLOROETHENE	ND(<1.0)	NA
CIS-1,2-DICHLOROETHENE	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA
TOTAL 1,2-DICHLOROETHENE	ND(<1.0)	NA
1,2-DICHLOROPROPANE	ND(<1.0)	NA
ETHYLBENZENE	1.6	ND
METHYLENE CHLORIDE	ND(<1.0)	NA
1,1,2,2-TETRACHLOROETHANE	ND(<1.0)	NA
TETRACHLOROETHENE	ND(<1.0)	NA
TOLUENE	ND(<1.0)	ND
1,1,1-TRICHLOROETHANE	ND(<1.0)	NA
1,1,2-TRICHLOROETHANE	ND(<1.0)	NA
TRICHLOROETHENE	ND(<1.0)	NA
TRICHLOROFLUOROMETHANE	1.4	NA
VINYL CHLORIDE	ND(<1.0)	NA
TOTAL XYLENES	0.23	ND
TR -	TRACE	
ND -	NOT DETECTED	
NA -	NOT ANALYZED	
** -	SPLIT SAMPLE	

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-43/GRW-4

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>9/7/89</u>	<u>4/2/90</u>	<u>7/17/90</u>	<u>9/4/90</u>	<u>10/4/90</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	(BELOW)	(BELOW)	(BELOW)	(BELOW)
BENZENE	950.0	440.0	120.0	450.0	770.0
BROMODICHLOROMETHANE	ND (10.0)	ND (2.0)	ND (2.5)	NA	ND (5.0)
BROMOFORM	ND (200.0)	ND (10.0)	ND (12.0)	NA	ND (25.0)
BROMOMETHANE	ND (100.0)	ND (24.0)	ND (30.0)	NA	ND (59.0)
CARBON TETRACHLORIDE	ND (20.0)	ND (2.4)	ND (3.0)	NA	ND (6.0)
CHLOROBENZENE	ND (10.0)	ND (4.0)	ND (2.0)	ND (2.0)	ND (10.0)
CHLOROETHANE	ND (50.0)	ND (10.0)	ND (13.0)	NA	ND (26.0)
CHLOROFORM	ND (10.0)	ND (2.0)	ND (2.5)	NA	ND (5.0)
CHLOROMETHANE	ND (50.0)	ND (6.0)	ND (7.5)	NA	ND (15.0)
DIBROMOCHLOROMETHANE	ND (20.0)	ND (4.0)	ND (5.0)	NA	ND (10.0)
1,2-DICHLOROBENZENE	ND (20.0)	ND (8.0)	ND (4.0)	ND (4.0)	ND (20.0)
1,3-DICHLOROBENZENE	ND (40.0)	ND (8.0)	ND (4.0)	ND (4.0)	ND (20.0)
1,4-DICHLOROBENZENE	ND (20.0)	ND (6.0)	ND (3.0)	ND (3.0)	ND (15.0)
1,1-DICHLOROETHANE	ND (10.0)	ND (10.0)	13.0	NA	ND (25.0)
1,2-DICHLOROETHANE	ND (10.0)	ND (2.0)	5.2	NA	6.1 X
1,1-DICHLOROETHENE	ND (10.0)	ND (4.0)	ND (5.0)	NA	ND (10.0)
CIS-1,2-DICHLOROETHENE	NA	21.0	46.0	NA	25.0 X
TRANS-1,2-DICHLOROETHENE	NA	ND (4.0)	ND (5.0)	NA	ND (10.0)
TOTAL 1,2-DICHLOROETHENE	28.0	NA	NA	NA	NA
1,2-DICHLOROPROPANE	ND (10.0)	ND (2.0)	ND (2.5)	NA	ND (5.0)
ETHYLBENZENE	200.0	65.0	24.0	150.0	160.0
METHYLENE CHLORIDE	ND (40.0)	ND (8.0)	ND (10.0)	NA	22.0 X
1,1,2,2-TETRACHLOROETHANE	ND (20.0)	ND (3.0)	ND (3.8)	NA	ND (7.5)
TETRACHLOROETHENE	ND (10.0)	ND (2.0)	ND (2.5)	NA	ND (5.0)
TOLUENE	ND (30.0)	ND (4.0)	ND (2.0)	5.2	ND (10.0)
1,1,1-TRICHLOROETHANE	71.0	ND (4.0)	ND (5.0)	NA	ND (10.0)
1,1,2-TRICHLOROETHANE	ND (20.0)	ND (4.0)	ND (5.0)	NA	ND (10.0)
TRICHLOROETHENE	ND (20.0)	8.6	10.0	NA	ND (10.0)
TRICHLOROFLUOROMETHANE	ND (10.0)	ND (4.0)	ND (5.0)	NA	11.0 X
VINYL CHLORIDE	ND (20.0)	ND (4.0)	ND (5.0)	NA	ND (10.0)
TOTAL XYLENES	200.0	ND (4.0)	8.5	970.0	ND (10.0)

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE
X - PRESENCE NOT CONFIRMED

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-43/GRW-4

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>1/24/91</u>	<u>4/8/91</u>	<u>10/1/91</u>	<u>1/7/92</u>	<u>4/8/92</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	(BELOW)	(BELOW)	<1.0	<1.0
BENZENE	600.0	1700.0	570.0	22.0	ND
BROMODICHLOROMETHANE	ND (20.0)	ND (40.0)	ND (1.0)	ND	ND
BROMOFORM	ND (20.0)	ND (40.0)	ND (1.0)	ND	ND
BROMOMETHANE	ND (20.0)	ND (40.0)	ND (1.0)	ND	ND
CARBON TETRACHLORIDE	ND (20.0)	ND (40.0)	ND (1.0)	ND	ND
CHLOROBENZENE	ND (50.0)	ND (100.0)	ND (2.5)	ND	ND
CHLOROETHANE	ND (20.0)	ND (40.0)	ND (1.0)	ND	ND
CHLOROFORM	ND (20.0)	ND (40.0)	3.0	ND	ND
CHLOROMETHANE	ND (20.0)	ND (40.0)	ND (1.0)	ND	ND
DIBROMOCHLOROMETHANE	ND (20.0)	ND (40.0)	ND (1.0)	ND	ND
1,2-DICHLOROBENZENE	ND (50.0)	ND (100.0)	ND (2.5)	ND	ND
1,3-DICHLOROBENZENE	ND (50.0)	ND (100.0)	ND (2.5)	ND	ND
1,4-DICHLOROBENZENE	ND (50.0)	ND (100.0)	ND (2.5)	ND	ND
DICHLORODIFLUOROMETHANE	ND (20.0)	ND (40.0)	ND (1.0)	ND	ND
1,1-DICHLOROETHANE	ND (20.0)	ND (40.0)	2.0	0.4	1.6
1,2-DICHLOROETHANE	ND (20.0)	ND (40.0)	ND (1.0)	0.9	1.0
1,1-DICHLOROETHENE	ND (20.0)	ND (40.0)	ND (1.0)	ND	ND
TOTAL 1,2-DICHLOROETHENE	ND (20.0)	ND (40.0)	3.0	1.2	
1,2-DICHLOROPROPANE	ND (20.0)	ND (40.0)	ND (1.0)	ND	ND
ETHYLBENZENE	150.0	450.0	49.0	2.3	ND
METHYLENE CHLORIDE	ND (200.0)	ND (400.0)	ND (10.0)	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND (20.0)	ND (40.0)	ND (1.0)	ND	ND
TETRACHLOROETHENE	ND (20.0)	ND (40.0)	2.0	0.3	ND
TOLUENE	ND (50.0)	ND (100.0)	3.0	ND	ND
1,1,1-TRICHLOROETHANE	ND (20.0)	ND (40.0)	2.0	ND	ND
1,1,2-TRICHLOROETHANE	ND (20.0)	ND (40.0)	ND (1.0)	ND	ND
TRICHLOROETHENE	ND (20.0)	ND (40.0)	3.0	0.4	0.4
TRICHLOROFLUOROMETHANE	ND (50.0)	ND (100.0)	ND (2.5)	ND	ND
VINYL CHLORIDE	ND (20.0)	ND (40.0)	ND (1.0)	ND	ND
TOTAL XYLENES	ND (50.0)	690.0	30.0	1.3	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-44/GRW-6

<u>SAMPLER</u>	OCD	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>6/8/88</u>	<u>9/7/89</u>	<u>4/2/90</u>	<u>7/17/90</u>	<u>9/4/90</u>
<u>PARAMETER</u>					
DETECTION LIMIT	0.5	<1.0	<1.0	(BELOW)	(BELOW)
BENZENE	10.0	10.8	16.0	120.0	220.0
BROMODICHLOROMETHANE	ND	ND	ND	ND(<1.0)	NA
BROMOFORM	ND	ND	ND	ND(1.2)	NA
BROMOMETHANE	ND	ND	ND	ND(<1.0)	NA
CARBON TETRACHLORIDE	ND	ND	ND	ND(<1.0)	NA
CHLOROBENZENE	ND	ND	ND	ND(2.0)	ND(2.0)
CHLOROETHANE	ND	ND	ND	ND(<1.0)	NA
CHLOROFORM	ND	ND	ND	ND(<1.0)	NA
CHLOROMETHANE	ND	ND	ND	ND(<1.0)	NA
DIBROMOCHLOROMETHANE	ND	ND	ND	ND(<1.0)	NA
1,2-DICHLOROBENZENE	ND	ND	ND	ND(4.0)	ND(4.0)
1,3-DICHLOROBENZENE	ND	ND	ND	ND(4.0)	ND(4.0)
1,4-DICHLOROBENZENE	ND	ND	ND	ND(3.0)	ND(3.0)
DICHLORODIFLUOROMETHANE	ND	NA	NA	ND(<1.0)	NA
1,1-DICHLOROETHANE	5.5	1.4	2.1	1.9	NA
1,2-DICHLOROETHANE	2.4	3.5	7.9	5.1	NA
1,1-DICHLOROETHENE	ND	ND	ND	ND(<1.0)	NA
CIS-1,2-DICHLOROETHENE	20.0	NA	ND	7.8	NA
TRANS-1,2-DICHLOROETHENE	ND	NA	ND	ND(<1.0)	NA
TOTAL 1,2-DICHLOROETHENE	NA	0.48	NA	NA	NA
DICHLOROMETHANE	4.0	ND	ND	ND(<1.0)	NA
1,2-DICHLOROPROPANE	ND	ND	ND	ND(<1.0)	NA
ETHYLBENZENE	ND	16.0	ND	24.0	67.0
METHYLENE CHLORIDE	ND	1.1	1.1	ND(<1.0)	NA
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND(<1.0)	NA
TETRACHLOROETHENE	6.7	ND	2.7	1.7	NA
TOLUENE	0.7	ND	0.65	ND(2.0)	ND(2.0)
1,1,1-TRICHLOROETHANE	5.5	0.97	1.6	0.41	NA
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND(<1.0)	NA
TRICHLOROETHENE	3.6	0.77	2.3	1.5	NA
TRICHLOROFLUOROMETHANE	ND	ND	ND	0.34	NA
VINYL CHLORIDE	ND	ND	ND	ND(<1.0)	NA
TOTAL XYLENES	ND	15.0	3.4	8.5	46.0
TR -	TRACE				
ND -	NOT DETECTED				
NA -	NOT ANALYZED				
** -	SPLIT SAMPLE				

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-44/GRW-6

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>10/4/90</u>	<u>1/24/91</u>	<u>4/8/91</u>	<u>7/3/91</u>	<u>10/1/91</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	<1.0	<1.0	<1.0	<1.0
BENZENE	300.0	93.0	9.9	66.0	13.5
BROMODICHLOROMETHANE	ND (1.0)	ND	ND	ND	ND
BROMOFORM	ND (5.0)	ND	ND	ND	ND
BROMOMETHANE	ND (12.0)	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND (1.2)	ND	ND	ND	ND
CHLOROBENZENE	ND (2.0)	ND	ND	ND	ND
CHLOROETHANE	ND (5.2)	ND	ND	ND	ND
CHLOROFORM	ND (1.0)	ND	ND	ND	0.6
CHLOROMETHANE	ND (3.0)	3.5	ND	ND	ND
DIBROMOCHLOROMETHANE	ND (2.0)	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND (4.0)	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND (4.0)	ND	ND	ND	ND
1,4-DICHLOROBENZENE	20.0	0.60	ND	ND	ND
1,1-DICHLOROETHANE	ND (5.0)	1.7	1.2	1.5	1.3
1,2-DICHLOROETHANE	6.1	4.8	4.1	2.4	ND
1,1-DICHLOROETHENE	ND (2.0)	ND	ND	ND	0.3
CIS-1,2-DICHLOROETHENE	4.5	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	ND (2.0)	NA	NA	NA	NA
TOTAL 1,2-DICHLOROETHENE	NA	9.0	11.0	4.6	3.7
1,2-DICHLOROPROPANE	ND (1.0)	ND	ND	ND	ND
ETHYLBENZENE	47.0	24.0	3.3	46.0	0.8
METHYLENE CHLORIDE	8.1 X	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND (1.5)	ND	ND	ND	ND
TETRACHLOROETHENE	1.6 X	1.6	1.9	0.9	1.2
TOLUENE	ND (2.0)	0.79	ND	2.0	0.6
1,1,1-TRICHLOROETHANE	ND (2.0)	0.27	0.22	0.3	0.7
1,1,2-TRICHLOROETHANE	ND (2.0)	ND	ND	ND	ND
TRICHLOROETHENE	ND (2.0)	2.0	2.3	1.1	1.1
TRICHLOROFLUOROMETHANE	ND (2.0)	ND	ND	ND	ND
VINYL CHLORIDE	ND (2.0)	ND	ND	ND	ND
TOTAL XYLENES	6.8	ND	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE
X - PRESENCE NOT CONFIRMED

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-44/RW-6

<u>SAMPLER</u>	GIANT	GIANT
<u>DATE</u>	<u>1/7/92</u>	<u>4/9/92</u>
<u>PARAMETER</u>		
DETECTION LIMIT	<1.0	<1.0
BENZENE	20.0	ND
BROMODICHLOROMETHANE	ND	NA
BROMOFORM	ND	NA
BROMOMETHANE	ND	NA
CARBON TETRACHLORIDE	ND	NA
CHLOROBENZENE	ND	NA
CHLOROETHANE	ND	NA
CHLOROFORM	ND	NA
CHLOROMETHANE	ND	NA
DIBROMOCHLOROMETHANE	ND	NA
1,2-DICHLOROBENZENE	ND	ND
1,3-DICHLOROBENZENE	ND	ND
1,4-DICHLOROBENZENE	ND	ND
DICHLORODIFLUOROMETHANE	ND	NA
1,1-DICHLOROETHANE	0.6	NA
1,2-DICHLOROETHANE	1.2	NA
1,1-DICHLOROETHENE	ND	NA
TOTAL 1,2-DICHLOROETHENE	2.1	NA
1,2-DICHLOROPROPANE	ND	NA
ETHYLBENZENE	1.6	ND
METHYLENE CHLORIDE	ND	NA
1,1,2,2-TETRACHLOROETHANE	ND	NA
TETRACHLOROETHENE	0.5	NA
TOLUENE	ND	ND
1,1,1-TRICHLOROETHANE	ND	NA
1,1,2-TRICHLOROETHANE	ND	NA
TRICHLOROETHENE	0.5	NA
TRICHLOROFLUOROMETHANE	ND	NA
VINYL CHLORIDE	ND	NA
TOTAL XYLENES	ND	ND

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
**	-	SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-47

<u>SAMPLER</u>	GIANT	GIANT	GIANT
<u>DATE</u>	<u>3/14/88</u>	<u>3/15/89</u>	<u>6/13/89</u>
<u>PARAMETER</u>			
DETECTION LIMIT	(BELOW)	(BELOW)	(BELOW)
BENZENE	ND(<1.0)	ND(<1.0)	17.7
BROMODICHLOROMETHANE	ND(<1.0)	ND(<1.0)	ND(1.0)
BROMOFORM	ND(<1.0)	ND(<1.0)	ND(1.0)
BROMOMETHANE	ND(1.0)	ND(1.0)	ND(1.0)
CARBON TETRACHLORIDE	ND(<1.0)	ND(<1.0)	ND(1.0)
CHLOROBENZENE	ND(<1.0)	ND(<1.0)	ND(<1.0)
CHLOROETHANE	ND(1.0)	ND(1.0)	ND(1.0)
CHLOROFORM	ND(<1.0)	ND(<1.0)	1.0
CHLOROMETHANE	ND(1.0)	ND(1.0)	ND(1.0)
DIBROMOCHLOROMETHANE	ND(<1.0)	ND(<1.0)	ND(1.0)
1,2-DICHLOROBENZENE	ND(<1.0)	ND(<1.0)	ND(<1.0)
1,3-DICHLOROBENZENE	ND(<1.0)	ND(<1.0)	ND(<1.0)
1,4-DICHLOROBENZENE	ND(<1.0)	ND(<1.0)	ND(<1.0)
DICHLORODIFLUOROMETHANE	ND(1.0)	ND(1.0)	ND(1.0)
1,1-DICHLOROETHANE	ND(<1.0)	0.81	ND(1.0)
1,2-DICHLOROETHANE	ND(<1.0)	0.45	9.3
1,1-DICHLOROETHENE	ND(<1.0)	ND(<1.0)	ND(1.0)
CIS-1,2-DICHLOROETHENE	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	ND(<1.0)	ND(<1.0)	ND(1.0)
1,2-DICHLOROPROPANE	ND(<1.0)	ND(<1.0)	ND(1.0)
ETHYLBENZENE	ND(<1.0)	ND(<1.0)	15.5
METHYLENE CHLORIDE	3.1	0.5	4.0
1,1,2,2-TETRACHLOROETHANE	ND(<1.0)	ND(<1.0)	ND(1.0)
TETRACHLOROETHENE	ND(<1.0)	2.0	ND(1.0)
TOLUENE	ND(<1.0)	0.26	22.5
1,1,1-TRICHLOROETHANE	ND(<1.0)	0.24	ND(1.0)
1,1,2-TRICHLOROETHANE	ND(<1.0)	ND(<1.0)	ND(1.0)
TRICHLOROETHENE	ND(<1.0)	1.2	ND(1.0)
TRICHLOROFLUOROMETHANE	ND(<1.0)	ND(<1.0)	ND(1.0)
VINYL CHLORIDE	ND(1.0)	ND(1.0)	ND(1.0)
TOTAL XYLENES	ND(<1.0)	ND(<1.0)	56.0

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-48

<u>SAMPLER</u>	GIANT	GIANT	GIANT*	GIANT	OCD
<u>DATE</u>	<u>11/8/88</u>	<u>3/14/89</u>	<u>3/14/89</u>	<u>6/13/89</u>	<u>4/9/90</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	(BELOW)	(BELOW)	(BELOW)	2.5
BENZENE	ND (2.0)	0.24	NA	ND (<1.0)	ND
BROMODICHLOROMETHANE	ND (1.0)	ND (<1.0)	ND (<1.0)	ND	ND
BROMOFORM	ND (3.0)	ND (<1.0)	ND (<1.0)	ND	ND
BROMOMETHANE	ND (1.2)	ND (1.0)	ND (1.0)	ND (1.0)	ND
CARBON TETRACHLORIDE	ND (1.0)	ND (<1.0)	ND (<1.0)	ND	ND
CHLOROBENZENE	ND (3.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND
CHLOROETHANE	ND (<1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND
CHLOROFORM	ND (<1.0)	0.5	0.5	ND (1.0)	7.5
CHLOROMETHANE	ND (<1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND
DIBROMOCHLOROMETHANE	ND (2.0)	ND (<1.0)	ND (<1.0)	ND (1.0)	ND
1,2-DICHLOROBENZENE	ND (5.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND
1,3-DICHLOROBENZENE	ND (3.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND
1,4-DICHLOROBENZENE	ND (4.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND
DICHLORODIFLUOROMETHANE	NA	ND (1.0)	ND (1.0)	ND (1.0)	ND
1,1-DICHLOROETHANE	180.0	3.0	3.3	5.2	ND
1,2-DICHLOROETHANE	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (1.0)	ND
1,1-DICHLOROETHENE	ND (1.0)	ND (<1.0)	ND (<1.0)	ND (1.0)	ND
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	65.0
TRANS-1,2-DICHLOROETHENE	ND (2.0)	ND (<1.0)	ND (<1.0)	ND (1.0)	ND
1,2-DICHLOROPROPANE	ND (1.0)	ND (<1.0)	ND (<1.0)	ND (1.0)	ND
ETHYLBENZENE	ND (3.0)	ND (<1.0)	NA	ND (<1.0)	ND
METHYLENE CHLORIDE	0.3	0.6	1.1	ND (1.0)	ND
1,1,2,2-TETRACHLOROETHANE	ND (1.2)	ND (<1.0)	ND (<1.0)	ND (1.0)	ND
TETRACHLOROETHENE	31.0	7.4	7.6	26.1	11.3
TOLUENE	ND (2.0)	0.23	NA	ND (<1.0)	ND
1,1,1-TRICHLOROETHANE	ND (<1.0)	0.69	0.73	2.4	ND
1,1,2-TRICHLOROETHANE	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (1.0)	ND
TRICHLOROETHENE	25.0	5.4	6.0	14.7	20.8
TRICHLOROFLUOROMETHANE	ND (1.0)	ND (<1.0)	ND (<1.0)	ND (1.0)	ND
VINYL CHLORIDE	ND (<1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND
TOTAL XYLENES	ND (2.0)	ND (<1.0)	NA	ND (<1.0)	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-48

<u>SAMPLER</u>	GIANT	GIANT	GIANT
<u>DATE</u>	<u>6/18/90</u>	<u>12/16/91</u>	<u>7/15/92</u>
<u>PARAMETER</u>			
DETECTION LIMIT	(BELOW)	<1.0	(BELOW)
BENZENE	5.7	ND	ND (2.5)
BROMODICHLOROMETHANE	ND (2.5)	ND	ND (1.0)
BROMOFORM	ND (13.0)	ND	ND (1.0)
BROMOMETHANE	ND (30.0)	ND	ND (1.0)
CARBON TETRACHLORIDE	3.3	ND	ND (1.0)
CHLOROBENZENE	ND (5.0)	ND	ND (2.5)
CHLOROETHANE	ND (13.0)	ND	ND (1.0)
CHLOROFORM	ND (2.5)	0.5	ND (1.0)
CHLOROMETHANE	ND (7.5)	ND	ND (1.0)
DIBROMOCHLOROMETHANE	ND (5.0)	ND	ND (1.0)
1,2-DICHLOROBENZENE	ND (10.0)	ND	ND (2.5)
1,3-DICHLOROBENZENE	ND (10.0)	ND	ND (2.5)
1,4-DICHLOROBENZENE	ND (7.5)	ND	ND (2.5)
DICHLORODIFLUOROMETHANE	NA	ND	ND (1.0)
1,1-DICHLOROETHANE	14.0	2.7	4.0
1,2-DICHLOROETHANE	ND (2.5)	ND	ND (1.0)
1,1-DICHLOROETHENE	14.0	ND	ND (1.0)
CIS-1,2-DICHLOROETHENE	220.0	NA	NA
TRANS-1,2-DICHLOROETHENE	ND (5.0)	NA	NA
TOTAL 1,2-DICHLOROETHENE	NA	140.0	120.0
1,2-DICHLOROPROPANE	ND (2.5)	ND	ND (1.0)
ETHYLBENZENE	ND (5.0)	ND	ND (2.5)
METHYLENE CHLORIDE	ND (10.0)	ND	ND (10.0)
1,1,2,2-TETRACHLOROETHANE	ND (3.8)	ND	ND (1.0)
TETRACHLOROETHENE	32.0	11.0	7.0
TOLUENE	ND (5.0)	ND	ND (2.5)
1,1,1-TRICHLOROETHANE	6.2	0.5	ND (1.0)
1,1,2-TRICHLOROETHANE	ND (5.0)	ND	ND (1.0)
TRICHLOROETHENE	30.0	7.7	5.0
TRICHLOROFLUOROMETHANE	ND (5.0)	0.4	ND (2.5)
VINYL CHLORIDE	ND (5.0)	ND	ND (1.0)
TOTAL XYLENES	ND (5.0)	ND	ND (2.5)

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-49

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	OCD
<u>DATE</u>	<u>11/8/88</u>	<u>3/14/89</u>	<u>6/14/89</u>	<u>12/11/89</u>	<u>4/9/90</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	(BELOW)	(BELOW)	(BELOW)	1.0
BENZENE	ND(<1.0)	0.63	ND(<1.0)	74.0	ND
BROMODICHLOROMETHANE	ND(1.0)	ND(<1.0)	ND(1.0)	ND(<1.0)	ND
BROMOFORM	ND(3.0)	ND(<1.0)	ND(1.0)	ND(2.5)	ND
BROMOMETHANE	ND(12.0)	ND(1.0)	ND(1.0)	ND(5.9)	ND
CARBON TETRACHLORIDE	ND(1.0)	ND(<1.0)	ND(1.0)	ND(<1.0)	ND
CHLOROBENZENE	ND(3.0)	ND(<1.0)	ND(<1.0)	ND(1.0)	ND
CHLOROETHANE	ND(5.0)	ND(1.0)	ND(1.0)	ND(2.6)	ND
CHLOROFORM	6.9	1.0	ND(1.0)	ND(<1.0)	ND
CHLOROMETHANE	ND(3.0)	ND(1.0)	ND(1.0)	ND(1.5)	ND
DIBROMOCHLOROMETHANE	ND(2.0)	ND(<1.0)	ND(1.0)	ND(1.0)	ND
1,2-DICHLOROBENZENE	ND(5.0)	ND(<1.0)	ND(<1.0)	ND(2.0)	ND
1,3-DICHLOROBENZENE	ND(3.0)	ND(<1.0)	ND(<1.0)	ND(2.0)	ND
1,4-DICHLOROBENZENE	ND(4.0)	ND(<1.0)	ND(<1.0)	ND(1.5)	ND
DICHLORODIFLUOROMETHANE	NA	ND(1.0)	ND(1.0)	NA	ND
1,1-DICHLOROETHANE	6.8	10.4	ND(1.0)	2.8	1.2
1,2-DICHLOROETHANE	ND(<1.0)	0.07	ND(1.0)	ND(<1.0)	ND
1,1-DICHLOROETHENE	ND(1.0)	ND(<1.0)	ND(1.0)	ND(1.0)	ND
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	86.7
TRANS-1,2-DICHLOROETHENE	88.0	0.3	ND(1.0)	150.0	ND
1,2-DICHLOROPROPANE	ND(1.0)	ND(<1.0)	ND(1.0)	ND(<1.0)	ND
ETHYLBENZENE	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(1.0)	ND
METHYLENE CHLORIDE	ND(3.0)	2.5	ND(1.0)	ND(2.0)	ND
1,1,2,2-TETRACHLOROETHANE	ND(1.2)	ND(<1.0)	ND(1.0)	ND(<1.0)	ND
TETRACHLOROETHENE	15.0	25.3	4.2	25.0	11.9
TOLUENE	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(1.0)	ND
1,1,1-TRICHLOROETHANE	6.6	3.5	ND(1.0)	1.0	ND
1,1,2-TRICHLOROETHANE	ND(<1.0)	ND(<1.0)	ND(1.0)	ND(1.0)	ND
TRICHLOROETHENE	11.0	24.9	2.7	14.0	7.2
TRICHLOROFLUOROMETHANE	ND(1.0)	ND(<1.0)	ND(1.0)	ND(1.0)	ND
VINYL CHLORIDE	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND
TOTAL XYLENES	ND(<1.0)	0.28	ND(<1.0)	ND(1.0)	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-49

<u>SAMPLER</u>	GIANT	GIANT	GIANT
<u>DATE</u>	<u>6/18/90</u>	<u>12/16/91</u>	<u>7/15/92</u>
<u>PARAMETER</u>			
DETECTION LIMIT	(BELOW)	<1.0	<1.0
BENZENE	ND (5.0)	ND	ND
BROMODICHLOROMETHANE	ND (2.5)	ND	ND
BROMOFORM	ND (12.0)	ND	ND
BROMOMETHANE	ND (30.0)	ND	ND
CARBON TETRACHLORIDE	3.5	ND	ND
CHLOROBENZENE	ND (5.0)	ND	ND
CHLOROETHANE	ND (13.0)	ND	ND
CHLOROFORM	2.5	ND	ND
CHLOROMETHANE	ND (7.5)	ND	ND
DIBROMOCHLOROMETHANE	ND (5.0)	ND	ND
1,2-DICHLOROBENZENE	ND (10.0)	ND	ND
1,3-DICHLOROBENZENE	ND (10.0)	ND	ND
1,4-DICHLOROBENZENE	ND (7.5)	ND	ND
DICHLORODIFLUOROMETHANE	NA	ND	ND
1,1-DICHLOROETHANE	ND (12.0)	6.3	2.9
1,2-DICHLOROETHANE	ND (2.5)	ND	ND
1,1-DICHLOROETHENE	ND (5.0)	0.3	ND
CIS-1,2-DICHLOROETHENE	120.0	NA	NA
TRANS-1,2-DICHLOROETHENE	ND (5.0)	NA	NA
TOTAL 1,2-DICHLOROETHENE	NA	120.0	74.0
1,2-DICHLOROPROPANE	ND (2.5)	ND	ND
ETHYLBENZENE	ND (5.0)	ND	ND
METHYLENE CHLORIDE	21.0	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND (3.8)	ND	ND
TETRACHLOROETHENE	22.0	17.0	4.6
TOLUENE	ND (5.0)	ND	ND
1,1,1-TRICHLOROETHANE	ND (5.0)	0.7	0.2
1,1,2-TRICHLOROETHANE	ND (5.0)	ND	ND
TRICHLOROETHENE	14.0	12.0	3.6
TRICHLOROFLUOROMETHANE	ND (5.0)	0.2	ND
VINYL CHLORIDE	ND (5.0)	ND	ND
TOTAL XYLENES	ND (5.0)	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-50

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>11/8/88</u>	<u>3/14/89</u>	<u>6/13/89</u>	<u>12/11/89</u>	<u>6/18/90</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	(BELOW)	(BELOW)	<1.0	<1.0
BENZENE	0.8	ND (<1.0)	ND (<1.0)	ND	ND
BROMODICHLOROMETHANE	ND	ND (<1.0)	ND (1.0)	ND	ND
BROMOFORM	ND	ND (<1.0)	ND (1.0)	ND	ND
BROMOMETHANE	ND	ND (1.0)	ND (1.0)	ND	ND
CARBON TETRACHLORIDE	ND	ND (<1.0)	ND (1.0)	ND	ND
CHLOROBENZENE	ND	ND (<1.0)	ND (<1.0)	ND	ND
CHLOROETHANE	ND	ND (1.0)	ND (1.0)	ND	ND
CHLOROFORM	0.2	ND (<1.0)	ND (1.0)	ND	ND
CHLOROMETHANE	ND	ND (1.0)	ND (1.0)	ND	ND
DIBROMOCHLOROMETHANE	ND	ND (<1.0)	ND (1.0)	ND	ND
1,2-DICHLOROBENZENE	ND	ND (<1.0)	ND (<1.0)	ND	ND
1,3-DICHLOROBENZENE	ND	ND (<1.0)	ND (<1.0)	ND	ND
1,4-DICHLOROBENZENE	ND	ND (<1.0)	ND (<1.0)	ND	ND
DICHLORODIFLUOROMETHANE	NA	ND (1.0)	ND (1.0)	ND	ND
1,1-DICHLOROETHANE	0.7	0.1	ND (1.0)	ND	ND
1,2-DICHLOROETHANE	ND	ND (<1.0)	ND (1.0)	ND	ND
1,1-DICHLOROETHENE	ND	ND (<1.0)	ND (1.0)	ND	ND
CIS-1,2-DICHLOROETHENE	NA	NA	NA	ND	0.37
TRANS-1,2-DICHLOROETHENE	0.3	ND (<1.0)	ND (1.0)	0.27	ND
1,2-DICHLOROPROPANE	ND	ND (<1.0)	ND (1.0)	ND	ND
ETHYLBENZENE	ND	ND (<1.0)	ND (<1.0)	ND	ND
METHYLENE CHLORIDE	0.3	1.2	ND (1.0)	ND	0.43
1,1,2,2-TETRACHLOROETHANE	ND	ND (<1.0)	ND (1.0)	ND	0.16
TETRACHLOROETHENE	0.7	0.19	ND (1.0)	1.2	0.57
TOLUENE	ND	ND (<1.0)	ND (<1.0)	ND	ND
1,1,1-TRICHLOROETHANE	0.6	ND (<1.0)	ND (1.0)	0.26	ND
1,1,2-TRICHLOROETHANE	ND	ND (<1.0)	ND (1.0)	ND	ND
TRICHLOROETHENE	0.2	ND (<1.0)	ND (1.0)	ND	0.31
TRICHLOROFLUOROMETHANE	ND	ND (<1.0)	ND (1.0)	ND	ND
VINYL CHLORIDE	ND	ND (1.0)	ND (1.0)	ND	ND
TOTAL XYLENES	ND	ND (<1.0)	6.0	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-50

<u>SAMPLER</u>	GIANT	GIANT
<u>DATE</u>	<u>12/16/91</u>	<u>7/15/92</u>
<u>PARAMETER</u>		
DETECTION LIMIT	<1.0	<1.0
BENZENE	ND	ND
BROMODICHLOROMETHANE	ND	ND
BROMOFORM	ND	ND
BROMOMETHANE	ND	ND
CARBON TETRACHLORIDE	ND	ND
CHLOROBENZENE	ND	ND
CHLOROETHANE	ND	ND
CHLOROFORM	ND	ND
CHLOROMETHANE	ND	ND
DIBROMOCHLOROMETHANE	ND	ND
1,2-DICHLOROBENZENE	ND	ND
1,3-DICHLOROBENZENE	ND	ND
1,4-DICHLOROBENZENE	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND
1,1-DICHLOROETHANE	ND	ND
1,2-DICHLOROETHANE	ND	ND
1,1-DICHLOROETHENE	ND	ND
TOTAL 1,2-DICHLOROETHENE	0.9	0.5
1,2-DICHLOROPROPANE	ND	ND
ETHYLBENZENE	ND	ND
METHYLENE CHLORIDE	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND
TETRACHLOROETHENE	ND	0.3
TOLUENE	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND
TRICHLOROETHENE	ND	ND
TRICHLOROFLUOROMETHANE	0.3	ND
VINYL CHLORIDE	ND	ND
TOTAL XYLENES	ND	ND

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
**	-	SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-51/GRW-7

<u>SAMPLER</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT*</u>	<u>GIANT</u>
<u>DATE</u>	<u>11/8/88</u>	<u>6/12/89</u>	<u>6/12/89</u>	<u>2/6/91</u>
<u>PARAMETER</u>				
DETECTION LIMIT	<1.0	(BELOW)	(BELOW)	<1.0
BENZENE	ND	ND(<1.0)	ND(<1.0)	ND
BROMODICHLOROMETHANE	ND	ND(1.0)	ND(1.0)	ND
BROMOFORM	ND	ND(1.0)	ND(1.0)	ND
BROMOMETHANE	ND	ND(1.0)	ND(1.0)	ND
CARBON TETRACHLORIDE	ND	ND(1.0)	ND(1.0)	ND
CHLOROBENZENE	ND	ND(<1.0)	ND(<1.0)	ND
CHLOROETHANE	ND	ND(1.0)	ND(1.0)	ND
CHLOROFORM	0.5	ND(1.0)	ND(1.0)	ND
CHLOROMETHANE	ND	ND(1.0)	ND(1.0)	ND
DIBROMOCHLOROMETHANE	ND	ND(1.0)	ND(1.0)	ND
1,2-DICHLOROBENZENE	ND	ND(<1.0)	ND(<1.0)	ND
1,3-DICHLOROBENZENE	ND	ND(<1.0)	ND(<1.0)	ND
1,4-DICHLOROBENZENE	ND	ND(<1.0)	ND(<1.0)	ND
DICHLORODIFLUOROMETHANE	ND	ND(1.0)	ND(1.0)	ND
1,1-DICHLOROETHANE	0.6	3.3	2.0	ND
1,2-DICHLOROETHANE	ND	ND(1.0)	ND(1.0)	ND
1,1-DICHLOROETHENE	ND	ND(1.0)	ND(1.0)	ND
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	0.7	ND(1.0)	ND(1.0)	NA
TOTAL 1,2-DICHLOROETHENE	NA	NA	NA	ND
1,2-DICHLOROPROPANE	ND	ND(1.0)	ND(1.0)	ND
ETHYLBENZENE	ND	ND(<1.0)	ND(<1.0)	ND
METHYLENE CHLORIDE	ND	ND(10.0)	ND(10.0)	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND(1.0)	ND(1.0)	ND
TETRACHLOROETHENE	2.1	ND(1.0)	ND(1.0)	0.4
TOLUENE	ND	ND(<1.0)	ND(<1.0)	ND
1,1,1-TRICHLOROETHANE	1.0	1.3	1.0	2.1
1,1,2-TRICHLOROETHANE	ND	ND(1.0)	ND(1.0)	ND
TRICHLOROETHENE	ND	ND(1.0)	ND(1.0)	ND
TRICHLOROFLUOROMETHANE	ND	ND(1.0)	ND(1.0)	ND
VINYL CHLORIDE	ND	ND(1.0)	ND(1.0)	ND
TOTAL XYLENES	ND	1.4	1.9	ND

TR - TRACE

ND - NOT DETECTED

NA - NOT ANALYZED

* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-52

<u>SAMPLER</u>	GIANT	GIANT	GIANT*	GIANT	GIANT
<u>DATE</u>	<u>11/8/88</u>	<u>6/12/89</u>	<u>6/12/89</u>	<u>9/7/89</u>	<u>2/4/91</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	(BELOW)	(BELOW)	<1.0	<1.0
BENZENE	0.8	7.6	5.4	ND	ND
BROMODICHLOROMETHANE	ND	ND (1.0)	ND (1.0)	ND	ND
BROMOFORM	ND	ND (1.0)	ND (1.0)	ND	ND
BROMOMETHANE	ND	ND (1.0)	ND (1.0)	ND	ND
CARBON TETRACHLORIDE	ND	ND (1.0)	ND (1.0)	ND	ND
CHLOROBENZENE	ND	ND (<1.0)	ND (<1.0)	ND	ND
CHLOROETHANE	ND	ND (1.0)	ND (1.0)	ND	ND
CHLOROFORM	0.7	ND (1.0)	ND (1.0)	ND	ND
CHLOROMETHANE	ND	ND (1.0)	ND (1.0)	ND	ND
DIBROMOCHLOROMETHANE	ND	ND (1.0)	ND (1.0)	ND	ND
1,2-DICHLOROBENZENE	ND	ND (<1.0)	ND (<1.0)	ND	ND
1,3-DICHLOROBENZENE	ND	ND (<1.0)	ND (<1.0)	ND	ND
1,4-DICHLOROBENZENE	ND	ND (<1.0)	ND (<1.0)	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND (1.0)	ND (1.0)	ND	ND
1,1-DICHLOROETHANE	ND	ND (1.0)	ND (1.0)	ND	ND
1,2-DICHLOROETHANE	ND	ND (1.0)	ND (1.0)	ND	ND
1,1-DICHLOROETHENE	ND	ND (1.0)	ND (1.0)	ND	ND
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	ND	ND (1.0)	ND (1.0)	NA	NA
TOTAL 1,2-DICHLOROETHENE	NA	NA	NA	NA	ND
1,2-DICHLOROPROPANE	ND	ND (1.0)	ND (1.0)	ND	ND
ETHYLBENZENE	ND	ND (<1.0)	ND (<1.0)	ND	ND
METHYLENE CHLORIDE	ND	ND (1.0)	ND (1.0)	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND (1.0)	ND (1.0)	ND	ND
TETRACHLOROETHENE	ND	1.3	1.3	ND	ND
TOLUENE	ND	ND (<1.0)	ND (<1.0)	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND (1.0)	ND (1.0)	ND	0.7
1,1,2-TRICHLOROETHANE	ND	ND (1.0)	ND (1.0)	ND	ND
TRICHLOROETHENE	ND	ND (1.0)	ND (1.0)	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND (1.0)	ND (1.0)	1.1	ND
VINYL CHLORIDE	ND	ND (1.0)	ND (1.0)	ND	ND
TOTAL XYLENES	ND	ND (<1.0)	ND (<1.0)	ND	ND

TR - TRACE

ND - NOT DETECTED

NA - NOT ANALYZED2

* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-1

<u>SAMPLER</u>	GIANT	GIANT	GIANT
<u>DATE</u>	<u>9/6/89</u>	<u>12/12/89</u>	<u>6/19/90</u>
<u>PARAMETER</u>			
DETECTION LIMIT	(BELOW)	(BELOW)	(BELOW)
BENZENE	ND (10.0)	ND (50.0)	ND (2.0)
BROMODICHLOROMETHANE	ND (10.0)	ND (0.5)	ND (1.0)
BROMOFORM	ND (200.0)	ND (2.5)	ND (5.0)
BROMOMETHANE	ND (100.0)	ND (5.9)	ND (12.0)
CARBON TETRACHLORIDE	ND (20.0)	ND (0.6)	ND (1.2)
CHLOROBENZENE	ND (10.0)	ND (50.0)	4.4
CHLOROETHANE	ND (50.0)	ND (2.6)	ND (5.2)
CHLOROFORM	ND (10.0)	5.7	ND (1.0)
CHLOROMETHANE	ND (50.0)	ND (1.5)	ND (3.0)
DIBROMOCHLOROMETHANE	ND (20.0)	ND (1.0)	ND (2.0)
1,2-DICHLOROBENZENE	ND (20.0)	ND (100.0)	ND (4.0)
1,3-DICHLOROBENZENE	ND (40.0)	ND (100.0)	ND (4.0)
1,4-DICHLOROBENZENE	ND (20.0)	ND (75.0)	ND (3.0)
DICHLORODIFLUOROMETHANE	NA	NA	NA
1,1-DICHLOROETHANE	ND (10.0)	0.72	ND (5.0)
1,2-DICHLOROETHANE	ND (10.0)	7.1	7.1
1,1-DICHLOROETHENE	ND (10.0)	ND (1.0)	ND (2.0)
CIS-1,2-DICHLOROETHENE	NA	NA	39.0
TRANS-1,2-DICHLOROETHENE	NA	21.0	ND (2.0)
TOTAL 1,2-DICHLOROETHENE	ND (10.0)	NA	NA
1,2-DICHLOROPROPANE	ND (10.0)	ND (0.5)	ND (1.0)
ETHYLBENZENE	140.0	ND (50.0)	57.0
METHYLENE CHLORIDE	ND (40.0)	ND (2.0)	ND (4.0)
1,1,2,2-TETRACHLOROETHANE	ND (20.0)	ND (0.75)	ND (1.5)
TETRACHLOROETHENE	ND (10.0)	ND (0.5)	1.2
TOLUENE	ND (30.0)	ND (50.0)	ND (2.0)
1,1,1-TRICHLOROETHANE	ND (20.0)	ND (1.0)	ND (2.0)
1,1,2-TRICHLOROETHANE	ND (20.0)	ND (1.0)	ND (2.0)
TRICHLOROETHENE	22.2	6.2	2.9
TRICHLOROFLUOROMETHANE	ND (10.0)	ND (1.0)	ND (2.0)
VINYL CHLORIDE	ND (20.0)	ND (1.0)	ND (2.0)
TOTAL XYLENES	280.0	330.0	24.0

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS -2

<u>SAMPLER</u>	GIANT	GIANT	GIANT
<u>DATE</u>	<u>9/6/89</u>	<u>12/12/89</u>	<u>6/20/90</u>
<u>PARAMETER</u>			
DETECTION LIMIT	(BELOW)	(BELOW)	(BELOW)
BENZENE	ND (10.0)	10.0	5.4
BROMODICHLOROMETHANE	ND (10.0)	ND (<1.0)	ND (1.0)
BROMOFORM	ND (200.0)	ND (<1.0)	ND (5.0)
BROMOMETHANE	ND (100.0)	ND (1.2)	ND (12.0)
CARBON TETRACHLORIDE	ND (20.0)	ND (<1.0)	ND (1.2)
CHLOROBENZENE	ND (10.0)	ND (2.0)	230.0
CHLOROETHANE	ND (50.0)	ND (<1.0)	ND (5.2)
CHLOROFORM	ND (10.0)	ND (<1.0)	ND (1.0)
CHLOROMETHANE	ND (50.0)	ND (<1.0)	ND (3.0)
DIBROMOCHLOROMETHANE	ND (20.0)	ND (<1.0)	ND (2.0)
1,2-DICHLOROBENZENE	ND (20.0)	ND (4.0)	ND (4.0)
1,3-DICHLOROBENZENE	ND (40.0)	ND (4.0)	ND (4.0)
1,4-DICHLOROBENZENE	ND (20.0)	ND (3.0)	ND (3.0)
1,1-DICHLOROETHANE	ND (10.0)	ND (<1.0)	ND (5.0)
1,2-DICHLOROETHANE	68.0	ND (<1.0)	ND (1.0)
1,1-DICHLOROETHENE	ND (10.0)	ND (<1.0)	ND (2.0)
CIS-1,2-DICHLOROETHENE	NA	NA	ND (2.0)
TRANS-1,2-DICHLOROETHENE	NA	ND (<1.0)	ND (2.0)
TOTAL 1,2-DICHLOROETHENE	ND	NA	NA
1,2-DICHLOROPROPANE	ND (10.0)	ND (<1.0)	ND (1.0)
ETHYLBENZENE	120.0	120.0	78.0
METHYLENE CHLORIDE	ND (40.0)	ND (<1.0)	ND (4.0)
1,1,2,2-TETRACHLOROETHANE	ND (20.0)	ND (<1.0)	ND (1.5)
TETRACHLOROETHENE	13.0	1.7	2.1
TOLUENE	ND (30.0)	2.2	19.0
1,1,1-TRICHLOROETHANE	ND (20.0)	ND (<1.0)	ND (2.0)
1,1,2-TRICHLOROETHANE	ND (20.0)	ND (<1.0)	ND (2.0)
TRICHLOROETHENE	ND (20.0)	ND (<1.0)	ND (2.0)
TRICHLOROFLUOROMETHANE	ND (10.0)	ND (<1.0)	ND (2.0)
VINYL CHLORIDE	ND (20.0)	ND (<1.0)	ND (2.0)
TOTAL XYLENES	48.0	37.0	730.0

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-3

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>6/20/90</u>	<u>1/23/91</u>	<u>4/5/91</u>	<u>7/3/91</u>	<u>10/2/91</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	<1.0	<1.0	<1.0	<1.0
BENZENE	ND	ND	ND	ND	ND
BROMODICHLOROMETHANE	ND	ND	ND	ND	ND
BROMOFORM	ND	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND	ND
CHLOROFORM	ND	ND	ND	ND	ND
CHLOROMETHANE	ND	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	ND	ND	ND	ND	ND
1,1-DICHLOROETHENE	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	ND	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	ND	NA	NA	NA	NA
TOTAL 1,2-DICHLOROETHENE	NA	ND	ND	ND	ND
1,2-DICHLOROPROPANE	ND	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	ND	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND	ND
TETRACHLOROETHENE	ND	ND	ND	ND	ND
TOLUENE	ND	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND	ND
TRICHLOROETHENE	ND	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND	ND
TOTAL XYLENES	ND	ND	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-3

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>1/9/92</u>	<u>4/10/92</u>	<u>7/7/92</u>	<u>10/8/92</u>
<u>PARAMETER</u>				
DETECTION LIMIT	<1.0	<1.0	<1.0	<1.0
BENZENE	ND	ND	ND	ND
BROMODICHLOROMETHANE	ND	ND	ND	ND
BROMOFORM	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND
CHLOROFORM	ND	ND	ND	ND
CHLOROMETHANE	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND	ND	ND
1,2-DICHLOROETHANE	ND	ND	ND	ND
1,1-DICHLOROETHENE	ND	ND	ND	ND
TOTAL 1,2-DICHLOROETHENE	ND	ND	ND	ND
1,2-DICHLOROPROPANE	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND
METHYLENE CHLORIDE	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND
TETRACHLOROETHENE	ND	ND	ND	ND
TOLUENE	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND
TRICHLOROETHENE	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND
TOTAL XYLENES	ND	ND	ND	ND

TR - TRACE
 ND - NOT DETECTED
 NA - NOT ANALYZED
 ** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-4

<u>SAMPLER</u>	GIANT	GIANT
<u>DATE</u>	<u>6/19/90</u>	<u>7/7/92</u>
<u>PARAMETER</u>		
DETECTION LIMIT	<1.0	<1.0
BENZENE	ND	ND
BROMODICHLOROMETHANE	ND	ND
BROMOFORM	ND	ND
BROMOMETHANE	ND	ND
CARBON TETRACHLORIDE	ND	ND
CHLOROBENZENE	ND	ND
CHLOROETHANE	ND	ND
CHLOROFORM	ND	ND
CHLOROMETHANE	ND	ND
DIBROMOCHLOROMETHANE	ND	ND
1,2-DICHLOROBENZENE	ND	ND
1,3-DICHLOROBENZENE	ND	ND
1,4-DICHLOROBENZENE	ND	ND
1,1-DICHLOROETHANE	ND	ND
1,2-DICHLOROETHANE	ND	ND
1,1-DICHLOROETHENE	ND	ND
CIS-1,2-DICHLOROETHENE	ND	NA
TRANS-1,2-DICHLOROETHENE	ND	NA
TOTAL 1,2-DICHLOROETHENE	NA	ND
1,2-DICHLOROPROPANE	ND	ND
ETHYLBENZENE	ND	ND
METHYLENE CHLORIDE	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND
TETRACHLOROETHENE	ND	ND
TOLUENE	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND
TRICHLOROETHENE	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND
VINYL CHLORIDE	ND	ND
TOTAL XYLENES	ND	ND

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
**	-	SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-5

<u>SAMPLER</u>	<u>GIANT</u>	<u>GIANT</u>
<u>DATE</u>	<u>11/27/89</u>	<u>6/20/90</u>
<u>PARAMETER</u>		
DETECTION LIMIT	<1.0	(BELOW)
BENZENE	ND	ND (2.0)
BROMODICHLOROMETHANE	ND	ND (1.0)
BROMOFORM	ND	ND (5.0)
BROMOMETHANE	ND	ND (12.0)
CARBON TETRACHLORIDE	ND	ND (1.2)
CHLOROBENZENE	ND	ND (2.0)
CHLOROETHANE	ND	ND (5.2)
CHLOROFORM	ND	ND (1.0)
CHLOROMETHANE	ND	ND (3.0)
DIBROMOCHLOROMETHANE	ND	ND (2.0)
1,2-DICHLOROBENZENE	0.5	ND (4.0)
1,3-DICHLOROBENZENE	ND	ND (4.0)
1,4-DICHLOROBENZENE	ND	ND (3.0)
1,1-DICHLOROETHANE	ND	ND (5.0)
1,2-DICHLOROETHANE	ND	ND (1.0)
1,1-DICHLOROETHENE	ND	ND (2.0)
CIS-1,2-DICHLOROETHENE	NA	14.0
TRANS-1,2-DICHLOROETHENE	12.0	ND (2.0)
1,2-DICHLOROPROPANE	ND	ND (1.0)
ETHYLBENZENE	ND	ND (2.0)
METHYLENE CHLORIDE	0.72	ND (4.0)
1,1,2,2-TETRACHLOROETHANE	ND	ND (1.5)
TETRACHLOROETHENE	1.3	2.7
TOLUENE	ND	ND (2.0)
1,1,1-TRICHLOROETHANE	0.88	ND (2.0)
1,1,2-TRICHLOROETHANE	ND	ND (2.0)
TRICHLOROETHENE	1.8	3.0
TRICHLOROFLUOROMETHANE	ND	ND (2.0)
VINYL CHLORIDE	ND	ND (2.0)
TOTAL XYLENES	ND	ND (2.0)

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
**	-	SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-6

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>11/27/89</u>	<u>6/20/90</u>	<u>1/23/91</u>	<u>4/5/91</u>	<u>7/3/91</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	<1.0	<1.0	<1.0	<1.0
BENZENE	ND	ND	ND	ND	ND
BROMODICHLOROMETHANE	ND	ND	ND	ND	ND
BROMOFORM	ND	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND	ND
CHLOROFORM	ND	ND	ND	ND	ND
CHLOROMETHANE	ND	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	ND	ND	ND	ND	ND
1,1-DICHLOROETHENE	0.93	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	NA	ND	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	ND	ND	NA	NA	NA
TOTAL 1,2-DICHLOROETHENE	NA	NA	ND	ND	ND
1,2-DICHLOROPROPANE	ND	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	ND	ND	ND	3.1	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND	ND
TETRACHLOROETHENE	0.45	0.42	ND	ND	ND
TOLUENE	ND	ND	ND	0.81	ND
1,1,1-TRICHLOROETHANE	ND	0.35	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND	ND
TRICHLOROETHENE	ND	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND	ND
TOTAL XYLENES	ND	ND	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-6

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>10/2/91</u>	<u>1/9/92</u>	<u>4/10/92</u>	<u>10/8/92</u>
<u>PARAMETER</u>				
DETECTION LIMIT	<1.0	<1.0	<1.0	<1.0
BENZENE	ND	ND	ND	ND
BROMODICHLOROMETHANE	ND	ND	ND	ND
BROMOFORM	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND
CHLOROFORM	ND	ND	ND	ND
CHLOROMETHANE	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND	ND	ND
1,2-DICHLOROETHANE	ND	ND	ND	ND
1,1-DICHLOROETHENE	ND	ND	ND	ND
TOTAL 1,2-DICHLOROETHENE	0.6	1.2	ND	0.4
1,2-DICHLOROPROPANE	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND
METHYLENE CHLORIDE	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND
TETRACHLOROETHENE	ND	ND	ND	ND
TOLUENE	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND
TRICHLOROETHENE	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND
TOTAL XYLENES	ND	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-7

<u>SAMPLER</u>	GIANT	GIANT
<u>DATE</u>	<u>11/27/89</u>	<u>6/21/90</u>
<u>PARAMETER</u>		
DETECTION LIMIT	(BELOW)	<1.0
BENZENE	190.0	80.0
BROMODICHLOROMETHANE	ND (10.0)	2.5
BROMOFORM	ND (50.0)	ND
BROMOMETHANE	ND (120.0)	ND
CARBON TETRACHLORIDE	ND (12.0)	ND
CHLOROBENZENE	ND (20.0)	ND
CHLOROETHANE	ND (52.0)	4.0
CHLOROFORM	ND (10.0)	ND
CHLOROMETHANE	ND (30.0)	ND
DIBROMOCHLOROMETHANE	ND (20.0)	ND
1,2-DICHLOROBENZENE	ND (40.0)	ND
1,3-DICHLOROBENZENE	ND (40.0)	ND
1,4-DICHLOROBENZENE	ND (30.0)	ND
1,1-DICHLOROETHANE	ND (50.0)	2.2
1,2-DICHLOROETHANE	ND (10.0)	5.2
1,1-DICHLOROETHENE	ND (20.0)	ND
CIS-1,2-DICHLOROETHENE	NA	1.3
TRANS-1,2-DICHLOROETHENE	ND (20.0)	ND
1,2-DICHLOROPROPANE	ND (10.0)	ND
ETHYLBENZENE	ND (20.0)	140.0
METHYLENE CHLORIDE	ND (40.0)	ND
1,1,2,2-TETRACHLOROETHANE	ND (15.0)	ND
TETRACHLOROETHENE	ND (10.0)	ND
TOLUENE	290.0	1.1
1,1,1-TRICHLOROETHANE	ND (20.0)	ND
1,1,2-TRICHLOROETHANE	ND (20.0)	ND
TRICHLOROETHENE	ND (20.0)	0.28
TRICHLOROFLUOROMETHANE	ND (20.0)	ND
VINYL CHLORIDE	ND (20.0)	ND
TOTAL XYLENES	680.0	27.0

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
**	-	SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-8

<u>SAMPLER</u>	GIANT	GIANT
<u>DATE</u>	<u>11/27/89</u>	<u>6/21/90</u>
<u>PARAMETER</u>		
DETECTION LIMIT	(BELOW)	(BELOW)
BENZENE	14.0	ND (1000)
BROMODICHLOROMETHANE	ND (0.5)	ND (500.0)
BROMOFORM	ND (2.5)	ND (2500)
BROMOMETHANE	ND (5.9)	ND (5900)
CARBON TETRACHLORIDE	ND (0.6)	ND (600.0)
CHLOROBENZENE	ND (1.0)	ND (1000)
CHLOROETHANE	ND (2.6)	ND (2600)
CHLOROFORM	ND (0.5)	ND (500.0)
CHLOROMETHANE	ND (1.5)	ND (1500)
DIBROMOCHLOROMETHANE	ND (1.0)	ND (1000)
1,2-DICHLOROBENZENE	ND (2.0)	ND (2000)
1,3-DICHLOROBENZENE	ND (2.0)	ND (2000)
1,4-DICHLOROBENZENE	ND (1.5)	ND (1500)
1,1-DICHLOROETHANE	ND (2.5)	ND (2500)
1,2-DICHLOROETHANE	ND (0.5)	ND (500.0)
1,1-DICHLOROETHENE	ND (1.0)	ND (1000)
CIS-1,2-DICHLOROETHENE	NA	ND (1000)
TRANS-1,2-DICHLOROETHENE	24.0	ND (1000)
1,2-DICHLOROPROPANE	ND (0.5)	ND (500.0)
ETHYLBENZENE	85.0	ND (1000)
METHYLENE CHLORIDE	2.6	ND (2000)
1,1,2,2-TETRACHLOROETHANE	ND (0.75)	ND (750.0)
TETRACHLOROETHENE	ND (0.5)	ND (500.0)
TOLUENE	ND (1.0)	ND (1000)
1,1,1-TRICHLOROETHANE	6.2	ND (1000)
1,1,2-TRICHLOROETHANE	ND (1.0)	ND (1000)
TRICHLOROETHENE	4.7	3,200
TRICHLOROFLUOROMETHANE	ND (1.0)	ND (1000)
VINYL CHLORIDE	ND (1.0)	ND (1000)
TOTAL XYLENES	230.0	3,600

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
**	-	SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-9

<u>SAMPLER</u>	GIANT	GIANT
<u>DATE</u>	<u>6/21/90</u>	<u>1/9/92</u>
<u>PARAMETER</u>		
DETECTION LIMIT	(BELOW)	(BELOW)
BENZENE	2,400	ND (5.0)
BROMODICHLOROMETHANE	ND (200.0)	ND (2.0)
BROMOFORM	ND (1000)	ND (2.0)
BROMOMETHANE	ND (2400)	ND (2.0)
CARBON TETRACHLORIDE	ND (240.0)	ND (2.0)
CHLOROBENZENE	1,800	ND (5.0)
CHLOROETHANE	ND (1000)	ND (2.0)
CHLOROFORM	ND (200.0)	ND (2.0)
CHLOROMETHANE	ND (600.0)	ND (2.0)
DIBROMOCHLOROMETHANE	ND (400.0)	ND (2.0)
1,2-DICHLOROBENZENE	ND (800.0)	ND (5.0)
1,3-DICHLOROBENZENE	ND (800.0)	ND (5.0)
1,4-DICHLOROBENZENE	ND (600.0)	ND (5.0)
1,1-DICHLOROETHANE	ND (1000)	ND (2.0)
1,2-DICHLOROETHANE	ND (200.0)	ND (2.0)
1,1-DICHLOROETHENE	ND (400.0)	ND (2.0)
CIS-1,2-DICHLOROETHENE	ND (400.0)	NA
TRANS-1,2-DICHLOROETHENE	ND (400.0)	NA
TOTAL 1,2-DICHLOROETHENE	NA	ND (2.0)
1,2-DICHLOROPROPANE	ND (200.0)	ND (2.0)
ETHYLBENZENE	13,000	ND (5.0)
METHYLENE CHLORIDE	ND (800.0)	160.0
1,1,2,2-TETRACHLOROETHANE	ND (300.0)	ND (2.0)
TETRACHLOROETHENE	ND (200.0)	ND (2.0)
TOLUENE	1,100	ND (5.0)
1,1,1-TRICHLOROETHANE	ND (400.0)	ND (2.0)
1,1,2-TRICHLOROETHANE	ND (400.0)	ND (2.0)
TRICHLOROETHENE	ND (400.0)	ND (2.0)
TRICHLOROFLUOROMETHANE	ND (400.0)	ND (5.0)
VINYL CHLORIDE	ND (400.0)	ND (2.0)
TOTAL XYLENES	79,000	ND (5.0)

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
**	-	SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-10

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>6/23/90</u>	<u>1/23/91</u>	<u>4/5/91</u>	<u>7/5/91</u>	<u>10/2/91</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	(BELOW)	(BELOW)	<1.0	<1.0
BENZENE	ND (2.0)	ND (2.5)	ND (5.0)	0.5	ND
BROMODICHLOROMETHANE	ND (1.0)	ND (1.0)	ND (2.0)	ND	ND
BROMOFORM	ND (5.0)	ND (1.0)	ND (2.0)	ND	ND
BROMOMETHANE	ND (12.0)	ND (1.0)	ND (2.0)	ND	ND
CARBON TETRACHLORIDE	ND (1.2)	ND (1.0)	ND (2.0)	ND	ND
CHLOROBENZENE	3.0	ND (2.5)	ND (5.0)	ND	ND
CHLOROETHANE	ND (5.2)	ND (1.0)	ND (2.0)	ND	ND
CHLOROFORM	4.3	ND (1.0)	ND (2.0)	ND	ND
CHLOROMETHANE	ND (3.0)	ND (1.0)	ND (2.0)	ND	ND
DIBROMOCHLOROMETHANE	ND (2.0)	ND (1.0)	ND (2.0)	ND	ND
1,2-DICHLOROBENZENE	ND (4.0)	ND (2.5)	ND (5.0)	ND	ND
1,3-DICHLOROBENZENE	ND (4.0)	ND (2.5)	ND (5.0)	ND	ND
1,4-DICHLOROBENZENE	ND (3.0)	ND (2.5)	ND (5.0)	ND	ND
1,1-DICHLOROETHANE	ND (5.0)	ND (1.0)	ND (2.0)	ND	ND
1,2-DICHLOROETHANE	ND (1.0)	ND (1.0)	ND (2.0)	ND	ND
1,1-DICHLOROETHENE	ND (2.0)	ND (1.0)	ND (2.0)	ND	ND
CIS-1,2-DICHLOROETHENE	ND (2.0)	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	ND (2.0)	NA	NA	NA	NA
TOTAL 1,2-DICHLOROETHENE	NA	ND (1.0)	ND (2.0)	ND	ND
1,2-DICHLOROPROPANE	ND (1.0)	ND (1.0)	ND (2.0)	ND	ND
ETHYLBENZENE	69.0	106.0	100.0	47.0	37.0
METHYLENE CHLORIDE	ND (4.0)	ND (10.0)	ND (20.0)	ND	ND
1,1,2,2-TETRACHLOROETHANE	5.5	ND (1.0)	ND (2.0)	ND	ND
TETRACHLOROETHENE	ND (1.0)	ND (1.0)	ND (2.0)	ND	0.2
TOLUENE	3.2	4.0	ND (5.0)	1.8	ND
1,1,1-TRICHLOROETHANE	ND (2.0)	ND (1.0)	ND (2.0)	ND	ND
1,1,2-TRICHLOROETHANE	ND (2.0)	ND (1.0)	ND (2.0)	ND	ND
TRICHLOROETHENE	ND (2.0)	ND (1.0)	ND (2.0)	ND	ND
TRICHLOROFLUOROMETHANE	ND (2.0)	ND (2.5)	ND (5.0)	ND	ND
VINYL CHLORIDE	ND (2.0)	ND (1.0)	ND (2.0)	ND	ND
TOTAL XYLENES	150.0	ND (2.5)	ND (10.0)	ND	ND
TR -	TRACE				
ND -	NOT DETECTED				
NA -	NOT ANALYZED				
** -	SPLIT SAMPLE				

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-10

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>1/9/92</u>	<u>4/10/92</u>	<u>7/8/92</u>	<u>10/8/92</u>
<u>PARAMETER</u>				
DETECTION LIMIT	<1.0	(BELOW)	<1.0	<1.0
BENZENE	ND	ND (2.5)	ND	ND
BROMODICHLOROMETHANE	ND	ND (1.0)	ND	ND
BROMOFORM	ND	ND (1.0)	ND	ND
BROMOMETHANE	ND	ND (1.0)	ND	ND
CARBON TETRACHLORIDE	ND	ND (1.0)	ND	ND
CHLOROBENZENE	ND	ND (2.5)	ND	ND
CHLOROETHANE	ND	ND (1.0)	ND	ND
CHLOROFORM	ND	ND (1.0)	ND	ND
CHLOROMETHANE	ND	ND (1.0)	ND	ND
DIBROMOCHLOROMETHANE	ND	ND (1.0)	ND	ND
1,2-DICHLOROBENZENE	ND	ND (2.5)	ND	ND
1,3-DICHLOROBENZENE	ND	ND (2.5)	ND	ND
1,4-DICHLOROBENZENE	ND	ND (2.5)	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND (1.0)	ND	ND
1,1-DICHLOROETHANE	ND	ND (1.0)	ND	ND
1,2-DICHLOROETHANE	ND	ND (1.0)	ND	ND
1,1-DICHLOROETHENE	ND	ND (1.0)	ND	ND
TOTAL 1,2-DICHLOROETHENE	ND	ND (1.0)	ND	ND
1,2-DICHLOROPROPANE	ND	ND (1.0)	ND	ND
ETHYLBENZENE	27.0	27.0	19.2	13.3
METHYLENE CHLORIDE	ND	ND (10.0)	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND (1.0)	ND	ND
TETRACHLOROETHENE	ND	ND (1.0)	0.2	ND
TOLUENE	ND	ND (2.5)	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND (1.0)	0.2	1.0
1,1,2-TRICHLOROETHANE	ND	ND (1.0)	ND	ND
TRICHLOROETHENE	ND	ND (1.0)	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND (2.5)	ND	ND
VINYL CHLORIDE	ND	ND (1.0)	ND	ND
TOTAL XYLENES	ND	ND (2.5)	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-11

<u>SAMPLER</u>	GIANT
<u>DATE</u>	<u>6/23/90</u>
<u>PARAMETER</u>	
DETECTION LIMIT	(BELOW)
BENZENE	800.0
BROMODICHLOROMETHANE	ND (10.0)
BROMOFORM	ND (50.0)
BROMOMETHANE	ND (120.0)
CARBON TETRACHLORIDE	ND (12.0)
CHLOROBENZENE	ND (20.0)
CHLOROETHANE	ND (52.0)
CHLOROFORM	ND (10.0)
CHLOROMETHANE	ND (30.0)
DIBROMOCHLOROMETHANE	ND (20.0)
1,2-DICHLOROBENZENE	ND (40.0)
1,3-DICHLOROBENZENE	ND (40.0)
1,4-DICHLOROBENZENE	ND (30.0)
1,1-DICHLOROETHANE	ND (50.0)
1,2-DICHLOROETHANE	ND (10.0)
1,1-DICHLOROETHENE	ND (20.0)
CIS-1,2-DICHLOROETHENE	22.0
TRANS-1,2-DICHLOROETHENE	ND (20.0)
1,2-DICHLOROPROPANE	ND (10.0)
ETHYLBENZENE	1,100
METHYLENE CHLORIDE	ND (40.0)
1,1,2,2-TETRACHLOROETHANE	ND (15.0)
TETRACHLOROETHENE	ND (10.0)
TOLUENE	ND (20.0)
1,1,1-TRICHLOROETHANE	ND (20.0)
1,1,2-TRICHLOROETHANE	ND (20.0)
TRICHLOROETHENE	ND (20.0)
TRICHLOROFLUOROMETHANE	ND (20.0)
VINYL CHLORIDE	ND (20.0)
TOTAL XYLENES	5,100

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
**	-	SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-12

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>6/23/88</u>	<u>1/24/91</u>	<u>4/5/91</u>	<u>7/5/91</u>	<u>10/2/91</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	<1.0	<1.0	<1.0	<1.0
BENZENE	ND (2.0)	ND	0.89	ND	ND
BROMODICHLOROMETHANE	ND (1.0)	ND	ND	ND	ND
BROMOFORM	ND (5.0)	ND	ND	ND	ND
BROMOMETHANE	ND (12.0)	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND (1.2)	ND	ND	ND	ND
CHLOROBENZENE	ND (2.0)	ND	ND	ND	ND
CHLOROETHANE	ND (5.2)	ND	ND	ND	ND
CHLOROFORM	5.6	0.80	0.25	ND	0.3
CHLOROMETHANE	ND (3.0)	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND (2.0)	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND (4.0)	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND (4.0)	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND (3.0)	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND (5.0)	0.41	0.44	1.2	0.6
1,2-DICHLOROETHANE	ND (1.0)	0.39	0.47	ND	ND
1,1-DICHLOROETHENE	ND (2.0)	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	10.0	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	ND (2.0)	NA	NA	NA	NA
TOTAL 1,2-DICHLOROETHENE	NA	4.7	7.0	6.9	3.2
1,2-DICHLOROPROPANE	ND (1.0)	ND	ND	ND	ND
ETHYLBENZENE	ND (2.0)	ND	ND	ND	ND
METHYLENE CHLORIDE	ND (4.0)	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND (1.5)	ND	ND	ND	ND
TETRACHLOROETHENE	3.1	1.3	1.2	0.7	0.9
TOLUENE	ND (2.0)	1.9	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND (2.0)	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND (2.0)	ND	ND	ND	ND
TRICHLOROETHENE	2.0	0.74	0.58	0.4	0.4
TRICHLOROFLUOROMETHANE	ND (2.0)	ND	ND	ND	ND
VINYL CHLORIDE	ND (2.0)	ND	ND	ND	ND
TOTAL XYLENES	ND (2.0)	ND	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-12

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>1/9/92</u>	<u>4/10/92</u>	<u>7/8/92</u>	<u>10/9/92</u>
<u>PARAMETER</u>				
DETECTION LIMIT	<1.0	<1.0	<1.0	<1.0
BENZENE	ND	0.6	ND	0.5
BROMODICHLOROMETHANE	ND	ND	ND	ND
BROMOFORM	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND
CHLOROFORM	ND	ND	ND	ND
CHLOROMETHANE	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND	ND
1,1-DICHLOROETHANE	0.8	0.7	0.7	ND
1,2-DICHLOROETHANE	0.4	0.4	0.4	ND
1,1-DICHLOROETHENE	ND	ND	ND	ND
TOTAL 1,2-DICHLOROETHENE	5.1	3.7	1.6	ND
1,2-DICHLOROPROPANE	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	4.9
METHYLENE CHLORIDE	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND
TETRACHLOROETHENE	0.7	0.7	0.6	ND
TOLUENE	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND	0.6	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND
TRICHLOROETHENE	0.3	0.2	0.2	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND
TOTAL XYLENES	ND	ND	ND	10.6

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-13

<u>SAMPLER</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>
<u>DATE</u>	<u>8/23/90</u>	<u>1/24/91</u>	<u>4/5/91</u>	<u>7/5/91</u>	<u>10/2/91</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	<1.0	<1.0	<1.0	<1.0
BENZENE	ND (0.2)	ND	ND	ND	ND
BROMODICHLOROMETHANE	ND (0.1)	ND	ND	ND	ND
BROMOFORM	ND (0.5)	ND	ND	ND	ND
BROMOMETHANE	ND (1.2)	0.96	ND	ND	ND
CARBON TETRACHLORIDE	ND (0.12)	ND	ND	ND	ND
CHLOROBENZENE	ND (0.2)	ND	ND	ND	ND
CHLOROETHANE	ND (0.52)	0.96	0.41	ND	ND
CHLOROFORM	ND (0.1)	ND	ND	ND	ND
CHLOROMETHANE	ND (0.3)	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND (0.2)	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND (0.4)	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND (0.4)	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND (0.3)	ND	ND	ND	ND
1,1-DICHLOROETHANE	0.53	1.0	0.83	0.9	ND
1,2-DICHLOROETHANE	11.0	3.8	3.9	ND	0.9
1,1-DICHLOROETHENE	ND (0.2)	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA
TOTAL 1,2-DICHLOROETHENE	0.28	ND	ND	ND	0.4
1,2-DICHLOROPROPANE	ND (0.1)	ND	ND	ND	ND
ETHYLBENZENE	ND (0.2)	ND	ND	ND	ND
METHYLENE CHLORIDE	ND (0.4)	ND	ND	ND	ND
1,1,1,2-TETRACHLOROETHANE	ND (5.0)	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND (0.15)	ND	ND	ND	ND
TETRACHLOROETHENE	0.34	ND	ND	ND	ND
TOLUENE	0.79	0.95	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND (0.2)	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND (0.2)	ND	ND	ND	ND
TRICHLOROETHENE	0.26	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	ND (0.2)	ND	ND	ND	ND
VINYL CHLORIDE	ND (0.2)	ND	ND	ND	ND
TOTAL XYLENES	ND (0.2)	ND	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-13

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>1/9/92</u>	<u>4/10/92</u>	<u>7/8/92</u>	<u>10/9/92</u>
<u>PARAMETER</u>				
DETECTION LIMIT	<1.0	<1.0	<1.0	<1.0
BENZENE	ND	ND	ND	ND
BROMODICHLOROMETHANE	ND	ND	ND	ND
BROMOFORM	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND
CHLOROFORM	ND	ND	ND	ND
CHLOROMETHANE	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND	ND
1,1-DICHLOROETHANE	1.7	1.0	0.9	1.5
1,2-DICHLOROETHANE	11.0	3.1	3.1	4.7
1,1-DICHLOROETHENE	ND	ND	ND	ND
TOTAL 1,2-DICHLOROETHENE	0.9	ND	ND	0.6
1,2-DICHLOROPROPANE	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND
METHYLENE CHLORIDE	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND
TETRACHLOROETHENE	ND	ND	ND	ND
TOLUENE	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND
TRICHLOROETHENE	0.2	ND	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND
TOTAL XYLENES	ND	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-14

<u>SAMPLER</u>	GIANT	GIANT
<u>DATE</u>	<u>8/22/90</u>	<u>1/9/92</u>
<u>PARAMETER</u>		
DETECTION LIMIT	(BELOW)	(BELOW)
BENZENE	11.0	ND (5.0)
BROMODICHLOROMETHANE	ND (1.0)	ND (2.0)
BROMOFORM	ND (5.0)	ND (2.0)
BROMOMETHANE	ND (12.0)	ND (2.0)
CARBON TETRACHLORIDE	ND (1.2)	ND (2.0)
CHLOROBENZENE	ND (2.0)	ND (5.0)
CHLOROETHANE	ND (5.2)	ND (2.0)
CHLOROFORM	ND (1.0)	ND (2.0)
CHLOROMETHANE	ND (3.0)	ND (2.0)
DIBROMOCHLOROMETHANE	ND (2.0)	ND (2.0)
1,2-DICHLOROBENZENE	ND (4.0)	ND (5.0)
1,3-DICHLOROBENZENE	ND (4.0)	ND (5.0)
1,4-DICHLOROBENZENE	140.0	ND (5.0)
1,1-DICHLOROETHANE	ND (5.0)	ND (2.0)
1,2-DICHLOROETHANE	ND (1.0)	ND (2.0)
1,1-DICHLOROETHENE	2.0	ND (2.0)
CIS-1,2-DICHLOROETHENE	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA
TOTAL 1,2-DICHLOROETHENE	ND (2.0)	ND (2.0)
1,2-DICHLOROPROPANE	ND (1.0)	ND (2.0)
ETHYLBENZENE	77.0	ND (5.0)
METHYLENE CHLORIDE	ND (50.0)	440.0
1,1,2,2-TETRACHLOROETHANE	ND (1.5)	ND (2.0)
TETRACHLOROETHENE	4.6	ND (2.0)
TOLUENE	31.0	ND (5.0)
1,1,1-TRICHLOROETHANE	ND (2.0)	ND (2.0)
1,1,2-TRICHLOROETHANE	ND (2.0)	ND (2.0)
TRICHLOROETHENE	ND (2.0)	ND (2.0)
TRICHLOROFLUOROMETHANE	ND (2.0)	ND (5.0)
VINYL CHLORIDE	ND (2.0)	ND (2.0)
TOTAL XYLENES	260.0	ND (5.0)

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-15

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>8/22/90</u>	<u>1/25/91</u>	<u>4/8/91</u>	<u>7/5/91</u>	<u>10/2/91</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	<1.0	<1.0	<1.0	<1.0
BENZENE	ND(0.2)	ND	ND	ND	ND
BROMODICHLOROMETHANE	ND(0.1)	ND	ND	0.6	ND
BROMOFORM	ND(0.5)	ND	ND	ND	ND
BROMOMETHANE	ND(1.2)	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND(0.12)	ND	ND	ND	ND
CHLOROBENZENE	ND(0.2)	ND	ND	ND	ND
CHLOROETHANE	ND(0.52)	ND	ND	ND	ND
CHLOROFORM	ND(0.1)	ND	0.6	11.8	6.5
CHLOROMETHANE	ND(0.3)	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND(0.2)	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND(0.4)	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND(0.4)	ND	ND	ND	ND
1,4-DICHLOROBENZENE	0.38	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND(0.5)	ND	ND	ND	ND
1,2-DICHLOROETHANE	ND(0.1)	ND	ND	ND	ND
1,1-DICHLOROETHENE	ND(0.2)	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA
TOTAL 1,2-DICHLOROETHENE	ND(0.2)	ND	ND	ND	ND
1,2-DICHLOROPROPANE	ND(0.1)	ND	ND	ND	ND
ETHYLBENZENE	0.24	ND	ND	ND	ND
METHYLENE CHLORIDE	ND(0.4)	ND	ND	ND	ND
1,1,1,2-TETRACHLOROETHANE	ND(5.0)	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND(0.15)	ND	ND	ND	ND
TETRACHLOROETHENE	0.4	ND	ND	ND	ND
TOLUENE	0.33	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND(0.2)	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND(0.2)	ND	ND	ND	ND
TRICHLOROETHENE	ND(0.2)	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	ND(0.2)	ND	ND	ND	ND
VINYL CHLORIDE	ND(0.2)	ND	ND	ND	ND
TOTAL XYLENES	0.97	ND	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-15

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>1/9/92</u>	<u>4/10/92</u>	<u>7/8/92</u>	<u>10/9/92</u>
<u>PARAMETER</u>				
DETECTION LIMIT	<1.0	<1.0	<1.0	<1.0
BENZENE	ND	ND	ND	ND
BROMODICHLOROMETHANE	ND	0.3	ND	ND
BROMOFORM	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND
CHLOROFORM	0.6	6.5	11.7	3.3
CHLOROMETHANE	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND	ND	ND
1,2-DICHLOROETHANE	ND	ND	ND	ND
1,1-DICHLOROETHENE	ND	ND	ND	ND
TOTAL 1,2-DICHLOROETHENE	ND	ND	ND	ND
1,2-DICHLOROPROPANE	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND
METHYLENE CHLORIDE	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND
TETRACHLOROETHENE	ND	ND	ND	ND
TOLUENE	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND
TRICHLOROETHENE	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND
TOTAL XYLENES	ND	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-16

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>8/22/90</u>	<u>1/25/91</u>	<u>4/8/91</u>	<u>7/5/91</u>	<u>10/2/91</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	<1.0	<1.0	<1.0	<1.0
BENZENE	ND	ND	ND	ND	ND
BROMODICHLOROMETHANE	ND	ND	ND	ND	ND
BROMOFORM	ND	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND	ND
CHLOROFORM	0.17	ND	0.4	ND	ND
CHLOROMETHANE	ND	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	ND	ND	ND	ND	ND
1,1-DICHLOROETHENE	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA
TOTAL 1,2-DICHLOROETHENE	0.34	ND	ND	ND	ND
1,2-DICHLOROPROPANE	ND	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	ND	ND	ND	ND	ND
1,1,1,2-TETRACHLOROETHANE	ND	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND	ND
TETRACHLOROETHENE	ND	ND	ND	ND	ND
TOLUENE	ND	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND	ND
TRICHLOROETHENE	ND	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND	ND
TOTAL XYLENES	ND	ND	ND	ND	ND
TR -	TRACE				
ND -	NOT DETECTED				
NA -	NOT ANALYZED				
** -	SPLIT SAMPLE				

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-16

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>1/9/92</u>	<u>4/10/92</u>	<u>7/8/92</u>	<u>10/12/92</u>
<u>PARAMETER</u>				
DETECTION LIMIT	<1.0	<1.0	<1.0	<1.0
BENZENE	ND	ND	ND	ND
BROMODICHLOROMETHANE	ND	ND	ND	ND
BROMOFORM	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND
CHLOROFORM	ND	ND	ND	ND
CHLOROMETHANE	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND	ND	ND
1,2-DICHLOROETHANE	ND	ND	ND	ND
1,1-DICHLOROETHENE	ND	ND	ND	ND
TOTAL 1,2-DICHLOROETHENE	ND	ND	ND	ND
1,2-DICHLOROPROPANE	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND
METHYLENE CHLORIDE	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND
TETRACHLOROETHENE	ND	ND	ND	ND
TOLUENE	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND
TRICHLOROETHENE	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND
TOTAL XYLENES	ND	ND	ND	ND

TR - TRACE
 ND - NOT DETECTED
 NA - NOT ANALYZED
 ** - SPLIT SAMPLE

MONITOR WELL GBR-17

GIANT

10/12/92

PARAMETER

<1.0

BENZENE	ND
BROMODICHLOROMETHANE	ND
BROMOFORM	ND
BROMOMETHANE	ND
CARBON TETRACHLORIDE	ND
CHLOROBENZENE	ND
CHLOROETHANE	ND
CHLOROFORM	ND
CHLOROMETHANE	ND
DIBROMOCHLOROMETHANE	ND
1,2-DICHLOROBENZENE	ND
1,3-DICHLOROBENZENE	ND
1,4-DICHLOROBENZENE	ND
DICHLORODIFLUOROMETHANE	ND
1,1-DICHLOROETHANE	ND
1,2-DICHLOROETHANE	ND
1,1-DICHLOROETHENE	ND
TOTAL 1,2-DICHLOROETHENE	ND
1,2-DICHLOROPROPANE	ND
ETHYLBENZENE	ND
METHYLENE CHLORIDE	ND
1,1,2,2-TETRACHLOROETHANE	ND
TETRACHLOROETHENE	ND
TOLUENE	ND
1,1,1-TRICHLOROETHANE	ND
1,1,2-TRICHLOROETHANE	ND
TRICHLOROETHENE	ND
TRICHLOROFLUOROMETHANE	ND
VINYL CHLORIDE	ND
TOTAL XYLENES	ND

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
**	-	SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-18

<u>SAMPLER</u>	GIANT	GIANT
<u>DATE</u>	<u>8/10/92</u>	<u>10/9/92</u>
<u>PARAMETER</u>		
DETECTION LIMIT	<1.0	<1.0
BENZENE	2.4	9.0
BROMODICHLOROMETHANE	ND	ND
BROMOFORM	ND	ND
BROMOMETHANE	ND	ND
CARBON TETRACHLORIDE	ND	ND
CHLOROBENZENE	ND	ND
CHLOROETHANE	ND	ND
CHLOROFORM	0.3	ND
CHLOROMETHANE	ND	ND
DIBROMOCHLOROMETHANE	ND	ND
1,2-DICHLOROBENZENE	0.6	ND
1,3-DICHLOROBENZENE	ND	ND
1,4-DICHLOROBENZENE	0.6	ND
DICHLORODIFLUOROMETHANE	ND	ND
1,1-DICHLOROETHANE	ND	ND
1,2-DICHLOROETHANE	0.6	0.4
1,1-DICHLOROETHENE	ND	ND
TOTAL 1,2-DICHLOROETHENE	0.6	ND
1,2-DICHLOROPROPANE	ND	ND
ETHYLBENZENE	8.9	76.0
METHYLENE CHLORIDE	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND
TETRACHLOROETHENE	ND	ND
TOLUENE	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND
TRICHLOROETHENE	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND
VINYL CHLORIDE	ND	ND
TOTAL XYLENES	10.9	150.0

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
**	-	SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL - STEEL WELL

<u>SAMPLER</u>	GIANT	GIANT
<u>DATE</u>	<u>5/9/86</u>	<u>10/17/86</u>
<u>PARAMETER</u>		
DETECTION LIMIT	1.0	5.0
BENZENE	ND	144.0
BROMODICHLOROMETHANE	NA	ND
BROMOFORM	NA	ND
BROMOMETHANE	NA	ND
CARBON TETRACHLORIDE	NA	ND
CHLOROBENZENE	NA	NA
CHLOROETHANE	NA	ND
CHLOROFORM	NA	ND
CHLOROMETHANE	NA	ND
DIBROMOCHLOROMETHANE	NA	ND
1,2-DICHLOROBENZENE	NA	NA
1,3-DICHLOROBENZENE	NA	NA
1,4-DICHLOROBENZENE	NA	NA
DICHLORODIFLUOROMETHANE	NA	NA
1,1-DICHLOROETHANE	NA	ND
1,2-DICHLOROETHANE	NA	31.0
1,1-DICHLOROETHENE	NA	ND
CIS-1,2-DICHLOROETHENE	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	ND
1,2-DICHLOROPROPANE	NA	ND
ETHYLBENZENE	ND	179.0
METHYLENE CHLORIDE	NA	ND
1,1,2,2-TETRACHLOROETHANE	NA	ND
TETRACHLOROETHENE	NA	ND
TOLUENE	ND	148.0
1,1,1-TRICHLOROETHANE	NA	ND
1,1,2-TRICHLOROETHANE	NA	ND
TRICHLOROETHENE	NA	ND
TRICHLOROFLUOROMETHANE	NA	ND
VINYL CHLORIDE	NA	ND
TOTAL XYLENES	ND	356.0

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
**	-	SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS(ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER INFLUENT

<u>SAMPLER</u>	GIANT	OCD	GIANT	OCD	OCD*
<u>DATE</u>	<u>6/23/88</u>	<u>7/13/88</u>	<u>11/8/88</u>	<u>12/15/88</u>	<u>12/15/88</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	50.0	2.0	(BELOW)	(BELOW)
BENZENE	700.0	1,030	520.0	373.0	90.0
BROMODICHLOROMETHANE	ND	ND	ND	ND(<1.0)	ND(0.5)
BROMOFORM	ND	ND	ND	ND(<1.0)	ND(0.5)
BROMOMETHANE	ND	ND	ND	ND(<1.0)	ND(0.5)
CARBON TETRACHLORIDE	ND	ND	ND	ND(<1.0)	ND(0.5)
CHLOROBENZENE	ND	ND	ND	ND(<1.0)	ND(0.5)
CHLOROETHANE	ND	ND	ND	ND(<1.0)	ND(0.5)
CHLOROFORM	ND	ND	ND	ND(<1.0)	ND(0.5)
CHLOROMETHANE	ND	ND	ND	ND(<1.0)	ND(0.5)
DIBROMOCHLOROMETHANE	ND	ND	ND	ND(<1.0)	ND(0.5)
1,2-DICHLOROBENZENE	ND	ND	ND	ND(<1.0)	ND(0.5)
1,3-DICHLOROBENZENE	ND	ND	ND	ND(<1.0)	ND(0.5)
1,4-DICHLOROBENZENE	ND	ND	ND	ND(<1.0)	ND(0.5)
DICHLORODIFLUOROMETHANE	ND	ND	ND	ND(<1.0)	ND(0.5)
1,1-DICHLOROETHANE	4.5	ND	ND	3.9	1.0
1,2-DICHLOROETHANE	42.0	TR	ND	2.3	3.0
1,1-DICHLOROETHENE	ND	ND	ND	ND(<1.0)	ND(0.5)
CIS-1,2-DICHLOROETHENE	NA	ND	NA	NA	4.0
TRANS-1,2-DICHLOROETHENE	14.0	ND	ND	ND(<1.0)	ND(0.5)
DICHLOROMETHANE	NA	ND	NA	NA	1.5
1,2-DICHLOROPROPANE	ND	ND	ND	ND(<1.0)	ND(0.5)
1,2-DIMETHYLBENZENE	NA	ND	NA	NA	10.0
ETHYLBENZENE	79.0	210.0	68.0	ND(5.0)	ND(5.0)
METHYLENE CHLORIDE	4.7	ND	ND	ND(<1.0)	ND(0.5)
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND(<1.0)	ND(0.5)
TETRACHLOROETHENE	ND	ND	ND	1.8	1.0
TOLUENE	490.0	315.0	5.4	38.0	TR(5.0)
1,1,1-TRICHLOROETHANE	1.6	ND	ND	0.9	ND(0.5)
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND(<1.0)	ND(0.5)
TRICHLOROETHENE	1.7	ND	3.2	2.2	1.0
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND(<1.0)	ND(0.5)
VINYL CHLORIDE	ND	ND	ND	ND(<1.0)	ND(0.5)
TOTAL XYLENES	800.0	945.0	310.0	246.0	60.0

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE SAMPLE

VOLATILE ORGANIC CONCENTRATIONS (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER INFLUENT

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>1/16/89</u>	<u>2/2/89</u>	<u>3/14/89</u>	<u>12/11/89</u>	<u>5/12/89</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	(BELOW)	(BELOW)	2.0	<1.0
BENZENE	440.0	280.0	2,314	363.0	390.0
BROMODICHLOROMETHANE	ND(<1.0)	ND(<1.0)	ND(<1.0)	NA	ND
BROMOFORM	ND(<1.0)	ND(<1.0)	ND(<1.0)	NA	ND
BROMOMETHANE	ND(1.2)	ND(1.2)	ND(1.0)	NA	ND
CARBON TETRACHLORIDE	ND(<1.0)	ND(<1.0)	ND(<1.0)	NA	ND
CHLOROBENZENE	ND(7.5)	ND(15.0)	ND(<1.0)	NA	ND
CHLOROETHANE	ND(<1.0)	ND(<1.0)	ND(1.0)	NA	ND
CHLOROFORM	ND(<1.0)	0.9	ND(<1.0)	NA	ND
CHLOROMETHANE	ND(<1.0)	ND(<1.0)	ND(1.0)	NA	ND
DIBROMOCHLOROMETHANE	ND(<1.0)	ND(<1.0)	ND(<1.0)	NA	1.2
1,2-DICHLOROBENZENE	ND(10.0)	ND(20.0)	ND(<1.0)	NA	ND
1,3-DICHLOROBENZENE	ND(10.0)	ND(20.0)	ND(<1.0)	NA	ND
1,4-DICHLOROBENZENE	ND(7.5)	ND(15.0)	ND(<1.0)	NA	ND
DICHLORODIFLUOROMETHANE	NA	NA	ND(1.0)	NA	ND
1,1-DICHLOROETHANE	4.2	5.0	ND(<1.0)	NA	3.1
1,2-DICHLOROETHANE	6.7	6.0	13.4	NA	7.3
1,1-DICHLOROETHENE	ND(<1.0)	ND(<1.0)	ND(<1.0)	NA	ND
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	11.0	11.0	ND(<1.0)	NA	ND
1,2-DICHLOROPROPANE	ND(<1.0)	ND(<1.0)	ND(<1.0)	NA	ND
ETHYLBENZENE	ND(7.5)	ND(15.0)	191.0	97.3	41.0
METHYLENE CHLORIDE	1.0	1.4	2.5	NA	1.2
1,1,2,2-TETRACHLOROETHANE	ND(<1.0)	ND(<1.0)	ND(<1.0)	NA	ND
TETRACHLOROETHENE	1.9	2.2	ND(<1.0)	NA	ND
TOLUENE	ND(5.0)	ND(10.0)	2,630	121.0	140.0
1,1,1-TRICHLOROETHANE	2.1	2.1	ND(<1.0)	NA	ND
1,1,2-TRICHLOROETHANE	ND(<1.0)	ND(<1.0)	ND(<1.0)	NA	ND
TRICHLOROETHENE	3.0	3.4	ND(<1.0)	NA	ND
TRICHLOROFLUOROMETHANE	0.5	ND(<1.0)	ND(<1.0)	NA	ND
VINYL CHLORIDE	ND(<1.0)	ND(<1.0)	ND(1.0)	NA	ND
TOTAL XYLENES	319.0	38.0	1,161	342.8	310.0

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER INFLUENT

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>6/14/89</u>	<u>7/12/89</u>	<u>8/17/89</u>	<u>9/13/89</u>	<u>9/29/89</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	(BELOW)	(BELOW)	(BELOW)	1.0
BENZENE	82.3	33.5	140.0	1,800	78.0
BROMODICHLOROMETHANE	ND(1.0)	ND(1.0)	ND(1.0)	ND(10.0)	NA
BROMOFORM	ND(1.0)	ND(1.0)	ND(20.0)	ND(200.0)	NA
BROMOMETHANE	ND(1.0)	ND(1.0)	ND(10.0)	ND(100.0)	NA
CARBON TETRACHLORIDE	ND(1.0)	ND(1.0)	ND(2.0)	ND(20.0)	NA
CHLOROBENZENE	ND(<1.0)	ND(<1.0)	ND(1.0)	ND(10.0)	ND
CHLOROETHANE	ND(1.0)	ND(1.0)	ND(5.0)	ND(50.0)	NA
CHLOROFORM	1.2	ND(1.0)	ND(1.0)	ND(10.0)	NA
CHLOROMETHANE	ND(1.0)	ND(1.0)	ND(5.0)	ND(50.0)	NA
DIBROMOCHLOROMETHANE	ND(1.0)	ND(1.0)	ND(2.0)	ND(20.0)	NA
1,2-DICHLOROBENZENE	ND(<1.0)	ND(<1.0)	ND(2.0)	ND(20.0)	ND
1,3-DICHLOROBENZENE	ND(<1.0)	ND(<1.0)	ND(4.0)	ND(40.0)	ND
1,4-DICHLOROBENZENE	ND(<1.0)	ND(<1.0)	ND(2.0)	ND(20.0)	ND
DICHLORODIFLUOROMETHANE	ND(1.0)	ND(1.0)	NA	NA	NA
1,1-DICHLOROETHANE	4.6	ND(1.0)	ND(1.0)	ND(10.0)	NA
1,2-DICHLOROETHANE	3.3	ND(1.0)	3.9	ND(10.0)	NA
1,1-DICHLOROETHENE	ND(1.0)	ND(1.0)	ND(1.0)	ND(10.0)	NA
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	ND(1.0)	2.7	NA	NA	NA
TOTAL 1,2-DICHLOROETHENE	NA	NA	17.0	ND(10.0)	NA
1,2-DICHLOROPROPANE	ND(1.0)	ND(1.0)	ND(1.0)	ND(10.0)	NA
ETHYLBENZENE	11.4	1.8	ND(1.0)	130.0	16.3
METHYLENE CHLORIDE	ND(1.0)	ND(1.0)	ND(4.0)	ND(40.0)	NA
1,1,2,2-TETRACHLOROETHANE	ND(1.0)	ND(1.0)	ND(2.0)	ND(20.0)	NA
TETRACHLOROETHENE	1.6	1.2	ND(1.0)	ND(10.0)	NA
TOLUENE	17.8	ND(<1.0)	6.1	260.0	22.6
1,1,1-TRICHLOROETHANE	ND(1.0)	3.4	ND(2.0)	ND(20.0)	NA
1,1,2-TRICHLOROETHANE	ND(1.0)	ND(1.0)	ND(2.0)	ND(20.0)	NA
TRICHLOROETHENE	1.9	0.9	ND(2.0)	ND(20.0)	NA
TRICHLOROFLUOROMETHANE	ND(1.0)	ND(1.0)	ND(1.0)	ND(10.0)	NA
VINYL CHLORIDE	ND(1.0)	ND(1.0)	ND(2.0)	ND(20.0)	NA
TOTAL XYLENES	43.0	18.5	36.0	210.0	43.1

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER INFLUENT

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>10/19/89</u>	<u>11/15/89</u>	<u>12/12/89</u>	<u>1/15/90</u>	<u>2/12/90</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	(BELOW)	(BELOW)	(BELOW)	(BELOW)
BENZENE	129.58	23.6	110.0	112.5	240.0
BROMODICHLOROMETHANE	ND(1.0)	ND(1.0)	ND(0.1)	ND(10.0)	ND(1.0)
BROMOFORM	ND(1.0)	ND(1.0)	ND(0.5)	ND(10.0)	ND(5.0)
BROMOMETHANE	ND(1.0)	ND(1.0)	ND(1.2)	ND(10.0)	ND(12.0)
CARBON TETRACHLORIDE	ND(1.0)	ND(1.0)	ND(0.12)	ND(10.0)	ND(1.2)
CHLOROBENZENE	ND(0.2)	ND(0.5)	ND(1.0)	ND(10.0)	ND(2.0)
CHLOROETHANE	ND(1.0)	ND(1.0)	ND(0.52)	ND(10.0)	ND(5.2)
CHLOROFORM	ND(1.0)	ND(1.0)	ND(0.1)	ND(10.0)	ND(1.0)
CHLOROMETHANE	ND(1.0)	ND(1.0)	ND(0.3)	ND(10.0)	ND(3.0)
DIBROMOCHLOROMETHANE	ND(1.0)	ND(1.0)	ND(0.2)	ND(10.0)	ND(2.0)
1,2-DICHLOROBENZENE	ND(0.2)	ND(0.5)	ND(2.0)	ND(10.0)	ND(4.0)
1,3-DICHLOROBENZENE	ND(0.2)	ND(0.5)	ND(2.0)	ND(10.0)	ND(4.0)
1,4-DICHLOROBENZENE	ND(0.2)	ND(0.5)	8.6	ND(10.0)	ND(3.0)
DICHLORODIFLUOROMETHANE	ND(1.0)	ND(1.0)	NA	NA	NA
1,1-DICHLOROETHANE	ND(1.0)	ND(1.0)	1.9	ND(10.0)	ND(5.0)
1,2-DICHLOROETHANE	ND(1.0)	ND(1.0)	3.5	ND(10.0)	6.3
1,1-DICHLOROETHENE	ND(1.0)	ND(1.0)	ND(0.2)	ND(10.0)	ND(2.0)
CIS-1,2-DICHLOROETHENE	NA	ND(1.0)	NA	ND(10.0)	28.0
TRANS-1,2-DICHLOROETHENE	ND(1.0)	5.6	9.3	ND(10.0)	ND(2.0)
1,2-DICHLOROPROPANE	ND(1.0)	ND(1.0)	ND(0.1)	ND(10.0)	ND(1.0)
ETHYLBENZENE	23.67	3.01	18.0	20.5	19.0
METHYLENE CHLORIDE	ND(1.0)	ND(1.0)	1.0	ND(10.0)	ND(4.0)
1,1,2,2-TETRACHLOROETHANE	ND(1.0)	2.3	ND(0.15)	ND(10.0)	ND(1.5)
TETRACHLOROETHENE	ND(1.0)	ND(1.0)	1.3	ND(10.0)	ND(1.0)
TOLUENE	69.33	ND(0.5)	ND(1.0)	ND(1.0)	ND(2.0)
1,1,1-TRICHLOROETHANE	ND(1.0)	ND(1.0)	0.8	ND(10.0)	4.5
1,1,2-TRICHLOROETHANE	ND(1.0)	2.3	ND(0.2)	ND(10.0)	ND(2.0)
TRICHLOROETHENE	ND(1.0)	ND(1.0)	2.0	ND(10.0)	2.0
TRICHLOROFLUOROMETHANE	ND(1.0)	ND(1.0)	ND(0.2)	ND(10.0)	ND(2.0)
VINYL CHLORIDE	ND(1.0)	ND(1.0)	ND(0.2)	ND(10.0)	ND(2.0)
TOTAL XYLENES	47.44	18.86	9.1	6.25	ND(2.0)

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER INFLUENT

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>4/2/90</u>	<u>5/2/90</u>	<u>6/4/90</u>	<u>7/17/90</u>	<u>8/21/90</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	<1.0	<1.0	(BELOW)	<1.0
BENZENE	23.0	22.0	ND	52.0	ND
BROMODICHLOROMETHANE	ND	ND	ND	ND(1.0)	1.4 X
BROMOFORM	ND	ND	1.2	ND(5.0)	ND
BROMOMETHANE	ND	ND	ND	ND(12.0)	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND(1.2)	ND
CHLOROBENZENE	ND	ND	4.5	ND(2.0)	ND
CHLOROETHANE	ND	ND	ND	ND(5.2)	ND
CHLOROFORM	ND	ND	ND	ND(1.0)	ND
CHLOROMETHANE	ND	ND	ND	ND(3.0)	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND(2.0)	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND(4.0)	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND(4.0)	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND(3.0)	ND
DICHLORODIFLUOROMETHANE	NA	NA	NA	NA	ND
1,1-DICHLOROETHANE	3.1	2.2	ND	ND(5.0)	0.68 X
1,2-DICHLOROETHANE	4.5	2.2	1.3	ND(1.0)	1.1
1,1-DICHLOROETHENE	ND	ND	ND	ND(2.0)	ND
CIS-1,2-DICHLOROETHENE	25.0	5.9	ND	16.0	0.43 X
TRANS-1,2-DICHLOROETHENE	ND	ND	ND	ND(2.0)	ND
1,2-DICHLOROPROPANE	ND	ND	ND	ND(1.0)	ND
ETHYLBENZENE	0.9	3.5	7.1	6.7	ND
METHYLENE CHLORIDE	0.65	ND	ND	6.2	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	0.89	ND(1.5)	ND
TETRACHLOROETHENE	2.8	2.7	ND	4.2	0.32 X
TOLUENE	ND	ND	1.2	2.2	ND
1,1,1-TRICHLOROETHANE	0.96	0.53	ND	16.0	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND(2.0)	0.2 X
TRICHLOROETHENE	2.4	2.6	ND	36.0	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND(2.0)	ND
VINYL CHLORIDE	ND	ND	ND	ND(2.0)	ND
TOTAL XYLENES	7.1	3.8	16.0	36.0	0.81

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE
X - PRESENCE NOT CONFIRMED

VOLATILE ORGANIC CONCENTRATIONS (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER INFLUENT

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>9/5/90</u>	<u>10/4/90</u>	<u>11/5/90</u>	<u>1/29/90</u>	<u>2/6/91</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	(BELOW)	<1.0	<1.0	<1.0
BENZENE	2.8 X	60.0	5.2	1.5	ND
BROMODICHLOROMETHANE	NA	ND (1.0)	ND	ND	ND
BROMOFORM	NA	ND (5.0)	ND	ND	ND
BROMOMETHANE	NA	ND (12.0)	ND	ND	ND
CARBON TETRACHLORIDE	NA	ND (1.2)	ND	ND	ND
CHLOROBENZENE	ND	4.5 X	ND	ND	ND
CHLOROETHANE	NA	ND (5.2)	ND	ND	ND
CHLOROFORM	NA	ND (1.0)	ND	ND	ND
CHLOROMETHANE	NA	ND (3.0)	ND	ND	ND
DIBROMOCHLOROMETHANE	NA	ND (2.0)	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND (4.0)	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND (4.0)	ND	ND	ND
1,4-DICHLOROBENZENE	ND	100.0	2.3	ND	ND
1,1-DICHLOROETHANE	NA	ND (5.0)	ND	ND	ND
1,2-DICHLOROETHANE	NA	2.7 X	ND	ND	ND
1,1-DICHLOROETHENE	NA	ND (2.0)	ND	ND	ND
CIS-1,2-DICHLOROETHENE	NA	16.0 X	0.66	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	ND (2.0)	ND	NA	NA
TOTAL 1,2-DICHLOROETHENE	NA	NA	NA	ND	ND
1,2-DICHLOROPROPANE	NA	ND (1.0)	ND	ND	ND
ETHYLBENZENE	ND	ND (2.0)	0.42	ND	ND
METHYLENE CHLORIDE	NA	4.9 X	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	NA	ND (1.5)	ND	ND	ND
TETRACHLOROETHENE	NA	1.5 X	0.31	ND	ND
TOLUENE	ND	3.0	0.25	ND	ND
1,1,1-TRICHLOROETHANE	NA	2.5 X	ND	ND	ND
1,1,2-TRICHLOROETHANE	NA	ND (2.0)	ND	ND	ND
TRICHLOROETHENE	NA	2.3 X	ND	ND	ND
TRICHLOROFLUOROMETHANE	NA	3.0 X	ND	ND	ND
VINYL CHLORIDE	NA	ND (2.0)	ND	ND	ND
TOTAL XYLENES	0.92 X	140.0	1.7	1.3	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE
X - PRESENCE NOT CONFIRMED

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER INFLUENT

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>3/8/91</u>	<u>4/8/91</u>	<u>5/1/91</u>	<u>6/7/91</u>	<u>7/8/91</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	<1.0	<1.0	<1.0	(BELOW)
BENZENE	ND(5.0)	2.9	ND	25.2	303.0
BROMODICHLOROMETHANE	ND(2.0)	ND	ND	ND	ND(1.0)
BROMOFORM	ND(2.0)	ND	ND	ND	ND(1.0)
BROMOMETHANE	ND(2.0)	ND	ND	ND	ND(1.0)
CARBON TETRACHLORIDE	ND(2.0)	ND	ND	ND	ND(1.0)
CHLOROBENZENE	ND(5.0)	ND	ND	ND	ND(2.5)
CHLOROETHANE	ND(2.0)	ND	ND	ND	ND(1.0)
CHLOROFORM	ND(2.0)	ND	ND	ND	ND(1.0)
CHLOROMETHANE	ND(2.0)	ND	ND	ND	ND(1.0)
DIBROMOCHLOROMETHANE	ND(2.0)	ND	ND	ND	ND(1.0)
1,2-DICHLOROBENZENE	ND(5.0)	ND	ND	ND	ND(2.5)
1,3-DICHLOROBENZENE	ND(5.0)	ND	ND	ND	ND(2.5)
1,4-DICHLOROBENZENE	ND(5.0)	ND	ND	ND	ND(2.5)
1,1-DICHLOROETHANE	ND(2.0)	ND	ND	0.7	4.0
1,2-DICHLOROETHANE	ND(2.0)	0.6	ND	1.2	9.0
1,1-DICHLOROETHENE	ND(2.0)	ND	ND	ND	ND(1.0)
TOTAL 1,2-DICHLOROETHENE	ND(2.0)	1.5	ND	2.7	14.0
1,2-DICHLOROPROPANE	ND(2.0)	ND	ND	ND	ND(1.0)
ETHYLBENZENE	ND(5.0)	ND	ND	4.5	52.0
METHYLENE CHLORIDE	ND(20.0)	ND	ND	ND	ND(10.0)
1,1,2,2-TETRACHLOROETHANE	ND(2.0)	ND	ND	ND	ND(1.0)
TETRACHLOROETHENE	ND(2.0)	ND	ND	0.3	1.0
TOLUENE	ND(5.0)	ND	ND	1.9	43.0
1,1,1-TRICHLOROETHANE	ND(2.0)	ND	ND	ND	ND(1.0)
1,1,2-TRICHLOROETHANE	ND(2.0)	ND	ND	ND	ND(1.0)
TRICHLOROETHENE	ND(2.0)	ND	ND	0.3	2.0
TRICHLOROFLUOROMETHANE	ND(5.0)	ND	ND	ND	ND(2.5)
VINYL CHLORIDE	ND(5.0)	ND	ND	ND	ND(1.0)
TOTAL XYLENES	ND(20.0)	3.2	ND	46.0	156.0

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER INFLUENT

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>8/9/91</u>	<u>9/9/91</u>	<u>10/31/91</u>	<u>11/11/91</u>	<u>12/9/91</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	(BELOW)	<1.0	<1.0	<1.0
BENZENE	45.7	35.0	17.0	21.0	8.9
BROMODICHLOROMETHANE	ND	ND (1.0)	ND	ND	ND
BROMOFORM	ND	ND (1.0)	ND	ND	ND
BROMOMETHANE	ND	ND (1.0)	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND (1.0)	ND	ND	ND
CHLOROBENZENE	ND	ND (2.5)	ND	ND	ND
CHLOROETHANE	ND	ND (1.0)	ND	ND	ND
CHLOROFORM	ND	ND (1.0)	ND	ND	ND
CHLOROMETHANE	ND	ND (1.0)	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND (1.0)	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND (2.5)	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND (2.5)	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND (2.5)	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND (1.0)	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND (1.0)	0.5	0.4	0.7
1,2-DICHLOROETHANE	ND	ND (1.0)	0.5	0.7	0.4
1,1-DICHLOROETHENE	ND	ND (1.0)	ND	ND	ND
TOTAL 1,2-DICHLOROETHENE	2.8	ND (1.0)	3.1	3.2	2.6
1,2-DICHLOROPROPANE	ND	ND (1.0)	ND	ND	ND
ETHYLBENZENE	ND	3.0	1.2	2.7	1.5
METHYLENE CHLORIDE	2.1	ND (10.0)	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND (1.0)	ND	ND	ND
TETRACHLOROETHENE	0.4	ND (1.0)	0.3	0.5	0.2
TOLUENE	0.7	ND (2.5)	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND (1.0)	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND (1.0)	ND	ND	ND
TRICHLOROETHENE	0.4	ND (1.0)	0.2	0.4	ND
TRICHLOROFLUOROMETHANE	ND	ND (2.5)	ND	ND	ND
VINYL CHLORIDE	ND	ND (1.0)	ND	ND	ND
TOTAL XYLENES	7.5	13.0	3.4	4.5	1.0

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER INFLUENT

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>1/9/92</u>	<u>2/10/92</u>	<u>3/4/92</u>	<u>4/9/92</u>	<u>5/8/92</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	<1.0	<1.0	<1.0	<1.0
BENZENE	11.0	11.0	9.8	12.0	5.1
BROMODICHLOROMETHANE	ND	ND	ND	NA	ND
BROMOFORM	ND	ND	ND	NA	ND
BROMOMETHANE	ND	ND	ND	NA	ND
CARBON TETRACHLORIDE	ND	ND	ND	NA	ND
CHLOROBENZENE	ND	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	NA	ND
CHLOROFORM	ND	ND	ND	NA	ND
CHLOROMETHANE	ND	ND	ND	NA	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	NA	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND	NA	ND
1,1-DICHLOROETHANE	0.8	0.8	1.0	NA	0.6
1,2-DICHLOROETHANE	0.7	0.6	0.6	NA	0.5
1,1-DICHLOROETHENE	ND	ND	ND	NA	ND
TOTAL 1,2-DICHLOROETHENE	2.8	2.8	2.9	NA	1.3
1,2-DICHLOROPROPANE	ND	ND	ND	NA	ND
ETHYLBENZENE	1.5	0.6	1.5	2.9	0.6
METHYLENE CHLORIDE	ND	ND	ND	NA	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	NA	ND
TETRACHLOROETHENE	0.2	0.2	ND	NA	ND
TOLUENE	ND	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND	ND	NA	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	NA	ND
TRICHLOROETHENE	ND	ND	ND	NA	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	NA	ND
VINYL CHLORIDE	ND	ND	ND	NA	ND
TOTAL XYLENES	ND	1.7	2.2	4.1	4.8

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER INFLUENT

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>6/5/92</u>	<u>7/7/92</u>	<u>8/10/92</u>	<u>10/12/92</u>	<u>11/16/92</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	<1.0	<1.0	<1.0	<1.0
BENZENE	5.3	11.7	15.6	19.3	30.0
BROMODICHLOROMETHANE	ND	ND	ND	ND	ND
BROMOFORM	ND	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND	ND
CHLOROFORM	0.5	ND	ND	ND	ND
CHLOROMETHANE	ND	ND	1.2	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	0.6	0.8	0.8	ND	0.7
1,2-DICHLOROETHANE	0.6	0.4	0.4	0.4	0.5
1,1-DICHLOROETHENE	ND	ND	ND	ND	ND
TOTAL 1,2-DICHLOROETHENE	1.3	1.8	1.2	3.0	ND
1,2-DICHLOROPROPANE	ND	ND	ND	ND	ND
TRANS-1-3-DICHLOROPROPENE	ND	ND	ND	ND	3.3
ETHYLBENZENE	0.7	3.3	4.4	ND	13.9
METHYLENE CHLORIDE	ND	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND	ND
TETRACHLOROETHENE	0.3	ND	ND	ND	ND
TOLUENE	ND	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	0.3	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND	ND
TRICHLOROETHENE	0.3	ND	ND	ND	0.2
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND	ND
TOTAL XYLENES	3.8	3.3	5.4	11.2	16.0

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER INFLUENT

<u>SAMPLER</u>	<u>GIANT</u>
<u>DATE</u>	<u>12/9/92</u>
<u>PARAMETER</u>	
DETECTION LIMIT	(BELOW)
BENZENE	30.0
BROMODICHLOROMETHANE	ND (1.0)
BROMOFORM	ND (1.0)
BROMOMETHANE	ND (1.0)
CARBON TETRACHLORIDE	ND (1.0)
CHLOROBENZENE	ND (2.5)
CHLOROETHANE	ND (1.0)
CHLOROFORM	ND (1.0)
CHLOROMETHANE	ND (1.0)
DIBROMOCHLOROMETHANE	ND (1.0)
1,2-DICHLOROBENZENE	ND (2.5)
1,3-DICHLOROBENZENE	ND (2.5)
1,4-DICHLOROBENZENE	ND (2.5)
DICHLORODIFLUOROMETHANE	ND (1.0)
1,1-DICHLOROETHANE	ND (1.0)
1,2-DICHLOROETHANE	ND (1.0)
1,1-DICHLOROETHENE	ND (1.0)
TOTAL 1,2-DICHLOROETHENE	1.0
1,2-DICHLOROPROPANE	ND (1.0)
ETHYLBENZENE	ND (2.5)
METHYLENE CHLORIDE	ND (10.0)
1,1,2,2-TETRACHLOROETHANE	ND (1.0)
TETRACHLOROETHENE	ND (1.0)
TOLUENE	ND (2.5)
1,1,1-TRICHLOROETHANE	ND (1.0)
1,1,2-TRICHLOROETHANE	ND (1.0)
TRICHLOROETHENE	ND (1.0)
TRICHLOROFLUOROMETHANE	ND (2.5)
VINYL CHLORIDE	ND (1.0)
TOTAL XYLENES	11.0

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
**	-	SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER EFFLUENT

<u>SAMPLER</u>	<u>GIANT</u>	<u>OCD</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>
<u>DATE</u>	<u>6/23/88</u>	<u>7/13/88</u>	<u>11/8/88</u>	<u>12/8/88</u>	<u>12/13/88</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	5.0	2.0	(BELOW)	<1.0
BENZENE	9.5	14.0	ND	59.0	51.0
BROMODICHLOROMETHANE	ND	ND	ND	ND(<1.0)	ND
BROMOFORM	ND	ND	ND	ND(<1.0)	ND
BROMOMETHANE	ND	ND	ND	ND(1.2)	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND(<1.0)	ND
CHLOROBENZENE	ND	ND	ND	ND(7.5)	ND
CHLOROETHANE	ND	ND	ND	ND(<1.0)	ND
CHLOROFORM	ND	ND	ND	ND(<1.0)	ND
CHLOROMETHANE	ND	ND	ND	ND(<1.0)	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND(<1.0)	ND
1,2-DICHLOROBENZENE	ND	ND	NA	ND(10.0)	ND
1,3-DICHLOROBENZENE	ND	ND	NA	ND(10.0)	ND
1,4-DICHLOROBENZENE	ND	ND	NA	ND(7.5)	ND
DICHLORODIFLUOROMETHANE	NA	ND	NA	NA	NA
1,1-DICHLOROETHANE	ND	ND	ND	0.8	0.7
1,2-DICHLOROETHANE	0.87	ND	ND	2.4	2.4
1,1-DICHLOROETHENE	ND	ND	ND	ND(<1.0)	ND
CIS-1,2-DICHLOROETHENE	NA	ND	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	ND	ND	ND	0.8	0.9
1,2-DICHLOROPROPANE	ND	ND	ND	ND(<1.0)	ND
ETHYLBENZENE	1.3	TR	ND	17.0	6.0
METHYLENE CHLORIDE	3.0	ND	ND	ND(<1.0)	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND(<1.0)	ND
TETRACHLOROETHENE	ND	ND	ND	ND(<1.0)	ND
TOLUENE	7.8	TR	ND	18.0	1.8
1,1,1-TRICHLOROETHANE	ND	ND	ND	ND(<1.0)	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND(<1.0)	ND
TRICHLOROETHENE	ND	ND	ND	ND(<1.0)	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	1.3	ND
VINYL CHLORIDE	ND	ND	ND	ND(<1.0)	ND
TOTAL XYLENES	28.0	14.0	6.6	115.0	53.0

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER EFFLUENT

<u>SAMPLER</u>	OCD	OCD*	GIANT	GIANT	GIANT
<u>DATE</u>	<u>12/15/88</u>	<u>12/15/88</u>	<u>1/16/89</u>	<u>2/2/89</u>	<u>3/14/89</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	(BELOW)	(BELOW)	<1.0	(BELOW)
BENZENE	20.8	15.0	42.0	ND	219.0
BROMODICHLOROMETHANE	ND(0.5)	ND(0.5)	ND(<1.0)	ND	ND(<1.0)
BROMOFORM	ND(0.5)	ND(0.5)	ND(<1.0)	ND	ND(<1.0)
BROMOMETHANE	ND(0.5)	ND(0.5)	ND(1.2)	ND	ND(1.0)
CARBON TETRACHLORIDE	ND(0.5)	ND(0.5)	ND(<1.0)	ND	ND(<1.0)
CHLOROBENZENE	ND(0.5)	ND(0.5)	ND(1.5)	ND	ND(<1.0)
CHLOROETHANE	ND(0.5)	ND(0.5)	ND(<1.0)	ND	ND(1.0)
CHLOROFORM	ND(0.5)	ND(0.5)	ND(<1.0)	ND	ND(<1.0)
CHLOROMETHANE	ND(0.5)	ND(0.5)	ND(<1.0)	ND	ND(1.0)
DIBROMOCHLOROMETHANE	ND(0.5)	ND(0.5)	ND(<1.0)	ND	ND(<1.0)
1,2-DICHLOROBENZENE	ND(0.5)	ND(0.5)	ND(2.0)	ND	ND(<1.0)
1,3-DICHLOROBENZENE	ND(0.5)	ND(0.5)	ND(2.0)	ND	ND(<1.0)
1,4-DICHLOROBENZENE	ND(0.5)	ND(0.5)	ND(1.5)	ND	ND(<1.0)
DICHLORODIFLUOROMETHANE	ND(0.5)	ND(0.5)	NA	NA	ND(1.0)
1,1-DICHLOROETHANE	0.5	ND(0.5)	0.8	ND	ND(<1.0)
1,2-DICHLOROETHANE	1.5	1.0	2.9	0.7	11.1
1,1-DICHLOROETHENE	ND(0.5)	ND(0.5)	ND(<1.0)	ND	ND(<1.0)
CIS-1,2-DICHLOROETHENE	NA	ND(0.5)	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	ND(0.5)	ND(0.5)	1.3	ND	ND(<1.0)
1,2-DICHLOROPROPANE	ND(0.5)	ND(0.5)	ND(<1.0)	ND	ND(<1.0)
1,2-DIMETHYLBENZENE	NA	TR(2.0)	NA	NA	NA
ETHYLBENZENE	ND(0.2)	TR(2.0)	10.0	ND	12.5
METHYLENE CHLORIDE	ND(0.5)	ND(0.5)	ND(<1.0)	ND	7.2
1,1,2,2-TETRACHLOROETHANE	ND(0.5)	ND(0.5)	ND(<1.0)	ND	ND(<1.0)
TETRACHLOROETHENE	ND(0.5)	ND(0.5)	0.6	ND	ND(<1.0)
TOLUENE	1.8	TR(2.0)	ND(1.0)	ND	319.0
1,1,1-TRICHLOROETHANE	ND(0.5)	ND(0.5)	0.6	ND	ND(<1.0)
1,1,2-TRICHLOROETHANE	ND(0.5)	ND(0.5)	ND(<1.0)	ND	ND(<1.0)
TRICHLOROETHENE	ND(0.5)	ND(0.5)	0.5	ND	ND(<1.0)
TRICHLOROFLUOROMETHANE	ND(0.5)	ND(0.5)	1.0	ND	ND(<1.0)
VINYL CHLORIDE	ND(0.5)	ND(0.5)	ND(<1.0)	ND	ND(1.0)
TOTAL XYLENES	12.0	15.0	41.6	ND	137.2
TR -	TRACE				
ND -	NOT DETECTED				
NA -	NOT ANALYZED				
* -	DUPLICATE ANALYSIS				

VOLATILE ORGANIC CONCENTRATIONS (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER EFFLUENT

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>4/25/89</u>	<u>5/12/89</u>	<u>6/14/89</u>	<u>7/12/89</u>	<u>8/17/89</u>
<u>PARAMETER</u>					
DETECTION LIMIT	0.2	<1.0	(BELOW)	(BELOW)	(BELOW)
BENZENE	10.1	9.8	5.5	0.51	58.0
BROMODICHLOROMETHANE	NA	ND	ND(1.0)	ND(1.0)	ND(1.0)
BROMOFORM	NA	ND	ND(1.0)	ND(1.0)	ND(20.0)
BROMOMETHANE	NA	ND	ND(1.0)	ND(1.0)	ND(10.0)
CARBON TETRACHLORIDE	NA	ND	ND(1.0)	ND(1.0)	ND(2.0)
CHLOROBENZENE	NA	ND	ND(0.2)	ND(0.2)	ND(1.0)
CHLOROETHANE	NA	ND	ND(1.0)	ND(1.0)	ND(5.0)
CHLOROFORM	NA	ND	ND(1.0)	ND(1.0)	ND(1.0)
CHLOROMETHANE	NA	ND	ND(1.0)	ND(1.0)	ND(5.0)
DIBROMOCHLOROMETHANE	NA	ND	ND(1.0)	ND(1.0)	ND(2.0)
1,2-DICHLOROBENZENE	NA	ND	ND(0.2)	ND(0.2)	ND(2.0)
1,3-DICHLOROBENZENE	NA	ND	ND(0.2)	ND(0.2)	ND(4.0)
1,4-DICHLOROBENZENE	NA	ND	ND(0.2)	ND(0.2)	ND(2.0)
DICHLORODIFLUOROMETHANE	NA	ND	ND(1.0)	ND(1.0)	NA
1,1-DICHLOROETHANE	NA	ND	ND(1.0)	ND(1.0)	ND(1.0)
1,2-DICHLOROETHANE	NA	0.9	ND(1.0)	ND(1.0)	ND(1.0)
1,1-DICHLOROETHENE	NA	ND	ND(1.0)	ND(1.0)	ND(1.0)
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	ND	ND(1.0)	ND(1.0)	NA
TOTAL 1,2-DICHLOROETHENE	NA	NA	NA	NA	7.1
1,2-DICHLOROPROPANE	NA	ND	ND(1.0)	ND(1.0)	ND(1.0)
ETHYLBENZENE	8.3	2.6	ND(0.2)	ND(0.2)	ND(1.0)
METHYLENE CHLORIDE	NA	0.3	ND(1.0)	ND(1.0)	ND(4.0)
1,1,2,2-TETRACHLOROETHANE	NA	ND	ND(1.0)	ND(1.0)	ND(2.0)
TETRACHLOROETHENE	NA	ND	ND(1.0)	ND(1.0)	ND(1.0)
TOLUENE	4.6	4.5	ND(0.2)	ND(0.2)	2.7
1,1,1-TRICHLOROETHANE	NA	ND	ND(1.0)	ND(1.0)	ND(2.0)
1,1,2-TRICHLOROETHANE	NA	ND	ND(1.0)	ND(1.0)	ND(2.0)
TRICHLOROETHENE	NA	ND	ND(1.0)	ND(1.0)	ND(2.0)
TRICHLOROFLUOROMETHANE	NA	ND	ND(1.0)	ND(1.0)	ND(1.0)
VINYL CHLORIDE	NA	ND	ND(1.0)	ND(1.0)	ND(2.0)
TOTAL XYLENES	29.9	17.7	ND(0.2)	ND(0.2)	13.0
TR -	TRACE				
ND -	NOT DETECTED				
NA -	NOT ANALYZED				
** -	SPLIT SAMPLE				

VOLATILE ORGANIC CONCENTRATIONS (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER EFFLUENT

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>9/13/89</u>	<u>9/29/89</u>	<u>10/19/89</u>	<u>11/15/89</u>	<u>12/12/89</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	1.0	(BELOW)	0.5	<1.0
BENZENE	1,200	9.2	12.43	ND	3.3
BROMODICHLOROMETHANE	ND(10.0)	NA	ND(1.0)	NA	ND
BROMOFORM	ND(200.0)	NA	ND(1.0)	NA	ND
BROMOMETHANE	ND(100.0)	NA	ND(1.0)	NA	ND
CARBON TETRACHLORIDE	ND(20.0)	NA	ND(1.0)	NA	ND
CHLOROBENZENE	ND(10.0)	ND	ND(0.2)	ND	ND
CHLOROETHANE	ND(50.0)	NA	ND(1.0)	NA	ND
CHLOROFORM	ND(10.0)	NA	ND(1.0)	NA	ND
CHLOROMETHANE	ND(50.0)	NA	ND(1.0)	NA	ND
DIBROMOCHLOROMETHANE	ND(20.0)	NA	ND(1.0)	NA	ND
1,2-DICHLOROBENZENE	ND(20.0)	ND	ND(0.2)	ND	ND
1,3-DICHLOROBENZENE	ND(40.0)	ND	ND(0.2)	ND	ND
1,4-DICHLOROBENZENE	ND(20.0)	ND	ND(0.2)	ND	1.4
DICHLORODIFLUOROMETHANE	NA	NA	ND(1.0)	NA	NA
1,1-DICHLOROETHANE	ND(10.0)	NA	ND(1.0)	NA	ND
1,2-DICHLOROETHANE	ND(10.0)	NA	ND(1.0)	NA	1.0
1,1-DICHLOROETHENE	ND(10.0)	NA	ND(1.0)	NA	ND
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	ND(1.0)	NA	0.97
TOTAL 1,2-DICHLOROETHENE	ND(10.0)	NA	NA	NA	NA
1,2-DICHLOROPROPANE	ND(10.0)	NA	ND(1.0)	NA	ND
ETHYLBENZENE	50.0	0.4	1.48	ND	0.55
METHYLENE CHLORIDE	ND(40.0)	NA	ND(1.0A)	NA	ND
1,1,2,2-TETRACHLOROETHANE	ND(20.0)	NA	ND(1.0A)	NA	ND
TETRACHLOROETHENE	ND(10.0)	NA	ND(1.0)	NA	ND
TOLUENE	190.0	0.6	5.42	ND	ND
1,1,1-TRICHLOROETHANE	ND(20.0)	NA	ND(1.0)	NA	ND
1,1,2-TRICHLOROETHANE	ND(20.0)	NA	ND(1.0)	NA	ND
TRICHLOROETHENE	ND(20.0)	NA	ND(1.0)	NA	ND
TRICHLOROFLUOROMETHANE	ND(10.0)	NA	ND(1.0)	NA	ND
VINYL CHLORIDE	ND(20.0)	NA	ND(1.0)	NA	ND
TOTAL XYLENES	110.0	1.2	3.54	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER EFFLUENT

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>1/15/90</u>	<u>2/12/90</u>	<u>4/2/90</u>	<u>5/2/90</u>	<u>6/4/90</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	<1.0	<1.0	<1.0	<1.0
BENZENE	ND (1.0)	5.3	ND	ND	ND
BROMODICHLOROMETHANE	ND (10.0)	ND	ND	ND	ND
BROMOFORM	ND (10.0)	ND	ND	ND	ND
BROMOMETHANE	ND (10.0)	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND (10.0)	ND	ND	ND	ND
CHLOROBENZENE	ND (10.0)	ND	ND	ND	ND
CHLOROETHANE	ND (10.0)	ND	ND	ND	ND
CHLOROFORM	ND (10.0)	ND	ND	ND	ND
CHLOROMETHANE	ND (10.0)	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND (10.0)	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND (10.0)	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND (10.0)	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND (10.0)	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND (10.0)	NA	NA	NA	NA
1,1-DICHLOROETHANE	ND (10.0)	ND	ND	ND	ND
1,2-DICHLOROETHANE	ND (10.0)	0.84	ND	0.17	ND
1,1-DICHLOROETHENE	ND (10.0)	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	NA	0.7	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	ND (10.0)	ND	ND	ND	5.2
1,2-DICHLOROPROPANE	ND (10.0)	ND	ND	ND	ND
ETHYLBENZENE	ND (1.0)	ND	ND	ND	ND
METHYLENE CHLORIDE	ND (10.0)	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND (10.0)	ND	ND	ND	ND
TETRACHLOROETHENE	ND (10.0)	ND	ND	ND	ND
TOLUENE	ND (1.0)	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND (10.0)	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND (10.0)	ND	ND	ND	ND
TRICHLOROETHENE	ND (10.0)	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	ND (10.0)	ND	ND	ND	ND
VINYL CHLORIDE	ND (10.0)	ND	ND	ND	ND
TOTAL XYLENES	ND (1.0)	ND	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER EFFLUENT

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>7/17/90</u>	<u>8/21/90</u>	<u>9/5/90</u>	<u>10/4/90</u>	<u>10/8/90</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	<1.0	<1.0	(BELOW)	<1.0
BENZENE	ND	ND	ND	5.9 X	ND
BROMODICHLOROMETHANE	ND	0.27 X	NA	13.0 X	ND
BROMOFORM	ND	ND	NA	23.0 X	ND
BROMOMETHANE	ND	ND	NA	ND (12.0)	ND
CARBON TETRACHLORIDE	ND	ND	NA	16.0 X	ND
CHLOROBENZENE	ND	ND	ND	14.0 X	ND
CHLOROETHANE	ND	ND	NA	ND (5.2)	ND
CHLOROFORM	ND	0.18 X	NA	10.0 X	ND
CHLOROMETHANE	ND	ND	NA	ND (3.0)	ND
DIBROMOCHLOROMETHANE	ND	ND	NA	14.0	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND (4.0)	ND
1,3-DICHLOROBENZENE	ND	ND	ND	19.0	ND
1,4-DICHLOROBENZENE	ND	ND	ND	20.0	0.56 X
1,1-DICHLOROETHANE	ND	ND	NA	13.0 X	ND
1,2-DICHLOROETHANE	ND	ND	NA	13.0 X	ND
1,1-DICHLOROETHENE	ND	ND	NA	14.0 X	ND
CIS-1,2-DICHLOROETHENE	ND	ND	NA	13.0 X	ND
TRANS-1,2-DICHLOROETHENE	ND	ND	NA	ND (2.0)	ND
1,2-DICHLOROPROPANE	ND	ND	NA	6.7 X	ND
ETHYLBENZENE	ND	0.2 X	ND	3.0	ND
METHYLENE CHLORIDE	0.69	ND	NA	9.5 X	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	NA	ND (1.5)	ND
TETRACHLOROETHENE	0.14	ND	NA	16.0 X	ND
TOLUENE	ND	0.32 X	ND	6.5	0.45 X
1,1,1-TRICHLOROETHANE	0.94	ND	NA	20.0 X	ND
1,1,2-TRICHLOROETHANE	ND	ND	NA	ND (2.0)	ND
TRICHLOROETHENE	6.8	0.48 X	NA	9.9 X	ND
TRICHLOROFLUOROMETHANE	0.24	ND	NA	22.0 X	ND
VINYL CHLORIDE	ND	ND	NA	ND (2.0)	ND
TOTAL XYLENES	ND	0.44 X	ND	35.0	0.91 X

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE
X - PRESENCE NOT CONFIRMED

VOLATILE ORGANIC CONCENTRATIONS (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER EFFLUENT

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>11/5/90</u>	<u>1/29/91</u>	<u>2/6/91</u>	<u>3/8/91</u>	<u>4/8/91</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	<1.0	<1.0	<1.0	<1.0
BENZENE	ND	ND	ND	ND	ND
BROMODICHLOROMETHANE	ND	ND	ND	ND	ND
BROMOFORM	ND	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND	ND
CHLOROFORM	ND	ND	ND	ND	ND
CHLOROMETHANE	ND	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	ND	ND	ND	ND	ND
1,1-DICHLOROETHENE	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	ND	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	ND	NA	NA	NA	NA
TOTAL 1,2-DICHLOROETHENE	NA	ND	ND	ND	ND
1,2-DICHLOROPROPANE	ND	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	ND	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND	ND
TETRACHLOROETHENE	ND	ND	ND	ND	ND
TOLUENE	0.29 X	1.4	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND	ND
TRICHLOROETHENE	ND	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	0.34 X	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND	ND
TOTAL XYLENES	0.48 X	ND	ND	ND	2.2

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE
X - PRESENCE NOT CONFIRMED

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER EFFLUENT

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>5/1/91</u>	<u>6/91</u>	<u>7/2/91</u>	<u>8/7/91</u>	<u>9/4/91</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	<1.0	<1.0	<1.0	<1.0
BENZENE	ND	ND	ND	ND	ND
BROMODICHLOROMETHANE	ND	ND	ND	ND	ND
BROMOFORM	ND	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND	ND
CHLOROFORM	ND	ND	ND	ND	ND
CHLOROMETHANE	ND	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	ND	ND	ND	ND	ND
1,1-DICHLOROETHENE	ND	ND	ND	ND	ND
TOTAL 1,2-DICHLOROETHENE	ND	ND	ND	ND	ND
1,2-DICHLOROPROPANE	ND	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	ND	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND	ND
TETRACHLOROETHENE	ND	ND	ND	ND	ND
TOLUENE	ND	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND	ND
TRICHLOROETHENE	ND	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND	ND
TOTAL XYLENES	ND	ND	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER EFFLUENT

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>10/1/91</u>	<u>11/11/91</u>	<u>11/8/91</u>	<u>12/23/91</u>	<u>1/8/92</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	<1.0	<1.0	<1.0	<1.0
BENZENE	ND	21.0	ND	ND	ND
BROMODICHLOROMETHANE	ND	ND	ND	ND	ND
BROMOFORM	ND	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND	ND
CHLOROFORM	ND	ND	ND	ND	ND
CHLOROMETHANE	ND	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND	0.4	ND	ND	ND
1,2-DICHLOROETHANE	ND	0.7	0.2	ND	ND
1,1-DICHLOROETHENE	ND	ND	ND	ND	ND
TOTAL 1,2-DICHLOROETHENE	ND	3.2	0.3	ND	ND
1,2-DICHLOROPROPANE	ND	ND	ND	ND	ND
ETHYLBENZENE	ND	2.7	ND	ND	ND
METHYLENE CHLORIDE	ND	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND	ND
TETRACHLOROETHENE	ND	0.5	ND	ND	ND
TOLUENE	ND	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND	ND
TRICHLOROETHENE	ND	0.4	ND	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND	ND
TOTAL XYLENES	ND	4.5	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER EFFLUENT

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>2/7/92</u>	<u>3/13/92</u>	<u>4/13/92</u>	<u>5/13/92</u>	<u>6/18/92</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	<1.0	<1.0	<1.0	<1.0
BENZENE	ND	ND	ND	ND	ND
BROMODICHLOROMETHANE	ND	ND	ND	ND	ND
BROMOFORM	ND	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND	ND
CHLOROFORM	ND	ND	ND	ND	ND
CHLOROMETHANE	ND	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	ND	0.3	ND	ND	ND
1,1-DICHLOROETHENE	ND	ND	ND	ND	ND
TOTAL 1,2-DICHLOROETHENE	ND	0.3	ND	ND	ND
1,2-DICHLOROPROPANE	ND	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	ND	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND	ND
TETRACHLOROETHENE	ND	ND	ND	ND	ND
TOLUENE	ND	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND	ND
TRICHLOROETHENE	ND	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND	ND
TOTAL XYLENES	ND	ND	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER EFFLUENT

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>7/20/92</u>	<u>8/3/92</u>	<u>9/21/92</u>	<u>10/9/92</u>	<u>11/23/92</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	<1.0	<1.0	<1.0	<1.0
BENZENE	ND	ND	0.9	2.2	ND
BROMODICHLOROMETHANE	ND	ND	ND	ND	ND
BROMOFORM	ND	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND	ND
CHLOROFORM	ND	ND	ND	ND	ND
CHLOROMETHANE	ND	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND	0.9	ND	ND
1,2-DICHLOROETHANE	ND	ND	0.5	0.6	0.2
1,1-DICHLOROETHENE	ND	ND	ND	ND	ND
TOTAL 1,2-DICHLOROETHENE	ND	ND	1.0	2.1	0.3
1,2-DICHLOROPROPANE	ND	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	0.5	1.8	ND
METHYLENE CHLORIDE	ND	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND	ND
TETRACHLOROETHENE	ND	ND	ND	ND	ND
TOLUENE	ND	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND	ND
TRICHLOROETHENE	ND	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND	ND
TOTAL XYLENES	ND	ND	1.6	2.0	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER EFFLUENT

SAMPLER GIANT

DATE 12/7/92

PARAMETER

DETECTION LIMIT <1.0

BENZENE	ND
BROMODICHLOROMETHANE	ND
BROMOFORM	ND
BROMOMETHANE	ND
CARBON TETRACHLORIDE	ND
CHLOROBENZENE	ND
CHLOROETHANE	ND
CHLOROFORM	ND
CHLOROMETHANE	ND
DIBROMOCHLOROMETHANE	ND
1,2-DICHLOROBENZENE	ND
1,3-DICHLOROBENZENE	ND
1,4-DICHLOROBENZENE	ND
DICHLORODIFLUOROMETHANE	ND
1,1-DICHLOROETHANE	ND
1,2-DICHLOROETHANE	ND
1,1-DICHLOROETHENE	ND
TOTAL 1,2-DICHLOROETHENE	0.3
1,2-DICHLOROPROPANE	ND
ETHYLBENZENE	ND
METHYLENE CHLORIDE	ND
1,1,2,2-TETRACHLOROETHANE	ND
TETRACHLOROETHENE	ND
TOLUENE	ND
1,1,1-TRICHLOROETHANE	ND
1,1,2-TRICHLOROETHANE	ND
TRICHLOROETHENE	ND
TRICHLOROFLUOROMETHANE	ND
VINYL CHLORIDE	ND
TOTAL XYLENES	ND

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
**	-	SPLIT SAMPLE

GBR 5	11/20/86	201.22	cat/an	Main 2-CAL!	Der. up to sea
	6/5/86	✓	✓		
	12/31/86	✓			
	5/29/86				
GBR 6	11/11/87	✓		✓	
	10/6/87	✓		✓	
	9/10/87	✓		✓	
	11/2/86	✓	✓		Nthog...
GBR 7	11/20/86	✓	✓		Nthog...
	10/17/86	✓			
GBR 8	1/20/88	✓		✓	
	11/17/87	✓		✓	
	10/6/87	✓		✓	
	10/17/86	✓			
GBR 9	8/25/88	✓✓	✓		
	10/7/87	✓		✓	
	9/10/87	✓		✓	
	11/21/86	✓		✓	Nthog...
	12/17/86	✓			
GBR 10	11/21/86	✓		✓	
GBR 11	11/20/86	✓	✓	✓	
	6/5/86	✓	✓	✓ (F.P.G.)	
	5/29/86	F.P.G.			

		605/602	Pat/Analysis	Mdals ICAP
GBR 13	11/11/87	✓		✓
	10/7/87	✓		✓
	9/10/87	✓		✓
	8/5/87	✓	✓	
	11/20/86	✓	✓	✓
	6/5/86	✓	✓	
	5/9/86	BTEX		
	4/15/85	BTEX		
GBR 14	6/8/88	✓	✓	✓
	11/21/86	✓	✓	
	10/17/86	✓		
GBR 15	1/20/88	✓		✓
	11/11/87	✓		✓
	10/7/87	✓		✓
	9/10/87	✓		✓
	10/17/86	✓		
GBR 17	3/14/89	BTEX	(AIR) ✓	
	10/7/87	605/602 ✓ ✓		✓
	12/7/88	605/602	✓	
	3/4/89	601		
	11/21/86	602 ✓ ✓	✓	✓
	11/12/87	✓ ✓		✓
	4/12/88	✓		
	8/24/88	✓ ✓ ✓	✓	
	9/01/88	✓		
	6/1 & 6/2 // 88	ZO: D, 8310, 610	✓	

TDS
Orthophosphate

	C	601/602	Cat/Air	Metals
GBR 17	4/20/88	✓, ⁸⁰¹⁰ 8020, BTEX	✓	
	5/29/86	✓ BTEX + Pb		Pb
	8/5/87	✓✓	✓	
	7/15/86	✓		
	6/5/86	✓	✓	✓
GBR 18	6/5/86	BTEX ✓	✓	✓
	? 6/8/88	BTEX ✓	✓	
	6/24/88	✓		
	8/24/88	✓✓	✓	
	11/21/86	✓	✓	✓
	7/8/86	✓		
	7/8/86	✓		
	5/9/86	BTEX		
GBR 19	8/25/88	✓✓	✓	
	4/20/88	✓✓ 8010	✓	
	11/21/86	✓	✓	✓
	10/17/86	✓		
GBR 20	11/20/86	✓	✓	
	6/5/86	✓	✓	✓
	5/9/86	BTEX		
GBR 21	5/9/86	BTEX		
GBR 22	5/9/86	BTEX		

TLO

	D.L.	601/602	Cat/AN	Metals	Other
GBR 24	11/21/86	✓	✓	✓	
	6/5/86	✓			
Shallow or Deep?	5/9/86	BTEX			
GBR 24D	3/14/89	BTEX	✓		
	2/9/87	601			
	10/1/87	601, ✓, ✓		✓	
	3/14/89	601			
	8/25/86	✓, ✓, ✓	✓		
	11/21/86	✓, ✓	✓	✓	
	11/21/87	✓			
	6/11/88	8010, ✓, 8310, 610	✓		
	11/12/87	✓		✓	
	9/10/87	✓		✓	
GBR 25	5/9/86	BTEX			
GBR 26	10/17/86	✓			
	5/9/86	BTEX			
GBR 27	10/7/87	✓			
	11/21/86	✓	✓	✓	
	6/5/86	✓	✓		PNA's, ✓
	5/18/86	BTEX			
GBR 28	6/8/88	✓	✓	✓	
	7/15/86	✓			
	5/29/86	BTEX			

	Date	601/602	Cat/AN	Metals	Other
GBR 29	6/8/88	✓	✓	✓	
	11/20/86	✓	✓	✓	
	6/9/86	✓			
	6/5/86	BTX, Fe, Pb, Cu	✓	✓	
	5/30/86	BTX, Pb			
GBR 30	3/14/89	BTX	✓		
	2/7/88	601/602	✓		GRTHSiphon 770
	6/1/88	8310, 610 8010, 8010, 8020	✓		610
	11/21/86	✓✓	✓	✓	
	10/17/86	✓			
GBR-31	8/25/88	✓✓	✓		
	6/2/88	8010/8020	✓		610
	9/20/88	✓ 8020, 8010	✓		
	11/21/86	✓	✓	✓	
	10/17/86	✓			
GBR 32	10/7/87	601, 601/602, ✓		✓	
	11/8/88	601/602			
	3/14/89	601/602	✓		
	8/24/88	✓, ✓, ✓	✓		
	4/20/88	✓, ✓, 8010 8020, ✓	✓		
	8/5/87	✓✓	✓	✓	Nitrates
	11/12/87	✓✓		✓	

	Date	401/602	Co2/Al	Metals	Other
GBR 33	10/7/87	✓		✓	
	9/9/87	✓		✓	
GBR 36	6/8/88	✓	✓	✓	
GBR 37	6/8/88	✓	✓	✓	Nitrogen
GBR 38	6/8/88	✓	✓	✓	Nitrogen
GBR 40	6/8/88	✓	✓		
GBR 41	6/8/88	✓	✓		
GBR 44	6/8/88	✓	✓	✓	
GBR 48	3/14/89	BTEX, 601	✓		
	11/8/88	601, 602, 601, 602	✓✓		NO ₂ , Nitrogen
GBR 49	3/14/89	BTEX, 601			
	11/8/88	601, 602, 601, 602	✓✓		NO ₂ , Nitrogen
GBR 50	3/14/89	602, 601	✓		
	11/8/88	601, 602, 601, 602	✓✓		NO ₂ , Nitrogen
Steel Well	10/17/86	✓			
	5/9/86	BTEX			

	Date	601/602	Cit/cu	Material	Other
Airstripper INFLUENT	12/15/88	✓ 8020, 602 8010, 601			
	7/13/88	✓			
Airstripper OUTFLOW	12/15/88	✓ 8020, 602 8010, 601	✓		
	7/13/88	✓	✓		610
South Tank TK 22	6/2/88	8010, 8020, 6010	✓		810, 610
	11/10/87	✓		✓	
	10/6/87	✓		✓	
TK 24 (North Tank)	6/2/88	8010, 8020,	✓		610
	11/10/87	✓		✓	
	10/7/87	✓		✓	
TK 32	?? ↓	8010, 8020 ↓			
	6/2/88		✓		610
TK 37	1/20/88	✓		✓	
West Srep	4/8/88	✓	✓	✓	Nitrate
	4/23/87	✓	✓		Nitrate
	11/21/86	✓			
	6/5/86	✓ BTEX, Fe, Pb, Cr	✓	✓	Nitrogen
	10/24/85	✓✓	✓	✓	608, Nitrate
Raw Water Pond	7/8/86	✓			
	6/5/86		✓	✓	

	Date	601/602	Cal/am	Mistake	Other
Sprinkler	11/7/86	✓✓✓			
	1410	}	✓		
	1420		✓		
	1400		✓		

Trip Blank	12/1/88	✓
Spot Blank	1/26/88	✓
Trip Blank	11/17/87	✓
Trip Blank	10/6/87	✓
Duplicate	10/7/87	✓
?	10/7/87	✓
Trip Blank	9/10/87	✓
Casing rinse water	4/21/87	
Equip. rinse water	4/21/87	
Trip Blank	6/5/86	✓

01-26-93 01:36p
Free: 487,424

Directory C:\WP51\BILL\GIANT\ANALYSE.DAT*.*

.	Current	<Dir>	..	Parent	<Dir>
AIRSTRIP.IN	67,409	01-26-93 10:23a	AIRSTRIP.OUT	72,559	01-26-93 10:25a
GBR .05	5,552	01-26-93 10:25a	GBR .07	4,750	01-26-93 10:26a
GBR .10	3,924	01-26-93 10:26a	GBR .18	11,312	01-26-93 10:27a
GBR .21	3,732	01-26-93 10:27a	GBR .22	3,714	01-26-93 10:28a
GBR .25	3,708	01-26-93 10:28a	GBR .26	4,665	01-26-93 10:29a
GBR .27	7,027	01-26-93 10:46a	GBR .28	6,244	01-26-93 10:48a
GBR .38	4,508	01-26-93 10:50a	GBR .40	3,709	01-26-93 10:56a
GBR .41	3,735	01-26-93 10:58a	GBR .42	4,500	01-26-93 10:58a
GBR(CL) .06	12,541	01-26-93 10:59a	GBR(CL) .08	12,052	01-26-93 11:00a
GBR(CL) .09	10,677	01-26-93 11:00a	GBR(CL) .11	5,606	01-26-93 11:01a
GBR(CL) .13	18,297	01-26-93 11:02a	GBR(CL) .14	25,557	01-26-93 11:02a
GBR(CL) .15	24,610	01-26-93 11:03a	GBR(CL) .17	37,996	01-26-93 11:07a
GBR(CL) .19	11,251	01-26-93 11:11a	GBR(CL) .20	5,472	01-26-93 11:12a
GBR(CL) .24D	31,249	01-26-93 11:13a	GBR(CL) .24S	5,465	01-26-93 11:13a
GBR(CL) .29	19,217	01-26-93 11:18a	GBR(CL) .30	25,345	01-26-93 11:29a
GBR(CL) .31	31,769	01-26-93 01:04p	GBR(CL) .32	25,166	01-26-93 01:05p
GBR(CL) .33	13,104	01-26-93 01:05p	GBR(CL) .36	4,575	01-26-93 01:06p
GBR(CL) .37	4,745	01-26-93 01:06p	GBR(CL) .43	12,573	01-26-93 01:07p
GBR(CL) .44	19,793	01-26-93 01:07p	GBR(CL) .47	5,203	01-26-93 01:10p
GBR(CL) .48	11,346	01-26-93 01:11p	GBR(CL) .49	11,145	01-26-93 01:11p
GBR(CL) .50	12,573	01-26-93 01:11p	GBR(CL) .51	6,013	01-22-93 01:34p
GBR(CL) .52	6,768	01-22-93 10:29a	MASTER .	6,647	01-26-93 01:12p
SHS .03	12,896	01-26-93 01:13p	SHS .04	4,547	01-26-93 01:13p
SHS .09	4,582	01-26-93 01:23p	SHS .11	3,844	01-26-93 01:14p
SHS .17	6,652	01-26-93 01:15p	SHS(CL) .01	5,395	01-26-93 01:25p
SHS(CL) .02	5,292	01-26-93 01:25p	SHS(CL) .05	4,628	01-26-93 01:26p
SHS(CL) .06	12,929	01-26-93 01:26p	SHS(CL) .07	4,385	01-26-93 01:26p
SHS(CL) .08	4,545	01-26-93 01:27p	SHS(CL) .10	12,369	01-26-93 01:27p
SHS(CL) .12	13,038	01-26-93 01:27p	SHS(CL) .13	13,079	01-26-93 01:28p
SHS(CL) .14	4,598	01-26-93 01:28p	SHS(CL) .15	13,367	01-26-93 01:29p
SHS(CL) .16	13,070	01-26-93 01:29p	SHS(CL) .18	6,765	01-26-93 01:29p
STEELWEL.L	4,552	01-26-93 01:36p			

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-5

<u>SAMPLER</u>	<u>GIANT</u>	<u>OCD</u>	<u>OCD</u>
<u>DATE</u>	<u>3/13/86</u>	<u>6/9/86</u>	<u>11/20/86</u>
<u>PARAMETER</u>			
DETECTION LIMIT	1.0	50.0	10.0
BENZENE	830.0	530.0	210.0
BROMODICHLOROMETHANE	NA	ND	ND
BROMOFORM	NA	ND	ND
BROMOMETHANE	NA	ND	ND
CARBON TETRACHLORIDE	NA	ND	ND
CHLOROBENZENE	NA	ND	ND
CHLOROETHANE	NA	ND	ND
CHLOROFORM	NA	ND	ND
CHLOROMETHANE	NA	ND	ND
DIBROMOCHLOROMETHANE	NA	ND	ND
1,2-DICHLOROBENZENE	NA	ND	ND
1,3-DICHLOROBENZENE	NA	ND	ND
1,4-DICHLOROBENZENE	NA	ND	ND
DICHLORODIFLUOROMETHANE	NA	ND	ND
1,1-DICHLOROETHANE	NA	ND	ND
1,2-DICHLOROETHANE	NA	ND	ND
1,1-DICHLOROETHENE	NA	ND	ND
CIS-1,2-DICHLOROETHENE	NA	ND	ND
TRANS-1,2-DICHLOROETHENE	NA	ND	ND
DICHLOROMETHANE	NA	ND	ND
1,2-DICHLOROPROPANE	NA	ND	ND
ETHYLBENZENE	299.0	1,000	700.0
METHYLENE CHLORIDE	NA	ND	ND
1,1,2,2-TETRACHLOROETHANE	NA	ND	ND
TETRACHLOROETHENE	NA	ND	ND
TOLUENE	638.0	200.0	31.0
1,1,1-TRICHLOROETHANE	NA	ND	ND
1,1,2-TRICHLOROETHANE	NA	ND	ND
TRICHLOROETHENE	NA	ND	ND
TRICHLOROFLUOROMETHANE	NA	ND	ND
VINYL CHLORIDE	NA	ND	ND
TOTAL XYLENES	2,204	4,600	2,701

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-6

<u>SAMPLER</u>	<u>OCD</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>
<u>DATE</u>	<u>11/20/86</u>	<u>9/10/87</u>	<u>10/6/87</u>	<u>11/11/87</u>	<u>12/7/88</u>
<u>PARAMETER</u>					
DETECTION LIMIT	1.0	<1.0	(BELOW)	(BELOW)	(BELOW)
BENZENE	70.0	101.0	85.0	75.0	740.0
BROMODICHLOROMETHANE	ND	ND	ND(<1.0)	ND(2.0)	ND(<1.0)
BROMOFORM	ND	ND	ND(<1.0)	ND(2.0)	ND(<1.0)
BROMOMETHANE	ND	ND	ND(<1.0)	ND(2.0)	ND(1.2)
CARBON TETRACHLORIDE	ND	ND	ND(<1.0)	ND(2.0)	ND(<1.0)
CHLOROBENZENE	ND	ND	ND(<1.0)	ND(5.0)	ND(300.0)
CHLOROETHANE	ND	ND	ND(1.0)	ND(2.0)	ND(<1.0)
CHLOROFORM	ND	ND	ND(<1.0)	ND(2.0)	ND(<1.0)
CHLOROMETHANE	ND	ND	ND(<1.0)	ND(2.0)	ND(<1.0)
DIBROMOCHLOROMETHANE	ND	ND	ND(<1.0)	ND(2.0)	ND(<1.0)
1,2-DICHLOROBENZENE	ND	ND	ND(4.0)	ND(5.0)	ND(400.0)
1,3-DICHLOROBENZENE	ND	ND	ND(4.0)	ND(5.0)	ND(400.0)
1,4-DICHLOROBENZENE	ND	ND	ND(6.0)	ND(5.0)	ND(300.0)
DICHLORODIFLUOROMETHANE	ND	ND	ND(<1.0)	ND(2.0)	ND(<1.0)
1,1-DICHLOROETHANE	ND	0.9	ND(<1.0)	ND(2.0)	ND(<1.0)
1,2-DICHLOROETHANE	3.0	2.6	ND(<1.0)	ND(2.0)	1.7
1,1-DICHLOROETHENE	ND	ND	ND(<1.0)	ND(2.0)	ND(<1.0)
CIS-1,2-DICHLOROETHENE	ND	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	ND	ND	ND(<1.0)	ND(2.0)	ND(<1.0)
1,2-DICHLOROPROPANE	ND	ND	ND(<1.0)	ND(2.0)	ND(<1.0)
ETHYLBENZENE	ND	74.4	169.0	240.0	25,000
METHYLENE CHLORIDE	ND	ND	ND(<1.0)	ND(2.0)	ND(<1.0)
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND(<1.0)	ND(2.0)	ND(<1.0)
TETRACHLOROETHENE	TR	0.3	ND(<1.0)	ND(2.0)	0.6
TOLUENE	ND	8.0	ND(4.0)	ND(10.0)	ND(200.0)
1,1,1-TRICHLOROETHANE	ND	ND	ND(<1.0)	ND(2.0)	ND(<1.0)
1,1,2-TRICHLOROETHANE	ND	ND	ND(<1.0)	ND(2.0)	ND(<1.0)
TRICHLOROETHENE	ND	ND	ND(<1.0)	ND(2.0)	ND(<1.0)
TRICHLOROFLUOROMETHANE	ND	ND	ND(<1.0)	ND(20.0)	ND(<1.0)
VINYL CHLORIDE	ND	ND	ND(<1.0)	ND(2.0)	ND(<1.0)
TOTAL XYLENES	1,240	190.8	46.3	190.0	31,000

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-6

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>3/15/89</u>	<u>6/13/89</u>	<u>9/12/89</u>	<u>12/13/89</u>
<u>PARAMETER</u>				
DETECTION LIMIT	(BELOW)	(BELOW)	(BELOW)	(BELOW)
BENZENE	222.0	136.0	200.0	110.0
BROMODICHLOROMETHANE	ND(<1.0)	ND(10.0)	ND(25.0)	ND(<1.0)
BROMOFORM	ND(<1.0)	ND(10.0)	ND(500.0)	ND(<1.0)
BROMOMETHANE	ND(1.0)	ND(10.0)	ND(250.0)	ND(1.2)
CARBON TETRACHLORIDE	ND(<1.0)	ND(10.0)	ND(50.0)	ND(<1.0)
CHLOROBENZENE	ND(<1.0)	ND(<1.0)	ND(25.0)	ND(10.0)
CHLOROETHANE	ND(1.0)	ND(10.0)	ND(130.0)	ND(<1.0)
CHLOROFORM	ND(<1.0)	ND(10.0)	ND(25.0)	ND(<1.0)
CHLOROMETHANE	ND(1.0)	ND(10.0)	ND(134.0)	ND(<1.0)
DIBROMOCHLOROMETHANE	ND(<1.0)	ND(10.0)	ND(50.0)	ND(<1.0)
1,2-DICHLOROBENZENE	ND(<1.0)	ND(<1.0)	ND(50.0)	ND(20.0)
1,3-DICHLOROBENZENE	ND(<1.0)	ND(<1.0)	ND(100.0)	ND(20.0)
1,4-DICHLOROBENZENE	ND(<1.0)	ND(<1.0)	ND(50.0)	ND(15.0)
DICHLORODIFLUOROMETHANE	ND(1.0)	ND(10.0)	NA	ND(<1.0)
1,1-DICHLOROETHANE	ND(<1.0)	ND(10.0)	ND(25.0)	ND(<1.0)
1,2-DICHLOROETHANE	ND(<1.0)	ND(10.0)	ND(25.0)	1.2
1,1-DICHLOROETHENE	ND(<1.0)	ND(10.0)	ND(25.0)	ND(<1.0)
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	ND(<1.0)	ND(10.0)	NA	ND(<1.0)
TOTAL 1,2-DICHLOROETHENE	NA	NA	ND(25.0)	NA
DICHLOROMETHANE	ND(<1.0)	ND(10.0)	NA	ND(<1.0)
1,2-DICHLOROPROPANE	ND(<1.0)	ND(10.0)	ND(25.0)	ND(<1.0)
ETHYLBENZENE	323.0	149.0	860.0	85.0
METHYLENE CHLORIDE	2.0	ND(10.0)	ND(100.0)	ND(<1.0)
1,1,2,2-TETRACHLOROETHANE	ND(<1.0)	ND(10.0)	ND(50.0)	ND(<1.0)
TETRACHLOROETHENE	ND(<1.0)	ND(10.0)	ND(25.0)	ND(<1.0)
TOLUENE	ND(2.0)	ND(<1.0)	ND(75.0)	ND(10.0)
1,1,1-TRICHLOROETHANE	ND(<1.0)	ND(10.0)	ND(50.0)	ND(<1.0)
1,1,2-TRICHLOROETHANE	ND(<1.0)	ND(10.0)	ND(50.0)	ND(<1.0)
TRICHLOROETHENE	ND(<1.0)	ND(10.0)	ND(50.0)	ND(<1.0)
TRICHLOROFLUOROMETHANE	ND(<1.0)	ND(10.0)	ND(25.0)	ND(<1.0)
VINYL CHLORIDE	ND(1.0)	ND(10.0)	ND(50.0)	ND(<1.0)
TOTAL XYLENES	432.0	206.0	4,100	140.0

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS (ppb)
IN GROUND WATER, GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-7

<u>SAMPLER</u>	<u>GIANT</u>	<u>OCD</u>
<u>DATE</u>	<u>10/17/86</u>	<u>11/20/86</u>
<u>PARAMETER</u>		
DETECTION LIMIT	1.0	10.0
BENZENE	8.0	21.0
BROMODICHLOROMETHANE	NA	ND
BROMOFORM	NA	ND
BROMOMETHANE	NA	ND
CARBON TETRACHLORIDE	NA	ND
CHLOROBENZENE	NA	ND
CHLOROETHANE	NA	ND
CHLOROFORM	NA	ND
CHLOROMETHANE	NA	ND
DIBROMOCHLOROMETHANE	NA	ND
1,2-DICHLOROBENZENE	NA	ND
1,3-DICHLOROBENZENE	NA	ND
1,4-DICHLOROBENZENE	NA	ND
DICHLORODIFLUOROMETHANE	NA	ND
1,1-DICHLOROETHANE	NA	ND
1,2-DICHLOROETHANE	NA	ND
1,1-DICHLOROETHENE	NA	ND
CIS-1,2-DICHLOROETHENE	NA	ND
TRANS-1,2-DICHLOROETHENE	NA	ND
DICHLOROMETHANE	NA	ND
1,2-DICHLOROPROPANE	NA	ND
ETHYLBENZENE	11.0	ND
METHYLENE CHLORIDE	NA	ND
1,1,2,2-TETRACHLOROETHANE	NA	ND
TETRACHLOROETHENE	NA	ND
TOLUENE	10.0	ND
1,1,1-TRICHLOROETHANE	NA	ND
1,1,2-TRICHLOROETHANE	NA	ND
TRICHLOROETHENE	NA	ND
TRICHLOROFLUOROMETHANE	NA	ND
VINYL CHLORIDE	NA	ND
TOTAL XYLENES	33.0	29.0

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
	-	DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS (ppb)
IN GROUND WATER, GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-8

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>10/17/86</u>	<u>10/6/87</u>	<u>11/11/87</u>	<u>12/7/88</u>	<u>1/20/89</u>
<u>PARAMETER</u>					
DETECTION LIMIT	1.0	(BELOW)	(BELOW)	(BELOW)	(BELOW)
BENZENE	2670.0	7750.0	6500.0	570.0	1000.0
BROMODICHLOROMETHANE	NA	ND (4.0)	ND (10.0)	ND (<1.0)	ND (20.0)
BROMOFORM	NA	ND (9.0)	ND (10.0)	ND (<1.0)	ND (50.0)
BROMOMETHANE	NA	ND (6.0)	ND (10.0)	ND (1.2)	ND (20.0)
CARBON TETRACHLORIDE	NA	ND (8.0)	ND (10.0)	ND (<1.0)	ND (20.0)
CHLOROBENZENE	NA	ND (16.0)	ND (25.0)	ND (150.0)	ND (50.0)
CHLOROETHANE	NA	ND (10.0)	ND (10.0)	ND (<1.0)	ND (20.0)
CHLOROFORM	NA	ND (5.0)	12.0	ND (<1.0)	ND (20.0)
CHLOROMETHANE	NA	ND (2.0)	ND (10.0)	ND (<1.0)	ND (20.0)
DIBROMOCHLOROMETHANE	NA	ND (7.0)	ND (10.0)	ND (<1.0)	ND (20.0)
1,2-DICHLOROBENZENE	NA	ND (40.0)	ND (25.0)	ND (200.0)	ND (50.0)
1,3-DICHLOROBENZENE	NA	ND (40.0)	ND (25.0)	ND (200.0)	ND (50.0)
1,4-DICHLOROBENZENE	NA	ND (60.0)	ND (25.0)	ND (150.0)	ND (50.0)
DICHLORODIFLUOROMETHANE	NA	ND (4.0)	ND (10.0)	ND (<1.0)	ND (20.0)
1,1-DICHLOROETHANE	NA	ND (5.0)	ND (10.0)	ND (<1.0)	ND (20.0)
1,2-DICHLOROETHANE	NA	ND (7.0)	32.0	ND (<1.0)	ND (20.0)
1,1-DICHLOROETHENE	NA	ND (7.0)	ND (10.0)	ND (<1.0)	ND (20.0)
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	ND (9.0)	16.0	ND (<1.0)	ND (20.0)
1,2-DICHLOROPROPANE	NA	ND (3.0)	ND (10.0)	ND (<1.0)	ND (20.0)
ETHYLBENZENE	1890.0	1320.0	1200.0	1800.0	1000.0
METHYLENE CHLORIDE	NA	ND (2.0)	ND (2.0)	ND (<1.0)	ND (200.0)
1,1,2,2-TETRACHLOROETHANE	NA	ND (3.0)	ND (10.0)	ND (<1.0)	ND (20.0)
TETRACHLOROETHENE	NA	ND (3.0)	ND (10.0)	ND (<1.0)	ND (20.0)
TOLUENE	1460.0	1160.0	820.0	470.0	940.0
1,1,1-TRICHLOROETHANE	NA	ND (3.0)	ND (10.0)	ND (<1.0)	ND (20.0)
1,1,2-TRICHLOROETHANE	NA	ND (3.0)	ND (10.0)	ND (<1.0)	ND (20.0)
TRICHLOROETHENE	NA	ND (6.0)	ND (10.0)	ND (<1.0)	ND (20.0)
TRICHLOROFLUOROMETHANE	NA	ND (7.0)	ND (2.0)	ND (<1.0)	ND (200.0)
VINYL CHLORIDE	NA	ND (5.0)	ND (10.0)	ND (<1.0)	ND (20.0)
TOTAL XYLENES	6980.0	5600.0	3600.0	9000.0	3700.0

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS (ppb)
IN GROUND WATER, GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-8

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>3/15/89</u>	<u>6/12/89</u>	<u>9/12/89</u>	<u>12/12/89</u>
<u>PARAMETER</u>				
DETECTION LIMIT	(BELOW)	(BELOW)	(BELOW)	(BELOW)
BENZENE	5184.0	4400.0	2200.0	2000.0
BROMODICHLOROMETHANE	ND(<1.0)	ND(50.0)	ND(25.0)	ND(<1.0)
BROMOFORM	ND(<1.0)	ND(50.0)	ND(500.0)	ND(<1.0)
BROMOMETHANE	ND(1.0)	ND(50.0)	ND(250.0)	ND(1.2)
CARBON TETRACHLORIDE	ND(<1.0)	ND(50.0)	ND(50.0)	ND(<1.0)
CHLOROBENZENE	ND(<1.0)	ND(20.0)	ND(25.0)	ND(50.0)
CHLOROETHANE	ND(1.0)	ND(50.0)	ND(130.0)	1.3
CHLOROFORM	ND(<1.0)	ND(50.0)	ND(25.0)	ND(<1.0)
CHLOROMETHANE	ND(1.0)	ND(50.0)	ND(130.0)	ND(<1.0)
DIBROMOCHLOROMETHANE	ND(<1.0)	ND(50.0)	ND(50.0)	ND(<1.0)
1,2-DICHLOROBENZENE	ND(<1.0)	ND(20.0)	ND(50.0)	0.84
1,3-DICHLOROBENZENE	ND(<1.0)	ND(20.0)	ND(100.0)	ND(<1.0)
1,4-DICHLOROBENZENE	ND(<1.0)	ND(20.0)	ND(50.0)	ND(<1.0)
DICHLORODIFLUOROMETHANE	ND(1.0)	ND(50.0)	ND(25.0)	ND(<1.0)
1,1-DICHLOROETHANE	3.2	ND(50.0)	ND(25.0)	5.3
1,2-DICHLOROETHANE	5.7	ND(50.0)	ND(25.0)	4.7
1,1-DICHLOROETHENE	ND(<1.0)	ND(50.0)	ND(25.0)	ND(<1.0)
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA(<1.0)
TRANS-1,2-DICHLOROETHENE	ND(<1.0)	ND(50.0)	ND(25.0)	20.0
1,2-DICHLOROPROPANE	ND(<1.0)	ND(50.0)	ND(25.0)	ND(<1.0)
ETHYLBENZENE	1341.0	2130.0	1400.0	560.0
METHYLENE CHLORIDE	10.7	ND(50.0)	ND(100.0)	ND(<1.0)
1,1,2,2-TETRACHLOROETHANE	ND(<1.0)	ND(50.0)	ND(50.0)	ND(<1.0)
TETRACHLOROETHENE	ND(<1.0)	ND(50.0)	ND(25.0)	ND(<1.0)
TOLUENE	172.0	560.0	180.0	ND(50.0)
1,1,1-TRICHLOROETHANE	ND(<1.0)	ND(50.0)	ND(50.0)	ND(<1.0)
1,1,2-TRICHLOROETHANE	ND(<1.0)	ND(50.0)	ND(50.0)	ND(<1.0)
TRICHLOROETHENE	1.4	ND(50.0)	ND(50.0)	2.3
TRICHLOROFLUOROMETHANE	ND(<1.0)	ND(50.0)	ND(25.0)	ND(<1.0)
VINYL CHLORIDE	ND(1.0)	ND(50.0)	ND(50.0)	ND(<1.0)
TOTAL XYLENES	2664.0	7010.0	4400.0	2200.0

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-9

<u>SAMPLER</u>	GIANT	OCD	GIANT	GIANT	GIANT
<u>DATE</u>	<u>10/17/86</u>	<u>11/21/86</u>	<u>9/10/87</u>	<u>10/7/87</u>	<u>8/25/88</u>
<u>PARAMETER</u>					
DETECTION LIMIT	1.0	1.0	<1.0	<1.0	(BELOW)
BENZENE	41.0	49.0	60.9	29.3	ND(0.5)
BROMODICHLOROMETHANE	NA	ND	ND	ND	ND(0.2)
BROMOFORM	NA	ND	ND	ND	ND(0.2)
BROMOMETHANE	NA	ND	ND	ND	ND(0.2)
CARBON TETRACHLORIDE	NA	ND	ND	ND	ND(0.2)
CHLOROBENZENE	NA	ND	ND	ND	ND(0.5)
CHLOROETHANE	NA	ND	ND	ND	ND(0.2)
CHLOROFORM	NA	ND	ND	ND	ND(0.2)
CHLOROMETHANE	NA	ND	ND	ND	ND(0.2)
DIBROMOCHLOROMETHANE	NA	ND	ND	ND	ND(0.2)
1,2-DICHLOROBENZENE	NA	ND	ND	ND	ND(0.5)
1,3-DICHLOROBENZENE	NA	ND	ND	ND	ND(0.5)
1,4-DICHLOROBENZENE	NA	TR	ND	ND	ND(0.5)
DICHLORODIFLUOROMETHANE	NA	ND	ND	ND	ND(0.2)
1,1-DICHLOROETHANE	NA	4.0	8.0	9.4	3.3
1,2-DICHLOROETHANE	NA	6.0	23.3	28.6	5.1
1,1-DICHLOROETHENE	NA	ND	0.4	0.6	0.6
CIS-1,2-DICHLOROETHENE	NA	TR	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	ND	1.3	1.8	NA
TOTAL 1,2-DICHLOROETHENE	NA	NA	NA	NA	2.3
1,2-DICHLOROPROPANE	NA	ND	ND	ND	ND(0.2)
ETHYLBENZENE	54.0	ND	9.5	6.4	ND(0.5)
METHYLENE CHLORIDE	NA	ND	ND	ND	ND(2.0)
1,1,2,2-TETRACHLOROETHANE	NA	ND	ND	ND	ND(0.2)
TETRACHLOROETHENE	NA	TR	ND	ND	0.9
TOLUENE	66.0	ND	4.0	5.1	ND(0.5)
1,1,1-TRICHLOROETHANE	NA	TR	0.7	0.3	1.3
1,1,2-TRICHLOROETHANE	NA	ND	ND	ND	ND(0.2)
TRICHLOROETHENE	NA	TR	2.6	4.1	2.5
TRICHLOROFLUOROMETHANE	NA	ND	ND	ND	ND(2.0)
VINYL CHLORIDE	NA	ND	ND	ND	ND(0.2)
TOTAL XYLENES	138.0	2.0	53.6	44.1	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-9

SAMPLER

EID

DATE

8/25/88

PARAMETER

DETECTION LIMIT	0.5
BENZENE	1.3
BROMODICHLOROMETHANE	ND
BROMOFORM	ND
BROMOMETHANE	ND
CARBON TETRACHLORIDE	ND
CHLOROBENZENE	ND
CHLOROETHANE	ND
CHLOROFORM	ND
CHLOROMETHANE	ND
DIBROMOCHLOROMETHANE	ND
1,2-DICHLOROBENZENE	ND
1,3-DICHLOROBENZENE	ND
1,4-DICHLOROBENZENE	ND
DICHLORODIFLUOROMETHANE	ND
1,1-DICHLOROETHANE	3.4
1,2-DICHLOROETHANE	3.5
1,1-DICHLOROETHENE	1.5
CIS-1,2-DICHLOROETHENE	2.3
TRANS-1,2-DICHLOROETHENE	ND
DICHLOROMETHANE	1.2
1,2-DICHLOROPROPANE	ND
ETHYLBENZENE	ND
METHYLENE CHLORIDE	ND
1,1,2,2-TETRACHLOROETHANE	ND
TETRACHLOROETHENE	0.7
TOLUENE	ND
1,1,1-TRICHLOROETHANE	1.3
1,1,2-TRICHLOROETHANE	ND
TRICHLOROETHENE	3.5
TRICHLOROFLUOROMETHANE	0.5
VINYL CHLORIDE	ND
TOTAL XYLENES	ND

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
*	-	DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-10

SAMPLER

OCD

DATE

11/21/86

PARAMETER

DETECTION LIMIT	50.0
BENZENE	9,500
BROMODICHLOROMETHANE	ND
BROMOFORM	ND
BROMOMETHANE	ND
CARBON TETRACHLORIDE	ND
CHLOROBENZENE	ND
CHLOROETHANE	ND
CHLOROFORM	ND
CHLOROMETHANE	ND
DIBROMOCHLOROMETHANE	ND
1,2-DICHLOROBENZENE	ND
1,3-DICHLOROBENZENE	TR
1,4-DICHLOROBENZENE	ND
DICHLORODIFLUOROMETHANE	ND
1,1-DICHLOROETHANE	ND
1,2-DICHLOROETHANE	150.0
1,1-DICHLOROETHENE	ND
CIS-1,2-DICHLOROETHENE	ND
TRANS-1,2-DICHLOROETHENE	ND
DICHLOROMETHANE	ND
1,2-DICHLOROPROPANE	ND
ETHYLBENZENE	670.0
METHYLENE CHLORIDE	ND
1,1,2,2-TETRACHLOROETHANE	ND
TETRACHLOROETHENE	ND
TOLUENE	1,100
1,1,1-TRICHLOROETHANE	ND
1,1,2-TRICHLOROETHANE	ND
TRICHLOROETHENE	ND
TRICHLOROFLUOROMETHANE	ND
VINYL CHLORIDE	ND
TOTAL XYLENES	3,130

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
*	-	DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-11

<u>SAMPLER</u>	GIANT	OCD	OCD
<u>DATE</u>	<u>5/29/86</u>	<u>6/5/86</u>	<u>11/20/86</u>
<u>PARAMETER</u>			
DETECTION LIMIT	1.0	50.0	50.0
BENZENE	9,025	4,600	6,500
BROMODICHLOROMETHANE	NA	ND	ND
BROMOFORM	NA	ND	ND
BROMOMETHANE	NA	ND	ND
CARBON TETRACHLORIDE	NA	ND	ND
CHLOROBENZENE	NA	ND	ND
CHLOROETHANE	NA	ND	ND
CHLOROFORM	NA	ND	ND
CHLOROMETHANE	NA	ND	ND
DIBROMOCHLOROMETHANE	NA	ND	ND
1,2-DICHLOROBENZENE	NA	ND	ND
1,3-DICHLOROBENZENE	NA	ND	ND
1,4-DICHLOROBENZENE	NA	ND	ND
DICHLORODIFLUOROMETHANE	NA	ND	ND
1,1-DICHLOROETHANE	NA	ND	ND
1,2-DICHLOROETHANE	NA	140.0	ND
1,1-DICHLOROETHENE	NA	ND	ND
CIS-1,2-DICHLOROETHENE	NA	ND	ND
TRANS-1,2-DICHLOROETHENE	NA	ND	ND
DICHLOROMETHANE	NA	ND	ND
1,2-DICHLOROPROPANE	NA	ND	ND
ETHYLBENZENE	NA	960.0	680.0
METHYLENE CHLORIDE	NA	ND	ND
1,1,2,2-TETRACHLOROETHANE	NA	ND	ND
TETRACHLOROETHENE	NA	ND	TR
TOLUENE	3,088	3,100	2,800
1,1,1-TRICHLOROETHANE	NA	ND	ND
1,1,2-TRICHLOROETHANE	NA	ND	ND
TRICHLOROETHENE	NA	ND	TR
TRICHLOROFLUOROMETHANE	NA	ND	ND
VINYL CHLORIDE	NA	ND	ND
TOTAL XYLENES	6,981	4,200	1,780

TR - TRACE
 ND - NOT DETECTED
 NA - NOT ANALYZED
 * - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-13

<u>SAMPLER</u>	GIANT	GIANT	OCD	OCD	EID
<u>DATE</u>	<u>4/15/85</u>	<u>5/9/86</u>	<u>6/5/86</u>	<u>11/20/86</u>	<u>8/5/87</u>
<u>PARAMETER</u>					
DETECTION LIMIT	10.0	1.0	10.0	5.0	25.0
BENZENE	42.0	129.0	1,300	2,900	1,050
BROMODICHLOROMETHANE	NA	NA	ND	ND	ND
BROMOFORM	NA	NA	ND	ND	ND
BROMOMETHANE	NA	NA	ND	ND	ND
CARBON TETRACHLORIDE	NA	NA	ND	ND	ND
CHLOROBENZENE	NA	NA	ND	ND	ND
CHLOROETHANE	NA	NA	ND	ND	ND
CHLOROFORM	NA	NA	ND	ND	ND
CHLOROMETHANE	NA	NA	ND	ND	ND
DIBROMOCHLOROMETHANE	NA	NA	ND	ND	ND
1,2-DICHLOROBENZENE	NA	NA	ND	ND	ND
1,3-DICHLOROBENZENE	NA	NA	ND	ND	ND
1,4-DICHLOROBENZENE	NA	NA	ND	ND	ND
DICHLORODIFLUOROMETHANE	NA	NA	ND	ND	ND
1,1-DICHLOROETHANE	NA	NA	25.0	44.0	TR
1,2-DICHLOROETHANE	NA	NA	58.0	32.0	TR
1,1-DICHLOROETHENE	NA	NA	ND	ND	ND
CIS-1,2-DICHLOROETHENE	NA	NA	NA	23.0	25.0
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	ND	ND
TOTAL 1,2 DICHLOROETHENE	NA	NA	10.0	NA	NA
DICHLOROMETHANE	NA	NA	25.0	ND	ND
1,2-DICHLOROPROPANE	NA	NA	ND	ND	ND
ETHYLBENZENE	11.0	3.0	130.0	520.0	275.0
METHYLENE CHLORIDE	NA	NA	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	NA	NA	ND	ND	ND
TETRACHLOROETHENE	NA	NA	TR	19.0	ND
TOLUENE	25.0	32.0	12.0	1,800	390.0
1,1,1-TRICHLOROETHANE	NA	NA	23.0	16.0	TR
1,1,2-TRICHLOROETHANE	NA	NA	ND	ND	ND
TRICHLOROETHENE	NA	NA	TR	12.0	TR
TRICHLOROFLUOROMETHANE	NA	NA	ND	ND	ND
VINYL CHLORIDE	NA	NA	ND	ND	ND
TOTAL XYLENES	99.0	105.0	731.0	2870.0	1125.0

TR - TRACE
 ND - NOT DETECTED
 NA - NOT ANALYZED
 * - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-13

<u>SAMPLER</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>
<u>DATE</u>	<u>9/10/87</u>	<u>10/7/87</u>	<u>11/11/87</u>	<u>12/7/88</u>	<u>3/16/89</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	(BELOW)	(BELOW)	(BELOW)	(BELOW)
BENZENE	2,470	1,130	4,500	390.0	309.0
BROMODICHLOROMETHANE	ND(2.0)	ND(2.0)	ND(10.0)	ND(<1.0)	ND(<1.0)
BROMOFORM	ND(4.5)	ND(4.5)	ND(10.0)	ND(<1.0)	ND(<1.0)
BROMOMETHANE	ND(3.0)	ND(3.0)	ND(10.0)	ND(1.2)	ND(1.0)
CARBON TETRACHLORIDE	ND(4.0)	ND(4.0)	ND(10.0)	ND(<1.0)	ND(<1.0)
CHLOROBENZENE	ND(8.0)	ND(8.0)	ND(25.0)	ND(7.5)	ND(<1.0)
CHLOROETHANE	ND(50.0)	ND(50.0)	ND(10.0)	ND(<1.0)	ND(1.0)
CHLOROFORM	ND(2.5)	ND(2.5)	17.0	ND(<1.0)	ND(<1.0)
CHLOROMETHANE	ND(1.0)	ND(1.0)	ND(10.0)	ND(<1.0)	ND(1.0)
DIBROMOCHLOROMETHANE	ND(3.5)	ND(3.5)	ND(10.0)	ND(<1.0)	ND(<1.0)
1,2-DICHLOROBENZENE	ND(20.0)	ND(20.0)	ND(25.0)	ND(10.0)	ND(<1.0)
1,3-DICHLOROBENZENE	ND(20.0)	ND(20.0)	ND(25.0)	ND(10.0)	ND(<1.0)
1,4-DICHLOROBENZENE	ND(30.0)	ND(30.0)	ND(25.0)	ND(7.5)	ND(<1.0)
DICHLORODIFLUOROMETHANE	ND(2.0)	ND(2.0)	ND(10.0)	ND(<1.0)	ND(1.0)
1,1-DICHLOROETHANE	58.9	60.0	ND(10.0)	5.2	4.3
1,2-DICHLOROETHANE	41.8	34.0	35.0	9.0	4.4
1,1-DICHLOROETHENE	ND(3.5)	ND(3.5)	ND(10.0)	ND(<1.0)	ND(<1.0)
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	44.7	55.0	29.0	14.0	ND(<1.0)
1,2-DICHLOROPROPANE	ND(1.5)	ND(1.5)	ND(10.0)	ND(<1.0)	ND(<1.0)
ETHYLBENZENE	797.0	495.0	1,700	330.0	166.0
METHYLENE CHLORIDE	ND(1.0)	ND(1.0)	ND(2.0)	1.6	30.8
1,1,2,2-TETRACHLOROETHANE	ND(1.5)	ND(1.5)	ND(10.0)	ND(<1.0)	ND(<1.0)
TETRACHLOROETHENE	ND(1.5)	ND(1.5)	ND(10.0)	ND(<1.0)	ND(<1.0)
TOLUENE	1,240	288.0	3,000	78.0	24.3
1,1,1-TRICHLOROETHANE	11.7	ND(1.5)	ND(10.0)	1.8	ND(<1.0)
1,1,2-TRICHLOROETHANE	ND(1.5)	ND(1.5)	ND(10.0)	ND(<1.0)	ND(<1.0)
TRICHLOROETHENE	ND(3.0)	15.0	ND(10.0)	4.8	3.6
TRICHLOROFLUOROMETHANE	ND(3.5)	ND(3.5)	ND(2.0)	0.6	ND(<1.0)
VINYL CHLORIDE	ND(2.5)	ND(2.5)	ND(10.0)	ND(<1.0)	ND(1.0)
TOTAL XYLENES	3,790	1,715	5,200	1,530	132.9

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-13

<u>SAMPLER</u>	GIANT	GIANT	GIANT
<u>DATE</u>	<u>6/12/89</u>	<u>9/12/89</u>	<u>12/12/89</u>
<u>PARAMETER</u>			
DETECTION LIMIT	(BELOW)	(BELOW)	(BELOW)
BENZENE	1,600	1,700	710.0
BROMODICHLOROMETHANE	ND(100.0)	ND(5.0)	ND(<1.0)
BROMOFORM	ND(100.0)	ND(100.0)	ND(<1.0)
BROMOMETHANE	ND(100.0)	ND(50.0)	ND(1.2)
CARBON TETRACHLORIDE	ND(100.0)	ND(10.0)	ND(<1.0)
CHLOROBENZENE	ND(20.0)	ND(5.0)	ND(100.0)
CHLOROETHANE	ND(100.0)	ND(25.0)	ND(<1.0)
CHLOROFORM	ND(100.0)	ND(5.0)	ND(<1.0)
CHLOROMETHANE	ND(100.0)	ND(25.0)	ND(<1.0)
DIBROMOCHLOROMETHANE	ND(100.0)	ND(10.0)	ND(<1.0)
1,2-DICHLOROBENZENE	ND(20.0)	ND(10.0)	ND(200.0)
1,3-DICHLOROBENZENE	ND(20.0)	ND(20.0)	ND(200.0)
1,4-DICHLOROBENZENE	ND(20.0)	ND(10.0)	ND(150.0)
DICHLORODIFLUOROMETHANE	ND(100.0)	NA	NA
1,1-DICHLOROETHANE	ND(100.0)	ND(5.0)	4.9
1,2-DICHLOROETHANE	ND(100.0)	ND(5.0)	7.4
1,1-DICHLOROETHENE	ND(100.0)	ND(5.0)	ND(<1.0)
CIS-1,2-DICHLOROETHENE	ND(100.0)	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	25.0
TOTAL 1,2-DICHLOROETHENE	NA	57.0	NA
1,2-DICHLOROPROPANE	ND(100.0)	ND(5.0)	ND(<1.0)
ETHYLBENZENE	620.0	540.0	820.0
METHYLENE CHLORIDE	ND(100.0)	ND(20.0)	1.3
1,1,2,2-TETRACHLOROETHANE	ND(100.0)	ND(10.0)	ND(<1.0)
TETRACHLOROETHENE	ND(100.0)	ND(5.0)	ND(<1.0)
TOLUENE	840.0	200.0	130.0
1,1,1-TRICHLOROETHANE	ND(100.0)	ND(10.0)	0.9
1,1,2-TRICHLOROETHANE	ND(100.0)	ND(10.0)	ND(<1.0)
TRICHLOROETHENE	ND(100.0)	13.0	4.0
TRICHLOROFLUOROMETHANE	ND(100.0)	ND(5.0)	ND(<1.0)
VINYL CHLORIDE	ND(100.0)	ND(10.0)	ND(<1.0)
TOTAL XYLENES	2,060	1,900	3,100

TR - TRACE
 ND - NOT DETECTED
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 * - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-14/GRW-13

<u>SAMPLER</u>	GIANT	OCD	OCD	GIANT	GIANT
<u>DATE</u>	<u>10/17/86</u>	<u>11/21/86</u>	<u>6/8/88</u>	<u>12/7/88</u>	<u>3/14/89</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	1.0	0.5	<1.0	(BELOW)
BENZENE	ND (1.0)	ND	TR	ND	ND (<1.0)
BROMODICHLOROMETHANE	ND (5.0)	ND	ND	ND	ND (<1.0)
BROMOFORM	ND (5.0)	ND	ND	ND	ND (<1.0)
BROMOMETHANE	NA	ND	ND	ND	ND (1.0)
CARBON TETRACHLORIDE	ND (5.0)	ND	ND	ND	ND (<1.0)
CHLOROBENZENE	NA	ND	ND	ND	ND (<1.0)
CHLOROETHANE	ND (5.0)	ND	ND	ND	ND (1.0)
CHLOROFORM	ND (5.0)	ND	ND	ND	ND (<1.0)
CHLOROMETHANE	NA	ND	ND	ND	ND (1.0)
DIBROMOCHLOROMETHANE	ND (5.0)	ND	ND	ND	ND (<1.0)
1,2-DICHLOROBENZENE	NA	ND	ND	ND	ND (<1.0)
1,3-DICHLOROBENZENE	NA	ND	ND	ND	ND (<1.0)
1,4-DICHLOROBENZENE	NA	ND	ND	ND	ND (<1.0)
DICHLORODIFLUOROMETHANE	NA	ND	ND	ND	ND (1.0)
1,1-DICHLOROETHANE	ND (5.0)	ND	ND	ND	ND (<1.0)
1,2-DICHLOROETHANE	ND (5.0)	9.0	2.5	3.4	2.1
1,1-DICHLOROETHENE	ND (5.0)	ND	ND	ND	ND (<1.0)
CIS-1,2-DICHLOROETHENE	NA	ND	ND	ND	NA (<1.0)
TRANS-1,2-DICHLOROETHENE	ND (5.0)	ND	ND	ND	ND (<1.0)
1,2-DICHLOROPROPANE	ND (5.0)	ND	ND	ND	ND (<1.0)
ETHYLBENZENE	ND (1.0)	ND	ND	ND	ND (<1.0)
METHYLENE CHLORIDE	ND (5.0)	ND	ND	ND	2.0
1,1,2,2-TETRACHLOROETHANE	ND (5.0)	ND	ND	ND	ND (<1.0)
TETRACHLOROETHENE	ND (5.0)	ND	ND	ND	ND (<1.0)
TOLUENE	ND (1.0)	ND	ND	ND	ND (<1.0)
1,1,1-TRICHLOROETHANE	ND (5.0)	ND	ND	ND	ND (<1.0)
1,1,2-TRICHLOROETHANE	ND (5.0)	ND	ND	ND	ND (<1.0)
TRICHLOROETHENE	ND (5.0)	ND	ND	ND	ND (<1.0)
TRICHLOROFLUOROMETHANE	NA	ND	ND	ND	ND (<1.0)
VINYL CHLORIDE	ND (5.0)	ND	ND	ND	ND (1.0)
TOTAL XYLENES	ND (1.0)	ND	ND	ND	ND (<1.0)

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-14/GRW-13

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>6/13/89</u>	<u>9/13/89</u>	<u>12/12/89</u>	<u>4/2/90</u>	<u>7/17/90</u>
<u>PARAMETER</u>					
DETECTION LIMIT	1.0	<1.0	<1.0	<1.0	<1.0
BENZENE	ND	ND	ND	ND	ND
BROMODICHLOROMETHANE	ND	ND	ND	ND	ND
BROMOFORM	ND	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND	ND
CHLOROFORM	ND	ND	ND	ND	ND
CHLOROMETHANE	ND	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	4.3	12.0	1.1	4.5	4.8
1,1-DICHLOROETHENE	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	NA	NA	NA	ND	ND
TRANS-1,2-DICHLOROETHENE	ND	NA	ND	ND	ND
TOTAL 1,2-DICHLOROETHENE	NA	ND	NA	NA	NA
1,2-DICHLOROPROPANE	ND	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	ND	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND	ND
TETRACHLOROETHENE	ND	ND	ND	ND	ND
TOLUENE	ND	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	0.29	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND	ND
TRICHLOROETHENE	ND	ND	ND	ND	3.0
TRICHLOROFLUOROMETHANE	ND	2.0	ND	ND	0.25
VINYL CHLORIDE	ND	ND	ND	ND	ND
TOTAL XYLENES	ND	4.7	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-14/GRW-13

<u>SAMPLER</u>	GIANT	GIANT	GIANT
<u>DATE</u>	<u>10/1/91</u>	<u>1/7/92</u>	<u>4/9/92</u>
<u>PARAMETER</u>			
DETECTION LIMIT	<1.0	<1.0	<1.0
BENZENE	15.5	2.4	ND
BROMODICHLOROMETHANE	ND	ND	NA
BROMOFORM	ND	ND	NA
BROMOMETHANE	ND	ND	NA
CARBON TETRACHLORIDE	ND	ND	NA
CHLOROBENZENE	ND	ND	NA
CHLOROETHANE	ND	ND	NA
CHLOROFORM	ND	ND	NA
CHLOROMETHANE	ND	ND	NA
DIBROMOCHLOROMETHANE	ND	ND	NA
1,2-DICHLOROBENZENE	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	NA
1,1-DICHLOROETHANE	ND	ND	NA
1,2-DICHLOROETHANE	ND	6.6	NA
1,1-DICHLOROETHENE	ND	ND	NA
TOTAL 1,2-DICHLOROETHENE	ND	ND	NA
1,2-DICHLOROPROPANE	ND	ND	NA
ETHYLBENZENE	ND	ND	ND
METHYLENE CHLORIDE	ND	ND	NA
1,1,2,2-TETRACHLOROETHANE	ND	ND	NA
TETRACHLOROETHENE	ND	ND	NA
TOLUENE	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND	NA
1,1,2-TRICHLOROETHANE	ND	ND	NA
TRICHLOROETHENE	ND	ND	NA
TRICHLOROFLUOROMETHANE	ND	ND	NA
VINYL CHLORIDE	ND	ND	NA
TOTAL XYLENES	ND	0.6	ND

TR - TRACE
 ND - NOT DETECTED
 NA - NOT ANALYZED
 ** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-14/GRW-13

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>9/4/90</u>	<u>10/4/90</u>	<u>1/25/92</u>	<u>4/8/91</u>	<u>7/3/91</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	<1.0	<1.0	<1.0	<1.0
BENZENE	ND	ND	ND	16.0	25.0
BROMODICHLOROMETHANE	NA	ND	ND	ND	ND
BROMOFORM	NA	ND	ND	ND	ND
BROMOMETHANE	NA	ND	ND	ND	ND
CARBON TETRACHLORIDE	NA	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND	ND
CHLOROETHANE	NA	ND	ND	ND	ND
CHLOROFORM	NA	ND	ND	ND	ND
CHLOROMETHANE	NA	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	NA	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	NA	ND	ND	ND	ND
1,2-DICHLOROETHANE	NA	4.1	ND	6.8	10.0
1,1-DICHLOROETHENE	NA	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	NA	ND	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	ND	NA	NA	NA
TOTAL 1,2-DICHLOROETHENE	NA	NA	ND	ND	ND
1,2-DICHLOROPROPANE	NA	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	NA	0.52 X	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	NA	ND	ND	ND	ND
TETRACHLOROETHENE	NA	ND	ND	ND	ND
TOLUENE	ND	2.0 X	ND	ND	ND
1,1,1-TRICHLOROETHANE	NA	0.62 X	ND	ND	ND
1,1,2-TRICHLOROETHANE	NA	ND	ND	ND	ND
TRICHLOROETHENE	NA	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	NA	0.2 X	ND	ND	ND
VINYL CHLORIDE	NA	ND	ND	ND	ND
TOTAL XYLENES	ND	ND	ND	ND	ND

TR - TRACE
 ND - NOT DETECTED
 NA - NOT ANALYZED
 ** - SPLIT SAMPLE
 X - PRESENCE NOT CONFIRMED

VOLATILE ORGANIC CONCENTRATIONS IN GROUND
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-14/GRW-13

<u>SAMPLER</u>	GIANT	GIANT	GIANT
<u>DATE</u>	<u>10/1/91</u>	<u>1/7/92</u>	<u>4/9/92</u>
<u>PARAMETER</u>			
DETECTION LIMIT	<1.0	<1.0	<1.0
BENZENE	15.5	2.4	ND
BROMODICHLOROMETHANE	ND	ND	NA
BROMOFORM	ND	ND	NA
BROMOMETHANE	ND	ND	NA
CARBON TETRACHLORIDE	ND	ND	NA
CHLOROBENZENE	ND	ND	NA
CHLOROETHANE	ND	ND	NA
CHLOROFORM	ND	ND	NA
CHLOROMETHANE	ND	ND	NA
DIBROMOCHLOROMETHANE	ND	ND	NA
1,2-DICHLOROBENZENE	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	NA
1,1-DICHLOROETHANE	ND	ND	NA
1,2-DICHLOROETHANE	ND	6.6	NA
1,1-DICHLOROETHENE	ND	ND	NA
TOTAL 1,2-DICHLOROETHENE	ND	ND	NA
1,2-DICHLOROPROPANE	ND	ND	NA
ETHYLBENZENE	ND	ND	ND
METHYLENE CHLORIDE	ND	ND	NA
1,1,2,2-TETRACHLOROETHANE	ND	ND	NA
TETRACHLOROETHENE	ND	ND	NA
TOLUENE	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND	NA
1,1,2-TRICHLOROETHANE	ND	ND	NA
TRICHLOROETHENE	ND	ND	NA
TRICHLOROFLUOROMETHANE	ND	ND	NA
VINYL CHLORIDE	ND	ND	NA
TOTAL XYLENES	ND	0.6	ND

TR - TRACE
 ND - NOT DETECTED
 NA - NOT ANALYZED
 ** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER(ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-15

<u>SAMPLER</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>
<u>DATE</u>	<u>10/17/86</u>	<u>9/10/87</u>	<u>10/7/87</u>	<u>11/11/87</u>	<u>1/20/88</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	<1.0	<1.0	(BELOW)	(BELOW)
BENZENE	334.0	100.0	70.5	114.0	106.0
BROMODICHLOROMETHANE	ND (5.0)	ND	ND	ND (<1.0)	ND (2.0)
BROMOFORM	ND (5.0)	ND	ND	ND (<1.0)	ND (5.0)
BROMOMETHANE	NA	ND	ND	ND (<1.0)	ND (2.0)
CARBON TETRACHLORIDE	ND (5.0)	ND	ND	ND (<1.0)	ND (2.0)
CHLOROBENZENE	NA	ND	ND	ND (<1.0)	ND (5.0)
CHLOROETHANE	ND (5.0)	ND	ND	ND (<1.0)	ND (2.0)
CHLOROFORM	ND (5.0)	ND	ND	ND (<1.0)	ND (2.0)
CHLOROMETHANE	NA	ND	ND	ND (<1.0)	ND (2.0)
DIBROMOCHLOROMETHANE	ND (5.0)	ND	ND	ND (<1.0)	ND (2.0)
1,2-DICHLOROBENZENE	NA	ND	ND	ND (<1.0)	ND (5.0)
1,3-DICHLOROBENZENE	NA	ND	ND	ND (<1.0)	ND (5.0)
1,4-DICHLOROBENZENE	NA	ND	ND	ND (<1.0)	ND (5.0)
DICHLORODIFLUOROMETHANE	NA	ND	ND	ND (<1.0)	ND (2.0)
1,1-DICHLOROETHANE	ND (5.0)	0.9	ND	ND (<1.0)	ND (2.0)
1,2-DICHLOROETHANE	78.0	51.4	68.7	53.4	54.0
1,1-DICHLOROETHENE	ND (5.0)	ND	ND	ND (<1.0)	ND (2.0)
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	ND (5.0)	ND	ND	ND (<1.0)	ND (2.0)
1,2-DICHLOROPROPANE	ND (5.0)	ND	ND	ND (<1.0)	ND (2.0)
ETHYLBENZENE	209.0	ND	1.9	2.1	ND (5.0)
METHYLENE CHLORIDE	ND (5.0)	ND	ND	ND (2.0)	ND (20.0)
1,1,2,2-TETRACHLOROETHANE	ND (5.0)	ND	ND	ND (<1.0)	ND (2.0)
TETRACHLOROETHENE	ND (5.0)	ND	ND	ND (<1.0)	ND (2.0)
TOLUENE	52.0	2.4	1.5	1.7	ND (5.0)
1,1,1-TRICHLOROETHANE	ND (5.0)	ND	ND	ND (<1.0)	ND (2.0)
1,1,2-TRICHLOROETHANE	ND (5.0)	ND	ND	ND (<1.0)	ND (2.0)
TRICHLOROETHENE	ND (5.0)	ND	ND	ND (<1.0)	ND (2.0)
TRICHLOROFLUOROMETHANE	NA	ND	ND	ND (2.0)	ND (20.0)
VINYL CHLORIDE	ND (5.0)	ND	ND	ND (<1.0)	ND (2.0)
TOTAL XYLENES	772.0	15.9	7.9	ND (<1.0)	ND (5.0)

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-15

<u>SAMPLER</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>
<u>DATE</u>	<u>12/7/88</u>	<u>3/14/89</u>	<u>6/12/89</u>	<u>9/13/89</u>	<u>12/13/89</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	(BELOW)	(BELOW)	(BELOW)	<1.0
BENZENE	ND(<1.0)	32.6	23.7	33.0	63.0
BROMODICHLOROMETHANE	ND(<1.0)	ND(<1.0)	ND(1.0)	ND(<1.0)	ND
BROMOFORM	ND(1.5)	ND(<1.0)	ND(1.0)	ND(10.0)	ND
BROMOMETHANE	ND(6.0)	ND(1.0)	ND(1.0)	ND(5.0)	ND
CARBON TETRACHLORIDE	ND(<1.0)	ND(<1.0)	ND(1.0)	ND(1.0)	ND
CHLOROBENZENE	ND(1.5)	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND
CHLOROETHANE	ND(2.5)	ND(1.0)	ND(1.0)	ND(2.5)	ND
CHLOROFORM	ND(<1.0)	ND(<1.0)	ND(1.0)	ND(<1.0)	ND
CHLOROMETHANE	ND(1.5)	ND(1.0)	ND(1.0)	ND(2.5)	ND
DIBROMOCHLOROMETHANE	ND(1.0)	ND(<1.0)	ND(1.0)	ND(1.0)	ND
1,2-DICHLOROBENZENE	ND(2.5)	ND(<1.0)	ND(<1.0)	ND(1.0)	ND
1,3-DICHLOROBENZENE	ND(1.5)	ND(<1.0)	ND(<1.0)	ND(2.0)	ND
1,4-DICHLOROBENZENE	ND(2.0)	ND(<1.0)	ND(<1.0)	ND(1.0)	ND
DICHLORODIFLUOROMETHANE	ND(<1.0)	ND(1.0)	ND(1.0)	NA	ND
1,1-DICHLOROETHANE	ND(<1.0)	0.1	ND(1.0)	ND(<1.0)	ND
1,2-DICHLOROETHANE	51.0	16.9	10.7	77.0	ND
1,1-DICHLOROETHENE	ND(<1.0)	ND(<1.0)	ND(1.0)	ND(<1.0)	ND
CIS-1,2-DICHLOROETHENE	NA	NA	NA(1.0)	NA	NA
TRANS-1,2-DICHLOROETHENE	ND(1.0)	ND(<1.0)	ND(1.0)	NA	ND
TOTAL 1,2-DICHLOROETHENE	NA	NA	NA	ND(<1.0)	NA
1,2-DICHLOROPROPANE	ND(<1.0)	ND(<1.0)	ND(1.0)	ND(<1.0)	ND
ETHYLBENZENE	1.3	2.9	ND(<1.0)	ND(<1.0)	2.8
METHYLENE CHLORIDE	ND(1.5)	1.2	ND(1.0)	6.7	ND
1,1,2,2-TETRACHLOROETHANE	ND(<1.0)	ND(<1.0)	ND(1.0)	ND(1.0)	ND
TETRACHLOROETHENE	ND(<1.0)	ND(<1.0)	ND(1.0)	ND(<1.0)	ND
TOLUENE	ND(<1.0)	2.1	ND(<1.0)	ND(1.5)	ND
1,1,1-TRICHLOROETHANE	ND(<1.0)	ND(<1.0)	ND(1.0)	ND(1.0)	ND
1,1,2-TRICHLOROETHANE	ND(<1.0)	ND(<1.0)	ND(1.0)	ND(1.0)	ND
TRICHLOROETHENE	ND(1.0)	ND(<1.0)	ND(1.0)	ND(1.0)	ND
TRICHLOROFLUOROMETHANE	ND(<1.0)	ND(<1.0)	ND(1.0)	ND(<1.0)	ND
VINYL CHLORIDE	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND
TOTAL XYLENES	2.5	ND(<1.0)	ND(<1.0)	ND(1.0)	ND

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* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-15

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>4/3/90</u>	<u>7/17/90</u>	<u>10/4/90</u>	<u>1/22/91</u>	<u>4/2/91</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	<1.0	(BELOW)	<1.0	<1.0
BENZENE	110.0	39.0	87.0	59.4	5.2
BROMODICHLOROMETHANE	ND (2.0)	ND	ND (1.0)	ND	ND
BROMOFORM	ND (10.0)	ND	ND (5.0)	ND	ND
BROMOMETHANE	ND (24.0)	ND	ND (12.0)	ND	ND
CARBON TETRACHLORIDE	ND (2.4)	ND	ND (1.2)	ND	ND
CHLOROBENZENE	ND (4.0)	ND	ND (2.0)	ND	ND
CHLOROETHANE	ND (10.0)	ND	ND (5.2)	ND	ND
CHLOROFORM	ND (2.0)	ND	ND (1.0)	ND	ND
CHLOROMETHANE	ND (6.0)	ND	ND (3.0)	ND	ND
DIBROMOCHLOROMETHANE	ND (4.0)	ND	ND (2.0)	ND	ND
1,2-DICHLOROBENZENE	ND (8.0)	ND	ND (4.0)	ND	ND
1,3-DICHLOROBENZENE	ND (8.0)	ND	ND (4.0)	ND	ND
1,4-DICHLOROBENZENE	ND (6.0)	ND	ND (3.0)	ND	ND
1,1-DICHLOROETHANE	84.0	ND	ND (5.0)	ND	ND
1,2-DICHLOROETHANE	ND (2.0)	33.0	52.0	21.4	14.0
1,1-DICHLOROETHENE	ND (4.0)	ND	ND (2.0)	ND	ND
CIS-1,2-DICHLOROETHENE	ND (4.0)	ND	ND (2.0)	NA	NA
TRANS-1,2-DICHLOROETHENE	ND (4.0)	0.45	ND (2.0)	NA	NA
TOTAL 1,2-DICHLOROETHENE	NA	NA	NA	ND	ND
1,2-DICHLOROPROPANE	ND (2.0)	ND	ND (1.0)	ND	ND
ETHYLBENZENE	ND (4.0)	ND	ND (2.0)	0.8	ND
METHYLENE CHLORIDE	ND (8.0)	ND	ND (4.0)	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND (3.0)	ND	ND (1.5)	ND	ND
TETRACHLOROETHENE	ND (2.0)	ND	ND (1.0)	ND	ND
TOLUENE	ND (4.0)	ND	ND (2.0)	ND	ND
1,1,1-TRICHLOROETHANE	ND (4.0)	ND	ND (2.0)	ND	ND
1,1,2-TRICHLOROETHANE	ND (4.0)	ND	ND (2.0)	ND	ND
TRICHLOROETHENE	ND (4.0)	ND	ND (2.0)	ND	ND
TRICHLOROFLUOROMETHANE	ND (4.0)	ND	ND (2.0)	ND	ND
VINYL CHLORIDE	ND (4.0)	ND	ND (2.0)	ND	ND
TOTAL XYLENES	ND (4.0)	ND	ND (2.0)	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (pbb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-15

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>7/2/91</u>	<u>10/1/91</u>	<u>1/8/92</u>	<u>4/9/92</u>	<u>7/7/92</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	<1.0	<1.0	<1.0	<1.0
BENZENE	1.0	3.0	0.6	3.5	2.5
BROMODICHLOROMETHANE	ND	ND	ND	NA	ND
BROMOFORM	ND	ND	ND	NA	ND
BROMOMETHANE	ND	ND	ND	NA	ND
CARBON TETRACHLORIDE	ND	ND	ND	NA	ND
CHLOROBENZENE	ND	ND	ND	NA	ND
CHLOROETHANE	ND	ND	ND	NA	ND
CHLOROFORM	ND	ND	ND	NA	ND
CHLOROMETHANE	ND	ND	ND	NA	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	NA	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND	NA	ND
1,1-DICHLOROETHANE	10.3	0.2	ND	NA	ND
1,2-DICHLOROETHANE	ND	ND	16.0	NA	23.3
1,1-DICHLOROETHENE	ND	ND	ND	NA	ND
TOTAL 1,2-DICHLOROETHENE	ND	ND	ND	NA	ND
1,2-DICHLOROPROPANE	ND	ND	ND	NA	ND
ETHYLBENZENE	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	ND	ND	ND	NA	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	NA	ND
TETRACHLOROETHENE	ND	ND	ND	NA	ND
TOLUENE	ND	2.3	2.4	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND	ND	NA	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	NA	ND
TRICHLOROETHENE	ND	ND	ND	NA	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	NA	ND
VINYL CHLORIDE	ND	ND	ND	NA	ND
TOTAL XYLENES	ND	ND	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-17

<u>SAMPLER</u>	GIANT	OCD	GIANT	OCD	EID
<u>DATE</u>	<u>5/29/86</u>	<u>6/5/86</u>	<u>7/15/86</u>	<u>11/21/86</u>	<u>8/5/87</u>
<u>PARAMETER</u>					
DETECTION LIMIT	1.0	2.0	1.0	(BELOW)	1.0
BENZENE	ND	ND	ND	TR(1.0)	ND
BROMODICHLOROMETHANE	NA	ND	NA	ND(20.0)	ND
BROMOFORM	NA	ND	NA	ND(20.0)	ND
BROMOMETHANE	NA	ND	NA	ND(20.0)	ND
CARBON TETRACHLORIDE	NA	ND	ND	ND(20.0)	ND
CHLOROBENZENE	NA	ND	NA	ND(20.0)	ND
CHLOROETHANE	NA	ND	NA	ND(20.0)	ND
CHLOROFORM	NA	ND	ND	ND(20.0)	ND
CHLOROMETHANE	NA	ND	NA	ND(20.0)	ND
DIBROMOCHLOROMETHANE	NA	ND	NA	ND(20.0)	ND
1,2-DICHLOROBENZENE	NA	ND	NA	ND(20.0)	ND
1,3-DICHLOROBENZENE	NA	ND	NA	ND(20.0)	ND
1,4-DICHLOROBENZENE	NA	ND	NA	ND(20.0)	ND
DICHLORODIFLUOROMETHANE	NA	ND	NA	ND(20.0)	ND
1,1-DICHLOROETHANE	NA	20.0	ND	6.0	TR
1,2-DICHLOROETHANE	NA	ND	ND	ND(20.0)	ND
1,1-DICHLOROETHENE	NA	ND	ND	ND(20.0)	ND
CIS-1,2-DICHLOROETHENE	NA	ND	NA	ND(20.0)	ND
TRANS-1,2-DICHLOROETHENE	NA	ND	ND	ND(20.0)	ND
DICHLOROMETHANE	NA	15.0	NA	TR(20.0)	ND
1,2-DICHLOROPROPANE	NA	ND	NA	ND(20.0)	ND
ETHYLBENZENE	ND	ND	NA	ND(1.0)	ND
METHYLENE CHLORIDE	NA	ND	NA	ND(20.0)	ND
1,1,2,2-TETRACHLOROETHANE	NA	ND	ND	ND(20.0)	ND
TETRACHLOROETHENE	NA	1.0	ND	TR(20.0)	TR
TOLUENE	ND	ND	ND	ND(1.0)	ND
1,1,1-TRICHLOROETHANE	NA	14.0	ND	7.0	4.0
1,1,2-TRICHLOROETHANE	NA	ND	ND	ND(20.0)	ND
TRICHLOROETHENE	NA	1.0	ND	TR(20.0)	TR
TRICHLOROFLUOROMETHANE	NA	ND	NA	ND(20.0)	ND
VINYL CHLORIDE	NA	ND	NA	ND(20.0)	ND
TOTAL XYLENES	ND	ND	ND	ND(1.0)	ND

TR - TRACE
ND - NOT DETECTED
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* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-17

<u>SAMPLER</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>	<u>EID</u>	<u>GIANT</u>
<u>DATE</u>	<u>10/7/87</u>	<u>11/12/87</u>	<u>4/20/88</u>	<u>4/20/88</u>	<u>6/2/88</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	(BELOW)	0.5	0.5	(BELOW)
BENZENE	ND	ND (<1.0)	ND	ND	ND (0.5)
BROMODICHLOROMETHANE	ND	ND (<1.0)	ND	ND	ND (0.5)
BROMOFORM	ND	ND (<1.0)	ND	ND	ND (0.5)
BROMOMETHANE	ND	ND (<1.0)	ND	ND	ND (0.5)
CARBON TETRACHLORIDE	ND	ND (<1.0)	ND	ND	ND (0.5)
CHLOROBENZENE	ND	ND (<1.0)	ND	ND	ND (0.5)
CHLOROETHANE	ND	ND (<1.0)	ND	ND	ND (0.5)
CHLOROFORM	ND	1.3	ND	ND	ND (0.5)
CHLOROMETHANE	ND	ND (<1.0)	ND	ND	ND (0.5)
DIBROMOCHLOROMETHANE	ND	ND (<1.0)	ND	ND	ND (0.5)
1,2-DICHLOROBENZENE	ND	ND (<1.0)	ND	ND	ND (0.5)
1,3-DICHLOROBENZENE	ND	ND (<1.0)	ND	ND	ND (0.5)
1,4-DICHLOROBENZENE	ND	ND (<1.0)	ND	ND	ND (0.2)
DICHLORODIFLUOROMETHANE	ND	ND (<1.0)	ND	ND	ND (0.5)
1,1-DICHLOROETHANE	3.3	4.0	ND	TR	ND (0.5)
1,2-DICHLOROETHANE	ND	ND (<1.0)	ND	ND	ND (0.5)
1,1-DICHLOROETHENE	ND	ND (<1.0)	ND	TR	ND (0.2)
CIS-1,2-DICHLOROETHENE	NA	NA	ND	ND	NA
TRANS-1,2-DICHLOROETHENE	1.2	0.9	ND	ND	ND (0.5)
DICHLOROMETHANE	ND	ND (<1.0)	ND	ND	ND (0.5)
1,2-DICHLOROPROPANE	ND	ND (<1.0)	ND	ND	ND (0.5)
ETHYLBENZENE	ND	ND (<1.0)	ND	ND	ND (0.5)
METHYLENE CHLORIDE	ND	ND (2.0)	ND	ND	ND (0.5)
1,1,2,2-TETRACHLOROETHANE	ND	ND (<1.0)	ND	ND	ND (0.5)
TETRACHLOROETHENE	0.4	0.6	ND	TR	ND (0.5)
TOLUENE	ND	ND (1.0)	ND	ND	ND (0.5)
1,1,1-TRICHLOROETHANE	4.0	2.1	4.4	2.4	3.1
1,1,2-TRICHLOROETHANE	ND	ND (<1.0)	ND	ND	ND (0.5)
TRICHLOROETHENE	0.4	0.5	ND	TR	ND (0.5)
TRICHLOROFLUOROMETHANE	ND	ND (2.0)	ND	TR	ND (0.5)
VINYL CHLORIDE	ND	ND (<1.0)	ND	ND	ND (1.0)
TOTAL XYLENES	ND	ND (<1.0)	ND	ND	ND (0.5)

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* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-17

<u>SAMPLER</u>	GIANT	EID	GIANT	GIANT	GIANT
<u>DATE</u>	<u>8/24/88</u>	<u>8/24/88</u>	<u>9/1/88</u>	<u>12/7/89</u>	<u>3/14/89</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	0.5		<1.0	(BELOW)
BENZENE	ND(<1.0)	ND	ND	ND	ND(<1.0)
BROMODICHLOROMETHANE	ND(<1.0)	ND	ND	ND	ND(<1.0)
BROMOFORM	ND(<1.0)	ND	ND	ND	ND(<1.0)
BROMOMETHANE	ND(<1.0)	ND	ND	ND	ND(1.0)
CARBON TETRACHLORIDE	ND(<1.0)	ND	ND	ND	ND(<1.0)
CHLOROBENZENE	ND(<1.0)	ND	ND	ND	ND(<1.0)
CHLOROETHANE	ND(<1.0)	ND	ND	ND	ND(1.0)
CHLOROFORM	ND(<1.0)	TR	ND	ND	ND(<1.0)
CHLOROMETHANE	ND(<1.0)	ND	ND	ND	ND(1.0)
DIBROMOCHLOROMETHANE	ND(<1.0)	ND	ND	ND	ND(<1.0)
1,2-DICHLOROBENZENE	ND(<1.0)	ND	ND	ND	ND(<1.0)
1,3-DICHLOROBENZENE	ND(<1.0)	ND	ND	ND	ND(<1.0)
1,4-DICHLOROBENZENE	ND(<1.0)	ND	ND	ND	ND(<1.0)
DICHLORODIFLUOROMETHANE	ND(<1.0)	ND	ND	ND	ND(1.0)
1,1-DICHLOROETHANE	ND(<1.0)	TR	ND	0.8	ND(<1.0)
1,2-DICHLOROETHANE	ND(<1.0)	ND	ND	ND	ND(<1.0)
1,1-DICHLOROETHENE	ND(<1.0)	ND	ND	ND	ND(<1.0)
CIS-1,2-DICHLOROETHENE	NA	ND	ND	ND	NA
TRANS-1,2-DICHLOROETHENE	NA	ND	ND	ND	ND(<1.0)
TOTAL 1,2-DICHLOROETHENE	ND(<1.0)	NA	ND	NA	NA
DICHLOROMETHANE	NA	TR	NA	NA	NA
1,2-DICHLOROPROPANE	ND(<1.0)	ND	ND	ND	ND(<1.0)
ETHYLBENZENE	ND(<1.0)	ND	ND	ND	ND(<1.0)
METHYLENE CHLORIDE	ND(2.0)	ND	ND	ND	1.8
1,1,2,2-TETRACHLOROETHANE	ND(<1.0)	ND	ND	ND	ND(<1.0)
TETRACHLOROETHENE	ND(<1.0)	TR	ND	0.7	ND(<1.0)
TOLUENE	ND(<1.0)	ND	ND	ND	ND(<1.0)
1,1,1-TRICHLOROETHANE	2.4	1.2	2.4	2.0	0.85
1,1,2-TRICHLOROETHANE	ND(<1.0)	ND	ND	ND	ND(<1.0)
TRICHLOROETHENE	ND(<1.0)	TR	TR	ND	ND(<1.0)
TRICHLOROFLUOROMETHANE	ND(2.0)	ND	ND	0.6	ND(<1.0)
VINYL CHLORIDE	ND(<1.0)	ND	ND	ND	ND(1.0)
TOTAL XYLENES	ND(<1.0)	ND	ND	ND	ND(<1.0)

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VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-17

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>6/14/89</u>	<u>9/13/89</u>	<u>12/12/89</u>	<u>4/3/90</u>	<u>7/17/90</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	<1.0	<1.0	<1.0	<1.0
BENZENE	ND (<1.0)	ND	ND	ND	ND
BROMODICHLOROMETHANE	ND (1.0)	ND	ND	ND	ND
BROMOFORM	ND (1.0)	ND	ND	ND	ND
BROMOMETHANE	ND (1.0)	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND (1.0)	ND	ND	ND	ND
CHLOROBENZENE	ND (<1.0)	ND	ND	ND	ND
CHLOROETHANE	ND (1.0)	ND	ND	ND	ND
CHLOROFORM	ND (1.0)	ND	ND	ND	ND
CHLOROMETHANE	ND (1.0)	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND (1.0)	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND (<1.0)	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND (<1.0)	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND (<1.0)	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND (1.0)	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND (1.0)	0.89	ND	ND	ND
1,2-DICHLOROETHANE	ND (1.0)	ND	ND	ND	ND
1,1-DICHLOROETHENE	ND (1.0)	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	NA	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	ND (1.0)	ND	ND	ND	ND
1,2-DICHLOROPROPANE	ND (1.0)	ND	ND	ND	ND
ETHYLBENZENE	ND (<1.0)	ND	ND	ND	ND
METHYLENE CHLORIDE	ND (1.0)	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND (1.0)	ND	ND	ND	ND
TETRACHLOROETHENE	ND (1.0)	0.21	0.13	0.37	0.19
TOLUENE	ND (<1.0)	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	1.4	0.96	1.0	1.7	0.3
1,1,2-TRICHLOROETHANE	ND (1.0)	ND	ND	ND	ND
TRICHLOROETHENE	ND (1.0)	ND	ND	ND	1.5
TRICHLOROFLUOROMETHANE	ND (1.0)	3.0	ND	ND	ND
VINYL CHLORIDE	ND (1.0)	ND	ND	ND	ND
TOTAL XYLENES	ND (<1.0)	ND	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-17

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>10/4/90</u>	<u>1/22/91</u>	<u>4/2/91</u>	<u>7/2/91</u>	<u>10/1/91</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	<1.0	<1.0	<1.0	<1.0
BENZENE	4.6 X	ND	ND	ND	ND
BROMODICHLOROMETHANE	9.4 X	ND	ND	ND	ND
BROMOFORM	21.0 X	ND	ND	ND	ND
BROMOMETHANE	ND(12.0)	ND	ND	ND	ND
CARBON TETRACHLORIDE	14.0 X	ND	ND	ND	ND
CHLOROBENZENE	13.0 X	ND	ND	ND	ND
CHLOROETHANE	ND(5.2)	ND	ND	ND	ND
CHLOROFORM	8.2 X	ND	ND	ND	ND
CHLOROMETHANE	ND(3.0)	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	13.0	ND	ND	ND	ND
1,2-DICHLOROBENZENE	4.1 X	ND	ND	ND	ND
1,3-DICHLOROBENZENE	19.0 X	ND	ND	ND	ND
1,4-DICHLOROBENZENE	11.0 X	ND	ND	ND	ND
1,1-DICHLOROETHANE	11.0 X	ND	ND	ND	ND
1,2-DICHLOROETHANE	10.0 X	ND	ND	ND	ND
1,1-DICHLOROETHENE	11.0 X	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	11.0 X	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	ND(2.0)	NA	NA	NA	NA
TOTAL 1,2-DICHLOROETHENE	NA	ND	ND	ND	ND
1,2-DICHLOROPROPANE	5.6 X	ND	ND	ND	ND
ETHYLBENZENE	7.8 X	ND	ND	ND	ND
METHYLENE CHLORIDE	11.0 X	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND(1.5)	ND	ND	ND	ND
TETRACHLOROETHENE	15.0 X	ND	ND	ND	ND
TOLUENE	7.2	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	17.0 X	0.9	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND(2.0)	ND	ND	ND	ND
TRICHLOROETHENE	9.5 X	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	18.0 X	ND	ND	ND	ND
VINYL CHLORIDE	ND(2.0)	ND	ND	ND	ND
TOTAL XYLENES	35.0 X	ND	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE
X - PRESENCE NOT CONFIRMED

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-17

<u>SAMPLER</u>	GIANT	GIANT	GIANT
<u>DATE</u>	<u>1/8/92</u>	<u>4/9/92</u>	<u>7/7/92</u>
<u>PARAMETER</u>			
DETECTION LIMIT	<1.0	<1.0	<1.0
BENZENE	ND	0.8	ND
BROMODICHLOROMETHANE	ND	NA	ND
BROMOFORM	ND	NA	ND
BROMOMETHANE	ND	NA	ND
CARBON TETRACHLORIDE	ND	NA	ND
CHLOROBENZENE	ND	NA	ND
CHLOROETHANE	ND	NA	ND
CHLOROFORM	ND	NA	ND
CHLOROMETHANE	ND	NA	ND
DIBROMOCHLOROMETHANE	ND	NA	ND
1,2-DICHLOROBENZENE	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	NA	ND
1,1-DICHLOROETHANE	ND	NA	ND
1,2-DICHLOROETHANE	ND	NA	ND
1,1-DICHLOROETHENE	ND	NA	ND
TOTAL 1,2-DICHLOROETHENE	ND	NA	ND
1,2-DICHLOROPROPANE	ND	NA	ND
ETHYLBENZENE	ND	ND	ND
METHYLENE CHLORIDE	ND	NA	ND
1,1,2,2-TETRACHLOROETHANE	ND	NA	ND
TETRACHLOROETHENE	ND	NA	ND
TOLUENE	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	NA	ND
1,1,2-TRICHLOROETHANE	ND	NA	ND
TRICHLOROETHENE	ND	NA	ND
TRICHLOROFLUOROMETHANE	ND	NA	ND
VINYL CHLORIDE	ND	NA	ND
TOTAL XYLENES	ND	ND	ND

TR - TRACE
 ND - NOT DETECTED
 NA - NOT ANALYZED
 ** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-18

<u>SAMPLER</u>	GIANT	OCD	OCD	OCD*	OCD
<u>DATE</u>	<u>5/9/86</u>	<u>6/5/86</u>	<u>7/8/86</u>	<u>7/8/86</u>	<u>11/21/86</u>
<u>PARAMETER</u>					
DETECTION LIMIT	1.0	2.0	2.0	1.0	5.0
BENZENE	ND	50.0	ND	ND	ND
BROMODICHLOROMETHANE	NA	ND	ND	ND	ND
BROMOFORM	NA	ND	ND	ND	ND
BROMOMETHANE	NA	ND	ND	ND	ND
CARBON TETRACHLORIDE	NA	ND	ND	ND	ND
CHLOROBENZENE	NA	ND	ND	ND	ND
CHLOROETHANE	NA	ND	ND	ND	ND
CHLOROFORM	NA	ND	ND	ND	ND
CHLOROMETHANE	NA	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	NA	ND	ND	ND	ND
1,2-DICHLOROBENZENE	NA	ND	ND	ND	ND
1,3-DICHLOROBENZENE	NA	ND	ND	ND	ND
1,4-DICHLOROBENZENE	NA	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	NA	ND	ND	ND	ND
1,1-DICHLOROETHANE	NA	ND	ND	ND	ND
1,2-DICHLOROETHANE	NA	ND	ND	ND	ND
1,1-DICHLOROETHENE	NA	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	NA	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	NA	ND	ND	ND	ND
1,2-DICHLOROPROPANE	NA	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	NA	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	NA	ND	ND	ND	ND
TETRACHLOROETHENE	NA	ND	ND	ND	ND
TOLUENE	ND	11.0	ND	1.0	ND
1,1,1-TRICHLOROETHANE	NA	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	NA	ND	ND	ND	ND
TRICHLOROETHENE	NA	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	NA	ND	ND	ND	ND
VINYL CHLORIDE	NA	ND	ND	ND	ND
TOTAL XYLENES	ND	4.0	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-19

<u>SAMPLER</u>	GIANT	OCD	GIANT	EID	GIANT
<u>DATE</u>	<u>10/17/86</u>	<u>11/21/86</u>	<u>4/20/88</u>	<u>4/20/88</u>	<u>8/25/88</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	5.0	<1.0	100.0	(BELOW)
BENZENE	112.0	200.0	26.0	ND	ND (5.0)
BROMODICHLOROMETHANE	ND (5.0)	ND	ND	ND	ND (2.0)
BROMOFORM	ND (5.0)	ND	ND	ND	ND (2.0)
BROMOMETHANE	NA	ND	ND	ND	ND (2.0)
CARBON TETRACHLORIDE	ND (5.0)	ND	ND	ND	ND (2.0)
CHLOROBENZENE	NA	ND	ND	ND	ND (5.0)
CHLOROETHANE	ND (5.0)	ND	ND	ND	ND (2.0)
CHLOROFORM	ND (5.0)	ND	ND	ND	ND (2.0)
CHLOROMETHANE	NA	ND	ND	ND	ND (2.0)
DIBROMOCHLOROMETHANE	ND (5.0)	ND	ND	ND	ND (2.0)
1,2-DICHLOROBENZENE	NA	TR	ND	ND	ND (5.0)
1,3-DICHLOROBENZENE	NA	ND	ND	ND	ND (5.0)
1,4-DICHLOROBENZENE	NA	ND	ND	ND	ND (5.0)
DICHLORODIFLUOROMETHANE	NA	ND	ND	ND	ND (2.0)
1,1-DICHLOROETHANE	12.0	4.0	5.9	ND	6.0
1,2-DICHLOROETHANE	5.9	10.0	5.0	ND	ND (2.0)
1,1-DICHLOROETHENE	ND (5.0)	ND	ND	ND	ND (2.0)
CIS-1,2-DICHLOROETHENE	NA	4.0	ND	ND	ND (2.0)
TRANS-1,2-DICHLOROETHENE	14.0	ND	35.0	ND	ND (2.0)
TOTAL 1,2-DICHLOROETHENE	NA	NA	NA	NA	33.0
1,2-DICHLOROPROPANE	ND (5.0)	ND	ND	ND	ND (2.0)
ETHYLBENZENE	111.0	270.0	17.0	ND	ND (5.0)
METHYLENE CHLORIDE	ND (5.0)	ND	ND	ND	ND (20.0)
1,1,2,2-TETRACHLOROETHANE	ND (5.0)	ND	ND	ND	ND (2.0)
TETRACHLOROETHENE	ND (5.0)	TR	1.0	ND	8.0
TOLUENE	105.0	18.0	3.3	ND	ND (5.0)
1,1,1-TRICHLOROETHANE	ND (5.0)	ND	ND	ND	ND (2.0)
1,1,2-TRICHLOROETHANE	ND (5.0)	ND	ND	ND	ND (2.0)
TRICHLOROETHENE	9.3	11.0	7.2	ND	5.0
TRICHLOROFLUOROMETHANE	NA	ND	ND	ND	ND (20.0)
VINYL CHLORIDE	ND (5.0)	ND	ND	ND	ND (2.0)
TOTAL XYLENES	306.0	274.0	120.0	ND	ND (5.0)

TR - TRACE
 ND - NOT DETECTED
 NA - NOT ANALYZED
 ** - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-19

<u>SAMPLER</u>	<u>EID</u>	<u>GIANT</u>
<u>DATE</u>	<u>8/25/88</u>	<u>10/8/92</u>
<u>PARAMETER</u>		
DETECTION LIMIT	50.0	<1.0
BENZENE	ND	28.1
BROMODICHLOROMETHANE	ND	ND
BROMOFORM	ND	ND
BROMOMETHANE	ND	ND
CARBON TETRACHLORIDE	ND	ND
CHLOROBENZENE	ND	ND
CHLOROETHANE	ND	ND
CHLOROFORM	ND	ND
CHLOROMETHANE	ND	ND
DIBROMOCHLOROMETHANE	ND	ND
1,2-DICHLOROBENZENE	ND	ND
1,3-DICHLOROBENZENE	ND	ND
1,4-DICHLOROBENZENE	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND
1,1-DICHLOROETHANE	ND	0.8
1,2-DICHLOROETHANE	ND	2.7
1,1-DICHLOROETHENE	ND	ND
CIS-1,2-DICHLOROETHENE	ND	NA
TRANS-1,2-DICHLOROETHENE	ND	NA
TOTAL 1,2-DICHLOROETHENE	NA	2.7
1,2-DICHLOROPROPANE	ND	ND
ETHYLBENZENE	ND	0.9
METHYLENE CHLORIDE	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND
TETRACHLOROETHENE	ND	ND
TOLUENE	ND	2.5
1,1,1-TRICHLOROETHANE	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND
TRICHLOROETHENE	ND	1.0
TRICHLOROFLUOROMETHANE	ND	ND
VINYL CHLORIDE	ND	ND
TOTAL XYLENES	ND	ND

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-20

<u>SAMPLER</u>	<u>GIANT</u>	<u>OCD</u>	<u>OCD</u>
<u>DATE</u>	<u>5/9/86</u>	<u>6/5/86</u>	<u>11/20/86</u>
<u>PARAMETER</u>			
DETECTION LIMIT	1.0	2.0	5.0
BENZENE	ND	4.0	41.0
BROMODICHLOROMETHANE	NA	ND	ND
BROMOFORM	NA	ND	ND
BROMOMETHANE	NA	ND	ND
CARBON TETRACHLORIDE	NA	ND	ND
CHLOROBENZENE	NA	ND	ND
CHLOROETHANE	NA	ND	ND
CHLOROFORM	NA	ND	ND
CHLOROMETHANE	NA	ND	ND
DIBROMOCHLOROMETHANE	NA	ND	ND
1,2-DICHLOROBENZENE	NA	ND	ND
1,3-DICHLOROBENZENE	NA	ND	ND
1,4-DICHLOROBENZENE	NA	ND	ND
DICHLORODIFLUOROMETHANE	NA	ND	ND
1,1-DICHLOROETHANE	NA	ND	ND
1,2-DICHLOROETHANE	NA	TR	ND
1,1-DICHLOROETHENE	NA	ND	ND
CIS-1,2-DICHLOROETHENE	NA	ND	ND
TRANS-1,2-DICHLOROETHENE	NA	ND	ND
DICHLOROMETHANE	NA	ND	ND
1,2-DICHLOROPROPANE	NA	ND	ND
ETHYLBENZENE	ND	TR	ND
METHYLENE CHLORIDE	NA	ND	ND
1,1,2,2-TETRACHLOROETHANE	NA	ND	ND
TETRACHLOROETHENE	NA	ND	TR
TOLUENE	ND	ND	ND
1,1,1-TRICHLOROETHANE	NA	ND	ND
1,1,2-TRICHLOROETHANE	NA	ND	ND
TRICHLOROETHENE	NA	ND	TR
TRICHLOROFLUOROMETHANE	NA	ND	ND
VINYL CHLORIDE	NA	ND	ND
TOTAL XYLENES	ND	ND	50.0

TR - TRACE
 ND - NOT DETECTED
 NA - NOT ANALYZED
 * - DUPLICATE ANALYSIS

GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-21

GIANT

5/9/88

PARAMETER

1.0

BENZENE	ND
BROMODICHLOROMETHANE	NA
BROMOFORM	NA
BROMOMETHANE	NA
CARBON TETRACHLORIDE	NA
CHLOROBENZENE	NA
CHLOROETHANE	NA
CHLOROFORM	NA
CHLOROMETHANE	NA
DIBROMOCHLOROMETHANE	NA
1,2-DICHLOROBENZENE	NA
1,3-DICHLOROBENZENE	NA
1,4-DICHLOROBENZENE	NA
DICHLORODIFLUOROMETHANE	NA
1,1-DICHLOROETHANE	NA
1,2-DICHLOROETHANE	NA
1,1-DICHLOROETHENE	NA
CIS-1,2-DICHLOROETHENE	NA
TRANS-1,2-DICHLOROETHENE	NA
1,2-DICHLOROPROPANE	NA
ETHYLBENZENE	2.0
METHYLENE CHLORIDE	NA
1,1,2,2-TETRACHLOROETHANE	NA
TETRACHLOROETHENE	NA
TOLUENE	22.0
1,1,1-TRICHLOROETHANE	NA
1,1,2-TRICHLOROETHANE	NA
TRICHLOROETHENE	NA
TRICHLOROFLUOROMETHANE	NA
VINYL CHLORIDE	NA
TOTAL XYLENES	234.0

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
*	-	DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-22

GIANT

5/9/86

PARAMETER

1.0

ND
NA
NA
NA
NA
NA
NA
NA
NA
NA
NA
NA
NA
NA
NA
NA
NA
ND
NA
NA
NA
ND
NA
NA
NA
NA
NA
ND

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
*	-	DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-24D

<u>SAMPLER</u>	OCD	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>11/21/86</u>	<u>9/10/87</u>	<u>10/7/87</u>	<u>11/12/87</u>	<u>6/1/88</u>
<u>PARAMETER</u>					
DETECTION LIMIT	5.0	<1.0	(BELOW)	(BELOW)	<1.0
BENZENE	230.0	100.0	100.0	1,200	63.0
BROMODICHLOROMETHANE	ND	ND	ND(<1.0)	ND(2.0)	ND
BROMOFORM	ND	ND	ND(<1.0)	ND(2.0)	ND
BROMOMETHANE	ND	ND	ND(<1.0)	ND(2.0)	ND
CARBON TETRACHLORIDE	ND	ND	ND(<1.0)	ND(2.0)	ND
CHLOROBENZENE	ND	ND	ND(1.6)	ND(5.0)	ND
CHLOROETHANE	ND	ND	ND(1.0)	ND(2.0)	ND
CHLOROFORM	ND	ND	ND(<1.0)	23.0	ND
CHLOROMETHANE	ND	ND	ND(<1.0)	ND(2.0)	ND
DIBROMOCHLOROMETHANE	ND	ND	ND(<1.0)	ND(2.0)	ND
1,2-DICHLOROBENZENE	TR	1.9	ND(4.0)	ND(5.0)	ND
1,3-DICHLOROBENZENE	ND	ND	ND(4.0)	ND(5.0)	1.3
1,4-DICHLOROBENZENE	ND	ND	ND(6.0)	ND(5.0)	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND(<1.0)	ND(2.0)	ND
1,1-DICHLOROETHANE	ND	ND	ND(<1.0)	ND(2.0)	ND
1,2-DICHLOROETHANE	69.0	44.7	35.0	34.0	55.0
1,1-DICHLOROETHENE	ND	ND	ND(<1.0)	ND(2.0)	ND
CIS-1,2-DICHLOROETHENE	ND	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	ND	ND	ND(<1.0)	ND(2.0)	ND
1,2-DICHLOROPROPANE	ND	ND	ND(<1.0)	ND(2.0)	ND
ETHYLBENZENE	180.0	211.0	181.0	1,100	73.0
METHYLENE CHLORIDE	ND	ND	ND(<1.0)	ND(20.0)	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND(<1.0)	ND(2.0)	ND
TETRACHLOROETHENE	TR	1.1	ND(<1.0)	2.9	0.69
TOLUENE	5.0	47.7	35.0	22.0	11.0
1,1,1-TRICHLOROETHANE	ND	ND	ND(<1.0)	ND(2.0)	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND(<1.0)	ND(2.0)	ND
TRICHLOROETHENE	ND	ND	ND(<1.0)	2.0	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND(<1.0)	ND(20.0)	ND
VINYL CHLORIDE	ND	ND	ND(<1.0)	ND(2.0)	ND
TOTAL XYLENES	147.0	246.1	165.0	55.0	40.0

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
IN GROUND WATER, GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-24D

<u>SAMPLER</u>	GIANT	OCD**	GIANT	GIANT	GIANT
<u>DATE</u>	<u>8/25/88</u>	<u>8/25/88</u>	<u>12/7/88</u>	<u>3/14/89</u>	<u>6/13/89</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	5.0	<1.0	(BELOW)	1.0
BENZENE	39.1	27.0	28.0	28.7	19.4
BROMODICHLOROMETHANE	ND	ND	ND	ND(<1.0)	ND
BROMOFORM	ND	ND	ND	ND(<1.0)	ND
BROMOMETHANE	ND	ND	ND	ND(1.0)	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND(<1.0)	ND
CHLOROBENZENE	ND	ND	ND	ND(<1.0)	ND
CHLOROETHANE	ND	ND	ND	ND(1.0)	ND
CHLOROFORM	ND	ND	ND	ND(<1.0)	ND
CHLOROMETHANE	ND	ND	ND	ND(1.0)	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND(<1.0)	ND
1,2-DICHLOROBENZENE	1.1	ND	ND	ND(<1.0)	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND(<1.0)	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND(<1.0)	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND	ND(1.0)	ND
1,1-DICHLOROETHANE	ND	ND	ND	ND(<1.0)	ND
1,2-DICHLOROETHANE	25.7	6.0	21.0	6.8	13.1
1,1-DICHLOROETHENE	ND	ND	ND	ND(<1.0)	ND
CIS-1,2-DICHLOROETHENE	NA	ND	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	ND	ND	ND(<1.0)	ND
TOTAL 1,2-DICHLOROETHENE	ND	NA	NA	NA	NA
1,2-DICHLOROPROPANE	ND	ND	ND	ND(<1.0)	ND
ETHYLBENZENE	87.3	55.0	45.0	58.9	34.0
METHYLENE CHLORIDE	ND	ND	ND	ND(<1.0)	4.3
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND(<1.0)	ND
TETRACHLOROETHENE	0.6	ND	ND	ND(<1.0)	ND
TOLUENE	6.5	TR	4.8	8.9	6.9
1,1,1-TRICHLOROETHANE	ND	ND	ND	ND(<1.0)	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND(<1.0)	ND
TRICHLOROETHENE	ND	ND	ND	ND(<1.0)	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND(<1.0)	ND
VINYL CHLORIDE	ND	ND	ND	ND(1.0)	ND
TOTAL XYLENES	30.4	10.0	25.0	18.9	10.6
TR -	TRACE				
ND -	NOT DETECTED				
NA -	NOT ANALYZED				
** -	SPLIT SAMPLE				

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-24D

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>9/13/89</u>	<u>12/12/89</u>	<u>4/3/90</u>	<u>7/18/90</u>	<u>10/8/90</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	(BELOW)	<1.0	(BELOW)	(BELOW)
BENZENE	12.0	21.0	31.0	39.0	25.0
BROMODICHLOROMETHANE	ND	ND(<1.0)	ND	ND(<1.0)	ND(0.1)
BROMOFORM	ND	ND(<1.0)	ND	ND(2.5)	ND(0.5)
BROMOMETHANE	ND	ND(<1.0)	ND	ND(5.9)	ND(5.9)
CARBON TETRACHLORIDE	ND	ND(<1.0)	ND	ND(<1.0)	ND(0.12)
CHLOROBENZENE	0.47	ND(2.0)	ND	16.0	ND(1.0)
CHLOROETHANE	ND	ND(<1.0)	ND	ND(2.6)	ND(2.6)
CHLOROFORM	ND	ND(<1.0)	ND	ND(<1.0)	ND(0.5)
CHLOROMETHANE	ND	ND(<1.0)	ND	ND(1.5)	ND(1.5)
DIBROMOCHLOROMETHANE	ND	ND(<1.0)	ND	ND(1.0)	ND(1.0)
1,2-DICHLOROBENZENE	ND	0.6	ND	ND(2.0)	ND(2.0)
1,3-DICHLOROBENZENE	ND	ND(<1.0)	ND	ND(2.0)	ND(2.0)
1,4-DICHLOROBENZENE	ND	ND(<1.0)	ND	ND(1.5)	1.7 X
1,1-DICHLOROETHANE	ND	ND(<1.0)	ND	ND(2.5)	ND(2.5)
1,2-DICHLOROETHANE	18.0	18.0	16.0	57.0	44.0
1,1-DICHLOROETHENE	ND	ND(<1.0)	ND	ND(1.0)	ND(1.0)
CIS-1,2-DICHLOROETHENE	ND	NA	ND	ND(1.0)	ND(1.0)
TRANS-1,2-DICHLOROETHENE	ND	ND(<1.0)	ND	ND(1.0)	ND(1.0)
1,2-DICHLOROPROPANE	ND	ND(<1.0)	ND	ND(<1.0)	ND(0.5)
ETHYLBENZENE	18.0	27.0	13.0	28.0	29.0
METHYLENE CHLORIDE	0.5	ND(<1.0)	ND	ND(2.0)	ND(2.0)
1,1,2,2-TETRACHLOROETHANE	ND	ND(<1.0)	ND	ND(<1.0)	ND(0.15)
TETRACHLOROETHENE	ND	ND(<1.0)	0.21	4.0	ND(0.5)
TOLUENE	2.8	ND(2.0)	2.3	4.8	4.8
1,1,1-TRICHLOROETHANE	ND	ND(<1.0)	ND	6.8	ND(1.0)
1,1,2-TRICHLOROETHANE	ND	ND(<1.0)	ND	ND(1.0)	ND(1.0)
TRICHLOROETHENE	ND	ND(<1.0)	ND	56.0	ND(1.0)
TRICHLOROFLUOROMETHANE	2.5	ND(<1.0)	ND	ND(1.0)	ND(1.0)
VINYL CHLORIDE	ND	ND(<1.0)	ND	ND(1.0)	ND(1.0)
TOTAL XYLENES	19.0	6.9	6.7	8.8	16.0

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS
X - PRESENCE NOT CONFIRMED

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-24D

<u>SAMPLER</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>
<u>DATE</u>	<u>1/22/91</u>	<u>4/2/91</u>	<u>7/3/91</u>	<u>10/1/91</u>	<u>1/8/92</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	(BELOW)	<1.0	<1.0	<1.0
BENZENE	16.6	190.0	45.0	100.0	47.0
BROMODICHLOROMETHANE	ND	ND (4.0)	ND	ND	ND
BROMOFORM	ND	ND (4.0)	ND	ND	ND
BROMOMETHANE	ND	ND (4.0)	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND (4.0)	ND	ND	ND
CHLOROBENZENE	ND	ND (10.0)	ND	ND	ND
CHLOROETHANE	ND	ND (4.0)	ND	ND	ND
CHLOROFORM	ND	ND (4.0)	ND	ND	ND
CHLOROMETHANE	ND	ND (4.0)	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND (6.0)	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND (10.0)	ND	1.0	ND
1,3-DICHLOROBENZENE	ND	ND (10.0)	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND (10.0)	ND	1.0	ND
DICHLORODIFLUOROMETHANE	ND	ND (6.0)	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND (4.0)	ND	0.5	ND
1,2-DICHLOROETHANE	23.9	26.0	6.0	34.0	14.0
1,1-DICHLOROETHENE	ND	ND (4.0)	ND	ND	ND
TOTAL 1,2-DICHLOROETHENE	ND	ND (4.0)	ND	ND	ND
1,2-DICHLOROPROPANE	ND	ND (4.0)	ND	ND	ND
ETHYLBENZENE	9.1	100.0	10.0	24.0	13.0
METHYLENE CHLORIDE	ND	ND (40.0)	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND (4.0)	ND	ND	ND
TETRACHLOROETHENE	ND	ND (4.0)	ND	0.6	0.3
TOLUENE	2.4	15.0	2.0	10.0	3.5
1,1,1-TRICHLOROETHANE	ND	ND (4.0)	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND (4.0)	ND	ND	ND
TRICHLOROETHENE	ND	ND (4.0)	ND	0.4	0.3
TRICHLOROFLUOROMETHANE	ND	ND (10.0)	ND	ND	ND
VINYL CHLORIDE	ND	ND (4.0)	ND	ND	ND
TOTAL XYLENES	15.9	ND (20.0)	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-24D

<u>SAMPLER</u>	GIANT	GIANT
<u>DATE</u>	<u>4/9/92</u>	<u>7/7/92</u>
<u>PARAMETER</u>		
DETECTION LIMIT	2.5	<1.0
BENZENE	24.0	47.6
BROMODICHLOROMETHANE	NA	ND
BROMOFORM	NA	ND
BROMOMETHANE	NA	ND
CARBON TETRACHLORIDE	NA	ND
CHLOROBENZENE	NA	ND
CHLOROETHANE	NA	ND
CHLOROFORM	NA	ND
CHLOROMETHANE	NA	ND
DIBROMOCHLOROMETHANE	NA	ND
1,2-DICHLOROBENZENE	ND	1.4
1,3-DICHLOROBENZENE	ND	ND
1,4-DICHLOROBENZENE	ND	1.4
DICHLORODIFLUOROMETHANE	NA	ND
1,1-DICHLOROETHANE	NA	0.8
1,2-DICHLOROETHANE	NA	36.6
1,1-DICHLOROETHENE	NA	ND
TOTAL 1,2-DICHLOROETHENE	NA	ND
1,2-DICHLOROPROPANE	NA	ND
ETHYLBENZENE	7.0	5.8
METHYLENE CHLORIDE	NA	ND
1,1,2,2-TETRACHLOROETHANE	NA	ND
TETRACHLOROETHENE	NA	0.5
TOLUENE	ND	2.6
1,1,1-TRICHLOROETHANE	NA	ND
1,1,2-TRICHLOROETHANE	NA	ND
TRICHLOROETHENE	NA	0.3
TRICHLOROFLUOROMETHANE	NA	ND
VINYL CHLORIDE	NA	ND
TOTAL XYLENES	ND	ND

TR - TRACE
 ND - NOT DETECTED
 NA - NOT ANALYZED
 ** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-24S

<u>SAMPLER</u>	<u>GIANT</u>	<u>OCD</u>	<u>OCD</u>
<u>DATE</u>	<u>5/9/86</u>	<u>6/5/86</u>	<u>11/21/86</u>
<u>PARAMETER</u>			
DETECTION LIMIT	1.0	10.0	10.0
BENZENE	1,154	680.0	580.0
BROMODICHLOROETHANE	NA	TR	ND
BROMOFORM	NA	ND	ND
BROMOMETHANE	NA	ND	ND
CARBON TETRACHLORIDE	NA	ND	ND
CHLOROBENZENE	NA	ND	ND
CHLOROETHANE	NA	ND	ND
CHLOROFORM	NA	ND	ND
CHLOROMETHANE	NA	ND	ND
DIBROMOCHLOROMETHANE	NA	ND	ND
1,2-DICHLOROBENZENE	NA	ND	TR
1,3-DICHLOROBENZENE	NA	ND	ND
1,4-DICHLOROBENZENE	NA	ND	ND
DICHLORODIFLUOROMETHANE	NA	ND	ND
1,1-DICHLOROETHANE	NA	ND	ND
1,2-DICHLOROETHANE	NA	TR	60.0
1,1-DICHLOROETHENE	NA	ND	ND
CIS-1,2-DICHLOROETHENE	NA	ND	ND
TRANS-1,2-DICHLOROETHENE	NA	ND	ND
1,2-DICHLOROPROPANE	NA	ND	ND
ETHYLBENZENE	147.0	140.0	300.0
METHYLENE CHLORIDE	NA	ND	ND
1,1,2,2-TETRACHLOROETHANE	NA	ND	ND
TETRACHLOROETHENE	NA	TR	ND
TOLUENE	803.0	690.0	200.0
1,1,1-TRICHLOROETHANE	NA	ND	ND
1,1,2-TRICHLOROETHANE	NA	ND	ND
TRICHLOROETHENE	NA	TR	ND
TRICHLOROFLUOROMETHANE	NA	ND	ND
VINYL CHLORIDE	NA	ND	ND
TOTAL XYLENES	1,020	890.0	495.0

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
*	-	DUPLICATE ANALYSIS

GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-25

GIANT

5/9/86

DETECTION LIMIT

BENZENE	ND
BROMODICHLOROMETHANE	NA
BROMOFORM	NA
BROMOMETHANE	NA
CARBON TETRACHLORIDE	NA
CHLOROBENZENE	NA
CHLOROETHANE	NA
CHLOROFORM	NA
CHLOROMETHANE	NA
DIBROMOCHLOROMETHANE	NA
1,2-DICHLOROBENZENE	NA
1,3-DICHLOROBENZENE	NA
1,4-DICHLOROBENZENE	NA
DICHLORODIFLUOROMETHANE	NA
1,1-DICHLOROETHANE	NA
1,2-DICHLOROETHANE	NA
1,1-DICHLOROETHENE	NA
CIS-1,2-DICHLOROETHENE	NA
TRANS-1,2-DICHLOROETHENE	NA
1,2-DICHLOROPROPANE	NA
ETHYLBENZENE	ND
METHYLENE CHLORIDE	NA
1,1,2,2-TETRACHLOROETHANE	NA
TETRACHLOROETHENE	NA
TOLUENE	ND
1,1,1-TRICHLOROETHANE	NA
1,1,2-TRICHLOROETHANE	NA
TRICHLOROETHENE	NA
TRICHLOROFLUOROMETHANE	NA
VINYL CHLORIDE	NA
TOTAL XYLENES	NA

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
*	-	DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-26

<u>SAMPLER</u>	<u>GIANT</u>	<u>GIANT</u>
<u>DATE</u>	<u>5/9/86</u>	<u>10/17/86</u>
<u>PARAMETER</u>		
DETECTION LIMIT	1.0	(BELOW)
BENZENE	ND	5,280
BROMODICHLOROMETHANE	NA	ND(5.0)
BROMOFORM	NA	ND(5.0)
BROMOMETHANE	NA	NA
CARBON TETRACHLORIDE	NA	ND(5.0)
CHLORO BENZENE	NA	NA
CHLOROETHANE	NA	ND(5.0)
CHLOROFORM	NA	ND(5.0)
CHLOROMETHANE	NA	NA
DIBROMOCHLOROMETHANE	NA	ND(5.0)
1,2-DICHLORO BENZENE	NA	NA
1,3-DICHLORO BENZENE	NA	NA
1,4-DICHLORO BENZENE	NA	NA
DICHLORODIFLUOROMETHANE	NA	NA
1,1-DICHLOROETHANE	NA	ND(5.0)
1,2-DICHLOROETHANE	NA	66.0
1,1-DICHLOROETHENE	NA	ND(5.0)
CIS-1,2-DICHLOROETHENE	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	ND(5.0)
1,2-DICHLOROPROPANE	NA	ND(5.0)
ETHYLBENZENE	ND	54.0
METHYLENE CHLORIDE	NA	ND(5.0)
1,1,2,2-TETRACHLOROETHANE	NA	ND(5.0)
TETRACHLOROETHENE	NA	ND(5.0)
TOLUENE	ND	119.0
1,1,1-TRICHLOROETHANE	NA	ND(5.0)
1,1,2-TRICHLOROETHANE	NA	ND(5.0)
TRICHLOROETHENE	NA	ND(5.0)
TRICHLOROFLUOROMETHANE	NA	NA
VINYL CHLORIDE	NA	ND(5.0)
TOTAL XYLENES	ND	1,140

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
*	-	DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-27/GRW-11

<u>SAMPLER</u>	<u>GIANT</u>	<u>OCD</u>	<u>OCD*</u>	<u>OCD</u>	<u>GIANT</u>
<u>DATE</u>	<u>5/18/86</u>	<u>6/5/86</u>	<u>6/5/86</u>	<u>11/21/86</u>	<u>10/7/87</u>
<u>PARAMETER</u>					
DETECTION LIMIT	1.0	50.0	5.0	5.0	<1.0
BENZENE	ND	410.0	50.0	ND	70.5
BROMODICHLOROMETHANE	NA	ND	ND	ND	ND
BROMOFORM	NA	ND	ND	ND	ND
BROMOMETHANE	NA	ND	ND	ND	ND
CARBON TETRACHLORIDE	NA	ND	ND	ND	ND
CHLOROBENZENE	NA	ND	ND	ND	ND
CHLOROETHANE	NA	ND	ND	ND	ND
CHLOROFORM	NA	ND	ND	ND	ND
CHLOROMETHANE	NA	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	NA	ND	ND	ND	ND
1,2-DICHLOROBENZENE	NA	ND	ND	ND	ND
1,3-DICHLOROBENZENE	NA	ND	ND	ND	ND
1,4-DICHLOROBENZENE	NA	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	NA	ND	ND	ND	ND
1,1-DICHLOROETHANE	NA	ND	ND	ND	ND
1,2-DICHLOROETHANE	NA	TR	6.0	5.0	68.7
1,1-DICHLOROETHENE	NA	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	NA	ND	ND	ND	NA
TRANS-1,2-DICHLOROETHENE	NA	ND	ND	ND	ND
1,2-DICHLOROPROPANE	NA	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	12.0	ND	1.9
METHYLENE CHLORIDE	NA	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	NA	ND	ND	ND	ND
TETRACHLOROETHENE	NA	ND	ND	ND	ND
TOLUENE	ND	120.0	74.0	ND	1.5
1,1,1-TRICHLOROETHANE	NA	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	NA	ND	ND	ND	ND
TRICHLOROETHENE	NA	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	NA	ND	ND	ND	ND
VINYL CHLORIDE	NA	ND	ND	ND	ND
TOTAL XYLENES	ND	506.0	457.0	ND	7.9

TR - TRACE
 ND - NOT DETECTED
 NA - NOT ANALYZED
 * - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-28/GRW-12

<u>SAMPLER</u>	<u>GIANT</u>	<u>GIANT</u>	<u>OCD</u>	<u>GIANT</u>
<u>DATE</u>	<u>5/29/86</u>	<u>7/15/86</u>	<u>6/8/88</u>	<u>9/4/90</u>
<u>PARAMETER</u>				
DETECTION LIMIT	1.0	1.0	100.0	(BELOW)
BENZENE	2,419	319.0	1,060	1400.0
BROMODICHLOROMETHANE	NA	NA	ND	NA
BROMOFORM	NA	NA	ND	NA
BROMOMETHANE	NA	NA	ND	NA
CARBON TETRACHLORIDE	NA	ND	ND	NA
CHLOROBENZENE	NA	NA	ND	ND (1.0)
CHLOROETHANE	NA	NA	ND	NA
CHLOROFORM	NA	ND	ND	NA
CHLOROMETHANE	NA	NA	ND	NA
DIBROMOCHLOROMETHANE	NA	NA	ND	NA
1,2-DICHLOROBENZENE	NA	NA	ND	ND (2.0)
1,3-DICHLOROBENZENE	NA	NA	ND	ND (2.0)
1,4-DICHLOROBENZENE	NA	NA	ND	ND (1.5)
1,1-DICHLOROETHANE	NA	ND	ND	NA
1,2-DICHLOROETHANE	NA	ND	ND	NA
1,1-DICHLOROETHENE	NA	ND	ND	NA
CIS-1,2-DICHLOROETHENE	NA	NA	ND	NA
TRANS-1,2-DICHLOROETHENE	NA	ND	ND	NA
1,2-DICHLOROPROPANE	NA	NA	ND	NA
ETHYLBENZENE	NA	NA	TR	52.0
METHYLENE CHLORIDE	NA	NA	ND	NA
1,1,2,2-TETRACHLOROETHANE	NA	ND	ND	NA
1,1,1,2-TETRACHLOROETHANE	NA	ND	ND	NA
TETRACHLOROETHENE	NA	ND	ND	NA
TOLUENE	819.0	143.0	TR	2.2
1,1,1-TRICHLOROETHANE	NA	ND	ND	NA
1,1,2-TRICHLOROETHANE	NA	ND	ND	NA
TRICHLOROETHENE	NA	ND	ND	NA
TRICHLOROFLUOROMETHANE	NA	NA	ND	NA
VINYL CHLORIDE	NA	NA	ND	NA
TOTAL XYLENES	4,019	224.0	270.0	66.0

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-29/GRW-3

<u>SAMPLER</u>	GIANT	GIANT	OCD**	OCD	OCD
<u>DATE</u>	<u>5/30/86</u>	<u>6/5/86</u>	<u>6/5/86</u>	<u>11/20/86</u>	<u>6/8/88</u>
<u>PARAMETER</u>					
DETECTION LIMIT	1.0	1.0	10.0	10.0	100.0
BENZENE	388.0	3,818	2,600	240.0	3,500
BROMODICHLOROMETHANE	NA	NA	ND	ND	ND
BROMOFORM	NA	NA	ND	ND	ND
BROMOMETHANE	NA	NA	ND	ND	ND
CARBON TETRACHLORIDE	NA	NA	ND	ND	ND
CHLOROBENZENE	NA	NA	ND	ND	ND
CHLOROETHANE	NA	NA	ND	ND	ND
CHLOROFORM	NA	NA	ND	ND	ND
CHLOROMETHANE	NA	NA	ND	ND	ND
DIBROMOCHLOROMETHANE	NA	NA	ND	ND	ND
1,2-DICHLOROBENZENE	NA	NA	ND	ND	ND
1,3-DICHLOROBENZENE	NA	NA	ND	ND	ND
1,4-DICHLOROBENZENE	NA	NA	ND	ND	ND
DICHLORODIFLUOROMETHANE	NA	NA	ND	ND	ND
1,1-DICHLOROETHANE	NA	NA	30.0	34.0	ND
1,2-DICHLOROETHANE	NA	NA	36.0	28.0	ND
1,1-DICHLOROETHENE	NA	NA	ND	ND	ND
CIS-1,2-DICHLOROETHENE	NA	NA	NA	14.0	ND
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	ND	ND
TOTAL 1,2 DICHLOROETHENE	NA	NA	30.0	NA	NA
DICHLOROMETHANE	NA	NA	ND	TR	ND
1,2-DICHLOROPROPANE	NA	NA	ND	ND	ND
ETHYLBENZENE	NA	NA	600.0	98.0	800.0
METHYLENE CHLORIDE	NA	NA	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	NA	NA	ND	ND	ND
TETRACHLOROETHENE	NA	NA	ND	ND	ND
TOLUENE	643.0	3,338	3,000	72.0	320.0
1,1,1-TRICHLOROETHANE	NA	NA	TR	8.0	ND
1,1,2-TRICHLOROETHANE	NA	NA	ND	ND	ND
TRICHLOROETHENE	NA	NA	TR	12.0	ND
TRICHLOROFLUOROMETHANE	NA	NA	ND	ND	ND
VINYL CHLORIDE	NA	NA	ND	ND	ND
TOTAL XYLENES	2,000	5,210	2,870	1,400	1,880

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-29/GRW-3

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>4/2/90</u>	<u>7/17/90</u>	<u>9/4/90</u>	<u>10/4/90</u>	<u>1/25/91</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	(BELOW)	(BELOW)	(BELOW)	(BELOW)
BENZENE	280.0	380.0	460.0	490.0	350.0
BROMODICHLOROMETHANE	ND(1.0)	ND(5.0)	NA	ND(2.0)	<5.0
BROMOFORM	ND(5.0)	ND(25.0)	NA	ND(10.0)	<5.0
BROMOMETHANE	ND(12.0)	ND(59.0)	NA	ND(24.0)	<5.0
CARBON TETRACHLORIDE	ND(1.2)	ND(6.0)	NA	ND(2.4)	<5.0
CHLOROBENZENE	ND(2.5)	ND(10.0)	ND(2.0)	5.8 X	<12.5
CHLOROETHANE	ND(5.2)	ND(12.0)	NA	ND(10.0)	<5.0
CHLOROFORM	ND(1.0)	ND(5.0)	NA	ND(2.0)	<5.0
CHLOROMETHANE	ND(3.0)	ND(15.0)	NA	ND(6.0)	<5.0
DIBROMOCHLOROMETHANE	ND(2.0)	ND(10.0)	NA	ND(4.0)	<5.0
1,2-DICHLOROBENZENE	ND(4.0)	ND(20.0)	ND(4.0)	ND(8.0)	<12.5
1,3-DICHLOROBENZENE	ND(4.0)	ND(20.0)	ND(4.0)	ND(8.0)	<12.5
1,4-DICHLOROBENZENE	ND(3.0)	ND(15.0)	ND(3.0)	290.0	<12.5
1,1-DICHLOROETHANE	ND(5.0)	ND(25.0)	NA	ND(10.0)	<5.0
1,2-DICHLOROETHANE	ND(1.0)	ND(5.0)	NA	4.3 X	<5.0
1,1-DICHLOROETHENE	ND(2.0)	ND(10.0)	NA	ND(4.0)	<5.0
CIS-1,2-DICHLOROETHENE	14.0	22.0	NA	17.0	NA
TRANS-1,2-DICHLOROETHENE	ND(2.0)	ND(10.0)	NA	ND(4.0)	NA
TOTAL 1,2-DICHLOROETHENE	NA	NA	NA	NA	<5.0
1,2-DICHLOROPROPANE	ND(1.0)	ND(5.0)	NA	ND(2.0)	<5.0
ETHYLBENZENE	98.0	160.0	450.0	420.0	160.0
METHYLENE CHLORIDE	ND(4.0)	ND(20.0)	NA	ND(8.0)	<50.0
1,1,2,2-TETRACHLOROETHANE	ND(1.5)	ND(7.5)	NA	ND(3.0)	<5.0
TETRACHLOROETHENE	ND(1.0)	ND(5.0)	NA	ND(2.0)	<5.0
TOLUENE	ND(2.0)	ND(10.0)	5.2	ND(4.0)	<12.5
1,1,1-TRICHLOROETHANE	ND(2.0)	ND(10.0)	NA	ND(4.0)	<5.0
1,1,2-TRICHLOROETHANE	ND(2.0)	ND(10.0)	NA	ND(4.0)	<5.0
TRICHLOROETHENE	ND(2.0)	ND(10.0)	NA	ND(4.0)	<5.0
TRICHLOROFLUOROMETHANE	ND(2.0)	ND(10.0)	NA	ND(4.0)	<12.5
VINYL CHLORIDE	ND(2.0)	ND(10.0)	NA	ND(4.0)	<5.0
TOTAL XYLENES	33.0	57.0	970.0	710.0	80.0

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS
X - PRESENCE NOT CONFIRMED

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-29/RW-3

<u>SAMPLER</u>	GIANT	GIANT	GIANT
<u>DATE</u>	<u>10/1/91</u>	<u>1/7/92</u>	<u>4/8/92</u>
<u>PARAMETER</u>			
DETECTION LIMIT	<1.0	(BELOW)	<1.0
BENZENE	89.9	27.0	27.0
BROMODICHLOROMETHANE	ND	ND (1.0)	ND
BROMOFORM	ND	ND (1.0)	ND
BROMOMETHANE	ND	ND (1.0)	ND
CARBON TETRACHLORIDE	ND	ND (1.0)	ND
CHLOROBENZENE	ND	ND (2.5)	ND
CHLOROETHANE	ND	ND (1.0)	ND
CHLOROFORM	0.4	ND (1.0)	ND
CHLOROMETHANE	ND	ND (1.0)	ND
DIBROMOCHLOROMETHANE	ND	ND (1.0)	ND
1,2-DICHLOROBENZENE	ND	ND (2.5)	ND
1,3-DICHLOROBENZENE	ND	ND (2.5)	ND
1,4-DICHLOROBENZENE	ND	ND (2.5)	ND
DICHLORODIFLUOROMETHANE	ND	ND (1.0)	ND
1,1-DICHLOROETHANE	1.0	ND (1.0)	0.8
1,2-DICHLOROETHANE	ND	ND (1.0)	0.5
1,1-DICHLOROETHENE	ND	ND (1.0)	ND
TOTAL 1,2-DICHLOROETHENE	1.0	ND (1.0)	0.5
1,2-DICHLOROPROPANE	ND	ND (1.0)	ND
ETHYLBENZENE	57.0	17.0	44.0
METHYLENE CHLORIDE	ND	ND (10.0)	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND (1.0)	ND
TETRACHLOROETHENE	ND	ND (1.0)	ND
TOLUENE	7.0	ND (2.5)	0.7
1,1,1-TRICHLOROETHANE	ND	ND (1.0)	ND
1,1,2-TRICHLOROETHANE	ND	ND (1.0)	ND
TRICHLOROETHENE	ND	ND (1.0)	ND
TRICHLOROFLUOROMETHANE	ND	ND (2.5)	ND
VINYL CHLORIDE	ND	ND (1.0)	ND
TOTAL XYLENES	11.0	4.0	10.0

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-30

<u>SAMPLER</u>	<u>GIANT</u>	<u>OCD</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>
<u>DATE</u>	<u>10/17/86</u>	<u>11/21/86</u>	<u>6/1/88</u>	<u>12/7/88</u>	<u>3/14/89</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	5.0	<1.0	<1.0	(BELOW)
BENZENE	ND (1.0)	ND	ND	ND	1.9
BROMODICHLOROMETHANE	ND (5.0)	ND	ND	ND	ND (<1.0)
BROMOFORM	ND (5.0)	ND	ND	ND	ND (<1.0)
BROMOMETHANE	NA	ND	ND	ND	ND (1.0)
CARBON TETRACHLORIDE	ND (5.0)	ND	ND	ND	ND (<1.0)
CHLOROBENZENE	NA	ND	ND	ND	ND (<1.0)
CHLOROETHANE	ND (5.0)	ND	ND	ND	ND (1.0)
CHLOROFORM	ND (5.0)	ND	ND	ND	ND (<1.0)
CHLOROMETHANE	NA	ND	ND	ND	ND (1.0)
DIBROMOCHLOROMETHANE	ND (5.0)	ND	ND	ND	ND (<1.0)
1,2-DICHLOROBENZENE	NA	ND	ND	ND	ND (<1.0)
1,3-DICHLOROBENZENE	NA	ND	ND	ND	ND (<1.0)
1,4-DICHLOROBENZENE	NA	ND	ND	ND	ND (<1.0)
DICHLORODIFLUOROMETHANE	NA	ND	ND	ND	ND (1.0)
1,1-DICHLOROETHANE	ND (5.0)	ND	0.98	0.5	0.08
1,2-DICHLOROETHANE	ND (5.0)	ND	ND	1.1	0.1
1,1-DICHLOROETHENE	ND (5.0)	ND	ND	ND	ND (<1.0)
CIS-1,2-DICHLOROETHENE	NA	ND	ND	ND	NA
TRANS-1,2-DICHLOROETHENE	ND (5.0)	ND	1.0	ND	ND (<1.0)
1,2-DICHLOROPROPANE	ND (5.0)	ND	ND	ND	ND (<1.0)
ETHYLBENZENE	ND (1.0)	ND	ND	2.4	3.5
METHYLENE CHLORIDE	ND (5.0)	ND	ND	ND	1.0
1,1,2,2-TETRACHLOROETHANE	ND (5.0)	ND	ND	ND	ND (<1.0)
TETRACHLOROETHENE	ND (5.0)	TR	0.61	ND	ND (<1.0)
TOLUENE	ND (1.0)	ND	ND	ND	5.3
1,1,1-TRICHLOROETHANE	ND (5.0)	ND	ND	ND	ND (<1.0)
1,1,2-TRICHLOROETHANE	ND (5.0)	ND	ND	ND	ND (<1.0)
TRICHLOROETHENE	ND (5.0)	TR	0.52	ND	ND (<1.0)
TRICHLOROFLUOROMETHANE	NA	ND	ND	0.6	ND (<1.0)
VINYL CHLORIDE	ND (5.0)	ND	ND	ND	ND (1.0)
TOTAL XYLENES	ND (1.0)	89.0	20.0	13.6	11.6

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NA - NOT ANALYZED
* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-30

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>6/13/89</u>	<u>9/13/89</u>	<u>12/13/89</u>	<u>4/3/90</u>	<u>7/18/90</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	(BELOW)	<1.0	<1.0	<1.0
BENZENE	ND(<1.0)	0.96	1.1	ND	ND
BROMODICHLOROMETHANE	ND(1.0)	ND(<1.0)	ND	ND	ND
BROMOFORM	ND(1.0)	ND(4.0)	ND	ND	ND
BROMOMETHANE	ND(1.0)	ND(2.0)	ND	ND	ND
CARBON TETRACHLORIDE	ND(1.0)	ND(<1.0)	ND	ND	ND
CHLOROBENZENE	ND(<1.0)	2.7	ND	ND	1.8
CHLOROETHANE	ND(1.0)	ND(1.0)	ND	ND	ND
CHLOROFORM	ND(1.0)	ND(<1.0)	ND	ND	ND
CHLOROMETHANE	ND(1.0)	ND(1.0)	ND	ND	ND
DIBROMOCHLOROMETHANE	ND(1.0)	ND(<1.0)	ND	ND	ND
1,2-DICHLOROBENZENE	ND(<1.0)	35.0	ND	ND	ND
1,3-DICHLOROBENZENE	ND(<1.0)	17.0	ND	ND	ND
1,4-DICHLOROBENZENE	ND(<1.0)	40.0	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND(1.0)	ND(<1.0)	ND	ND	ND
1,1-DICHLOROETHANE	ND(1.0)	0.88	ND	ND	0.67
1,2-DICHLOROETHANE	ND(1.0)	9.6	0.94	ND	0.75
1,1-DICHLOROETHENE	ND(1.0)	ND(<1.0)	ND	ND	ND
CIS-1,2-DICHLOROETHENE	NA	NA	NA	ND	5.6
TRANS-1,2-DICHLOROETHENE	ND(1.0)	NA	ND	ND	ND
TOTAL 1,2-DICHLOROETHENE	NA	ND(<1.0)	NA	NA	NA
1,2-DICHLOROPROPANE	ND(1.0)	ND(<1.0)	ND	ND	ND
ETHYLBENZENE	ND(<1.0)	11.0	ND	2.0	0.55
METHYLENE CHLORIDE	ND(1.0)	ND(<1.0)	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND(1.0)	ND(<1.0)	ND	ND	ND
TETRACHLOROETHENE	ND(1.0)	ND(<1.0)	ND	ND	0.44
TOLUENE	ND(<1.0)	4.3	0.28	3.1	ND
1,1,1-TRICHLOROETHANE	ND(1.0)	ND(<1.0)	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND(1.0)	ND(<1.0)	ND	ND	ND
TRICHLOROETHENE	ND(1.0)	ND(<1.0)	ND	ND	0.44
TRICHLOROFLUOROMETHANE	ND(1.0)	0.91	ND	ND	ND
VINYL CHLORIDE	ND(1.0)	ND(<1.0)	ND	ND	ND
TOTAL XYLENES	4.3	44.0	1.3	ND	2.4

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* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-30

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>10/8/90</u>	<u>1/22/91</u>	<u>4/2/91</u>	<u>7/2/91</u>	<u>10/1/91</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	<1.0	<1.0	<1.0	<1.0
BENZENE	ND	ND	ND	ND	ND
BROMODICHLOROMETHANE	ND	ND	ND	ND	ND
BROMOFORM	ND	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND	ND
CHLOROFORM	ND	ND	ND	ND	ND
CHLOROMETHANE	ND	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	0.86 X	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	2.6	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	0.18	ND	ND	ND	ND
1,1-DICHLOROETHENE	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	ND	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	ND	NA	NA	NA	NA
TOTAL 1,2-DICHLOROETHENE	NA	ND	ND	ND	ND
1,2-DICHLOROPROPANE	ND	ND	ND	ND	ND
ETHYLBENZENE	1.6	25.9	1.1	ND	ND
METHYLENE CHLORIDE	ND	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND	ND
TETRACHLOROETHENE	ND	ND	ND	ND	ND
TOLUENE	1.2	5.7	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND	ND
TRICHLOROETHENE	ND	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND	ND
TOTAL XYLENES	3.5	39.9	ND	ND	ND

TR - TRACE
 ND - NOT DETECTED
 NA - NOT ANALYZED
 ** - SPLIT SAMPLE
 X - PRESENCE NOT CONFIRMED

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-30

<u>SAMPLER</u>	GIANT	GIANT	GIANT
<u>DATE</u>	<u>1/8/92</u>	<u>4/9/92</u>	<u>7/7/92</u>
<u>PARAMETER</u>			
DETECTION LIMIT	<1.0	<1.0	<1.0
BENZENE	ND	ND	ND
BROMODICHLOROMETHANE	ND	NA	ND
BROMOFORM	ND	NA	ND
BROMOMETHANE	ND	NA	ND
CARBON TETRACHLORIDE	ND	NA	ND
CHLOROBENZENE	ND	NA	ND
CHLOROETHANE	ND	NA	ND
CHLOROFORM	ND	NA	ND
CHLOROMETHANE	ND	NA	ND
DIBROMOCHLOROMETHANE	ND	NA	ND
1,2-DICHLOROBENZENE	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	NA	ND
1,1-DICHLOROETHANE	ND	NA	ND
1,2-DICHLOROETHANE	ND	NA	ND
1,1-DICHLOROETHENE	ND	NA	ND
TOTAL 1,2-DICHLOROETHENE	ND	NA	ND
1,2-DICHLOROPROPANE	ND	NA	ND
ETHYLBENZENE	ND	ND	ND
METHYLENE CHLORIDE	ND	NA	ND
1,1,2,2-TETRACHLOROETHANE	ND	NA	ND
TETRACHLOROETHENE	ND	NA	ND
TOLUENE	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	NA	ND
1,1,2-TRICHLOROETHANE	ND	NA	ND
TRICHLOROETHENE	ND	NA	ND
TRICHLOROFLUOROMETHANE	ND	NA	ND
VINYL CHLORIDE	ND	NA	ND
TOTAL XYLENES	ND	ND	ND

TR - TRACE
 ND - NOT DETECTED
 NA - NOT ANALYZED
 ** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-31

<u>SAMPLER</u>	<u>GIANT</u>	<u>OCD</u>	<u>GIANT</u>	<u>EID**</u>	<u>GIANT</u>
<u>DATE</u>	<u>10/17/86</u>	<u>11/21/86</u>	<u>4/20/88</u>	<u>4/20/88</u>	<u>6/2/88</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	1.0	<1.0	0.5	<1.0
BENZENE	4.0	ND	ND	ND	ND
BROMODICHLOROETHANE	ND (5.0)	10.0	ND	ND	ND
BROMOFORM	ND (5.0)	ND	ND	ND	ND
BROMOMETHANE	NA	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND (5.0)	ND	ND	ND	ND
CHLOROBENZENE	NA	ND	ND	ND	ND
CHLOROETHANE	ND (5.0)	ND	ND	ND	ND
CHLOROFORM	ND (5.0)	ND	ND	TR	ND
CHLOROMETHANE	NA	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND (5.0)	ND	0.76	ND	ND
1,2-DICHLOROBENZENE	NA	ND	ND	ND	ND
1,3-DICHLOROBENZENE	NA	ND	ND	ND	ND
1,4-DICHLOROBENZENE	NA	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	NA	ND	ND	ND	ND
1,1-DICHLOROETHANE	11.0	22.0	4.8	3.5	4.6
1,2-DICHLOROETHANE	ND (5.0)	TR	ND	ND	ND
1,1-DICHLOROETHENE	ND (5.0)	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	NA	23.0	ND	29.0	ND
TRANS-1,2-DICHLOROETHENE	21.0	ND	58.0	ND	53.0
DICHLOROMETHANE	NA	ND	NA	ND	
1,2-DICHLOROPROPANE	NA	TR	ND	ND	ND
ETHYLBENZENE	ND (1.0)	ND	ND	ND	ND
METHYLENE CHLORIDE	7.0	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND (5.0)	ND	ND	ND	ND
TETRACHLOROETHENE	11.0	16.0	ND	8.3	5.0
TOLUENE	6.0	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	7.3	12.0	2.9	0.8	1.8
1,1,2-TRICHLOROETHANE	ND (5.0)	ND	ND	ND	ND
TRICHLOROETHENE	ND (5.0)	12.0	7.3	5.4	7.6
TRICHLOROFLUOROMETHANE	NA	ND	ND	0.7	ND
VINYL CHLORIDE	ND (5.0)	ND	ND	ND	ND
TOTAL XYLENES	14.0	ND	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-31

<u>SAMPLER</u>	<u>GIANT</u>	<u>EID**</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>
<u>DATE</u>	<u>8/25/88</u>	<u>8/25/88</u>	<u>12/07/88</u>	<u>3/15/89</u>	<u>6/13/89</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	0.5	<1.0	(BELOW)	(BELOW)
BENZENE	ND	ND	ND	12.6	ND(0.2)
BROMODICHLOROMETHANE	ND	ND	ND	ND(<1.0)	ND(1.0)
BROMOFORM	ND	ND	ND	ND(<1.0)	ND(1.0)
BROMOMETHANE	ND	ND	ND	ND(1.0)	ND(1.0)
CARBON TETRACHLORIDE	ND	ND	ND	ND(<1.0)	ND(1.0)
CHLOROBENZENE	ND	ND	ND	ND(<1.0)	ND(0.2)
CHLOROETHANE	ND	ND	ND	ND(1.0)	ND(1.0)
CHLOROFORM	ND	ND	ND	ND(<1.0)	1.9
CHLOROMETHANE	ND	ND	ND	ND(1.0)	ND(1.0)
DIBROMOCHLOROMETHANE	ND	ND	ND	ND(<1.0)	ND(1.0)
1,2-DICHLOROBENZENE	ND	ND	ND	ND(<1.0)	ND(0.2)
1,3-DICHLOROBENZENE	ND	ND	ND	ND(<1.0)	ND(0.2)
1,4-DICHLOROBENZENE	ND	ND	ND	ND(<1.0)	ND(0.2)
DICHLORODIFLUOROMETHANE	ND	ND	ND	ND(1.0)	ND(1.0)
1,1-DICHLOROETHANE	ND	ND	0.9	0.18	5.7
1,2-DICHLOROETHANE	1.8	0.6	0.8	0.84	ND(1.0)
1,1-DICHLOROETHENE	ND	ND	ND	ND(<1.0)	ND(1.0)
CIS-1,2-DICHLOROETHENE	NA	ND	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	ND	4.5	ND(<1.0)	ND(1.0)
TOTAL 1,2-DICHLOROETHENE	ND	NA	NA	NA	NA
1,2-DICHLOROPROPANE	ND	ND	ND	ND(<1.0)	ND(1.0)
ETHYLBENZENE	ND	ND	ND	16.3	ND(0.2)
METHYLENE CHLORIDE	ND	ND	0.3	3.2	ND(1.0)
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND(<1.0)	ND(1.0)
TETRACHLOROETHENE	0.3	TR	3.9	0.17	17.2
TOLUENE	ND	ND	ND	3.3	ND(0.2)
1,1,1-TRICHLOROETHANE	ND	ND	0.7	ND(<1.0)	1.6
1,1,2-TRICHLOROETHANE	ND	ND	1.1	ND(<1.0)	ND(1.0)
TRICHLOROETHENE	ND	ND	ND	ND(<1.0)	10.8
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND(<1.0)	ND(1.0)
VINYL CHLORIDE	ND	ND	ND	ND(1.0)	ND(1.0)
TOTAL XYLENES	ND	ND	ND	18.3	ND(0.2)

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-31

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>9/13/89</u>	<u>12/13/89</u>	<u>4/4/89</u>	<u>7/18/90</u>	<u>10/8/90</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	<1.0	<1.0	(BELOW)	<1.0
BENZENE	0.38	ND	0.98	ND(2.0)	ND
BROMODICHLOROMETHANE	ND(<1.0)	ND	ND	ND(1.0)	ND
BROMOFORM	ND(2.0)	ND	ND	ND(5.0)	ND
BROMOMETHANE	ND(1.0)	ND	ND	ND(12.0)	ND
CARBON TETRACHLORIDE	ND(<1.0)	ND	ND	ND(1.2)	ND
CHLOROBENZENE	ND(<1.0)	ND	ND	ND(2.0)	0.34 X
CHLOROETHANE	ND(<1.0)	ND	ND	ND(5.2)	ND
CHLOROFORM	ND(<1.0)	ND	ND	ND(1.0)	ND
CHLOROMETHANE	ND(<1.0)	ND	ND	ND(3.0)	ND
DIBROMOCHLOROMETHANE	ND(<1.0)	ND	ND	ND(2.0)	ND
1,2-DICHLOROBENZENE	ND(<1.0)	ND	ND	ND(4.0)	1.2 X
1,3-DICHLOROBENZENE	ND(<1.0)	ND	ND	ND(4.0)	1.8 X
1,4-DICHLOROBENZENE	ND(<1.0)	ND	ND	ND(3.0)	1.5 X
DICHLORODIFLUOROMETHANE	ND(<1.0)	NA	NA	NA	NA
1,1-DICHLOROETHANE	2.8	3.4	ND	5.5	ND
1,2-DICHLOROETHANE	1.8	2.0	1.0	ND(1.0)	ND
1,1-DICHLOROETHENE	ND(<1.0)	ND	ND	ND(2.0)	ND
CIS-1,2-DICHLOROETHENE	NA	NA	6.2	81.0	13.0
TRANS-1,2-DICHLOROETHENE	NA	44.0	ND	ND(2.0)	ND
TOTAL 1,2-DICHLOROETHENE	23.0	NA	NA	NA	NA
1,2-DICHLOROPROPANE	ND(<1.0)	ND	ND	ND(1.0)	ND
ETHYLBENZENE	ND(<1.0)	ND	ND	ND(2.0)	ND
METHYLENE CHLORIDE	0.71	1.1	ND	ND(4.0)	ND
1,1,2,2-TETRACHLOROETHANE	ND(<1.0)	ND	ND	ND(1.5)	ND
TETRACHLOROETHENE	4.7	12.0	0.64	12.0	2.8
TOLUENE	ND(<1.0)	ND	ND	ND(2.0)	0.98
1,1,1-TRICHLOROETHANE	0.65	1.4	ND	15.0	ND
1,1,2-TRICHLOROETHANE	ND(<1.0)	ND	ND	ND(2.0)	ND
TRICHLOROETHENE	ND(<1.0)	7.9	0.86	34.0	0.47
TRICHLOROFLUOROMETHANE	3.6	ND	ND	ND(2.0)	ND
VINYL CHLORIDE	ND(<1.0)	ND	ND	ND(2.0)	ND
TOTAL XYLENES	ND(<1.0)	ND	6.0	ND(2.0)	0.45 X

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS
X - PRESENCE NOT CONFIRMED

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-31

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>1/23/91</u>	<u>4/2/91</u>	<u>7/3/91</u>	<u>10/1/91</u>	<u>1/8/92</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	<1.0	<1.0	<1.0	<1.0
BENZENE	ND	ND	ND	ND	ND
BROMODICHLOROMETHANE	ND	ND	ND	ND	ND
BROMOFORM	ND	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND	ND
CHLOROFORM	ND	ND	ND	ND	ND
CHLOROMETHANE	90.0	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND	2.4	0.2	ND
1,2-DICHLOROETHANE	ND	ND	ND	ND	0.2
1,1-DICHLOROETHENE	ND	ND	0.2	ND	ND
TOTAL 1,2-DICHLOROETHENE	2.1	0.66	57.0	2.7	2.7
1,2-DICHLOROPROPANE	ND	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	ND	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND	ND
TETRACHLOROETHENE	0.5	ND	6.0	0.5	0.3
TOLUENE	ND	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND	0.5	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND	ND
TRICHLOROETHENE	0.4	ND	4.2	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND	ND
TOTAL XYLENES	ND	ND	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-31

<u>SAMPLER</u>	GIANT	GIANT
<u>DATE</u>	<u>4/10/92</u>	<u>7/7/92</u>
<u>PARAMETER</u>		
DETECTION LIMIT	<1.0	<1.0
BENZENE	ND	ND
BROMODICHLOROMETHANE	NA	ND
BROMOFORM	NA	ND
BROMOMETHANE	NA	ND
CARBON TETRACHLORIDE	NA	ND
CHLOROBENZENE	NA	ND
CHLOROETHANE	NA	ND
CHLOROFORM	NA	ND
CHLOROMETHANE	NA	ND
DIBROMOCHLOROMETHANE	NA	ND
1,2-DICHLOROBENZENE	ND	ND
1,3-DICHLOROBENZENE	ND	ND
1,4-DICHLOROBENZENE	ND	ND
DICHLORODIFLUOROMETHANE	NA	ND
1,1-DICHLOROETHANE	NA	ND
1,2-DICHLOROETHANE	NA	ND
1,1-DICHLOROETHENE	NA	ND
TOTAL 1,2-DICHLOROETHENE	NA	ND
1,2-DICHLOROPROPANE	NA	ND
ETHYLBENZENE	ND	ND
METHYLENE CHLORIDE	NA	ND
1,1,2,2-TETRACHLOROETHANE	NA	ND
TETRACHLOROETHENE	NA	ND
TOLUENE	ND	ND
1,1,1-TRICHLOROETHANE	NA	ND
1,1,2-TRICHLOROETHANE	NA	ND
TRICHLOROETHENE	NA	ND
TRICHLOROFLUOROMETHANE	NA	ND
VINYL CHLORIDE	NA	ND
TOTAL XYLENES	ND	ND

TR - TRACE
 ND - NOT DETECTED
 NA - NOT ANALYZED
 ** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-32

<u>SAMPLER</u>	<u>EID</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>	<u>EID**</u>
<u>DATE</u>	<u>8/5/87</u>	<u>10/7/87</u>	<u>11/12/87</u>	<u>4/20/88</u>	<u>4/20/88</u>
<u>PARAMETER</u>					
DETECTION LIMIT	1.0	<1.0	(BELOW)	<1.0	0.5
BENZENE	ND	ND	ND(<1.0)	ND	ND
BROMODICHLOROMETHANE	ND	ND	ND(<1.0)	ND	ND
BROMOFORM	ND	ND	ND(<1.0)	ND	ND
BROMOMETHANE	ND	ND	ND(<1.0)	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND(<1.0)	ND	ND
CHLOROBENZENE	ND	ND	ND(<1.0)	ND	ND
CHLOROETHANE	ND	ND	ND(<1.0)	ND	ND
CHLOROFORM	ND	ND	11.0	1.1	0.9
CHLOROMETHANE	ND	ND	ND(<1.0)	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND(<1.0)	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND(<1.0)	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND(<1.0)	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND(<1.0)	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND(<1.0)	ND	ND
1,1-DICHLOROETHANE	3.0	10.4	10.7	5.7	8.5
1,2-DICHLOROETHANE	ND	ND	ND(<1.0)	ND	ND
1,1-DICHLOROETHENE	ND	ND	106.0	ND	ND
CIS-1,2-DICHLOROETHENE	79.0	NA	NA	NA	88.0
TRANS-1,2-DICHLOROETHENE	ND	35.0	ND(<1.0)	160.0	ND
1,2-DICHLOROPROPANE	ND	0.5	ND(<1.0)	ND	ND
ETHYLBENZENE	ND	ND	ND(<1.0)	ND	ND
METHYLENE CHLORIDE	ND	ND	ND(2.0)	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND(<1.0)	ND	ND
TETRACHLOROETHENE	19.0	16.6	15.3	17.0	18.0
TOLUENE	ND	ND	ND(1.0)	ND	ND
1,1,1-TRICHLOROETHANE	3.0	3.3	2.3	1.9	1.0
1,1,2-TRICHLOROETHANE	ND	ND	ND(<1.0)	ND	ND
TRICHLOROETHENE	17.0	13.4	11.4	16.0	14.0
TRICHLOROFLUOROMETHANE	ND	ND	ND(2.0)	ND	2.0
VINYL CHLORIDE	ND	ND	ND(<1.0)	ND	ND
TOTAL XYLENES	ND	ND	ND(<1.0)	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-32

<u>SAMPLER</u>	GIANT	EID**	GIANT	GIANT	GIANT
<u>DATE</u>	<u>8/24/88</u>	<u>8/24/88</u>	<u>11/8/88</u>	<u>3/14/89</u>	<u>6/13/89</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	0.5	(BELOW)	(BELOW)	(BELOW)
BENZENE	ND (5.0)	ND	ND (<1.0)	0.81	ND (<1.0)
BROMODICHLOROMETHANE	ND (2.0)	ND	NA	ND	ND (1.0)
BROMOFORM	ND (2.0)	ND	ND (3.0)	ND	ND (1.0)
BROMOMETHANE	ND (2.0)	ND	ND (12.0)	ND (1.0)	ND (1.0)
CARBON TETRACHLORIDE	ND (2.0)	ND	ND (1.0)	ND	ND (1.0)
CHLOROBENZENE	ND (5.0)	ND	ND (<1.0)	ND	ND (<1.0)
CHLOROETHANE	ND (2.0)	ND	ND (5.0)	ND (1.0)	ND (1.0)
CHLOROFORM	ND (2.0)	3.9	8.2	0.4	3.0
CHLOROMETHANE	ND (2.0)	ND	ND (3.0)	ND (1.0)	ND (1.0)
DIBROMOCHLOROMETHANE	ND (2.0)	ND	ND (2.0)	ND (<1.0)	ND (1.0)
1,2-DICHLOROBENZENE	ND (5.0)	ND	ND (<1.0)	ND (<1.0)	ND (<1.0)
1,3-DICHLOROBENZENE	ND (5.0)	ND	ND (<1.0)	ND (<1.0)	ND (<1.0)
1,4-DICHLOROBENZENE	ND (5.0)	ND	ND (<1.0)	ND (<1.0)	ND (<1.0)
DICHLORODIFLUOROMETHANE	ND (2.0)	ND	NA	ND (1.0)	ND (1.0)
1,1-DICHLOROETHANE	6.0	3.6	5.8	3.1	3.9
1,2-DICHLOROETHANE	ND (2.0)	ND	ND (<1.0)	ND (<1.0)	ND (1.0)
1,1-DICHLOROETHENE	ND (2.0)	ND	ND (1.0)	ND (<1.0)	ND (1.0)
CIS-1,2-DICHLOROETHENE	NA	97.0	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	ND	120.0	ND (<1.0)	ND (1.0)
TOTAL 1,2-DICHLOROETHENE	100.0	NA	NA	NA	NA
DICHLOROMETHANE	NA	TR	NA	NA	NA
1,2-DICHLOROPROPANE	ND (2.0)	ND	ND (1.0)	ND (<1.0)	ND (1.0)
ETHYLBENZENE	ND (5.0)	ND	ND (<1.0)	ND (<1.0)	ND (<1.0)
METHYLENE CHLORIDE	ND (20.0)	ND	ND (3.0)	10.8	ND (1.0)
1,1,2,2-TETRACHLOROETHANE	ND (2.0)	ND	ND (1.2)	ND (<1.0)	ND (1.0)
TETRACHLOROETHENE	9.0	24.0	20.0	11.7	17.3
TOLUENE	ND (5.0)	ND	ND (<1.0)	1.1	ND (<1.0)
1,1,1-TRICHLOROETHANE	ND (2.0)	4.5	6.6	0.78	1.5
1,1,2-TRICHLOROETHANE	ND (2.0)	ND	ND (<1.0)	ND (<1.0)	ND (1.0)
TRICHLOROETHENE	8.0	16.0	13.0	8.1	12.2
TRICHLOROFLUOROMETHANE	ND (20.0)	0.8	ND (1.0)	ND (<1.0)	ND (1.0)
VINYL CHLORIDE	ND (2.0)	ND	ND (2.0)	ND (1.0)	ND (1.0)
TOTAL XYLENES	ND (5.0)	ND	ND (<1.0)	ND (<1.0)	ND (<1.0)

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-32

<u>SAMPLER</u>	GIANT	GIANT	OCD	GIANT	GIANT
<u>DATE</u>	<u>12/11/89</u>	<u>12/18/89</u>	<u>4/9/90</u>	<u>6/18/90</u>	<u>12/16/91</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	<1.0	1.0	(BELOW)	<1.0
BENZENE	96.0	ND	ND	ND (5.0)	ND
BROMODICHLOROMETHANE	ND	ND	ND	ND (2.5)	ND
BROMOFORM	ND	ND	ND	ND (13.0)	ND
BROMOMETHANE	ND	ND	ND	ND (30.0)	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND (3.0)	ND
CHLOROBENZENE	ND	ND	ND	ND (5.0)	ND
CHLOROETHANE	ND	ND	ND	ND (13.0)	ND
CHLOROFORM	ND	ND	ND	ND (2.5)	ND
CHLOROMETHANE	ND	ND	ND	ND (7.5)	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND (5.0)	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND (10.0)	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND (10.0)	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND (7.5)	ND
1,1-DICHLOROETHANE	3.0	2.8	1.5	ND (13.0)	ND
1,2-DICHLOROETHANE	ND	ND	ND	ND (2.5)	ND
1,1-DICHLOROETHENE	ND	ND	ND	ND (5.0)	1.6
CIS-1,2-DICHLOROETHENE	NA	NA	88.3	160.0	NA
TRANS-1,2-DICHLOROETHENE	140.0	160.0	ND	ND (5.0)	NA
1,2-DICHLOROPROPANE	ND	ND	ND	ND (2.5)	49.0
ETHYLBENZENE	ND	ND	ND	ND (5.0)	ND
METHYLENE CHLORIDE	1.2	1.1	ND	10.0	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND (3.8)	ND
TETRACHLOROETHENE	17.0	22.0	15.0	23.0	5.2
TOLUENE	ND	ND	ND	ND (5.0)	ND
1,1,1-TRICHLOROETHANE	1.3	1.5	ND	ND (5.0)	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND (5.0)	ND
TRICHLOROETHENE	10.0	12.0	10.9	17.0	2.5
TRICHLOROFLUOROMETHANE	ND	1.1	ND	ND (5.0)	0.3
VINYL CHLORIDE	ND	ND	ND	ND (5.0)	ND
TOTAL XYLENES	ND	ND	ND	ND (5.0)	ND

TR - TRACE
 ND - NOT DETECTED
 NA - NOT ANALYZED
 * - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-32

SAMPLER

GIANT

DATE

7/15/92

PARAMETER

DETECTION LIMIT	<1.0
BENZENE	ND
BROMODICHLOROMETHANE	ND
BROMOFORM	ND
BROMOMETHANE	ND
CARBON TETRACHLORIDE	ND
CHLOROBENZENE	ND
CHLOROETHANE	ND
CHLOROFORM	ND
CHLOROMETHANE	ND
DIBROMOCHLOROMETHANE	ND
1,2-DICHLOROBENZENE	ND
1,3-DICHLOROBENZENE	ND
1,4-DICHLOROBENZENE	ND
DICHLORODIFLUOROMETHANE	ND
1,1-DICHLOROETHANE	3.7
1,2-DICHLOROETHANE	ND
1,1-DICHLOROETHENE	ND
TOTAL 1,2-DICHLOROETHENE	100.0
1,2-DICHLOROPROPANE	ND
ETHYLBENZENE	ND
METHYLENE CHLORIDE	ND
1,1,2,2-TETRACHLOROETHANE	ND
TETRACHLOROETHENE	5.6
TOLUENE	ND
1,1,1-TRICHLOROETHANE	0.3
1,1,2-TRICHLOROETHANE	ND
TRICHLOROETHENE	4.2
TRICHLOROFLUOROMETHANE	ND
VINYL CHLORIDE	ND
TOTAL XYLENES	ND

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
**	-	SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-33

<u>SAMPLER</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>
<u>DATE</u>	<u>9/9/87</u>	<u>10/7/87</u>	<u>12/7/89</u>	<u>3/15/89</u>	<u>6/13/89</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	(BELOW)	(BELOW)	(BELOW)	(BELOW)
BENZENE	764.0	503.0	130.0	0.3	32.6
BROMODICHLOROMETHANE	ND	ND (2.0)	ND (<1.0)	ND (<1.0)	ND (1.0)
BROMOFORM	ND	ND (4.5)	ND (<1.0)	ND (<1.0)	ND (1.0)
BROMOMETHANE	ND	ND (3.0)	ND (1.2)	ND (1.0)	ND (1.0)
CARBON TETRACHLORIDE	ND	ND (4.0)	ND (<1.0)	ND (<1.0)	ND (1.0)
CHLOROBENZENE	ND	ND (8.0)	ND (3.0)	ND (<1.0)	ND (<1.0)
CHLOROETHANE	0.4	ND (50.0)	ND (<1.0)	ND (1.0)	ND (1.0)
CHLOROFORM	ND	ND (2.5)	ND (<1.0)	ND (<1.0)	ND (1.0)
CHLOROMETHANE	ND	ND (1.0)	ND (<1.0)	ND (1.0)	ND (1.0)
DIBROMOCHLOROMETHANE	ND	ND (3.5)	ND (<1.0)	ND (<1.0)	ND (1.0)
1,2-DICHLOROBENZENE	1.1	ND (20.0)	ND (4.0)	ND (<1.0)	ND (<1.0)
1,3-DICHLOROBENZENE	ND	ND (20.0)	ND (4.0)	ND (<1.0)	ND (<1.0)
1,4-DICHLOROBENZENE	ND	ND (30.0)	ND (3.0)	ND (<1.0)	ND (<1.0)
DICHLORODIFLUOROMETHANE	ND	ND (2.0)	ND (<1.0)	ND (1.0)	ND (1.0)
1,1-DICHLOROETHANE	1.0	ND (2.5)	0.5	1.4	ND (1.0)
1,2-DICHLOROETHANE	22.8	ND (3.5)	4.3	0.33	1.8
1,1-DICHLOROETHENE	ND	ND (3.5)	ND (<1.0)	ND (<1.0)	ND (1.0)
CIS-1,2-DICHLOROETHENE	ND	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	3.4	ND (4.5)	1.7	ND (<1.0)	ND (1.0)
1,2-DICHLOROPROPANE	ND	ND (1.5)	ND (<1.0)	ND (<1.0)	ND (1.0)
ETHYLBENZENE	1120.0	370.0	80.0	ND (<1.0)	76.0
METHYLENE CHLORIDE	ND	ND (1.0)	ND (<1.0)	5.8	ND (1.0)
1,1,2,2-TETRACHLOROETHANE	ND	ND (1.5)	ND (<1.0)	ND (<1.0)	ND (1.0)
TETRACHLOROETHENE	0.4	ND (1.5)	0.7	1.4	ND (1.0)
TOLUENE	188.0	136.0	9.9	ND (<1.0)	11.3
1,1,1-TRICHLOROETHANE	ND	ND (1.5)	ND (<1.0)	0.32	ND (1.0)
1,1,2-TRICHLOROETHANE	ND	ND (1.5)	ND (<1.0)	ND (<1.0)	ND (1.0)
TRICHLOROETHENE	0.4	37.0	0.5	1.1	ND (1.0)
TRICHLOROFLUOROMETHANE	ND	ND (3.5)	0.8	ND (<1.0)	ND (1.0)
VINYL CHLORIDE	ND	ND (2.5)	ND (<1.0)	ND (1.0)	ND (1.0)
TOTAL XYLENES	1393.0	1332.0	172.0	ND (<1.0)	74.1

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER(ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-33

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>9/12/89</u>	<u>12/13/89</u>	<u>4/4/90</u>	<u>7/18/90</u>	<u>10/8/90</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	(BELOW)	<1.0	<1.0	(BELOW)
BENZENE	ND(<1.0)	73.0	ND	ND	4.6
BROMODICHLOROMETHANE	ND(<1.0)	ND(<1.0)	ND	ND	ND(1.0)
BROMOFORM	ND(10.0)	ND(<1.0)	ND	ND	ND(5.0)
BROMOMETHANE	ND(5.0)	ND(1.2)	ND	ND	ND(12.0)
CARBON TETRACHLORIDE	ND(1.0)	ND(<1.0)	ND	ND	ND(1.2)
CHLOROBENZENE	ND(<1.0)	ND(5.0)	ND	2.5	11.0
CHLOROETHANE	ND(2.5)	ND(<1.0)	ND	ND	ND(5.2)
CHLOROFORM	ND(<1.0)	ND(<1.0)	ND	ND	ND(1.0)
CHLOROMETHANE	ND(2.5)	ND(<1.0)	ND	ND	ND(3.0)
DIBROMOCHLOROMETHANE	ND(1.0)	ND(<1.0)	ND	ND	ND(2.0)
1,2-DICHLOROBENZENE	ND(1.0)	ND(10.0)	ND	ND	ND(4.0)
1,3-DICHLOROBENZENE	ND(2.0)	ND(10.0)	ND	ND	61.0 X
1,4-DICHLOROBENZENE	ND(1.0)	ND(7.5)	ND	12.0	68.0
1,1-DICHLOROETHANE	ND(<1.0)	ND(<1.0)	1.3	ND	ND(5.0)
1,2-DICHLOROETHANE	0.97	4.0	0.21	0.28	ND(1.0)
1,1-DICHLOROETHENE	ND(<1.0)	ND(<1.0)	ND	ND	ND(2.0)
CIS-1,2-DICHLOROETHENE	NA	NA	12.0	4.9	38.0
TRANS-1,2-DICHLOROETHENE	NA	1.1	ND	ND	ND(2.0)
TOTAL 1,2-DICHLOROETHENE	2.5	NA	NA	ND	NA
1,2-DICHLOROPROPANE	ND(<1.0)	ND(<1.0)	ND	ND	ND(1.0)
ETHYLBENZENE	7.9	120.0	ND	3.7	220.0
METHYLENE CHLORIDE	ND(2.0)	ND(<1.0)	ND	ND	ND(4.0)
1,1,2,2-TETRACHLOROETHANE	ND(1.0)	ND(<1.0)	ND	ND	ND(1.5)
TETRACHLOROETHENE	ND(<1.0)	ND(<1.0)	2.5	0.6	ND(1.0)
TOLUENE	ND(1.5)	ND(5.0)	ND	0.35	8.3
1,1,1-TRICHLOROETHANE	ND(1.0)	ND(<1.0)	0.24	ND	ND(2.0)
1,1,2-TRICHLOROETHANE	ND(1.0)	ND(<1.0)	ND	ND	ND(2.0)
TRICHLOROETHENE	ND(1.0)	ND(<1.0)	1.1	3.2	ND(2.0)
TRICHLOROFLUOROMETHANE	ND(<1.0)	ND(<1.0)	ND	0.28	ND(2.0)
VINYL CHLORIDE	ND(1.0)	ND(<1.0)	ND	ND	ND(2.0)
TOTAL XYLENES	17.0	170.0	ND	6.6	310.0

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS
X - PRESENCE NOT CONFIRMED

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-36/GRW-10

<u>SAMPLER</u>	OCD	GIANT
<u>DATE</u>	<u>6/8/88</u>	<u>9/4/90</u>
<u>PARAMETER</u>		
DETECTION LIMIT	(BELOW)	<1.0
BENZENE	15.0	2.2
BROMODICHLOROMETHANE	ND (<1.0)	ND
BROMOFORM	ND (<1.0)	ND
BROMOMETHANE	ND (<1.0)	ND
CARBON TETRACHLORIDE	ND (<1.0)	ND
CHLOROBENZENE	ND (<1.0)	ND
CHLOROETHANE	ND (<1.0)	ND
CHLOROFORM	ND (<1.0)	ND
CHLOROMETHANE	ND (<1.0)	ND
DIBROMOCHLOROMETHANE	ND (<1.0)	ND
1,2-DICHLOROBENZENE	ND (<1.0)	ND
1,3-DICHLOROBENZENE	ND (<1.0)	ND
1,4-DICHLOROBENZENE	ND (<1.0)	ND
1,1-DICHLOROETHANE	9.6	ND
1,2-DICHLOROETHANE	3.5	ND
1,1-DICHLOROETHENE	ND (<1.0)	ND
CIS-1,2-DICHLOROETHENE	80.0	ND
TRANS-1,2-DICHLOROETHENE	ND (<1.0)	ND
DICHLOROMETHANE	6.3	ND
1,2-DICHLOROPROPANE	ND (<1.0)	ND
ETHYLBENZENE	TR(12.5)	5.3
METHYLENE CHLORIDE	ND (<1.0)	ND
1,1,2,2-TETRACHLOROETHANE	ND (<1.0)	ND
TETRACHLOROETHENE	17.0	ND
TOLUENE	ND(12.5)	0.33 X
1,1,1-TRICHLOROETHANE	10.0	ND
1,1,2-TRICHLOROETHANE	ND (<1.0)	ND
TRICHLOROETHENE	10.0	ND
TRICHLOROFLUOROMETHANE	ND (<1.0)	ND
VINYL CHLORIDE	ND (<1.0)	ND
TOTAL XYLENES	12.5	19.0

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
*	-	DUPLICATE ANALYSIS
X	-	PRESENCE NOT CONFIRMED

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-37/GRW-5

<u>SAMPLER</u>	OCD	GIANT
<u>DATE</u>	<u>6/8/88</u>	<u>9/4/90</u>
<u>PARAMETER</u>		
DETECTION LIMIT	0.5	(BELOW)
BENZENE	68.0	140.0
BROMODICHLOROMETHANE	ND	NA
BROMOFORM	ND	NA
BROMOMETHANE	ND	NA
CARBON TETRACHLORIDE	ND	NA
CHLOROBENZENE	ND	ND (2.0)
CHLOROETHANE	ND	NA
CHLOROFORM	ND	NA
CHLOROMETHANE	ND	NA
DIBROMOCHLOROMETHANE	ND	NA
1,2-DICHLOROBENZENE	ND	ND (4.0)
1,3-DICHLOROBENZENE	ND	ND (4.0)
1,4-DICHLOROBENZENE	ND	ND (3.0)
DICHLORODIFLUOROMETHANE	ND	NA
1,1-DICHLOROETHANE	2.5	NA
1,2-DICHLOROETHANE	4.0	NA
1,1-DICHLOROETHENE	ND	NA
CIS-1,2-DICHLOROETHENE	7.0	NA
TRANS-1,2-DICHLOROETHENE	ND	NA
DICHLOROMETHANE	1.7	NA
1,2-DICHLOROPROPANE	ND	NA
ETHYLBENZENE	61.0	120.0
METHYLENE CHLORIDE	ND	NA
1,1,2,2-TETRACHLOROETHANE	ND	NA
TETRACHLOROETHENE	2.3	NA
TOLUENE	2.0	ND (2.0)
1,1,1-TRICHLOROETHANE	1.5	NA
1,1,2-TRICHLOROETHANE	ND	NA
TRICHLOROETHENE	2.4	NA
TRICHLOROFLUOROMETHANE	ND	NA
VINYL CHLORIDE	ND	NA
TOTAL XYLENES	43.0	14.0

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
*	-	DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-38/GRW-1

<u>SAMPLER</u>	OCD	GIANT
<u>DATE</u>	<u>6/8/88</u>	<u>9/4/90</u>
<u>PARAMETER</u>		
DETECTION LIMIT	0.5	<1.0
BENZENE	ND	ND
BROMODICHLOROMETHANE	ND	NA
BROMOFORM	ND	NA
BROMOMETHANE	ND	NA
CARBON TETRACHLORIDE	ND	NA
CHLOROBENZENE	ND	ND
CHLOROETHANE	ND	NA
CHLOROFORM	ND	NA
CHLOROMETHANE	ND	NA
DIBROMOCHLOROMETHANE	ND	NA
1,2-DICHLOROBENZENE	ND	ND
1,3-DICHLOROBENZENE	ND	ND
1,4-DICHLOROBENZENE	ND	ND
DICHLORODIFLUOROMETHANE	ND	NA
1,1-DICHLOROETHANE	ND	NA
1,2-DICHLOROETHANE	ND	NA
1,1-DICHLOROETHENE	ND	NA
CIS-1,2-DICHLOROETHENE	ND	NA
TRANS-1,2-DICHLOROETHENE	ND	NA
1,2 DICHLOROPROPANE	ND	NA
ETHYLBENZENE	ND	ND
METHYLENE CHLORIDE	ND	NA
1,1,2,2-TETRACHLOROETHANE	ND	NA
TETRACHLOROETHENE	ND	NA
TOLUENE	ND	ND
1,1,1-TRICHLOROETHANE	ND	NA
1,1,2-TRICHLOROETHANE	ND	NA
TRICHLOROETHENE	ND	NA
TRICHLOROFLUOROMETHANE	ND	NA
VINYL CHLORIDE	ND	NA
TOTAL XYLENES	ND	ND

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
**	-	SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-40

<u>SAMPLER</u>	OCD
<u>DATE</u>	<u>6/8/88</u>
<u>PARAMETER</u>	
DETECTION LIMIT	0.5
BENZENE	ND
BROMODICHLOROMETHANE	ND
BROMOFORM	ND
BROMOMETHANE	ND
CARBON TETRACHLORIDE	ND
CHLOROBENZENE	ND
CHLOROETHANE	ND
CHLOROFORM	ND
CHLOROMETHANE	ND
DIBROMOCHLOROMETHANE	ND
1,2-DICHLOROBENZENE	ND
1,3-DICHLOROBENZENE	ND
1,4-DICHLOROBENZENE	ND
DICHLORODIFLUOROMETHANE	ND
1,1-DICHLOROETHANE	ND
1,2-DICHLOROETHANE	ND
1,1-DICHLOROETHENE	ND
CIS-1,2-DICHLOROETHENE	ND
TRANS-1,2-DICHLOROETHENE	ND
1,2-DICHLOROPROPANE	ND
ETHYLBENZENE	1.8
METHYLENE CHLORIDE	ND
1,1,2,2-TETRACHLOROETHANE	ND
TETRACHLOROETHENE	ND
TOLUENE	ND
1,1,1-TRICHLOROETHANE	ND
1,1,2-TRICHLOROETHANE	ND
TRICHLOROETHENE	ND
TRICHLOROFLUOROMETHANE	ND
VINYL CHLORIDE	ND
TOTAL XYLENES	ND

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
**	-	SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-41

<u>SAMPLER</u>	OCD
<u>DATE</u>	<u>6/8/88</u>
<u>PARAMETER</u>	
DETECTION LIMIT	5.0
BENZENE	25.0
BROMODICHLOROMETHANE	ND
BROMOFORM	ND
BROMOMETHANE	ND
CARBON TETRACHLORIDE	ND
CHLOROBENZENE	ND
CHLOROETHANE	ND
CHLOROFORM	ND
CHLOROMETHANE	ND
DIBROMOCHLOROMETHANE	ND
1,2-DICHLOROBENZENE	ND
1,3-DICHLOROBENZENE	ND
1,4-DICHLOROBENZENE	ND
DICHLORODIFLUOROMETHANE	ND
1,1-DICHLOROETHANE	ND
1,2-DICHLOROETHANE	ND
1,1-DICHLOROETHENE	ND
CIS-1,2-DICHLOROETHENE	ND
TRANS-1,2-DICHLOROETHENE	ND
1,2-DICHLOROPROPANE	ND
ETHYLBENZENE	474.0
METHYLENE CHLORIDE	ND
1,1,2,2-TETRACHLOROETHANE	ND
TETRACHLOROETHENE	ND
TOLUENE	16.0
1,1,1-TRICHLOROETHANE	ND
1,1,2-TRICHLOROETHANE	ND
TRICHLOROETHENE	ND
TRICHLOROFLUOROMETHANE	ND
VINYL CHLORIDE	ND
TOTAL XYLENES	224.0

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
**	-	SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-42/GRW-2

<u>SAMPLER</u>	GIANT	GIANT
<u>DATE</u>	<u>9/7/89</u>	<u>9/4/90</u>
<u>PARAMETER</u>		
DETECTION LIMIT	(BELOW)	<1.0
BENZENE	0.26	ND
BROMODICHLOROMETHANE	ND(<1.0)	NA
BROMOFORM	ND(2.0)	NA
BROMOMETHANE	ND(1.0)	NA
CARBON TETRACHLORIDE	ND(<1.0)	NA
CHLOROBENZENE	ND(<1.0)	ND
CHLOROETHANE	ND(<1.0)	NA
CHLOROFORM	ND(<1.0)	NA
CHLOROMETHANE	ND(<1.0)	NA
DIBROMOCHLOROMETHANE	ND(<1.0)	NA
1,2-DICHLOROBENZENE	ND(<1.0)	ND
1,3-DICHLOROBENZENE	ND(<1.0)	ND
1,4-DICHLOROBENZENE	ND(<1.0)	ND
DICHLORODIFLUOROMETHANE	NA	NA
1,1-DICHLOROETHANE	ND(<1.0)	NA
1,2-DICHLOROETHANE	0.36	NA
1,1-DICHLOROETHENE	ND(<1.0)	NA
CIS-1,2-DICHLOROETHENE	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA
TOTAL 1,2-DICHLOROETHENE	ND(<1.0)	NA
1,2-DICHLOROPROPANE	ND(<1.0)	NA
ETHYLBENZENE	1.6	ND
METHYLENE CHLORIDE	ND(<1.0)	NA
1,1,2,2-TETRACHLOROETHANE	ND(<1.0)	NA
TETRACHLOROETHENE	ND(<1.0)	NA
TOLUENE	ND(<1.0)	ND
1,1,1-TRICHLOROETHANE	ND(<1.0)	NA
1,1,2-TRICHLOROETHANE	ND(<1.0)	NA
TRICHLOROETHENE	ND(<1.0)	NA
TRICHLOROFLUOROMETHANE	1.4	NA
VINYL CHLORIDE	ND(<1.0)	NA
TOTAL XYLENES	0.23	ND

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
**	-	SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-43/GRW-4

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>9/7/89</u>	<u>4/2/90</u>	<u>7/17/90</u>	<u>9/4/90</u>	<u>10/4/90</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	(BELOW)	(BELOW)	(BELOW)	(BELOW)
BENZENE	950.0	440.0	120.0	450.0	770.0
BROMODICHLOROMETHANE	ND(10.0)	ND(2.0)	ND(2.5)	NA	ND(5.0)
BROMOFORM	ND(200.0)	ND(10.0)	ND(12.0)	NA	ND(25.0)
BROMOMETHANE	ND(100.0)	ND(24.0)	ND(30.0)	NA	ND(59.0)
CARBON TETRACHLORIDE	ND(20.0)	ND(2.4)	ND(3.0)	NA	ND(6.0)
CHLOROBENZENE	ND(10.0)	ND(4.0)	ND(2.0)	ND(2.0)	ND(10.0)
CHLOROETHANE	ND(50.0)	ND(10.0)	ND(13.0)	NA	ND(26.0)
CHLOROFORM	ND(10.0)	ND(2.0)	ND(2.5)	NA	ND(5.0)
CHLOROMETHANE	ND(50.0)	ND(6.0)	ND(7.5)	NA	ND(15.0)
DIBROMOCHLOROMETHANE	ND(20.0)	ND(4.0)	ND(5.0)	NA	ND(10.0)
1,2-DICHLOROBENZENE	ND(20.0)	ND(8.0)	ND(4.0)	ND(4.0)	ND(20.0)
1,3-DICHLOROBENZENE	ND(40.0)	ND(8.0)	ND(4.0)	ND(4.0)	ND(20.0)
1,4-DICHLOROBENZENE	ND(20.0)	ND(6.0)	ND(3.0)	ND(3.0)	ND(15.0)
1,1-DICHLOROETHANE	ND(10.0)	ND(10.0)	13.0	NA	ND(25.0)
1,2-DICHLOROETHANE	ND(10.0)	ND(2.0)	5.2	NA	6.1 X
1,1-DICHLOROETHENE	ND(10.0)	ND(4.0)	ND(5.0)	NA	ND(10.0)
CIS-1,2-DICHLOROETHENE	NA	21.0	46.0	NA	25.0 X
TRANS-1,2-DICHLOROETHENE	NA	ND(4.0)	ND(5.0)	NA	ND(10.0)
TOTAL 1,2-DICHLOROETHENE	28.0	NA	NA	NA	NA
1,2-DICHLOROPROPANE	ND(10.0)	ND(2.0)	ND(2.5)	NA	ND(5.0)
ETHYLBENZENE	200.0	65.0	24.0	150.0	160.0
METHYLENE CHLORIDE	ND(40.0)	ND(8.0)	ND(10.0)	NA	22.0 X
1,1,2,2-TETRACHLOROETHANE	ND(20.0)	ND(3.0)	ND(3.8)	NA	ND(7.5)
TETRACHLOROETHENE	ND(10.0)	ND(2.0)	ND(2.5)	NA	ND(5.0)
TOLUENE	ND(30.0)	ND(4.0)	ND(2.0)	5.2	ND(10.0)
1,1,1-TRICHLOROETHANE	71.0	ND(4.0)	ND(5.0)	NA	ND(10.0)
1,1,2-TRICHLOROETHANE	ND(20.0)	ND(4.0)	ND(5.0)	NA	ND(10.0)
TRICHLOROETHENE	ND(20.0)	8.6	10.0	NA	ND(10.0)
TRICHLOROFLUOROMETHANE	ND(10.0)	ND(4.0)	ND(5.0)	NA	11.0 X
VINYL CHLORIDE	ND(20.0)	ND(4.0)	ND(5.0)	NA	ND(10.0)
TOTAL XYLENES	200.0	ND(4.0)	8.5	970.0	ND(10.0)

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE
X - PRESENCE NOT CONFIRMED

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-43/GRW-4

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>1/24/91</u>	<u>4/8/91</u>	<u>10/1/91</u>	<u>1/7/92</u>	<u>4/8/92</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	(BELOW)	(BELOW)	<1.0	<1.0
BENZENE	600.0	1700.0	570.0	22.0	ND
BROMODICHLOROMETHANE	ND(20.0)	ND(40.0)	ND(1.0)	ND	ND
BROMOFORM	ND(20.0)	ND(40.0)	ND(1.0)	ND	ND
BROMOMETHANE	ND(20.0)	ND(40.0)	ND(1.0)	ND	ND
CARBON TETRACHLORIDE	ND(20.0)	ND(40.0)	ND(1.0)	ND	ND
CHLOROBENZENE	ND(50.0)	ND(100.0)	ND(2.5)	ND	ND
CHLOROETHANE	ND(20.0)	ND(40.0)	ND(1.0)	ND	ND
CHLOROFORM	ND(20.0)	ND(40.0)	3.0	ND	ND
CHLOROMETHANE	ND(20.0)	ND(40.0)	ND(1.0)	ND	ND
DIBROMOCHLOROMETHANE	ND(20.0)	ND(40.0)	ND(1.0)	ND	ND
1,2-DICHLOROBENZENE	ND(50.0)	ND(100.0)	ND(2.5)	ND	ND
1,3-DICHLOROBENZENE	ND(50.0)	ND(100.0)	ND(2.5)	ND	ND
1,4-DICHLOROBENZENE	ND(50.0)	ND(100.0)	ND(2.5)	ND	ND
DICHLORODIFLUOROMETHANE	ND(20.0)	ND(40.0)	ND(1.0)	ND	ND
1,1-DICHLOROETHANE	ND(20.0)	ND(40.0)	2.0	0.4	1.6
1,2-DICHLOROETHANE	ND(20.0)	ND(40.0)	ND(1.0)	0.9	1.0
1,1-DICHLOROETHENE	ND(20.0)	ND(40.0)	ND(1.0)	ND	ND
TOTAL 1,2-DICHLOROETHENE	ND(20.0)	ND(40.0)	3.0	1.2	
1,2-DICHLOROPROPANE	ND(20.0)	ND(40.0)	ND(1.0)	ND	ND
ETHYLBENZENE	150.0	450.0	49.0	2.3	ND
METHYLENE CHLORIDE	ND(200.0)	ND(400.0)	ND(10.0)	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND(20.0)	ND(40.0)	ND(1.0)	ND	ND
TETRACHLOROETHENE	ND(20.0)	ND(40.0)	2.0	0.3	ND
TOLUENE	ND(50.0)	ND(100.0)	3.0	ND	ND
1,1,1-TRICHLOROETHANE	ND(20.0)	ND(40.0)	2.0	ND	ND
1,1,2-TRICHLOROETHANE	ND(20.0)	ND(40.0)	ND(1.0)	ND	ND
TRICHLOROETHENE	ND(20.0)	ND(40.0)	3.0	0.4	0.4
TRICHLOROFLUOROMETHANE	ND(50.0)	ND(100.0)	ND(2.5)	ND	ND
VINYL CHLORIDE	ND(20.0)	ND(40.0)	ND(1.0)	ND	ND
TOTAL XYLENES	ND(50.0)	690.0	30.0	1.3	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-44/GRW-6

<u>SAMPLER</u>	OCD	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>6/8/88</u>	<u>9/7/89</u>	<u>4/2/90</u>	<u>7/17/90</u>	<u>9/4/90</u>
<u>PARAMETER</u>					
DETECTION LIMIT	0.5	<1.0	<1.0	(BELOW)	(BELOW)
BENZENE	10.0	10.8	16.0	120.0	220.0
BROMODICHLOROMETHANE	ND	ND	ND	ND(<1.0)	NA
BROMOFORM	ND	ND	ND	ND(1.2)	NA
BROMOMETHANE	ND	ND	ND	ND(<1.0)	NA
CARBON TETRACHLORIDE	ND	ND	ND	ND(<1.0)	NA
CHLOROBENZENE	ND	ND	ND	ND(2.0)	ND(2.0)
CHLOROETHANE	ND	ND	ND	ND(<1.0)	NA
CHLOROFORM	ND	ND	ND	ND(<1.0)	NA
CHLOROMETHANE	ND	ND	ND	ND(<1.0)	NA
DIBROMOCHLOROMETHANE	ND	ND	ND	ND(<1.0)	NA
1,2-DICHLOROBENZENE	ND	ND	ND	ND(4.0)	ND(4.0)
1,3-DICHLOROBENZENE	ND	ND	ND	ND(4.0)	ND(4.0)
1,4-DICHLOROBENZENE	ND	ND	ND	ND(3.0)	ND(3.0)
DICHLORODIFLUOROMETHANE	ND	NA	NA	ND(<1.0)	NA
1,1-DICHLOROETHANE	5.5	1.4	2.1	1.9	NA
1,2-DICHLOROETHANE	2.4	3.5	7.9	5.1	NA
1,1-DICHLOROETHENE	ND	ND	ND	ND(<1.0)	NA
CIS-1,2-DICHLOROETHENE	20.0	NA	ND	7.8	NA
TRANS-1,2-DICHLOROETHENE	ND	NA	ND	ND(<1.0)	NA
TOTAL 1,2-DICHLOROETHENE	NA	0.48	NA	NA	NA
DICHLOROMETHANE	4.0	ND	ND	ND(<1.0)	NA
1,2-DICHLOROPROPANE	ND	ND	ND	ND(<1.0)	NA
ETHYLBENZENE	ND	16.0	ND	24.0	67.0
METHYLENE CHLORIDE	ND	1.1	1.1	ND(<1.0)	NA
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND(<1.0)	NA
TETRACHLOROETHENE	6.7	ND	2.7	1.7	NA
TOLUENE	0.7	ND	0.65	ND(2.0)	ND(2.0)
1,1,1-TRICHLOROETHANE	5.5	0.97	1.6	0.41	NA
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND(<1.0)	NA
TRICHLOROETHENE	3.6	0.77	2.3	1.5	NA
TRICHLOROFLUOROMETHANE	ND	ND	ND	0.34	NA
VINYL CHLORIDE	ND	ND	ND	ND(<1.0)	NA
TOTAL XYLENES	ND	15.0	3.4	8.5	46.0

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-44/GRW-6

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>10/4/90</u>	<u>1/24/91</u>	<u>4/8/91</u>	<u>7/3/91</u>	<u>10/1/91</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	<1.0	<1.0	<1.0	<1.0
BENZENE	300.0	93.0	9.9	66.0	13.5
BROMODICHLOROMETHANE	ND (1.0)	ND	ND	ND	ND
BROMOFORM	ND (5.0)	ND	ND	ND	ND
BROMOMETHANE	ND (12.0)	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND (1.2)	ND	ND	ND	ND
CHLOROBENZENE	ND (2.0)	ND	ND	ND	ND
CHLOROETHANE	ND (5.2)	ND	ND	ND	ND
CHLOROFORM	ND (1.0)	ND	ND	ND	0.6
CHLOROMETHANE	ND (3.0)	3.5	ND	ND	ND
DIBROMOCHLOROMETHANE	ND (2.0)	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND (4.0)	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND (4.0)	ND	ND	ND	ND
1,4-DICHLOROBENZENE	20.0	0.60	ND	ND	ND
1,1-DICHLOROETHANE	ND (5.0)	1.7	1.2	1.5	1.3
1,2-DICHLOROETHANE	6.1	4.8	4.1	2.4	ND
1,1-DICHLOROETHENE	ND (2.0)	ND	ND	ND	0.3
CIS-1,2-DICHLOROETHENE	4.5	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	ND (2.0)	NA	NA	NA	NA
TOTAL 1,2-DICHLOROETHENE	NA	9.0	11.0	4.6	3.7
1,2-DICHLOROPROPANE	ND (1.0)	ND	ND	ND	ND
ETHYLBENZENE	47.0	24.0	3.3	46.0	0.8
METHYLENE CHLORIDE	8.1 X	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND (1.5)	ND	ND	ND	ND
TETRACHLOROETHENE	1.6 X	1.6	1.9	0.9	1.2
TOLUENE	ND (2.0)	0.79	ND	2.0	0.6
1,1,1-TRICHLOROETHANE	ND (2.0)	0.27	0.22	0.3	0.7
1,1,2-TRICHLOROETHANE	ND (2.0)	ND	ND	ND	ND
TRICHLOROETHENE	ND (2.0)	2.0	2.3	1.1	1.1
TRICHLOROFLUOROMETHANE	ND (2.0)	ND	ND	ND	ND
VINYL CHLORIDE	ND (2.0)	ND	ND	ND	ND
TOTAL XYLENES	6.8	ND	ND	ND	ND

TR - TRACE
 ND - NOT DETECTED
 NA - NOT ANALYZED
 ** - SPLIT SAMPLE
 X - PRESENCE NOT CONFIRMED

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-44/RW-6

<u>SAMPLER</u>	GIANT	GIANT
<u>DATE</u>	<u>1/7/92</u>	<u>4/9/92</u>
<u>PARAMETER</u>		
DETECTION LIMIT	<1.0	<1.0
BENZENE	20.0	ND
BROMODICHLOROMETHANE	ND	NA
BROMOFORM	ND	NA
BROMOMETHANE	ND	NA
CARBON TETRACHLORIDE	ND	NA
CHLOROBENZENE	ND	NA
CHLOROETHANE	ND	NA
CHLOROFORM	ND	NA
CHLOROMETHANE	ND	NA
DIBROMOCHLOROMETHANE	ND	NA
1,2-DICHLOROBENZENE	ND	ND
1,3-DICHLOROBENZENE	ND	ND
1,4-DICHLOROBENZENE	ND	ND
DICHLORODIFLUOROMETHANE	ND	NA
1,1-DICHLOROETHANE	0.6	NA
1,2-DICHLOROETHANE	1.2	NA
1,1-DICHLOROETHENE	ND	NA
TOTAL 1,2-DICHLOROETHENE	2.1	NA
1,2-DICHLOROPROPANE	ND	NA
ETHYLBENZENE	1.6	ND
METHYLENE CHLORIDE	ND	NA
1,1,2,2-TETRACHLOROETHANE	ND	NA
TETRACHLOROETHENE	0.5	NA
TOLUENE	ND	ND
1,1,1-TRICHLOROETHANE	ND	NA
1,1,2-TRICHLOROETHANE	ND	NA
TRICHLOROETHENE	0.5	NA
TRICHLOROFLUOROMETHANE	ND	NA
VINYL CHLORIDE	ND	NA
TOTAL XYLENES	ND	ND

TR - TRACE
 ND - NOT DETECTED
 NA - NOT ANALYZED
 ** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-47

<u>SAMPLER</u>	GIANT	GIANT	GIANT
<u>DATE</u>	<u>3/14/88</u>	<u>3/15/89</u>	<u>6/13/89</u>
<u>PARAMETER</u>			
DETECTION LIMIT	(BELOW)	(BELOW)	(BELOW)
BENZENE	ND (<1.0)	ND (<1.0)	17.7
BROMODICHLOROMETHANE	ND (<1.0)	ND (<1.0)	ND (1.0)
BROMOFORM	ND (<1.0)	ND (<1.0)	ND (1.0)
BROMOMETHANE	ND (1.0)	ND (1.0)	ND (1.0)
CARBON TETRACHLORIDE	ND (<1.0)	ND (<1.0)	ND (1.0)
CHLOROBENZENE	ND (<1.0)	ND (<1.0)	ND (<1.0)
CHLOROETHANE	ND (1.0)	ND (1.0)	ND (1.0)
CHLOROFORM	ND (<1.0)	ND (<1.0)	1.0
CHLOROMETHANE	ND (1.0)	ND (1.0)	ND (1.0)
DIBROMOCHLOROMETHANE	ND (<1.0)	ND (<1.0)	ND (1.0)
1,2-DICHLOROBENZENE	ND (<1.0)	ND (<1.0)	ND (<1.0)
1,3-DICHLOROBENZENE	ND (<1.0)	ND (<1.0)	ND (<1.0)
1,4-DICHLOROBENZENE	ND (<1.0)	ND (<1.0)	ND (<1.0)
DICHLORODIFLUOROMETHANE	ND (1.0)	ND (1.0)	ND (1.0)
1,1-DICHLOROETHANE	ND (<1.0)	0.81	ND (1.0)
1,2-DICHLOROETHANE	ND (<1.0)	0.45	9.3
1,1-DICHLOROETHENE	ND (<1.0)	ND (<1.0)	ND (1.0)
CIS-1,2-DICHLOROETHENE	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	ND (<1.0)	ND (<1.0)	ND (1.0)
1,2-DICHLOROPROPANE	ND (<1.0)	ND (<1.0)	ND (1.0)
ETHYLBENZENE	ND (<1.0)	ND (<1.0)	15.5
METHYLENE CHLORIDE	3.1	0.5	4.0
1,1,2,2-TETRACHLOROETHANE	ND (<1.0)	ND (<1.0)	ND (1.0)
TETRACHLOROETHENE	ND (<1.0)	2.0	ND (1.0)
TOLUENE	ND (<1.0)	0.26	22.5
1,1,1-TRICHLOROETHANE	ND (<1.0)	0.24	ND (1.0)
1,1,2-TRICHLOROETHANE	ND (<1.0)	ND (<1.0)	ND (1.0)
TRICHLOROETHENE	ND (<1.0)	1.2	ND (1.0)
TRICHLOROFLUOROMETHANE	ND (<1.0)	ND (<1.0)	ND (1.0)
VINYL CHLORIDE	ND (1.0)	ND (1.0)	ND (1.0)
TOTAL XYLENES	ND (<1.0)	ND (<1.0)	56.0

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-48

<u>SAMPLER</u>	GIANT	GIANT	GIANT*	GIANT	OCD
<u>DATE</u>	<u>11/8/88</u>	<u>3/14/89</u>	<u>3/14/89</u>	<u>6/13/89</u>	<u>4/9/90</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	(BELOW)	(BELOW)	(BELOW)	2.5
BENZENE	ND(2.0)	0.24	NA	ND(<1.0)	ND
BROMODICHLOROMETHANE	ND(1.0)	ND(<1.0)	ND(<1.0)	ND	ND
BROMOFORM	ND(3.0)	ND(<1.0)	ND(<1.0)	ND	ND
BROMOMETHANE	ND(1.2)	ND(1.0)	ND(1.0)	ND(1.0)	ND
CARBON TETRACHLORIDE	ND(1.0)	ND(<1.0)	ND(<1.0)	ND	ND
CHLOROBENZENE	ND(3.0)	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND
CHLOROETHANE	ND(<1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND
CHLOROFORM	ND(<1.0)	0.5	0.5	ND(1.0)	7.5
CHLOROMETHANE	ND(<1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND
DIBROMOCHLOROMETHANE	ND(2.0)	ND(<1.0)	ND(<1.0)	ND(1.0)	ND
1,2-DICHLOROBENZENE	ND(5.0)	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND
1,3-DICHLOROBENZENE	ND(3.0)	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND
1,4-DICHLOROBENZENE	ND(4.0)	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND
DICHLORODIFLUOROMETHANE	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND
1,1-DICHLOROETHANE	180.0	3.0	3.3	5.2	ND
1,2-DICHLOROETHANE	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(1.0)	ND
1,1-DICHLOROETHENE	ND(1.0)	ND(<1.0)	ND(<1.0)	ND(1.0)	ND
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	65.0
TRANS-1,2-DICHLOROETHENE	ND(2.0)	ND(<1.0)	ND(<1.0)	ND(1.0)	ND
1,2-DICHLOROPROPANE	ND(1.0)	ND(<1.0)	ND(<1.0)	ND(1.0)	ND
ETHYLBENZENE	ND(3.0)	ND(<1.0)	NA	ND(<1.0)	ND
METHYLENE CHLORIDE	0.3	0.6	1.1	ND(1.0)	ND
1,1,2,2-TETRACHLOROETHANE	ND(1.2)	ND(<1.0)	ND(<1.0)	ND(1.0)	ND
TETRACHLOROETHENE	31.0	7.4	7.6	26.1	11.3
TOLUENE	ND(2.0)	0.23	NA	ND(<1.0)	ND
1,1,1-TRICHLOROETHANE	ND(<1.0)	0.69	0.73	2.4	ND
1,1,2-TRICHLOROETHANE	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(1.0)	ND
TRICHLOROETHENE	25.0	5.4	6.0	14.7	20.8
TRICHLOROFLUOROMETHANE	ND(1.0)	ND(<1.0)	ND(<1.0)	ND(1.0)	ND
VINYL CHLORIDE	ND(<1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND
TOTAL XYLENES	ND(2.0)	ND(<1.0)	NA	ND(<1.0)	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-48

<u>SAMPLER</u>	GIANT	GIANT	GIANT
<u>DATE</u>	<u>6/18/90</u>	<u>12/16/91</u>	<u>7/15/92</u>
<u>PARAMETER</u>			
DETECTION LIMIT	(BELOW)	<1.0	(BELOW)
BENZENE	5.7	ND	ND (2.5)
BROMODICHLOROMETHANE	ND (2.5)	ND	ND (1.0)
BROMOFORM	ND (13.0)	ND	ND (1.0)
BROMOMETHANE	ND (30.0)	ND	ND (1.0)
CARBON TETRACHLORIDE	3.3	ND	ND (1.0)
CHLORO BENZENE	ND (5.0)	ND	ND (2.5)
CHLOROETHANE	ND (13.0)	ND	ND (1.0)
CHLOROFORM	ND (2.5)	0.5	ND (1.0)
CHLOROMETHANE	ND (7.5)	ND	ND (1.0)
DIBROMOCHLOROMETHANE	ND (5.0)	ND	ND (1.0)
1,2-DICHLORO BENZENE	ND (10.0)	ND	ND (2.5)
1,3-DICHLORO BENZENE	ND (10.0)	ND	ND (2.5)
1,4-DICHLORO BENZENE	ND (7.5)	ND	ND (2.5)
DICHLORODIFLUOROMETHANE	NA	ND	ND (1.0)
1,1-DICHLOROETHANE	14.0	2.7	4.0
1,2-DICHLOROETHANE	ND (2.5)	ND	ND (1.0)
1,1-DICHLOROETHENE	14.0	ND	ND (1.0)
CIS-1,2-DICHLOROETHENE	220.0	NA	NA
TRANS-1,2-DICHLOROETHENE	ND (5.0)	NA	NA
TOTAL 1,2-DICHLOROETHENE	NA	140.0	120.0
1,2-DICHLOROPROPANE	ND (2.5)	ND	ND (1.0)
ETHYLBENZENE	ND (5.0)	ND	ND (2.5)
METHYLENE CHLORIDE	ND (10.0)	ND	ND (10.0)
1,1,2,2-TETRACHLOROETHANE	ND (3.8)	ND	ND (1.0)
TETRACHLOROETHENE	32.0	11.0	7.0
TOLUENE	ND (5.0)	ND	ND (2.5)
1,1,1-TRICHLOROETHANE	6.2	0.5	ND (1.0)
1,1,2-TRICHLOROETHANE	ND (5.0)	ND	ND (1.0)
TRICHLOROETHENE	30.0	7.7	5.0
TRICHLOROFLUOROMETHANE	ND (5.0)	0.4	ND (2.5)
VINYL CHLORIDE	ND (5.0)	ND	ND (1.0)
TOTAL XYLENES	ND (5.0)	ND	ND (2.5)

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-49

<u>SAMPLER</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>	<u>OCD</u>
<u>DATE</u>	<u>11/8/88</u>	<u>3/14/89</u>	<u>6/14/89</u>	<u>12/11/89</u>	<u>4/9/90</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	(BELOW)	(BELOW)	(BELOW)	1.0
BENZENE	ND(<1.0)	0.63	ND(<1.0)	74.0	ND
BROMODICHLOROMETHANE	ND(1.0)	ND(<1.0)	ND(1.0)	ND(<1.0)	ND
BROMOFORM	ND(3.0)	ND(<1.0)	ND(1.0)	ND(2.5)	ND
BROMOMETHANE	ND(12.0)	ND(1.0)	ND(1.0)	ND(5.9)	ND
CARBON TETRACHLORIDE	ND(1.0)	ND(<1.0)	ND(1.0)	ND(<1.0)	ND
CHLOROBENZENE	ND(3.0)	ND(<1.0)	ND(<1.0)	ND(1.0)	ND
CHLOROETHANE	ND(5.0)	ND(1.0)	ND(1.0)	ND(2.6)	ND
CHLOROFORM	6.9	1.0	ND(1.0)	ND(<1.0)	ND
CHLOROMETHANE	ND(3.0)	ND(1.0)	ND(1.0)	ND(1.5)	ND
DIBROMOCHLOROMETHANE	ND(2.0)	ND(<1.0)	ND(1.0)	ND(1.0)	ND
1,2-DICHLOROBENZENE	ND(5.0)	ND(<1.0)	ND(<1.0)	ND(2.0)	ND
1,3-DICHLOROBENZENE	ND(3.0)	ND(<1.0)	ND(<1.0)	ND(2.0)	ND
1,4-DICHLOROBENZENE	ND(4.0)	ND(<1.0)	ND(<1.0)	ND(1.5)	ND
DICHLORODIFLUOROMETHANE	NA	ND(1.0)	ND(1.0)	NA	ND
1,1-DICHLOROETHANE	6.8	10.4	ND(1.0)	2.8	1.2
1,2-DICHLOROETHANE	ND(<1.0)	0.07	ND(1.0)	ND(<1.0)	ND
1,1-DICHLOROETHENE	ND(1.0)	ND(<1.0)	ND(1.0)	ND(1.0)	ND
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	86.7
TRANS-1,2-DICHLOROETHENE	88.0	0.3	ND(1.0)	150.0	ND
1,2-DICHLOROPROPANE	ND(1.0)	ND(<1.0)	ND(1.0)	ND(<1.0)	ND
ETHYLBENZENE	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(1.0)	ND
METHYLENE CHLORIDE	ND(3.0)	2.5	ND(1.0)	ND(2.0)	ND
1,1,2,2-TETRACHLOROETHANE	ND(1.2)	ND(<1.0)	ND(1.0)	ND(<1.0)	ND
TETRACHLOROETHENE	15.0	25.3	4.2	25.0	11.9
TOLUENE	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(1.0)	ND
1,1,1-TRICHLOROETHANE	6.6	3.5	ND(1.0)	1.0	ND
1,1,2-TRICHLOROETHANE	ND(<1.0)	ND(<1.0)	ND(1.0)	ND(1.0)	ND
TRICHLOROETHENE	11.0	24.9	2.7	14.0	7.2
TRICHLOROFLUOROMETHANE	ND(1.0)	ND(<1.0)	ND(1.0)	ND(1.0)	ND
VINYL CHLORIDE	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND
TOTAL XYLENES	ND(<1.0)	0.28	ND(<1.0)	ND(1.0)	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-49

<u>SAMPLER</u>	GIANT	GIANT	GIANT
<u>DATE</u>	<u>6/18/90</u>	<u>12/16/91</u>	<u>7/15/92</u>
<u>PARAMETER</u>			
DETECTION LIMIT	(BELOW)	<1.0	<1.0
BENZENE	ND (5.0)	ND	ND
BROMODICHLOROMETHANE	ND (2.5)	ND	ND
BROMOFORM	ND (12.0)	ND	ND
BROMOMETHANE	ND (30.0)	ND	ND
CARBON TETRACHLORIDE	3.5	ND	ND
CHLOROBENZENE	ND (5.0)	ND	ND
CHLOROETHANE	ND (13.0)	ND	ND
CHLOROFORM	2.5	ND	ND
CHLOROMETHANE	ND (7.5)	ND	ND
DIBROMOCHLOROMETHANE	ND (5.0)	ND	ND
1,2-DICHLOROBENZENE	ND (10.0)	ND	ND
1,3-DICHLOROBENZENE	ND (10.0)	ND	ND
1,4-DICHLOROBENZENE	ND (7.5)	ND	ND
DICHLORODIFLUOROMETHANE	NA	ND	ND
1,1-DICHLOROETHANE	ND (12.0)	6.3	2.9
1,2-DICHLOROETHANE	ND (2.5)	ND	ND
1,1-DICHLOROETHENE	ND (5.0)	0.3	ND
CIS-1,2-DICHLOROETHENE	120.0	NA	NA
TRANS-1,2-DICHLOROETHENE	ND (5.0)	NA	NA
TOTAL 1,2-DICHLOROETHENE	NA	120.0	74.0
1,2-DICHLOROPROPANE	ND (2.5)	ND	ND
ETHYLBENZENE	ND (5.0)	ND	ND
METHYLENE CHLORIDE	21.0	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND (3.8)	ND	ND
TETRACHLOROETHENE	22.0	17.0	4.6
TOLUENE	ND (5.0)	ND	ND
1,1,1-TRICHLOROETHANE	ND (5.0)	0.7	0.2
1,1,2-TRICHLOROETHANE	ND (5.0)	ND	ND
TRICHLOROETHENE	14.0	12.0	3.6
TRICHLOROFLUOROMETHANE	ND (5.0)	0.2	ND
VINYL CHLORIDE	ND (5.0)	ND	ND
TOTAL XYLENES	ND (5.0)	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-50

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>11/8/88</u>	<u>3/14/89</u>	<u>6/13/89</u>	<u>12/11/89</u>	<u>6/18/90</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	(BELOW)	(BELOW)	<1.0	<1.0
BENZENE	0.8	ND(<1.0)	ND(<1.0)	ND	ND
BROMODICHLOROMETHANE	ND	ND(<1.0)	ND(1.0)	ND	ND
BROMOFORM	ND	ND(<1.0)	ND(1.0)	ND	ND
BROMOMETHANE	ND	ND(1.0)	ND(1.0)	ND	ND
CARBON TETRACHLORIDE	ND	ND(<1.0)	ND(1.0)	ND	ND
CHLOROBENZENE	ND	ND(<1.0)	ND(<1.0)	ND	ND
CHLOROETHANE	ND	ND(1.0)	ND(1.0)	ND	ND
CHLOROFORM	0.2	ND(<1.0)	ND(1.0)	ND	ND
CHLOROMETHANE	ND	ND(1.0)	ND(1.0)	ND	ND
DIBROMOCHLOROMETHANE	ND	ND(<1.0)	ND(1.0)	ND	ND
1,2-DICHLOROBENZENE	ND	ND(<1.0)	ND(<1.0)	ND	ND
1,3-DICHLOROBENZENE	ND	ND(<1.0)	ND(<1.0)	ND	ND
1,4-DICHLOROBENZENE	ND	ND(<1.0)	ND(<1.0)	ND	ND
DICHLORODIFLUOROMETHANE	NA	ND(1.0)	ND(1.0)	ND	ND
1,1-DICHLOROETHANE	0.7	0.1	ND(1.0)	ND	ND
1,2-DICHLOROETHANE	ND	ND(<1.0)	ND(1.0)	ND	ND
1,1-DICHLOROETHENE	ND	ND(<1.0)	ND(1.0)	ND	ND
CIS-1,2-DICHLOROETHENE	NA	NA	NA	ND	0.37
TRANS-1,2-DICHLOROETHENE	0.3	ND(<1.0)	ND(1.0)	0.27	ND
1,2-DICHLOROPROPANE	ND	ND(<1.0)	ND(1.0)	ND	ND
ETHYLBENZENE	ND	ND(<1.0)	ND(<1.0)	ND	ND
METHYLENE CHLORIDE	0.3	1.2	ND(1.0)	ND	0.43
1,1,2,2-TETRACHLOROETHANE	ND	ND(<1.0)	ND(1.0)	ND	0.16
TETRACHLOROETHENE	0.7	0.19	ND(1.0)	1.2	0.57
TOLUENE	ND	ND(<1.0)	ND(<1.0)	ND	ND
1,1,1-TRICHLOROETHANE	0.6	ND(<1.0)	ND(1.0)	0.26	ND
1,1,2-TRICHLOROETHANE	ND	ND(<1.0)	ND(1.0)	ND	ND
TRICHLOROETHENE	0.2	ND(<1.0)	ND(1.0)	ND	0.31
TRICHLOROFLUOROMETHANE	ND	ND(<1.0)	ND(1.0)	ND	ND
VINYL CHLORIDE	ND	ND(1.0)	ND(1.0)	ND	ND
TOTAL XYLENES	ND	ND(<1.0)	6.0	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-50

<u>SAMPLER</u>	<u>GIANT</u>	<u>GIANT</u>
<u>DATE</u>	<u>12/16/91</u>	<u>7/15/92</u>
<u>PARAMETER</u>		
DETECTION LIMIT	<1.0	<1.0
BENZENE	ND	ND
BROMODICHLOROMETHANE	ND	ND
BROMOFORM	ND	ND
BROMOMETHANE	ND	ND
CARBON TETRACHLORIDE	ND	ND
CHLOROBENZENE	ND	ND
CHLOROETHANE	ND	ND
CHLOROFORM	ND	ND
CHLOROMETHANE	ND	ND
DIBROMOCHLOROMETHANE	ND	ND
1,2-DICHLOROBENZENE	ND	ND
1,3-DICHLOROBENZENE	ND	ND
1,4-DICHLOROBENZENE	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND
1,1-DICHLOROETHANE	ND	ND
1,2-DICHLOROETHANE	ND	ND
1,1-DICHLOROETHENE	ND	ND
TOTAL 1,2-DICHLOROETHENE	0.9	0.5
1,2-DICHLOROPROPANE	ND	ND
ETHYLBENZENE	ND	ND
METHYLENE CHLORIDE	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND
TETRACHLOROETHENE	ND	0.3
TOLUENE	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND
TRICHLOROETHENE	ND	ND
TRICHLOROFLUOROMETHANE	0.3	ND
VINYL CHLORIDE	ND	ND
TOTAL XYLENES	ND	ND

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
**	-	SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-51/GRW-7

<u>SAMPLER</u>	GIANT	GIANT	GIANT*	GIANT
<u>DATE</u>	<u>11/8/88</u>	<u>6/12/89</u>	<u>6/12/89</u>	<u>2/6/91</u>
<u>PARAMETER</u>				
DETECTION LIMIT	<1.0	(BELOW)	(BELOW)	<1.0
BENZENE	ND	ND(<1.0)	ND(<1.0)	ND
BROMODICHLOROMETHANE	ND	ND(1.0)	ND(1.0)	ND
BROMOFORM	ND	ND(1.0)	ND(1.0)	ND
BROMOMETHANE	ND	ND(1.0)	ND(1.0)	ND
CARBON TETRACHLORIDE	ND	ND(1.0)	ND(1.0)	ND
CHLOROBENZENE	ND	ND(<1.0)	ND(<1.0)	ND
CHLOROETHANE	ND	ND(1.0)	ND(1.0)	ND
CHLOROFORM	0.5	ND(1.0)	ND(1.0)	ND
CHLOROMETHANE	ND	ND(1.0)	ND(1.0)	ND
DIBROMOCHLOROMETHANE	ND	ND(1.0)	ND(1.0)	ND
1,2-DICHLOROBENZENE	ND	ND(<1.0)	ND(<1.0)	ND
1,3-DICHLOROBENZENE	ND	ND(<1.0)	ND(<1.0)	ND
1,4-DICHLOROBENZENE	ND	ND(<1.0)	ND(<1.0)	ND
DICHLORODIFLUOROMETHANE	ND	ND(1.0)	ND(1.0)	ND
1,1-DICHLOROETHANE	0.6	3.3	2.0	ND
1,2-DICHLOROETHANE	ND	ND(1.0)	ND(1.0)	ND
1,1-DICHLOROETHENE	ND	ND(1.0)	ND(1.0)	ND
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	0.7	ND(1.0)	ND(1.0)	NA
TOTAL 1,2-DICHLOROETHENE	NA	NA	NA	ND
1,2-DICHLOROPROPANE	ND	ND(1.0)	ND(1.0)	ND
ETHYLBENZENE	ND	ND(<1.0)	ND(<1.0)	ND
METHYLENE CHLORIDE	ND	ND(10.0)	ND(10.0)	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND(1.0)	ND(1.0)	ND
TETRACHLOROETHENE	2.1	ND(1.0)	ND(1.0)	0.4
TOLUENE	ND	ND(<1.0)	ND(<1.0)	ND
1,1,1-TRICHLOROETHANE	1.0	1.3	1.0	2.1
1,1,2-TRICHLOROETHANE	ND	ND(1.0)	ND(1.0)	ND
TRICHLOROETHENE	ND	ND(1.0)	ND(1.0)	ND
TRICHLOROFLUOROMETHANE	ND	ND(1.0)	ND(1.0)	ND
VINYL CHLORIDE	ND	ND(1.0)	ND(1.0)	ND
TOTAL XYLENES	ND	1.4	1.9	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-52

<u>SAMPLER</u>	GIANT	GIANT	GIANT*	GIANT	GIANT
<u>DATE</u>	<u>11/8/88</u>	<u>6/12/89</u>	<u>6/12/89</u>	<u>9/7/89</u>	<u>2/4/91</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	(BELOW)	(BELOW)	<1.0	<1.0
BENZENE	0.8	7.6	5.4	ND	ND
BROMODICHLOROMETHANE	ND	ND (1.0)	ND (1.0)	ND	ND
BROMOFORM	ND	ND (1.0)	ND (1.0)	ND	ND
BROMOMETHANE	ND	ND (1.0)	ND (1.0)	ND	ND
CARBON TETRACHLORIDE	ND	ND (1.0)	ND (1.0)	ND	ND
CHLOROBENZENE	ND	ND (<1.0)	ND (<1.0)	ND	ND
CHLOROETHANE	ND	ND (1.0)	ND (1.0)	ND	ND
CHLOROFORM	0.7	ND (1.0)	ND (1.0)	ND	ND
CHLOROMETHANE	ND	ND (1.0)	ND (1.0)	ND	ND
DIBROMOCHLOROMETHANE	ND	ND (1.0)	ND (1.0)	ND	ND
1,2-DICHLOROBENZENE	ND	ND (<1.0)	ND (<1.0)	ND	ND
1,3-DICHLOROBENZENE	ND	ND (<1.0)	ND (<1.0)	ND	ND
1,4-DICHLOROBENZENE	ND	ND (<1.0)	ND (<1.0)	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND (1.0)	ND (1.0)	ND	ND
1,1-DICHLOROETHANE	ND	ND (1.0)	ND (1.0)	ND	ND
1,2-DICHLOROETHANE	ND	ND (1.0)	ND (1.0)	ND	ND
1,1-DICHLOROETHENE	ND	ND (1.0)	ND (1.0)	ND	ND
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	ND	ND (1.0)	ND (1.0)	NA	NA
TOTAL 1,2-DICHLOROETHENE	NA	NA	NA	NA	ND
1,2-DICHLOROPROPANE	ND	ND (1.0)	ND (1.0)	ND	ND
ETHYLBENZENE	ND	ND (<1.0)	ND (<1.0)	ND	ND
METHYLENE CHLORIDE	ND	ND (1.0)	ND (1.0)	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND (1.0)	ND (1.0)	ND	ND
TETRACHLOROETHENE	ND	1.3	1.3	ND	ND
TOLUENE	ND	ND (<1.0)	ND (<1.0)	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND (1.0)	ND (1.0)	ND	0.7
1,1,2-TRICHLOROETHANE	ND	ND (1.0)	ND (1.0)	ND	ND
TRICHLOROETHENE	ND	ND (1.0)	ND (1.0)	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND (1.0)	ND (1.0)	1.1	ND
VINYL CHLORIDE	ND	ND (1.0)	ND (1.0)	ND	ND
TOTAL XYLENES	ND	ND (<1.0)	ND (<1.0)	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED2
* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-1

<u>SAMPLER</u>	GIANT	GIANT	GIANT
<u>DATE</u>	<u>9/6/89</u>	<u>12/12/89</u>	<u>6/19/90</u>
<u>PARAMETER</u>			
DETECTION LIMIT	(BELOW)	(BELOW)	(BELOW)
BENZENE	ND(10.0)	ND(50.0)	ND(2.0)
BROMODICHLOROMETHANE	ND(10.0)	ND(0.5)	ND(1.0)
BROMOFORM	ND(200.0)	ND(2.5)	ND(5.0)
BROMOMETHANE	ND(100.0)	ND(5.9)	ND(12.0)
CARBON TETRACHLORIDE	ND(20.0)	ND(0.6)	ND(1.2)
CHLOROBENZENE	ND(10.0)	ND(50.0)	4.4
CHLOROETHANE	ND(50.0)	ND(2.6)	ND(5.2)
CHLOROFORM	ND(10.0)	5.7	ND(1.0)
CHLOROMETHANE	ND(50.0)	ND(1.5)	ND(3.0)
DIBROMOCHLOROMETHANE	ND(20.0)	ND(1.0)	ND(2.0)
1,2-DICHLOROBENZENE	ND(20.0)	ND(100.0)	ND(4.0)
1,3-DICHLOROBENZENE	ND(40.0)	ND(100.0)	ND(4.0)
1,4-DICHLOROBENZENE	ND(20.0)	ND(75.0)	ND(3.0)
DICHLORODIFLUOROMETHANE	NA	NA	NA
1,1-DICHLOROETHANE	ND(10.0)	0.72	ND(5.0)
1,2-DICHLOROETHANE	ND(10.0)	7.1	7.1
1,1-DICHLOROETHENE	ND(10.0)	ND(1.0)	ND(2.0)
CIS-1,2-DICHLOROETHENE	NA	NA	39.0
TRANS-1,2-DICHLOROETHENE	NA	21.0	ND(2.0)
TOTAL 1,2-DICHLOROETHENE	ND(10.0)	NA	NA
1,2-DICHLOROPROPANE	ND(10.0)	ND(0.5)	ND(1.0)
ETHYLBENZENE	140.0	ND(50.0)	57.0
METHYLENE CHLORIDE	ND(40.0)	ND(2.0)	ND(4.0)
1,1,2,2-TETRACHLOROETHANE	ND(20.0)	ND(0.75)	ND(1.5)
TETRACHLOROETHENE	ND(10.0)	ND(0.5)	1.2
TOLUENE	ND(30.0)	ND(50.0)	ND(2.0)
1,1,1-TRICHLOROETHANE	ND(20.0)	ND(1.0)	ND(2.0)
1,1,2-TRICHLOROETHANE	ND(20.0)	ND(1.0)	ND(2.0)
TRICHLOROETHENE	22.2	6.2	2.9
TRICHLOROFLUOROMETHANE	ND(10.0)	ND(1.0)	ND(2.0)
VINYL CHLORIDE	ND(20.0)	ND(1.0)	ND(2.0)
TOTAL XYLENES	280.0	330.0	24.0

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS -2

<u>SAMPLER</u>	GIANT	GIANT	GIANT
<u>DATE</u>	<u>9/6/89</u>	<u>12/12/89</u>	<u>6/20/90</u>
<u>PARAMETER</u>			
DETECTION LIMIT	(BELOW)	(BELOW)	(BELOW)
BENZENE	ND (10.0)	10.0	5.4
BROMODICHLOROMETHANE	ND (10.0)	ND (<1.0)	ND (1.0)
BROMOFORM	ND (200.0)	ND (<1.0)	ND (5.0)
BROMOMETHANE	ND (100.0)	ND (1.2)	ND (12.0)
CARBON TETRACHLORIDE	ND (20.0)	ND (<1.0)	ND (1.2)
CHLOROBENZENE	ND (10.0)	ND (2.0)	230.0
CHLOROETHANE	ND (50.0)	ND (<1.0)	ND (5.2)
CHLOROFORM	ND (10.0)	ND (<1.0)	ND (1.0)
CHLOROMETHANE	ND (50.0)	ND (<1.0)	ND (3.0)
DIBROMOCHLOROMETHANE	ND (20.0)	ND (<1.0)	ND (2.0)
1,2-DICHLOROBENZENE	ND (20.0)	ND (4.0)	ND (4.0)
1,3-DICHLOROBENZENE	ND (40.0)	ND (4.0)	ND (4.0)
1,4-DICHLOROBENZENE	ND (20.0)	ND (3.0)	ND (3.0)
1,1-DICHLOROETHANE	ND (10.0)	ND (<1.0)	ND (5.0)
1,2-DICHLOROETHANE	68.0	ND (<1.0)	ND (1.0)
1,1-DICHLOROETHENE	ND (10.0)	ND (<1.0)	ND (2.0)
CIS-1,2-DICHLOROETHENE	NA	NA	ND (2.0)
TRANS-1,2-DICHLOROETHENE	NA	ND (<1.0)	ND (2.0)
TOTAL 1,2-DICHLOROETHENE	ND	NA	NA
1,2-DICHLOROPROPANE	ND (10.0)	ND (<1.0)	ND (1.0)
ETHYLBENZENE	120.0	120.0	78.0
METHYLENE CHLORIDE	ND (40.0)	ND (<1.0)	ND (4.0)
1,1,2,2-TETRACHLOROETHANE	ND (20.0)	ND (<1.0)	ND (1.5)
TETRACHLOROETHENE	13.0	1.7	2.1
TOLUENE	ND (30.0)	2.2	19.0
1,1,1-TRICHLOROETHANE	ND (20.0)	ND (<1.0)	ND (2.0)
1,1,2-TRICHLOROETHANE	ND (20.0)	ND (<1.0)	ND (2.0)
TRICHLOROETHENE	ND (20.0)	ND (<1.0)	ND (2.0)
TRICHLOROFLUOROMETHANE	ND (10.0)	ND (<1.0)	ND (2.0)
VINYL CHLORIDE	ND (20.0)	ND (<1.0)	ND (2.0)
TOTAL XYLENES	48.0	37.0	730.0

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-3

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>6/20/90</u>	<u>1/23/91</u>	<u>4/5/91</u>	<u>7/3/91</u>	<u>10/2/91</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	<1.0	<1.0	<1.0	<1.0
BENZENE	ND	ND	ND	ND	ND
BROMODICHLOROMETHANE	ND	ND	ND	ND	ND
BROMOFORM	ND	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND	ND
CHLOROFORM	ND	ND	ND	ND	ND
CHLOROMETHANE	ND	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	ND	ND	ND	ND	ND
1,1-DICHLOROETHENE	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	ND	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	ND	NA	NA	NA	NA
TOTAL 1,2-DICHLOROETHENE	NA	ND	ND	ND	ND
1,2-DICHLOROPROPANE	ND	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	ND	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND	ND
TETRACHLOROETHENE	ND	ND	ND	ND	ND
TOLUENE	ND	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND	ND
TRICHLOROETHENE	ND	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND	ND
TOTAL XYLENES	ND	ND	ND	ND	ND

TR - TRACE
 ND - NOT DETECTED
 NA - NOT ANALYZED
 ** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-3

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>1/9/92</u>	<u>4/10/92</u>	<u>7/7/92</u>	<u>10/8/92</u>
<u>PARAMETER</u>				
DETECTION LIMIT	<1.0	<1.0	<1.0	<1.0
BENZENE	ND	ND	ND	ND
BROMODICHLOROMETHANE	ND	ND	ND	ND
BROMOFORM	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND
CHLOROFORM	ND	ND	ND	ND
CHLOROMETHANE	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND	ND	ND
1,2-DICHLOROETHANE	ND	ND	ND	ND
1,1-DICHLOROETHENE	ND	ND	ND	ND
TOTAL 1,2-DICHLOROETHENE	ND	ND	ND	ND
1,2-DICHLOROPROPANE	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND
METHYLENE CHLORIDE	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND
TETRACHLOROETHENE	ND	ND	ND	ND
TOLUENE	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND
TRICHLOROETHENE	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND
TOTAL XYLENES	ND	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-4

<u>SAMPLER</u>	GIANT	GIANT
<u>DATE</u>	<u>6/19/90</u>	<u>7/7/92</u>
<u>PARAMETER</u>		
DETECTION LIMIT	<1.0	<1.0
BENZENE	ND	ND
BROMODICHLOROMETHANE	ND	ND
BROMOFORM	ND	ND
BROMOMETHANE	ND	ND
CARBON TETRACHLORIDE	ND	ND
CHLOROBENZENE	ND	ND
CHLOROETHANE	ND	ND
CHLOROFORM	ND	ND
CHLOROMETHANE	ND	ND
DIBROMOCHLOROMETHANE	ND	ND
1,2-DICHLOROBENZENE	ND	ND
1,3-DICHLOROBENZENE	ND	ND
1,4-DICHLOROBENZENE	ND	ND
1,1-DICHLOROETHANE	ND	ND
1,2-DICHLOROETHANE	ND	ND
1,1-DICHLOROETHENE	ND	ND
CIS-1,2-DICHLOROETHENE	ND	NA
TRANS-1,2-DICHLOROETHENE	ND	NA
TOTAL 1,2-DICHLOROETHENE	NA	ND
1,2-DICHLOROPROPANE	ND	ND
ETHYLBENZENE	ND	ND
METHYLENE CHLORIDE	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND
TETRACHLOROETHENE	ND	ND
TOLUENE	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND
TRICHLOROETHENE	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND
VINYL CHLORIDE	ND	ND
TOTAL XYLENES	ND	ND

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
**	-	SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-5

<u>SAMPLER</u>	GIANT	GIANT
<u>DATE</u>	<u>11/27/89</u>	<u>6/20/90</u>
<u>PARAMETER</u>		
DETECTION LIMIT	<1.0	(BELOW)
BENZENE	ND	ND (2.0)
BROMODICHLOROMETHANE	ND	ND (1.0)
BROMOFORM	ND	ND (5.0)
BROMOMETHANE	ND	ND (12.0)
CARBON TETRACHLORIDE	ND	ND (1.2)
CHLOROBENZENE	ND	ND (2.0)
CHLOROETHANE	ND	ND (5.2)
CHLOROFORM	ND	ND (1.0)
CHLOROMETHANE	ND	ND (3.0)
DIBROMOCHLOROMETHANE	ND	ND (2.0)
1,2-DICHLOROBENZENE	0.5	ND (4.0)
1,3-DICHLOROBENZENE	ND	ND (4.0)
1,4-DICHLOROBENZENE	ND	ND (3.0)
1,1-DICHLOROETHANE	ND	ND (5.0)
1,2-DICHLOROETHANE	ND	ND (1.0)
1,1-DICHLOROETHENE	ND	ND (2.0)
CIS-1,2-DICHLOROETHENE	NA	14.0
TRANS-1,2-DICHLOROETHENE	12.0	ND (2.0)
1,2-DICHLOROPROPANE	ND	ND (1.0)
ETHYLBENZENE	ND	ND (2.0)
METHYLENE CHLORIDE	0.72	ND (4.0)
1,1,2,2-TETRACHLOROETHANE	ND	ND (1.5)
TETRACHLOROETHENE	1.3	2.7
TOLUENE	ND	ND (2.0)
1,1,1-TRICHLOROETHANE	0.88	ND (2.0)
1,1,2-TRICHLOROETHANE	ND	ND (2.0)
TRICHLOROETHENE	1.8	3.0
TRICHLOROFLUOROMETHANE	ND	ND (2.0)
VINYL CHLORIDE	ND	ND (2.0)
TOTAL XYLENES	ND	ND (2.0)

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
**	-	SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-6

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>11/27/89</u>	<u>6/20/90</u>	<u>1/23/91</u>	<u>4/5/91</u>	<u>7/3/91</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	<1.0	<1.0	<1.0	<1.0
BENZENE	ND	ND	ND	ND	ND
BROMODICHLOROMETHANE	ND	ND	ND	ND	ND
BROMOFORM	ND	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND	ND
CHLOROFORM	ND	ND	ND	ND	ND
CHLOROMETHANE	ND	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	ND	ND	ND	ND	ND
1,1-DICHLOROETHENE	0.93	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	NA	ND	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	ND	ND	NA	NA	NA
TOTAL 1,2-DICHLOROETHENE	NA	NA	ND	ND	ND
1,2-DICHLOROPROPANE	ND	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	ND	ND	ND	3.1	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND	ND
TETRACHLOROETHENE	0.45	0.42	ND	ND	ND
TOLUENE	ND	ND	ND	0.81	ND
1,1,1-TRICHLOROETHANE	ND	0.35	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND	ND
TRICHLOROETHENE	ND	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND	ND
TOTAL XYLENES	ND	ND	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-6

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>10/2/91</u>	<u>1/9/92</u>	<u>4/10/92</u>	<u>10/8/92</u>
<u>PARAMETER</u>				
DETECTION LIMIT	<1.0	<1.0	<1.0	<1.0
BENZENE	ND	ND	ND	ND
BROMODICHLOROMETHANE	ND	ND	ND	ND
BROMOFORM	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND
CHLOROFORM	ND	ND	ND	ND
CHLOROMETHANE	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND	ND	ND
1,2-DICHLOROETHANE	ND	ND	ND	ND
1,1-DICHLOROETHENE	ND	ND	ND	ND
TOTAL 1,2-DICHLOROETHENE	0.6	1.2	ND	0.4
1,2-DICHLOROPROPANE	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND
METHYLENE CHLORIDE	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND
TETRACHLOROETHENE	ND	ND	ND	ND
TOLUENE	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND
TRICHLOROETHENE	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND
TOTAL XYLENES	ND	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-7

<u>SAMPLER</u>	GIANT	GIANT
<u>DATE</u>	<u>11/27/89</u>	<u>6/21/90</u>
<u>PARAMETER</u>		
DETECTION LIMIT	(BELOW)	<1.0
BENZENE	190.0	80.0
BROMODICHLOROMETHANE	ND(10.0)	2.5
BROMOFORM	ND(50.0)	ND
BROMOMETHANE	ND(120.0)	ND
CARBON TETRACHLORIDE	ND(12.0)	ND
CHLOROBENZENE	ND(20.0)	ND
CHLOROETHANE	ND(52.0)	4.0
CHLOROFORM	ND(10.0)	ND
CHLOROMETHANE	ND(30.0)	ND
DIBROMOCHLOROMETHANE	ND(20.0)	ND
1,2-DICHLOROBENZENE	ND(40.0)	ND
1,3-DICHLOROBENZENE	ND(40.0)	ND
1,4-DICHLOROBENZENE	ND(30.0)	ND
1,1-DICHLOROETHANE	ND(50.0)	2.2
1,2-DICHLOROETHANE	ND(10.0)	5.2
1,1-DICHLOROETHENE	ND(20.0)	ND
CIS-1,2-DICHLOROETHENE	NA	1.3
TRANS-1,2-DICHLOROETHENE	ND(20.0)	ND
1,2-DICHLOROPROPANE	ND(10.0)	ND
ETHYLBENZENE	ND(20.0)	140.0
METHYLENE CHLORIDE	ND(40.0)	ND
1,1,2,2-TETRACHLOROETHANE	ND(15.0)	ND
TETRACHLOROETHENE	ND(10.0)	ND
TOLUENE	290.0	1.1
1,1,1-TRICHLOROETHANE	ND(20.0)	ND
1,1,2-TRICHLOROETHANE	ND(20.0)	ND
TRICHLOROETHENE	ND(20.0)	0.28
TRICHLOROFLUOROMETHANE	ND(20.0)	ND
VINYL CHLORIDE	ND(20.0)	ND
TOTAL XYLENES	680.0	27.0

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
**	-	SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-8

<u>SAMPLER</u>	GIANT	GIANT
<u>DATE</u>	<u>11/27/89</u>	<u>6/21/90</u>
<u>PARAMETER</u>		
DETECTION LIMIT	(BELOW)	(BELOW)
BENZENE	14.0	ND (1000)
BROMODICHLOROMETHANE	ND (0.5)	ND (500.0)
BROMOFORM	ND (2.5)	ND (2500)
BROMOMETHANE	ND (5.9)	ND (5900)
CARBON TETRACHLORIDE	ND (0.6)	ND (600.0)
CHLOROBENZENE	ND (1.0)	ND (1000)
CHLOROETHANE	ND (2.6)	ND (2600)
CHLOROFORM	ND (0.5)	ND (500.0)
CHLOROMETHANE	ND (1.5)	ND (1500)
DIBROMOCHLOROMETHANE	ND (1.0)	ND (1000)
1,2-DICHLOROBENZENE	ND (2.0)	ND (2000)
1,3-DICHLOROBENZENE	ND (2.0)	ND (2000)
1,4-DICHLOROBENZENE	ND (1.5)	ND (1500)
1,1-DICHLOROETHANE	ND (2.5)	ND (2500)
1,2-DICHLOROETHANE	ND (0.5)	ND (500.0)
1,1-DICHLOROETHENE	ND (1.0)	ND (1000)
CIS-1,2-DICHLOROETHENE	NA	ND (1000)
TRANS-1,2-DICHLOROETHENE	24.0	ND (1000)
1,2-DICHLOROPROPANE	ND (0.5)	ND (500.0)
ETHYLBENZENE	85.0	ND (1000)
METHYLENE CHLORIDE	2.6	ND (2000)
1,1,2,2-TETRACHLOROETHANE	ND (0.75)	ND (750.0)
TETRACHLOROETHENE	ND (0.5)	ND (500.0)
TOLUENE	ND (1.0)	ND (1000)
1,1,1-TRICHLOROETHANE	6.2	ND (1000)
1,1,2-TRICHLOROETHANE	ND (1.0)	ND (1000)
TRICHLOROETHENE	4.7	3,200
TRICHLOROFLUOROMETHANE	ND (1.0)	ND (1000)
VINYL CHLORIDE	ND (1.0)	ND (1000)
TOTAL XYLENES	230.0	3,600

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
**	-	SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-9

<u>SAMPLER</u>	GIANT	GIANT
<u>DATE</u>	<u>6/21/90</u>	<u>1/9/92</u>
<u>PARAMETER</u>		
DETECTION LIMIT	(BELOW)	(BELOW)
BENZENE	2,400	ND(5.0)
BROMODICHLOROMETHANE	ND(200.0)	ND(2.0)
BROMOFORM	ND(1000)	ND(2.0)
BROMOMETHANE	ND(2400)	ND(2.0)
CARBON TETRACHLORIDE	ND(240.0)	ND(2.0)
CHLOROBENZENE	1,800	ND(5.0)
CHLOROETHANE	ND(1000)	ND(2.0)
CHLOROFORM	ND(200.0)	ND(2.0)
CHLOROMETHANE	ND(600.0)	ND(2.0)
DIBROMOCHLOROMETHANE	ND(400.0)	ND(2.0)
1,2-DICHLOROBENZENE	ND(800.0)	ND(5.0)
1,3-DICHLOROBENZENE	ND(800.0)	ND(5.0)
1,4-DICHLOROBENZENE	ND(600.0)	ND(5.0)
1,1-DICHLOROETHANE	ND(1000)	ND(2.0)
1,2-DICHLOROETHANE	ND(200.0)	ND(2.0)
1,1-DICHLOROETHENE	ND(400.0)	ND(2.0)
CIS-1,2-DICHLOROETHENE	ND(400.0)	NA
TRANS-1,2-DICHLOROETHENE	ND(400.0)	NA
TOTAL 1,2-DICHLOROETHENE	NA	ND(2.0)
1,2-DICHLOROPROPANE	ND(200.0)	ND(2.0)
ETHYLBENZENE	13,000	ND(5.0)
METHYLENE CHLORIDE	ND(800.0)	160.0
1,1,2,2-TETRACHLOROETHANE	ND(300.0)	ND(2.0)
TETRACHLOROETHENE	ND(200.0)	ND(2.0)
TOLUENE	1,100	ND(5.0)
1,1,1-TRICHLOROETHANE	ND(400.0)	ND(2.0)
1,1,2-TRICHLOROETHANE	ND(400.0)	ND(2.0)
TRICHLOROETHENE	ND(400.0)	ND(2.0)
TRICHLOROFLUOROMETHANE	ND(400.0)	ND(5.0)
VINYL CHLORIDE	ND(400.0)	ND(2.0)
TOTAL XYLENES	79,000	ND(5.0)

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
**	-	SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-10

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>6/23/90</u>	<u>1/23/91</u>	<u>4/5/91</u>	<u>7/5/91</u>	<u>10/2/91</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	(BELOW)	(BELOW)	<1.0	<1.0
BENZENE	ND (2.0)	ND (2.5)	ND (5.0)	0.5	ND
BROMODICHLOROMETHANE	ND (1.0)	ND (1.0)	ND (2.0)	ND	ND
BROMOFORM	ND (5.0)	ND (1.0)	ND (2.0)	ND	ND
BROMOMETHANE	ND (12.0)	ND (1.0)	ND (2.0)	ND	ND
CARBON TETRACHLORIDE	ND (1.2)	ND (1.0)	ND (2.0)	ND	ND
CHLOROBENZENE	3.0	ND (2.5)	ND (5.0)	ND	ND
CHLOROETHANE	ND (5.2)	ND (1.0)	ND (2.0)	ND	ND
CHLOROFORM	4.3	ND (1.0)	ND (2.0)	ND	ND
CHLOROMETHANE	ND (3.0)	ND (1.0)	ND (2.0)	ND	ND
DIBROMOCHLOROMETHANE	ND (2.0)	ND (1.0)	ND (2.0)	ND	ND
1,2-DICHLOROBENZENE	ND (4.0)	ND (2.5)	ND (5.0)	ND	ND
1,3-DICHLOROBENZENE	ND (4.0)	ND (2.5)	ND (5.0)	ND	ND
1,4-DICHLOROBENZENE	ND (3.0)	ND (2.5)	ND (5.0)	ND	ND
1,1-DICHLOROETHANE	ND (5.0)	ND (1.0)	ND (2.0)	ND	ND
1,2-DICHLOROETHANE	ND (1.0)	ND (1.0)	ND (2.0)	ND	ND
1,1-DICHLOROETHENE	ND (2.0)	ND (1.0)	ND (2.0)	ND	ND
CIS-1,2-DICHLOROETHENE	ND (2.0)	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	ND (2.0)	NA	NA	NA	NA
TOTAL 1,2-DICHLOROETHENE	NA	ND (1.0)	ND (2.0)	ND	ND
1,2-DICHLOROPROPANE	ND (1.0)	ND (1.0)	ND (2.0)	ND	ND
ETHYLBENZENE	69.0	106.0	100.0	47.0	37.0
METHYLENE CHLORIDE	ND (4.0)	ND (10.0)	ND (20.0)	ND	ND
1,1,2,2-TETRACHLOROETHANE	5.5	ND (1.0)	ND (2.0)	ND	ND
TETRACHLOROETHENE	ND (1.0)	ND (1.0)	ND (2.0)	ND	0.2
TOLUENE	3.2	4.0	ND (5.0)	1.8	ND
1,1,1-TRICHLOROETHANE	ND (2.0)	ND (1.0)	ND (2.0)	ND	ND
1,1,2-TRICHLOROETHANE	ND (2.0)	ND (1.0)	ND (2.0)	ND	ND
TRICHLOROETHENE	ND (2.0)	ND (1.0)	ND (2.0)	ND	ND
TRICHLOROFLUOROMETHANE	ND (2.0)	ND (2.5)	ND (5.0)	ND	ND
VINYL CHLORIDE	ND (2.0)	ND (1.0)	ND (2.0)	ND	ND
TOTAL XYLENES	150.0	ND (2.5)	ND (10.0)	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-10

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>1/9/92</u>	<u>4/10/92</u>	<u>7/8/92</u>	<u>10/8/92</u>
<u>PARAMETER</u>				
DETECTION LIMIT	<1.0	(BELOW)	<1.0	<1.0
BENZENE	ND	ND (2.5)	ND	ND
BROMODICHLOROMETHANE	ND	ND (1.0)	ND	ND
BROMOFORM	ND	ND (1.0)	ND	ND
BROMOMETHANE	ND	ND (1.0)	ND	ND
CARBON TETRACHLORIDE	ND	ND (1.0)	ND	ND
CHLOROBENZENE	ND	ND (2.5)	ND	ND
CHLOROETHANE	ND	ND (1.0)	ND	ND
CHLOROFORM	ND	ND (1.0)	ND	ND
CHLOROMETHANE	ND	ND (1.0)	ND	ND
DIBROMOCHLOROMETHANE	ND	ND (1.0)	ND	ND
1,2-DICHLOROBENZENE	ND	ND (2.5)	ND	ND
1,3-DICHLOROBENZENE	ND	ND (2.5)	ND	ND
1,4-DICHLOROBENZENE	ND	ND (2.5)	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND (1.0)	ND	ND
1,1-DICHLOROETHANE	ND	ND (1.0)	ND	ND
1,2-DICHLOROETHANE	ND	ND (1.0)	ND	ND
1,1-DICHLOROETHENE	ND	ND (1.0)	ND	ND
TOTAL 1,2-DICHLOROETHENE	ND	ND (1.0)	ND	ND
1,2-DICHLOROPROPANE	ND	ND (1.0)	ND	ND
ETHYLBENZENE	27.0	27.0	19.2	13.3
METHYLENE CHLORIDE	ND	ND (10.0)	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND (1.0)	ND	ND
TETRACHLOROETHENE	ND	ND (1.0)	0.2	ND
TOLUENE	ND	ND (2.5)	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND (1.0)	0.2	1.0
1,1,2-TRICHLOROETHANE	ND	ND (1.0)	ND	ND
TRICHLOROETHENE	ND	ND (1.0)	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND (2.5)	ND	ND
VINYL CHLORIDE	ND	ND (1.0)	ND	ND
TOTAL XYLENES	ND	ND (2.5)	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-11

<u>SAMPLER</u>	<u>GIANT</u>
<u>DATE</u>	<u>6/23/90</u>
<u>PARAMETER</u>	
<u>DETECTION LIMIT</u>	<u>(BELOW)</u>
BENZENE	800.0
BROMODICHLOROMETHANE	ND(10.0)
BROMOFORM	ND(50.0)
BROMOMETHANE	ND(120.0)
CARBON TETRACHLORIDE	ND(12.0)
CHLOROBENZENE	ND(20.0)
CHLOROETHANE	ND(52.0)
CHLOROFORM	ND(10.0)
CHLOROMETHANE	ND(30.0)
DIBROMOCHLOROMETHANE	ND(20.0)
1,2-DICHLOROBENZENE	ND(40.0)
1,3-DICHLOROBENZENE	ND(40.0)
1,4-DICHLOROBENZENE	ND(30.0)
1,1-DICHLOROETHANE	ND(50.0)
1,2-DICHLOROETHANE	ND(10.0)
1,1-DICHLOROETHENE	ND(20.0)
CIS-1,2-DICHLOROETHENE	22.0
TRANS-1,2-DICHLOROETHENE	ND(20.0)
1,2-DICHLOROPROPANE	ND(10.0)
ETHYLBENZENE	1,100
METHYLENE CHLORIDE	ND(40.0)
1,1,2,2-TETRACHLOROETHANE	ND(15.0)
TETRACHLOROETHENE	ND(10.0)
TOLUENE	ND(20.0)
1,1,1-TRICHLOROETHANE	ND(20.0)
1,1,2-TRICHLOROETHANE	ND(20.0)
TRICHLOROETHENE	ND(20.0)
TRICHLOROFLUOROMETHANE	ND(20.0)
VINYL CHLORIDE	ND(20.0)
TOTAL XYLENES	5,100

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
**	-	SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-12

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>6/23/88</u>	<u>1/24/91</u>	<u>4/5/91</u>	<u>7/5/91</u>	<u>10/2/91</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	<1.0	<1.0	<1.0	<1.0
BENZENE	ND (2.0)	ND	0.89	ND	ND
BROMODICHLOROMETHANE	ND (1.0)	ND	ND	ND	ND
BROMOFORM	ND (5.0)	ND	ND	ND	ND
BROMOMETHANE	ND (12.0)	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND (1.2)	ND	ND	ND	ND
CHLOROBENZENE	ND (2.0)	ND	ND	ND	ND
CHLOROETHANE	ND (5.2)	ND	ND	ND	ND
CHLOROFORM	5.6	0.80	0.25	ND	0.3
CHLOROMETHANE	ND (3.0)	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND (2.0)	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND (4.0)	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND (4.0)	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND (3.0)	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND (5.0)	0.41	0.44	1.2	0.6
1,2-DICHLOROETHANE	ND (1.0)	0.39	0.47	ND	ND
1,1-DICHLOROETHENE	ND (2.0)	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	10.0	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	ND (2.0)	NA	NA	NA	NA
TOTAL 1,2-DICHLOROETHENE	NA	4.7	7.0	6.9	3.2
1,2-DICHLOROPROPANE	ND (1.0)	ND	ND	ND	ND
ETHYLBENZENE	ND (2.0)	ND	ND	ND	ND
METHYLENE CHLORIDE	ND (4.0)	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND (1.5)	ND	ND	ND	ND
TETRACHLOROETHENE	3.1	1.3	1.2	0.7	0.9
TOLUENE	ND (2.0)	1.9	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND (2.0)	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND (2.0)	ND	ND	ND	ND
TRICHLOROETHENE	2.0	0.74	0.58	0.4	0.4
TRICHLOROFLUOROMETHANE	ND (2.0)	ND	ND	ND	ND
VINYL CHLORIDE	ND (2.0)	ND	ND	ND	ND
TOTAL XYLENES	ND (2.0)	ND	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-12

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>1/9/92</u>	<u>4/10/92</u>	<u>7/8/92</u>	<u>10/9/92</u>
<u>PARAMETER</u>				
DETECTION LIMIT	<1.0	<1.0	<1.0	<1.0
BENZENE	ND	0.6	ND	0.5
BROMODICHLOROMETHANE	ND	ND	ND	ND
BROMOFORM	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND
CHLOROFORM	ND	ND	ND	ND
CHLOROMETHANE	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND	ND
1,1-DICHLOROETHANE	0.8	0.7	0.7	ND
1,2-DICHLOROETHANE	0.4	0.4	0.4	ND
1,1-DICHLOROETHENE	ND	ND	ND	ND
TOTAL 1,2-DICHLOROETHENE	5.1	3.7	1.6	ND
1,2-DICHLOROPROPANE	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	4.9
METHYLENE CHLORIDE	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND
TETRACHLOROETHENE	0.7	0.7	0.6	ND
TOLUENE	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND	0.6	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND
TRICHLOROETHENE	0.3	0.2	0.2	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND
TOTAL XYLENES	ND	ND	ND	10.6

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-13

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>8/23/90</u>	<u>1/24/91</u>	<u>4/5/91</u>	<u>7/5/91</u>	<u>10/2/91</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	<1.0	<1.0	<1.0	<1.0
BENZENE	ND(0.2)	ND	ND	ND	ND
BROMODICHLOROMETHANE	ND(0.1)	ND	ND	ND	ND
BROMOFORM	ND(0.5)	ND	ND	ND	ND
BROMOMETHANE	ND(1.2)	0.96	ND	ND	ND
CARBON TETRACHLORIDE	ND(0.12)	ND	ND	ND	ND
CHLOROBENZENE	ND(0.2)	ND	ND	ND	ND
CHLOROETHANE	ND(0.52)	0.96	0.41	ND	ND
CHLOROFORM	ND(0.1)	ND	ND	ND	ND
CHLOROMETHANE	ND(0.3)	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND(0.2)	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND(0.4)	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND(0.4)	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND(0.3)	ND	ND	ND	ND
1,1-DICHLOROETHANE	0.53	1.0	0.83	0.9	ND
1,2-DICHLOROETHANE	11.0	3.8	3.9	ND	0.9
1,1-DICHLOROETHENE	ND(0.2)	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA
TOTAL 1,2-DICHLOROETHENE	0.28	ND	ND	ND	0.4
1,2-DICHLOROPROPANE	ND(0.1)	ND	ND	ND	ND
ETHYLBENZENE	ND(0.2)	ND	ND	ND	ND
METHYLENE CHLORIDE	ND(0.4)	ND	ND	ND	ND
1,1,1,2-TETRACHLOROETHANE	ND(5.0)	ND	ND	ND	ND
1,1,1,2-TETRACHLOROETHANE	ND(0.15)	ND	ND	ND	ND
TETRACHLOROETHENE	0.34	ND	ND	ND	ND
TOLUENE	0.79	0.95	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND(0.2)	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND(0.2)	ND	ND	ND	ND
TRICHLOROETHENE	0.26	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	ND(0.2)	ND	ND	ND	ND
VINYL CHLORIDE	ND(0.2)	ND	ND	ND	ND
TOTAL XYLENES	ND(0.2)	ND	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-13

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>1/9/92</u>	<u>4/10/92</u>	<u>7/8/92</u>	<u>10/9/92</u>
<u>PARAMETER</u>				
DETECTION LIMIT	<1.0	<1.0	<1.0	<1.0
BENZENE	ND	ND	ND	ND
BROMODICHLOROMETHANE	ND	ND	ND	ND
BROMOFORM	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND
CHLOROFORM	ND	ND	ND	ND
CHLOROMETHANE	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND	ND
1,1-DICHLOROETHANE	1.7	1.0	0.9	1.5
1,2-DICHLOROETHANE	11.0	3.1	3.1	4.7
1,1-DICHLOROETHENE	ND	ND	ND	ND
TOTAL 1,2-DICHLOROETHENE	0.9	ND	ND	0.6
1,2-DICHLOROPROPANE	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND
METHYLENE CHLORIDE	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND
TETRACHLOROETHENE	ND	ND	ND	ND
TOLUENE	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND
TRICHLOROETHENE	0.2	ND	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND
TOTAL XYLENES	ND	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-14

<u>SAMPLER</u>	GIANT	GIANT
<u>DATE</u>	<u>8/22/90</u>	<u>1/9/92</u>
<u>PARAMETER</u>		
DETECTION LIMIT	(BELOW)	(BELOW)
BENZENE	11.0	ND (5.0)
BROMODICHLOROMETHANE	ND (1.0)	ND (2.0)
BROMOFORM	ND (5.0)	ND (2.0)
BROMOMETHANE	ND (12.0)	ND (2.0)
CARBON TETRACHLORIDE	ND (1.2)	ND (2.0)
CHLOROBENZENE	ND (2.0)	ND (5.0)
CHLOROETHANE	ND (5.2)	ND (2.0)
CHLOROFORM	ND (1.0)	ND (2.0)
CHLOROMETHANE	ND (3.0)	ND (2.0)
DIBROMOCHLOROMETHANE	ND (2.0)	ND (2.0)
1,2-DICHLOROBENZENE	ND (4.0)	ND (5.0)
1,3-DICHLOROBENZENE	ND (4.0)	ND (5.0)
1,4-DICHLOROBENZENE	140.0	ND (5.0)
1,1-DICHLOROETHANE	ND (5.0)	ND (2.0)
1,2-DICHLOROETHANE	ND (1.0)	ND (2.0)
1,1-DICHLOROETHENE	2.0	ND (2.0)
CIS-1,2-DICHLOROETHENE	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA
TOTAL 1,2-DICHLOROETHENE	ND (2.0)	ND (2.0)
1,2-DICHLOROPROPANE	ND (1.0)	ND (2.0)
ETHYLBENZENE	77.0	ND (5.0)
METHYLENE CHLORIDE	ND (50.0)	440.0
1,1,2,2-TETRACHLOROETHANE	ND (1.5)	ND (2.0)
TETRACHLOROETHENE	4.6	ND (2.0)
TOLUENE	31.0	ND (5.0)
1,1,1-TRICHLOROETHANE	ND (2.0)	ND (2.0)
1,1,2-TRICHLOROETHANE	ND (2.0)	ND (2.0)
TRICHLOROETHENE	ND (2.0)	ND (2.0)
TRICHLOROFLUOROMETHANE	ND (2.0)	ND (5.0)
VINYL CHLORIDE	ND (2.0)	ND (2.0)
TOTAL XYLENES	260.0	ND (5.0)

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-15

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>8/22/90</u>	<u>1/25/91</u>	<u>4/8/91</u>	<u>7/5/91</u>	<u>10/2/91</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	<1.0	<1.0	<1.0	<1.0
BENZENE	ND (0.2)	ND	ND	ND	ND
BROMODICHLOROMETHANE	ND (0.1)	ND	ND	0.6	ND
BROMOFORM	ND (0.5)	ND	ND	ND	ND
BROMOMETHANE	ND (1.2)	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND (0.12)	ND	ND	ND	ND
CHLOROBENZENE	ND (0.2)	ND	ND	ND	ND
CHLOROETHANE	ND (0.52)	ND	ND	ND	ND
CHLOROFORM	ND (0.1)	ND	0.6	11.8	6.5
CHLOROMETHANE	ND (0.3)	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND (0.2)	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND (0.4)	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND (0.4)	ND	ND	ND	ND
1,4-DICHLOROBENZENE	0.38	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND (0.5)	ND	ND	ND	ND
1,2-DICHLOROETHANE	ND (0.1)	ND	ND	ND	ND
1,1-DICHLOROETHENE	ND (0.2)	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA
TOTAL 1,2-DICHLOROETHENE	ND (0.2)	ND	ND	ND	ND
1,2-DICHLOROPROPANE	ND (0.1)	ND	ND	ND	ND
ETHYLBENZENE	0.24	ND	ND	ND	ND
METHYLENE CHLORIDE	ND (0.4)	ND	ND	ND	ND
1,1,1,2-TETRACHLOROETHANE	ND (5.0)	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND (0.15)	ND	ND	ND	ND
TETRACHLOROETHENE	0.4	ND	ND	ND	ND
TOLUENE	0.33	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND (0.2)	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND (0.2)	ND	ND	ND	ND
TRICHLOROETHENE	ND (0.2)	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	ND (0.2)	ND	ND	ND	ND
VINYL CHLORIDE	ND (0.2)	ND	ND	ND	ND
TOTAL XYLENES	0.97	ND	ND	ND	ND
TR -	TRACE				
ND -	NOT DETECTED				
NA -	NOT ANALYZED				
** -	SPLIT SAMPLE				

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-15

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>1/9/92</u>	<u>4/10/92</u>	<u>7/8/92</u>	<u>10/9/92</u>
<u>PARAMETER</u>				
DETECTION LIMIT	<1.0	<1.0	<1.0	<1.0
BENZENE	ND	ND	ND	ND
BROMODICHLOROMETHANE	ND	0.3	ND	ND
BROMOFORM	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND
CHLOROFORM	0.6	6.5	11.7	3.3
CHLOROMETHANE	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND	ND	ND
1,2-DICHLOROETHANE	ND	ND	ND	ND
1,1-DICHLOROETHENE	ND	ND	ND	ND
TOTAL 1,2-DICHLOROETHENE	ND	ND	ND	ND
1,2-DICHLOROPROPANE	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND
METHYLENE CHLORIDE	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND
TETRACHLOROETHENE	ND	ND	ND	ND
TOLUENE	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND
TRICHLOROETHENE	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND
TOTAL XYLENES	ND	ND	ND	ND
TR -	TRACE			
ND -	NOT DETECTED			
NA -	NOT ANALYZED			
** -	SPLIT SAMPLE			

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-16

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>8/22/90</u>	<u>1/25/91</u>	<u>4/8/91</u>	<u>7/5/91</u>	<u>10/2/91</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	<1.0	<1.0	<1.0	<1.0
BENZENE	ND	ND	ND	ND	ND
BROMODICHLOROMETHANE	ND	ND	ND	ND	ND
BROMOFORM	ND	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND	ND
CHLOROFORM	0.17	ND	0.4	ND	ND
CHLOROMETHANE	ND	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	ND	ND	ND	ND	ND
1,1-DICHLOROETHENE	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA
TOTAL 1,2-DICHLOROETHENE	0.34	ND	ND	ND	ND
1,2-DICHLOROPROPANE	ND	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	ND	ND	ND	ND	ND
1,1,1,2-TETRACHLOROETHANE	ND	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND	ND
TETRACHLOROETHENE	ND	ND	ND	ND	ND
TOLUENE	ND	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND	ND
TRICHLOROETHENE	ND	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND	ND
TOTAL XYLENES	ND	ND	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-16

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>1/9/92</u>	<u>4/10/92</u>	<u>7/8/92</u>	<u>10/12/92</u>
<u>PARAMETER</u>				
DETECTION LIMIT	<1.0	<1.0	<1.0	<1.0
BENZENE	ND	ND	ND	ND
BROMODICHLOROMETHANE	ND	ND	ND	ND
BROMOFORM	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND
CHLOROFORM	ND	ND	ND	ND
CHLOROMETHANE	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND	ND	ND
1,2-DICHLOROETHANE	ND	ND	ND	ND
1,1-DICHLOROETHENE	ND	ND	ND	ND
TOTAL 1,2-DICHLOROETHENE	ND	ND	ND	ND
1,2-DICHLOROPROPANE	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND
METHYLENE CHLORIDE	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND
TETRACHLOROETHENE	ND	ND	ND	ND
TOLUENE	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND
TRICHLOROETHENE	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND
TOTAL XYLENES	ND	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL GBR-17

GIANT

10/12/92

PARAMETER

<1.0

BENZENE	ND
BROMODICHLOROMETHANE	ND
BROMOFORM	ND
BROMOMETHANE	ND
CARBON TETRACHLORIDE	ND
CHLOROBENZENE	ND
CHLOROETHANE	ND
CHLOROFORM	ND
CHLOROMETHANE	ND
DIBROMOCHLOROMETHANE	ND
1,2-DICHLOROBENZENE	ND
1,3-DICHLOROBENZENE	ND
1,4-DICHLOROBENZENE	ND
DICHLORODIFLUOROMETHANE	ND
1,1-DICHLOROETHANE	ND
1,2-DICHLOROETHANE	ND
1,1-DICHLOROETHENE	ND
TOTAL 1,2-DICHLOROETHENE	ND
1,2-DICHLOROPROPANE	ND
ETHYLBENZENE	ND
METHYLENE CHLORIDE	ND
1,1,2,2-TETRACHLOROETHANE	ND
TETRACHLOROETHENE	ND
TOLUENE	ND
1,1,1-TRICHLOROETHANE	ND
1,1,2-TRICHLOROETHANE	ND
TRICHLOROETHENE	ND
TRICHLOROFLUOROMETHANE	ND
VINYL CHLORIDE	ND
TOTAL XYLENES	ND

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
**	-	SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL SHS-18

<u>SAMPLER</u>	GIANT	GIANT
<u>DATE</u>	<u>8/10/92</u>	<u>10/9/92</u>
<u>PARAMETER</u>		
DETECTION LIMIT	<1.0	<1.0
BENZENE	2.4	9.0
BROMODICHLOROMETHANE	ND	ND
BROMOFORM	ND	ND
BROMOMETHANE	ND	ND
CARBON TETRACHLORIDE	ND	ND
CHLOROBENZENE	ND	ND
CHLOROETHANE	ND	ND
CHLOROFORM	0.3	ND
CHLOROMETHANE	ND	ND
DIBROMOCHLOROMETHANE	ND	ND
1,2-DICHLOROBENZENE	0.6	ND
1,3-DICHLOROBENZENE	ND	ND
1,4-DICHLOROBENZENE	0.6	ND
DICHLORODIFLUOROMETHANE	ND	ND
1,1-DICHLOROETHANE	ND	ND
1,2-DICHLOROETHANE	0.6	0.4
1,1-DICHLOROETHENE	ND	ND
TOTAL 1,2-DICHLOROETHENE	0.6	ND
1,2-DICHLOROPROPANE	ND	ND
ETHYLBENZENE	8.9	76.0
METHYLENE CHLORIDE	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND
TETRACHLOROETHENE	ND	ND
TOLUENE	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND
TRICHLOROETHENE	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND
VINYL CHLORIDE	ND	ND
TOTAL XYLENES	10.9	150.0

TR - TRACE
 ND - NOT DETECTED
 NA - NOT ANALYZED
 ** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

MONITOR WELL - STEEL WELL

<u>SAMPLER</u>	GIANT	GIANT
<u>DATE</u>	<u>5/9/86</u>	<u>10/17/86</u>
<u>PARAMETER</u>		
DETECTION LIMIT	1.0	5.0
BENZENE	ND	144.0
BROMODICHLOROMETHANE	NA	ND
BROMOFORM	NA	ND
BROMOMETHANE	NA	ND
CARBON TETRACHLORIDE	NA	ND
CHLOROBENZENE	NA	NA
CHLOROETHANE	NA	ND
CHLOROFORM	NA	ND
CHLOROMETHANE	NA	ND
DIBROMOCHLOROMETHANE	NA	ND
1,2-DICHLOROBENZENE	NA	NA
1,3-DICHLOROBENZENE	NA	NA
1,4-DICHLOROBENZENE	NA	NA
DICHLORODIFLUOROMETHANE	NA	NA
1,1-DICHLOROETHANE	NA	ND
1,2-DICHLOROETHANE	NA	31.0
1,1-DICHLOROETHENE	NA	ND
CIS-1,2-DICHLOROETHENE	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	ND
1,2-DICHLOROPROPANE	NA	ND
ETHYLBENZENE	ND	179.0
METHYLENE CHLORIDE	NA	ND
1,1,2,2-TETRACHLOROETHANE	NA	ND
TETRACHLOROETHENE	NA	ND
TOLUENE	ND	148.0
1,1,1-TRICHLOROETHANE	NA	ND
1,1,2-TRICHLOROETHANE	NA	ND
TRICHLOROETHENE	NA	ND
TRICHLOROFLUOROMETHANE	NA	ND
VINYL CHLORIDE	NA	ND
TOTAL XYLENES	ND	356.0

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
**	-	SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER INFLUENT

<u>SAMPLER</u>	GIANT	OCD	GIANT	OCD	OCD*
<u>DATE</u>	<u>6/23/88</u>	<u>7/13/88</u>	<u>11/8/88</u>	<u>12/15/88</u>	<u>12/15/88</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	50.0	2.0	(BELOW)	(BELOW)
BENZENE	700.0	1,030	520.0	373.0	90.0
BROMODICHLOROMETHANE	ND	ND	ND	ND(<1.0)	ND(0.5)
BROMOFORM	ND	ND	ND	ND(<1.0)	ND(0.5)
BROMOMETHANE	ND	ND	ND	ND(<1.0)	ND(0.5)
CARBON TETRACHLORIDE	ND	ND	ND	ND(<1.0)	ND(0.5)
CHLOROBENZENE	ND	ND	ND	ND(<1.0)	ND(0.5)
CHLOROETHANE	ND	ND	ND	ND(<1.0)	ND(0.5)
CHLOROFORM	ND	ND	ND	ND(<1.0)	ND(0.5)
CHLOROMETHANE	ND	ND	ND	ND(<1.0)	ND(0.5)
DIBROMOCHLOROMETHANE	ND	ND	ND	ND(<1.0)	ND(0.5)
1,2-DICHLOROBENZENE	ND	ND	ND	ND(<1.0)	ND(0.5)
1,3-DICHLOROBENZENE	ND	ND	ND	ND(<1.0)	ND(0.5)
1,4-DICHLOROBENZENE	ND	ND	ND	ND(<1.0)	ND(0.5)
DICHLORODIFLUOROMETHANE	ND	ND	ND	ND(<1.0)	ND(0.5)
1,1-DICHLOROETHANE	4.5	ND	ND	3.9	1.0
1,2-DICHLOROETHANE	42.0	TR	ND	2.3	3.0
1,1-DICHLOROETHENE	ND	ND	ND	ND(<1.0)	ND(0.5)
CIS-1,2-DICHLOROETHENE	NA	ND	NA	NA	4.0
TRANS-1,2-DICHLOROETHENE	14.0	ND	ND	ND(<1.0)	ND(0.5)
DICHLOROMETHANE	NA	ND	NA	NA	1.5
1,2-DICHLOROPROPANE	ND	ND	ND	ND(<1.0)	ND(0.5)
1,2-DIMETHYLBENZENE	NA	ND	NA	NA	10.0
ETHYLBENZENE	79.0	210.0	68.0	ND(5.0)	ND(5.0)
METHYLENE CHLORIDE	4.7	ND	ND	ND(<1.0)	ND(0.5)
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND(<1.0)	ND(0.5)
TETRACHLOROETHENE	ND	ND	ND	1.8	1.0
TOLUENE	490.0	315.0	5.4	38.0	TR(5.0)
1,1,1-TRICHLOROETHANE	1.6	ND	ND	0.9	ND(0.5)
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND(<1.0)	ND(0.5)
TRICHLOROETHENE	1.7	ND	3.2	2.2	1.0
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND(<1.0)	ND(0.5)
VINYL CHLORIDE	ND	ND	ND	ND(<1.0)	ND(0.5)
TOTAL XYLENES	800.0	945.0	310.0	246.0	60.0

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE SAMPLE

VOLATILE ORGANIC CONCENTRATIONS (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER INFLUENT

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>1/16/89</u>	<u>2/2/89</u>	<u>3/14/89</u>	<u>12/11/89</u>	<u>5/12/89</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	(BELOW)	(BELOW)	2.0	<1.0
BENZENE	440.0	280.0	2,314	363.0	390.0
BROMODICHLOROMETHANE	ND(<1.0)	ND(<1.0)	ND(<1.0)	NA	ND
BROMOFORM	ND(<1.0)	ND(<1.0)	ND(<1.0)	NA	ND
BROMOMETHANE	ND(1.2)	ND(1.2)	ND(1.0)	NA	ND
CARBON TETRACHLORIDE	ND(<1.0)	ND(<1.0)	ND(<1.0)	NA	ND
CHLOROBENZENE	ND(7.5)	ND(15.0)	ND(<1.0)	NA	ND
CHLOROETHANE	ND(<1.0)	ND(<1.0)	ND(1.0)	NA	ND
CHLOROFORM	ND(<1.0)	0.9	ND(<1.0)	NA	ND
CHLOROMETHANE	ND(<1.0)	ND(<1.0)	ND(1.0)	NA	ND
DIBROMOCHLOROMETHANE	ND(<1.0)	ND(<1.0)	ND(<1.0)	NA	1.2
1,2-DICHLOROBENZENE	ND(10.0)	ND(20.0)	ND(<1.0)	NA	ND
1,3-DICHLOROBENZENE	ND(10.0)	ND(20.0)	ND(<1.0)	NA	ND
1,4-DICHLOROBENZENE	ND(7.5)	ND(15.0)	ND(<1.0)	NA	ND
DICHLORODIFLUOROMETHANE	NA	NA	ND(1.0)	NA	ND
1,1-DICHLOROETHANE	4.2	5.0	ND(<1.0)	NA	3.1
1,2-DICHLOROETHANE	6.7	6.0	13.4	NA	7.3
1,1-DICHLOROETHENE	ND(<1.0)	ND(<1.0)	ND(<1.0)	NA	ND
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	11.0	11.0	ND(<1.0)	NA	ND
1,2-DICHLOROPROPANE	ND(<1.0)	ND(<1.0)	ND(<1.0)	NA	ND
ETHYLBENZENE	ND(7.5)	ND(15.0)	191.0	97.3	41.0
METHYLENE CHLORIDE	1.0	1.4	2.5	NA	1.2
1,1,2,2-TETRACHLOROETHANE	ND(<1.0)	ND(<1.0)	ND(<1.0)	NA	ND
TETRACHLOROETHENE	1.9	2.2	ND(<1.0)	NA	ND
TOLUENE	ND(5.0)	ND(10.0)	2,630	121.0	140.0
1,1,1-TRICHLOROETHANE	2.1	2.1	ND(<1.0)	NA	ND
1,1,2-TRICHLOROETHANE	ND(<1.0)	ND(<1.0)	ND(<1.0)	NA	ND
TRICHLOROETHENE	3.0	3.4	ND(<1.0)	NA	ND
TRICHLOROFLUOROMETHANE	0.5	ND(<1.0)	ND(<1.0)	NA	ND
VINYL CHLORIDE	ND(<1.0)	ND(<1.0)	ND(1.0)	NA	ND
TOTAL XYLENES	319.0	38.0	1,161	342.8	310.0

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER INFLUENT

<u>SAMPLER</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>
<u>DATE</u>	<u>6/14/89</u>	<u>7/12/89</u>	<u>8/17/89</u>	<u>9/13/89</u>	<u>9/29/89</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	(BELOW)	(BELOW)	(BELOW)	1.0
BENZENE	82.3	33.5	140.0	1,800	78.0
BROMODICHLOROMETHANE	ND(1.0)	ND(1.0)	ND(1.0)	ND(10.0)	NA
BROMOFORM	ND(1.0)	ND(1.0)	ND(20.0)	ND(200.0)	NA
BROMOMETHANE	ND(1.0)	ND(1.0)	ND(10.0)	ND(100.0)	NA
CARBON TETRACHLORIDE	ND(1.0)	ND(1.0)	ND(2.0)	ND(20.0)	NA
CHLOROBENZENE	ND(<1.0)	ND(<1.0)	ND(1.0)	ND(10.0)	ND
CHLOROETHANE	ND(1.0)	ND(1.0)	ND(5.0)	ND(50.0)	NA
CHLOROFORM	1.2	ND(1.0)	ND(1.0)	ND(10.0)	NA
CHLOROMETHANE	ND(1.0)	ND(1.0)	ND(5.0)	ND(50.0)	NA
DIBROMOCHLOROMETHANE	ND(1.0)	ND(1.0)	ND(2.0)	ND(20.0)	NA
1,2-DICHLOROBENZENE	ND(<1.0)	ND(<1.0)	ND(2.0)	ND(20.0)	ND
1,3-DICHLOROBENZENE	ND(<1.0)	ND(<1.0)	ND(4.0)	ND(40.0)	ND
1,4-DICHLOROBENZENE	ND(<1.0)	ND(<1.0)	ND(2.0)	ND(20.0)	ND
DICHLORODIFLUOROMETHANE	ND(1.0)	ND(1.0)	NA	NA	NA
1,1-DICHLOROETHANE	4.6	ND(1.0)	ND(1.0)	ND(10.0)	NA
1,2-DICHLOROETHANE	3.3	ND(1.0)	3.9	ND(10.0)	NA
1,1-DICHLOROETHENE	ND(1.0)	ND(1.0)	ND(1.0)	ND(10.0)	NA
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	ND(1.0)	2.7	NA	NA	NA
TOTAL 1,2-DICHLOROETHENE	NA	NA	17.0	ND(10.0)	NA
1,2-DICHLOROPROPANE	ND(1.0)	ND(1.0)	ND(1.0)	ND(10.0)	NA
ETHYLBENZENE	11.4	1.8	ND(1.0)	130.0	16.3
METHYLENE CHLORIDE	ND(1.0)	ND(1.0)	ND(4.0)	ND(40.0)	NA
1,1,2,2-TETRACHLOROETHANE	ND(1.0)	ND(1.0)	ND(2.0)	ND(20.0)	NA
TETRACHLOROETHENE	1.6	1.2	ND(1.0)	ND(10.0)	NA
TOLUENE	17.8	ND(<1.0)	6.1	260.0	22.6
1,1,1-TRICHLOROETHANE	ND(1.0)	3.4	ND(2.0)	ND(20.0)	NA
1,1,2-TRICHLOROETHANE	ND(1.0)	ND(1.0)	ND(2.0)	ND(20.0)	NA
TRICHLOROETHENE	1.9	0.9	ND(2.0)	ND(20.0)	NA
TRICHLOROFLUOROMETHANE	ND(1.0)	ND(1.0)	ND(1.0)	ND(10.0)	NA
VINYL CHLORIDE	ND(1.0)	ND(1.0)	ND(2.0)	ND(20.0)	NA
TOTAL XYLENES	43.0	18.5	36.0	210.0	43.1

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER INFLUENT

<u>SAMPLER</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>
<u>DATE</u>	<u>10/19/89</u>	<u>11/15/89</u>	<u>12/12/89</u>	<u>1/15/90</u>	<u>2/12/90</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	(BELOW)	(BELOW)	(BELOW)	(BELOW)
BENZENE	129.58	23.6	110.0	112.5	240.0
BROMODICHLOROMETHANE	ND(1.0)	ND(1.0)	ND(0.1)	ND(10.0)	ND(1.0)
BROMOFORM	ND(1.0)	ND(1.0)	ND(0.5)	ND(10.0)	ND(5.0)
BROMOMETHANE	ND(1.0)	ND(1.0)	ND(1.2)	ND(10.0)	ND(12.0)
CARBON TETRACHLORIDE	ND(1.0)	ND(1.0)	ND(0.12)	ND(10.0)	ND(1.2)
CHLOROBENZENE	ND(0.2)	ND(0.5)	ND(1.0)	ND(10.0)	ND(2.0)
CHLOROETHANE	ND(1.0)	ND(1.0)	ND(0.52)	ND(10.0)	ND(5.2)
CHLOROFORM	ND(1.0)	ND(1.0)	ND(0.1)	ND(10.0)	ND(1.0)
CHLOROMETHANE	ND(1.0)	ND(1.0)	ND(0.3)	ND(10.0)	ND(3.0)
DIBROMOCHLOROMETHANE	ND(1.0)	ND(1.0)	ND(0.2)	ND(10.0)	ND(2.0)
1,2-DICHLOROBENZENE	ND(0.2)	ND(0.5)	ND(2.0)	ND(10.0)	ND(4.0)
1,3-DICHLOROBENZENE	ND(0.2)	ND(0.5)	ND(2.0)	ND(10.0)	ND(4.0)
1,4-DICHLOROBENZENE	ND(0.2)	ND(0.5)	8.6	ND(10.0)	ND(3.0)
DICHLORODIFLUOROMETHANE	ND(1.0)	ND(1.0)	NA	NA	NA
1,1-DICHLOROETHANE	ND(1.0)	ND(1.0)	1.9	ND(10.0)	ND(5.0)
1,2-DICHLOROETHANE	ND(1.0)	ND(1.0)	3.5	ND(10.0)	6.3
1,1-DICHLOROETHENE	ND(1.0)	ND(1.0)	ND(0.2)	ND(10.0)	ND(2.0)
CIS-1,2-DICHLOROETHENE	NA	ND(1.0)	NA	ND(10.0)	28.0
TRANS-1,2-DICHLOROETHENE	ND(1.0)	5.6	9.3	ND(10.0)	ND(2.0)
1,2-DICHLOROPROPANE	ND(1.0)	ND(1.0)	ND(0.1)	ND(10.0)	ND(1.0)
ETHYLBENZENE	23.67	3.01	18.0	20.5	19.0
METHYLENE CHLORIDE	ND(1.0)	ND(1.0)	1.0	ND(10.0)	ND(4.0)
1,1,2,2-TETRACHLOROETHANE	ND(1.0)	2.3	ND(0.15)	ND(10.0)	ND(1.5)
TETRACHLOROETHENE	ND(1.0)	ND(1.0)	1.3	ND(10.0)	ND(1.0)
TOLUENE	69.33	ND(0.5)	ND(1.0)	ND(1.0)	ND(2.0)
1,1,1-TRICHLOROETHANE	ND(1.0)	ND(1.0)	0.8	ND(10.0)	4.5
1,1,2-TRICHLOROETHANE	ND(1.0)	2.3	ND(0.2)	ND(10.0)	ND(2.0)
TRICHLOROETHENE	ND(1.0)	ND(1.0)	2.0	ND(10.0)	2.0
TRICHLOROFLUOROMETHANE	ND(1.0)	ND(1.0)	ND(0.2)	ND(10.0)	ND(2.0)
VINYL CHLORIDE	ND(1.0)	ND(1.0)	ND(0.2)	ND(10.0)	ND(2.0)
TOTAL XYLENES	47.44	18.86	9.1	6.25	ND(2.0)

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER INFLUENT

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>4/2/90</u>	<u>5/2/90</u>	<u>6/4/90</u>	<u>7/17/90</u>	<u>8/21/90</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	<1.0	<1.0	(BELOW)	<1.0
BENZENE	23.0	22.0	ND	52.0	ND
BROMODICHLOROMETHANE	ND	ND	ND	ND(1.0)	1.4 X
BROMOFORM	ND	ND	1.2	ND(5.0)	ND
BROMOMETHANE	ND	ND	ND	ND(12.0)	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND(1.2)	ND
CHLORO BENZENE	ND	ND	4.5	ND(2.0)	ND
CHLOROETHANE	ND	ND	ND	ND(5.2)	ND
CHLOROFORM	ND	ND	ND	ND(1.0)	ND
CHLOROMETHANE	ND	ND	ND	ND(3.0)	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND(2.0)	ND
1,2-DICHLORO BENZENE	ND	ND	ND	ND(4.0)	ND
1,3-DICHLORO BENZENE	ND	ND	ND	ND(4.0)	ND
1,4-DICHLORO BENZENE	ND	ND	ND	ND(3.0)	ND
DICHLORODIFLUOROMETHANE	NA	NA	NA	NA	ND
1,1-DICHLOROETHANE	3.1	2.2	ND	ND(5.0)	0.68 X
1,2-DICHLOROETHANE	4.5	2.2	1.3	ND(1.0)	1.1
1,1-DICHLOROETHENE	ND	ND	ND	ND(2.0)	ND
CIS-1,2-DICHLOROETHENE	25.0	5.9	ND	16.0	0.43 X
TRANS-1,2-DICHLOROETHENE	ND	ND	ND	ND(2.0)	ND
1,2-DICHLOROPROPANE	ND	ND	ND	ND(1.0)	ND
ETHYLBENZENE	0.9	3.5	7.1	6.7	ND
METHYLENE CHLORIDE	0.65	ND	ND	6.2	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	0.89	ND(1.5)	ND
TETRACHLOROETHENE	2.8	2.7	ND	4.2	0.32 X
TOLUENE	ND	ND	1.2	2.2	ND
1,1,1-TRICHLOROETHANE	0.96	0.53	ND	16.0	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND(2.0)	0.2 X
TRICHLOROETHENE	2.4	2.6	ND	36.0	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND(2.0)	ND
VINYL CHLORIDE	ND	ND	ND	ND(2.0)	ND
TOTAL XYLENES	7.1	3.8	16.0	36.0	0.81
TR -	TRACE				
ND -	NOT DETECTED				
NA -	NOT ANALYZED				
** -	SPLIT SAMPLE				
X -	PRESENCE NOT CONFIRMED				

VOLATILE ORGANIC CONCENTRATIONS (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER INFLUENT

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>9/5/90</u>	<u>10/4/90</u>	<u>11/5/90</u>	<u>1/29/90</u>	<u>2/6/91</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	(BELOW)	<1.0	<1.0	<1.0
BENZENE	2.8 X	60.0	5.2	1.5	ND
BROMODICHLOROMETHANE	NA	ND (1.0)	ND	ND	ND
BROMOFORM	NA	ND (5.0)	ND	ND	ND
BROMOMETHANE	NA	ND (12.0)	ND	ND	ND
CARBON TETRACHLORIDE	NA	ND (1.2)	ND	ND	ND
CHLOROBENZENE	ND	4.5 X	ND	ND	ND
CHLOROETHANE	NA	ND (5.2)	ND	ND	ND
CHLOROFORM	NA	ND (1.0)	ND	ND	ND
CHLOROMETHANE	NA	ND (3.0)	ND	ND	ND
DIBROMOCHLOROMETHANE	NA	ND (2.0)	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND (4.0)	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND (4.0)	ND	ND	ND
1,4-DICHLOROBENZENE	ND	100.0	2.3	ND	ND
1,1-DICHLOROETHANE	NA	ND (5.0)	ND	ND	ND
1,2-DICHLOROETHANE	NA	2.7 X	ND	ND	ND
1,1-DICHLOROETHENE	NA	ND (2.0)	ND	ND	ND
CIS-1,2-DICHLOROETHENE	NA	16.0 X	0.66	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	ND (2.0)	ND	NA	NA
TOTAL 1,2-DICHLOROETHENE	NA	NA	NA	ND	ND
1,2-DICHLOROPROPANE	NA	ND (1.0)	ND	ND	ND
ETHYLBENZENE	ND	ND (2.0)	0.42	ND	ND
METHYLENE CHLORIDE	NA	4.9 X	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	NA	ND (1.5)	ND	ND	ND
TETRACHLOROETHENE	NA	1.5 X	0.31	ND	ND
TOLUENE	ND	3.0	0.25	ND	ND
1,1,1-TRICHLOROETHANE	NA	2.5 X	ND	ND	ND
1,1,2-TRICHLOROETHANE	NA	ND (2.0)	ND	ND	ND
TRICHLOROETHENE	NA	2.3 X	ND	ND	ND
TRICHLOROFLUOROMETHANE	NA	3.0 X	ND	ND	ND
VINYL CHLORIDE	NA	ND (2.0)	ND	ND	ND
TOTAL XYLENES	0.92 X	140.0	1.7	1.3	ND
TR -	TRACE				
ND -	NOT DETECTED				
NA -	NOT ANALYZED				
** -	SPLIT SAMPLE				
X -	PRESENCE NOT CONFIRMED				

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER INFLUENT

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>3/8/91</u>	<u>4/8/91</u>	<u>5/1/91</u>	<u>6/7/91</u>	<u>7/8/91</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	<1.0	<1.0	<1.0	(BELOW)
BENZENE	ND (5.0)	2.9	ND	25.2	303.0
BROMODICHLOROMETHANE	ND (2.0)	ND	ND	ND	ND (1.0)
BROMOFORM	ND (2.0)	ND	ND	ND	ND (1.0)
BROMOMETHANE	ND (2.0)	ND	ND	ND	ND (1.0)
CARBON TETRACHLORIDE	ND (2.0)	ND	ND	ND	ND (1.0)
CHLORO BENZENE	ND (5.0)	ND	ND	ND	ND (2.5)
CHLOROETHANE	ND (2.0)	ND	ND	ND	ND (1.0)
CHLOROFORM	ND (2.0)	ND	ND	ND	ND (1.0)
CHLOROMETHANE	ND (2.0)	ND	ND	ND	ND (1.0)
DIBROMOCHLOROMETHANE	ND (2.0)	ND	ND	ND	ND (1.0)
1,2-DICHLORO BENZENE	ND (5.0)	ND	ND	ND	ND (2.5)
1,3-DICHLORO BENZENE	ND (5.0)	ND	ND	ND	ND (2.5)
1,4-DICHLORO BENZENE	ND (5.0)	ND	ND	ND	ND (2.5)
1,1-DICHLOROETHANE	ND (2.0)	ND	ND	0.7	4.0
1,2-DICHLOROETHANE	ND (2.0)	0.6	ND	1.2	9.0
1,1-DICHLOROETHENE	ND (2.0)	ND	ND	ND	ND (1.0)
TOTAL 1,2-DICHLOROETHENE	ND (2.0)	1.5	ND	2.7	14.0
1,2-DICHLOROPROPANE	ND (2.0)	ND	ND	ND	ND (1.0)
ETHYLBENZENE	ND (5.0)	ND	ND	4.5	52.0
METHYLENE CHLORIDE	ND (20.0)	ND	ND	ND	ND (10.0)
1,1,2,2-TETRACHLOROETHANE	ND (2.0)	ND	ND	ND	ND (1.0)
TETRACHLOROETHENE	ND (2.0)	ND	ND	0.3	1.0
TOLUENE	ND (5.0)	ND	ND	1.9	43.0
1,1,1-TRICHLOROETHANE	ND (2.0)	ND	ND	ND	ND (1.0)
1,1,2-TRICHLOROETHANE	ND (2.0)	ND	ND	ND	ND (1.0)
TRICHLOROETHENE	ND (2.0)	ND	ND	0.3	2.0
TRICHLOROFLUOROMETHANE	ND (5.0)	ND	ND	ND	ND (2.5)
VINYL CHLORIDE	ND (5.0)	ND	ND	ND	ND (1.0)
TOTAL XYLENES	ND (20.0)	3.2	ND	46.0	156.0

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER INFLUENT

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>8/9/91</u>	<u>9/9/91</u>	<u>10/31/91</u>	<u>11/11/91</u>	<u>12/9/91</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	(BELOW)	<1.0	<1.0	<1.0
BENZENE	45.7	35.0	17.0	21.0	8.9
BROMODICHLOROMETHANE	ND	ND (1.0)	ND	ND	ND
BROMOFORM	ND	ND (1.0)	ND	ND	ND
BROMOMETHANE	ND	ND (1.0)	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND (1.0)	ND	ND	ND
CHLOROBENZENE	ND	ND (2.5)	ND	ND	ND
CHLOROETHANE	ND	ND (1.0)	ND	ND	ND
CHLOROFORM	ND	ND (1.0)	ND	ND	ND
CHLOROMETHANE	ND	ND (1.0)	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND (1.0)	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND (2.5)	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND (2.5)	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND (2.5)	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND (1.0)	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND (1.0)	0.5	0.4	0.7
1,2-DICHLOROETHANE	ND	ND (1.0)	0.5	0.7	0.4
1,1-DICHLOROETHENE	ND	ND (1.0)	ND	ND	ND
TOTAL 1,2-DICHLOROETHENE	2.8	ND (1.0)	3.1	3.2	2.6
1,2-DICHLOROPROPANE	ND	ND (1.0)	ND	ND	ND
ETHYLBENZENE	ND	3.0	1.2	2.7	1.5
METHYLENE CHLORIDE	2.1	ND (10.0)	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND (1.0)	ND	ND	ND
TETRACHLOROETHENE	0.4	ND (1.0)	0.3	0.5	0.2
TOLUENE	0.7	ND (2.5)	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND (1.0)	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND (1.0)	ND	ND	ND
TRICHLOROETHENE	0.4	ND (1.0)	0.2	0.4	ND
TRICHLOROFLUOROMETHANE	ND	ND (2.5)	ND	ND	ND
VINYL CHLORIDE	ND	ND (1.0)	ND	ND	ND
TOTAL XYLENES	7.5	13.0	3.4	4.5	1.0

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER INFLUENT

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>1/9/92</u>	<u>2/10/92</u>	<u>3/4/92</u>	<u>4/9/92</u>	<u>5/8/92</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	<1.0	<1.0	<1.0	<1.0
BENZENE	11.0	11.0	9.8	12.0	5.1
BROMODICHLOROMETHANE	ND	ND	ND	NA	ND
BROMOFORM	ND	ND	ND	NA	ND
BROMOMETHANE	ND	ND	ND	NA	ND
CARBON TETRACHLORIDE	ND	ND	ND	NA	ND
CHLOROBENZENE	ND	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	NA	ND
CHLOROFORM	ND	ND	ND	NA	ND
CHLOROMETHANE	ND	ND	ND	NA	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	NA	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND	NA	ND
1,1-DICHLOROETHANE	0.8	0.8	1.0	NA	0.6
1,2-DICHLOROETHANE	0.7	0.6	0.6	NA	0.5
1,1-DICHLOROETHENE	ND	ND	ND	NA	ND
TOTAL 1,2-DICHLOROETHENE	2.8	2.8	2.9	NA	1.3
1,2-DICHLOROPROPANE	ND	ND	ND	NA	ND
ETHYLBENZENE	1.5	0.6	1.5	2.9	0.6
METHYLENE CHLORIDE	ND	ND	ND	NA	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	NA	ND
TETRACHLOROETHENE	0.2	0.2	ND	NA	ND
TOLUENE	ND	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND	ND	NA	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	NA	ND
TRICHLOROETHENE	ND	ND	ND	NA	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	NA	ND
VINYL CHLORIDE	ND	ND	ND	NA	ND
TOTAL XYLENES	ND	1.7	2.2	4.1	4.8

TR - TRACE
 ND - NOT DETECTED
 NA - NOT ANALYZED
 ** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER INFLUENT

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>6/5/92</u>	<u>7/7/92</u>	<u>8/10/92</u>	<u>10/12/92</u>	<u>11/16/92</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	<1.0	<1.0	<1.0	<1.0
BENZENE	5.3	11.7	15.6	19.3	30.0
BROMODICHLOROMETHANE	ND	ND	ND	ND	ND
BROMOFORM	ND	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND	ND
CHLOROFORM	0.5	ND	ND	ND	ND
CHLOROMETHANE	ND	ND	1.2	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	0.6	0.8	0.8	ND	0.7
1,2-DICHLOROETHANE	0.6	0.4	0.4	0.4	0.5
1,1-DICHLOROETHENE	ND	ND	ND	ND	ND
TOTAL 1,2-DICHLOROETHENE	1.3	1.8	1.2	3.0	ND
1,2-DICHLOROPROPANE	ND	ND	ND	ND	ND
TRANS-1-3-DICHLOROPROPENE	ND	ND	ND	ND	3.3
ETHYLBENZENE	0.7	3.3	4.4	ND	13.9
METHYLENE CHLORIDE	ND	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND	ND
TETRACHLOROETHENE	0.3	ND	ND	ND	ND
TOLUENE	ND	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	0.3	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND	ND
TRICHLOROETHENE	0.3	ND	ND	ND	0.2
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND	ND
TOTAL XYLENES	3.8	3.3	5.4	11.2	16.0

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER INFLUENT

SAMPLER

GIANT

DATE

12/9/92

PARAMETER

DETECTION LIMIT

(BELOW)

BENZENE	30.0
BROMODICHLOROMETHANE	ND(1.0)
BROMOFORM	ND(1.0)
BROMOMETHANE	ND(1.0)
CARBON TETRACHLORIDE	ND(1.0)
CHLOROBENZENE	ND(2.5)
CHLOROETHANE	ND(1.0)
CHLOROFORM	ND(1.0)
CHLOROMETHANE	ND(1.0)
DIBROMOCHLOROMETHANE	ND(1.0)
1,2-DICHLOROBENZENE	ND(2.5)
1,3-DICHLOROBENZENE	ND(2.5)
1,4-DICHLOROBENZENE	ND(2.5)
DICHLORODIFLUOROMETHANE	ND(1.0)
1,1-DICHLOROETHANE	ND(1.0)
1,2-DICHLOROETHANE	ND(1.0)
1,1-DICHLOROETHENE	ND(1.0)
TOTAL 1,2-DICHLOROETHENE	1.0
1,2-DICHLOROPROPANE	ND(1.0)
ETHYLBENZENE	ND(2.5)
METHYLENE CHLORIDE	ND(10.0)
1,1,2,2-TETRACHLOROETHANE	ND(1.0)
TETRACHLOROETHENE	ND(1.0)
TOLUENE	ND(2.5)
1,1,1-TRICHLOROETHANE	ND(1.0)
1,1,2-TRICHLOROETHANE	ND(1.0)
TRICHLOROETHENE	ND(1.0)
TRICHLOROFLUOROMETHANE	ND(2.5)
VINYL CHLORIDE	ND(1.0)
TOTAL XYLENES	11.0

TR	-	TRACE
ND	-	NOT DETECTED
NA	-	NOT ANALYZED
**	-	SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER EFFLUENT

<u>SAMPLER</u>	GIANT	OCD	GIANT	GIANT	GIANT
<u>DATE</u>	<u>6/23/88</u>	<u>7/13/88</u>	<u>11/8/88</u>	<u>12/8/88</u>	<u>12/13/88</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	5.0	2.0	(BELOW)	<1.0
BENZENE	9.5	14.0	ND	59.0	51.0
BROMODICHLOROMETHANE	ND	ND	ND	ND(<1.0)	ND
BROMOFORM	ND	ND	ND	ND(<1.0)	ND
BROMOMETHANE	ND	ND	ND	ND(1.2)	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND(<1.0)	ND
CHLOROBENZENE	ND	ND	ND	ND(7.5)	ND
CHLOROETHANE	ND	ND	ND	ND(<1.0)	ND
CHLOROFORM	ND	ND	ND	ND(<1.0)	ND
CHLOROMETHANE	ND	ND	ND	ND(<1.0)	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND(<1.0)	ND
1,2-DICHLOROBENZENE	ND	ND	NA	ND(10.0)	ND
1,3-DICHLOROBENZENE	ND	ND	NA	ND(10.0)	ND
1,4-DICHLOROBENZENE	ND	ND	NA	ND(7.5)	ND
DICHLORODIFLUOROMETHANE	NA	ND	NA	NA	NA
1,1-DICHLOROETHANE	ND	ND	ND	0.8	0.7
1,2-DICHLOROETHANE	0.87	ND	ND	2.4	2.4
1,1-DICHLOROETHENE	ND	ND	ND	ND(<1.0)	ND
CIS-1,2-DICHLOROETHENE	NA	ND	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	ND	ND	ND	0.8	0.9
1,2-DICHLOROPROPANE	ND	ND	ND	ND(<1.0)	ND
ETHYLBENZENE	1.3	TR	ND	17.0	6.0
METHYLENE CHLORIDE	3.0	ND	ND	ND(<1.0)	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND(<1.0)	ND
TETRACHLOROETHENE	ND	ND	ND	ND(<1.0)	ND
TOLUENE	7.8	TR	ND	18.0	1.8
1,1,1-TRICHLOROETHANE	ND	ND	ND	ND(<1.0)	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND(<1.0)	ND
TRICHLOROETHENE	ND	ND	ND	ND(<1.0)	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	1.3	ND
VINYL CHLORIDE	ND	ND	ND	ND(<1.0)	ND
TOTAL XYLENES	28.0	14.0	6.6	115.0	53.0

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER EFFLUENT

<u>SAMPLER</u>	OCD	OCD*	GIANT	GIANT	GIANT
<u>DATE</u>	<u>12/15/88</u>	<u>12/15/88</u>	<u>1/16/89</u>	<u>2/2/89</u>	<u>3/14/89</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	(BELOW)	(BELOW)	<1.0	(BELOW)
BENZENE	20.8	15.0	42.0	ND	219.0
BROMODICHLOROMETHANE	ND(0.5)	ND(0.5)	ND(<1.0)	ND	ND(<1.0)
BROMOFORM	ND(0.5)	ND(0.5)	ND(<1.0)	ND	ND(<1.0)
BROMOMETHANE	ND(0.5)	ND(0.5)	ND(1.2)	ND	ND(1.0)
CARBON TETRACHLORIDE	ND(0.5)	ND(0.5)	ND(<1.0)	ND	ND(<1.0)
CHLOROBENZENE	ND(0.5)	ND(0.5)	ND(1.5)	ND	ND(<1.0)
CHLOROETHANE	ND(0.5)	ND(0.5)	ND(<1.0)	ND	ND(1.0)
CHLOROFORM	ND(0.5)	ND(0.5)	ND(<1.0)	ND	ND(<1.0)
CHLOROMETHANE	ND(0.5)	ND(0.5)	ND(<1.0)	ND	ND(1.0)
DIBROMOCHLOROMETHANE	ND(0.5)	ND(0.5)	ND(<1.0)	ND	ND(<1.0)
1,2-DICHLOROBENZENE	ND(0.5)	ND(0.5)	ND(2.0)	ND	ND(<1.0)
1,3-DICHLOROBENZENE	ND(0.5)	ND(0.5)	ND(2.0)	ND	ND(<1.0)
1,4-DICHLOROBENZENE	ND(0.5)	ND(0.5)	ND(1.5)	ND	ND(<1.0)
DICHLORODIFLUOROMETHANE	ND(0.5)	ND(0.5)	NA	NA	ND(1.0)
1,1-DICHLOROETHANE	0.5	ND(0.5)	0.8	ND	ND(<1.0)
1,2-DICHLOROETHANE	1.5	1.0	2.9	0.7	11.1
1,1-DICHLOROETHENE	ND(0.5)	ND(0.5)	ND(<1.0)	ND	ND(<1.0)
CIS-1,2-DICHLOROETHENE	NA	ND(0.5)	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	ND(0.5)	ND(0.5)	1.3	ND	ND(<1.0)
1,2-DICHLOROPROPANE	ND(0.5)	ND(0.5)	ND(<1.0)	ND	ND(<1.0)
1,2-DIMETHYLBENZENE	NA	TR(2.0)	NA	NA	NA
ETHYLBENZENE	ND(0.2)	TR(2.0)	10.0	ND	12.5
METHYLENE CHLORIDE	ND(0.5)	ND(0.5)	ND(<1.0)	ND	7.2
1,1,2,2-TETRACHLOROETHANE	ND(0.5)	ND(0.5)	ND(<1.0)	ND	ND(<1.0)
TETRACHLOROETHENE	ND(0.5)	ND(0.5)	0.6	ND	ND(<1.0)
TOLUENE	1.8	TR(2.0)	ND(1.0)	ND	319.0
1,1,1-TRICHLOROETHANE	ND(0.5)	ND(0.5)	0.6	ND	ND(<1.0)
1,1,2-TRICHLOROETHANE	ND(0.5)	ND(0.5)	ND(<1.0)	ND	ND(<1.0)
TRICHLOROETHENE	ND(0.5)	ND(0.5)	0.5	ND	ND(<1.0)
TRICHLOROFLUOROMETHANE	ND(0.5)	ND(0.5)	1.0	ND	ND(<1.0)
VINYL CHLORIDE	ND(0.5)	ND(0.5)	ND(<1.0)	ND	ND(1.0)
TOTAL XYLENES	12.0	15.0	41.6	ND	137.2

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
* - DUPLICATE ANALYSIS

VOLATILE ORGANIC CONCENTRATIONS (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER EFFLUENT

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>4/25/89</u>	<u>5/12/89</u>	<u>6/14/89</u>	<u>7/12/89</u>	<u>8/17/89</u>
<u>PARAMETER</u>					
DETECTION LIMIT	0.2	<1.0	(BELOW)	(BELOW)	(BELOW)
BENZENE	10.1	9.8	5.5	0.51	58.0
BROMODICHLOROMETHANE	NA	ND	ND(1.0)	ND(1.0)	ND(1.0)
BROMOFORM	NA	ND	ND(1.0)	ND(1.0)	ND(20.0)
BROMOMETHANE	NA	ND	ND(1.0)	ND(1.0)	ND(10.0)
CARBON TETRACHLORIDE	NA	ND	ND(1.0)	ND(1.0)	ND(2.0)
CHLOROBENZENE	NA	ND	ND(0.2)	ND(0.2)	ND(1.0)
CHLOROETHANE	NA	ND	ND(1.0)	ND(1.0)	ND(5.0)
CHLOROFORM	NA	ND	ND(1.0)	ND(1.0)	ND(1.0)
CHLOROMETHANE	NA	ND	ND(1.0)	ND(1.0)	ND(5.0)
DIBROMOCHLOROMETHANE	NA	ND	ND(1.0)	ND(1.0)	ND(2.0)
1,2-DICHLOROBENZENE	NA	ND	ND(0.2)	ND(0.2)	ND(2.0)
1,3-DICHLOROBENZENE	NA	ND	ND(0.2)	ND(0.2)	ND(4.0)
1,4-DICHLOROBENZENE	NA	ND	ND(0.2)	ND(0.2)	ND(2.0)
DICHLORODIFLUOROMETHANE	NA	ND	ND(1.0)	ND(1.0)	NA
1,1-DICHLOROETHANE	NA	ND	ND(1.0)	ND(1.0)	ND(1.0)
1,2-DICHLOROETHANE	NA	0.9	ND(1.0)	ND(1.0)	ND(1.0)
1,1-DICHLOROETHENE	NA	ND	ND(1.0)	ND(1.0)	ND(1.0)
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	ND	ND(1.0)	ND(1.0)	NA
TOTAL 1,2-DICHLOROETHENE	NA	NA	NA	NA	7.1
1,2-DICHLOROPROPANE	NA	ND	ND(1.0)	ND(1.0)	ND(1.0)
ETHYLBENZENE	8.3	2.6	ND(0.2)	ND(0.2)	ND(1.0)
METHYLENE CHLORIDE	NA	0.3	ND(1.0)	ND(1.0)	ND(4.0)
1,1,2,2-TETRACHLOROETHANE	NA	ND	ND(1.0)	ND(1.0)	ND(2.0)
TETRACHLOROETHENE	NA	ND	ND(1.0)	ND(1.0)	ND(1.0)
TOLUENE	4.6	4.5	ND(0.2)	ND(0.2)	2.7
1,1,1-TRICHLOROETHANE	NA	ND	ND(1.0)	ND(1.0)	ND(2.0)
1,1,2-TRICHLOROETHANE	NA	ND	ND(1.0)	ND(1.0)	ND(2.0)
TRICHLOROETHENE	NA	ND	ND(1.0)	ND(1.0)	ND(2.0)
TRICHLOROFLUOROMETHANE	NA	ND	ND(1.0)	ND(1.0)	ND(1.0)
VINYL CHLORIDE	NA	ND	ND(1.0)	ND(1.0)	ND(2.0)
TOTAL XYLENES	29.9	17.7	ND(0.2)	ND(0.2)	13.0
TR -	TRACE				
ND -	NOT DETECTED				
NA -	NOT ANALYZED				
** -	SPLIT SAMPLE				

VOLATILE ORGANIC CONCENTRATIONS (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER EFFLUENT

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>9/13/89</u>	<u>9/29/89</u>	<u>10/19/89</u>	<u>11/15/89</u>	<u>12/12/89</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	1.0	(BELOW)	0.5	<1.0
BENZENE	1,200	9.2	12.43	ND	3.3
BROMODICHLOROMETHANE	ND(10.0)	NA	ND(1.0)	NA	ND
BROMOFORM	ND(200.0)	NA	ND(1.0)	NA	ND
BROMOMETHANE	ND(100.0)	NA	ND(1.0)	NA	ND
CARBON TETRACHLORIDE	ND(20.0)	NA	ND(1.0)	NA	ND
CHLOROBENZENE	ND(10.0)	ND	ND(0.2)	ND	ND
CHLOROETHANE	ND(50.0)	NA	ND(1.0)	NA	ND
CHLOROFORM	ND(10.0)	NA	ND(1.0)	NA	ND
CHLOROMETHANE	ND(50.0)	NA	ND(1.0)	NA	ND
DIBROMOCHLOROMETHANE	ND(20.0)	NA	ND(1.0)	NA	ND
1,2-DICHLOROBENZENE	ND(20.0)	ND	ND(0.2)	ND	ND
1,3-DICHLOROBENZENE	ND(40.0)	ND	ND(0.2)	ND	ND
1,4-DICHLOROBENZENE	ND(20.0)	ND	ND(0.2)	ND	1.4
DICHLORODIFLUOROMETHANE	NA	NA	ND(1.0)	NA	NA
1,1-DICHLOROETHANE	ND(10.0)	NA	ND(1.0)	NA	ND
1,2-DICHLOROETHANE	ND(10.0)	NA	ND(1.0)	NA	1.0
1,1-DICHLOROETHENE	ND(10.0)	NA	ND(1.0)	NA	ND
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	ND(1.0)	NA	0.97
TOTAL 1,2-DICHLOROETHENE	ND(10.0)	NA	NA	NA	NA
1,2-DICHLOROPROPANE	ND(10.0)	NA	ND(1.0)	NA	ND
ETHYLBENZENE	50.0	0.4	1.48	ND	0.55
METHYLENE CHLORIDE	ND(40.0)	NA	ND(1.0A)	NA	ND
1,1,2,2-TETRACHLOROETHANE	ND(20.0)	NA	ND(1.0A)	NA	ND
TETRACHLOROETHENE	ND(10.0)	NA	ND(1.0)	NA	ND
TOLUENE	190.0	0.6	5.42	ND	ND
1,1,1-TRICHLOROETHANE	ND(20.0)	NA	ND(1.0)	NA	ND
1,1,2-TRICHLOROETHANE	ND(20.0)	NA	ND(1.0)	NA	ND
TRICHLOROETHENE	ND(20.0)	NA	ND(1.0)	NA	ND
TRICHLOROFLUOROMETHANE	ND(10.0)	NA	ND(1.0)	NA	ND
VINYL CHLORIDE	ND(20.0)	NA	ND(1.0)	NA	ND
TOTAL XYLENES	110.0	1.2	3.54	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER EFFLUENT

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>1/15/90</u>	<u>2/12/90</u>	<u>4/2/90</u>	<u>5/2/90</u>	<u>6/4/90</u>
<u>PARAMETER</u>					
DETECTION LIMIT	(BELOW)	<1.0	<1.0	<1.0	<1.0
BENZENE	ND(1.0)	5.3	ND	ND	ND
BROMODICHLOROMETHANE	ND(10.0)	ND	ND	ND	ND
BROMOFORM	ND(10.0)	ND	ND	ND	ND
BROMOMETHANE	ND(10.0)	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND(10.0)	ND	ND	ND	ND
CHLOROBENZENE	ND(10.0)	ND	ND	ND	ND
CHLOROETHANE	ND(10.0)	ND	ND	ND	ND
CHLOROFORM	ND(10.0)	ND	ND	ND	ND
CHLOROMETHANE	ND(10.0)	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND(10.0)	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND(10.0)	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND(10.0)	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND(10.0)	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND(10.0)	NA	NA	NA	NA
1,1-DICHLOROETHANE	ND(10.0)	ND	ND	ND	ND
1,2-DICHLOROETHANE	ND(10.0)	0.84	ND	0.17	ND
1,1-DICHLOROETHENE	ND(10.0)	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	NA	0.7	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	ND(10.0)	ND	ND	ND	5.2
1,2-DICHLOROPROPANE	ND(10.0)	ND	ND	ND	ND
ETHYLBENZENE	ND(1.0)	ND	ND	ND	ND
METHYLENE CHLORIDE	ND(10.0)	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND(10.0)	ND	ND	ND	ND
TETRACHLOROETHENE	ND(10.0)	ND	ND	ND	ND
TOLUENE	ND(1.0)	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND(10.0)	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND(10.0)	ND	ND	ND	ND
TRICHLOROETHENE	ND(10.0)	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	ND(10.0)	ND	ND	ND	ND
VINYL CHLORIDE	ND(10.0)	ND	ND	ND	ND
TOTAL XYLENES	ND(1.0)	ND	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER EFFLUENT

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>7/17/90</u>	<u>8/21/90</u>	<u>9/5/90</u>	<u>10/4/90</u>	<u>10/8/90</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	<1.0	<1.0	(BELOW)	<1.0
BENZENE	ND	ND	ND	5.9 X	ND
BROMODICHLOROMETHANE	ND	0.27 X	NA	13.0 X	ND
BROMOFORM	ND	ND	NA	23.0 X	ND
BROMOMETHANE	ND	ND	NA	ND(12.0)	ND
CARBON TETRACHLORIDE	ND	ND	NA	16.0 X	ND
CHLOROBENZENE	ND	ND	ND	14.0 X	ND
CHLOROETHANE	ND	ND	NA	ND(5.2)	ND
CHLOROFORM	ND	0.18 X	NA	10.0 X	ND
CHLOROMETHANE	ND	ND	NA	ND(3.0)	ND
DIBROMOCHLOROMETHANE	ND	ND	NA	14.0	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND(4.0)	ND
1,3-DICHLOROBENZENE	ND	ND	ND	19.0	ND
1,4-DICHLOROBENZENE	ND	ND	ND	20.0	0.56 X
1,1-DICHLOROETHANE	ND	ND	NA	13.0 X	ND
1,2-DICHLOROETHANE	ND	ND	NA	13.0 X	ND
1,1-DICHLOROETHENE	ND	ND	NA	14.0 X	ND
CIS-1,2-DICHLOROETHENE	ND	ND	NA	13.0 X	ND
TRANS-1,2-DICHLOROETHENE	ND	ND	NA	ND(2.0)	ND
1,2-DICHLOROPROPANE	ND	ND	NA	6.7 X	ND
ETHYLBENZENE	ND	0.2 X	ND	3.0	ND
METHYLENE CHLORIDE	0.69	ND	NA	9.5 X	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	NA	ND(1.5)	ND
TETRACHLOROETHENE	0.14	ND	NA	16.0 X	ND
TOLUENE	ND	0.32 X	ND	6.5	0.45 X
1,1,1-TRICHLOROETHANE	0.94	ND	NA	20.0 X	ND
1,1,2-TRICHLOROETHANE	ND	ND	NA	ND(2.0)	ND
TRICHLOROETHENE	6.8	0.48 X	NA	9.9 X	ND
TRICHLOROFLUOROMETHANE	0.24	ND	NA	22.0 X	ND
VINYL CHLORIDE	ND	ND	NA	ND(2.0)	ND
TOTAL XYLENES	ND	0.44 X	ND	35.0	0.91 X

TR - TRACE
 ND - NOT DETECTED
 NA - NOT ANALYZED
 ** - SPLIT SAMPLE
 X - PRESENCE NOT CONFIRMED

VOLATILE ORGANIC CONCENTRATIONS (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER EFFLUENT

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>11/5/90</u>	<u>1/29/91</u>	<u>2/6/91</u>	<u>3/8/91</u>	<u>4/8/91</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	<1.0	<1.0	<1.0	<1.0
BENZENE	ND	ND	ND	ND	ND
BROMODICHLOROMETHANE	ND	ND	ND	ND	ND
BROMOFORM	ND	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND	ND
CHLOROFORM	ND	ND	ND	ND	ND
CHLOROMETHANE	ND	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	ND	ND	ND	ND	ND
1,1-DICHLOROETHENE	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	ND	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	ND	NA	NA	NA	NA
TOTAL 1,2-DICHLOROETHENE	NA	ND	ND	ND	ND
1,2-DICHLOROPROPANE	ND	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	ND	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND	ND
TETRACHLOROETHENE	ND	ND	ND	ND	ND
TOLUENE	0.29 X	1.4	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND	ND
TRICHLOROETHENE	ND	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	0.34 X	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND	ND
TOTAL XYLENES	0.48 X	ND	ND	ND	2.2

TR - TRACE
 ND - NOT DETECTED
 NA - NOT ANALYZED
 ** - SPLIT SAMPLE
 X - PRESENCE NOT CONFIRMED

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER EFFLUENT

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>5/1/91</u>	<u>6/91</u>	<u>7/2/91</u>	<u>8/7/91</u>	<u>9/4/91</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	<1.0	<1.0	<1.0	<1.0
BENZENE	ND	ND	ND	ND	ND
BROMODICHLOROMETHANE	ND	ND	ND	ND	ND
BROMOFORM	ND	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND	ND
CHLOROFORM	ND	ND	ND	ND	ND
CHLOROMETHANE	ND	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	ND	ND	ND	ND	ND
1,1-DICHLOROETHENE	ND	ND	ND	ND	ND
TOTAL 1,2-DICHLOROETHENE	ND	ND	ND	ND	ND
1,2-DICHLOROPROPANE	ND	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	ND	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND	ND
TETRACHLOROETHENE	ND	ND	ND	ND	ND
TOLUENE	ND	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND	ND
TRICHLOROETHENE	ND	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND	ND
TOTAL XYLENES	ND	ND	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER EFFLUENT

<u>SAMPLER</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>	<u>GIANT</u>
<u>DATE</u>	<u>10/1/91</u>	<u>11/11/91</u>	<u>11/8/91</u>	<u>12/23/91</u>	<u>1/8/92</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	<1.0	<1.0	<1.0	<1.0
BENZENE	ND	21.0	ND	ND	ND
BROMODICHLOROMETHANE	ND	ND	ND	ND	ND
BROMOFORM	ND	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND	ND
CHLOROFORM	ND	ND	ND	ND	ND
CHLOROMETHANE	ND	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND	0.4	ND	ND	ND
1,2-DICHLOROETHANE	ND	0.7	0.2	ND	ND
1,1-DICHLOROETHENE	ND	ND	ND	ND	ND
TOTAL 1,2-DICHLOROETHENE	ND	3.2	0.3	ND	ND
1,2-DICHLOROPROPANE	ND	ND	ND	ND	ND
ETHYLBENZENE	ND	2.7	ND	ND	ND
METHYLENE CHLORIDE	ND	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND	ND
TETRACHLOROETHENE	ND	0.5	ND	ND	ND
TOLUENE	ND	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND	ND
TRICHLOROETHENE	ND	0.4	ND	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND	ND
TOTAL XYLENES	ND	4.5	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER EFFLUENT

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>2/7/92</u>	<u>3/13/92</u>	<u>4/13/92</u>	<u>5/13/92</u>	<u>6/18/92</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	<1.0	<1.0	<1.0	<1.0
BENZENE	ND	ND	ND	ND	ND
BROMODICHLOROMETHANE	ND	ND	ND	ND	ND
BROMOFORM	ND	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND	ND
CHLOROFORM	ND	ND	ND	ND	ND
CHLOROMETHANE	ND	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	ND	0.3	ND	ND	ND
1,1-DICHLOROETHENE	ND	ND	ND	ND	ND
TOTAL 1,2-DICHLOROETHENE	ND	0.3	ND	ND	ND
1,2-DICHLOROPROPANE	ND	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	ND	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND	ND
TETRACHLOROETHENE	ND	ND	ND	ND	ND
TOLUENE	ND	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND	ND
TRICHLOROETHENE	ND	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND	ND
TOTAL XYLENES	ND	ND	ND	ND	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE

VOLATILE ORGANIC CONCENTRATIONS IN GROUND WATER (ppb)
GIANT BLOOMFIELD REFINERY

AIR STRIPPER EFFLUENT

<u>SAMPLER</u>	GIANT	GIANT	GIANT	GIANT	GIANT
<u>DATE</u>	<u>7/20/92</u>	<u>8/3/92</u>	<u>9/21/92</u>	<u>10/9/92</u>	<u>11/23/92</u>
<u>PARAMETER</u>					
DETECTION LIMIT	<1.0	<1.0	<1.0	<1.0	<1.0
BENZENE	ND	ND	0.9	2.2	ND
BROMODICHLOROMETHANE	ND	ND	ND	ND	ND
BROMOFORM	ND	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND	ND
CHLOROFORM	ND	ND	ND	ND	ND
CHLOROMETHANE	ND	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND	0.9	ND	ND
1,2-DICHLOROETHANE	ND	ND	0.5	0.6	0.2
1,1-DICHLOROETHENE	ND	ND	ND	ND	ND
TOTAL 1,2-DICHLOROETHENE	ND	ND	1.0	2.1	0.3
1,2-DICHLOROPROPANE	ND	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	0.5	1.8	ND
METHYLENE CHLORIDE	ND	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND	ND
TETRACHLOROETHENE	ND	ND	ND	ND	ND
TOLUENE	ND	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND	ND
TRICHLOROETHENE	ND	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND	ND
TOTAL XYLENES	ND	ND	1.6	2.0	ND

TR - TRACE
ND - NOT DETECTED
NA - NOT ANALYZED
** - SPLIT SAMPLE



Inter-Mountain
Laboratories, Inc.

2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: Giant Refinery
ID: 9010041115
SITE: Stripper Influent
LAB NO: F5144

DATE REPORTED: 10/23/90
DATE RECEIVED: 10/04/90
DATE COLLECTED: 10/04/90

Lab pH (s.u.).....	6.66
Lab conductivity, umhos/cm.....	4390
Lab resistivity, ohm-m.....	2.28
Total dissolved solids (180), mg/l..	3430
Total dissolved solids (calc), mg/l.	3250
Total alkalinity as CaCO ₃ , mg/l.....	94
Total acidity as CaCO ₃ , mg/l.....	0
Total hardness as CaCO ₃ , mg/l.....	1200
Sodium absorption ratio.....	7.42

	mg/l	meq/l
Bicarbonate as HCO ₃	115	1.88
Carbonate as CO ₃	0	0
Chloride.....	735	20.7
Sulfate.....	1440	30
Calcium.....	349	17.4
Magnesium.....	81	6.66
Potassium.....	3.15	0.08
Sodium.....	592	25.8
Major cations.....		49.9
Major anions.....		52.6
Cation/anion difference.....		2.56 %

C. Neal Schaeffer
Lab Director



InterMountain
Laboratories, Inc.

2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: Giant Refinery
ID: 9010041125
SITE: Stripper Effluent
LAB NO: F5145

DATE REPORTED: 10/23/90
DATE RECEIVED: 10/04/90
DATE COLLECTED: 10/04/90

Lab pH (s.u.).....	8.05
Lab conductivity, umhos/cm.....	4360
Lab resistivity, ohm-m.....	2.3
Total dissolved solids (180), mg/l..	3430
Total dissolved solids (calc), mg/l.	3260
Total alkalinity as CaCO ₃ , mg/l.....	85.5
Total acidity as CaCO ₃ , mg/l.....	0
Total hardness as CaCO ₃ , mg/l.....	1220
Sodium absorption ratio.....	7.57

	mg/l	meq/l
Bicarbonate as HCO ₃	104	1.71
Carbonate as CO ₃	0	0
Chloride.....	736	20.8
Sulfate.....	1440	30.1
Calcium.....	297	14.8
Magnesium.....	118	9.67
Potassium.....	3.24	0.08
Sodium.....	609	26.5
Major cations.....		51.1
Major anions.....		52.5
Cation/anion difference.....		1.41 %

C. Neal Schaeffer
Lab Director



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Laboratories, Inc.

2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: Giant Refinery
ID: 9010041028
SITE: RW-3
LAB NO: F5140

DATE REPORTED: 10/23/90
DATE RECEIVED: 10/04/90
DATE COLLECTED: 10/04/90

Lab pH (s.u.).....	7.91
Lab conductivity, umhos/cm.....	3970
Lab resistivity, ohm-m.....	2.52
Total dissolved solids (180), mg/l..	2950
Total dissolved solids (calc), mg/l.	2940
Total alkalinity as CaCO ₃ , mg/l.....	829
Total acidity as CaCO ₃ , mg/l.....	0
Total hardness as CaCO ₃ , mg/l.....	944
Sodium absorption ratio.....	9.8

	mg/l	meq/l
Bicarbonate as HCO ₃	1010	16.6
Carbonate as CO ₃	0	0
Chloride.....	435	12.3
Sulfate.....	944	19.7
Calcium.....	349	17.4
Magnesium.....	17.5	1.44
Potassium.....	2.28	0.06
Sodium.....	692	30.1
Major cations.....		49.1
Major anions.....		48.5
Cation/anion difference.....		0.54 %

C. Neal Schaeffer
Lab Director



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Laboratories, Inc.

2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: Giant Refinery
ID: 9010040945
SITE: RW-4
LAB NO: F5141

DATE REPORTED: 10/23/90
DATE RECEIVED: 10/04/90
DATE COLLECTED: 10/04/90

Lab pH (s.u.).....	7.89
Lab conductivity, umhos/cm.....	4380
Lab resistivity, ohm-m.....	2.29
Total dissolved solids (180), mg/l..	3410
Total dissolved solids (calc), mg/l.	3230
Total alkalinity as CaCO ₃ , mg/l.....	804
Total acidity as CaCO ₃ , mg/l.....	0
Total hardness as CaCO ₃ , mg/l.....	1350
Sodium absorption ratio.....	7.22

	mg/l	meq/l
Bicarbonate as HCO ₃	982	16.1
Carbonate as CO ₃	0	0
Chloride.....	488	13.8
Sulfate.....	1170	24.4
Calcium.....	369	18.4
Magnesium.....	103	8.47
Potassium.....	2.31	0.06
Sodium.....	609	26.5
Major cations.....		53.4
Major anions.....		54.3
Cation/anion difference.....		0.76 %

C. Neal Schaeffer
Lab Director



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2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: Giant Refinery
ID: 9010041010
SITE: RW-6
LAB NO: F5142

DATE REPORTED: 10/23/90
DATE RECEIVED: 10/04/90
DATE COLLECTED: 10/04/90

Lab pH (s.u.).....	7.95
Lab conductivity, umhos/cm.....	4530
Lab resistivity, ohm-m.....	2.21
Total dissolved solids (180), mg/l..	3190
Total dissolved solids (calc), mg/l.	2950
Total alkalinity as CaCO ₃ , mg/l.....	599
Total acidity as CaCO ₃ , mg/l.....	0
Total hardness as CaCO ₃ , mg/l.....	1110
Sodium absorption ratio.....	8.45

	mg/l	meq/l
Bicarbonate as HCO ₃	732	12
Carbonate as CO ₃	0	0
Chloride.....	818	23.1
Sulfate.....	702	14.6
Calcium.....	382	19
Magnesium.....	39.5	3.25
Potassium.....	2.16	0.06
Sodium.....	648	28.2
Major cations.....		50.5
Major anions.....		49.7
Cation/anion difference.....		0.85 %

C. Neal Schaeffer
Lab Director



2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: Giant Refinery
ID: 9010041100
SITE: RW-13 L/S
LAB NO: F5148

DATE REPORTED: 10/23/90
DATE RECEIVED: 10/04/90
DATE COLLECTED: 10/04/90

Lab pH (s.u.).....	8.04
Lab conductivity, umhos/cm.....	4710
Lab resistivity, ohm-m.....	2.12
Total dissolved solids (180), mg/l..	3530
Total dissolved solids (calc), mg/l.	3380
Total alkalinity as CaCO ₃ , mg/l.....	248
Total acidity as CaCO ₃ , mg/l.....	0
Total hardness as CaCO ₃ , mg/l.....	1260
Sodium absorption ratio.....	8.27

	mg/l	meq/l
Bicarbonate as HCO ₃	303	4.96
Carbonate as CO ₃	0	0
Chloride.....	685	19.3
Sulfate.....	1420	29.5
Calcium.....	382	19
Magnesium.....	73.7	6.06
Potassium.....	3.33	0.09
Sodium.....	674	29.3
Major cations.....		54.5
Major anions.....		53.8
Cation/anion difference.....		0.64 %

C. Neal Schaeffer
Lab Director



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Laboratories, Inc.

2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: Giant Refinery
ID: 9010041100
SITE: RW-13
LAB NO: F5143

DATE REPORTED: 10/23/90
DATE RECEIVED: 10/04/90
DATE COLLECTED: 10/04/90

Lab pH (s.u.).....	8.02
Lab conductivity, umhos/cm.....	4500
Lab resistivity, ohm-m.....	2.22
Total dissolved solids (180), mg/l..	3510
Total dissolved solids (calc), mg/l.	3370
Total alkalinity as CaCO ₃ , mg/l.....	265
Total acidity as CaCO ₃ , mg/l.....	0
Total hardness as CaCO ₃ , mg/l.....	1210
Sodium absorption ratio.....	8.04

	mg/l	meq/l
Bicarbonate as HCO ₃	323	5.3
Carbonate as CO ₃	0	0
Chloride.....	698	19.7
Sulfate.....	1430	29.8
Calcium.....	349	17.4
Magnesium.....	83.4	6.86
Potassium.....	3.36	0.09
Sodium.....	644	28
Major cations.....		52.4
Major anions.....		54.8
Cation/anion difference.....		2.26 %

C. Neal Schaeffer
Lab Director



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Laboratories, Inc.

2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: Giant Refinery
ID: 9010041444
SITE: GBR-15
LAB NO: F5146

DATE REPORTED: 10/23/90
DATE RECEIVED: 10/04/90
DATE COLLECTED: 10/04/90

Lab pH (s.u.).....	8.17
Lab conductivity, umhos/cm.....	4510
Lab resistivity, ohm-m.....	2.22
Total dissolved solids (180), mg/l..	3820
Total dissolved solids (calc), mg/l.	3770
Total alkalinity as CaCO ₃ , mg/l.....	197
Total acidity as CaCO ₃ , mg/l.....	0
Total hardness as CaCO ₃ , mg/l.....	1300
Sodium absorption ratio.....	8.36

	mg/l	meq/l
Bicarbonate as HCO ₃	240	3.93
Carbonate as CO ₃	0	0
Chloride.....	431	12.2
Sulfate.....	2040	42.6
Calcium.....	422	21
Magnesium.....	59.1	4.86
Potassium.....	6.8	0.17
Sodium.....	692	30.1
Major cations.....		56.2
Major anions.....		58.7
Cation/anion difference.....		2.19 %

C. Neal Schaeffer
Lab Director



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2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: Giant Refinery
ID: 9010041320
SITE: GBR-17
LAB NO: F5147

DATE REPORTED: 10/23/90
DATE RECEIVED: 10/04/90
DATE COLLECTED: 10/04/90

Lab pH (s.u.).....	8.08
Lab conductivity, umhos/cm.....	2620
Lab resistivity, ohm-m.....	3.82
Total dissolved solids (180), mg/l..	2260
Total dissolved solids (calc), mg/l.	2150
Total alkalinity as CaCO ₃ , mg/l.....	239
Total acidity as CaCO ₃ , mg/l.....	0
Total hardness as CaCO ₃ , mg/l.....	994
Sodium absorption ratio.....	4.14

	mg/l	meq/l
Bicarbonate as HCO ₃	292	4.79
Carbonate as CO ₃	0	0
Chloride.....	76.1	2.15
Sulfate.....	1280	26.7
Calcium.....	257	12.8
Magnesium.....	85.8	7.05
Potassium.....	0.6	0.02
Sodium.....	300	13.1
Major cations.....		33
Major anions.....		33.6
Cation/anion difference.....		1.02 %

C. Neal Schaeffer
Lab Director



2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: GBR
ID: 9010081350
SITE: GBR-24D
LAB NO: F5233

DATE REPORTED: 10/23/90
DATE RECEIVED: 10/08/90
DATE COLLECTED: 10/08/90

Lab pH (s.u.).....	7.89
Lab conductivity, umhos/cm.....	4930
Lab resistivity, ohm-m.....	2.03
Total dissolved solids (180), mg/l..	3730
Total dissolved solids (calc), mg/l.	3580
Total alkalinity as CaCO ₃ , mg/l.....	246
Total acidity as CaCO ₃ , mg/l.....	0
Total hardness as CaCO ₃ , mg/l.....	1790
Sodium absorption ratio.....	4.75

	mg/l	meq/l
Bicarbonate as HCO ₃	300	4.92
Carbonate as CO ₃	0	0
Chloride.....	679	19.2
Sulfate.....	1620	33.7
Calcium.....	578	28.9
Magnesium.....	83.7	6.88
Potassium.....	5.04	0.13
Sodium.....	462	20.1
Major cations.....		56
Major anions.....		57.8
Cation/anion difference.....		1.63 %

C. Neal Schaeffer
Lab Director



Inter-Mountain
Laboratories, Inc.

2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: GBR
ID: 9010081240
SITE: GBR-30
LAB NO: F5232

DATE REPORTED: 10/23/90

DATE RECEIVED: 10/08/90

DATE COLLECTED: 10/08/90

Lab pH (s.u.).....	7.35
Lab conductivity, umhos/cm.....	4600
Lab resistivity, ohm-m.....	2.18
Total dissolved solids (180), mg/l..	3230
Total dissolved solids (calc), mg/l.	3220
Total alkalinity as CaCO ₃ , mg/l.....	250
Total acidity as CaCO ₃ , mg/l.....	0
Total hardness as CaCO ₃ , mg/l.....	1270
Sodium absorption ratio.....	7.7

	mg/l	meq/l
Bicarbonate as HCO ₃	304	4.99
Carbonate as CO ₃	0	0
Chloride.....	584	16.5
Sulfate.....	1400	29.2
Calcium.....	357	17.8
Magnesium.....	90.8	7.47
Potassium.....	2.76	0.07
Sodium.....	630	27.4
Major cations.....		52.8
Major anions.....		50.7
Cation/anion difference.....		1.99 %

C. Neal Schaeffer
Lab Director



Inter-Mountain
Laboratories, Inc.

2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: GBR
ID: 9010081035
SITE: GBR-31
LAB NO: F5230

DATE REPORTED: 10/23/90
DATE RECEIVED: 10/08/90
DATE COLLECTED: 10/08/90

Lab pH (s.u.).....	7.58
Lab conductivity, umhos/cm.....	4670
Lab resistivity, ohm-m.....	2.14
Total dissolved solids (180), mg/l..	3300
Total dissolved solids (calc), mg/l.	3170
Total alkalinity as CaCO ₃ , mg/l.....	291
Total acidity as CaCO ₃ , mg/l.....	0
Total hardness as CaCO ₃ , mg/l.....	1120
Sodium absorption ratio.....	8.2

	mg/l	meq/l
Bicarbonate as HCO ₃	354	5.81
Carbonate as CO ₃	0	0
Chloride.....	584	16.5
Sulfate.....	1410	29.3
Calcium.....	261	13
Magnesium.....	115	9.46
Potassium.....	2.01	0.05
Sodium.....	632	27.5
Major cations.....		50
Major anions.....		51.6
Cation/anion difference.....		1.5 %

C. Neal Schaeffer
Lab Director



Inter-Mountain
Laboratories, Inc.

2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: GBR
ID: 9010081135
SITE: GBR-33
LAB NO: F5231

DATE REPORTED: 10/23/90

DATE RECEIVED: 10/08/90

DATE COLLECTED: 10/08/90

Lab pH (s.u.).....	7.39
Lab conductivity, umhos/cm.....	4740
Lab resistivity, ohm-m.....	2.11
Total dissolved solids (180), mg/l..	3410
Total dissolved solids (calc), mg/l.	3190
Total alkalinity as CaCO ₃ , mg/l.....	321
Total acidity as CaCO ₃ , mg/l.....	0
Total hardness as CaCO ₃ , mg/l.....	1230
Sodium absorption ratio.....	7.32

	mg/l	meq/l
Bicarbonate as HCO ₃	392	6.43
Carbonate as CO ₃	0	0
Chloride.....	533	15
Sulfate.....	1470	30.7
Calcium.....	261	13
Magnesium.....	141	11.6
Potassium.....	2.88	0.07
Sodium.....	590	25.7
Major cations.....		50.4
Major anions.....		52.2
Cation/anion difference.....		1.76 %

C. Neal Schaeffer
Lab Director

Analytical Report
12/19/90

Giant Refining Company

Giant Refining Company
606 E. Highway 64
Farmington, NM 87401

Tim Kinney

Customer Work Identification REFINERY REMEDIATION 9834
Purchase Order Number RFE-9834

Contents:

- 1 Analytical Data Summary
- 2 Sample History
- 3 Comments Summary
- 4 Notes and Definitions

Radian Analytical Services
10395 Old Placerville Road
Sacramento, CA 95827

916-362-5332

Client Services Coordinator: RRMAY

Certified by: Marilyn Melton

Giant Refining Company
 Radian Work Order: S0-10-082

Method: Halocarbons by SW8010 (1)

List: Table 3 analyte list

Sample ID:	901008950	9010081035	9010081135	9010081240
	STRIPPER EFF.	GBR-31	GBR-33	GBR-30
Factor:	1	1	10	1
Results in:	ug/L	ug/L	ug/L	ug/L
	01A	02A	03A	04A
Matrix:	water	water	water	water

	Result	Det. Limit	Result	Det. Limit	Result	Det. Limit	Result	Det. Limit
Bromodichloromethane	ND	0.10	ND	0.10	ND	1.0	ND	0.10
Bromoform	ND	0.50	ND	0.50	ND	5.0	ND	0.50
Bromomethane	ND	1.2	ND	1.2	ND	12	ND	1.2
Carbon tetrachloride	ND	0.12	ND	0.12	ND	1.2	ND	0.12
Chlorobenzene	ND	0.25	ND	0.25	ND	2.5	ND	0.25
Chloroethane	ND	0.52	ND	0.52	ND	5.2	ND	0.52
2-Chloroethylvinylether	ND	0.50	ND	0.50	ND	5.0	ND	0.50
Chloroform	ND	0.10	ND	0.10	ND	1.0	ND	0.10
Chloromethane	ND	0.30	ND	0.30	ND	3.0	ND	0.30
Dibromochloromethane	ND	0.20	ND	0.20	ND	2.0	ND	0.20
1,2-Dichlorobenzene	ND	0.50	ND	0.50	ND	5.0	ND	0.50
1,3-Dichlorobenzene	ND	0.32	ND	0.32	ND	3.2	ND	0.32
1,4-Dichlorobenzene	ND	0.24	ND	0.24	ND	2.4	ND	0.24
1,1-Dichloroethane	ND	0.50	ND	0.50	ND	5.0	ND	0.50
1,2-Dichloroethane	ND	0.10	ND	0.10	ND	1.0	0.18 ca	0.10
1,1-Dichloroethene	ND	0.20	ND	0.20	ND	2.0	ND	0.20
cis-1,2-Dichloroethene	ND	0.20	13 C	0.20	38 C	2.0	ND	0.20
trans-1,2-Dichloroethene	ND	0.20	ND	0.20	ND	2.0	ND	0.20
1,2-Dichloropropane	ND	0.10	ND	0.10	ND	1.0	ND	0.10
cis-1,3-Dichloropropene	ND	0.20	ND	0.20	ND	2.0	ND	0.20
trans-1,3-Dichloropropene	ND	0.34	ND	0.34	ND	3.4	ND	0.34
Methylene chloride	ND	0.40	ND	0.40	ND	4.0	ND	0.40
1,1,2,2-Tetrachloroethane	ND	0.15	ND	0.15	ND	1.5	ND	0.15
Tetrachloroethene	ND	0.10	2.8 C	0.10	ND	1.0	ND	0.10
1,1,1-Trichloroethane	ND	0.20	ND	0.20	ND	2.0	ND	0.20
1,1,2-Trichloroethane	ND	0.20	ND	0.20	ND	2.0	ND	0.20
Trichloroethene	ND	0.20	0.47 ca	0.20	ND	2.0	ND	0.20
Trichlorofluoromethane	ND	0.20	ND	0.20	ND	2.0	ND	0.20
Vinyl chloride	ND	0.20	ND	0.20	ND	2.0	ND	0.20

ND Not detected at specified detection limit

C Confirmed on second column or by GC/MS

ca Est. result less than 5 times detection limit

(1) For a detailed description of flags and technical terms in this report refer to Appendix A in this report.

Giant Refining Company
 Radian Work Order: S0-10-082

Method: Halocarbons by SW8010 (1)

List: Table 3 analyte list

Sample ID:	9010081350	REAGENT BLANK
	GBR-240	
Factor:	5	1
Results in:	ug/L	ug/L
	05A	06A
Matrix:	water	water

	Result	Det. Limit	Result	Det. Limit
Bromodichloromethane	ND	0.50	ND	0.10
Bromoform	ND	2.5	ND	0.50
Bromomethane	ND	5.9	ND	1.2
Carbon tetrachloride	ND	0.60	ND	0.12
Chlorobenzene	ND	1.3	ND	0.25
Chloroethane	ND	2.6	ND	0.52
2-Chloroethylvinylether	ND	2.5	ND	0.50
Chloroform	ND	0.50	ND	0.10
Chloromethane	ND	1.5	ND	0.30
Dibromochloromethane	ND	1.0	ND	0.20
1,2-Dichlorobenzene	ND	2.5	ND	0.50
1,3-Dichlorobenzene	ND	1.6	ND	0.32
1,4-Dichlorobenzene	ND	1.2	ND	0.24
1,1-Dichloroethane	ND	2.5	ND	0.50
1,2-Dichloroethane	44 C	0.50	ND	0.10
1,1-Dichloroethene	ND	1.0	ND	0.20
cis-1,2-Dichloroethene	ND	1.0	ND	0.20
trans-1,2-Dichloroethene	ND	1.0	ND	0.20
1,2-Dichloropropane	ND	0.50	ND	0.10
cis-1,3-Dichloropropene	ND	1.0	ND	0.20
trans-1,3-Dichloropropene	ND	1.7	ND	0.34
Methylene chloride	ND	2.0	ND	0.40
1,1,2,2-Tetrachloroethane	ND	0.75	ND	0.15
Tetrachloroethene	ND	0.50	ND	0.10
1,1,1-Trichloroethane	ND	1.0	ND	0.20
1,1,2-Trichloroethane	ND	1.0	ND	0.20
Trichloroethene	ND	1.0	ND	0.20
Trichlorofluoromethane	ND	1.0	ND	0.20
Vinyl chloride	ND	1.0	ND	0.20

ND Not detected at specified detection limit

C Confirmed on second column or by GC/MS

(1) For a detailed description of flags and technical terms in this report refer to Appendix A in this report.

Giant Refining Company
 Radian Work Order: S0-10-082

Method: Halocarbons by SW8010 (1)

List: Table 3 analyte list

Sample ID:	901008950	9010081035	9010081135	9010081240
	STRIPPER EFF.	GBR-31	GBR-33	GBR-30
Factor:	1	1	10	1
Results in:	ug/L	ug/L	ug/L	ug/L
	01A	02A	03A	04A
Matrix:	water	water	water	water

Surrogate Recovery(%)

1-Bromo-4-fluorobenzene

Control Limits: 40 to 140

Result Det. Limit

145 Q

Result Det. Limit

138

Result Det. Limit

137

Result Det. Limit

123

Q Outside control limits

(1) For a detailed description of flags and technical terms in this report refer to Appendix A in this report.

Giant Refining Company
Radian Work Order: S0-10-082

Method: Halocarbons by SW8010 (1)

List: Table 3 analyte list

Sample ID:	9010081350	REAGENT BLANK
	GBR-240	
Factor:	5	1
Results in:	ug/L	ug/L
	05A	06A
Matrix:	water	water

Surrogate Recovery(%)

1-Bromo-4-fluorobenzene

Control Limits: 40 to 140

Result Det. Limit

123

Result Det. Limit

129

(1) For a detailed description of flags and technical terms in this report refer to Appendix A in this report.

Giant Refining Company
 Radian Work Order: 50-10-082

Method: Aromatics by SW8020 (1)

List: Complete analyte list

Sample ID:	901008950	9010081035	9010081135	9010081240
	STRIPPER EFF.	GBR-31	GBR-33	GBR-30
Factor:	1	1	10	1
Results in:	ug/L	ug/L	ug/L	ug/L
	07A	08A	09A	10A
Matrix:	water	water	water	water

	Result	Det. Limit	Result	Det. Limit	Result	Det. Limit	Result	Det. Limit
Benzene	ND	0.20	ND	0.20	4.6 G _a	2.0	ND	0.20
Chlorobenzene	ND	0.20	0.34 X _a	0.20	11 G	2.0	ND	0.20
1,2-Dichlorobenzene	ND	0.40	1.2 X _a	0.40	ND	4.0	0.86 X _a	0.40
1,3-Dichlorobenzene	ND	0.40	1.8 X _a	0.40	61 X	4.0	ND	0.40
1,4-Dichlorobenzene	0.56 X _a	0.30	1.5 X	0.30	68 G	3.0	2.6 C	0.30
Ethylbenzene	ND	0.20	ND	0.20	220 G	2.0	1.6 C	0.20
Toluene	0.45 G _a	0.20	0.98 G _a	0.20	8.3 C _a	2.0	1.2 C	0.20
Xylenes (total)	0.91 X _a	0.20	0.45 X _a	0.20	310 C	2.0	3.5 X	0.20
<u>Surrogate Recovery(%)</u>								
1-Bromo-4-fluorobenzene	120		75		118		133	
Control Limits: 40 to 140								

ND Not detected at specified detection limit

_a Est. result less than 5 times detection limit

C Confirmed on second column or by GC/MS

X See definition in report narrative

G Indicates an estimated GC value due to interferences.

(1) For a detailed description of flags and technical terms in this report refer to Appendix A in this report.

Giant Refining Company
 Radian Work Order: S0-10-082

Method: Aromatics by SW8020 (1)

List: Complete analyte list

Sample ID:	9010081350	REAGENT BLANK	REAGENT BLANK
	GBR-240		
Factor:	5	1	1
Results in:	ug/L	ug/L	ug/L
	11A	12A	12B
Matrix:	water	water	water

	Result	Det. Limit	Result	Det. Limit	Result	Det. Limit	Result	Det. Limit
Benzene	25 C	1.0	ND	0.20	ND	0.20		
Chlorobenzene	ND	1.0	ND	0.20	ND	0.20		
1,2-Dichlorobenzene	ND	2.0	ND	0.40	ND	0.40		
1,3-Dichlorobenzene	ND	2.0	ND	0.40	ND	0.40		
1,4-Dichlorobenzene	1.7 Xa	1.5	ND	0.30	ND	0.30		
Ethylbenzene	29 C	1.0	ND	0.20	ND	0.20		
Toluene	4.8 Gb	1.0	ND	0.20	ND	0.20		
Xylenes (total)	16 C	1.0	ND	0.20	ND	0.20		
<u>Surrogate Recovery(%)</u>								
1-Bromo-4-fluorobenzene	126		118		127			
Control Limits: 40 to 140								

C Confirmed on second column or by GC/MS

X See definition in report narrative

G Indicates an estimated GC value due to interferences.

ND Not detected at specified detection limit

a Est. result less than 5 times detection limit

(1) For a detailed description of flags and technical terms in this report refer to Appendix A in this report.

Halocarbons by SW8010						
Prepared						
Analyzed	10/19/90	10/19/90	10/19/90	10/19/90	10/19/90	10/19/90
Analyst	MG	MG	MG	MG	MG	WKW
File ID	D210194	D210195	D210196	D210197	D210198	Q210191
Blank ID	Q210191	Q210191	Q210191	Q210191	Q210191	
Instrument	2	2	2	2	2	2
Report as	received	received	received	received	received	received

Giant Refining Company
 Radian Work Order: S0-10-082

Sample Identifications and Dates

Sample ID	901008950	9010081035	9010081135	9010081240	9010081350	REAGENT BLANK
	STRIPPER EF	GBR-31	GBR-33	GBR-30	GBR-24D	
Date Sampled	10/08/90	10/08/90	10/08/90	10/08/90	10/08/90	10/08/90
Date Received	10/09/90	10/09/90	10/09/90	10/09/90	10/09/90	10/09/90
Matrix	water	water	water	water	water	water
	07	08	09	10	11	12

Aromatics by SW8020

Prepared						
Analyzed	10/19/90	10/19/90	10/19/90	10/19/90	10/19/90	10/18/90
Analyst	MG	MG	MG	MG	MG	MG
File ID	E2101823	E2101824	E2101825	E2101826	E210199	R210181
Blank ID	R210181	R210181	R210181	R210181	R210191	
Instrument	2	2	2	2	2	2
Report as	received	received	received	received	received	received

Aromatics by SW8020

Prepared	
Analyzed	10/19/90
Analyst	WKW
File ID	R210191
Blank ID	
Instrument	2
Report as	received

Appendix A

Comments, Notes and Definitions

Giant Refining Company
Radian Work Order: S0-10-082

VOA samples run shortly after midnight are associated with the blank which is run on the previous day within the 24hr period.

The X flag means that the presence of this analyte was not confirmed after analysis on a second column.

There was a large amount of matrix interferences with these samples. Several compounds were reported as estimated values due to significant differences in quantitation between the primary and confirmation analyses. The results of the confirmation analyses are reported below.

Sample ID	Compound	Concentration (ug/L)
-----	-----	-----
901008950 STIPPER EFF.	Toluene	1.1
9010081035 GBR-31	Toluene	2.8
9010081135 GBR-33	Benzene	86
	Chlorobenzene	62
	1,4-Dichlorobenzene	170
	Ethylbenzene	99
9010081350 GBR-24D	Toluene	17

Giant Refining Company
Radian Work Order: S0-10-082

a ALL METHODS EXCEPT CLP

The results which are less than five times the method specified detection limit.

EXPLANATION

Uncertainty of the analysis will increase as the method detection limit is approached. These results should be considered approximate.

C ORGANIC CLP

pesticides require that single component results > 10ng/uL in the final extract be confirmed by GC/MS.

OTHER ORGANIC METHODS

This analysis has been confirmed on a second column or by GC/MS.

EXPLANATION

Most methods of analysis by gas chromatography recommend reanalysis on a second column of dissimilar phase to resolve compounds of interest from interferences that may occur and for analyte confirmation.

G ALL ORGANIC GC METHODS EXCEPT CLP

Indicates an estimated GC value due to interferences.

ND ALL METHODS EXCEPT CLP

This flag is used to denote analytes which are not detected at or above the specified detection limit.

EXPLANATION

The value to the right of the < symbol is the method specified detection limit for the analyte.

Q ALL METHODS EXCEPT CLP

This quality control standard is outside method or laboratory specified control limits.

EXPLANATION

This flag is applied to matrix spike, analytical QC spike, and surrogate recoveries; and to RPD(relative percent difference) values for duplicate analyses and matrix spike/matrix spike duplicate result.

X ALL METHODS EXCEPT INORGANIC CLP

This is a general purpose flag for those situations not covered by the standard flags. The specific definition of this flag is described in the Comments Summary and/or in the case narrative.

Giant Refining Company
Radian Work Order: S0-10-082

TERMS USED IN THIS REPORT:

Analyte - A chemical for which a sample is to be analyzed. The analysis will meet EPA method and QC specifications.

Compound - See Analyte.

Detection Limit - The method specified detection limit, which is the lower limit of quantitation specified by EPA for a method. Radian staff regularly assess their laboratories' method detection limits to verify that they meet or are lower than those specified by EPA. Detection limits which are higher than method limits are based on experimental values at the 99% confidence level. The detection limits for EPA CLP (Contract Laboratory Program) methods are CRQLs (contract required quantitation limits) for organics and CRDLs (contract required detection limits) for inorganics. Note, the detection limit may vary from that specified by EPA based on sample size, dilution or cleanup. (Refer to Factor, below)

EPA Method - The EPA specified method used to perform an analysis. EPA has specified standard methods for analysis of environmental samples. Radian will perform its analyses and accompanying QC tests in conformance with EPA methods unless otherwise specified.

Factor - Default method detection limits are based on analysis of clean water samples. A factor is required to calculate sample specific detection limits based on alternate matrices (soil or water), reporting units, use of cleanup procedures, or dilution of extracts/digestates. For example, extraction or digestion of 10 grams of soil in contrast to 1 liter of water will result in a factor of 100.

Matrix - The sample material. Generally, it will be soil, water, air, oil, or solid waste.

Radian Work Order - The unique Radian identification code assigned to the samples reported in the analytical summary.

Units - ug/L	micrograms per liter (parts per billion); liquids/water
ug/kg	micrograms per kilogram (parts per billion); soils/solids
ug/M3	micrograms per cubic meter; air samples
mg/L	milligrams per liter (parts per million); liquids/water
mg/kg	milligrams per kilogram (parts per million); soils/solids
%	percent; usually used for percent recovery of QC standards
uS/cm	conductance unit; microSiemens/centimeter
mL/hr	milliliters per hour; rate of settlement of matter in water
NTU	turbidity unit; nephelometric turbidity unit
CU	color unit; equal to 1 mg/L of chloroplatinate salt

Analytical Report
12/18/90

Giant Refining Company

Giant Refining Company
606 E. Highway 64
Farmington, NM 87401

Tim Kinney

Customer Work Identification REFINERY REMEDIATION 9834
Purchase Order Number RFE-9834

Contents:

- 1 Analytical Data Summary
- 2 Sample History
- 3 Comments Summary
- 4 Notes and Definitions

Radian Analytical Services
10395 Old Placerville Road
Sacramento, CA 95827

916-362-5332

Client Services Coordinator: RRMAY

Certified by:

Marilyn Melton

Giant Refining Company
Radian Work Order: S0-10-043

Method: Halocarbons by SW8010 (1)

List: Table 3 analyte list

Sample ID:	901004945	9010041010	9010041028	9010041100
	RW-4	RW-6	RW-3	RW-13
Factor:	50	10	20	1
Results in:	ug/L	ug/L	ug/L	ug/L
	01A	02A	03A	04A
Matrix:	water	water	water	water

	Result	Det. Limit	Result	Det. Limit	Result	Det. Limit	Result	Det. Limit
Bromodichloromethane	ND	5.0	ND	1.0	ND	2.0	ND	0.10
Bromoform	ND	25	ND	5.0	ND	10	ND	0.50
Bromomethane	ND	59	ND	12	ND	24	ND	1.2
Carbon tetrachloride	ND	6.0	ND	1.2	ND	2.4	ND	0.12
Chlorobenzene	ND	12	ND	2.5	ND	5.0	ND	0.25
Chloroethane	ND	26	ND	5.2	ND	10	ND	0.52
2-Chloroethylvinylether	ND	25	ND	5.0	ND	10	ND	0.50
Chloroform	ND	5.0	ND	1.0	ND	2.0	ND	0.10
Chloromethane	ND	15	ND	3.0	ND	6.0	ND	0.30
Dibromochloromethane	ND	10	ND	2.0	ND	4.0	ND	0.20
1,2-Dichlorobenzene	ND	25	ND	5.0	ND	10	ND	0.50
1,3-Dichlorobenzene	ND	16	ND	3.2	ND	6.4	ND	0.32
1,4-Dichlorobenzene	ND	12	ND	2.4	ND	4.8	ND	0.24
1,1-Dichloroethane	ND	25	ND	5.0	ND	10	ND	0.50
1,2-Dichloroethane	6.1 Xa	5.0	6.1 C	1.0	4.3 Xa	2.0	4.1 C	0.10
1,1-Dichloroethene	ND	10	ND	2.0	ND	4.0	ND	0.20
cis-1,2-Dichloroethene	25 Xa	10	4.5 Ca	2.0	17 Ca	4.0	ND	0.20
trans-1,2-Dichloroethene	ND	25	ND	5.0	ND	10	ND	0.50
1,2-Dichloroethane	6.1 Xa	5.0	6.1 C	1.0	4.3 Xa	2.0	4.1 C	0.10
1,1-Dichloroethene	ND	10	ND	2.0	ND	4.0	ND	0.20
cis-1,2-Dichloroethene	25 Xa	10	4.5 Ca	2.0	17 Ca	4.0	ND	0.20
trans-1,2-Dichloroethene	ND	10	ND	2.0	ND	4.0	ND	0.20
1,2-Dichloropropane	ND	5.0	ND	1.0	ND	2.0	ND	0.10
cis-1,3-Dichloropropene	ND	10	ND	2.0	ND	4.0	ND	0.20
trans-1,3-Dichloropropene	ND	17	ND	3.4	ND	6.8	ND	0.34
Methylene chloride	22 Xa	20	8.1 Xa	4.0	ND	8.0	0.52 Xa	0.40
1,1,2,2-Tetrachloroethane	ND	7.5	ND	1.5	ND	3.0	ND	0.15
Tetrachloroethene	ND	5.0	1.6 Xa	1.0	ND	2.0	ND	0.10
1,1,1-Trichloroethane	ND	10	ND	2.0	ND	4.0	0.62 Xa	0.20
1,1,2-Trichloroethane	ND	10	ND	2.0	ND	4.0	ND	0.20
Trichloroethene	ND	10	ND	2.0	ND	4.0	ND	0.20
Trichlorofluoromethane	11 Xa	10	ND	2.0	ND	4.0	0.20 Xa	0.20
Vinyl chloride	ND	10	ND	2.0	ND	4.0	ND	0.20

ND Not detected at specified detection limit

X See definition in report narrative

a Est. result less than 5 times detection limit

C Confirmed on second column or by GC/MS

(1) For a detailed description of flags and technical terms in this report refer to Appendix A in this report.

Giant Refining Company
 Radian Work Order: S0-10-043

Method: Halocarbons by SW8010 (1)

List: Table 3 analyte list

Sample ID:	901004945	9010041010	9010041028	9010041100
	RW-4	RW-6	RW-3	RW-13
Factor:	50	10	20	1
Results in:	ug/L	ug/L	ug/L	ug/L
	01A	02A	03A	04A
Matrix:	water	water	water	water

Surrogate Recovery(%)

1-Bromo-4-fluorobenzene

Control Limits: 40 to 140

Result Det. Limit

127

Result Det. Limit

133

Result Det. Limit

124

Result Det. Limit

136

(1) For a detailed description of flags and technical terms in this report refer to Appendix A in this report.

Giant Refining Company
 Radian Work Order: SO-10-043

Method: Halocarbons by SW8010 (1)

List: Table 3 analyte list

Sample ID:	9010041115	9010041125	9010041320	9010041444
	STRIPPER INF.	STRIPPER EFF.	G-BR-17	G-BR-15
Factor:	10	10	10	10
Results in:	ug/L	ug/L	ug/L	ug/L
	05A	06A	07A	08A
Matrix:	water	water	water	water

	Result	Det. Limit	Result	Det. Limit	Result	Det. Limit	Result	Det. Limit
Bromodichloromethane	ND	1.0	13 X	1.0	9.4 X	1.0	ND	1.0
Bromoform	ND	5.0	23 Xa	5.0	21 Xa	5.0	ND	5.0
Bromomethane	ND	12	ND	12	ND	12	ND	12
Carbon tetrachloride	ND	1.2	16 X	1.2	14 X	1.2	ND	1.2
Chlorobenzene	ND	2.5	16 X	2.5	13 X	2.5	ND	2.5
Chloroethane	ND	5.2	ND	5.2	ND	5.2	ND	5.2
2-Chloroethylvinylether	ND	5.0	ND	5.0	ND	5.0	ND	5.0
Chloroform	ND	1.0	10 X	1.0	8.2 X	1.0	ND	1.0
Chloromethane	ND	3.0	ND	3.0	ND	3.0	ND	3.0
Dibromochloromethane	ND	2.0	14 Y	2.0	13 Y	2.0	ND	2.0
1,2-Dichlorobenzene	ND	5.0	ND	5.0	ND	5.0	ND	5.0
1,3-Dichlorobenzene	ND	3.2	23 X	3.2	23 X	3.2	ND	3.2
1,4-Dichlorobenzene	ND	2.4	26 X	2.4	25 X	2.4	ND	2.4
1,1-Dichloroethane	ND	5.0	13 Xa	5.0	11 Xa	5.0	ND	5.0
1,2-Dichloroethane	2.7 Xa	1.0	13 X	1.0	10 X	1.0	52 C	1.0
1,1-Dichloroethene	ND	2.0	14 X	2.0	11 X	2.0	ND	2.0
cis-1,2-Dichloroethene	16 X	2.0	13 X	2.0	11 X	2.0	ND	2.0
trans-1,2-Dichloroethene	ND	2.0	ND	2.0	ND	2.0	ND	2.0
1,2-Dichloropropane	ND	1.0	6.7 X	1.0	5.6 X	1.0	ND	1.0
cis-1,3-Dichloropropene	ND	2.0	19 X	2.0	18 X	2.0	ND	2.0
trans-1,3-Dichloropropene	ND	3.4	14 Ya	3.4	13 Ya	3.4	ND	3.4
Methylene chloride	4.9 Xa	4.0	9.5 Xa	4.0	11 Xa	4.0	ND	4.0
1,1,2,2-Tetrachloroethane	ND	1.5	ND	1.5	ND	1.5	ND	1.5
Tetrachloroethene	1.5 Xa	1.0	16 X	1.0	15 X	1.0	ND	1.0
1,1,1-Trichloroethane	2.5 Xa	2.0	20 X	2.0	17 X	2.0	ND	2.0
1,1,2-Trichloroethane	ND	2.0	ND	2.0	ND	2.0	ND	2.0
Trichloroethene	2.3 Xa	2.0	9.9 Xa	2.0	9.5 Xa	2.0	ND	2.0
Trichlorofluoromethane	3.0 Xa	2.0	22 X	2.0	18 X	2.0	ND	2.0
Vinyl chloride	ND	2.0	ND	2.0	ND	2.0	ND	2.0

ND Not detected at specified detection limit

X See definition in report narrative

a Est. result less than 5 times detection limit

Y See definition in report narrative

C Confirmed on second column or by GC/MS

(1) For a detailed description of flags and technical terms in this report refer to Appendix A in this report.

Giant Refining Company
 Radian Work Order: S0-10-043

Method: Halocarbons by SW8010 (1)

List: Table 3 analyte list

Sample ID:	9010041115	9010041125	9010041320	9010041444
	STRIPPER INF.	STRIPPER EFF.	G-BR-17	G-BR-15
Factor:	10	10	10	10
Results in:	ug/L	ug/L	ug/L	ug/L
	05A	06A	07A	08A
Matrix:	water	water	water	water

Surrogate Recovery(%)

1-Bromo-4-fluorobenzene

Control Limits: 40 to 140

Result Det. Limit

123

Result Det. Limit

127

Result Det. Limit

120

Result Det. Limit

124

(1) For a detailed description of flags and technical terms in this report refer to Appendix A in this report.

Giant Refining Company
 Radian Work Order: S0-10-043

Method: Halocarbons by SW8010 (1)

List: Table 3 analyte list

Sample ID:

REAGENT BLANK

Factor:

1

Results in:

ug/L

09A

Matrix:

water

	Result	Det. Limit
Bromodichloromethane	ND	0.10
Bromoform	ND	0.50
Bromomethane	ND	1.2
Carbon tetrachloride	ND	0.12
Chlorobenzene	ND	0.25
Chloroethane	ND	0.52
2-Chloroethylvinylether	ND	0.50
Chloroform	ND	0.10
Chloromethane	ND	0.30
Dibromochloromethane	ND	0.20
1,2-Dichlorobenzene	ND	0.50
1,3-Dichlorobenzene	ND	0.32
1,4-Dichlorobenzene	ND	0.24
1,1-Dichloroethane	ND	0.50
1,2-Dichloroethane	ND	0.10
1,1-Dichloroethene	ND	0.20
cis-1,2-Dichloroethene	ND	0.20
trans-1,2-Dichloroethene	ND	0.20
1,2-Dichloropropane	ND	0.10
cis-1,3-Dichloropropene	ND	0.20
trans-1,3-Dichloropropene	ND	0.34
Methylene chloride	ND	0.40
1,1,2,2-Tetrachloroethane	ND	0.15
Tetrachloroethene	ND	0.10
1,1,1-Trichloroethane	ND	0.20
1,1,2-Trichloroethane	ND	0.20
Trichloroethene	ND	0.20
Trichlorofluoromethane	ND	0.20
Vinyl chloride	ND	0.20

ND Not detected at specified detection limit

(1) For a detailed description of flags and technical terms in this report refer to Appendix A in this report.

Giant Refining Company
 Radian Work Order: S0-10-043

Method: Halocarbons by SW8010 (1)

List: Table 3 analyte list

Sample ID:

REAGENT BLANK

Factor:

1

Results in:

ug/L

09A

Matrix:

water

	Result	Det. Limit			
Surrogate Recovery(%)					
1-Bromo-4-fluorobenzene	98				
Control Limits: 40 to 140					

(1) For a detailed description of flags and technical terms in this report refer to Appendix A in this report.

Giant Refining Company
 Radian Work Order: S0-10-043

Method: Aromatics by SW8020 (1)

List: Complete analyte list

Sample ID:	901004945	9010041010	9010041028	9010041100
	RW-4	RW-6	RW-3	RW-13
Factor:	50	10	20	1
Results in:	ug/L	ug/L	ug/L	ug/L
	10A	11A	12A	13A
Matrix:	water	water	water	water

	Result	Det. Limit	Result	Det. Limit	Result	Det. Limit	Result	Det. Limit
Benzene	770 C	10	300 C	2.0	490 C	4.0	ND	0.20
Chlorobenzene	ND	10	ND	2.0	5.8 X ^a	4.0	ND	0.20
1,2-Dichlorobenzene	ND	20	ND	4.0	ND	8.0	ND	0.40
1,3-Dichlorobenzene	ND	20	ND	4.0	ND	8.0	ND	0.40
1,4-Dichlorobenzene	ND	15	20 G	3.0	290 G	6.0	ND	0.30
Ethylbenzene	160 C	10	47 C	2.0	420 C	4.0	ND	0.20
Toluene	ND	10	ND	2.0	ND	4.0	2.0 X	0.20
Xylenes (total)	ND	10	6.8 G ^a	2.0	710 C	4.0	ND	0.20
Surrogate Recovery(%)								
1-Bromo-4-fluorobenzene	117		122		97		112	
Control Limits: 40 to 140								

C Confirmed on second column or by GC/MS

ND Not detected at specified detection limit

G Indicates an estimated GC value due to interferences.

^a Est. result less than 5 times detection limit

X See definition in report narrative

(1) For a detailed description of flags and technical terms in this report refer to Appendix A in this report.

Giant Refining Company
 Radian Work Order: S0-10-043

Method: Aromatics by SW8020 (1)

List: Complete analyte list

Sample ID:	9010041115	9010041125	9010041320	9010041444
	STRIPPER INF.	STRIPPER EFF.	G-BR-17	G-BR-15
Factor:	10	10	10	10
Results in:	ug/L	ug/L	ug/L	ug/L
	14A	15A	16A	17A
Matrix:	water	water	water	water

	Result	Det. Limit	Result	Det. Limit	Result	Det. Limit	Result	Det. Limit
Benzene	60 C	2.0	5.9 Xa	2.0	4.6 Xa	2.0	87 C	2.0
Chlorobenzene	4.5 Xa	2.0	14 X	2.0	13 X	2.0	ND	2.0
1,2-Dichlorobenzene	ND	4.0	ND	4.0	4.1 Xa	4.0	ND	4.0
1,3-Dichlorobenzene	ND	4.0	19 Ga	4.0	19 Xa	4.0	ND	4.0
1,4-Dichlorobenzene	100 G	3.0	20 G	3.0	11 Xa	3.0	ND	3.0
Ethylbenzene	ND	2.0	3.0 Ca	2.0	7.8 Xa	2.0	ND	2.0
Toluene	3.0 Ga	2.0	6.5 Ga	2.0	7.2 Ca	2.0	ND	2.0
Xylenes (total)	140 C	2.0	35 G	2.0	35 X	2.0	ND	2.0
 Surrogate Recovery(%)								
1-Bromo-4-fluorobenzene	101		106		110		105	
Control Limits: 40 to 140								

C Confirmed on second column or by GC/MS

X See definition in report narrative

a Est. result less than 5 times detection limit

ND Not detected at specified detection limit

G Indicates an estimated GC value due to interferences.

(1) For a detailed description of flags and technical terms in this report refer to Appendix A in this report.

Giant Refining Company
 Radian Work Order: S0-10-043

Method: Aromatics by SW8020 (1)

List: Complete analyte list

Sample ID: REAGENT BLANK

Factor: 1

Results in: ug/L

18A

Matrix: water

	Result	Det. Limit	Result	Det. Limit	Result	Det. Limit	Result	Det. Limit
Benzene	ND	0.20						
Chlorobenzene	ND	0.20						
1,2-Dichlorobenzene	ND	0.40						
1,3-Dichlorobenzene	ND	0.40						
1,4-Dichlorobenzene	ND	0.30						
Ethylbenzene	ND	0.20						
Toluene	ND	0.20						
Xylenes (total)	ND	0.20						
Surrogate Recovery(%)								
1-Bromo-4-fluorobenzene	81							
Control Limits: 40 to 140								

ND Not detected at specified detection limit

(1) For a detailed description of flags and technical terms in this report refer to Appendix A in this report.

Giant Refining Company
Radian Work Order: S0-10-043

Sample Identifications and Dates

Sample ID	901004945	9010041010	9010041028	9010041100	9010041115	9010041125
	RW-4	RW-6	RW-3	RW-13	STRIPPER INF.	STRIPPER EFF.
Date Sampled	10/04/90	10/04/90	10/04/90	10/04/90	10/04/90	10/04/90
Date Received	10/05/90	10/05/90	10/05/90	10/05/90	10/05/90	10/05/90
Matrix	water	water	water	water	water	water
	01	02	03	04	05	06

Halocarbons by SW8010						
Prepared						
Analyzed	10/18/90	10/18/90	10/18/90	10/18/90	10/18/90	10/18/90
Analyst	WKW	WKW	WKW	WKW	WKW	WKW
File ID	DB101812	DB10185	DB10186	DB10187	DB10188	DB10189
Blank ID	QB10181	QB10181	QB10181	QB10181	QB10181	QB10181
Instrument	B	B	B	B	B	B
Report as	received	received	received	received	received	received

Giant Refining Company
 Radian Work Order: S0-10-043

Sample Identifications and Dates

Sample ID	9010041320	9010041444	REAGENT BLANK	901004945	9010041010	9010041028
	G-BR-17	G-BR-15		RW-4	RW-6	RW-3
Date Sampled	10/04/90	10/04/90		10/04/90	10/04/90	10/04/90
Date Received	10/05/90	10/05/90	10/05/90	10/05/90	10/05/90	10/05/90
Matrix	water	water	water	water	water	water
	07	08	09	10	11	12

Halocarbons by SW8010

Prepared			
Analyzed	10/18/90	10/18/90	10/18/90
Analyst	WKW	WKW	WKW
File ID	DB101810	DB101811	QB10181
Blank ID	QB10181	QB10181	
Instrument	B	B	B
Report as	received	received	received

Aromatics by SW8020

Prepared			
Analyzed			10/18/90
Analyst			WKW
File ID			EB101812
Blank ID			RB10181
Instrument			B
Report as			received

Giant Refining Company
Radian Work Order: S0-10-043

Sample ID	9010041100	9010041115	9010041125	9010041320	9010041444	REAGENT BLANK
	RW-13	STRIPPER INF.	STRIPPER EFF.	G-BR-17	G-BR-15	
Date Sampled	10/04/90	10/04/90	10/04/90	10/04/90	10/04/90	
Date Received	10/05/90	10/05/90	10/05/90	10/05/90	10/05/90	10/05/90
Matrix	water	water	water	water	water	water
	13	14	15	16	17	18

received

Appendix A

Comments, Notes and Definitions

Giant Refining Company
Radian Work Order: S0-10-043

The "X" flag indicates that the presence of the analyte was not confirmed after analysis on a second column.

The "G" flag indicates an estimated value due to significant difference between the quantitation of the primary and secondary columns. The concentrations determined on the secondary column for analytes with "G" flags are as follows:

9010041010 RW-6	1,4-Dichlorobenzene = 6.4 ug/L EPA Method 8020
	Xylenes = 16 ug/L
9010041028 RW-3	1,4-Dichlorobenzene = 63 ug/L EPA Method 8020
9010041115 STRIPPER-INF	1,4-Dichlorobenzene = 28 ug/L EPA Method 8020
	Toluene = 11 ug/L
9010041125 STRIPPER-EFF	1,3-Dichlorobenzene = 6.1 ug/L EPA Method 8020
	Toluene = 14 ug/L
	Xylenes = 15 ug/L

The "Y" flag indicates that the two analytes, Dibromochloromethane and trans-1,3-Dichloropropene, co-elute on the primary column. Neither compound was confirmed on the secondary column, thus, half of the concentration found was reported for each analyte.

Giant Refining Company
Radian Work Order: S0-10-043

D ALL METHODS EXCEPT CLP

The results which are less than five times the method specified detection limit.

EXPLANATION

Uncertainty of the analysis will increase as the method detection limit is approached. These results should be considered approximate.

C ORGANIC CLP

pesticides require that single component results > 10ng/uL in the final extract be confirmed by GC/MS.

OTHER ORGANIC METHODS

This analysis has been confirmed on a second column or by GC/MS.

EXPLANATION

Most methods of analysis by gas chromatography recommend reanalysis on a second column of dissimilar phase to resolve compounds of interest from interferences that may occur and for analyte confirmation.

G ALL ORGANIC GC METHODS EXCEPT CLP

Indicates an estimated GC value due to interferences.

ND ALL METHODS EXCEPT CLP

This flag is used to denote analytes which are not detected at or above the specified detection limit.

EXPLANATION

The value to the right of the < symbol is the method specified detection limit for the analyte.

X ALL METHODS EXCEPT INORGANIC CLP

This is a general purpose flag for those situations not covered by the standard flags. The specific definition of this flag is described in the Comments Summary and/or in the case narrative.

Y ALL METHODS EXCEPT INORGANIC CLP

This is a general purpose flag to be used after the X flag.

Giant Refining Company
Radian Work Order: S0-10-043

TERMS USED IN THIS REPORT:

Analyte - A chemical for which a sample is to be analyzed. The analysis will meet EPA method and QC specifications.

Compound - See Analyte.

Detection Limit - The method specified detection limit, which is the lower limit of quantitation specified by EPA for a method. Radian staff regularly assess their laboratories' method detection limits to verify that they meet or are lower than those specified by EPA. Detection limits which are higher than method limits are based on experimental values at the 99% confidence level. The detection limits for EPA CLP (Contract Laboratory Program) methods are CRQLs (contract required quantitation limits) for organics and CRDLs (contract required detection limits) for inorganics. Note, the detection limit may vary from that specified by EPA based on sample size, dilution or cleanup. (Refer to Factor, below)

EPA Method - The EPA specified method used to perform an analysis. EPA has specified standard methods for analysis of environmental samples. Radian will perform its analyses and accompanying QC tests in conformance with EPA methods unless otherwise specified.

Factor - Default method detection limits are based on analysis of clean water samples. A factor is required to calculate sample specific detection limits based on alternate matrices (soil or water), reporting units, use of cleanup procedures, or dilution of extracts/digestates. For example, extraction or digestion of 10 grams of soil in contrast to 1 liter of water will result in a factor of 100.

Matrix - The sample material. Generally, it will be soil, water, air, oil, or solid waste.

Radian Work Order - The unique Radian identification code assigned to the samples reported in the analytical summary.

Units - ug/L	micrograms per liter (parts per billion); liquids/water
ug/kg	micrograms per kilogram (parts per billion); soils/solids
ug/M3	micrograms per cubic meter; air samples
mg/L	milligrams per liter (parts per million); liquids/water
mg/kg	milligrams per kilogram (parts per million); soils/solids
%	percent; usually used for percent recovery of QC standards
uS/cm	conductance unit; microSiemens/centimeter
mL/hr	milliliters per hour; rate of settlement of matter in water
NTU	turbidity unit; nephelometric turbidity unit
CU	color unit; equal to 1 mg/L of chloroplatinate salt

Analytical Report
12/17/90

Giant Refining Co.

Giant Refining Co.
606 E. Highway 64
Farmington, NM 87401

Tim Kinney

Customer Work Identification Giant Refinery
Purchase Order Number RFE-9834

Contents:

- 1 Analytical Data Summary
- 2 Sample History
- 3 Comments Summary
- 4 Notes and Definitions

Radian Analytical Services
8501 Mo-Pac Boulevard
P. O. Box 201088
Austin, TX 78720-1088

512/454-4797

Client Services Coordinator: WLBROWN

Certified by:

Clellid Maysen

Giant Refining Co.
 Radian Work Order: 90-10-120

Method: SW8310 PAHs by HPLC (1)

List: 8310 Method analytes

Sample ID:	901004945 RW-4	9010041010 RW-	9010041028 RW-	Reagent Blank
		-6	-3	
Factor:	4.8	4.9	4.8	1
Results in:	ug/L	ug/L	ug/L	ug/L
	01A	02A	03A	04A
Matrix:	water	water	water	water

	Result	Det. Limit	Result	Det. Limit	Result	Det. Limit	Result	Det. Limit
Acenaphthene	ND	8.6	ND	8.8	ND	8.6	ND	1.8
Acenaphthylene	ND	11	ND	11	ND	11	ND	2.3
Anthracene	ND	3.2	ND	3.2	ND	3.2	ND	0.66
Benzo(a)anthracene	ND	0.062	ND	0.064	0.15 @	0.062	ND	0.013
Benzo(a)pyrene	ND	0.11	ND	0.11	ND	0.11	ND	0.023
Benzo(b)fluoranthene	ND	0.086	ND	0.088	ND	0.086	ND	0.018
Benzo(g,h,i)perylene	ND	0.36	ND	0.37	ND	0.36	ND	0.076
Benzo(k)fluoranthene	ND	0.082	ND	0.083	ND	0.082	ND	0.017
Chrysene	ND	0.72	ND	0.74	ND	0.72	ND	0.15
Dibenzo(a,h)anthracene	ND	0.14	ND	0.15	ND	0.14	ND	0.030
Fluoranthene	ND	1.0	ND	1.0	5.4	1.0	ND	0.21
Fluorene	3.2 @	1.0	ND	1.0	6.8	1.0	ND	0.21
Indeno(1,2,3-cd)pyrene	ND	0.21	ND	0.21	ND	0.21	ND	0.043
Naphthalene	ND	8.6	ND	8.8	57	8.6	ND	1.8
Phenanthrene	5.5 @	3.1	ND	3.1	45	3.1	ND	0.64
Pyrene	ND	1.3	ND	1.3	1.4 @	1.3	ND	0.27
<u>Surrogate Recovery(%)</u>								
Terphenyl-d14	168 Q		177 Q		193 Q		107	
Control Limits: 24 to 146								

ND Not detected at specified detection limit

@ Est. result less than 5 times detection limit

Q Outside control limits

(1) For a detailed description of flags and technical terms in this report refer to Appendix A in this report.

Giant Refining Co.
 Radian Work Order: 90-10-120

Sample Identifications and Dates

Sample ID	901004945 RW-4	9010041010 RW-	9010041028 RW-	Reagent Blank
	-6	-3		
Date Sampled	10/04/90	10/04/90	10/04/90	
Date Received	10/09/90	10/09/90	10/09/90	10/09/90
Matrix	water	water	water	water
	01	02	03	04

SW8310 PAHs by HPLC

	10/11/90	10/11/90	10/11/90	10/12/90
Prepared	10/11/90	10/11/90	10/11/90	10/12/90
Analyzed	11/18/90	11/18/90	11/19/90	11/18/90
Analyst	TLS	TLS	TLS	TLS
File ID	B&C11187	B&C11188	B&C11189	B&C11183
Blank ID	B&C11183	B&C11183	B&C11183	B&C11183
Instrument	HPLC2	HPLC2	HPLC2	HPLC2
Report as	received	received	received	received

Appendix A

Comments, Notes and Definitions

Giant Refining Co.
Radian Work Order: 90-10-120

Q ALL METHODS EXCEPT CLP

The results which are less than five times the method specified detection limit.

EXPLANATION

Uncertainty of the analysis will increase as the method detection limit is approached. These results should be considered approximate.

ND ALL METHODS EXCEPT CLP

This flag is used to denote analytes which are not detected at or above the specified detection limit.

EXPLANATION

The value to the right of the < symbol is the method specified detection limit for the analyte.

Q ALL METHODS EXCEPT CLP

This quality control standard is outside method or laboratory specified control limits.

EXPLANATION

This flag is applied to matrix spike, analytical QC spike, and surrogate recoveries; and to RPD(relative percent difference) values for duplicate analyses and matrix spike/matrix spike duplicate result.

Giant Refining Co.
Radian Work Order: 90-10-120

TERMS USED IN THIS REPORT:

Analyte - A chemical for which a sample is to be analyzed. The analysis will meet EPA method and QC specifications.

Compound - See Analyte.

Detection Limit - The method specified detection limit, which is the lower limit of quantitation specified by EPA for a method. Radian staff regularly assess their laboratories' method detection limits to verify that they meet or are lower than those specified by EPA. Detection limits which are higher than method limits are based on experimental values at the 99% confidence level. The detection limits for EPA CLP (Contract Laboratory Program) methods are CRQLs (contract required quantitation limits) for organics and CRDLs (contract required detection limits) for inorganics. Note, the detection limit may vary from that specified by EPA based on sample size, dilution or cleanup. (Refer to Factor, below)

EPA Method - The EPA specified method used to perform an analysis. EPA has specified standard methods for analysis of environmental samples. Radian will perform its analyses and accompanying QC tests in conformance with EPA methods unless otherwise specified.

Factor - Default method detection limits are based on analysis of clean water samples. A factor is required to calculate sample specific detection limits based on alternate matrices (soil or water), reporting units, use of cleanup procedures, or dilution of extracts/digestates. For example, extraction or digestion of 10 grams of soil in contrast to 1 liter of water will result in a factor of 100.

Matrix - The sample material. Generally, it will be soil, water, air, oil, or solid waste.

Radian Work Order - The unique Radian identification code assigned to the samples reported in the analytical summary.

Units - ug/L	micrograms per liter (parts per billion);liquids/water
ug/kg	micrograms per kilogram (parts per billion); soils/solids
ug/M3	micrograms per cubic meter; air samples
mg/L	milligrams per liter (parts per million);liquids/water
mg/kg	milligrams per kilogram (parts per million);soils/solids
%	percent; usually used for percent recovery of QC standards
uS/cm	conductance unit; microSiemens/centimeter
mL/hr	milliliters per hour; rate of settlement of matter in water
NTU	turbidity unit; nephelometric turbidity unit
CU	color unit; equal to 1 mg/L of chloroplatinate salt

Analytical Report
12/12/90

Giant Refining Company

Giant Refining Company
606 E. Highway 64
Farmington, NM 87401

Tim Kinney

Customer Work Identification service station 9003-39
Purchase Order Number RFE-9834

Contents:

- 1 Analytical Data Summary
- 2 Sample History
- 3 Comments Summary
- 4 Notes and Definitions

Radian Analytical Services
10395 Old Placerville Road
Sacramento, CA 95827

916-362-5332

Client Services Coordinator: RRMAY

Certified by:

Marilyn Melton

Giant Refining Company
 Radian Work Order: S0-11-025

Method: Halocarbons by SW8010 (1)

List: Table 3 analyte list

Sample ID:	901105950	9011051002	REAGENT BLANK	REAGENT BLANK
	STRIPPER INF.	STRIPPER EFF.		
Factor:	1	1	1	1
Results in:	ug/L	ug/L	ug/L	ug/L
	01A	02A	03A	03B
Matrix:	water	water	water	water

	Result	Det. Limit	Result	Det. Limit	Result	Det. Limit	Result	Det. Limit
Bromodichloromethane	ND	0.10	ND	0.10	ND	0.10	ND	0.10
Bromoform	ND	0.50	ND	0.50	ND	0.50	ND	0.50
Bromomethane	ND	1.2	ND	1.2	ND	1.2	ND	1.2
Carbon tetrachloride	ND	0.12	ND	0.12	ND	0.12	ND	0.12
Chlorobenzene	ND	0.25	ND	0.25	ND	0.25	ND	0.25
Chloroethane	ND	0.52	ND	0.52	ND	0.52	ND	0.52
2-Chloroethylvinylether	ND	0.50	ND	0.50	ND	0.50	ND	0.50
Chloroform	ND	0.10	ND	0.10	ND	0.10	ND	0.10
Chloromethane	ND	0.30	ND	0.30	ND	0.30	ND	0.30
Dibromochloromethane	ND	0.20	ND	0.20	ND	0.20	ND	0.20
1,2-Dichlorobenzene	ND	0.50	ND	0.50	ND	0.50	ND	0.50
1,3-Dichlorobenzene	ND	0.32	ND	0.32	ND	0.32	ND	0.32
1,4-Dichlorobenzene	ND	0.24	ND	0.24	ND	0.24	ND	0.24
1,1-Dichloroethane	ND	0.50	ND	0.50	ND	0.50	ND	0.50
1,2-Dichloroethane	ND	0.10	ND	0.10	ND	0.10	ND	0.10
1,1-Dichloroethene	ND	0.20	ND	0.20	ND	0.20	ND	0.20
cis-1,2-Dichloroethene	0.66 ca	0.20	ND	0.20	ND	0.20	ND	0.20
trans-1,2-Dichloroethene	ND	0.20	ND	0.20	ND	0.20	ND	0.20
1,2-Dichloropropane	ND	0.10	ND	0.10	ND	0.10	ND	0.10
cis-1,3-Dichloropropene	ND	0.20	ND	0.20	ND	0.20	ND	0.20
trans-1,3-Dichloropropene	ND	0.34	ND	0.34	ND	0.34	ND	0.34
Methylene chloride	ND	0.40	ND	0.40	ND	0.40	ND	0.40
1,1,2,2-Tetrachloroethane	ND	0.15	ND	0.15	ND	0.15	ND	0.15
Tetrachloroethene	0.31 ca	0.10	ND	0.10	ND	0.10	ND	0.10
1,1,1-Trichloroethane	ND	0.20	ND	0.20	ND	0.20	ND	0.20
1,1,2-Trichloroethane	ND	0.20	ND	0.20	ND	0.20	ND	0.20
Trichloroethene	ND	0.20	ND	0.20	ND	0.20	ND	0.20
Trichlorofluoromethane	ND	0.20	0.34 xa	0.20	ND	0.20	ND	0.20
Vinyl chloride	ND	0.20	ND	0.20	ND	0.20	ND	0.20

 ND Not detected at specified detection limit
 ca Est. result less than 5 times detection limit

 C Confirmed on second column or by GC/MS
 X See definition in report narrative

(1) For a detailed description of flags and technical terms in this report refer to Appendix A in this report.

Giant Refining Company
 Radian Work Order: S0-11-025

Method: Halocarbons by SW8010 (1)

List: Table 3 analyte list

Sample ID:	901105950 STRIPPER INF.	9011051002 STRIPPER EFF.	REAGENT BLANK	REAGENT BLANK
Factor:	1	1	1	1
Results in:	ug/L	ug/L	ug/L	ug/L
	01A	02A	03A	03B
Matrix:	water	water	water	water

Surrogate Recovery(%)

1-Bromo-4-fluorobenzene

Control Limits: 40 to 140

Result Det. Limit

127

Result Det. Limit

132

Result Det. Limit

129

Result Det. Limit

133

(1) For a detailed description of flags and technical terms in this report refer to Appendix A in this report.

Giant Refining Company
 Radian Work Order: S0-11-025

Method: Aromatics by SW8020 (1)

List: Complete analyte list

Sample ID:	901105950	9011051002	REAGENT BLANK
	STRIPPER INF.	STRIPPER EFF.	
Factor:	1	1	1
Results in:	ug/L	ug/L	ug/L
	04A	05A	06A
Matrix:	water	water	water

	Result	Det. Limit	Result	Det. Limit	Result	Det. Limit
Benzene	5.2 C	0.20	ND	0.20	ND	0.20
Chlorobenzene	ND	0.20	ND	0.20	ND	0.20
1,2-Dichlorobenzene	ND	0.40	ND	0.40	ND	0.40
1,3-Dichlorobenzene	ND	0.40	ND	0.40	ND	0.40
1,4-Dichlorobenzene	2.3 C	0.30	ND	0.30	ND	0.30
Ethylbenzene	0.42 G@	0.20	ND	0.20	ND	0.20
Toluene	0.25 C@	0.20	0.29 X@	0.20	ND	0.20
Xylenes (total)	1.7 C	0.20	0.48 C@	0.20	ND	0.20
<u>Surrogate Recovery(%)</u>						
1-Bromo-4-fluorobenzene	119		128		129	
Control Limits: 40 to 140						

C Confirmed on second column or by GC/MS

ND Not detected at specified detection limit

G Indicates an estimated GC value due to interferences.

@ Est. result less than 5 times detection limit

X See definition in report narrative

(1) For a detailed description of flags and technical terms in this report refer to Appendix A in this report.

Giant Refining Company
 Radian Work Order: S0-11-025

Sample Identifications and Dates

Sample ID	901105950	9011051002	REAGENT BLANK	901105950	9011051002	REAGENT BLANK
	STRIPPER IN	STRIPPER EFF.		STRIPPER INF.	STRIPPER EFF.	
Date Sampled	11/05/90	11/05/90		11/05/90	11/05/90	
Date Received	11/06/90	11/06/90	11/06/90	11/06/90	11/06/90	11/06/90
Matrix	water	water	water	water	water	water
	01	02	03	04	05	06

Halocarbons by SW8010

Prepared			
Analyzed	11/12/90	11/11/90	11/12/90
Analyst	WKW	WKW	WKW
File ID	E111213	A11119	E11121
Blank ID	E11121	A11111	
Instrument	2	B	2
Report as	received	received	received

Halocarbons by SW8010

Prepared	
Analyzed	11/11/90
Analyst	WKW
File ID	A11111
Blank ID	
Instrument	B
Report as	received

Aromatics by SW8020

Prepared			
Analyzed			
Analyst			
File ID			
Blank ID			
Instrument			
Report as			

	11/11/90	11/11/90	11/11/90
	WKW	WKW	WKW
	B11118	B11119	B11111
	B11111	B11111	
	B	B	B
	received	received	received

Appendix A

Comments, Notes and Definitions

Giant Refining Company
Radian Work Order: S0-11-025

The "X" flag indicates that the presence of the analyte was not confirmed after analysis on a second column.

The "G" flag indicates an estimated value due to a significant difference in quantitation between the primary and secondary columns. The concentrations determined on the secondary column for analytes with "G" flags are as follows:

901105950	Ethylbenzene	0.98 ug/L	EPA Method 8020
-----------	--------------	-----------	-----------------

Giant Refining Company
Radian Work Order: S0-11-025

a ALL METHODS EXCEPT CLP

The results which are less than five times the method specified detection limit.

EXPLANATION

Uncertainty of the analysis will increase as the method detection limit is approached. These results should be considered approximate.

C ORGANIC CLP

pesticides require that single component results > 10ng/uL in the final extract be confirmed by GC/MS.

OTHER ORGANIC METHODS

This analysis has been confirmed on a second column or by GC/MS.

EXPLANATION

Most methods of analysis by gas chromatography recommend reanalysis on a second column of dissimilar phase to resolve compounds of interest from interferences that may occur and for analyte confirmation.

G ALL ORGANIC GC METHODS EXCEPT CLP

Indicates an estimated GC value due to interferences.

ND ALL METHODS EXCEPT CLP

This flag is used to denote analytes which are not detected at or above the specified detection limit.

EXPLANATION

The value to the right of the < symbol is the method specified detection limit for the analyte.

X ALL METHODS EXCEPT INORGANIC CLP

This is a general purpose flag for those situations not covered by the standard flags. The specific definition of this flag is described in the Comments Summary and/or in the case narrative.

Giant Refining Company
Radian Work Order: S0-11-025

TERMS USED IN THIS REPORT:

Analyte - A chemical for which a sample is to be analyzed. The analysis will meet EPA method and QC specifications.

Compound - See Analyte.

Detection Limit - The method specified detection limit, which is the lower limit of quantitation specified by EPA for a method. Radian staff regularly assess their laboratories' method detection limits to verify that they meet or are lower than those specified by EPA. Detection limits which are higher than method limits are based on experimental values at the 99% confidence level. The detection limits for EPA CLP (Contract Laboratory Program) methods are CRQLs (contract required quantitation limits) for organics and CRDLs (contract required detection limits) for inorganics. Note, the detection limit may vary from that specified by EPA based on sample size, dilution or cleanup. (Refer to Factor, below)

EPA Method - The EPA specified method used to perform an analysis. EPA has specified standard methods for analysis of environmental samples. Radian will perform its analyses and accompanying QC tests in conformance with EPA methods unless otherwise specified.

Factor - Default method detection limits are based on analysis of clean water samples. A factor is required to calculate sample specific detection limits based on alternate matrices (soil or water), reporting units, use of cleanup procedures, or dilution of extracts/digestates. For example, extraction or digestion of 10 grams of soil in contrast to 1 liter of water will result in a factor of 100.

Matrix - The sample material. Generally, it will be soil, water, air, oil, or solid waste.

Radian Work Order - The unique Radian identification code assigned to the samples reported in the analytical summary.

Units - ug/L	micrograms per liter (parts per billion); liquids/water
ug/kg	micrograms per kilogram (parts per billion); soils/solids
ug/M3	micrograms per cubic meter; air samples
mg/L	milligrams per liter (parts per million); liquids/water
mg/kg	milligrams per kilogram (parts per million); soils/solids
%	percent; usually used for percent recovery of QC standards
uS/cm	conductance unit; microSiemens/centimeter
mL/hr	milliliters per hour; rate of settlement of matter in water
NTU	turbidity unit; nephelometric turbidity unit
CU	color unit; equal to 1 mg/L of chloroplatinate salt

Analytical Report
01/17/91

Giant Refining Co.

Giant Refining Co.
606 E. Highway 64
Farmington, NM 87401

Tim Kinney

Customer Work Identification Giant Refinery
Purchase Order Number RFE-9834

Contents:

- 1 Analytical Data Summary
- 2 Sample History
- 3 Comments Summary
- 4 Notes and Definitions

Radian Analytical Services
8501 Mo-Pac Boulevard
P. O. Box 201088
Austin, TX 78720-1088

512/454-4797

Client Services Coordinator: WLBROWN

Certified by:

Clifford Mayne

Giant Refining Co.
 Radian Work Order: 90-10-151

Method: SW8310 PAHs by HPLC (1)

List: 8310 Method analytes

Sample ID:	9010081035 GB-	9010081135 GB-	Reagent Blank
	R-31	R-33	
Factor:	1	100	1
Results in:	ug/L	ug/L	ug/L
	01A	02A	03A
Matrix:	water	water	water

	Result	Det. Limit	Result	Det. Limit	Result	Det. Limit
Acenaphthene	ND	1.8	ND	180	ND	1.8
Acenaphthylene	ND	2.3	35	2.3	ND	2.3
Anthracene	ND	0.66	72 @	66	ND	0.66
Benzo(a)anthracene	ND	0.013	5.0 @	1.3	ND	0.013
Benzo(a)pyrene	ND	0.023	ND	1.2	ND	0.023
Benzo(b)fluoranthene	ND	0.018	1.5 @	0.90	ND	0.018
Benzo(g,h,i)perylene	ND	0.076	ND	3.8	ND	0.076
Benzo(k)fluoranthene	ND	0.017	ND	0.85	ND	0.017
Chrysene	ND	0.15	ND	7.5	ND	0.15
Dibenzo(a,h)anthracene	ND	0.030	ND	1.5	ND	0.030
Fluoranthene	ND	0.21	240	21	ND	0.21
Fluorene	ND	0.21	280	10	ND	0.21
Indeno(1,2,3-cd)pyrene	ND	0.043	ND	0.043	ND	0.043
Naphthalene	ND	1.8	8.3 @	1.8	ND	1.8
Phenanthrene	ND	0.64	640	64	ND	0.64
Pyrene	ND	0.27	ND	27	ND	0.27
Surrogate Recovery(%)						
Terphenyl-d14	130		NC		107	
Control Limits: 24 to 146						

 ND Not detected at specified detection limit
 NC Not calculated

@ Est. result less than 5 times detection limit

(1) For a detailed description of flags and technical terms in this report refer to Appendix A in this report.

Giant Refining Co.
 Radian Work Order: 90-10-151

Method:SW8310 PAHs by HPLC (1)

List:Matrix Spike Analyte List

Sample ID:	Recovery Check	Recovery Check Dup
Factor:	1	1
Results in:	% recvry	% recvry
	04A	05A
Matrix:	water	water

	Result	Det. Limit	Result	Det. Limit		
Acenaphthene	56		55			
Acenaphthylene	73		70			
Anthracene	75		69			
Benzo(k)fluoranthene	110		102			
Dibenzo(a,h)anthracene	86		78			
Fluorene	75		73			
Naphthalene	76		119			
Phenanthrene	61		65			
Surrogate Recovery(%)						
Terphenyl-d14	157 q		159 q			
Control Limits: 24 to 146						

q Outside control limits

(1) For a detailed description of flags and technical terms in this report refer to Appendix A in this report.

Giant Refining Co.
 Radian Work Order: 90-10-151

Sample Identifications and Dates						
Sample ID	9010081035	GB- 9010081135	GB- Reagent Blank	Recovery Check	Recovery Check	
	R-31	R-33			k Dup	
Date Sampled	10/08/90	10/08/90				
Date Received	10/11/90	10/11/90	10/11/90	10/11/90	10/11/90	
Matrix	water	water	water	water	water	
	01	02	03	04	05	
SW8310 PAHs by HPLC						
Prepared	10/12/90	10/12/90	10/12/90			
Analyzed	11/19/90	01/13/91	11/18/90			
Analyst	TLS	TLS	TLS			
File ID	B&C111816	B&C011310	B&C11183			
Blank ID	B&C11183	B&C11183	B&C11183			
Instrument	HPLC2	HPLC2	HPLC2			
Report as	received	received	received			
SW8310 PAHs by HPLC						
Prepared				10/11/90	10/11/90	
Analyzed				11/18/90	11/18/90	
Analyst				TLS	TLS	
File ID				B&C11185	B&C11186	
Blank ID				B&C11183	B&C11183	
Instrument				HPLC2	HPLC2	
Report as				received	received	

Appendix A

Comments, Notes and Definitions

Giant Refining Co.
Radian Work Order: 90-10-151

@ ALL METHODS EXCEPT CLP

The results which are less than five times the method specified detection limit.

EXPLANATION

Uncertainty of the analysis will increase as the method detection limit is approached. These results should be considered approximate.

NC ALL METHODS EXCEPT CLP

The relative percent difference (RPD) and spike recovery are not calculated when a result value is less than five times the detection limit or obvious matrix interferences are present or a surrogate concentration is not calculated due to dilution.

EXPLANATION

See @ definition for data near the detection limit. A spike recovery is not calculated when the sample result is greater than four times the spike added concentration because the spike added concentration is insignificant. Surrogate recoveries are not calculated due to dilution to allow analyte quantitation.

ND ALL METHODS EXCEPT CLP

This flag is used to denote analytes which are not detected at or above the specified detection limit.

EXPLANATION

The value to the right of the < symbol is the method specified detection limit for the analyte.

Q ALL METHODS EXCEPT CLP

This quality control standard is outside method or laboratory specified control limits.

EXPLANATION

This flag is applied to matrix spike, analytical QC spike, and surrogate recoveries; and to RPD (relative percent difference) values for duplicate analyses and matrix spike/matrix spike duplicate result.

Giant Refining Co.
Radian Work Order: 90-10-151

TERMS USED IN THIS REPORT:

Analyte - A chemical for which a sample is to be analyzed. The analysis will meet EPA method and QC specifications.

Compound - See Analyte.

Detection Limit - The method specified detection limit, which is the lower limit of quantitation specified by EPA for a method. Radian staff regularly assess their laboratories' method detection limits to verify that they meet or are lower than those specified by EPA. Detection limits which are higher than method limits are based on experimental values at the 99% confidence level. The detection limits for EPA CLP (Contract Laboratory Program) methods are CRQLs (contract required quantitation limits) for organics and CRDLs (contract required detection limits) for inorganics. Note, the detection limit may vary from that specified by EPA based on sample size, dilution or cleanup. (Refer to Factor, below)

EPA Method - The EPA specified method used to perform an analysis. EPA has specified standard methods for analysis of environmental samples. Radian will perform its analyses and accompanying QC tests in conformance with EPA methods unless otherwise specified.

Factor - Default method detection limits are based on analysis of clean water samples. A factor is required to calculate sample specific detection limits based on alternate matrices (soil or water), reporting units, use of cleanup procedures, or dilution of extracts/digestates. For example, extraction or digestion of 10 grams of soil in contrast to 1 liter of water will result in a factor of 100.

Matrix - The sample material. Generally, it will be soil, water, air, oil, or solid waste.

Radian Work Order - The unique Radian identification code assigned to the samples reported in the analytical summary.

Units - ug/L	micrograms per liter (parts per billion);liquids/water
ug/kg	micrograms per kilogram (parts per billion); soils/solids
ug/M3	micrograms per cubic meter; air samples
mg/L	milligrams per liter (parts per million);liquids/water
mg/kg	milligrams per kilogram (parts per million);soils/solids
%	percent; usually used for percent recovery of QC standards
uS/cm	conductance unit; microSiemens/centimeter
mL/hr	milliliters per hour; rate of settlement of matter in water
NTU	turbidity unit; nephelometric turbidity unit
CU	color unit; equal to 1 mg/L of chloroplatinate salt



RECEIVED

2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

October 31, 1990

FEB 6 1991
OIL CONSERVATION DIV.
SANTA FE

Giant Bloomfield Refinery
POB 256
Farmington, NM 87499

Tim Kinney,

During a recent routine laboratory check we discovered isolated incidents of a miscalculation involving electrical conductivity. Two of your samples, listed below, were reported with incorrect electrical conductivities. I sincerely apologise for this inconvenience. Please contact me at 326-4737 if I can be of any assistance.

Client: Giant Refinery

Date received: 09/05/90
Date collected: 09/05/90

Electrical conductivity, umhos/cm.

Lab #:	Sample site:	Sample ID:	Previous result:	Recalculated result:
F4904	Stripper effluent	9009051004	3760	4830
F4905	Stripper influent	9009050957	3760	4830

Sincerely,


C. Neal Schaeffer
Senior chemist



2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: Giant Refinery
ID: 9009050957
SITE: Stripper influent
LAB NO: F4905

DATE REPORTED: 09/13/90
DATE RECEIVED: 09/05/90
DATE COLLECTED: 09/05/90

Lab pH (s.u.).....	7.38
Lab conductivity, umhos/cm.....	4830
Lab resistivity, ohm-m.....	2.07
Total dissolved solids (180), mg/l..	3290
Total dissolved solids (calc), mg/l.	3160
Total alkalinity as CaCO ₃ , mg/l.....	316
Total acidity as CaCO ₃ , mg/l.....	0
Total hardness as CaCO ₃ , mg/l.....	1080
Sodium absorption ratio.....	8.61

	mg/l	meq/l
Bicarbonate as HCO ₃	386	6.33
Carbonate as CO ₃	0	0
Chloride.....	624	17.6
Sulfate.....	1340	27.8
Calcium.....	241	12
Magnesium.....	117	9.66
Potassium.....	3.15	0.08
Sodium.....	652	28.3
Major cations.....		50.1
Major anions.....		51.8
Cation/anion difference.....		0.02


C. Neal Schaeffer
Lab Director



2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: Giant Refinery
ID: 9009051004
SITE: Stripper effluent
LAB NO: F4904

DATE REPORTED: 09/13/90
DATE RECEIVED: 09/05/90
DATE COLLECTED: 09/05/90

Lab pH (s.u.).....	8.16
Lab conductivity, umhos/cm.....	4830
Lab resistivity, ohm-m.....	2.07
Total dissolved solids (180), mg/l..	3290
Total dissolved solids (calc), mg/l.	3180
Total alkalinity as CaCO ₃ , mg/l.....	280
Total acidity as CaCO ₃ , mg/l.....	0
Total hardness as CaCO ₃ , mg/l.....	1010
Sodium absorption ratio.....	9.34

	mg/l	meq/l
Bicarbonate as HCO ₃	342	5.61
Carbonate as CO ₃	0	0
Chloride.....	619	17.5
Sulfate.....	1320	27.5
Calcium.....	357	17.8
Magnesium.....	28.8	2.36
Potassium.....	3.35	0.09
Sodium.....	682	29.6
Major cations.....		49.9
Major anions.....		50.6
Cation/anion difference.....		0.01


C. Neal Schaeffer
Lab Director

Analytical Report
10/16/90

Giant Refining Company

Giant Refining Company
606 E. Highway 64
Farmington, NM 87401

Tim Kinney

Customer Work Identification Refinery Remediation 9834
Purchase Order Number RFE-9834

Contents:

- 1 Analytical Data Summary
- 2 Sample History
- 3 Comments Summary
- 4 Notes and Definitions

Radian Analytical Services
10395 Old Placerville Road
Sacramento, CA 95827

916-362-5332

Client Services Coordinator: RRMAY

Certified by:

Marilyn Metten

Giant Refining Company
 radian Work Order: 50-08-228

Method: Halocarbons by SW8010 (1)

List: Table 3 analyte list

Sample ID:	9008211514	9008211524	REAGENT BLANK
	STRIPPER INF	STRIPPER EFFL.	
Factor:	1	1	1
Results in:	ug/L	ug/L	ug/L
	01A	03A	05A
Matrix:	water	water	water

	Result	Det. Limit	Result	Det. Limit	Result	Det. Limit
Bromodichloromethane	1.4 X	0.10	0.27 Xa	0.10	ND	0.10
Bromoform	ND	0.50	ND	0.50	ND	0.50
Bromomethane	ND	1.2	ND	1.2	ND	1.2
Carbon tetrachloride	ND	0.12	ND	0.12	ND	0.12
Chlorobenzene	ND	0.25	ND	0.25	ND	0.25
Chloroethane	ND	0.52	ND	0.52	ND	0.52
2-Chloroethylvinylether	ND	0.50	ND	0.50	ND	0.50
Chloroform	ND	0.10	0.18 Xa	0.10	ND	0.10
Chloromethane	ND	0.30	ND	0.30	ND	0.30
Dibromochloromethane	ND	0.20	ND	0.20	ND	0.20
1,2-Dichlorobenzene	ND	0.50	ND	0.50	ND	0.50
1,3-Dichlorobenzene	ND	0.32	ND	0.32	ND	0.32
1,4-Dichlorobenzene	ND	0.24	ND	0.24	ND	0.24
1,1-Dichloroethane	0.68 Xa	0.50	ND	0.50	ND	0.50
1,2-Dichloroethane	1.1 C	0.10	ND	0.10	ND	0.10
1,1-Dichloroethene	ND	0.20	ND	0.20	ND	0.20
cis-1,2-Dichloroethene	0.43 Xa	0.20	ND	0.20	ND	0.20
trans-1,2-Dichloroethene	ND	0.20	ND	0.20	ND	0.20
1,2-Dichloropropane	ND	0.10	ND	0.10	ND	0.10
cis-1,3-Dichloropropene	ND	0.20	ND	0.20	ND	0.20
trans-1,3-Dichloropropene	ND	0.34	ND	0.34	ND	0.34
Methylene chloride	ND	0.40	ND	0.40	ND	0.40
1,1,2,2-Tetrachloroethane	ND	0.15	ND	0.15	ND	0.15
Tetrachloroethene	0.32 Xa	0.10	ND	0.10	ND	0.10
1,1,1-Trichloroethane	0.20 Xa	0.20	ND	0.20	ND	0.20
1,1,2-Trichloroethane	ND	0.20	ND	0.20	ND	0.20
Trichloroethene	ND	0.20	0.48 Xa	0.20	ND	0.20
Trichlorofluoromethane	ND	0.20	ND	0.20	ND	0.20
Vinyl chloride	ND	0.20	ND	0.20	ND	0.20

X See definition in report narrative

a Est. result less than 5 times detection limit

ND Not detected at specified detection limit

C Confirmed on second column or by GC/MS

(1) For a detailed description of flags and technical terms in this report refer to Appendix A in this report.

Giant Refining Company
 Radian Work Order: 50-08-228

Method: Halocarbons by SW8010 (1)

List: Table 3 analyte list

Sample ID:	9008211514	9008211524	REAGENT BLANK
	STRIPPER INF	STRIPPER EFFL.	
Factor:	1	1	1
Results in:	ug/L	ug/L	ug/L
	01A	03A	05A
Matrix:	water	water	water

Surrogate Recovery(%)

1-Bromo-4-fluorobenzene

Control Limits: 40 to 140

Result Det. Limit

121

Result Det. Limit

107

Result Det. Limit

123

(1) For a detailed description of flags and technical terms in this report refer to Appendix A in this report.

Giant Refining Company
 Radian Work Order: S0-08-228

Method: Aromatics by SW8020 (1)

List: Complete analyte list

Sample ID:	9008211514	9008211524	REAGENT BLANK
	STRIPPER INF	STRIPPER EFFL.	
Factor:	1	1	1
Results in:	ug/L	ug/L	ug/L
	02A	04A	06A
Matrix:	water	water	water

	Result	Det. Limit	Result	Det. Limit	Result	Det. Limit
Benzene	ND	0.20	ND	0.20	ND	0.20
Chlorobenzene	ND	0.20	ND	0.20	ND	0.20
1,2-Dichlorobenzene	ND	0.40	ND	0.40	ND	0.40
1,3-Dichlorobenzene	ND	0.40	ND	0.40	ND	0.40
1,4-Dichlorobenzene	ND	0.30	ND	0.30	ND	0.30
Ethylbenzene	ND	0.20	0.20 X ^a	0.20	ND	0.20
Toluene	ND	0.20	0.32 X ^a	0.20	ND	0.20
Xylenes (total)	0.81 G ^a	0.20	0.44 X ^a	0.20	ND	0.20
<u>Surrogate Recovery(%)</u>						
1-Bromo-4-fluorobenzene	91		91		58	
Control Limits: 40 to 140						

ND Not detected at specified detection limit

^a Est. result less than 5 times detection limit

G Indicates an estimated GC value due to interferences.

X See definition in report narrative

(1) For a detailed description of flags and technical terms in this report refer to Appendix A in this report.

Giant Refining Company
 Radian Work Order: S0-08-228

Sample Identifications and Dates

Sample ID	9008211514	9008211514	9008211524	9008211524	REAGENT BLANK	REAGENT BLANK
	STRIPPER INF	STRIPPER INF	STRIPPER EFFL.	STRIPPER EFFL.		
Date Sampled	08/21/90	08/21/90	08/21/90	08/21/90		
Date Received	08/22/90	08/22/90	08/22/90	08/22/90	08/22/90	08/22/90
Matrix	water	water	water	water	water	water
	01	02	03	04	05	06

Halocarbons by SW8010

Prepared	
Analyzed	08/29/90
Analyst	MG
File ID	DB082917
Blank ID	QB08291
Instrument	B
Report as	received

08/30/90
MG
DB082918
QB08291
B
received

08/29/90
MG
QB08291
B
received

Aromatics by SW8020

Prepared	
Analyzed	
Analyst	
File ID	
Blank ID	
Instrument	
Report as	

08/25/90
BSJ
E5082521
R508251
5
received

08/25/90
BSJ
E5082522
R508251
5
received

08/25/90
BSJ
R508251
5
received

Appendix A

Comments, Notes and Definitions

Giant Refining Company
Radian Work Order: S0-08-228

The X flag means that the presence of this analyte was not confirmed after analysis on a second column.

VOA samples run shortly after midnight are associated with the blank from the previous day within the 24hr period.

Xylenes (Total) was reported as an estimated value in 8020 sample 9008211514 STIPPER INF. The value obtained on the confirmation column was 3.4 ug/L.

iant Refining Company
Radian Work Order: S0-08-228

Q ALL METHODS EXCEPT CLP

The results which are less than five times the method specified detection limit.

EXPLANATION

Uncertainty of the analysis will increase as the method detection limit is approached. These results should be considered approximate.

C ORGANIC CLP

pesticides require that single component results > 10ng/uL in the final extract be confirmed by GC/MS.

OTHER ORGANIC METHODS

This analysis has been confirmed on a second column or by GC/MS.

EXPLANATION

Most methods of analysis by gas chromatography recommend reanalysis on a second column of dissimilar phase to resolve compounds of interest from interferences that may occur and for analyte confirmation.

G ALL ORGANIC GC METHODS EXCEPT CLP

Indicates an estimated GC value due to interferences.

ND ALL METHODS EXCEPT CLP

This flag is used to denote analytes which are not detected at or above the specified detection limit.

EXPLANATION

The value to the right of the < symbol is the method specified detection limit for the analyte.

X ALL METHODS EXCEPT INORGANIC CLP

This is a general purpose flag for those situations not covered by the standard flags. The specific definition of this flag is described in the Comments Summary and/or in the case narrative.

Giant Refining Company
Radian Work Order: S0-08-228

TERMS USED IN THIS REPORT:

Analyte - A chemical for which a sample is to be analyzed. The analysis will meet EPA method and QC specifications.

Compound - See Analyte.

Detection Limit - The method specified detection limit, which is the lower limit of quantitation specified by EPA for a method. Radian staff regularly assess their laboratories' method detection limits to verify that they meet or are lower than those specified by EPA. Detection limits which are higher than method limits are based on experimental values at the 99% confidence level. The detection limits for EPA CLP (Contract Laboratory Program) methods are CRQLs (contract required quantitation limits) for organics and CRDLs (contract required detection limits) for inorganics. Note, the detection limit may vary from that specified by EPA based on sample size, dilution or cleanup. (Refer to Factor, below)

EPA Method - The EPA specified method used to perform an analysis. EPA has specified standard methods for analysis of environmental samples. Radian will perform its analyses and accompanying QC tests in conformance with EPA methods unless otherwise specified.

Factor - Default method detection limits are based on analysis of clean water samples. A factor is required to calculate sample specific detection limits based on alternate matrices (soil or water), reporting units, use of cleanup procedures, or dilution of extracts/digestates. For example, extraction or digestion of 10 grams of soil in contrast to 1 liter of water will result in a factor of 100.

Matrix - The sample material. Generally, it will be soil, water, air, oil, or solid waste.

Radian Work Order - The unique Radian identification code assigned to the samples reported in the analytical summary.

Units - ug/L	micrograms per liter (parts per billion); liquids/water
ug/kg	micrograms per kilogram (parts per billion); soils/solids
ug/M3	micrograms per cubic meter; air samples
mg/L	milligrams per liter (parts per million); liquids/water
mg/kg	milligrams per kilogram (parts per million); soils/solids
%	percent; usually used for percent recovery of QC standards
uS/cm	conductance unit; microSiemens/centimeter
mL/hr	milliliters per hour; rate of settlement of matter in water
NTU	turbidity unit; nephelometric turbidity unit
CU	color unit; equal to 1 mg/L of chloroplatinate salt

Analytical Report
10/02/90

Giant Refining Co.

Giant Refining Co.
606 E. Highway 64
Farmington, NM 87401

Tim Kinney

Customer Work Identification Refinery Remediation 9834
Purchase Order Number

Contents:

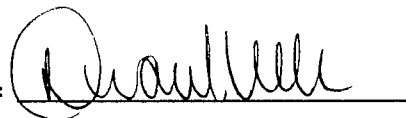
- 1 Analytical Data Summary
- 2 Sample History
- 3 Comments Summary
- 4 Notes and Definitions

Radian Analytical Services
8501 Mo-Pac Boulevard
P. O. Box 201088
Austin, TX 78720-1088

512/454-4797

Client Services Coordinator: LWKELLY

Certified by:



Giant Refining Co.
 Radian Work Order: 90-09-163

Method: Vol. aromatics by SW8020 (1)

List: SW8020

Sample ID:	9009041152	9009041202	9009041215	9009041229
	RW-1	RW-2	RW-3	RW-4
Factor:	1	1	10	10
Results in:	ug/L	ug/L	ug/L	ug/L
	01A	02A	03A	04A
Matrix:	water	water	water	water

	Result	Det. Limit	Result	Det. Limit	Result	Det. Limit	Result	Det. Limit
Benzene	ND	0.20	ND	0.20	460 C	2.0	450 C	2.0
Chlorobenzene	ND	0.20	ND	0.20	ND	2.0	ND	2.0
1,2-Dichlorobenzene	ND	0.40	ND	0.40	ND	4.0	ND	4.0
1,3-Dichlorobenzene	ND	0.40	ND	0.40	ND	4.0	ND	4.0
1,4-Dichlorobenzene	ND	0.30	ND	0.30	ND	3.0	ND	3.0
Ethylbenzene	ND	0.20	ND	0.20	450 C	2.0	150 C	2.0
Toluene	ND	0.20	ND	0.20	5.2 G ^a	2.0	ND	2.0
Total xylenes	ND	0.20	ND	0.20	970 C	2.0	40 C	2.0
<u>Surrogate Recovery(%)</u>								
1-Bromo-4-fluorobenzene	94		94		92		93	
Control Limits: 76 to 140								

ND Not detected at specified detection limit

G Indicates an estimated GC value due to interferences.

C Confirmed on second column or by GC/MS

^a Est. result less than 5 times detection limit

(1) For a detailed description of flags and technical terms in this report refer to Appendix A in this report.

Giant Refining Co.
 Radian Work Order: 90-09-163

Method: Vol. aromatics by SW8020 (1)

List: SW8020

Sample ID:	9009041235	9009041243	9009041300	9009041343
	RW-5	RW-6	RW-10	RW-12
Factor:	10	10	1	5
Results in:	ug/L	ug/L	ug/L	ug/L
	05A	06A	07A	08A
Matrix:	water	water	water	water

	Result	Det. Limit	Result	Det. Limit	Result	Det. Limit	Result	Det. Limit
Benzene	140 C	2.0	220 C	2.0	2.2 C	0.20	1400 DC	5.0
Chlorobenzene	ND	2.0	ND	2.0	ND	0.20	ND	1.0
1,2-Dichlorobenzene	ND	4.0	ND	4.0	ND	0.40	ND	2.0
1,3-Dichlorobenzene	ND	4.0	ND	4.0	ND	0.40	ND	2.0
1,4-Dichlorobenzene	ND	3.0	ND	3.0	ND	0.30	ND	1.5
Ethylbenzene	120 C	2.0	67 C	2.0	5.3 C	0.20	52 C	1.0
Toluene	ND	2.0	ND	2.0	0.33 X ^a	0.20	2.2 C ^a	1.0
Total xylenes	14 C	2.0	46 C	2.0	19 C	0.20	66 C	1.0
<u>Surrogate Recovery(%)</u>								
1-Bromo-4-fluorobenzene	91		90		95		93	
Control Limits: 76 to 140								

C Confirmed on second column or by GC/MS

X See definition in report narrative

D Sample dilution necessary for this analyte

ND Not detected at specified detection limit

^a Est. result less than 5 times detection limit

(1) For a detailed description of flags and technical terms in this report refer to Appendix A in this report.

Giant Refining Co.
 Radian Work Order: 90-09-163

Method: Vol. aromatics by SW8020 (1)

List: SW8020

Sample ID:	9009041352	900905957	9009051004	Reagent blank
	RW-13	STRIP INFL	STRIP EFFL	
Factor:	1	1	1	1
Results in:	ug/L	ug/L	ug/L	ug/L
	09A	10A	11A	12A
Matrix:	water	water	water	water

	Result	Det. Limit	Result	Det. Limit	Result	Det. Limit	Result	Det. Limit
Benzene	ND	0.20	2.8 X	0.20	ND	0.20	ND	0.20
Chlorobenzene	ND	0.20	ND	0.20	ND	0.20	ND	0.20
1,2-Dichlorobenzene	ND	0.40	ND	0.40	ND	0.40	ND	0.40
1,3-Dichlorobenzene	ND	0.40	ND	0.40	ND	0.40	ND	0.40
1,4-Dichlorobenzene	ND	0.30	ND	0.30	ND	0.30	ND	0.30
Ethylbenzene	ND	0.20	ND	0.20	ND	0.20	ND	0.20
Toluene	ND	0.20	ND	0.20	ND	0.20	ND	0.20
Total xylenes	ND	0.20	0.92 Xa	0.20	ND	0.20	ND	0.20
<u>Surrogate Recovery(%)</u>								
1-Bromo-4-fluorobenzene	92		88		93		92	
Control Limits: 76 to 140								

ND Not detected at specified detection limit

X See definition in report narrative

a Est. result less than 5 times detection limit

(1) For a detailed description of flags and technical terms in this report refer to Appendix A in this report.

Giant Refining Co.
 Radian Work Order: 90-09-163

Sample Identifications and Dates

Sample ID	9009041152	9009041202	9009041215	9009041229	9009041235	9009041243
	RW-1	RW-2	RW-3	RW-4	RW-5	RW-6
Date Sampled	09/04/90	09/04/90	09/04/90	09/04/90	09/04/90	09/04/90
Date Received	09/13/90	09/13/90	09/13/90	09/13/90	09/13/90	09/13/90
Matrix	water	water	water	water	water	water
	01	02	03	04	05	06

Vol. aromatics by SW8020

Prepared

Analyzed

Analyst

File ID

Blank ID

Instrument

Report as

09/14/90

BM

ei09146

i

received

09/14/90

JL

ei09147

i

received

09/14/90

JL

ei09148

i

received

09/14/90

BM

ei09149

i

received

09/16/90

JL

ei09168

i

received

09/16/90

JL

ei09169

i

received

Giant Refining Co.
Radian Work Order: 90-09-163

Sample Identifications and Dates

Sample ID	9009041300	9009041343	9009041352	900905957	9009051004	Reagent blank
	RW-10	RW-12	RW-13	STRIP INFL	STRIP EFFL	
Date Sampled	09/04/90	09/04/90	09/04/90	09/05/90	09/05/90	
Date Received	09/13/90	09/13/90	09/13/90	09/13/90	09/13/90	09/13/90
Matrix	water	water	water	water	water	water
	07	08	09	10	11	12

Vol. aromatics by SW8020						
Prepared						
Analyzed	09/16/90	09/16/90	09/17/90	09/17/90	09/17/90	09/16/90
Analyst	BM	BM	JL	JL	JL	JL
File ID	ei091610	ei091611	ei09179	ei091710	ei091711	ei09167
Blank ID						
Instrument	i	i	i	i	i	i
Report as	received	received	received	received	received	received

Appendix A

Comments, Notes and Definitions

Giant Refining Co.
Radian Work Order: 90-09-163

General Comments

X flag indicates that the data was not confirmed on a second column.

Giant Refining Co.
Radian Work Order: 90-09-163

Q ALL METHODS EXCEPT CLP

The results which are less than five times the method specified detection limit.

EXPLANATION

Uncertainty of the analysis will increase as the method detection limit is approached. These results should be considered approximate.

C ORGANIC CLP

pesticides require that single component results > 10ng/uL in the final extract be confirmed by GC/MS.

OTHER ORGANIC METHODS

This analysis has been confirmed on a second column or by GC/MS.

EXPLANATION

Most methods of analysis by gas chromatography recommend reanalysis on a second column of dissimilar phase to resolve compounds of interest from interferences that may occur and for analyte confirmation.

D ORGANICS METHODS

This flag identifies all analytes analyzed at a secondary dilution factor.

EXPLANATION

In an analysis some compounds can exceed the calibration range of the instrument. Therefore, two analyses are performed, one at the concentration of the majority of the analytes and a second with the sample diluted so that high concentration analyte(s) fall within the calibration range.

G ALL ORGANIC GC METHODS EXCEPT CLP

Indicates an estimated GC value due to interferences.

ND ALL METHODS EXCEPT CLP

This flag is used to denote analytes which are not detected at or above the specified detection limit.

EXPLANATION

The value to the right of the < symbol is the method specified detection limit for the analyte.

X ALL METHODS EXCEPT INORGANIC CLP

This is a general purpose flag for those situations not covered by the standard flags. The specific definition of this flag is described in the Comments Summary and/or in the case narrative.

Giant Refining Co.
Radian Work Order: 90-09-163

TERMS USED IN THIS REPORT:

Analyte - A chemical for which a sample is to be analyzed. The analysis will meet EPA method and QC specifications.

Compound - See Analyte.

Detection Limit - The method specified detection limit, which is the lower limit of quantitation specified by EPA for a method. Radian staff regularly assess their laboratories' method detection limits to verify that they meet or are lower than those specified by EPA. Detection limits which are higher than method limits are based on experimental values at the 99% confidence level. The detection limits for EPA CLP (Contract Laboratory Program) methods are CRQLs (contract required quantitation limits) for organics and CRDLs (contract required detection limits) for inorganics. Note, the detection limit may vary from that specified by EPA based on sample size, dilution or cleanup. (Refer to Factor, below)

EPA Method - The EPA specified method used to perform an analysis. EPA has specified standard methods for analysis of environmental samples. Radian will perform its analyses and accompanying QC tests in conformance with EPA methods unless otherwise specified.

Factor - Default method detection limits are based on analysis of clean water samples. A factor is required to calculate sample specific detection limits based on alternate matrices (soil or water), reporting units, use of cleanup procedures, or dilution of extracts/digestates. For example, extraction or digestion of 10 grams of soil in contrast to 1 liter of water will result in a factor of 100.

Matrix - The sample material. Generally, it will be soil, water, air, oil, or solid waste.

Radian Work Order - The unique Radian identification code assigned to the samples reported in the analytical summary.

Units - ug/L	micrograms per liter (parts per billion); liquids/water
ug/kg	micrograms per kilogram (parts per billion); soils/solids
ug/M3	micrograms per cubic meter; air samples
mg/L	milligrams per liter (parts per million); liquids/water
mg/kg	milligrams per kilogram (parts per million); soils/solids
%	percent; usually used for percent recovery of QC standards
uS/cm	conductance unit; microSiemens/centimeter
mL/hr	milliliters per hour; rate of settlement of matter in water
NTU	turbidity unit; nephelometric turbidity unit
CU	color unit; equal to 1 mg/L of chloroplatinate salt



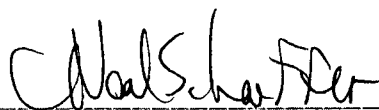
2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: Giant Refinery
ID: 9009050957
SITE: Stripper influent
LAB NO: F4905

DATE REPORTED: 09/13/90
DATE RECEIVED: 09/05/90
DATE COLLECTED: 09/05/90

Lab pH (s.u.).....	7.38
Lab conductivity, umhos/cm.....	3760
Lab resistivity, ohm-m.....	2.66
Total dissolved solids (180), mg/l..	3290
Total dissolved solids (calc), mg/l.	3160
Total alkalinity as CaCO ₃ , mg/l.....	316
Total acidity as CaCO ₃ , mg/l.....	0
Total hardness as CaCO ₃ , mg/l.....	1080
Sodium absorption ratio.....	8.61

	mg/l	meq/l
Bicarbonate as HCO ₃	386	6.33
Carbonate as CO ₃	0	0
Chloride.....	624	17.6
Sulfate.....	1340	27.8
Calcium.....	241	12
Magnesium.....	117	9.66
Potassium.....	3.15	0.08
Sodium.....	652	28.3
Major cations.....		50.1
Major anions.....		51.8
Cation/anion difference.....		0.02


C. Neal Schaeffer
Lab Director



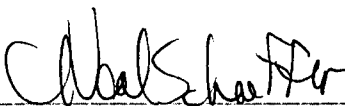
2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: Giant Refinery
ID: 9009051004
SITE: Stripper effluent
LAB NO: F4904

DATE REPORTED: 09/13/90
DATE RECEIVED: 09/05/90
DATE COLLECTED: 09/05/90

Lab pH (s.u.).....	8.16
Lab conductivity, umhos/cm.....	3760
Lab resistivity, ohm-m.....	2.66
Total dissolved solids (180), mg/l..	3290
Total dissolved solids (calc), mg/l.	3180
Total alkalinity as CaCO ₃ , mg/l.....	280
Total acidity as CaCO ₃ , mg/l.....	0
Total hardness as CaCO ₃ , mg/l.....	1010
Sodium absorption ratio.....	9.34

	mg/l	meq/l
Bicarbonate as HCO ₃	342	5.61
Carbonate as CO ₃	0	0
Chloride.....	619	17.5
Sulfate.....	1320	27.5
Calcium.....	357	17.8
Magnesium.....	28.8	2.36
Potassium.....	3.35	0.09
Sodium.....	682	29.6
Major cations.....		49.9
Major anions.....		50.6
Cation/anion difference.....		0.01


C. Neal Schaeffer
Lab Director



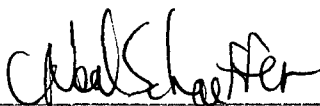
2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: Giant Refining
ID: 9008081119
SITE: Influent
LAB NO: F4725

DATE REPORTED: 08/14/90
DATE RECEIVED: 08/08/90
DATE COLLECTED: 08/08/90

Lab pH (s.u.).....	7.47
Lab conductivity, umhos/cm.....	5080
Lab resistivity, ohm-m.....	1.9685
Total dissolved solids (180), mg/l..	3328
Total dissolved solids (calc), mg/l.	3293
Total alkalinity as CaCO ₃ , mg/l.....	544.35
Total acidity as CaCO ₃ , mg/l.....	0.00
Total hardness as CaCO ₃ , mg/l.....	1114.44
Sodium absorption ratio.....	8.85

	mg/l	meq/l
Bicarbonate as HCO ₃	664.1	10.89
Carbonate as CO ₃	0.0	0.00
Chloride.....	582.4	16.43
Sulfate.....	1259.2	26.23
Calcium.....	433.7	21.64
Magnesium.....	7.9	0.65
Potassium.....	3.6	0.09
Sodium.....	679.5	29.56
Major cations.....		51.94
Major anions.....		53.55
Cation/anion difference.....		1.53 %



C. Neal Schaeffer
Lab Director



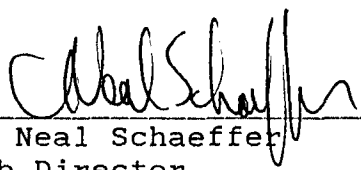
2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: Giant Refining
ID: 9008081121
SITE: Effluent
LAB NO: F4726

DATE REPORTED: 08/14/90
DATE RECEIVED: 08/08/90
DATE COLLECTED: 08/08/90

Lab pH (s.u.).....	7.90
Lab conductivity, umhos/cm.....	4892
Lab resistivity, ohm-m.....	2.0442
Total dissolved solids (180), mg/l..	3222
Total dissolved solids (calc), mg/l.	3155
Total alkalinity as CaCO ₃ , mg/l.....	401.10
Total acidity as CaCO ₃ , mg/l.....	0.00
Total hardness as CaCO ₃ , mg/l.....	1036.13
Sodium absorption ratio.....	8.90

	mg/l	meq/l
Bicarbonate as HCO ₃	489.3	8.02
Carbonate as CO ₃	0.0	0.00
Chloride.....	577.1	16.28
Sulfate.....	1278.1	26.63
Calcium.....	371.1	18.52
Magnesium.....	26.8	2.21
Potassium.....	3.0	0.08
Sodium.....	658.5	28.64
Major cations.....		49.44
Major anions.....		50.93
Cation/anion difference.....		1.48 %


C. Neal Schaeffer
Lab Director

Received: 11/10/88

RAS -

Austin

12/01/88 13:43:44

Work Order # 88-11-059

RECEIVED

REPORT

12/04/88

REPORT Geoscience Consultants, Ltd.

TO 500 Copper HW

Suite 200

Albuquerque, NM 87102

ATTEN Sample Manager

CLIENT GEOSCIENCE SAMPLES R

COMPANY Geoscience Consultants, Ltd.

FACILITY

PREPARED Radian Analytical Services

BY B201 Mo-Pac MI

PO Box 201088

Austin, TX 78720-1088

ATTEN

PHONE 512-454-4797

[Signature]

CERTIFIED BY

CONTACT ACHORD

WORK ID M&A

TAKEN MJN, DLT

TRANS Fed Ex

TYPE

P.O. # 0607001

INVOICE under separate cover

**Possible interference. Surrogate recovery out of acceptable range.

Footnotes and Comments

* Indicates a value less than 5 times the detection limit. Potential error for such low values ranges between 50 and 100%.

@ Indicates that spike recovery for this analysis on the specific matrix was not within acceptable limits indicating an interferent present.

SAMPLE IDENTIFICATION

01	8811081420	69A-49	✓
02	8811081452	69A-48	✓
03	8811081520	69A-50	✓
04	8811081546	69A-32	✓
05	8811081604	69A-07	✓
06	8811081621	69A-09	✓
07	8811081634	69A-41	✓
08	reagent blank		

TEST CODES and NAMES used on this report

ALKAL	Component	alkalinities
BR IC	Bromide, IC	
CA E	Calcium, IC/PES	
CL IC	Chloride, IC	
EPA601	EPA method 601	
EPA602	EPA method 602	
F IC	Fluoride, IC	
K E	Potassium, IC/PES	
MG E	Magnesium, IC/PES	
NA E	Sodium, IC/PES	
NO2ND3	Nitrate + nitrite	
OP04	Orthophosphate	
SO4 IC	Sulfate, IC	
TDS	Total dissolved solids	
XYLENE	Xylenes, EPA 602	

Page 2
 Received: 11/10/88
 RAS - Austin
 Results By Test
 REPORT
 Work Order # 88-11-059

SAMPLE	Test: BR IC	Test: CA E	Test: CL IC	Test: F IC	Test: K E
Sample Id	mg/L	ug/ml	mg/L	mg/L	ug/ml
✓ 6DR-49 8811081420	2*	680	790	3.6	<3
✓ 6DR-48 8811081452	3*	680	1300	4.7	5.4*
✓ 6DR-50 8811081520	<1	280	110	2.3	<3
✓ 6DR-7 8811081604	<1	460	200	2.3	<3
✓ 6DR-8 8811081621	<1	520	51	2.6	3.3*

SAMPLE	Test: NG E	Test: NA E	Test: NO2NO3	Test: SD4 IC
Sample Id	ug/ml	ug/ml	mg/L as N	mg/L as SD4
8811081420	50	750	5.1	1800
8811081452	70	960	8.0	1900
8811081520	23	400	1.8	1300
8811081604	42	230	6.0	950
8811081621	39	280	1.9	1400

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REPORT
Results by Sample

Work Order # 88-11-059

SAMPLE ID 8811081420

FRACTION O/D TEST CODE ALKAL
Date & Time Collected 11/08/88

NAME Component alkalinities
Category

VERIFIED LM

ANALYST INSTRMT	TAM 635	ANALYZED 11/21/88	1	UNITS	mg/L as CaCO3
ANALYTE RESULT DET LIMIT					
Total Alkalinity		360		1	
Hydroxide		ND		1	
Carbonate		ND		1	
Bicarbonate		360		1	

NOTES AND DEFINITIONS FOR THIS REPORT.

DET LIMIT = DETECTION LIMIT
 ND = not detected at detection limit
 NA = not analyzed
 * = less than 5 times the detection limit
 N/A = not available

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Results by Sample

Work Order # 88-11-059

SAMPLE ID 8811081420

FRACTION O1A TEST CODE EPA601 NAME EPA method 601
Date & Time Collected 11/08/88 Category

ANALYST	INSTRMT	BM	INJECTD	FILE #	VERIFIED	CL
		E	11/11/88		UNITS	ug/L
CAS#	COMPOUND	RESULT	DET LIMIT			
74-87-3	Chloromethane	ND	3.0			
74-83-9	Bromomethane	ND	1.2			
75-01-4	Vinyl chloride	ND	2.0			
75-00-3	Chloroethane	ND	5.0			
75-09-2	Methylene chloride	ND	3.0			
75-69-4	Trichlorofluoromethane	ND	1.0			
75-35-4	1,1-Dichloroethene	ND	1.0			
75-34-3	1,1-Dichloroethane	6.8	0.90			
156-60-5	trans-1,2-Dichloroethene	88	2.0			
67-66-3	Chloroform	6.9	0.50			
107-06-2	1,2-Dichloroethane	ND	0.30			
71-55-6	1,1,1-Trichloroethane	0.6	0.90			
56-23-5	Carbon tetrachloride	ND	1.0			
75-27-4	Bromodichloromethane	ND	1.0			

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Results by Sample

Work Order # 88-11-059
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SAMPLE ID 8811081420

FRACTION Q1A TEST CODE EPA601

NAME EPA method 601

Date & Time Collected 11/08/88

Category

CAS#	COMPOUND	RESULT	DET LIMIT
78-87-5	1,2-Dichloropropane	ND	1.0
10061-02-6	trans-1,3-Dichloropropene	ND	3.0
79-01-6	Trichloroethane	11	2.0
124-48-1	Dibromochloromethane-A	ND	2.0
79-00-5	1,1,2-Trichloroethane-A	ND	0.70
10061-01-5	cis-1,3-Dichloropropene-A	ND	N/A
110-75-8	2-Chloroethylvinyl ether	ND	2.0
75-25-2	Bromoform	ND	3.0
79-34-5	1,1,2,2-Tetrachloroethane-B	ND	1.2
127-18-4	Tetrachloroethene-B	15	0.30
108-90-7	Chlorobenzene	ND	3.0
541-73-1	1,3-Dichlorobenzene	ND	3.0
95-50-1	1,2-Dichlorobenzene	ND	5.0
106-46-7	1,4-Dichlorobenzene	ND	4.0
SURROGATES			
74-97-5	Bromochloromethane	99 %	Recovery
460-00-4	1-Bromo-4-fluorobenzene	120 %	Recovery

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Results by Sample

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SAMPLE ID 8811081420

FRACTION OIA TEST CODE EPA601

NAME EPA method 601

Date & Time Collected 11/08/88

Category

NOTES AND DEFINITIONS FOR THIS REPORT.

DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NA = not analyzed

* = less than 5 times the detection limit

N/A = not available

Second column confirmation NOT performed

unless otherwise noted.

A-Dibromochloromethane, 1,1,2-trichloroethane

and cis-1,3-dichloropropene co-elute.

Quantitated as dibromochloromethane

unless otherwise noted.

B-1,1,2,2-tetrachloroethane and

tetrachloroethene co-elute. Quantitated

as tetrachloroethene unless otherwise noted.

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Results by Sample

SAMPLE ID 8811081420

FRACTION O1B

TEST CODE EPA602 NAME EPA method 602

Date & Time Collected 11/08/88

Category

ANALYST	CL	FILE #	VERIFIED	CL
INSTRMT	D			
CAS#	INJECTED 11/10/88	COMPOUND	RESULT	DET LIMIT
71-43-2		Benzene	ND	0.20
108-88-3		Toluene	ND	0.20
100-41-4		Ethylbenzene	ND	0.30
108-90-7		Chlorobenzene-A	ND	0.30
106-46-7		1,4-Dichlorobenzene	ND	0.30
541-73-1		1,3-Dichlorobenzene	ND	0.40
95-50-1		1,2-Dichlorobenzene	ND	0.40

SURROGATES	
98-08-B	a,a,a-Trifluorotoluene 101% recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NA = not analyzed

* = less than 5 times the detection limit

N/A = not available

Second column confirmation NOT performed

unless otherwise noted.

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Results by Sample

Work Order # 88-11-059
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SAMPLE ID 8811081420

FRACTION O1B

TEST CODE EPA602

NAME EPA method 602

Date & Time Collected 11/08/88

Category

A-Chlorobenzene and p-xylene co-elute.
Quantitated as chlorobenzene unless
otherwise noted.

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SAMPLE ID 8811081420
 FRACTION OID
 Date & Time Collected 11/08/88
 TEST CODE OP04
 NAME Orthophosphate
 Category

VERIFIED LM

ANALYST MJS
 INSTRMT 21
 ANALYZED 11/11/88
 UNITS mg/L as P

ANALYTE RESULT DET LIMIT

Orthophosphate ND 0.020

NOTES AND DEFINITIONS FOR THIS REPORT.

DET LIMIT = DETECTION LIMIT
 ND = not detected at detection limit
 NA = not analyzed
 * = less than 5 times the detection limit
 N/A = not available

SAMPLE ID 8811081420
 FRACTION OID
 Date & Time Collected 11/08/88
 TEST CODE TDS
 NAME Total dissolved solids
 Category

VERIFIED LM

ANALYST TAM
 INSTRMT _____
 ANALYZED 11/15/88
 UNITS mg/L

ANALYTE RESULT DET LIMIT

Filterable Residue (TDS) 4700 6

NOTES AND DEFINITIONS FOR THIS REPORT.

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Results by Sample

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SAMPLE ID 8811081420

FRACTION Q1D TEST CODE TDS NAME Total dissolved solids
Date & Time Collected 11/08/88 Category

DET LIMIT = DETECTION LIMIT
ND = not detected at detection limit
NA = not analyzed
* = less than 5 times the detection limit
N/A = not available

SAMPLE ID 8811081420

FRACTION Q1B TEST CODE XYLENE NAME Xylenes, EPA 602
Date & Time Collected 11/08/88 Category

VERIFIED CL

ANALYST
INSTRMT

CL
D
INJECTD 11/10/88
FILE #
UNITS ug/L

CAS #	COMPOUND	RESULT	DET LIMIT
105-42-3	p-Xylene-A	ND	0.20
109-38-3	m-Xylene	ND	0.20
95-47-6	o-Xylene	ND	0.10

78-08-8 SURROGATES
a,a,a-Trifluorotoluene 101% recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

DET LIMIT = DETECTION LIMIT
ND = not detected at detection limit
NA = not analyzed
* = less than 5 times the detection limit
N/A = not available
Second column confirmation NOT performed unless otherwise noted.
Q = daily EPA standard recovery outside

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Results by Sample

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SAMPLE ID 8811081420

FRACTION 01B

TEST CODE XYLENE

NAME Xylenes, EPA 602

Date & Time Collected 11/08/88

Category

95% confidence interval.

Chlorobenzene and p-xylene co-elute

Quantitated as chlorobenzene unless
otherwise noted.

SAMPLE ID 8811081452

FRACTION 02D

TEST CODE ALKAL

NAME Component alkalinities

Date & Time Collected 11/08/88

Category

VERIFIED LM

ANALYST TAM
INSTRMT 636

ANALYZED 11/21/88

1 UNITS mg/L as CaCO3

ANALYTE RESULT DEF LIMIT

Total Alkalinity 434 1

Hydroxide ND 1

Carbonate ND 1

Bicarbonate 434 1

NOTES AND DEFINITIONS FOR THIS REPORT:

DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NA = not analyzed

* = less than 5 times the detection limit

N/A = not available

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Results by Sample

Work Order # 88-11-059

SAMPLE ID 8811081452

FRACTION 02A

TEST CODE EPA601

NAME EPA method 601

Date & Time Collected 11/08/88

Category

ANALYST _____ INSTRMT B INJECTD 11/15/88 FILE # _____ VERIFIED _____ CL _____
UNITS ug/L

CAS#	COMPOUND	RESULT	DET LIMIT
74-87-3	Chloromethane	ND	3.0
74-83-9	Bromomethane	ND	12
75-01-4	Vinyl chloride	ND	2.0
75-00-3	Chloroethane	ND	5.0
75-09-2	Methylene chloride	ND	3.0
75-69-4	Trichlorofluoromethane	ND	1.0
75-35-4	1,1-Dichloroethene	ND	1.0
75-34-3	1,1-Dichlorobethane	180	0.90
156-60-5	trans-1,2-Dichloroethene	ND	2.0
67-66-3	Chloroform	ND	0.50
107-06-2	1,2-Dichloroethane	ND	0.30
71-55-6	1,1,1-Trichloroethane	ND	0.90
56-23-5	Carbon tetrachloride	ND	1.0
75-27-4	Bromodichloromethane	ND	1.0

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SAMPLE ID 8811081452

FRACTION 02A TEST CODE EPA601

NAME EPA method 601

Date & Time Collected 11/08/88

Category

CAS#	COMPOUND	RESULT	DET LIMIT
78-87-5	1,2-Dichloropropene	ND	1.0
10061-02-6	trans-1,3-Dichloropropene	ND	3.0
79-01-6	Trichloroethene	25	2.0
124-48-1	Dibromochloromethane-A	ND	2.0
79-00-5	1,1,2-Trichloroethane-A	ND	0.70
10061-01-5	cis-1,3-Dichloropropene-A	ND	N/A
110-75-8	2-Chloroethyl vinyl ether	ND	2.0
75-25-2	Bromoform	ND	3.0
79-34-5	1,1,2,2-Tetrachloroethane-B	ND	1.2
127-18-4	Tetrachloroethene-B	31	0.30
108-90-7	Chlorobenzene	ND	3.0
541-73-1	1,3-Dichlorobenzene	ND	3.0
95-50-1	1,2-Dichlorobenzene	ND	5.0
106-46-7	1,4-Dichlorobenzene	ND	4.0
SURROGATES			
74-97-5	Bromochloromethane	69%	% Recovery
460-00-4	1-Bromo-4-fluorobenzene	100%	% Recovery

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SAMPLE ID 8811081452

FRACTION 02A TEST CODE EPA601

NAME EPA method 601

Date & Time Collected 11/08/88

Category

NOTES AND DEFINITIONS FOR THIS REPORT.

DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NA = not analyzed

* = less than 5 times the detection limit

N/A = not available

Second column confirmation NOT performed

unless otherwise noted.

A-Dibromochloromethane, 1,1,2-trichloroethane
and cis-1,3-dichloropropene co-elute.

Quantitated as dibromochloromethane

unless otherwise noted.

B-1,1,2,2-tetrachloroethane and

tetrachloroethene co-elute. Quantitated

as tetrachloroethene unless otherwise noted.

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Results by Sample

Work Order # 88-11-059

SAMPLE ID 8811081452

FRACTION 02B TEST CODE EPA602 NAME EPA method 602
Date & Time Collected 11/08/88 Category

ANALYST	CL	INJECTED	FILE #	VERIFIED	CL
INSTRMT	D	11/10/88			
CAS#		COMPOUND	RESULT	DET LIMIT	UNITS
71-43-2		Benzene	ND	2.0	ug/L
108-88-3		Toluene	ND	2.0	
100-41-4		Ethylbenzene	ND	3.0	
108-90-7		Chlorobenzene-A	ND	3.0	
106-46-7		1,4-Dichlorobenzene	ND	3.0	
541-73-1		1,3-Dichlorobenzene	ND	4.0	
95-50-1		1,2-Dichlorobenzene	ND	4.0	

SURROGATES

98-08-8 a,a,a-Trifluorotoluene 85% recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NA = not analyzed

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N/A = not available

Second column confirmation NOT performed unless otherwise noted.

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Results by Sample

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SAMPLE ID 8811081452

FRACTION 020

TEST CODE EPA602

NAME EPA method 602

Date & Time Collected 11/08/88

Category

A-Chlorobenzene and p-xylene co-elute.
Quantitated as chlorobenzene unless
otherwise noted.

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Results by Sample

Work Order # 88-11-059

SAMPLE ID 8811081452

FRACTION 02D

TEST CODE OP04

NAME Orthophosphate

Date & Time Collected 11/08/88

Category

VERIFIED LM

ANALYST MJS
INSTRMT 21

ANALYZED 11/11/88

UNITS mg/L as P

ANALYTE RESULT DET LIMIT

Orthophosphate ND 0.020

NOTES AND DEFINITIONS FOR THIS REPORT.

DET LIMIT = DETECTION LIMIT
ND = not detected at detection limit
NA = not analyzed
* = less than 5 times the detection limit
N/A = not available

SAMPLE ID 8811081452

FRACTION 02D

TEST CODE TDS

NAME Total dissolved solids

Date & Time Collected 11/08/88

Category

VERIFIED LM

ANALYST TAM
INSTRMT

ANALYZED 11/15/88

UNITS mg/L

ANALYTE RESULT DET LIMIT

Filterable Residue (TDS) 5900 6

NOTES AND DEFINITIONS FOR THIS REPORT.

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SAMPLE ID 8811081452

FRACTION Q20 TEST CODE TDS
Date & Time Collected 11/08/88

NAME Total dissolved solids
Category

DET LIMIT = DETECTION LIMIT
ND = not detected at detection limit
NA = not analyzed
* = less than 5 times the detection limit
N/A = not available

SAMPLE ID 8811081452

FRACTION Q26 TEST CODE XYLENE
Date & Time Collected 11/08/88

NAME Xylenes, EPA 602
Category

VERIFIED CL

ANALYST CL
INSTRMT D

INJECTD 11/10/88

FILE #

UNITS ug/L

CAS #	COMPOUND	RESULT	DET LIMIT
106-42-3	p-Xylene-A	ND	2.0
108-38-3	m-Xylene	ND	2.0
95-47-6	o-Xylene	ND	1.0

SURROGATES

98-08-8 a,a,a-Trifluorobenzene 100% recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

DET LIMIT = DETECTION LIMIT
ND = not detected at detection limit
NA = not analyzed
* = less than 5 times the detection limit
N/A = not available
Second column confirmation NOT performed
unless otherwise noted.
Q = daily EPA standard recovery outside

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SAMPLE ID 8811081452

FRACTION 02B TEST CODE XYLENE

NAME Xylenes, EPA 602

Date & Time Collected 11/08/88

Category

95% confidence interval.
Chlorobenzene and p-xylene co-elute.
Quantitated as chlorobenzene unless
otherwise noted.

SAMPLE ID 8811081520

FRACTION 03D TEST CODE ALKAL

NAME Component alkalinities

Date & Time Collected 11/08/88

Category

VERIFIED LM

ANALYST	TAM	ANALYZED	11/21/88	1	UNITS	mg/L as CaCO3
INSTRMT	636					
ANALYTE RESULT DET LIMIT						
Total Alkalinity		198		1		
Hydroxide		ND		1		
Carbonate		ND		1		
Bicarbonate		198		1		

NOTES AND DEFINITIONS FOR THIS REPORT.

DET LIMIT = DETECTION LIMIT
ND = not detected at detection limit
NA = not analyzed
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N/A = not available

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REPORT
Results by Sample

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SAMPLE ID 8811081520

FRACTION 03A

TEST CODE EPA601

NAME EPA method 601

Date & Time Collected 11/08/88

Category

ANALYST INSTRMT	BM B	INJECTD 11/16/88	FILE #	VERIFIED	
				UNITS	CL
CAS#		COMPOUND	RESULT	DET LIMIT	
74-87-3		Chloromethane	ND	0.30	
74-83-9		Bromomethane	ND	1.2	
75-01-4		Vinyl chloride	ND	0.20	
75-00-3		Chloroethane	ND	0.50	
75-09-2		Methylene chloride	0.2*	0.30	
75-69-4		Trichlorofluoromethane	ND	0.10	
75-35-4		1,1-Dichloroethene	ND	0.10	
75-34-3		1,1-Dichloroethane	0.7	0.070	
156-60-5		trans-1,2-Dichloroethene	0.2*	0.20	
67-66-3		Chloroform	0.2*	0.050	
107-06-2		1,2-Dichloroethane	ND	0.030	
71-55-6		1,1,1-Trichloroethane	0.6	0.070	
56-23-5		Carbon tetrachloride	ND	0.10	
75-27-4		Bromodichloromethane	ND	0.10	

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Results by Sample

SAMPLE ID 8811081520

FRACTION 03A TEST CODE EPA601

NAME EPA method 601

Date & Time Collected 11/08/88

Category

CAS#	COMPOUND	RESULT	DEF LIMIT
78-87-5	1,2-Dichloropropane	ND	0.10
10061-02-6	trans-1,3-Dichloropropene	ND	0.30
79-01-6	Trichloroethene	0.24	0.20
124-48-1	Dibromochloromethane-A	ND	0.20
79-00-5	1,1,2-Trichloroethane-A	ND	0.070
10061-01-5	cis-1,3-Dichloropropene-A	ND	N/A
110-75-8	2-Chloroethylvinyl ether	ND	0.20
75-25-2	Bromoform	ND	0.30
79-34-5	1,1,2,2-Tetrachloroethane-B	ND	0.12
127-18-4	Tetrachloroethane-B	0.7	0.030
108-90-7	Chlorobenzene	ND	0.30
541-73-1	1,3-Dichlorobenzene	ND	0.30
95-50-1	1,2-Dichlorobenzene	ND	0.50
106-46-7	1,4-Dichlorobenzene	ND	0.40
SURROGATES			
74-97-5	Bromochloromethane	97 %	Recovery
460-00-4	1-Bromo-4-fluorobenzene	95 %	Recovery

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Results by Sample

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SAMPLE ID 8811081520

FRACTION 03A TEST CODE EPA601

NAME EPA method 601

Date & Time Collected 11/08/88

Category

NOTES AND DEFINITIONS FOR THIS REPORT.

DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NA = not analyzed

* = less than 5 times the detection limit

N/A = not available

Second column confirmation NOT performed unless otherwise noted.

A-Dibromochloromethane, 1,1,2-trichloroethane and cis-1,3-dichloropropene co-elute. Quantitated as dibromochloromethane unless otherwise noted.

B-1,1,2,2-tetrachloroethane and tetrachloroethene co-elute. Quantitated as tetrachloroethane unless otherwise noted.

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SAMPLE ID 8811081520

FRACTION 038 TEST CODE EPA502 NAME EPA method 602
Date & Time Collected 11/08/88 Category

ANALYST INSTRMT CL
D

INJECTED 11/10/88

FILE #

VERIFIED CL

UNITS ug/L

CAS#	COMPOUND	RESULT	DET LIMIT
71-43-2	Benzene	0.84	0.20
108-88-3	Toluene	ND	0.20
100-41-4	Ethylbenzene	ND	0.30
108-90-7	Chlorobenzene-A	ND	0.30
106-46-7	1,4-Dichlorobenzene	ND	0.30
541-73-1	1,3-Dichlorobenzene	ND	0.40
95-50-1	1,2-Dichlorobenzene	ND	0.40

SURROGATES

98-08-8 a,a,a-Trifluorotoluene 94% recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

DET LIMIT = DETECTION LIMIT
ND = not detected at detection limit
NA = not analyzed
* = less than 5 times the detection limit
N/A = not available
Second column confirmation NOT performed unless otherwise noted.

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SAMPLE ID 8811081520

FRACTION 03B

NAME EPA method 602

Date & Time Collected 11/08/88

Category

A-Chlorobenzene and p-xylene co-elute
Quantitated as chlorobenzene unless
otherwise noted.

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Work Order # 88-11-059

SAMPLE ID 8811081520

FRACTION Q3D

TEST CODE OP04

NAME Orthophosphate

Date & Time Collected 11/08/88

Category

ANALYST MJS
INSTRMT 21

ANALYZED 11/11/88

UNITS mg/L as P

ANALYTE RESULT DET LIMIT

Orthophosphate ND 0.020

VERIFIED LM

NOTES AND DEFINITIONS FOR THIS REPORT.

DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NA = not analyzed

* = less than 5 times the detection limit

N/A = not available

SAMPLE ID 8811081520

FRACTION Q3D

TEST CODE TDS

NAME Total dissolved solids

Date & Time Collected 11/08/88

Category

VERIFIED LM

ANALYST TAM
INSTRMT

ANALYZED 11/15/88

UNITS mg/L

ANALYTE RESULT DET LIMIT

Filterable Residue (TDS) 2400 6

NOTES AND DEFINITIONS FOR THIS REPORT.

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SAMPLE ID 8811081520

FRACTION Q38

TEST CODE IDS

NAME Total dissolved solids

Date & Time Collected 11/08/88

Category

DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NA = not analyzed

* = less than 5 times the detection limit

N/A = not available

SAMPLE ID 8811081520

FRACTION Q38

TEST CODE XYLENE

NAME Xylenes, EPA 602

Date & Time Collected 11/08/88

Category

ANALYST CL
INSTRMT D

INJECTD 11/10/88

FILE #

VERIFIED CL

UNITS ug/L

CAS #	COMPOUND	RESULT	DET LIMIT
106-42-3	p-Xylene-A	ND	0.20
103-38-3	m-Xylene	ND	0.20
95-47-6	o-Xylene	ND	0.10

SURROGATES

98-09-8 a,a,a-Trifluorotoluene 94% recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NA = not analyzed

* = less than 5 times the detection limit

N/A = not available

Second column confirmation NOT performed unless otherwise noted.

Q = daily EPA standard recovery outside

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SAMPLE ID 8811081520

FRACTION Q3B TEST CODE XYLENE

NAME Xylenes, EPA 602

Date & Time Collected 11/08/88

Category

95% confidence interval.
Chlorobenzene and p-xylene co-elute.
Quantitated as chlorobenzene unless
otherwise noted.

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Results by Sample

REPORT

Work Order # 88-11-059

SAMPLE ID 8811081545

FRACTION 04A

TEST CODE EPA601

NAME EPA method 601

Date & Time Collected 11/08/88

Category

ANALYST INSTRMT	CL		FILE #	INJECTD 11/10/88	COMPOUND	RESULT	DET LIMIT	VERIFIED	
	B	CL						UNITS	CL
								ug/L	
74-87-3					Chloromethane	ND	3.0		
74-83-9					Bromomethane	ND	12		
75-01-4					Vinyl chloride	ND	2.0		
75-00-3					Chloroethane	ND	5.0		
75-09-2					Methylene chloride	ND	3.0		
75-69-4					Trichlorofluoromethane	ND	1.0		
75-35-4					1,1-Dichloroethene	ND	1.0		
75-34-3					1,1-Dichloroethane	5.8	0.90		
156-60-8					trans-1,2-Dichloroethene	120	2.0		
67-66-3					Chloroform	9.2	0.50		
107-06-2					1,2-Dichloroethane	ND	0.30		
71-55-6					1,1,1-Trichloroethane	6.6	0.90		
56-23-5					Carbon tetrachloride	ND	1.0		
75-27-4					Bromodichloromethane	7.5	1.0		

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Work Order # 88-11-059
Continued From Above

Results by Sample

SAMPLE ID 8811081546

FRACTION 04A

TEST CODE EPA601

NAME EPA method 601

Date & Time Collected 11/09/88

Category

CAS#	COMPOUND	RESULT	DET LIMIT
78-87-5	1,2-Dichloropropane	ND	1.0
10061-02-6	trans-1,3-Dichloropropene	ND	3.0
79-01-6	Trichloroethene	12	2.0
124-48-1	Dibromochloromethane-A	ND	2.0
79-00-5	1,1,2-Trichloroethane-A	ND	0.70
10061-01-5	cis-1,3-Dichloropropene-A	ND	N/A
110-75-8	2-Chloroethyl vinyl ether	ND	2.0
75-25-2	Bromoform	ND	3.0
79-34-5	1,1,2,2-Tetrachloroethane-B	ND	1.2
127-18-4	Tetrachloroethene-B	ND	0.30
108-90-7	Chlorobenzene	ND	3.0
541-73-1	1,3-Dichlorobenzene	ND	3.0
95-50-1	1,2-Dichlorobenzene	ND	2.0
106-46-7	1,4-Dichlorobenzene	ND	4.0

SURROGATES

74-97-5 Bromochloromethane 100 % Recovery

460-00-4 1-Bromo-4-fluorobenzene 99 % Recovery

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Results by Sample

Work Order # 88-11-059
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SAMPLE ID 8811081546

FRACTION Q4A

TEST CODE EPA601

NAME EPA method 601

Date & Time Collected 11/08/88

Category

NOTES AND DEFINITIONS FOR THIS REPORT.

DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NA = not analyzed

* = less than 5 times the detection limit

N/A = not available

Second column confirmation NOT performed unless otherwise noted.

A-Dibromochloromethane, 1,1,2-trichloroethane and cis-1,3-dichloropropene co-elute.

Quantitated as dibromochloromethane unless otherwise noted.

B-1,1,2,2-tetrachloroethane and tetrachloroethene co-elute. Quantitated as tetrachloroethene unless otherwise noted.

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REPORT

Work Order # 88-11-059

Received: 11/10/88

Results by Sample

SAMPLE ID 8811081546

FRACTION 04B

TEST CODE EPA602

NAME EPA method 602

Date & Time Collected 11/08/88

Category

VERIFIED CL
UNITS ug/L

ANALYST INSTRMT	CL D	FILE #	INJECTED 11/10/88	CAS#	COMPOUND	RESULT	DET LIMIT
				71-43-2	Benzene	ND	0.20
				108-88-3	Toluene	ND	0.20
				100-41-4	Ethylbenzene	ND	0.30
				108-90-7	Chlorobenzene-A	ND	0.30
				106-45-7	1,4-Dichlorobenzene	ND	0.30
				541-73-1	1,3-Dichlorobenzene	ND	0.40
				95-50-1	1,2-Dichlorobenzene	ND	0.40

SURROGATES
98-08-8 a,a,a-Trifluorotoluene 100% recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

DET LIMIT = DETECTION LIMIT
 ND = not detected at detection limit
 NA = not analyzed
 * = less than 5 times the detection limit
 N/A = not available
 Second column confirmation NOT performed
 unless otherwise noted.

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REPORT
Results by Sample

Work Order # 88-11-039
Continued From Above

SAMPLE ID 8811081546

FRACTION 04B TEST CODE EPA602 NAME EPA method 602

Date & Time Collected 11/08/88

Category

A-Chlorobenzene and p-xylene co-elute
Quantitated as chlorobenzene unless
otherwise noted.

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Results by Sample

Work Order # 88-11-059

SAMPLE ID 8811081546

FRACTION 04B

TEST CODE XYLENE NAME Xylenes, EPA 602

Date & Time Collected 11/08/88

Category

VERIFIED CL

ANALYST CL
INSTRMT D

FILE #

INJECTD 11/10/88

UNITS ug/L

CAS #	COMPOUND	RESULT	DET LIMIT
106-42-3	p-Xylene-A	ND	0.20
108-38-3	m-Xylene	ND	0.20
95-47-6	o-Xylene	ND	0.10

98-08-8

SURROGATES

a,a,a-Trifluorotoluene 102% recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NA = not analyzed

* = less than 5 times the detection limit

N/A = not available

Second column confirmation NOT performed

unless otherwise noted.

Q = daily EPA standard recovery outside

95% confidence interval.

Chlorobenzene and p-xylene co-elute.

Quantitated as chlorobenzene unless

otherwise noted.

Received: 11/10/88

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REPORT
Results by Sample

Work Order # 88-11-059

SAMPLE ID 8811081604

FRACTION QED

TEST CODE ALKAL

NAME Component alkalinities

Date & Time Collected 11/08/88

Category

VERIFIED LM

ANALYST	INSTRMT	TAM	ANALYZED	11/21/88	1	UNITS	REQ/L	as CaCO3
		636						
ANALYTE RESULT DET LIMIT								
Total Alkalinity			265					1
Hydroxide			ND					1
Carbonate			ND					1
Bicarbonate			265					1

NOTES AND DEFINITIONS FOR THIS REPORT.

DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NA = not analyzed

* = less than 5 times the detection limit

N/A = not available

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RAS - Austin

REPORT

Work Order # 88-11-059

Results by Sample

SAMPLE ID 8811081604

FRACTION 034

TEST CODE EPA601

NAME EPA method 601

Date & Time Collected 11/08/88

Category

ANALYST _____ BM _____
INSTRMT _____ E _____
INJECTID 11/15/88
FILE # _____
VERIFIED _____ CL _____
UNITS _____ ug/L _____

CAS#	COMPOUND	RESULT	DET LIMIT
74-87-3	Chloromethane	ND	0.30
74-83-9	Bromomethane	ND	1.2
75-01-4	Vinyl chloride	ND	0.20
75-00-3	Chloroethane	ND	0.50
75-09-2	Methylene chloride	ND	0.30
75-69-4	Trichlorofluoromethane	ND	0.10
75-35-4	1,1-Dichloroethene	ND	0.10
75-34-3	1,1-Dichloroethane	0.5	0.090
156-60-5	trans-1,2-Dichloroethene	0.7*	0.20
67-66-3	Chloroform	0.5	0.050
107-06-2	1,2-Dichloroethane	ND	0.030
71-55-6	1,1,1-Trichloroethane	1.0	0.090
56-23-5	Carbon tetrachloride	ND	0.10
75-27-4	Bromodichloromethane	ND	0.10

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Results by Sample

Work Order # 88-11-059
Continued From Above

SAMPLE ID 8811081604

FRACTION 05A TEST CODE EPA601

NAME EPA method 601

Date & Time Collected 11/08/83

Category

CAS#	COMPOUND	RESULT	DET LIMIT
78-87-5	1,2-Dichloropropane	ND	0.10
10061-02-6	trans-1,3-Dichloropropene	ND	0.30
79-01-6	Trichloroethene	ND	0.20
124-48-1	Dibromochloromethane-A	ND	0.20
79-00-5	1,1,2-Trichloroethane-A	ND	0.070
10061-01-5	cis-1,3-Dichloropropene-A	ND	N/A
110-75-6	2-Chloroethylvinyl ether	ND	0.20
75-25-2	Bromoform	ND	0.30
79-34-5	1,1,2,2-Tetrachloroethene-B	ND	0.12
127-18-4	Tetrachloroethene-A	0.1	0.030
108-90-7	Chlorobenzene	ND	0.30
541-73-1	1,3-Dichlorobenzene	ND	0.30
95-50-1	1,2-Dichlorobenzene	ND	0.50
106-46-7	1,4-Dichlorobenzene	ND	0.40
SURROGATES			
74-97-5	Bromochloromethane	94 %	Recovery
460-00-4	1-Bromo-4-fluorobenzene	100 %	Recovery

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Results by Sample

Work Order # 88-11-059
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SAMPLE ID 8811081604

FRACTION 050 TEST CODE EPA601 NAME EPA method 601

Date & Time Collected 11/08/88

Category

NOTES AND DEFINITIONS FOR THIS REPORT.

DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NA = not analyzed

* = less than 5 times the detection limit

N/A = not available

Second column confirmation NOT performed unless otherwise noted.

A-Dibromochloromethane, 1,1,2-trichloroethane and cis-1,3-dichloropropene co-elute. Quantitated as dibromochloromethane unless otherwise noted.

B-1,1,2,2-tetrachloroethane and tetrachloroethene co-elute. Quantitated as tetrachloroethene unless otherwise noted

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REPORT

Work Order # 88-11-059

Results by Sample

SAMPLE ID 8811081604

FRACTION 058

TEST CODE EPA602

NAME EPA method 602

Date & Time Collected 11/08/88

Category

ANALYST _____ CL
INSTRMT _____ D
INJECTED 11/10/88
VERIFIED _____ CL
UNITS ug/L

CAS#	COMPOUND	RESULT	DET LIMIT
71-43-2	Benzene	ND	0.20
108-88-3	Toluene	ND	0.20
100-41-4	Ethylbenzene	ND	0.30
108-90-7	Chlorobenzene-A	ND	0.30
106-46-7	1,4-Dichlorobenzene	ND	0.30
541-73-1	1,3-Dichlorobenzene	ND	0.40
95-50-1	1,2-Dichlorobenzene	ND	0.40

SURROGATES

98-08-8 a,a,a-Trifluorotoluene 91% recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NA = not analyzed

* = less than 5 times the detection limit

N/A = not available

Second column confirmation NOT performed unless otherwise noted.

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REPORT

Work Order # 88-11-059
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Results by Sample

SAMPLE ID 8811081604

FRACTION 058 TEST CODE EPA602

NAME EPA method 602

Date & Time Collected 11/08/88

Category

A-Chlorobenzene and p-xylene co-elute.
Quantitated as chlorobenzene unless
otherwise noted.

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REPORT

Results by Sample

Work Order # 88-11-007

SAMPLE ID 8811081604

FRACTION 050

TEST CODE OP04

NAME Orthophosphate

Date & Time Collected 11/08/88

Category

ANALYST HVS
INSTRMT 21

ANALYZED 11/11/88

UNITS mg/L as P

VERIFIED LM

ANALYTE RESULT DET LIMIT

Orthophosphate ND 0.020

NOTES AND DEFINITIONS FOR THIS REPORT.

DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NA = not analyzed

* = less than 5 times the detection limit

NNA = not available

SAMPLE ID 8811081604

FRACTION 050

TEST CODE TDS

NAME Total dissolved solids

Date & Time Collected 11/08/88

Category

ANALYST TAM
INSTRMT

ANALYZED 11/15/88

UNITS mg/L

VERIFIED LM

ANALYTE RESULT DET LIMIT

Filterable Residue (TDS) 2400 4

NOTES AND DEFINITIONS FOR THIS REPORT.

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REPORT

Results by Sample

Work Order # 88-11-059
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SAMPLE ID 8811081604

FRACTION Q28

TEST CODE IDS

NAME Total dissolved solids

Date & Time Collected 11/08/88

Category

DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NA = not analyzed

* = less than 5 times the detection limit

NVA = not available

SAMPLE ID 8811081604

FRACTION Q28

TEST CODE XYLENE

NAME Xylenes, EPA 602

Date & Time Collected 11/08/88

Category

VERIFIED CL

ANALYST CL
INSTRMT 0

INJECTD 11/10/88

REPT

UNITS ug/L

CAS #	COMPOUND	RESULT	DET LIMIT
106-42-3	p-Xylene-A	ND	0.20
103-38-3	m-Xylene	ND	0.20
95-47-6	o-Xylene	ND	0.10

98-08-8

a,a,a-Trifluorotoluene

91% recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NA = not analyzed

* = less than 5 times the detection limit

NVA = not available

Second column confirmation NOT performed

unless otherwise noted.

Q = daily EPA standard recovery estimate

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REPORT

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Results of Sample

SAMPLE ID 8811081604

FRACTION 058 TEST CODE XYLENE

NAME Xylenes, EPA 602

Date & Time Collected 11/08/88

Category

95% confidence interval.

Chlorobenzene and p-xylene co-eluted.
Quantitated as chlorobenzene unless
otherwise noted.

SAMPLE ID 8811081621

FRACTION 058

TEST CODE ALKAL

NAME Component alkalinities

Date & Time Collected 11/08/88

Category

VERIFIED LM

ANALYST	TAM		
INSTRMT	639	ANALYZED 11/21/88	UNITS mg/L as CaCO3

ANALYTE RESULT DET LIMIT

Total Alkalinity	196	1
Hydroxide	ND	1
Carbonate	ND	1
Bicarbonate	196	1

NOTES AND DEFINITIONS FOR THIS REPORT.

DET LIMIT = DETECTION LIMIT
 ND = not detected at detection limit
 NA = not analyzed
 * = less than 5 times the detection limit
 N/A = not available

Received: 11/10/88

Results by Sample

SAMPLE ID 8811081621

FRACTION 06A

TEST CODE EPA601

NAME EPA method 601

Date & Time Collected 11/08/88

Category

ANALYST INSTRMT	BM R	INJECTD 11/10/88	COMPOUND	RESULT	DET LIMIT	VERIFIED	
						FILE #	CL
74-87-3			Chloromethane	ND	0.30		
74-83-9			Bromomethane	ND	0.2		
75-01-4			Vinyl chloride	ND	0.20		
75-00-3			Chloroethane	ND	0.50		
75-09-2			Methylene chloride	ND	0.30		
75-69-4			Trichlorofluoromethane	ND	0.10		
75-35-4			1,1-Dichloroethene	ND	0.10		
75-34-3			1,1-Dichloroethane	ND	0.090		
156-60-5			trans-1,2-Dichloroethene	ND	0.20		
67-66-3			Chloroform	0.7	0.050		
107-06-2			1,2-Dichloroethane	ND	0.030		
71-55-6			1,1,1-Trichloroethane	ND	0.090		
56-23-5			Carbon tetrachloride	ND	0.10		
75-27-4			Bromodichloromethane	ND	0.10		

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REPORT

Work Order # 88-11-059

Results by Sample

Continued From Above

SAMPLE ID 8811081621

FRACTION C24

TEST CODE EPA601

NAME EPA method 601

Date & Time Collected 11/08/88

Category

CAS#	COMPOUND	RESULT	DET LIMIT
78-87-5	1,2-Dichloropropane	ND	0.10
10061-02-6	trans-1,3-Dichloropropene	ND	0.30
79-01-6	Trichloroethene	ND	0.20
124-48-1	Dibromochloromethane-A	ND	0.20
79-00-5	1,1,2-Trichloroethane-A	ND	0.070
10061-01-5	cis-1,3-Dichloropropene-A	ND	N/A
110-75-8	2-Chloroethylvinyl ether	ND	0.20
75-25-2	Bromoform	ND	0.30
79-34-5	1,1,2,2-Tetrachloroethane-B	ND	0.12
127-18-4	Tetrachloroethene-B	ND	0.030
108-90-7	Chlorobenzene	ND	0.30
541-73-1	1,3-Dichlorobenzene	ND	0.30
95-50-1	1,2-Dichlorobenzene	ND	0.30
105-46-7	1,4-Dichlorobenzene	ND	0.40

SURROGATES

74-97-5	Bromochloromethane	99 % Recovery
460-00-4	1-Bromo-4-fluorobenzene	90 % Recovery

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RAS - Austin

REPORT

Results by Sample

Work Order # 88-11-059

Continued From Above

SAMPLE ID 8811081621

FRACTION Q&A

TEST CODE EPA601

NAME EPA method 601

Date & Time Collected 11/08/88

Category

NOTES AND DEFINITIONS FOR THIS REPORT.

DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NA = not analyzed

* = less than 5 times the detection limit

N/A = not available

Second column confirmation NOT performed unless otherwise noted.

A-Dibromochloroethane, 1,1,2-trichloroethane and cis-1,3-dichloropropene co-elute. Quantitated as dibromochloroethane unless otherwise noted.

B-1,1,2,2-tetrachloroethane and tetrachloroethene co-elute. Quantitated as tetrachloroethene unless otherwise noted

SAMPLE ID 8811081621

Project Name

TEST CODE EPA602

NAME EPA method 602

Date & Time Collected 11/08/88

Category

ANALYST INSTRMT	CLL D	INJECTED 11/11/88	CAS#	COMPOUND	RESULT	DET LIMIT	VERIFIED	
							CL	CL
			71-43-2	Benzene	0.95	0.20		
			109-88-3	Toluene	ND	0.20		
			100-41-4	Ethylbenzene	ND	0.30		
			100-90-7	Styrene	ND	0.30		
			106-46-7	1,4-Dichlorobenzene	ND	0.30		
			541-73-1	1,3-Dichlorobenzene	ND	0.40		
			95-50-1	1,2-Dichlorobenzene	ND	0.40		

SUBSTITUTES

98-08-8	a,a,a-Trichlorobenzene	92% recovery
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NOTES AND DEFINITIONS FOR THIS REPORT.

DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NA = not analyzed

* = less than 5 times the detection limit

N/A = not available

Second column confirmation NOT performed unless otherwise noted.

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REPORT

Results by Sample

Work Order # 88-11-059
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SAMPLE ID 8811081621

FRACTION C6H

TEST CODE EPA602

NAME EPA method 602

Date & Time Collected 11/08/88

Category

A-Chlorobenzene and p-xylene co-elute
Quantitated as chlorobenzene unless
otherwise noted.

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REPORT
Results of Sample

Work Order # 88-11-059

SAMPLE ID 8811081621

FRACTION Q22

TEST CODE UP04

NAME Orthophosphate

Date & Time Collected 11/08/88

Category

ANALYST MJS
INSTRMT 21

ANALYZED 11/11/88

UNITS mg/L as P

VERIFIED LM

ANALYTE RESULT DET LIMIT

Orthophosphate ND 0.020

NOTES AND DEFINITIONS FOR THIS REPORT.

DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NA = not analyzed

* = less than 5 times the detection limit

N/A = not available

SAMPLE ID 8811081621

FRACTION Q22

TEST CODE IDS

NAME Total dissolved solids

Date & Time Collected 11/08/88

Category

ANALYST TAM
INSTRMT 21

ANALYZED 11/15/88

VERIFIED LM

UNITS mg/L

ANALYTE RESULT DET LIMIT

Filterable Residue (TDS) 2800 5

NOTES AND DEFINITIONS FOR THIS REPORT.

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REPORT
Results by Sample

SAMPLE ID 8811081621

FRACTION Q&Q TEST CODE IDS
Date & Time Collected 11/08/88

NAME Total dissolved solids
Category

DET LIMIT = DETECTION LIMIT
ND = not detected at detection limit
NA = not analyzed
* = less than 5 times the detection limit
N/A = not available

SAMPLE ID 8811081621

FRACTION Q&Q TEST CODE XYLENE
Date & Time Collected 11/08/88

NAME Xylenes, EPA 602
Category

ANALYST _____
INSTRMT _____

INJECTD 11/10/88

FILE # _____

VERIFIED _____ CL

UNITS _____ ug/L

CAS #	COMPOUND	RESULT	DET LIMIT
106-42-3	p-Xylene-A	ND	0.10
109-38-3	m-Xylene	ND	0.10
95-47-6	o-Xylene	ND	0.10

93-08-8

a,a,a-Trifluorotoluene

97% recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

DET LIMIT = DETECTION LIMIT
ND = not detected at detection limit
NA = not analyzed
* = less than 5 times the detection limit
N/A = not available
Second column confirmation NOT performed unless otherwise noted.
Q = daily EPA standard recovery curve

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RAS - Austin
Results by Sample
REPORT
Work Order # 88-11-059
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SAMPLE ID 8811081521
FRACTION Gm TEST CODE XYLINE NAME Xylenes, EPA 602
Date & Time Collected 11/08/88
Category

95% confidence interval.
Chlorobenzene and p-xylene co-eluted.
Quantitated as chlorobenzene unless
otherwise noted.

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Results by Sample

Work Order # 88-11-059

SAMPLE ID 8811081634

FRACTION 07A

TEST CODE EPA601

NAME EPA method 601

Date & Time Collected 11/08/88

Category

ANALYST INSTRMT	CL #	INJECTD 11/01/88	FILE #	VERIFIED	CL
CASH		COMPOUND	RESULT	DET LIMIT	UNITS ug/L
74-87-3		Chloromethane	ND	0.30	
74-93-9		Bromomethane	ND	1.2	
75-01-4		Vinyl chloride	ND	0.20	
75-00-3		Chloroethane	ND	0.50	
75-09-2		Methylene chloride	1.1*	0.30	
75-69-4		Trichlorofluoromethane	ND	0.10	
75-35-4		1,1-Dichloroethane	ND	0.10	
75-34-3		1,1-Dichloroethane	ND	0.090	
156-60-5		trans-1,2-Dichloroethene	ND	0.20	
67-66-3		Chloroform	ND	0.050	
107-06-2		1,2-Dichloroethane	ND	0.030	
71-55-6		1,1,1-Trichloroethane	ND	0.090	
56-23-5		Carbon tetrachloride	ND	0.10	
75-27-4		Bromodichloromethane	ND	0.10	

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Results by Sample

REPORT

Work Order # 88-11-059
Continued From Above

SAMPLE ID 8811081634

FRACTION 07A

TEST CODE EPA601

NAME EPA method 601

Date & Time Collected 11/08/88

Category

CAS#	COMPOUND	RESULT	DET LIMIT
78-87-5	1,2-Dichloropropane	ND	0.10
10061-02-6	trans-1,3-Dichloropropane	ND	0.30
79-01-6	Trichloroethene	ND	0.20
124-48-1	Dibromochloromethane-A	ND	0.20
79-00-5	1,1,2-Trichloroethane-A	ND	0.070
10061-01-5	cis-1,3-Dichloropropene-A	ND	N/A
110-75-8	2-Chloroethyl vinyl ether	ND	0.20
75-25-2	Bromoform	ND	0.30
79-34-5	1,1,2,2-Tetrachloroethene-B	ND	0.12
127-18-4	Tetrachloroethene-B	ND	0.030
108-90-7	Chlorobenzene	ND	0.30
541-73-1	1,3-Dichlorobenzene	ND	0.30
95-50-1	1,2-Dichlorobenzene	ND	0.50
106-46-7	1,4-Dichlorobenzene	ND	0.40
SURROGATES			
74-97-5	Bromochloromethane	101 %	Recovery
460-00-4	1-Bromo-4-fluorobenzene	97 %	Recovery

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REPORT

Results by Sample

Work Order # 88-11-059
Continued From Above

SAMPLE ID 8811081634

FRACTION 07A TEST CODE EPA601 NAME EPA method 601

Date & Time Collected 11/08/88

Category

NOTES AND DEFINITIONS FOR THIS REPORT.

DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NA = not analyzed

* = less than 5 times the detection limit

N/A = not available

Second column confirmation NOT performed unless otherwise noted.

A-Dibromochloromethane, 1,1,2-trichloroethane and cis-1,3-dichloropropene co-elute Quantitated as dibromochloromethane unless otherwise noted.

B-1,1,2,2-tetrachloroethane and tetrachloroethene co-elute. Quantitated as tetrachloroethene unless otherwise noted.

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REPORT
Results by Sample

Work Order # 88-11-059

SAMPLE ID 8811081634

FRACTION 07D

TEST CODE EPA402

NAME EPA method 602

Date & Time Collected 11/08/88

Category

ANALYST	CL	INJECTED	FILE #	VERIFIED	CL
INSTRMT	D	11/10/88			
CAS#	COMPOUND	RESULT	DET LIMIT	UNITS	ug/L
71-43-2	Benzene	ND	0.20		
108-88-3	Toluene	ND	0.20		
100-41-4	Ethylbenzene	ND	0.30		
108-90-7	Chlorobenzene-A	ND	0.30		
106-46-7	1,4-Dichlorobenzene	ND	0.30		
541-73-1	1,2-Dichlorobenzene	ND	0.40		
95-50-1	1,2-Dichlorobenzene	ND	0.40		

SURROGATES

98-08-8 a,a,a-Trifluorotoluene 98% recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

DET LIMIT = DETECTION LIMIT
 ND = not detected at detection limit
 NA = not analyzed
 * = less than 5 times the detection limit
 N/A = not available
 Second column confirmation NOT performed unless otherwise noted.

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Results by Sample REPORT

Work Order # 88-11-059
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SAMPLE ID 8811081634

FRACTION 07B TEST CODE EPA602

NAME EPA method 602

Date & Time Collected 11/08/88

Category

A-Chlorobenzene and p-xylene co-elute.
Quantitated as chlorobenzene unless
otherwise noted.

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REPORT

Results by Sample

SAMPLE ID 8811081634

FRACTION Q7B TEST CODE XYLENE NAME Xylenes, EPA 602

Date & Time Collected 11/08/88

Category

VERIFIED CL

ANALYST CL
INSTRMT D

FILE #

INJECTD 11/10/88

UNITS ug/L

CAS #	COMPOUND	RESULT	DET LIMIT
105-42-3	p-Xylene-A	ND	0.20
109-38-3	m-Xylene	ND	0.20
95-47-6	o-Xylene	ND	0.10

SURROGATES

98-08-8 a,a,a-Trifluorotoluene 98% recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NA = not analyzed

* = less than 5 times the detection limit

N/A = not available

Second column confirmation NOT performed unless otherwise noted.

Q = daily EPA standard recovery outside 95% confidence interval.

Chlorobenzene and p-xylene co-elute.

Quantitated as chlorobenzene unless otherwise noted.

Received: 11/10/88

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REPORT

Results by Sample

Work Order # 88-11-059

SAMPLE ID reagent blank

FRACTION OBA

TEST CODE EPA601 NAME EPA method 601

Date & Time Collected not specified

Category

ANALYST INSTRMT	CAS#	COMPOUND	RESULT	DEF LIMIT	VERIFIED	
					FILE #	CL
					UNITS	ug/L
	74-87-3	Chloromethane	ND	0.30		
	74-83-9	Bromomethane	ND	1.2		
	75-01-4	Vinyl chloride	ND	0.20		
	75-00-2	Chloroethane	ND	0.50		
	75-09-2	Methylene chloride	ND	0.30		
	75-69-4	Trichlorofluoromethane	ND	0.10		
	75-35-4	1,1-Dichloroethane	ND	0.10		
	75-34-2	1,1-Dichloroethane	ND	0.090		
	156-60-5	trans-1,2-Dichloroethane	ND	0.20		
	67-66-3	Chloroform	ND	0.050		
	107-06-2	1,2-Dichloroethane	ND	0.030		
	71-55-6	1,1,1-Trichloroethane	ND	0.090		
	56-23-5	Carbon tetrachloride	ND	0.10		
	75-27-4	Bromodichloromethane	ND	0.10		

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Results by Sample

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FRACTION C8A

TEST CODE EPA601 NAME EPA method 601

Date & time Collected not specified

Category

CAS#	COMPOUND	RESULT	DET LIMIT
78-87-5	1,2-Dichloropropane	ND	0.10
10061-02-6	trans-1,3-Dichloropropane	ND	0.30
79-01-6	Trichloroethene	ND	0.20
124-48-1	Dibromochloromethane-A	ND	0.20
79-00-5	1,1,2-Trichloroethane-A	ND	0.070
10061-01-5	cis-1,3-Dichloropropene-A	ND	N/A
110-75-8	2-Chloroethylvinyl ether	ND	0.20
75-25-2	Bromoform	ND	0.30
79-34-5	1,1,2,2-Tetrachloroethane-B	ND	0.12
127-18-4	Tetrachloroethene-B	ND	0.030
108-90-7	Chlorobenzene	ND	0.30
541-73-1	1,3-Dichlorobenzene	ND	0.30
95-50-1	1,2-Dichlorobenzene	ND	0.50
106-46-7	1,4-Dichlorobenzene	ND	0.40
SURROGATES			
74-97-5	Bromochloromethane	N/A	% Recovery
460-00-4	1-Bromo-4-fluorobenzene	N/A	% Recovery

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Results by Sample

Work Order # 88-11-059

Continued From Above

SAMPLE ID reagent blank

FRACTION Q84

TEST CODE EPA601 NAME EPA method 601

Date & Time Collected not specified

Category

NOTES AND DEFINITIONS FOR THIS REPORT.

DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NA = not analyzed

* = less than 5 times the detection limit

N/A= not available

Second column confirmation NOT performed unless otherwise noted.

A-Dibromochloromethane, 1,1,2-trichloroethane and cis-1,3-dichloropropene co-elute.

Quantitated as dibromochloromethane unless otherwise noted.

B-1,1,2,2-tetrachloroethane and tetrachloroethene co-elute. Quantitated as tetrachloroethene unless otherwise noted.

SAMPLE ID reagent blank

FRACTION Q8A

TEST CODE EPA602 NAME EPA method 602

Date & Time Collected not specified

Category

VERIFIED CL

ANALYST	INSTRMT	CL	FILE #	INJECTED	CAS#	COMPOUND	RESULT	DEF LIMIT	UNITS	ug/L
		D		11/10/88						
					71-43-2	Benzene	ND	0.20		
					108-88-3	Toluene	ND	0.20		
					100-41-4	Ethylbenzene	ND	0.30		
					108-90-7	Chlorobenzene-A	ND	0.30		
					106-46-7	1,4-Dichlorobenzene	ND	0.30		
					541-73-1	1,3-Dichlorobenzene	ND	0.40		
					95-50-1	1,2-Dichlorobenzene	ND	0.40		

SURROGATES

98-08-8 a,a,a-Trifluorotoluene N/A% recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

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- NA = not analyzed
- * = less than 5 times the detection limit
- N/A = not available
- Second column confirmation NOT performed unless otherwise noted.

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Results by Sample

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FRACTION ORA

TEST CODE EPA602 NAME EPA method 602

Date & Time Collected not specified

Category

A-Chlorobenzene and p-xylene co-elute.
Quantitated as chlorobenzene unless
otherwise noted.

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Work Order # 88-11-059

Results by Sample

SAMPLE ID reagent blank

FRACTION 02A TEST CODE XYLENE NAME Xylenes, EPA 602

Date & Time Collected not specified Category

VERIFIED CL

ANALYST CL
INSTRMT D

FILE #

INJECTD 11/10/88

UNITS ug/L

CAS #	COMPOUND	RESULT	DET LIMIT
106-42-3	p-Xylene-A	ND	0.20
103-38-3	m-Xylene	ND	0.20
95-47-6	o-Xylene	ND	0.10

SURROGATES

98-08-8 a,a,a-Trifluorotoluene N/A% recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NA = not analyzed

* = less than 5 times the detection limit

N/A = not available

Second column confirmation NOT performed unless otherwise noted.

Q = daily EPA standard recovery outside 95% confidence interval.

Chlorobenzene and p-xylene co-elute.

Quantitated as chlorobenzene unless otherwise noted.