

GW - 40

MONITORING REPORTS

DATE:
2001-1998

ANNUAL DATA REPORT
GIANT BLOOMFIELD REFINERY
2001

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ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

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INTRODUCTION AND SUMMARY ANNUAL REPORT 2001

INTRODUCTION

Tank 22 is being used for intermediate water storage. All water is treated by the carbon filter unit exclusively.

SUMMARY

Section 2

Section 2 contains a summary of the annual analytical results. Raw data, as received from the laboratory, is available on request as a supplement to the annual report.

Section 3

Potentiometric surface maps, as well as the adjusted water surface elevation and product thickness for each well, are included in Section 3.

Section 4

Section 4 illustrates the volume history for the year. Total volume pumped from each well, as well as current tank volumes and the reinjection volume, is reported. Additional detail, on a weekly basis, is also available if desired.

SECTION 2

The following pages show the annual analytical data for the Giant Refining Remediation Project. The data is broken down into units as described below.

	<u>Unit of Measure</u>
Total dissolved solids (180)	mg/l
Total dissolved solids (calc)	mg/l
Total alkalinity as CaCO ₃	mg/l
Total hardness as CaCO ₃	mg/l
Bicarbonate as HCO ₃	mg/l
Carbonate as CO ₃	mg/l
Chloride	mg/l
Sulfate	mg/l
Calcium	mg/l
Magnesium	mg/l
Potassium	mg/l
Sodium	mg/l

The remainder of the data is measured in ug/l.

GIANT INDUSTRIES, INC.
ONSITE REMEDIATION PROJECT
ANNUAL ANALYTICAL DATA SUMMARY
2001

	JAN	APR	JUL	AUG	OCT	DEC
SYSTEM EFFLUENT						
Lab pH	7.1	7.1	6.95		7.1	
Lab Conductivity @25 C	2910	2900	2800		2910	
Total Dissolved Solids (Calc)	2130	4500	2240		2250	
Total Alkalinity as CaCO3	520	500	504		510	
Total Hardness as CaCO3	827	890	732		817	
Bicarbonate as HCO3	634	610	615		622	
Carbonate as CO3	ND	ND	ND		ND	
Hydroxide	ND	ND	ND		ND	
Chloride	116	119	127		107	
Sulfate	979	961	897		1100	
Calcium	276	307	252		282	
Magnesium	33.7	30.2	25.3		27.7	
Potassium	2.9	2.2	2.3		2.3	
Sodium	378	404	409		427	
HALOCARBONS						
Bromodichloromethane	ND	ND	ND		ND	
Bromoform	ND	ND	ND		ND	
Bromomethane	ND	ND	ND		ND	
Carbon Tetrachloride	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-Dibromoethane (EDB)	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	
1,1-Dichloroethane	ND	ND	ND		ND	
1,2-Dichloroethane (EDC)	ND	ND	ND		ND	
1,1-Dichloroethene	ND	ND	ND		ND	
cis-1,2-Dichloroethene	ND	ND	ND		ND	
trans-1,2-Dichloroethene	ND	ND	ND		ND	
1,2-Dichloropropane	ND	ND	ND		ND	
cis-1,3-Dichloropropene	ND	ND	ND		ND	
trans-1,3-Dichloropropene	ND	ND	ND		ND	
Methylene Chloride	ND	ND	ND		ND	
1,1,2,2-Tetrachloroethane	ND	ND	ND		ND	
Tetrachlorethene	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	

	JAN	APR	JUL	AUG	OCT	DEC
Trichlorofluoromethane	ND	ND	ND		ND	
Vinyl Chloride	ND	ND	ND		ND	
AROMATICS						
Benzene	ND	ND	ND		ND	
Chlorobenzene	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	
Ethylbenzene	ND	ND	ND		ND	
Methyl-t-Butyl Ether	ND	ND	ND		ND	
Toluene	ND	ND	ND		ND	
Total Xylenes	ND	ND	ND		ND	
PAH						
1-Methylnaphthalene	ND	ND	ND		ND	
2-Methylnaphthalene	ND	ND	ND		ND	
Benzo(a)pyrene	ND	ND	ND		ND	
Naphthalene	ND	ND	ND		ND	
<u>SYSTEM INFLUENT</u>						
Lab pH	7.2	7.1	7.1		7.2	
Lab Conductivity @25 C	2910	2890	2830		2890	
Total Dissolved Solids (Calc)	2130	2260	2240		2250	
Total Alkalinity as CaCO3	468	490	495		500	
Total Hardness as CaCO3	779	886	654		819	
Bicarbonate as HCO3	570	598	604		610	
Carbonate as CO3	ND	ND	ND		ND	
Hydroxide	ND	ND	ND		ND	
Chloride	116	117	127		107	
Sulfate	992	962	906		1110	
Calcium	258	305	220		283	
Magnesium	32.9	30.3	25.6		27.6	
Potassium	3.7	2.6	2.1		2.3	
Sodium	437	404	413		431	
HALOCARBONS						
Bromodichloromethane	ND	ND	ND		ND	
Bromoform	ND	ND	ND		ND	
Bromomethane	ND	ND	ND		ND	
Carbon Tetrachloride	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-Dibromoethane (EDB)	ND	ND	ND		ND	
1,2-Dichlorobenzene	ND	ND	ND		ND	

	JAN	APR	JUL	AUG	OCT	DEC
1,3-Dichlorobenzene	ND	ND	ND		ND	
1,4-Dichlorobenzene	ND	ND	ND		ND	
1,1-Dichloroethane	ND	ND	ND		ND	
1,2-Dichloroethane (EDC)	ND	ND	ND		0.3	
1,1-Dichloroethene	ND	ND	ND		ND	
cis-1,2-Dichloroethene	ND	ND	ND		ND	
trans-1,2-Dichloroethene	ND	ND	ND		ND	
1,2-Dichloropropane	ND	ND	ND		ND	
cis-1,3-Dichloropropene	ND	ND	ND		ND	
trans-1,3-Dichloropropene	ND	ND	ND		ND	
Methylene Chloride	ND	ND	ND		ND	
1,1,2,2-Tetrachloroethane	ND	ND	ND		ND	
Tetrachlorethene	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	
AROMATICS						
Benzene	ND	ND	0.6		0.2	
Chlorobenzene	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	
Ethylbenzene	ND	ND	ND		ND	
Methyl-t-Butyl Ether	ND	ND	ND		ND	
Toluene	ND	ND	ND		ND	
Total Xylenes	ND	ND	ND		ND	
GRW-3						
Lab pH	7.1					
Lab Conductivity @25 C	2310					
Total Dissolved Solids @ 180 C	1410					
Total Alkalinity as CaCO3	1030					
Total Hardness as CaCO3	339					
Bicarbonate as HCO3	1250					
Carbonate as CO3	ND					
Hydroxide	ND					
Chloride	137					
Sulfate	82					
Calcium	107					
Magnesium	17.4					
Potassium	2.1					
Sodium	446					
HALOCARBONS						
Bromodichloromethane	ND					

	JAN	APR	JUL	AUG	OCT	DEC
Bromoform	ND					
Bromomethane	ND					
Carbon Tetrachloride	ND					
Chloroethane	ND					
Chloroform	ND					
Chloromethane	ND					
Dibromochloromethane	ND					
1,2-Dibromoethane (EDB)	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
1,1-Dichloroethane	ND					
1,2-Dichloroethane (EDC)	ND					
1,1-Dichloroethene	ND					
cis-1,2-Dichloroethene	ND					
trans-1,2-Dichloroethene	ND					
1,2-Dichloropropane	ND					
cis-1,3-Dichloropropene	ND					
trans-1,3-Dichloropropene	ND					
Methylene Chloride	ND					
1,1,2,2-Tetrachloroethane	ND					
Tetrachlorethene	ND					
1,1,1-Trichloroethane	ND					
1,1,2-Trichloroethane	ND					
Trichloroethene	ND					
Trichlorofluoromethane	ND					
Vinyl Chloride	ND					
AROMATICS						
Benzene	ND					
Chlorobenzene	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
Ethylbenzene	17					
Methyl-t-Butyl Ether	ND					
Toluene	ND					
Total Xylenes	ND					
PAH						
1-Methylnaphthalene	ND					
2-Methylnaphthalene	ND					
Benzo(a)pyrene	ND					
Naphthalene	ND					
GRW-6						
Lab pH	7.2					
Lab Conductivity @25 C	2560					
Total Dissolved Solids @ 180 C	1640					

	JAN	APR	JUL	AUG	OCT	DEC
Total Alkalinity as CaCO ₃	748					
Total Hardness as CaCO ₃	504					
Bicarbonate as HCO ₃	913					
Carbonate as CO ₃	ND					
Hydroxide	ND					
Chloride	142					
Sulfate	440					
Calcium	158					
Magnesium	26.9					
Potassium	2.7					
Sodium	443					
HALOCARBONS						
Bromodichloromethane	ND					
Bromoform	ND					
Bromomethane	ND					
Carbon Tetrachloride	ND					
Chloroethane	ND					
Chloroform	ND					
Chloromethane	ND					
Dibromochloromethane	ND					
1,2-Dibromoethane (EDB)	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
1,1-Dichloroethane	ND					
1,2-Dichloroethane (EDC)	ND					
1,1-Dichloroethene	ND					
cis-1,2-Dichloroethene	ND					
trans-1,2-Dichloroethene	ND					
1,2-Dichloropropane	ND					
cis-1,3-Dichloropropene	ND					
trans-1,3-Dichloropropene	ND					
Methylene Chloride	ND					
1,1,2,2-Tetrachloroethane	ND					
Tetrachlorethene	ND					
1,1,1-Trichloroethane	ND					
1,1,2-Trichloroethane	ND					
Trichloroethene	ND					
Trichlorofluoromethane	ND					
Vinyl Chloride	ND					
AROMATICS						
Benzene	ND					
Chlorobenzene	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
Ethylbenzene	ND					

	JAN	APR	JUL	AUG	OCT	DEC
Methyl-t-Butyl Ether	ND					
Toluene	ND					
Total Xylenes	ND					
PAH						
1-Methylnaphthalene	ND					
2-Methylnaphthalene	ND					
Benzo(a)pyrene	ND					
Naphthalene	ND					
GRW-13						
Lab pH	7					
Lab Conductivity @25 C	4110					
Total Dissolved Solids @ 180 C	3210					
Total Alkalinity as CaCO3	197					
Total Hardness as CaCO3	1030					
Bicarbonate as HCO3	240					
Carbonate as CO3	ND					
Hydroxide	ND					
Chloride	255					
Sulfate	1760					
Calcium	363					
Magnesium	29.1					
Potassium	7.8					
Sodium	565					
HALOCARBONS						
Bromodichloromethane	ND					
Bromoform	ND					
Bromomethane	ND					
Carbon Tetrachloride	ND					
Chloroethane	ND					
Chloroform	ND					
Chloromethane	ND					
Dibromochloromethane	ND					
1,2-Dibromoethane (EDB)	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
1,1-Dichloroethane	ND					
1,2-Dichloroethane (EDC)	ND					
1,1-Dichloroethene	ND					
cis-1,2-Dichloroethene	ND					
trans-1,2-Dichloroethene	ND					
1,2-Dichloropropane	ND					
cis-1,3-Dichloropropene	ND					
trans-1,3-Dichloropropene	ND					

	JAN	APR	JUL	AUG	OCT	DEC
Methylene Chloride	ND					
1,1,2,2-Tetrachloroethane	ND					
Tetrachlorethene	ND					
1,1,1-Trichloroethane	ND					
1,1,2-Trichloroethane	ND					
Trichloroethene	ND					
Trichlorofluoromethane	ND					
Vinyl Chloride	ND					
AROMATICS						
Benzene	ND					
Chlorobenzene	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
Ethylbenzene	ND					
Methyl-t-Butyl Ether	ND					
Toluene	ND					
Total Xylenes	ND					
PAH						
1-Methylnaphthalene	ND					
2-Methylnaphthalene	ND					
Benzo(a)pyrene	ND					
Naphthalene	ND					
GBR-15						
Lab pH	7.2					
Lab Conductivity @25 C	3700					
Total Dissolved Solids @ 180 C	2780					
Total Alkalinity as CaCO3	337					
Total Hardness as CaCO3	950					
Bicarbonate as HCO3	411					
Carbonate as CO3	ND					
Hydroxide	ND					
Chloride	312					
Sulfate	1340					
Calcium	336					
Magnesium	27					
Potassium	7.3					
Sodium	523					
HALOCARBONS						
Bromodichloromethane	ND					
Bromoform	ND					
Bromomethane	ND					
Carbon Tetrachloride	ND					
Chloroethane	ND					

	JAN	APR	JUL	AUG	OCT	DEC
Chloroform	ND					
Chloromethane	ND					
Dibromochloromethane	ND					
1,2-Dibromoethane (EDB)	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
1,1-Dichloroethane	ND					
1,2-Dichloroethane (EDC)	ND					
1,1-Dichloroethene	ND					
cis-1,2-Dichloroethene	ND					
trans-1,2-Dichloroethene	ND					
1,2-Dichloropropane	ND					
cis-1,3-Dichloropropene	ND					
trans-1,3-Dichloropropene	ND					
Methylene Chloride	ND					
1,1,2,2-Tetrachloroethane	ND					
Tetrachlorethene	ND					
1,1,1-Trichloroethane	ND					
1,1,2-Trichloroethane	ND					
Trichloroethene	ND					
Trichlorofluoromethane	ND					
Vinyl Chloride	ND					
AROMATICS						
Benzene	ND					
Chlorobenzene	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
Ethylbenzene	ND					
Methyl-t-Butyl Ether	ND					
Toluene	ND					
Total Xylenes	ND					
GBR-17						
Lab pH						7.1
Lab Conductivity @25 C						2480
Total Dissolved Solids (Calc)						2090
Total Alkalinity as CaCO3						183
Total Hardness as CaCO3						868
Bicarbonate as HCO3						223
Carbonate as CO3						ND
Hydroxide						ND
Chloride						55.0
Sulfate						1200
Calcium						308
Magnesium						24.1

	JAN	APR	JUL	AUG	OCT	DEC
Potassium						0.8
Sodium						312
HALOCARBONS						
Bromodichloromethane						ND
Bromoform						ND
Bromomethane						ND
Carbon Tetrachloride						ND
Chloroethane						ND
Chloroform						ND
Chloromethane						ND
Dibromochloromethane						ND
1,2-Dibromoethane (EDB)						ND
1,2-Dichlorobenzene						ND
1,3-Dichlorobenzene						ND
1,4-Dichlorobenzene						ND
1,1-Dichloroethane						ND
1,2-Dichloroethane (EDC)						ND
1,1-Dichloroethene						ND
cis-1,2-Dichloroethene						ND
trans-1,2-Dichloroethene						ND
1,2-Dichloropropane						ND
cis-1,3-Dichloropropene						ND
trans-1,3-Dichloropropene						ND
Methylene Chloride						ND
1,1,2,2-Tetrachloroethane						ND
Tetrachlorethene						ND
1,1,1-Trichloroethane						ND
1,1,2-Trichloroethane						ND
Trichloroethene						ND
Trichlorofluoromethane						ND
Vinyl Chloride						ND
AROMATICS						
Benzene						ND
Chlorobenzene						ND
1,2-Dichlorobenzene						ND
1,3-Dichlorobenzene						ND
1,4-Dichlorobenzene						ND
Ethylbenzene						ND
Methyl-t-Butyl Ether						ND
Toluene						ND
Total Xylenes						ND

	JAN	APR	JUL	AUG	OCT	DEC
GBR-24D						
Lab pH	7.9					
Lab Conductivity @25 C	4450					
Total Dissolved Solids @ 180 C	3530					
Total Alkalinity as CaCO3	243					
Total Hardness as CaCO3	1500					
Bicarbonate as HCO3	297					
Carbonate as CO3	ND					
Hydroxide	ND					
Chloride	589					
Sulfate	1540					
Calcium	482					
Magnesium	71.2					
Potassium	7.3					
Sodium	577					
HALOCARBONS						
Bromodichloromethane	ND					
Bromoform	ND					
Bromomethane	ND					
Carbon Tetrachloride	ND					
Chloroethane	ND					
Chloroform	ND					
Chloromethane	ND					
Dibromochloromethane	ND					
1,2-Dibromoethane (EDB)	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
1,1-Dichloroethane	ND					
1,2-Dichloroethane (EDC)	ND					
1,1-Dichloroethene	ND					
cis-1,2-Dichloroethene	ND					
trans-1,2-Dichloroethene	ND					
1,2-Dichloropropane	ND					
cis-1,3-Dichloropropene	ND					
trans-1,3-Dichloropropene	ND					
Methylene Chloride	ND					
1,1,2,2-Tetrachloroethane	ND					
Tetrachlorethene	ND					
1,1,1-Trichloroethane	ND					
1,1,2-Trichloroethane	ND					
Trichloroethene	ND					
Trichlorofluoromethane	ND					
Vinyl Chloride	ND					

	JAN	APR	JUL	AUG	OCT	DEC
AROMATICS						
Benzene	ND					
Chlorobenzene	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
Ethylbenzene	ND					
Methyl-t-Butyl Ether	ND					
Toluene	ND					
Total Xylenes	ND					
PAH						
1-Methylnaphthalene	ND					
2-Methylnaphthalene	ND					
Benzo(a)pyrene	ND					
Naphthalene	ND					
GBR-30						
Lab pH	6.9					
Lab Conductivity @25 C	4220					
Total Dissolved Solids @ 180 C	3360					
Total Alkalinity as CaCO3	262					
Total Hardness as CaCO3	1220					
Bicarbonate as HCO3	320					
Carbonate as CO3	ND					
Hydroxide	ND					
Chloride	411					
Sulfate	1650					
Calcium	404					
Magnesium	50.6					
Potassium	5.4					
Sodium	622					
HALOCARBONS						
Bromodichloromethane	ND					
Bromoform	ND					
Bromomethane	ND					
Carbon Tetrachloride	ND					
Chloroethane	ND					
Chloroform	ND					
Chloromethane	ND					
Dibromochloromethane	ND					
1,2-Dibromoethane (EDB)	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
1,1-Dichloroethane	ND					

	JAN	APR	JUL	AUG	OCT	DEC
1,2-Dichloroethane (EDC)	ND					
1,1-Dichloroethene	ND					
cis-1,2-Dichloroethene	ND					
trans-1,2-Dichloroethene	ND					
1,2-Dichloropropane	ND					
cis-1,3-Dichloropropene	ND					
trans-1,3-Dichloropropene	ND					
Methylene Chloride	ND					
1,1,2,2-Tetrachloroethane	ND					
Tetrachlorethene	ND					
1,1,1-Trichloroethane	ND					
1,1,2-Trichloroethane	ND					
Trichloroethene	ND					
Trichlorofluoromethane	ND					
Vinyl Chloride	ND					
AROMATICS						
Benzene	ND					
Chlorobenzene	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
Ethylbenzene	ND					
Methyl-t-Butyl Ether	ND					
Toluene	ND					
Total Xylenes	ND					
PAH						
1-Methylnaphthalene	ND					
2-Methylnaphthalene	ND					
Benzo(a)pyrene	ND					
Naphthalene	ND					
GBR-31						
Lab pH	7.2					
Lab Conductivity @25 C	3420					
Total Dissolved Solids @ 180 C	2850					
Total Alkalinity as CaCO3	215					
Total Hardness as CaCO3	1120					
Bicarbonate as HCO3	262					
Carbonate as CO3	ND					
Hydroxide	ND					
Chloride	127					
Sulfate	1650					
Calcium	380					
Magnesium	40.6					
Potassium	3.7					
Sodium	404					

	JAN	APR	JUL	AUG	OCT	DEC
HALOCARBONS						
Bromodichloromethane	ND					
Bromoform	ND					
Bromomethane	ND					
Carbon Tetrachloride	ND					
Chloroethane	ND					
Chloroform	ND					
Chloromethane	ND					
Dibromochloromethane	ND					
1,2-Dibromoethane (EDB)	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
1,1-Dichloroethane	ND					
1,2-Dichloroethane (EDC)	ND					
1,1-Dichloroethene	ND					
cis-1,2-Dichloroethene	ND					
trans-1,2-Dichloroethene	ND					
1,2-Dichloropropane	ND					
cis-1,3-Dichloropropene	ND					
trans-1,3-Dichloropropene	ND					
Methylene Chloride	ND					
1,1,2,2-Tetrachloroethane	ND					
Tetrachlorethene	ND					
1,1,1-Trichloroethane	ND					
1,1,2-Trichloroethane	ND					
Trichloroethene	ND					
Trichlorofluoromethane	ND					
Vinyl Chloride	ND					
AROMATICS						
Benzene	ND					
Chlorobenzene	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
Ethylbenzene	ND					
Methyl-t-Butyl Ether	ND					
Toluene	ND					
Total Xylenes	ND					
PAH						
1-Methylnaphthalene	ND					
2-Methylnaphthalene	ND					
Benzo(a)pyrene	ND					
Naphthalene	ND					

	JAN	APR	JUL	AUG	OCT	DEC
GBR-32						
Lab pH						6.9
Lab Conductivity @25 C						5630
Total Dissolved Solids (Calc)						4670
Total Alkalinity as CaCO3						256
Total Hardness as CaCO3						1610
Bicarbonate as HCO3						312
Carbonate as CO3						ND
Hydroxide						ND
Chloride						602
Sulfate						2400
Calcium						554
Magnesium						55.8
Potassium						5.9
Sodium						855
HALOCARBONS						
Bromodichloromethane						ND
Bromoform						ND
Bromomethane						ND
Carbon Tetrachloride						ND
Chloroethane						ND
Chloroform						1.0
Chloromethane						ND
Dibromochloromethane						ND
1,2-Dibromoethane (EDB)						ND
1,2-Dichlorobenzene						ND
1,3-Dichlorobenzene						ND
1,4-Dichlorobenzene						ND
1,1-Dichloroethane						0.6
1,2-Dichloroethane (EDC)						ND
1,1-Dichloroethene						ND
cis-1,2-Dichloroethene						4.5
trans-1,2-Dichloroethene						ND
1,2-Dichloropropane						ND
cis-1,3-Dichloropropene						ND
trans-1,3-Dichloropropene						ND
Methylene Chloride						ND
1,1,2,2-Tetrachloroethane						ND
Tetrachlorethene						2.0
1,1,1-Trichloroethane						ND
1,1,2-Trichloroethane						ND
Trichloroethene						1.4
Trichlorofluoromethane						ND
Vinyl Chloride						ND

	JAN	APR	JUL	AUG	OCT	DEC
AROMATICS						
Benzene						ND
Chlorobenzene						ND
1,2-Dichlorobenzene						ND
1,3-Dichlorobenzene						ND
1,4-Dichlorobenzene						ND
Ethylbenzene						ND
Methyl-t-Butyl Ether						ND
Toluene						ND
Total Xylenes						ND
GBR-48						
Lab pH						6.7
Lab Conductivity @25 C						6580
Total Dissolved Solids (Calc)						5320
Total Alkalinity as CaCO3						202
Total Hardness as CaCO3						1900
Bicarbonate as HCO3						246
Carbonate as CO3						ND
Hydroxide						ND
Chloride						1000
Sulfate						2380
Calcium						648
Magnesium						68.3
Potassium						5.6
Sodium						938
HALOCARBONS						
Bromodichloromethane						ND
Bromoform						ND
Bromomethane						ND
Carbon Tetrachloride						ND
Chloroethane						ND
Chloroform						2.7
Chloromethane						ND
Dibromochloromethane						ND
1,2-Dibromoethane (EDB)						ND
1,2-Dichlorobenzene						ND
1,3-Dichlorobenzene						ND
1,4-Dichlorobenzene						ND
1,1-Dichloroethane						0.5
1,2-Dichloroethane (EDC)						ND
1,1-Dichloroethene						ND
cis-1,2-Dichloroethene						7.3
trans-1,2-Dichloroethene						ND
1,2-Dichloropropane						ND
cis-1,3-Dichloropropene						0.2

	JAN	APR	JUL	AUG	OCT	DEC
trans-1,3-Dichloropropene						ND
Methylene Chloride						ND
1,1,2,2-Tetrachloroethane						ND
Tetrachlorethene						3.0
1,1,1-Trichloroethane						ND
1,1,2-Trichloroethane						ND
Trichloroethene						2.0
Trichlorofluoromethane						ND
Vinyl Chloride						ND
AROMATICS						
Benzene						ND
Chlorobenzene						ND
1,2-Dichlorobenzene						ND
1,3-Dichlorobenzene						ND
1,4-Dichlorobenzene						ND
Ethylbenzene						ND
Methyl-t-Butyl Ether						ND
Toluene						ND
Total Xylenes						ND
GBR-49						
Lab pH						7.0
Lab Conductivity @25 C						4210
Total Dissolved Solids (Calc)						4530
Total Alkalinity as CaCO3						247
Total Hardness as CaCO3						1310
Bicarbonate as HCO3						301
Carbonate as CO3						ND
Hydroxide						ND
Chloride						297
Sulfate						1940
Calcium						458
Magnesium						41.9
Potassium						3.7
Sodium						627
HALOCARBONS						
Bromodichloromethane						ND
Bromoform						ND
Bromomethane						ND
Carbon Tetrachloride						ND
Chloroethane						ND
Chloroform						0.8
Chloromethane						ND
Dibromochloromethane						ND
1,2-Dibromoethane (EDB)						ND

	JAN	APR	JUL	AUG	OCT	DEC
1,2-Dichlorobenzene						ND
1,3-Dichlorobenzene						ND
1,4-Dichlorobenzene						ND
1,1-Dichloroethane						0.7
1,2-Dichloroethane (EDC)						ND
1,1-Dichloroethene						ND
cis-1,2-Dichloroethene						6.1
trans-1,2-Dichloroethene						ND
1,2-Dichloropropane						ND
cis-1,3-Dichloropropene						ND
trans-1,3-Dichloropropene						ND
Methylene Chloride						ND
1,1,2,2-Tetrachloroethane						ND
Tetrachlorethene						1.9
1,1,1-Trichloroethane						ND
1,1,2-Trichloroethane						ND
Trichloroethene						1.2
Trichlorofluoromethane						ND
Vinyl Chloride						ND
AROMATICS						
Benzene						ND
Chlorobenzene						ND
1,2-Dichlorobenzene						ND
1,3-Dichlorobenzene						ND
1,4-Dichlorobenzene						ND
Ethylbenzene						ND
Methyl-t-Butyl Ether						ND
Toluene						ND
Total Xylenes						0.5
GBR-50						
Lab pH						6.9
Lab Conductivity @25 C						3100
Total Dissolved Solids (Calc)						2730
Total Alkalinity as CaCO3						174
Total Hardness as CaCO3						1000
Bicarbonate as HCO3						212
Carbonate as CO3						ND
Hydroxide						ND
Chloride						53
Sulfate						1690
Calcium						356
Magnesium						27.6
Potassium						2.5
Sodium						406

	JAN	APR	JUL	AUG	OCT	DEC
HALOCARBONS						
Bromodichloromethane						ND
Bromoform						ND
Bromomethane						ND
Carbon Tetrachloride						ND
Chloroethane						ND
Chloroform						ND
Chloromethane						ND
Dibromochloromethane						ND
1,2-Dibromoethane (EDB)						ND
1,2-Dichlorobenzene						ND
1,3-Dichlorobenzene						ND
1,4-Dichlorobenzene						ND
1,1-Dichloroethane						ND
1,2-Dichloroethane (EDC)						ND
1,1-Dichloroethene						ND
cis-1,2-Dichloroethene						ND
trans-1,2-Dichloroethene						ND
1,2-Dichloropropane						ND
cis-1,3-Dichloropropene						ND
trans-1,3-Dichloropropene						ND
Methylene Chloride						ND
1,1,2,2-Tetrachloroethane						ND
Tetrachlorethene						0.6
1,1,1-Trichloroethane						ND
1,1,2-Trichloroethane						ND
Trichloroethene						ND
Trichlorofluoromethane						ND
Vinyl Chloride						ND
AROMATICS						
Benzene						ND
Chlorobenzene						ND
1,2-Dichlorobenzene						ND
1,3-Dichlorobenzene						ND
1,4-Dichlorobenzene						ND
Ethylbenzene						ND
Methyl-t-Butyl Ether						ND
Toluene						ND
Total Xylenes						ND

	JAN	APR	JUL	AUG	OCT	DEC
GBR-51						
Lab pH	7.2					
Lab Conductivity @25 C	2760					
Total Dissolved Solids @ 180 C	2220					
Total Alkalinity as CaCO3	206					
Total Hardness as CaCO3	1020					
Bicarbonate as HCO3	251					
Carbonate as CO3	ND					
Hydroxide	ND					
Chloride	56					
Sulfate	1310					
Calcium	360					
Magnesium	29.3					
Potassium	1.7					
Sodium	302					
HALOCARBONS						
Bromodichloromethane	ND					
Bromoform	ND					
Bromomethane	ND					
Carbon Tetrachloride	ND					
Chloroethane	ND					
Chloroform	ND					
Chloromethane	ND					
Dibromochloromethane	ND					
1,2-Dibromoethane (EDB)	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
1,1-Dichloroethane	ND					
1,2-Dichloroethane (EDC)	ND					
1,1-Dichloroethene	ND					
cis-1,2-Dichloroethene	ND					
trans-1,2-Dichloroethene	ND					
1,2-Dichloropropane	ND					
cis-1,3-Dichloropropene	ND					
trans-1,3-Dichloropropene	ND					
Methylene Chloride	ND					
1,1,2,2-Tetrachloroethane	ND					
Tetrachlorethene	ND					
1,1,1-Trichloroethane	ND					
1,1,2-Trichloroethane	ND					
Trichloroethene	ND					
Trichlorofluoromethane	ND					
Vinyl Chloride	ND					

	JAN	APR	JUL	AUG	OCT	DEC
AROMATICS						
Benzene	ND					
Chlorobenzene	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
Ethylbenzene	ND					
Methyl-t-Butyl Ether	ND					
Toluene	ND					
Total Xylenes	ND					
GBR-52						
Lab pH	7.2					
Lab Conductivity @25 C	2940					
Total Dissolved Solids @ 180 C	2580					
Total Alkalinity as CaCO3	206					
Total Hardness as CaCO3	1230					
Bicarbonate as HCO3	251					
Carbonate as CO3	ND					
Hydroxide	ND					
Chloride	57					
Sulfate	1530					
Calcium	436					
Magnesium	34.3					
Potassium	2.6					
Sodium	313					
HALOCARBONS						
Bromodichloromethane	ND					
Bromoform	ND					
Bromomethane	ND					
Carbon Tetrachloride	ND					
Chloroethane	ND					
Chloroform	ND					
Chloromethane	ND					
Dibromochloromethane	ND					
1,2-Dibromoethane (EDB)	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
1,1-Dichloroethane	ND					
1,2-Dichloroethane (EDC)	ND					
1,1-Dichloroethene	ND					
cis-1,2-Dichloroethene	ND					
trans-1,2-Dichloroethene	ND					
1,2-Dichloropropane	ND					
cis-1,3-Dichloropropene	ND					

	JAN	APR	JUL	AUG	OCT	DEC
trans-1,3-Dichloropropene	ND					
Methylene Chloride	ND					
1,1,2,2-Tetrachloroethane	ND					
Tetrachlorethene	ND					
1,1,1-Trichloroethane	ND					
1,1,2-Trichloroethane	ND					
Trichloroethene	ND					
Trichlorofluoromethane	ND					
Vinyl Chloride	ND					
AROMATICS	ND					
Benzene	ND					
Chlorobenzene	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
Ethylbenzene	ND					
Methyl-t-Butyl Ether	ND					
Toluene	ND					
Total Xylenes	ND					
SHS-3						
Lab pH	6.7					
Lab Conductivity @25 C	4640					
Total Dissolved Solids @ 180 C	4390					
Total Alkalinity as CaCO3	231					
Total Hardness as CaCO3	1800					
Bicarbonate as HCO3	281					
Carbonate as CO3	ND					
Hydroxide	ND					
Chloride	262					
Sulfate	2160					
Calcium	580					
Magnesium	85.1					
Potassium	7.6					
Sodium	464					
HALOCARBONS						
Bromodichloromethane	ND					
Bromoform	ND					
Bromomethane	ND					
Carbon Tetrachloride	ND					
Chloroethane	ND					
Chloroform	ND					
Chloromethane	ND					
Dibromochloromethane	ND					
1,2-Dibromoethane (EDB)	ND					

	JAN	APR	JUL	AUG	OCT	DEC
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
1,1-Dichloroethane	ND					
1,2-Dichloroethane (EDC)	ND					
1,1-Dichloroethene	ND					
cis-1,2-Dichloroethene	ND					
trans-1,2-Dichloroethene	ND					
1,2-Dichloropropane	ND					
cis-1,3-Dichloropropene	ND					
trans-1,3-Dichloropropene	ND					
Methylene Chloride	ND					
1,1,2,2-Tetrachloroethane	ND					
Tetrachlorethene	ND					
1,1,1-Trichloroethane	ND					
1,1,2-Trichloroethane	ND					
Trichloroethene	ND					
Trichlorofluoromethane	ND					
Vinyl Chloride	ND					
AROMATICS						
Benzene	ND					
Chlorobenzene	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
Ethylbenzene	ND					
Methyl-t-Butyl Ether	ND					
Toluene	ND					
Total Xylenes	ND					
SHS-4						
Lab pH	7.2					
Lab Conductivity @25 C	3230					
Total Dissolved Solids (Calc)	2680					
Total Alkalinity as CaCO3	211					
Total Hardness as CaCO3	1340					
Bicarbonate as HCO3	257					
Carbonate as CO3	ND					
Hydroxide	ND					
Chloride	76					
Sulfate	1670					
Calcium	475					
Magnesium	37.5					
Potassium	1.7					
Sodium	322					

	JAN	APR	JUL	AUG	OCT	DEC
HALOCARBONS						
Bromodichloromethane	ND					
Bromoform	ND					
Bromomethane	ND					
Carbon Tetrachloride	ND					
Chloroethane	ND					
Chloroform	ND					
Chloromethane	ND					
Dibromochloromethane	ND					
1,2-Dibromoethane (EDB)	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
1,1-Dichloroethane	ND					
1,2-Dichloroethane (EDC)	ND					
1,1-Dichloroethene	ND					
cis-1,2-Dichloroethene	ND					
trans-1,2-Dichloroethene	ND					
1,2-Dichloropropane	ND					
cis-1,3-Dichloropropene	ND					
trans-1,3-Dichloropropene	ND					
Methylene Chloride	ND					
1,1,2,2-Tetrachloroethane	ND					
Tetrachlorethene	ND					
1,1,1-Trichloroethane	ND					
1,1,2-Trichloroethane	ND					
Trichloroethene	ND					
Trichlorofluoromethane	ND					
Vinyl Chloride	ND					
AROMATICS						
Benzene	ND					
Chlorobenzene	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
Ethylbenzene	ND					
Methyl-t-Butyl Ether	ND					
Toluene	ND					
Total Xylenes	ND					
SHS-6						
Lab pH	7.1					
Lab Conductivity @25 C	2750					
Total Dissolved Solids @ 180 C	2100					
Total Alkalinity as CaCO3	240					
Total Hardness as CaCO3	924					
Bicarbonate as HCO3	293					

	JAN	APR	JUL	AUG	OCT	DEC
Carbonate as CO ₃	ND					
Hydroxide	ND					
Chloride	76					
Sulfate	1170					
Calcium	326					
Magnesium	26.5					
Potassium	1.4					
Sodium	319					
HALOCARBONS						
Bromodichloromethane	ND					
Bromoform	ND					
Bromomethane	ND					
Carbon Tetrachloride	ND					
Chloroethane	ND					
Chloroform	ND					
Chloromethane	ND					
Dibromochloromethane	ND					
1,2-Dibromoethane (EDB)	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
1,1-Dichloroethane	ND					
1,2-Dichloroethane (EDC)	ND					
1,1-Dichloroethene	ND					
cis-1,2-Dichloroethene	ND					
trans-1,2-Dichloroethene	ND					
1,2-Dichloropropane	ND					
cis-1,3-Dichloropropene	ND					
trans-1,3-Dichloropropene	ND					
Methylene Chloride	ND					
1,1,2,2-Tetrachloroethane	ND					
Tetrachlorethene	ND					
1,1,1-Trichloroethane	ND					
1,1,2-Trichloroethane	ND					
Trichloroethene	ND					
Trichlorofluoromethane	ND					
Vinyl Chloride	ND					
AROMATICS						
Benzene	ND					
Chlorobenzene	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
Ethylbenzene	ND					
Methyl-t-Butyl Ether	ND					
Toluene	ND					
Total Xylenes	ND					

	JAN	APR	JUL	AUG	OCT	DEC
SHS-8						
Lab pH				6.5		
Lab Conductivity @25 C				2470		
Total Dissolved Solids @ 180 C				1380		
Total Alkalinity as CaCO3				836		
Total Hardness as CaCO3				436		
Bicarbonate as HCO3				1020		
Carbonate as CO3				ND		
Hydroxide				ND		
Chloride				272		
Sulfate				155		
Calcium				145		
Magnesium				17.9		
Potassium				2.8		
Sodium				434		
SHS-10						
Lab pH	7.3					
Lab Conductivity @25 C	2980					
Total Dissolved Solids (Calc)	2170					
Total Alkalinity as CaCO3	461					
Total Hardness as CaCO3	852					
Bicarbonate as HCO3	562					
Carbonate as CO3	ND					
Hydroxide	ND					
Chloride	117					
Sulfate	985					
Calcium	262					
Magnesium	48.3					
Potassium	8.5					
Sodium	411					
HALOCARBONS						
Bromodichloromethane	ND					
Bromoform	ND					
Bromomethane	ND					
Carbon Tetrachloride	ND					
Chloroethane	ND					
Chloroform	ND					
Chloromethane	ND					
Dibromochloromethane	ND					
1,2-Dibromoethane (EDB)	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					

	JAN	APR	JUL	AUG	OCT	DEC
1,4-Dichlorobenzene	ND					
1,1-Dichloroethane	ND					
1,2-Dichloroethane (EDC)	ND					
1,1-Dichloroethene	ND					
cis-1,2-Dichloroethene	ND					
trans-1,2-Dichloroethene	ND					
1,2-Dichloropropane	ND					
cis-1,3-Dichloropropene	ND					
trans-1,3-Dichloropropene	ND					
Methylene Chloride	ND					
1,1,2,2-Tetrachloroethane	ND					
Tetrachlorethene	ND					
1,1,1-Trichloroethane	ND					
1,1,2-Trichloroethane	ND					
Trichloroethene	ND					
Trichlorofluoromethane	ND					
Vinyl Chloride	ND					
AROMATICS						
Benzene	ND					
Chlorobenzene	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
Ethylbenzene	ND					
Methyl-t-Butyl Ether	ND					
Toluene	ND					
Total Xylenes	ND					
PAH						
Naphthalene	4.4					
SHS-12						
Lab pH	7.2					
Lab Conductivity @25 C	2700					
Total Dissolved Solids @ 180 C	1860					
Total Alkalinity as CaCO3	653					
Total Hardness as CaCO3	606					
Bicarbonate as HCO3	797					
Carbonate as CO3	ND					
Hydroxide	ND					
Chloride	146					
Sulfate	552					
Calcium	214					
Magnesium	17.8					
Potassium	1.2					
Sodium	427					

	JAN	APR	JUL	AUG	OCT	DEC
HALOCARBONS						
Bromodichloromethane	ND					
Bromoform	ND					
Bromomethane	ND					
Carbon Tetrachloride	ND					
Chloroethane	ND					
Chloroform	ND					
Chloromethane	ND					
Dibromochloromethane	ND					
1,2-Dibromoethane (EDB)	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
1,1-Dichloroethane	ND					
1,2-Dichloroethane (EDC)	ND					
1,1-Dichloroethene	ND					
cis-1,2-Dichloroethene	ND					
trans-1,2-Dichloroethene	ND					
1,2-Dichloropropane	ND					
cis-1,3-Dichloropropene	ND					
trans-1,3-Dichloropropene	ND					
Methylene Chloride	ND					
1,1,2,2-Tetrachloroethane	ND					
Tetrachlorethene	ND					
1,1,1-Trichloroethane	ND					
1,1,2-Trichloroethane	ND					
Trichloroethene	ND					
Trichlorofluoromethane	ND					
Vinyl Chloride	ND					
AROMATICS						
Benzene	ND					
Chlorobenzene	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
Ethylbenzene	ND					
Methyl-t-Butyl Ether	ND					
Toluene	ND					
Total Xylenes	ND					
PAH						
Naphthalene	ND					

	JAN	APR	JUL	AUG	OCT	DEC
SHS-13						
Lab pH	6.9					
Lab Conductivity @25 C	3300					
Total Dissolved Solids @ 180 C	2450					
Total Alkalinity as CaCO3	595					
Total Hardness as CaCO3	1020					
Bicarbonate as HCO3	726					
Carbonate as CO3	ND					
Hydroxide	ND					
Chloride	227					
Sulfate	878					
Calcium	348					
Magnesium	37.9					
Potassium	2.2					
Sodium	400					
HALOCARBONS						
Bromodichloromethane	ND					
Bromoform	ND					
Bromomethane	ND					
Carbon Tetrachloride	ND					
Chloroethane	ND					
Chloroform	ND					
Chloromethane	ND					
Dibromochloromethane	ND					
1,2-Dibromoethane (EDB)	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
1,1-Dichloroethane	ND					
1,2-Dichloroethane (EDC)	ND					
1,1-Dichloroethene	ND					
cis-1,2-Dichloroethene	ND					
trans-1,2-Dichloroethene	ND					
1,2-Dichloropropane	ND					
cis-1,3-Dichloropropene	ND					
trans-1,3-Dichloropropene	ND					
Methylene Chloride	ND					
1,1,2,2-Tetrachloroethane	ND					
Tetrachlorethene	ND					
1,1,1-Trichloroethane	0.92					
1,1,2-Trichloroethane	ND					
Trichloroethene	ND					
Trichlorofluoromethane	ND					
Vinyl Chloride	ND					

	JAN	APR	JUL	AUG	OCT	DEC
AROMATICS						
Benzene	ND					
Chlorobenzene	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
Ethylbenzene	ND					
Methyl-t-Butyl Ether	ND					
Toluene	ND					
Total Xylenes	ND					
PAH						
Naphthalene	ND					
SHS-14						
Lab pH				7.3		
Lab Conductivity @25 C				2440		
Total Dissolved Solids @ 180 C				2150		
Total Alkalinity as CaCO3				156		
Total Hardness as CaCO3				972		
Bicarbonate as HCO3				190		
Carbonate as CO3				ND		
Hydroxide				ND		
Chloride				75		
Sulfate				1050		
Calcium				333		
Magnesium				34.5		
Potassium				2.3		
Sodium				207		
HALOCARBONS						
Bromodichloromethane				ND		
Bromoform				ND		
Bromomethane				ND		
Carbon Tetrachloride				ND		
Chloroethane				ND		
Chloroform				ND		
Chloromethane				ND		
Dibromochloromethane				ND		
1,2-Dibromoethane (EDB)				ND		
1,2-Dichlorobenzene				ND		
1,3-Dichlorobenzene				ND		
1,4-Dichlorobenzene				ND		
1,1-Dichloroethane				ND		
1,2-Dichloroethane (EDC)				ND		
1,1-Dichloroethene				ND		
cis-1,2-Dichloroethene				ND		

	JAN	APR	JUL	AUG	OCT	DEC
trans-1,2-Dichloroethene				ND		
1,2-Dichloropropane				ND		
cis-1,3-Dichloropropene				ND		
trans-1,3-Dichloropropene				ND		
Methylene Chloride				ND		
1,1,2,2-Tetrachloroethane				ND		
Tetrachlorethene				ND		
1,1,1-Trichloroethane				ND		
1,1,2-Trichloroethane				ND		
Trichloroethene				ND		
Trichlorofluoromethane				ND		
Vinyl Chloride				ND		
AROMATICS						
Benzene				ND		
Chlorobenzene				ND		
1,2-Dichlorobenzene				ND		
1,3-Dichlorobenzene				ND		
1,4-Dichlorobenzene				ND		
Ethylbenzene				0.6		
Methyl-t-Butyl Ether				ND		
Toluene				ND		
Total Xylenes				ND		
PAH						
Naphthalene				ND		
SHS-15						
Lab pH	7.2					
Lab Conductivity @25 C	2510					
Total Dissolved Solids (Calc)	2050					
Total Alkalinity as CaCO3	269					
Total Hardness as CaCO3	1110					
Bicarbonate as HCO3	328					
Carbonate as CO3	ND					
Hydroxide	ND					
Chloride	75					
Sulfate	1080					
Calcium	377					
Magnesium	40.8					
Potassium	2.7					
Sodium	240					
HALOCARBONS						
Bromodichloromethane	ND					
Bromoform	ND					
Bromomethane	ND					

	JAN	APR	JUL	AUG	OCT	DEC
Carbon Tetrachloride	ND					
Chloroethane	ND					
Chloroform	ND					
Chloromethane	ND					
Dibromochloromethane	ND					
1,2-Dibromoethane (EDB)	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
1,1-Dichloroethane	ND					
1,2-Dichloroethane (EDC)	ND					
1,1-Dichloroethene	ND					
cis-1,2-Dichloroethene	ND					
trans-1,2-Dichloroethene	ND					
1,2-Dichloropropane	ND					
cis-1,3-Dichloropropene	ND					
trans-1,3-Dichloropropene	ND					
Methylene Chloride	ND					
1,1,2,2-Tetrachloroethane	ND					
Tetrachlorethene	ND					
1,1,1-Trichloroethane	0.92					
1,1,2-Trichloroethane	ND					
Trichloroethene	ND					
Trichlorofluoromethane	ND					
Vinyl Chloride	ND					
AROMATICS						
Benzene	ND					
Chlorobenzene	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
Ethylbenzene	ND					
Methyl-t-Butyl Ether	ND					
Toluene	ND					
Total Xylenes	ND					
PAH						
Naphthalene	ND					
SHS-16						
Lab pH	7.3					
Lab Conductivity @25 C	2910					
Total Dissolved Solids (Calc)	2470					
Total Alkalinity as CaCO3	279					
Total Hardness as CaCO3	1300					
Bicarbonate as HCO3	340					
Carbonate as CO3	ND					
Hydroxide	ND					

	JAN	APR	JUL	AUG	OCT	DEC
Chloride	66					
Sulfate	1420					
Calcium	445					
Magnesium	45.3					
Potassium	2.9					
Sodium	247					
HALOCARBONS						
Bromodichloromethane	ND					
Bromoform	ND					
Bromomethane	ND					
Carbon Tetrachloride	ND					
Chloroethane	ND					
Chloroform	ND					
Chloromethane	ND					
Dibromochloromethane	ND					
1,2-Dibromoethane (EDB)	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
1,1-Dichloroethane	ND					
1,2-Dichloroethane (EDC)	ND					
1,1-Dichloroethene	ND					
cis-1,2-Dichloroethene	ND					
trans-1,2-Dichloroethene	ND					
1,2-Dichloropropane	ND					
cis-1,3-Dichloropropene	ND					
trans-1,3-Dichloropropene	ND					
Methylene Chloride	ND					
1,1,2,2-Tetrachloroethane	ND					
Tetrachlorethene	ND					
1,1,1-Trichloroethane	ND					
1,1,2-Trichloroethane	ND					
Trichloroethene	ND					
Trichlorofluoromethane	ND					
Vinyl Chloride	ND					
AROMATICS						
Benzene	ND					
Chlorobenzene	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
Ethylbenzene	ND					
Methyl-t-Butyl Ether	ND					
Toluene	ND					
Total Xylenes	ND					

	JAN	APR	JUL	AUG	OCT	DEC
SHS-17						
Lab pH	7.2					
Lab Conductivity @25 C	3420					
Total Dissolved Solids (Calc)	2540					
Total Alkalinity as CaCO3	298					
Total Hardness as CaCO3	921					
Bicarbonate as HCO3	363					
Carbonate as CO3	ND					
Hydroxide	ND					
Chloride	179					
Sulfate	1120					
Calcium	292					
Magnesium	46.8					
Potassium	2.8					
Sodium	426					
HALOCARBONS						
Bromodichloromethane	ND					
Bromoform	ND					
Bromomethane	ND					
Carbon Tetrachloride	ND					
Chloroethane	ND					
Chloroform	ND					
Chloromethane	ND					
Dibromochloromethane	ND					
1,2-Dibromoethane (EDB)	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
1,1-Dichloroethane	ND					
1,2-Dichloroethane (EDC)	ND					
1,1-Dichloroethene	ND					
cis-1,2-Dichloroethene	ND					
trans-1,2-Dichloroethene	ND					
1,2-Dichloropropane	ND					
cis-1,3-Dichloropropene	ND					
trans-1,3-Dichloropropene	ND					
Methylene Chloride	ND					
1,1,2,2-Tetrachloroethane	ND					
Tetrachlorethene	ND					
1,1,1-Trichloroethane	ND					
1,1,2-Trichloroethane	ND					
Trichloroethene	ND					
Trichlorofluoromethane	ND					
Vinyl Chloride	ND					
AROMATICS						
Benzene	ND					
Chlorobenzene	ND					

	JAN	APR	JUL	AUG	OCT	DEC
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
Ethylbenzene	ND					
Methyl-t-Butyl Ether	ND					
Toluene	ND					
Total Xylenes	ND					

SHS-18						
Lab pH				7.1		
Lab Conductivity @25 C				2290		
Total Dissolved Solids (Calc)				1600		
Total Alkalinity as CaCO3				626		
Total Hardness as CaCO3				210		
Bicarbonate as HCO3				763		
Carbonate as CO3				ND		
Hydroxide				ND		
Chloride				139		
Sulfate				252		
Calcium				60.1		
Magnesium				14.5		
Potassium				0.9		
Sodium				403		
HALOCARBONS						
Bromodichloromethane				ND		
Bromoform				ND		
Bromomethane				ND		
Carbon Tetrachloride				ND		
Chloroethane				ND		
Chloroform				ND		
Chloromethane				ND		
Dibromochloromethane				ND		
1,2-Dibromoethane (EDB)				ND		
1,2-Dichlorobenzene				ND		
1,3-Dichlorobenzene				ND		
1,4-Dichlorobenzene				ND		
1,1-Dichloroethane				ND		
1,2-Dichloroethane (EDC)				ND		
1,1-Dichloroethene				ND		
cis-1,2-Dichloroethene				ND		
trans-1,2-Dichloroethene				ND		
1,2-Dichloropropane				ND		
cis-1,3-Dichloropropene				ND		
trans-1,3-Dichloropropene				ND		
Methylene Chloride				ND		
1,1,2,2-Tetrachloroethane				ND		
Tetrachlorethene				ND		

	JAN	APR	JUL	AUG	OCT	DEC
1,1,1-Trichloroethane				ND		
1,1,2-Trichloroethane				ND		
Trichloroethene				ND		
Trichlorofluoromethane				ND		
Vinyl Chloride				ND		
AROMATICS						
Benzene				ND		
Chlorobenzene				ND		
1,2-Dichlorobenzene				ND		
1,3-Dichlorobenzene				ND		
1,4-Dichlorobenzene				ND		
Ethylbenzene				0.6		
Methyl-t-Butyl Ether				ND		
Toluene				ND		
Total Xylenes				ND		
PAH						
Naphthalene				ND		

**GIANT REFINING BLOOMFIELD REFINERY
QUARTERLY POTENTIOMETRIC SURFACE**

JANUARY, 2001

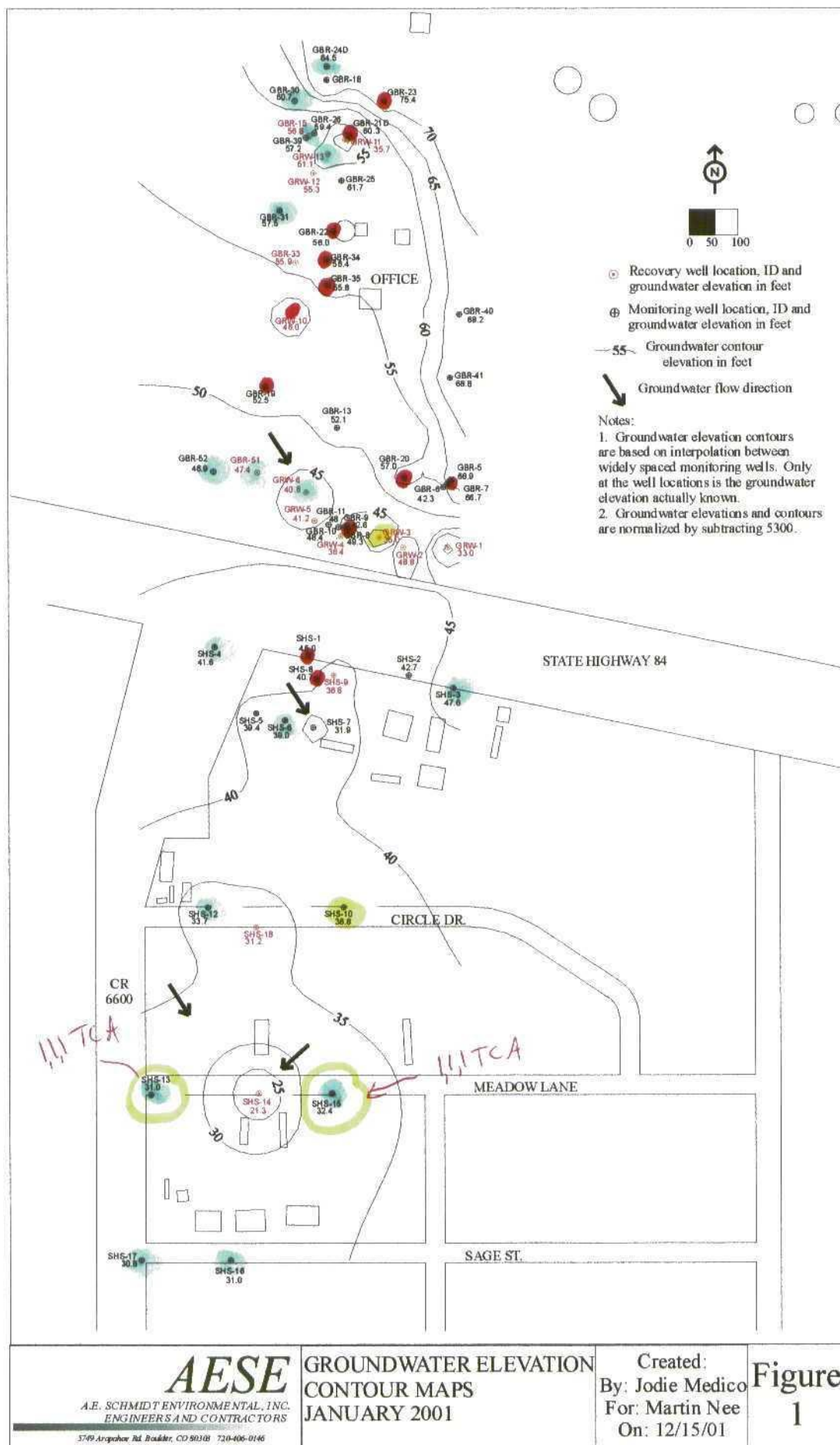
WELL #	WELLHEAD ELEVATION IN FEET	DEPTH TO WATER IN FEET	DEPTH TO PRODUCT IN FEET	PRODUCT THICKNESS IN FEET	ADJUSTED WSEL* IN FEET
GRW-1	5394.30	61.33	61.33	0.00	5332.97
GRW-2	5391.28	42.50	42.50	0.00	5348.78
GRW-3	5388.77	53.78	53.78	0.00	5334.99
GRW-4	5390.02	53.62	53.62	0.00	5336.40
GRW-5	5390.56	49.38	49.38	0.00	5341.18
GRW-6	5390.81	50.25	50.25	0.00	5340.56
GRW-10	5395.02	49.84	48.85	0.99	5345.97
GRW-11	5397.85	62.20	62.20	0.00	5335.65
GRW-12	5397.24	41.91	41.91	0.00	5355.33
GRW-13	5396.90	45.80	45.80	0.00	5351.10
GBR-5	5395.07	26.12	26.12	0.00	5368.95
GBR-6	5395.70	53.45	53.45	0.00	5342.25
GBR-7	5395.85	30.55	28.76	1.79	5366.73
GBR-8	5390.50	41.30	41.14	0.16	5349.33
GBR-9	5389.92	47.36	47.36	0.00	5342.56
GBR-10	5390.57	42.20	42.20	0.00	5348.37
GBR-11	5389.43	41.43	41.43	0.00	5348.00
GBR-13	5393.04	40.90	40.90	0.00	5352.14
GBR-15	5397.99	41.15	41.15	0.00	5356.84
GBR-18	5421.68	34.01	34.01	0.00	5387.67
GBR-19	5393.83	41.98	41.11	0.87	5352.55
GBR-20	5393.47	36.51	36.40	0.11	5357.05
GBR-21S	5400.65	27.12	25.74	1.38	5374.63
GBR-21D	5400.19	39.85	39.85	0.00	5360.34
GBR-22	5395.91	40.35	39.76	0.59	5356.03
GBR-23	5403.72	30.03	28.00	2.03	5375.38
GBR-24S	5396.08	29.96	29.96	0.00	5363.77
GBR-24D	5396.77	32.31	32.31	0.00	5364.46
GBR-25	5396.72	35.03	35.03	0.00	5361.69
GBR-26	5395.59	36.20	36.20	0.00	5359.39
GBR-30	5396.58	35.85	35.85	0.00	5360.73
GBR-31	5394.86	37.32	37.32	0.00	5357.54
GBR-33	5396.28	40.41	40.41	0.00	5355.87
GBR-34	5394.00	38.84	37.35	1.49	5356.35
GBR-35	5393.66	38.21	37.74	0.47	5355.83
GBR-39	5397.55	40.40	40.40	0.00	5357.15
GBR-40	5400.76	32.55	32.55	0.00	5368.21
GBR-41	5396.35	27.57	27.57	0.00	5368.78
GBR-51	5389.68	42.25	42.25	0.00	5347.43
GBR-52	5387.74	40.85	40.85	0.00	5346.89

GIANT REFINING BLOOMFIELD REFINERY
 QUARTERLY POTENTIOMETRIC SURFACE
 JANUARY, 2001

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WELL #	WELLHEAD ELEVATION IN FEET	DEPTH TO WATER IN FEET	DEPTH TO PRODUCT IN FEET	PRODUCT THICKNESS IN FEET	ADJUSTED WSEL* IN FEET
SHS-1	5383.54	38.59	38.50	0.09	5345.02
SHS-2	5381.66	38.98	38.98	0.00	5342.68
SHS-3	5383.33	35.75	35.75	0.00	5347.58
SHS-4	5383.62	42.00	42.00	0.00	5341.62
SHS-5	5378.36	38.98	38.98	0.00	5339.38
SHS-6	5378.17	39.20	39.20	0.00	5338.97
SHS-7	5375.89	43.97	43.97	0.00	5331.92
SHS-8	5380.25	40.82	39.28	1.54	5340.66
SHS-9	5380.79	44.00	44.00	0.00	5336.79
SHS-10	5373.80	37.04	37.04	0.00	5336.76
SHS-12	5373.94	40.22	40.22	0.00	5333.72
SHS-13	5367.81	36.83	36.83	0.00	5330.98
SHS-14	5367.07	45.75	45.75	0.00	5321.32
SHS-15	5366.21	33.85	33.85	0.00	5332.36
SHS-16	5362.58	31.62	31.62	0.00	5330.96
SHS-17	5364.35	33.60	33.60	0.00	5330.75
SHS-18	5373.64	42.42	42.42	0.00	5331.22

* WSEL - WATER SURFACE ELEVATION ADJUSTED FOR PRODUCT DEPTH



**GIANT REFINING BLOOMFIELD REFINERY
QUARTERLY POTENTIOMETRIC SURFACE**

APRIL, 2001

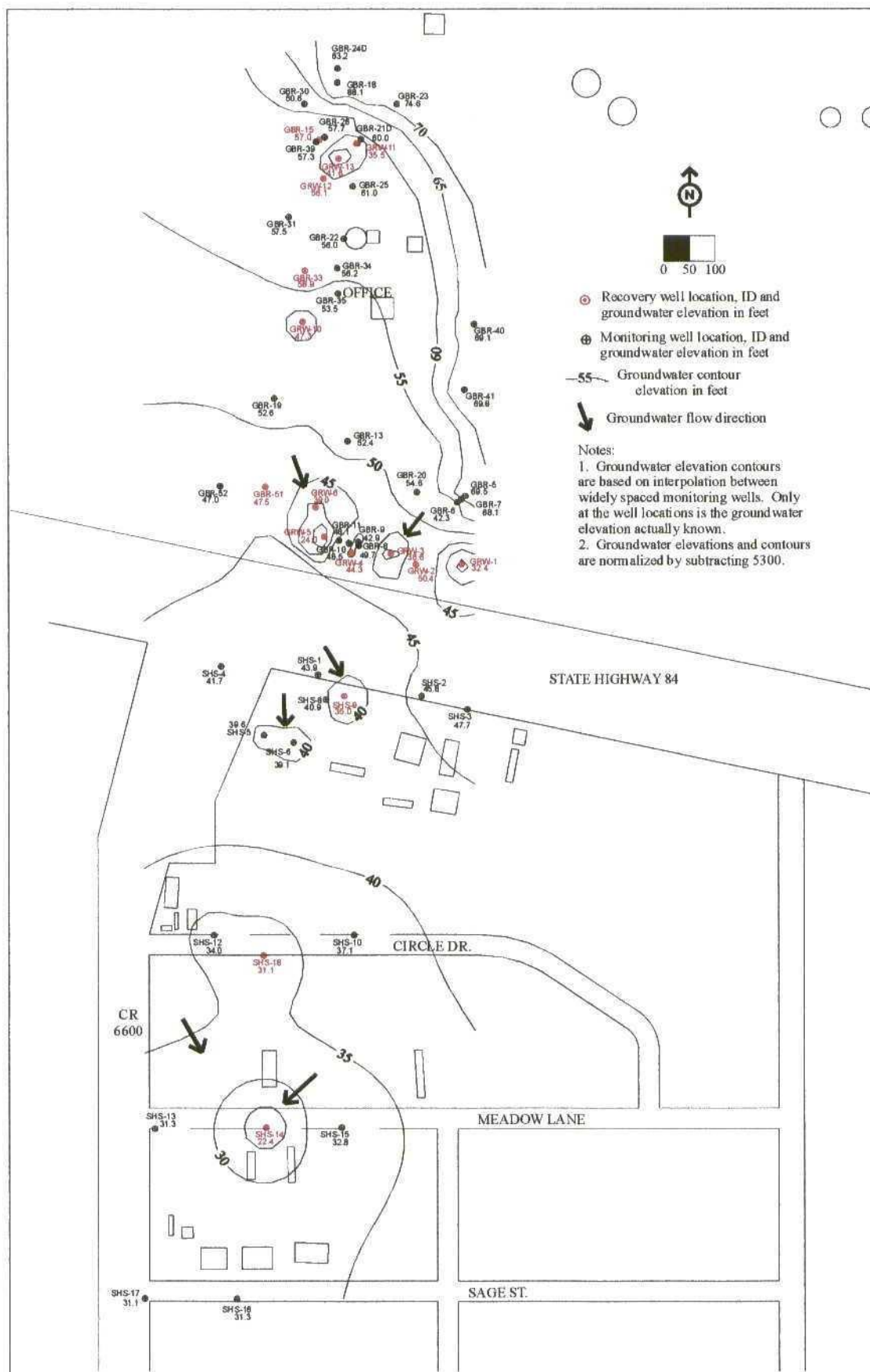
WELL #	WELLHEAD ELEVATION IN FEET	DEPTH TO WATER IN FEET	DEPTH TO PRODUCT IN FEET	PRODUCT THICKNESS IN FEET	ADJUSTED WSEL* IN FEET
GRW-1	5394.30	61.95	61.95	0.00	5332.35
GRW-2	5391.28	40.86	40.86	0.00	5350.42
GRW-3	5388.77	52.22	52.22	0.00	5336.55
GRW-4	5390.02	45.70	45.70	0.00	5344.32
GRW-5	5390.56	66.52	66.52	0.00	5324.04
GRW-6	5390.81	51.80	51.80	0.00	5339.01
GRW-10	5395.02	47.75	47.75	0.00	5347.27
GRW-11	5397.85	62.35	62.35	0.00	5335.50
GRW-12	5397.24	41.15	41.15	0.00	5356.09
GRW-13	5396.90	55.30	55.30	0.00	5341.60
GBR-5	5395.07	25.53	25.53	0.00	5369.54
GBR-6	5395.70	53.40	53.40	0.00	5342.30
GBR-7	5395.85	29.20	27.42	1.78	5368.07
GBR-8	5390.50	40.85	40.82	0.03	5349.67
GBR-9	5389.92	46.99	46.99	0.00	5342.93
GBR-10	5390.57	42.02	42.02	0.00	5348.55
GBR-11	5389.43	41.34	41.32	0.02	5348.11
GBR-13	5393.04	40.65	40.65	0.00	5352.39
GBR-15	5397.99	40.95	40.95	0.00	5357.04
GBR-18	5421.68	33.58	33.58	0.00	5388.10
GBR-19	5393.83	41.95	41.10	0.85	5352.56
GBR-20	5393.47	38.95	38.91	0.04	5354.55
GBR-21S	5400.65	27.84	26.35	1.49	5374.00
GBR-21D	5400.19	40.22	40.22	0.00	5359.97
GBR-22	5395.91	40.38	39.80	0.58	5355.99
GBR-23	5403.72	30.74	28.60	2.14	5374.59
GBR-24S	5396.08	31.56	30.84	0.72	5363.08
GBR-24D	5396.77	33.58	33.58	0.00	5363.19
GBR-25	5396.72	34.77	35.28	-0.51	5361.03
GBR-26	5395.59	37.85	37.85	0.00	5357.74
GBR-30	5396.58	35.95	35.95	0.00	5360.63
GBR-31	5394.86	37.39	37.39	0.00	5357.47
GBR-33	5396.28	37.44	37.38	0.06	5358.89
GBR-34	5394.00	38.52	37.65	0.87	5356.18
GBR-35	5393.66	40.19	40.19	0.00	5353.47
GBR-39	5397.55	40.30	40.30	0.00	5357.25
GBR-40	5400.76	31.62	31.62	0.00	5369.14
GBR-41	5396.35	26.60	26.60	0.00	5369.75
GBR-51	5389.68	42.15	42.15	0.00	5347.53
GBR-52	5387.74	40.72	40.72	0.00	5347.02

GIANT REFINING BLOOMFIELD REFINERY
 QUARTERLY POTENTIOMETRIC SURFACE
 APRIL, 2001
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WELL #	WELLHEAD ELEVATION IN FEET	DEPTH TO WATER IN FEET	DEPTH TO PRODUCT IN FEET	PRODUCT THICKNESS IN FEET	ADJUSTED WSEL* IN FEET
SHS-1	5383.54	39.73	39.63	0.10	5343.89
SHS-2	5381.66	35.91	35.91	0.00	5345.75
SHS-3	5383.33	35.64	35.64	0.00	5347.69
SHS-4	5383.62	41.90	41.90	0.00	5341.72
SHS-5	5378.36	38.78	38.78	0.00	5339.58
SHS-6	5378.17	39.03	39.03	0.00	5339.14
SHS-7	5375.89	*	*	0.00	5375.89
SHS-8	5380.25	40.67	39.06	1.61	5340.87
SHS-9	5380.79	45.75	45.75	0.00	5335.04
SHS-10	5373.80	36.75	36.75	0.00	5337.05
SHS-12	5373.94	39.89	39.89	0.00	5334.05
SHS-13	5367.81	36.48	36.48	0.00	5331.33
SHS-14	5367.07	44.64	44.64	0.00	5322.43
SHS-15	5366.21	33.44	33.44	0.00	5332.77
SHS-16	5362.58	31.25	31.25	0.00	5331.33
SHS-17	5364.35	33.21	33.21	0.00	5331.14
SHS-18	5373.64	42.50	42.50	0.00	5331.14

* WSEL - WATER SURFACE ELEVATION ADJUSTED FOR PRODUCT DEPTH

*SHS-7 HAS BEEN ABANDONED.



**GIANT REFINING BLOOMFIELD REFINERY
QUARTERLY POTENTIOMETRIC SURFACE**

JULY, 2001

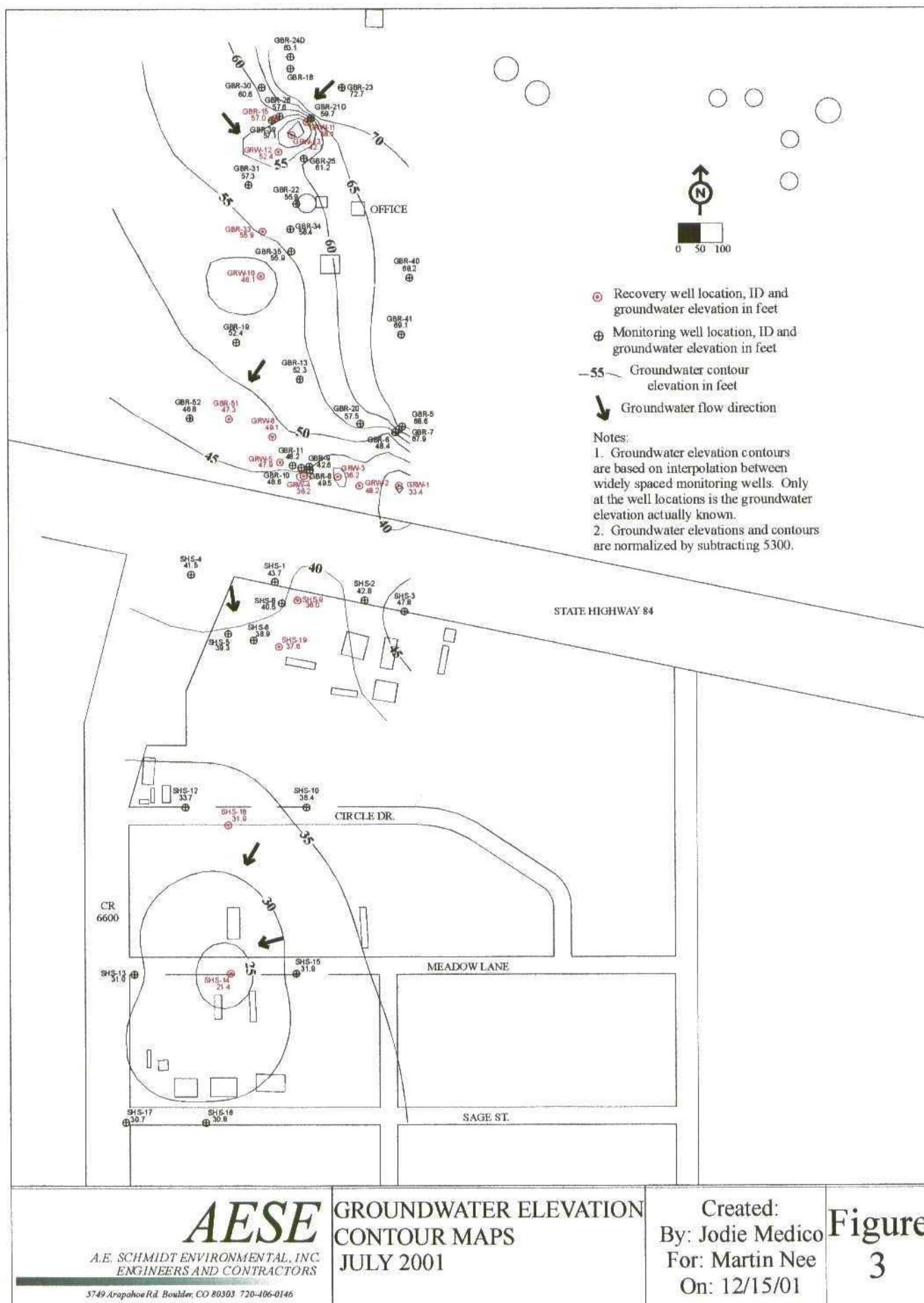
WELL #	WELLHEAD ELEVATION IN FEET	DEPTH TO WATER IN FEET	DEPTH TO PRODUCT IN FEET	PRODUCT THICKNESS IN FEET	ADJUSTED WSEL* IN FEET
GRW-1	5394.30	60.92	60.92	0.00	5333.38
GRW-2	5391.28	43.04	43.04	0.00	5348.24
GRW-3	5388.77	52.55	52.55	0.00	5336.22
GRW-4	5390.02	53.82	53.82	0.00	5336.20
GRW-5	5390.56	42.65	42.65	0.00	5347.91
GRW-6	5390.81	41.76	41.76	0.00	5349.05
GRW-10	5395.02	48.90	48.90	0.00	5346.12
GRW-11	5397.85	59.72	59.72	0.00	5338.13
GRW-12	5397.24	44.85	44.85	0.00	5352.39
GRW-13	5396.90	54.80	54.80	0.00	5342.10
GBR-5	5395.07	26.50	26.50	0.00	5368.57
GBR-6	5395.70	47.32	47.32	0.00	5348.38
GBR-7	5395.85	29.43	27.63	1.80	5367.86
GBR-8	5390.50	41.21	40.97	0.24	5349.48
GBR-9	5389.92	47.32	47.32	0.00	5342.60
GBR-10	5390.57	41.96	41.96	0.00	5348.61
GBR-11	5389.43	41.20	41.18	0.02	5348.25
GBR-13	5393.04	40.76	40.76	0.00	5352.28
GBR-15	5397.99	40.99	40.99	0.00	5357.00
GBR-18	5421.68	34.30	34.30	0.00	5387.38
GBR-19	5393.83	42.20	41.30	0.90	5352.35
GBR-20	5393.47	36.00	35.96	0.04	5357.50
GBR-21S	5400.65	26.57	26.57	0.00	5374.08
GBR-21D	5400.19	40.45	40.45	0.00	5359.74
GBR-22	5395.91	40.05	40.05	0.00	5355.86
GBR-23	5403.72	28.57	28.53	0.04	5372.70
GBR-24S	5396.08	31.08	31.05	0.03	5362.44
GBR-24D	5396.77	33.66	33.66	0.00	5363.11
GBR-25	5396.72	35.56	35.56	0.00	5361.16
GBR-26	5395.59	38.00	38.00	0.00	5357.59
GBR-30	5396.58	36.01	36.01	0.00	5360.57
GBR-31	5394.86	37.61	37.61	0.00	5357.25
GBR-33	5396.28	40.40	40.40	0.00	5355.88
GBR-34	5394.00	37.58	37.55	0.03	5356.44
GBR-35	5393.66	37.75	37.70	0.05	5355.95
GBR-39	5397.55	40.43	40.43	0.00	5357.12
GBR-40	5400.76	32.55	32.55	0.00	5368.21
GBR-41	5396.35	27.23	27.23	0.00	5369.12
GBR-51	5389.68	42.35	42.35	0.00	5347.33
GBR-52	5387.74	40.94	40.94	0.00	5346.80

GIANT REFINING BLOOMFIELD REFINERY
 QUARTERLY POTENTIOMETRIC SURFACE
 JULY, 2001
 Page 2

WELL #	WELLHEAD ELEVATION IN FEET	DEPTH TO WATER IN FEET	DEPTH TO PRODUCT IN FEET	PRODUCT THICKNESS IN FEET	ADJUSTED WSEL* IN FEET
SHS-1	5383.54	39.85	39.83	0.02	5343.71
SHS-2	5381.66	38.90	38.90	0.00	5342.76
SHS-3	5383.33	35.50	35.50	0.00	5347.83
SHS-4	5383.62	42.09	42.09	0.00	5341.53
SHS-5	5378.36	39.11	39.11	0.00	5339.25
SHS-6	5378.17	39.30	39.30	0.00	5338.87
SHS-7	5375.89	*	*	0.00	5375.89
SHS-8	5380.25	40.92	39.40	1.52	5340.55
SHS-9	5380.79	44.75	44.75	0.00	5336.04
SHS-10	5373.80	37.42	37.42	0.00	5336.38
SHS-12	5373.94	40.24	40.24	0.00	5333.70
SHS-13	5367.81	36.83	36.83	0.00	5330.98
SHS-14	5367.07	45.63	45.63	0.00	5321.44
SHS-15	5366.21	34.27	34.27	0.00	5331.94
SHS-16	5362.58	31.82	31.82	0.00	5330.76
SHS-17	5364.35	33.69	33.69	0.00	5330.66
SHS-18	5373.64	41.72	41.72	0.00	5331.92
SHS-19	5378.89	41.25	41.25	0.00	5337.64

* WSEL - WATER SURFACE ELEVATION ADJUSTED FOR PRODUCT DEPTH

*SHS-7 HAS BEEN ABANDONED AND REPLACED WITH SHS-19.



**GIANT REFINING BLOOMFIELD REFINERY
QUARTERLY POTENTIOMETRIC SURFACE**

OCTOBER, 2001

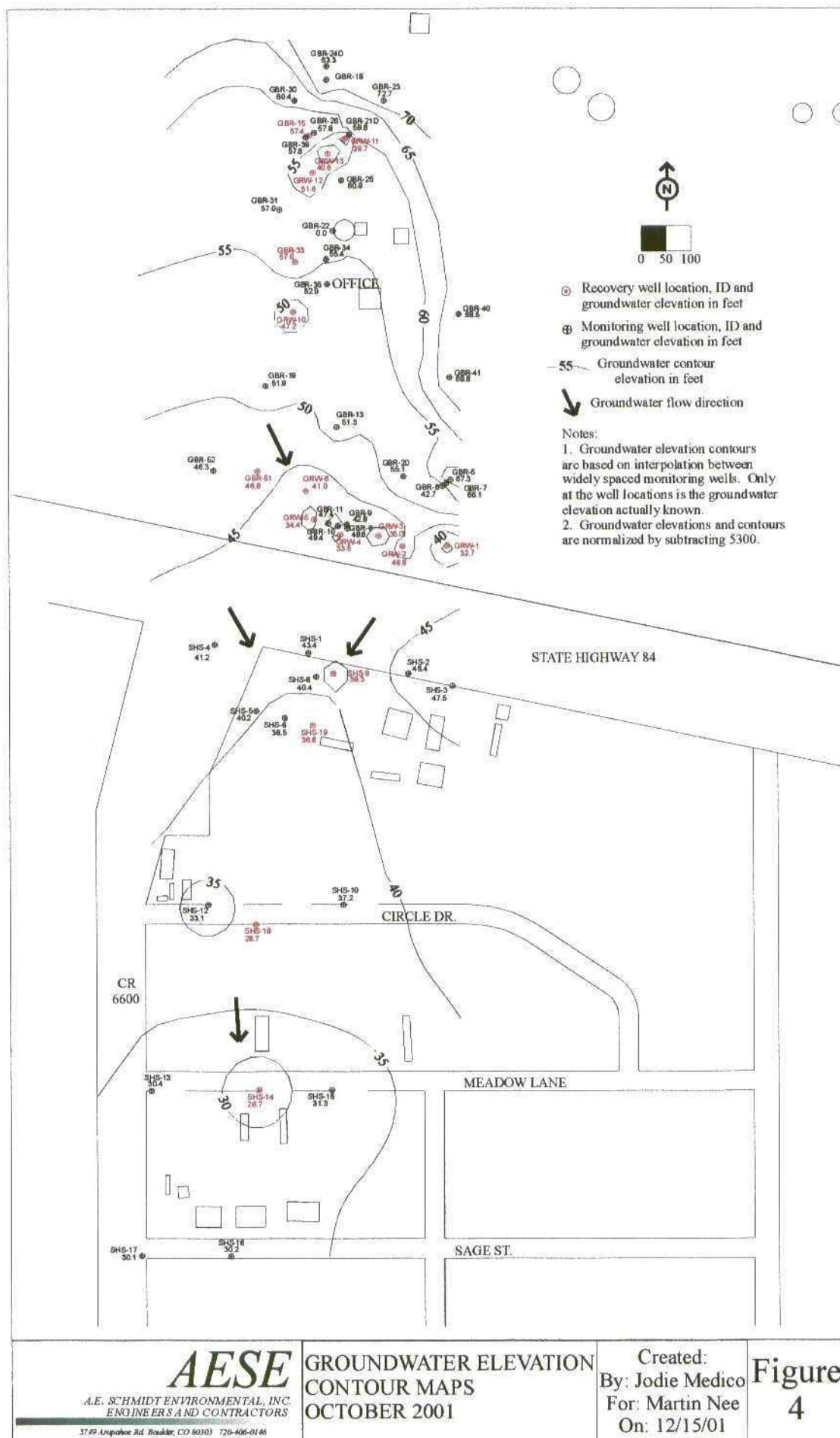
WELL #	WELLHEAD ELEVATION IN FEET	DEPTH TO WATER IN FEET	DEPTH TO PRODUCT IN FEET	PRODUCT THICKNESS IN FEET	ADJUSTED WSEL* IN FEET
GRW-1	5394.30	61.56	61.56	0.00	5332.74
GRW-2	5391.28	44.52	44.52	0.00	5346.76
GRW-3	5388.77	53.74	53.74	0.00	5335.03
GRW-4	5390.02	56.50	56.50	0.00	5333.52
GRW-5	5390.56	56.14	56.14	0.00	5334.42
GRW-6	5390.81	49.82	49.82	0.00	5340.99
GRW-10	5395.02	48.41	47.62	0.79	5347.24
GRW-11	5397.85	58.20	58.20	0.00	5339.65
GRW-12	5397.24	45.68	45.68	0.00	5351.56
GRW-13	5396.90	56.32	56.32	0.00	5340.58
GBR-5	5395.07	27.76	27.76	0.00	5367.31
GBR-6	5395.70	52.98	52.98	0.00	5342.72
GBR-7	5395.85	29.82	29.75	0.07	5366.09
GBR-8	5390.50	41.90	41.89	0.01	5348.61
GBR-9	5389.92	47.13	47.13	0.00	5342.79
GBR-10	5390.57	41.17	41.17	0.00	5349.40
GBR-11	5389.43	42.06	42.01	0.05	5347.41
GBR-13	5393.04	41.70	41.70	0.00	5351.34
GBR-15	5397.99	40.63	40.63	0.00	5357.36
GBR-18	5421.68	34.83	34.83	0.00	5386.85
GBR-19	5393.83	42.75	41.74	1.01	5351.89
GBR-20	5393.47	38.50	38.40	0.10	5355.05
GBR-21S	5400.65	26.61	26.61	0.00	5374.04
GBR-21D	5400.19	40.37	40.37	0.00	5359.82
GBR-22	5395.91	Dry	Dry	0.00	5395.91
GBR-23	5403.72	28.58	28.56	0.02	5372.74
GBR-24S	5396.08	31.02	31.00	0.02	5362.60
GBR-24D	5396.77	33.50	33.50	0.00	5363.27
GBR-25	5396.72	35.90	35.90	0.00	5360.82
GBR-26	5395.59	37.77	37.77	0.00	5357.82
GBR-30	5396.58	36.13	36.13	0.00	5360.45
GBR-31	5394.86	37.86	37.86	0.00	5357.00
GBR-33	5396.28	39.55	38.20	1.35	5357.81
GBR-34	5394.00	40.30	38.21	2.09	5355.37
GBR-35	5393.66	40.73	40.73	0.00	5352.93
GBR-39	5397.55	39.97	39.97	0.00	5357.58
GBR-40	5400.76	32.26	32.26	0.00	5368.50
GBR-41	5396.35	27.53	27.53	0.00	5368.82
GBR-51	5389.68	42.87	42.87	0.00	5346.81
GBR-52	5387.74	41.45	41.45	0.00	5346.29

GIANT REFINING BLOOMFIELD REFINERY
 QUARTERLY POTENTIOMETRIC SURFACE
 OCTOBER, 2001
 Page 2

WELL #	WELLHEAD ELEVATION IN FEET	DEPTH TO WATER IN FEET	DEPTH TO PRODUCT IN FEET	PRODUCT THICKNESS IN FEET	ADJUSTED WSEL* IN FEET
SHS-1	5383.54	40.10	40.10	0.00	5343.44
SHS-2	5381.66	35.23	35.23	0.00	5346.43
SHS-3	5383.33	35.85	35.85	0.00	5347.48
SHS-4	5383.62	42.46	42.46	0.00	5341.16
SHS-5	5378.36	38.12	38.12	0.00	5340.24
SHS-6	5378.17	39.69	39.69	0.00	5338.48
SHS-7	5375.89	*	*	0.00	5375.89
SHS-8	5380.25	39.85	39.85	0.00	5340.40
SHS-9	5380.79	42.50	42.50	0.00	5338.29
SHS-10	5373.80	36.60	36.60	0.00	5337.20
SHS-12	5373.94	40.85	40.85	0.00	5333.09
SHS-13	5367.81	37.43	37.43	0.00	5330.38
SHS-14	5367.07	40.40	40.40	0.00	5326.67
SHS-15	5366.21	34.89	34.89	0.00	5331.32
SHS-16	5362.58	32.40	32.40	0.00	5330.18
SHS-17	5364.35	34.29	34.29	0.00	5330.06
SHS-18	5373.64	44.91	44.91	0.00	5328.73
SHS-19	5378.89	42.30	42.30	0.00	5336.59

* WSEL - WATER SURFACE ELEVATION ADJUSTED FOR PRODUCT DEPTH

*SHS-7 HAS BEEN ABANDONED AND REPLACED WITH SHS-19.



**GIANT REFINING COMPANY
BLOOMFIELD REFINERY
VOLUME CHANGE**

2001

Tank Number	Beginning Volume	Ending Volume	Net Change
102	14,086	15,025	939
106	8,010	8,010	0
21	230,133	230,133	0
22	260,714	249,979	(10,735)
Total Net Volume Change			(9,796)

**GIANT REFINING COMPANY
BLOOMFIELD REFINERY
RECOVERY WELL
VOLUME TABULATION**

2001

Well	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total
GRW-1	45,760	42,590	36,760	29,350	154,460
GRW-2	37,970	38,690	42,930	33,280	152,870
GRW-3	61,060	66,560	50,890	30,960	209,470
GRW-4	43,980	47,250	44,120	35,110	170,460
GRW-5	99,010	58,260	101,160	84,690	343,120
GRW-6	109,620	169,640	106,810	80,840	466,910
GRW-9	72,150	57,120	38,830	35,330	203,430
GRW-10	600,730	564,520	593,170	634,880	2,393,300
GRW-11	47,020	43,410	59,260	53,070	202,760
GRW-12	7,690	6,480	8,260	7,210	29,640
GRW-13	8,180	10,860	8,160	6,730	33,930
SHS-7	40,302	0	0	0	40,302
SHS-9	11,319	6,906	8,901	8,675	35,801
SHS-14	397,859	239,630	90,898	188,511	916,898
SHS-18	170,480	166,368	97,028	62,536	496,412
SHS-19	0	83,787	132,462	128,763	345,012
TOTAL VOLUME PUMPED IN GALLONS					6,194,775

**GIANT REFINING COMPANY
BLOOMFIELD REFINERY
TOTAL VOLUME SUMMARY**

2001

Total Volume Of Water Recovered	6,194,775
Net Change In Storage Volume	(9,796)
Total Water Treated And Pumped To The Infiltration Gallery	6,204,571

ANNUAL DATA REPORT
GIANT BLOOMFIELD REFINERY
2000

RECEIVED

MAR 12 2001

**ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION**

Prepared By:

GIANT REFINING COMPANY
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Potentiometric Surface Maps.....	Section 3
Total Volume History	Section 4

INTRODUCTION AND SUMMARY

ANNUAL REPORT

2000

INTRODUCTION

Tank 22 is being used for intermediate water storage. All water is treated by the carbon filter unit exclusively. Inadvertently, influent and effluent samples were not collected for the last three quarters.

SUMMARY

Section 2

Section 2 contains a summary of the annual analytical results. Raw data, as received from the laboratory, is available on request as a supplement to the annual report.

Section 3

Potentiometric surface maps, as well as the adjusted water surface elevation and product thickness for each well, are included in Section 3.

Section 4

Section 4 illustrates the volume history for the year. Total volume pumped from each well, as well as current tank volumes and the reinjection volume, is reported. Additional detail, on a weekly basis, is also available if desired.

SECTION 2

The following pages show the annual analytical data for the Giant Refining Remediation Project. The data is broken down into units as described below.

	<u>Unit of Measure</u>
Total dissolved solids (180)	mg/l
Total dissolved solids (calc)	mg/l
Total alkalinity as CaCO ₃	mg/l
Total hardness as CaCO ₃	mg/l
Bicarbonate as HCO ₃	mg/l
Carbonate as CO ₃	mg/l
Chloride	mg/l
Sulfate	mg/l
Calcium	mg/l
Magnesium	mg/l
Potassium	mg/l
Sodium	mg/l

The remainder of the data is measured in ug/l.

GIANT INDUSTRIES, INC.
ONSITE REMEDIATION PROJECT
ANNUAL ANALYTICAL DATA SUMMARY
2000

	JAN	DEC
SYSTEM EFFLUENT		
Lab pH	7.4	
Lab Conductivity @25 C	3540	
Total Dissolved Solids (Calc)	2430	
Total Alkalinity as CaCO3	421	
Total Hardness as CaCO3	864	
Bicarbonate as HCO3	514	
Carbonate as CO3	ND	
Hydroxide	ND	
Chloride	149	
Sulfate	1030	
Calcium	298	
Magnesium	29.3	
Potassium	2.4	
Sodium	443	
HALOCARBONS		
Bromodichloromethane	ND	
Bromoform	ND	
Bromomethane	ND	
Carbon Tetrachloride	ND	
Chloroethane	ND	
Chloroform	ND	
Chloromethane	ND	
Dibromochloromethane	ND	
1,2-Dibromoethane (EDB)	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
1,1-Dichloroethane	ND	
1,2-Dichloroethane (EDC)	ND	
1,1-Dichloroethene	ND	
cis-1,2-Dichloroethene	ND	
trans-1,2-Dichloroethene	ND	
1,2-Dichloropropane	ND	
cis-1,3-Dichloropropene	ND	
trans-1,3-Dichloropropene	ND	
Methylene Chloride	ND	
1,1,2,2-Tetrachloroethane	ND	
Tetrachlorethene	ND	
1,1,1-Trichloroethane	ND	
1,1,2-Trichloroethane	ND	
Trichloroethene	ND	
Trichlorofluoromethane	ND	
Vinyl Chloride	ND	
AROMATICS		
Benzene	ND	
Chlorobenzene	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
Ethylbenzene	ND	
Methyl-t-Butyl Ether	ND	
Toluene	ND	
Total Xylenes	ND	

JAN

DEC

Methyl-t-Butyl Ether	ND	
Toluene	ND	
Total Xylenes	ND	
PAH		
1-Methylnaphthalene	ND	
2-Methylnaphthalene	ND	
Benzo(a)pyrene	ND	
Naphthalene	ND	
SYSTEM INFLUENT		
Lab pH	7.5	
Lab Conductivity @25 C	3490	
Total Dissolved Solids (Calc)	2430	
Total Alkalinity as CaCO3	449	
Total Hardness as CaCO3	888	
Bicarbonate as HCO3	548	
Carbonate as CO3	ND	
Hydroxide	ND	
Chloride	153	
Sulfate	1040	
Calcium	307	
Magnesium	29.5	
Potassium	2.8	
Sodium	443	
HALOCARBONS		
Bromodichloromethane	ND	
Bromoform	ND	
Bromomethane	ND	
Carbon Tetrachloride	ND	
Chloroethane	ND	
Chloroform	ND	
Chloromethane	ND	
Dibromochloromethane	ND	
1,2-Dibromoethane (EDB)	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
1,1-Dichloroethane	ND	
1,2-Dichloroethane (EDC)	ND	
1,1-Dichloroethene	ND	
cis-1,2-Dichloroethene	0.2	
trans-1,2-Dichloroethene	ND	
1,2-Dichloropropane	ND	
cis-1,3-Dichloropropene	ND	
trans-1,3-Dichloropropene	ND	
Methylene Chloride	ND	
1,1,2,2-Tetrachloroethane	ND	
Tetrachlorethene	ND	
1,1,1-Trichloroethane	ND	
1,1,2-Trichloroethane	ND	
Trichloroethene	ND	
Trichlorofluoromethane	ND	
Vinyl Chloride	ND	
AROMATICS		
Benzene	ND	

JAN

DEC

Chlorobenzene	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
Ethylbenzene	ND	
Methyl-t-Butyl Ether	ND	
Toluene	ND	
Total Xylenes	ND	
GRW-3		
Lab pH	7.4	
Lab Conductivity @25 C	2620	
Total Dissolved Solids @ 180 C	1540	
Total Alkalinity as CaCO3	973	
Total Hardness as CaCO3	341	
Bicarbonate as HCO3	1190	
Carbonate as CO3	ND	
Hydroxide	ND	
Chloride	148	
Sulfate	145	
Calcium	102	
Magnesium	21	
Potassium	1	
Sodium	472	
HALOCARBONS		
Bromodichloromethane	ND	
Bromoform	0.5	
Bromomethane	ND	
Carbon Tetrachloride	ND	
Chloroethane	ND	
Chloroform	ND	
Chloromethane	ND	
Dibromochloromethane	ND	
1,2-Dibromoethane (EDB)	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
1,1-Dichloroethane	ND	
1,2-Dichloroethane (EDC)	ND	
1,1-Dichloroethene	ND	
cis-1,2-Dichloroethene	ND	
trans-1,2-Dichloroethene	ND	
1,2-Dichloropropane	ND	
cis-1,3-Dichloropropene	ND	
trans-1,3-Dichloropropene	ND	
Methylene Chloride	3.8	
1,1,2,2-Tetrachloroethane	ND	
Tetrachlorethene	ND	
1,1,1-Trichloroethane	ND	
1,1,2-Trichloroethane	ND	
Trichloroethene	ND	
Trichlorofluoromethane	ND	
Vinyl Chloride	ND	
AROMATICS		
Benzene	16	
Chlorobenzene	ND	
1,2-Dichlorobenzene	ND	

JAN

DEC

1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
Ethylbenzene	45	
Methyl-t-Butyl Ether	ND	
Toluene	ND	
Total Xylenes	0.6	
PAH		
1-Methylnaphthalene	ND	
2-Methylnaphthalene	ND	
Benzo(a)pyrene	ND	
Naphthalene	ND	
GRW-6		
Lab pH	7.4	
Lab Conductivity @25 C	2880	
Total Dissolved Solids @ 180 C	1680	
Total Alkalinity as CaCO3	739	
Total Hardness as CaCO3	438	
Bicarbonate as HCO3	901	
Carbonate as CO3	ND	
Hydroxide	ND	
Chloride	162	
Sulfate	395	
Calcium	139	
Magnesium	22	
Potassium	1.9	
Sodium	440	

	JAN	DEC
HALOCARBONS		
Bromodichloromethane	ND	
Bromoform	ND	
Bromomethane	ND	
Carbon Tetrachloride	ND	
Chloroethane	ND	
Chloroform	ND	
Chloromethane	ND	
Dibromochloromethane	ND	
1,2-Dibromoethane (EDB)	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
1,1-Dichloroethane	ND	
1,2-Dichloroethane (EDC)	0.5	
1,1-Dichloroethene	ND	
cis-1,2-Dichloroethene	ND	
trans-1,2-Dichloroethene	ND	
1,2-Dichloropropane	ND	
cis-1,3-Dichloropropene	ND	
trans-1,3-Dichloropropene	ND	
Methylene Chloride	ND	
1,1,2,2-Tetrachloroethane	ND	
Tetrachlorethene	ND	
1,1,1-Trichloroethane	ND	
1,1,2-Trichloroethane	ND	
Trichloroethene	ND	
Trichlorofluoromethane	ND	
Vinyl Chloride	ND	
AROMATICS		
Benzene	ND	
Chlorobenzene	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
Ethylbenzene	ND	
Methyl-t-Butyl Ether	ND	
Toluene	ND	
Total Xylenes	ND	
PAH		
1-Methylnaphthalene	ND	
2-Methylnaphthalene	ND	
Benzo(a)pyrene	ND	
Naphthalene	ND	

JAN

DEC

GRW-13		
Lab pH	7.4	
Lab Conductivity @25 C	4590	
Total Dissolved Solids @ 180 C	510	
Total Alkalinity as CaCO3	187	
Total Hardness as CaCO3	1080	
Bicarbonate as HCO3	228	
Carbonate as CO3	ND	
Hydroxide	ND	
Chloride	264	
Sulfate	1640	
Calcium	392	
Magnesium	25.2	
Potassium	2.9	
Sodium	604	
HALOCARBONS		
Bromodichloromethane	ND	
Bromoform	ND	
Bromomethane	ND	
Carbon Tetrachloride	ND	
Chloroethane	ND	
Chloroform	ND	
Chloromethane	ND	
Dibromochloromethane	ND	
1,2-Dibromoethane (EDB)	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
1,1-Dichloroethane	ND	
1,2-Dichloroethane (EDC)	3.0	
1,1-Dichloroethene	ND	
cis-1,2-Dichloroethene	ND	
trans-1,2-Dichloroethene	ND	
1,2-Dichloropropane	ND	
cis-1,3-Dichloropropene	ND	
trans-1,3-Dichloropropene	ND	
Methylene Chloride	ND	
1,1,2,2-Tetrachloroethane	ND	
Tetrachlorethene	ND	
1,1,1-Trichloroethane	ND	
1,1,2-Trichloroethane	ND	
Trichloroethene	ND	
Trichlorofluoromethane	ND	
Vinyl Chloride	ND	
AROMATICS		
Benzene	ND	
Chlorobenzene	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
Ethylbenzene	ND	
Methyl-t-Butyl Ether	ND	
Toluene	ND	
Total Xylenes	ND	
PAH		
1-Methylnaphthalene	ND	

	JAN	DEC
2-Methylnaphthalene	ND	
Benzo(a)pyrene	ND	
Naphthalene	ND	
GBR-15		
Lab pH	7.4	
Lab Conductivity @25 C	4100	
Total Dissolved Solids @ 180 C	2910	
Total Alkalinity as CaCO3	309	
Total Hardness as CaCO3	987	
Bicarbonate as HCO3	376	
Carbonate as CO3	ND	
Hydroxide	ND	
Chloride	313	
Sulfate	1210	
Calcium	357	
Magnesium	23.3	
Potassium	5.2	
Sodium	554	
HALOCARBONS		
Bromodichloromethane	ND	
Bromoform	ND	
Bromomethane	ND	
Carbon Tetrachloride	ND	
Chloroethane	ND	
Chloroform	ND	
Chloromethane	ND	
Dibromochloromethane	ND	
1,2-Dibromoethane (EDB)	ND	
1,2-Dichlorobenzene	1.0	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
1,1-Dichloroethane	ND	
1,2-Dichloroethane (EDC)	3.1	
1,1-Dichloroethene	ND	
cis-1,2-Dichloroethene	ND	
trans-1,2-Dichloroethene	ND	
1,2-Dichloropropane	ND	
cis-1,3-Dichloropropene	ND	
trans-1,3-Dichloropropene	ND	
Methylene Chloride	ND	
1,1,2,2-Tetrachloroethane	ND	
Tetrachlorethene	ND	
1,1,1-Trichloroethane	ND	
1,1,2-Trichloroethane	ND	
Trichloroethene	ND	
Trichlorofluoromethane	ND	
Vinyl Chloride	ND	
AROMATICS		
Benzene	ND	
Chlorobenzene	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
Ethylbenzene	0.7	
Methyl-t-Butyl Ether	ND	
Toluene	ND	

JAN

DEC

Total Xylenes	ND	
GBR-17		
Lab pH		7.3
Lab Conductivity @25 C		2430
Total Dissolved Solids (Calc)		1930
Total Alkalinity as CaCO3		220
Total Hardness as CaCO3		798
Bicarbonate as HCO3		268
Carbonate as CO3		ND
Hydroxide		ND
Chloride		4.0
Sulfate		1060
Calcium		282
Magnesium		22.8
Potassium		3.7
Sodium		289
HALOCARBONS		
Bromodichloromethane		ND
Bromoform		ND
Bromomethane		ND
Carbon Tetrachloride		ND
Chloroethane		ND
Chloroform		ND
Chloromethane		ND
Dibromochloromethane		ND
1,2-Dibromoethane (EDB)		ND
1,2-Dichlorobenzene		ND
1,3-Dichlorobenzene		ND
1,4-Dichlorobenzene		ND
1,1-Dichloroethane		ND
1,2-Dichloroethane (EDC)		ND
1,1-Dichloroethene		ND
cis-1,2-Dichloroethene		ND
trans-1,2-Dichloroethene		ND
1,2-Dichloropropane		ND
cis-1,3-Dichloropropene		ND
trans-1,3-Dichloropropene		ND
Methylene Chloride		ND
1,1,2,2-Tetrachloroethane		ND
Tetrachlorethene		ND
1,1,1-Trichloroethane		ND
1,1,2-Trichloroethane		ND
Trichloroethene		ND
Trichlorofluoromethane		ND
Vinyl Chloride		ND
AROMATICS		
Benzene		ND
Chlorobenzene		ND
1,2-Dichlorobenzene		ND
1,3-Dichlorobenzene		ND
1,4-Dichlorobenzene		ND
Ethylbenzene		ND
Methyl-t-Butyl Ether		ND
Toluene		ND
Total Xylenes		ND

JAN

DEC

	JAN	DEC
GBR-24D		
Lab pH	7.9	
Lab Conductivity @25 C	4820	
Total Dissolved Solids @ 180 C	3550	
Total Alkalinity as CaCO3	234	
Total Hardness as CaCO3	1690	
Bicarbonate as HCO3	286	
Carbonate as CO3	ND	
Hydroxide	ND	
Chloride	610	
Sulfate	1380	
Calcium	567	
Magnesium	67.3	
Potassium	4.7	
Sodium	463	
HALOCARBONS		
Bromodichloromethane	ND	
Bromoform	ND	
Bromomethane	ND	
Carbon Tetrachloride	ND	
Chloroethane	ND	
Chloroform	ND	
Chloromethane	ND	
Dibromochloromethane	ND	
1,2-Dibromoethane (EDB)	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
1,1-Dichloroethane	ND	
1,2-Dichloroethane (EDC)	19	
1,1-Dichloroethene	ND	
cis-1,2-Dichloroethene	ND	
trans-1,2-Dichloroethene	ND	
1,2-Dichloropropane	ND	
cis-1,3-Dichloropropene	ND	
trans-1,3-Dichloropropene	ND	
Methylene Chloride	ND	
1,1,2,2-Tetrachloroethane	ND	
Tetrachlorethene	ND	
1,1,1-Trichloroethane	ND	
1,1,2-Trichloroethane	ND	
Trichloroethene	ND	
Trichlorofluoromethane	ND	
Vinyl Chloride	ND	
AROMATICS		
Benzene	6.6	
Chlorobenzene	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
Ethylbenzene	ND	
Methyl-t-Butyl Ether	ND	
Toluene	ND	
Total Xylenes	ND	
PAH		

	JAN	DEC
1-Methylnaphthalene	ND	
2-Methylnaphthalene	ND	
Benzo(a)pyrene	ND	
Naphthalene	ND	
GBR-30		
Lab pH	7.0	
Lab Conductivity @25 C	4220	
Total Dissolved Solids @ 180 C	3140	
Total Alkalinity as CaCO3	243	
Total Hardness as CaCO3	1290	
Bicarbonate as HCO3	297	
Carbonate as CO3	ND	
Hydroxide	ND	
Chloride	310	
Sulfate	1460	
Calcium	449	
Magnesium	40.4	
Potassium	3.3	
Sodium	491	

JAN

DEC

HALOCARBONS		
Bromodichloromethane	ND	
Bromoform	ND	
Bromomethane	ND	
Carbon Tetrachloride	ND	
Chloroethane	ND	
Chloroform	ND	
Chloromethane	ND	
Dibromochloromethane	ND	
1,2-Dibromoethane (EDB)	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
1,1-Dichloroethane	ND	
1,2-Dichloroethane (EDC)	ND	
1,1-Dichloroethene	ND	
cis-1,2-Dichloroethene	0.6	
trans-1,2-Dichloroethene	ND	
1,2-Dichloropropane	ND	
cis-1,3-Dichloropropene	ND	
trans-1,3-Dichloropropene	ND	
Methylene Chloride	ND	
1,1,2,2-Tetrachloroethane	ND	
Tetrachlorethene	ND	
1,1,1-Trichloroethane	ND	
1,1,2-Trichloroethane	ND	
Trichloroethene	ND	
Trichlorofluoromethane	ND	
Vinyl Chloride	ND	
AROMATICS		
Benzene	ND	
Chlorobenzene	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
Ethylbenzene	ND	
Methyl-t-Butyl Ether	ND	
Toluene	ND	
Total Xylenes	ND	
PAH		
1-Methylnaphthalene	ND	
2-Methylnaphthalene	ND	
Benzo(a)pyrene	ND	
Naphthalene	ND	
GBR-31		
Lab pH	7.4	
Lab Conductivity @25 C	3940	
Total Dissolved Solids @ 180 C	3030	
Total Alkalinity as CaCO3	197	
Total Hardness as CaCO3	1200	
Bicarbonate as HCO3	240	

JAN

DEC

Carbonate as CO3	ND	
Hydroxide	ND	
Chloride	181	
Sulfate	1560	
Calcium	420	
Magnesium	36.7	
Potassium	2.4	
Sodium	456	
HALOCARBONS		
Bromodichloromethane	ND	
Bromoform	ND	
Bromomethane	ND	
Carbon Tetrachloride	ND	
Chloroethane	ND	
Chloroform	ND	
Chloromethane	ND	
Dibromochloromethane	ND	
1,2-Dibromoethane (EDB)	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
1,1-Dichloroethane	ND	
1,2-Dichloroethane (EDC)	ND	
1,1-Dichloroethene	ND	
cis-1,2-Dichloroethene	2.1	
trans-1,2-Dichloroethene	ND	
1,2-Dichloropropane	ND	
cis-1,3-Dichloropropene	ND	
trans-1,3-Dichloropropene	ND	
Methylene Chloride	ND	
1,1,2,2-Tetrachloroethane	ND	
Tetrachlorethene	1.4	
1,1,1-Trichloroethane	ND	
1,1,2-Trichloroethane	ND	
Trichloroethene	0.6	
Trichlorofluoromethane	ND	
Vinyl Chloride	ND	
AROMATICS		
Benzene	ND	
Chlorobenzene	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
Ethylbenzene	ND	
Methyl-t-Butyl Ether	ND	
Toluene	ND	
Total Xylenes	ND	
PAH		
1-Methylnaphthalene	ND	
2-Methylnaphthalene	ND	
Benzo(a)pyrene	ND	
Naphthalene	ND	

JAN

DEC

	JAN	DEC
GBR-32		
Lab pH		7.1
Lab Conductivity @25 C		6030
Total Dissolved Solids (Calc)		4840
Total Alkalinity as CaCO3		300
Total Hardness as CaCO3		1760
Bicarbonate as HCO3		366
Carbonate as CO3		ND
Hydroxide		ND
Chloride		735
Sulfate		2190
Calcium		807
Magnesium		60.1
Potassium		6.8
Sodium		882
HALOCARBONS		
Bromodichloromethane		ND
Bromoform		ND
Bromomethane		ND
Carbon Tetrachloride		ND
Chloroethane		ND
Chloroform		1.6
Chloromethane		ND
Dibromochloromethane		ND
1,2-Dibromoethane (EDB)		ND
1,2-Dichlorobenzene		ND
1,3-Dichlorobenzene		ND
1,4-Dichlorobenzene		ND
1,1-Dichloroethane		1.1
1,2-Dichloroethane (EDC)		ND
1,1-Dichloroethene		ND
cis-1,2-Dichloroethene		10
trans-1,2-Dichloroethene		ND
1,2-Dichloropropane		ND
cis-1,3-Dichloropropene		0.3
trans-1,3-Dichloropropene		ND
Methylene Chloride		ND
1,1,2,2-Tetrachloroethane		ND
Tetrachlorethene		2.9
1,1,1-Trichloroethane		ND
1,1,2-Trichloroethane		ND
Trichloroethene		2.1
Trichlorofluoromethane		ND
Vinyl Chloride		ND
		ND
AROMATICS		
Benzene		ND
Chlorobenzene		ND
1,2-Dichlorobenzene		ND
1,3-Dichlorobenzene		ND
1,4-Dichlorobenzene		ND
Ethylbenzene		ND
Methyl-t-Butyl Ether		ND
Toluene		ND
Total Xylenes		ND

JAN

DEC

	JAN	DEC
GBR-48		
Lab pH		7.0
Lab Conductivity @25 C		7080
Total Dissolved Solids (Calc)		5340
Total Alkalinity as CaCO3		234
Total Hardness as CaCO3		2050
Bicarbonate as HCO3		286
Carbonate as CO3		ND
Hydroxide		ND
Chloride		1200
Sulfate		1990
Calcium		700
Magnesium		73.5
Potassium		7.0
Sodium		942
HALOCARBONS		
Bromodichloromethane		ND
Bromoform		ND
Bromomethane		ND
Carbon Tetrachloride		ND
Chloroethane		ND
Chloroform		3.2
Chloromethane		ND
Dibromochloromethane		ND
1,2-Dibromoethane (EDB)		ND
1,2-Dichlorobenzene		ND
1,3-Dichlorobenzene		ND
1,4-Dichlorobenzene		ND
1,1-Dichloroethane		0.5
1,2-Dichloroethane (EDC)		ND
1,1-Dichloroethene		ND
cis-1,2-Dichloroethene		15
trans-1,2-Dichloroethene		ND
1,2-Dichloropropane		ND
cis-1,3-Dichloropropene		ND
trans-1,3-Dichloropropene		ND
Methylene Chloride		ND
1,1,2,2-Tetrachloroethane		ND
Tetrachlorethene		3.3
1,1,1-Trichloroethane		ND
1,1,2-Trichloroethane		ND
Trichloroethene		2.6
Trichlorofluoromethane		0.4
Vinyl Chloride		ND
AROMATICS		
Benzene		ND
Chlorobenzene		ND
1,2-Dichlorobenzene		ND
1,3-Dichlorobenzene		ND
1,4-Dichlorobenzene		ND
Ethylbenzene		ND
Methyl-t-Butyl Ether		ND
Toluene		ND
Total Xylenes		ND

JAN

DEC

GBR-49		
Lab pH		7.3
Lab Conductivity @25 C		4750
Total Dissolved Solids (Calc)		3800
Total Alkalinity as CaCO3		320
Total Hardness as CaCO3		1480
Bicarbonate as HCO3		390
Carbonate as CO3		ND
Hydroxide		ND
Chloride		426
Sulfate		1910
Calcium		512
Magnesium		48.5
Potassium		7.5
Sodium		664
HALOCARBONS		
Bromodichloromethane		ND
Bromoform		ND
Bromomethane		ND
Carbon Tetrachloride		ND
Chloroethane		ND
Chloroform		1.2
Chloromethane		ND
Dibromochloromethane		ND
1,2-Dibromoethane (EDB)		ND
1,2-Dichlorobenzene		ND
1,3-Dichlorobenzene		ND
1,4-Dichlorobenzene		ND
1,1-Dichloroethane		1.0
1,2-Dichloroethane (EDC)		ND
1,1-Dichloroethene		ND
cis-1,2-Dichloroethene		13
trans-1,2-Dichloroethene		ND
1,2-Dichloropropane		ND
cis-1,3-Dichloropropene		0.4
trans-1,3-Dichloropropene		ND
Methylene Chloride		ND
1,1,2,2-Tetrachloroethane		ND
Tetrachlorethene		4
1,1,1-Trichloroethane		ND
1,1,2-Trichloroethane		ND
Trichloroethene		2.3
Trichlorofluoromethane		ND
Vinyl Chloride		ND
AROMATICS		
Benzene		ND
Chlorobenzene		ND
1,2-Dichlorobenzene		ND
1,3-Dichlorobenzene		ND
1,4-Dichlorobenzene		ND
Ethylbenzene		ND
Methyl-t-Butyl Ether		ND
Toluene		ND
Total Xylenes		ND
GBR-50		

JAN

DEC

	JAN	DEC
Lab pH		7.2
Lab Conductivity @25 C		3090
Total Dissolved Solids (Calc)		2580
Total Alkalinity as CaCO ₃		210
Total Hardness as CaCO ₃		1050
Bicarbonate as HCO ₃		256
Carbonate as CO ₃		ND
Hydroxide		ND
Chloride		4
Sulfate		1540
Calcium		72
Magnesium		29
Potassium		3.8
Sodium		397
HALOCARBONS		
Bromodichloromethane		ND
Bromoform		ND
Bromomethane		ND
Carbon Tetrachloride		ND
Chloroethane		ND
Chloroform		ND
Chloromethane		ND
Dibromochloromethane		ND
1,2-Dibromoethane (EDB)		ND
1,2-Dichlorobenzene		ND
1,3-Dichlorobenzene		ND
1,4-Dichlorobenzene		ND
1,1-Dichloroethane		ND
1,2-Dichloroethane (EDC)		ND
1,1-Dichloroethene		ND
cis-1,2-Dichloroethene		0.2
trans-1,2-Dichloroethene		ND
1,2-Dichloropropane		ND
cis-1,3-Dichloropropene		ND
trans-1,3-Dichloropropene		ND
Methylene Chloride		ND
1,1,2,2-Tetrachloroethane		ND
Tetrachlorethene		ND
1,1,1-Trichloroethane		ND
1,1,2-Trichloroethane		ND
Trichloroethene		ND
Trichlorofluoromethane		ND
Vinyl Chloride		ND
AROMATICS		
Benzene		ND
Chlorobenzene		ND
1,2-Dichlorobenzene		ND
1,3-Dichlorobenzene		ND
1,4-Dichlorobenzene		ND
Ethylbenzene		ND
Methyl-t-Butyl Ether		ND
Toluene		ND
Total Xylenes		ND
GBR-51		

	JAN	DEC
Lab pH	7.4	
Lab Conductivity @25 C	3140	
Total Dissolved Solids @ 180 C	2410	
Total Alkalinity as CaCO3	197	
Total Hardness as CaCO3	1060	
Bicarbonate as HCO3	240	
Carbonate as CO3	ND	
Hydroxide	ND	
Chloride	95	
Sulfate	1290	
Calcium	377	
Magnesium	30.1	
Potassium	0.5	
Sodium	306	
HALOCARBONS		
Bromodichloromethane	ND	
Bromoform	ND	
Bromomethane	ND	
Carbon Tetrachloride	ND	
Chloroethane	ND	
Chloroform	ND	
Chloromethane	ND	
Dibromochloromethane	ND	
1,2-Dibromoethane (EDB)	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
1,1-Dichloroethane	ND	
1,2-Dichloroethane (EDC)	ND	
1,1-Dichloroethene	ND	
cis-1,2-Dichloroethene	ND	
trans-1,2-Dichloroethene	ND	
1,2-Dichloropropane	ND	
cis-1,3-Dichloropropene	ND	
trans-1,3-Dichloropropene	ND	
Methylene Chloride	ND	
1,1,2,2-Tetrachloroethane	ND	
Tetrachlorethene	ND	
1,1,1-Trichloroethane	ND	
1,1,2-Trichloroethane	ND	
Trichloroethene	ND	
Trichlorofluoromethane	ND	
Vinyl Chloride	ND	
AROMATICS		
Benzene	ND	
Chlorobenzene	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
Ethylbenzene	ND	
Methyl-t-Butyl Ether	ND	
Toluene	ND	
Total Xylenes	ND	
GBR-52		
Lab pH	7.5	

JAN

DEC

Lab Conductivity @25 C	3440	
Total Dissolved Solids @ 180 C	2700	
Total Alkalinity as CaCO3	187	
Total Hardness as CaCO3	1240	
Bicarbonate as HCO3	228	
Carbonate as CO3	ND	
Hydroxide	ND	
Chloride	96	
Sulfate	1500	
Calcium	439	
Magnesium	34.1	
Potassium	1.8	
Sodium	309	
HALOCARBONS		
Bromodichloromethane	ND	
Bromoform	ND	
Bromomethane	ND	
Carbon Tetrachloride	ND	
Chloroethane	ND	
Chloroform	ND	
Chloromethane	ND	
Dibromochloromethane	ND	
1,2-Dibromoethane (EDB)	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
1,1-Dichloroethane	ND	
1,2-Dichloroethane (EDC)	ND	
1,1-Dichloroethene	ND	
cis-1,2-Dichloroethene	ND	
trans-1,2-Dichloroethene	ND	
1,2-Dichloropropane	ND	
cis-1,3-Dichloropropene	ND	
trans-1,3-Dichloropropene	ND	
Methylene Chloride	ND	
1,1,2,2-Tetrachloroethane	ND	
Tetrachloroethene	ND	
1,1,1-Trichloroethane	ND	
1,1,2-Trichloroethane	ND	
Trichloroethene	ND	
Trichlorofluoromethane	ND	
Vinyl Chloride	ND	
AROMATICS	ND	
Benzene	ND	
Chlorobenzene	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
Ethylbenzene	ND	
Methyl-t-Butyl Ether	ND	
Toluene	ND	
Total Xylenes	ND	
SHS-3		
Lab pH	6.8	
Lab Conductivity @25 C	4870	

JAN

DEC

Total Dissolved Solids @ 180 C	4040	
Total Alkalinity as CaCO ₃	197	
Total Hardness as CaCO ₃	1970	
Bicarbonate as HCO ₃	240	
Carbonate as CO ₃	ND	
Hydroxide	ND	
Chloride	317	
Sulfate	2060	
Calcium	665	
Magnesium	76.6	
Potassium	8.1	
Sodium	345	
HALOCARBONS		
Bromodichloromethane	ND	
Bromoform	ND	
Bromomethane	ND	
Carbon Tetrachloride	ND	
Chloroethane	ND	
Chloroform	ND	
Chloromethane	ND	
Dibromochloromethane	ND	
1,2-Dibromoethane (EDB)	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
1,1-Dichloroethane	ND	
1,2-Dichloroethane (EDC)	ND	
1,1-Dichloroethene	ND	
cis-1,2-Dichloroethene	ND	
trans-1,2-Dichloroethene	ND	
1,2-Dichloropropane	ND	
cis-1,3-Dichloropropene	ND	
trans-1,3-Dichloropropene	ND	
Methylene Chloride	ND	
1,1,2,2-Tetrachloroethane	ND	
Tetrachloroethene	ND	
1,1,1-Trichloroethane	ND	
1,1,2-Trichloroethane	ND	
Trichloroethene	ND	
Trichlorofluoromethane	ND	
Vinyl Chloride	ND	
AROMATICS		
Benzene	ND	
Chlorobenzene	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
Ethylbenzene	ND	
Methyl-t-Butyl Ether	ND	
Toluene	ND	
Total Xylenes	ND	
SHS-4		
Lab pH	7.4	
Lab Conductivity @25 C	3360	
Total Dissolved Solids (Calc)	2770	

	JAN	DEC
Total Alkalinity as CaCO ₃	141	
Total Hardness as CaCO ₃	1480	
Bicarbonate as HCO ₃	171	
Carbonate as CO ₃	ND	
Hydroxide	ND	
Chloride	91	
Sulfate	1530	
Calcium	532	
Magnesium	36.7	
Potassium	1.2	
Sodium	251	
HALOCARBONS		
Bromodichloromethane	ND	
Bromoform	ND	
Bromomethane	ND	
Carbon Tetrachloride	ND	
Chloroethane	ND	
Chloroform	ND	
Chloromethane	ND	
Dibromochloromethane	ND	
1,2-Dibromoethane (EDB)	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
1,1-Dichloroethane	ND	
1,2-Dichloroethane (EDC)	ND	
1,1-Dichloroethene	ND	
cis-1,2-Dichloroethene	ND	
trans-1,2-Dichloroethene	ND	
1,2-Dichloropropane	ND	
cis-1,3-Dichloropropene	ND	
trans-1,3-Dichloropropene	ND	
Methylene Chloride	ND	
1,1,2,2-Tetrachloroethane	ND	
Tetrachlorethene	ND	
1,1,1-Trichloroethane	ND	
1,1,2-Trichloroethane	ND	
Trichloroethene	ND	
Trichlorofluoromethane	ND	
Vinyl Chloride	ND	
AROMATICS		
Benzene	ND	
Chlorobenzene	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
Ethylbenzene	ND	
Methyl-t-Butyl Ether	ND	
Toluene	ND	
Total Xylenes	ND	
SHS-6		
Lab pH	7.3	
Lab Conductivity @25 C	3020	
Total Dissolved Solids @ 180 C	2310	
Total Alkalinity as CaCO ₃	215	

JAN

DEC

Total Hardness as CaCO ₃	1050	
Bicarbonate as HCO ₃	262	
Carbonate as CO ₃	ND	
Hydroxide	ND	
Chloride	94	
Sulfate	1190	
Calcium	379	
Magnesium	26.1	
Potassium	1.2	
Sodium	237	
HALOCARBONS		
Bromodichloromethane	ND	
Bromoform	ND	
Bromomethane	ND	
Carbon Tetrachloride	ND	
Chloroethane	ND	
Chloroform	ND	
Chloromethane	ND	
Dibromochloromethane	ND	
1,2-Dibromoethane (EDB)	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
1,1-Dichloroethane	ND	
1,2-Dichloroethane (EDC)	ND	
1,1-Dichloroethene	ND	
cis-1,2-Dichloroethene	ND	
trans-1,2-Dichloroethene	ND	
1,2-Dichloropropane	ND	
cis-1,3-Dichloropropene	ND	
trans-1,3-Dichloropropene	ND	
Methylene Chloride	ND	
1,1,2,2-Tetrachloroethane	ND	
Tetrachloroethene	ND	
1,1,1-Trichloroethane	ND	
1,1,2-Trichloroethane	ND	
Trichloroethene	ND	
Trichlorofluoromethane	ND	
Vinyl Chloride	ND	
AROMATICS		
Benzene	ND	
Chlorobenzene	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
Ethylbenzene	ND	
Methyl-t-Butyl Ether	ND	
Toluene	ND	
Total Xylenes	ND	
SHS-10		
Lab pH	7.3	
Lab Conductivity @25 C	3600	
Total Dissolved Solids (Calc)	2600	
Total Alkalinity as CaCO ₃	421	
Total Hardness as CaCO ₃	1140	

	JAN	DEC
Bicarbonate as HCO ₃	514	
Carbonate as CO ₃	ND	
Hydroxide	ND	
Chloride	149	
Sulfate	1170	
Calcium	365	
Magnesium	56.2	
Potassium	10.3	
Sodium	368	
HALOCARBONS		
Bromodichloromethane	ND	
Bromoform	ND	
Bromomethane	ND	
Carbon Tetrachloride	ND	
Chloroethane	ND	
Chloroform	ND	
Chloromethane	ND	
Dibromochloromethane	ND	
1,2-Dibromoethane (EDB)	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
1,1-Dichloroethane	ND	
1,2-Dichloroethane (EDC)	ND	
1,1-Dichloroethene	ND	
cis-1,2-Dichloroethene	ND	
trans-1,2-Dichloroethene	ND	
1,2-Dichloropropane	ND	
cis-1,3-Dichloropropene	ND	
trans-1,3-Dichloropropene	ND	
Methylene Chloride	3.2	
1,1,2,2-Tetrachloroethane	ND	
Tetrachlorethene	ND	
1,1,1-Trichloroethane	ND	
1,1,2-Trichloroethane	ND	
Trichloroethene	ND	
Trichlorofluoromethane	ND	
Vinyl Chloride	ND	
AROMATICS		
Benzene	ND	
Chlorobenzene	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
Ethylbenzene	ND	
Methyl-t-Butyl Ether	ND	
Toluene	ND	
Total Xylenes	ND	

JAN

DEC

SHS-12		
Lab pH	7.3	
Lab Conductivity @25 C	2940	
Total Dissolved Solids @ 180 C	1880	
Total Alkalinity as CaCO3	673	
Total Hardness as CaCO3	683	
Bicarbonate as HCO3	821	
Carbonate as CO3	ND	
Hydroxide	ND	
Chloride	167	
Sulfate	537	
Calcium	243	
Magnesium	18.6	
Potassium	0.3	
Sodium	339	
HALOCARBONS		
Bromodichloromethane	ND	
Bromoform	ND	
Bromomethane	ND	
Carbon Tetrachloride	ND	
Chloroethane	ND	
Chloroform	ND	
Chloromethane	ND	
Dibromochloromethane	ND	
1,2-Dibromoethane (EDB)	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
1,1-Dichloroethane	ND	
1,2-Dichloroethane (EDC)	ND	
1,1-Dichloroethene	ND	
cis-1,2-Dichloroethene	ND	
trans-1,2-Dichloroethene	ND	
1,2-Dichloropropane	ND	
cis-1,3-Dichloropropene	ND	
trans-1,3-Dichloropropene	ND	
Methylene Chloride	ND	
1,1,2,2-Tetrachloroethane	ND	
Tetrachlorethene	ND	
1,1,1-Trichloroethane	ND	
1,1,2-Trichloroethane	ND	
Trichloroethene	ND	
Trichlorofluoromethane	ND	
Vinyl Chloride	ND	
AROMATICS		
Benzene	ND	
Chlorobenzene	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
Ethylbenzene	ND	
Methyl-t-Butyl Ether	ND	
Toluene	ND	
Total Xylenes	ND	

JAN

DEC

SHS-13		
Lab pH	7.1	
Lab Conductivity @25 C	2650	
Total Dissolved Solids @ 180 C	1350	
Total Alkalinity as CaCO3	664	
Total Hardness as CaCO3	618	
Bicarbonate as HCO3	810	
Carbonate as CO3	ND	
Hydroxide	ND	
Chloride	244	
Sulfate	174	
Calcium	205	
Magnesium	25.7	
Potassium	7	
Sodium	210	
HALOCARBONS		
Bromodichloromethane	ND	
Bromoform	ND	
Bromomethane	ND	
Carbon Tetrachloride	ND	
Chloroethane	ND	
Chloroform	ND	
Chloromethane	ND	
Dibromochloromethane	ND	
1,2-Dibromoethane (EDB)	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
1,1-Dichloroethane	ND	
1,2-Dichloroethane (EDC)	ND	
1,1-Dichloroethene	ND	
cis-1,2-Dichloroethene	ND	
trans-1,2-Dichloroethene	ND	
1,2-Dichloropropane	ND	
cis-1,3-Dichloropropene	ND	
trans-1,3-Dichloropropene	ND	
Methylene Chloride	ND	
1,1,2,2-Tetrachloroethane	ND	
Tetrachlorethene	ND	
1,1,1-Trichloroethane	ND	
1,1,2-Trichloroethane	ND	
Trichloroethene	ND	
Trichlorofluoromethane	ND	
Vinyl Chloride	ND	
AROMATICS		
Benzene	ND	
Chlorobenzene	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
Ethylbenzene	ND	
Methyl-t-Butyl Ether	ND	
Toluene	ND	
Total Xylenes	ND	

	JAN	DEC
SHS-15		
Lab pH	7.5	
Lab Conductivity @25 C	2730	
Total Dissolved Solids (Calc)	1920	
Total Alkalinity as CaCO3	238	
Total Hardness as CaCO3	953	
Bicarbonate as HCO3	290	
Carbonate as CO3	ND	
Hydroxide	ND	
Chloride	45	
Sulfate	905	
Calcium	313	
Magnesium	41.7	
Potassium	2.9	
Sodium	152	
HALOCARBONS		
Bromodichloromethane	ND	
Bromoform	ND	
Bromomethane	ND	
Carbon Tetrachloride	ND	
Chloroethane	ND	
Chloroform	0.7	
Chloromethane	ND	
Dibromochloromethane	ND	
1,2-Dibromoethane (EDB)	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
1,1-Dichloroethane	ND	
1,2-Dichloroethane (EDC)	ND	
1,1-Dichloroethene	ND	
cis-1,2-Dichloroethene	ND	
trans-1,2-Dichloroethene	ND	
1,2-Dichloropropane	ND	
cis-1,3-Dichloropropene	ND	
trans-1,3-Dichloropropene	ND	
Methylene Chloride	ND	
1,1,2,2-Tetrachloroethane	ND	
Tetrachlorethene	ND	
1,1,1-Trichloroethane	ND	
1,1,2-Trichloroethane	ND	
Trichloroethene	ND	
Trichlorofluoromethane	ND	
Vinyl Chloride	ND	
AROMATICS		
Benzene	ND	
Chlorobenzene	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
Ethylbenzene	ND	
Methyl-t-Butyl Ether	ND	
Toluene	ND	
Total Xylenes	ND	

JAN

DEC

	JAN	DEC
SHS-16		
Lab pH	7.5	
Lab Conductivity @25 C	4040	
Total Dissolved Solids (Calc)	2740	
Total Alkalinity as CaCO ₃	692	
Total Hardness as CaCO ₃	1320	
Bicarbonate as HCO ₃	844	
Carbonate as CO ₃	ND	
Hydroxide	ND	
Chloride	287	
Sulfate	1020	
Calcium	457	
Magnesium	43.2	
Potassium	1.7	
Sodium	355	
HALOCARBONS		
Bromodichloromethane	ND	
Bromoform	ND	
Bromomethane	ND	
Carbon Tetrachloride	ND	
Chloroethane	ND	
Chloroform	ND	
Chloromethane	ND	
Dibromochloromethane	ND	
1,2-Dibromoethane (EDB)	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
1,1-Dichloroethane	ND	
1,2-Dichloroethane (EDC)	ND	
1,1-Dichloroethene	ND	
cis-1,2-Dichloroethene	ND	
trans-1,2-Dichloroethene	ND	
1,2-Dichloropropane	ND	
cis-1,3-Dichloropropene	ND	
trans-1,3-Dichloropropene	ND	
Methylene Chloride	ND	
1,1,2,2-Tetrachloroethane	ND	
Tetrachlorethene	ND	
1,1,1-Trichloroethane	ND	
1,1,2-Trichloroethane	ND	
Trichloroethene	ND	
Trichlorofluoromethane	ND	
Vinyl Chloride	ND	
AROMATICS		
Benzene	ND	
Chlorobenzene	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
Ethylbenzene	ND	
Methyl-t-Butyl Ether	ND	
Toluene	ND	
Total Xylenes	ND	

JAN

DEC

SHS-17		
Lab pH	7.4	
Lab Conductivity @25 C	4260	
Total Dissolved Solids (Calc)	2780	
Total Alkalinity as CaCO3	303	
Total Hardness as CaCO3	1200	
Bicarbonate as HCO3	370	
Carbonate as CO3	ND	
Hydroxide	ND	
Chloride	218	
Sulfate	1210	
Calcium	404	
Magnesium	46.2	
Potassium	1.8	
Sodium	338	
HALOCARBONS		
Bromodichloromethane	ND	
Bromoform	ND	
Bromomethane	ND	
Carbon Tetrachloride	ND	
Chloroethane	ND	
Chloroform	ND	
Chloromethane	ND	
Dibromochloromethane	ND	
1,2-Dibromoethane (EDB)	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
1,1-Dichloroethane	ND	
1,2-Dichloroethane (EDC)	ND	
1,1-Dichloroethene	ND	
cis-1,2-Dichloroethene	ND	
trans-1,2-Dichloroethene	ND	
1,2-Dichloropropane	ND	
cis-1,3-Dichloropropene	ND	
trans-1,3-Dichloropropene	ND	
Methylene Chloride	ND	
1,1,2,2-Tetrachloroethane	ND	
Tetrachlorethene	ND	
1,1,1-Trichloroethane	ND	
1,1,2-Trichloroethane	ND	
Trichloroethene	ND	
Trichlorofluoromethane	ND	
Vinyl Chloride	ND	
AROMATICS		
Benzene	ND	
Chlorobenzene	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
Ethylbenzene	ND	
Methyl-t-Butyl Ether	ND	
Toluene	ND	
Total Xylenes	ND	

NOTE: SHS-7 AND SHS-9 were not sampled due to free-floating product.

**GIANT REFINING BLOOMFIELD REFINERY
QUARTERLY POTENTIOMETRIC SURFACE**

JANUARY, 2000

WELL #	WELLHEAD ELEVATION IN FEET	DEPTH TO WATER IN FEET	DEPTH TO PRODUCT IN FEET	PRODUCT THICKNESS IN FEET	ADJUSTED WSEL* IN FEET
GRW-1	5394.30	61.60	61.60	0.00	5332.70
GRW-2	5391.28	40.71	40.71	0.00	5350.57
GRW-3	5388.77	44.57	44.57	0.00	5344.20
GRW-4	5390.02	52.65	52.65	0.00	5337.37
GRW-5	5390.56	62.27	62.27	0.00	5328.29
GRW-6	5390.81	50.95	50.95	0.00	5339.86
GRW-10	5395.02	45.20	44.00	1.20	5350.78
GRW-11	5397.85	46.80	46.80	0.00	5351.05
GRW-12	5397.24	43.15	43.15	0.00	5354.09
GRW-13	5396.90	53.76	53.76	0.00	5343.14
GBR-5	5395.07	24.95	24.95	0.00	5370.12
GBR-6	5395.70	53.97	53.97	0.00	5341.73
GBR-7	5395.85	29.03	27.21	1.82	5368.28
GBR-8	5390.50	41.18	41.05	0.13	5349.42
GBR-9	5389.92	47.15	47.15	0.00	5342.77
GBR-10	5390.57	42.02	42.02	0.00	5348.55
GBR-11	5389.43	41.26	41.26	0.00	5348.17
GBR-13	5393.04	40.56	40.56	0.00	5352.48
GBR-15	5397.99	40.94	40.94	0.00	5357.05
GBR-18	5421.68	33.26	33.26	0.00	5388.42
GBR-19	5393.83	41.59	40.75	0.84	5352.91
GBR-20	5393.47	35.31	35.26	0.05	5358.20
GBR-21S	5400.65	24.00	23.80	0.20	5376.81
GBR-21D	5400.19	39.13	39.13	0.00	5361.06
GBR-22	5395.91	40.30	39.44	0.86	5356.30
GBR-23	5403.72	26.58	26.58	0.00	5374.70
GBR-24S	5396.08	29.02	29.02	0.00	5364.00
GBR-24D	5396.77	32.08	32.08	0.00	5364.69
GBR-25	5396.72	34.32	34.32	0.00	5362.40
GBR-26	5395.59	39.96	39.96	0.00	5355.63
GBR-30	5396.58	35.65	35.65	0.00	5360.93
GBR-31	5394.86	36.98	36.98	0.00	5357.88
GBR-33	5396.28	39.76	39.76	0.00	5356.52
GBR-34	5394.00	38.22	37.32	0.90	5356.50
GBR-35	5393.66	39.15	37.28	1.87	5356.01
GBR-39	5397.55	37.55	37.55	0.00	5360.00
GBR-40	5400.76	31.56	31.56	0.00	5369.20
GBR-41	5396.35	26.38	26.38	0.00	5369.97
GBR-51	5389.68	40.41	40.41	0.00	5349.27
GBR-52	5387.74	41.85	41.85	0.00	5345.89

GIANT REFINING BLOOMFIELD REFINERY
 QUARTERLY POTENTIOMETRIC SURFACE
 JANUARY, 2000

Page 2

WELL #	WELLHEAD ELEVATION IN FEET	DEPTH TO WATER IN FEET	DEPTH TO PRODUCT IN FEET	PRODUCT THICKNESS IN FEET	ADJUSTED WSEL* IN FEET
SHS-1	5383.54	39.39	39.37	0.02	5344.17
SHS-2	5381.66	38.77	38.77	0.00	5342.89
SHS-3	5383.33	35.41	35.41	0.00	5347.92
SHS-4	5383.62	41.45	41.45	0.00	5342.17
SHS-5	5378.36	38.53	38.53	0.00	5339.83
SHS-6	5378.17	38.76	38.76	0.00	5339.41
SHS-7	5375.89	37.91	37.91	0.00	5337.98
SHS-8	5380.25	40.36	38.85	1.51	5341.10
SHS-9	5380.79	42.55	42.55	0.00	5338.24
SHS-10	5373.80	36.50	36.50	0.00	5337.30
SHS-12	5373.94	39.53	39.53	0.00	5334.41
SHS-13	5367.81	36.14	36.14	0.00	5331.67
SHS-14	5367.07	46.05	46.05	0.00	5321.02
SHS-15	5366.21	30.08	30.08	0.00	5336.13
SHS-16	5362.58	30.95	30.95	0.00	5331.63
SHS-17	5364.35	32.91	32.91	0.00	5331.44
SHS-18	5373.64	43.25	43.25	0.00	5330.39

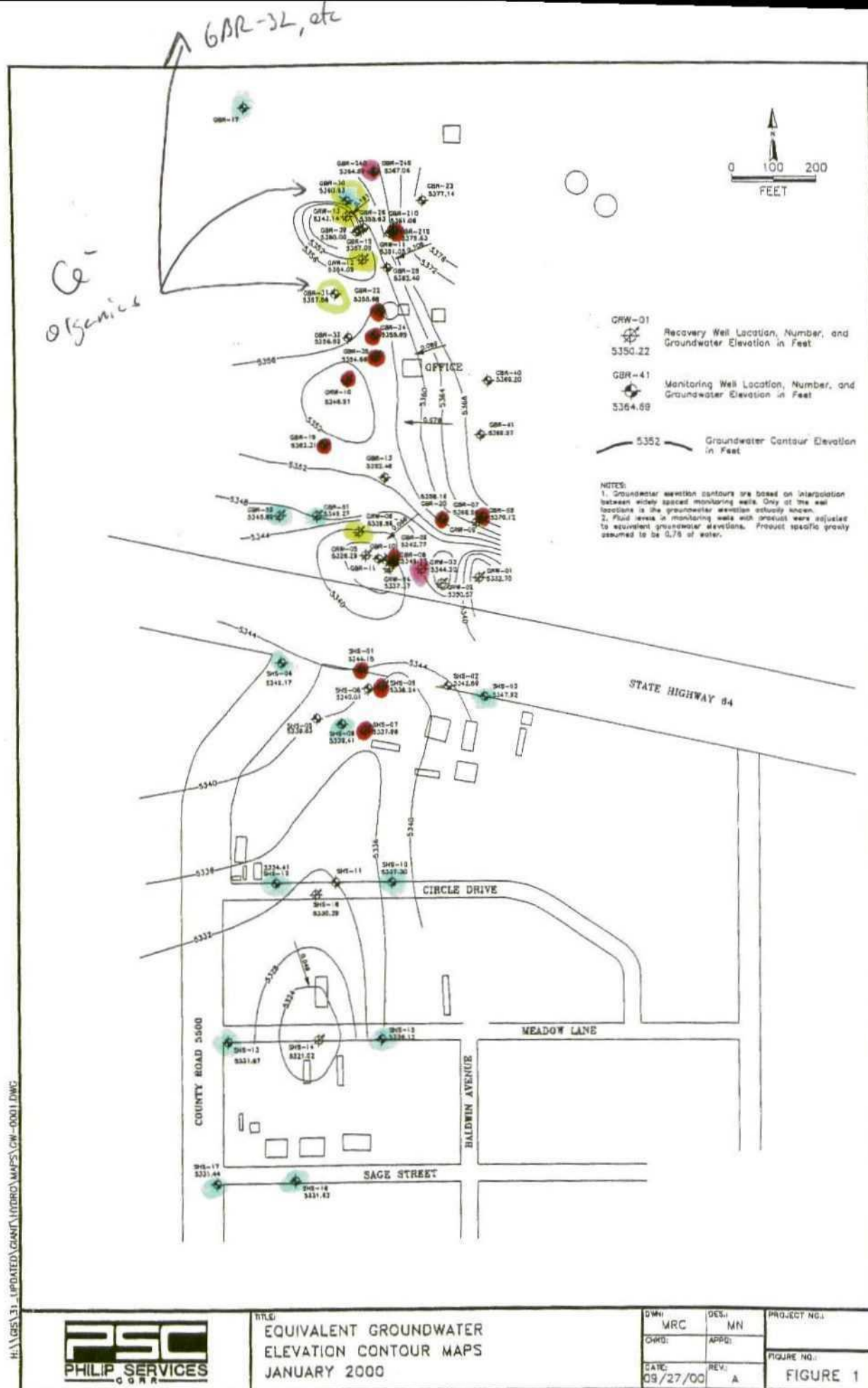
* WSEL - WATER SURFACE ELEVATION ADJUSTED FOR PRODUCT DEPTH

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TITLE:
 EQUIVALENT GROUNDWATER
 ELEVATION CONTOUR MAPS
 JANUARY 2000

DWG:	MRC	DES:	MN	PROJECT NO.:
CHRG:		APPQ:		FIGURE NO.:
DATE:	09/27/00	REV:	A	FIGURE 1





POINT	ELEVATION	NAME	ELEVATION	ELEVATION	ELEVATION
1	1000.00	1	1000.00	1	1000.00
2	1001.00	2	1001.00	2	1001.00
3	1002.00	3	1002.00	3	1002.00
4	1003.00	4	1003.00	4	1003.00
5	1004.00	5	1004.00	5	1004.00
6	1005.00	6	1005.00	6	1005.00
7	1006.00	7	1006.00	7	1006.00
8	1007.00	8	1007.00	8	1007.00
9	1008.00	9	1008.00	9	1008.00
10	1009.00	10	1009.00	10	1009.00
11	1010.00	11	1010.00	11	1010.00
12	1011.00	12	1011.00	12	1011.00
13	1012.00	13	1012.00	13	1012.00
14	1013.00	14	1013.00	14	1013.00
15	1014.00	15	1014.00	15	1014.00
16	1015.00	16	1015.00	16	1015.00
17	1016.00	17	1016.00	17	1016.00
18	1017.00	18	1017.00	18	1017.00
19	1018.00	19	1018.00	19	1018.00
20	1019.00	20	1019.00	20	1019.00
21	1020.00	21	1020.00	21	1020.00
22	1021.00	22	1021.00	22	1021.00
23	1022.00	23	1022.00	23	1022.00
24	1023.00	24	1023.00	24	1023.00
25	1024.00	25	1024.00	25	1024.00
26	1025.00	26	1025.00	26	1025.00
27	1026.00	27	1026.00	27	1026.00
28	1027.00	28	1027.00	28	1027.00
29	1028.00	29	1028.00	29	1028.00
30	1029.00	30	1029.00	30	1029.00
31	1030.00	31	1030.00	31	1030.00
32	1031.00	32	1031.00	32	1031.00
33	1032.00	33	1032.00	33	1032.00
34	1033.00	34	1033.00	34	1033.00
35	1034.00	35	1034.00	35	1034.00
36	1035.00	36	1035.00	36	1035.00
37	1036.00	37	1036.00	37	1036.00
38	1037.00	38	1037.00	38	1037.00
39	1038.00	39	1038.00	39	1038.00
40	1039.00	40	1039.00	40	1039.00
41	1040.00	41	1040.00	41	1040.00
42	1041.00	42	1041.00	42	1041.00
43	1042.00	43	1042.00	43	1042.00
44	1043.00	44	1043.00	44	1043.00
45	1044.00	45	1044.00	45	1044.00
46	1045.00	46	1045.00	46	1045.00
47	1046.00	47	1046.00	47	1046.00
48	1047.00	48	1047.00	48	1047.00
49	1048.00	49	1048.00	49	1048.00
50	1049.00	50	1049.00	50	1049.00
51	1050.00	51	1050.00	51	1050.00
52	1051.00	52	1051.00	52	1051.00
53	1052.00	53	1052.00	53	1052.00
54	1053.00	54	1053.00	54	1053.00
55	1054.00	55	1054.00	55	1054.00
56	1055.00	56	1055.00	56	1055.00
57	1056.00	57	1056.00	57	1056.00
58	1057.00	58	1057.00	58	1057.00
59	1058.00	59	1058.00	59	1058.00
60	1059.00	60	1059.00	60	1059.00
61	1060.00	61	1060.00	61	1060.00
62	1061.00	62	1061.00	62	1061.00
63	1062.00	63	1062.00	63	1062.00
64	1063.00	64	1063.00	64	1063.00
65	1064.00	65	1064.00	65	1064.00
66	1065.00	66	1065.00	66	1065.00
67	1066.00	67	1066.00	67	1066.00
68	1067.00	68	1067.00	68	1067.00
69	1068.00	69	1068.00	69	1068.00
70	1069.00	70	1069.00	70	1069.00
71	1070.00	71	1070.00	71	1070.00
72	1071.00	72	1071.00	72	1071.00
73	1072.00	73	1072.00	73	1072.00
74	1073.00	74	1073.00	74	1073.00
75	1074.00	75	1074.00	75	1074.00
76	1075.00	76	1075.00	76	1075.00
77	1076.00	77	1076.00	77	1076.00
78	1077.00	78	1077.00	78	1077.00
79	1078.00	79	1078.00	79	1078.00
80	1079.00	80	1079.00	80	1079.00
81	1080.00	81	1080.00	81	1080.00
82	1081.00	82	1081.00	82	1081.00
83	1082.00	83	1082.00	83	1082.00
84	1083.00	84	1083.00	84	1083.00
85	1084.00	85	1084.00	85	1084.00
86	1085.00	86	1085.00	86	1085.00
87	1086.00	87	1086.00	87	1086.00
88	1087.00	88	1087.00	88	1087.00
89	1088.00	89	1088.00	89	1088.00
90	1089.00	90	1089.00	90	1089.00
91	1090.00	91	1090.00	91	1090.00
92	1091.00	92	1091.00	92	1091.00
93	1092.00	93	1092.00	93	1092.00
94	1093.00	94	1093.00	94	1093.00
95	1094.00	95	1094.00	95	1094.00
96	1095.00	96	1095.00	96	1095.00
97	1096.00	97	1096.00	97	1096.00
98	1097.00	98	1097.00	98	1097.00
99	1098.00	99	1098.00	99	1098.00
100	1099.00	100	1099.00	100	1099.00

**GIANT REFINING BLOOMFIELD REFINERY
QUARTERLY POTENTIOMETRIC SURFACE**

APRIL, 2000

WELL #	WELLHEAD ELEVATION IN FEET	DEPTH TO WATER IN FEET	DEPTH TO PRODUCT IN FEET	PRODUCT THICKNESS IN FEET	ADJUSTED WSEL* IN FEET
GRW-1	5394.30	62.17	62.17	0.00	5332.13
GRW-2	5391.28	40.50	40.50	0.00	5350.78
GRW-3	5388.77	47.77	47.77	0.00	5341.00
GRW-4	5390.02	56.74	56.74	0.00	5333.28
GRW-5	5390.56	66.53	66.53	0.00	5324.03
GRW-6	5390.81	43.00	43.00	0.00	5347.81
GRW-10	5395.02	47.56	46.50	1.06	5348.31
GRW-11	5397.85	52.48	52.48	0.00	5345.37
GRW-12	5397.24	41.60	41.60	0.00	5355.64
GRW-13	5396.90	51.95	51.95	0.00	5344.95
GBR-5	5395.07	20.02	20.02	0.00	5375.05
GBR-6	5395.70	51.60	51.60	0.00	5344.10
GBR-7	5395.85	26.73	24.93	1.80	5370.56
GBR-8	5390.50	41.10	40.83	0.27	5349.62
GBR-9	5389.92	47.72	47.72	0.00	5342.20
GBR-10	5390.57	41.95	41.95	0.00	5348.62
GBR-11	5389.43	41.15	41.15	0.00	5348.28
GBR-13	5393.04	40.35	40.35	0.00	5352.69
GBR-15	5397.99	39.07	39.07	0.00	5358.92
GBR-18	5421.68	33.13	33.13	0.00	5388.55
GBR-19	5393.83	41.68	40.81	0.87	5352.85
GBR-20	5393.47	34.70	34.64	0.06	5358.82
GBR-21S	5400.65	25.81	24.38	1.43	5375.98
GBR-21D	5400.19	39.29	39.29	0.00	5360.90
GBR-22	5395.91	40.33	39.55	0.78	5356.20
GBR-23	5403.72	28.71	27.35	1.36	5375.54
GBR-24S	5396.08	29.29	29.27	0.02	5364.29
GBR-24D	5396.77	31.81	31.81	0.00	5364.96
GBR-25	5396.72	34.55	34.55	0.00	5362.17
GBR-26	5395.59	38.78	38.78	0.00	5356.81
GBR-30	5396.58	35.71	35.71	0.00	5360.87
GBR-31	5394.86	37.10	37.10	0.00	5357.76
GBR-33	5396.28	28.43	27.25	1.18	5368.79
GBR-34	5394.00	28.47	27.34	1.13	5366.43
GBR-35	5393.66	39.86	39.86	0.00	5353.80
GBR-39	5397.55	36.90	36.90	0.00	5360.65
GBR-40	5400.76	31.02	31.02	0.00	5369.74
GBR-41	5396.35	25.35	25.35	0.00	5371.00
GBR-51	5389.68	41.94	41.94	0.00	5347.74
GBR-52	5387.74	40.50	40.50	0.00	5347.24

GIANT REFINING BLOOMFIELD REFINERY
 QUARTERLY POTENTIOMETRIC SURFACE
 APRIL, 2000

Page 2

WELL #	WELLHEAD ELEVATION IN FEET	DEPTH TO WATER IN FEET	DEPTH TO PRODUCT IN FEET	PRODUCT THICKNESS IN FEET	ADJUSTED WSEL* IN FEET
SHS-1	5383.54	39.16	39.16	0.00	5344.38
SHS-2	5381.66	38.84	38.84	0.00	5342.82
SHS-3	5383.33	35.30	35.30	0.00	5348.03
SHS-4	5383.62	41.70	41.70	0.00	5341.92
SHS-5	5378.36	38.58	38.58	0.00	5339.78
SHS-6	5378.17	38.80	38.80	0.00	5339.37
SHS-7	5375.89	46.18	46.18	0.00	5329.71
SHS-8	5380.25	38.90	38.90	0.00	5341.35
SHS-9	5380.79	38.01	38.01	0.00	5342.78
SHS-10	5373.80	39.44	39.44	0.00	5334.36
SHS-12	5373.94	34.35	34.35	0.00	5339.59
SHS-13	5367.81	35.95	35.95	0.00	5331.86
SHS-14	5367.07	46.05	46.05	0.00	5321.02
SHS-15	5366.21	32.94	32.94	0.00	5333.27
SHS-16	5362.58	30.75	30.75	0.00	5331.83
SHS-17	5364.35	32.92	32.92	0.00	5331.43
SHS-18	5373.64	41.65	41.65	0.00	5331.99

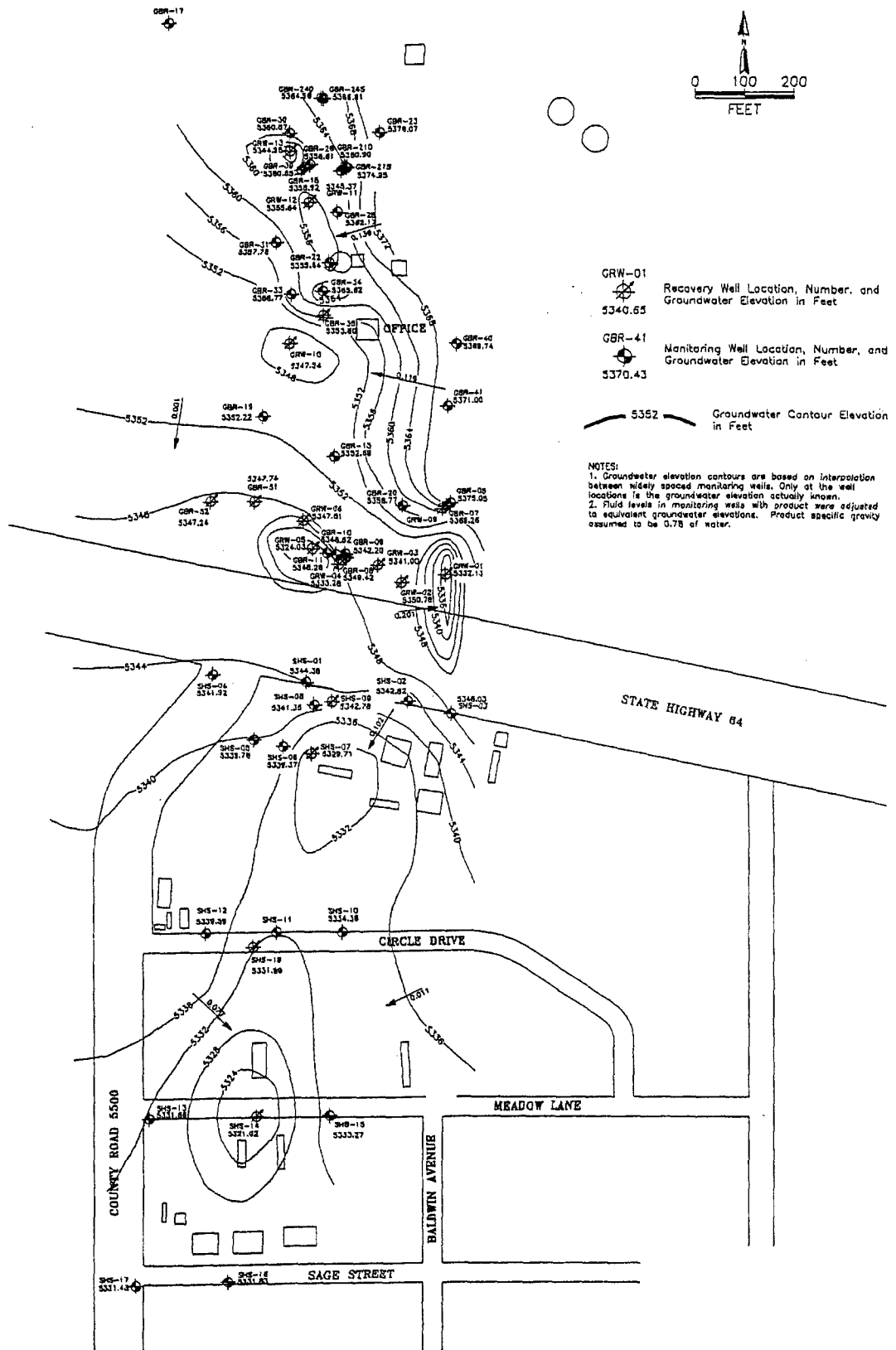
* WSEL - WATER SURFACE ELEVATION ADJUSTED FOR PRODUCT DEPTH

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TITLE:
EQUIVALENT GROUNDWATER
ELEVATION CONTOUR MAP
APRIL 2000

OWN: MRC	DES: MN	PROJECT NO.:
CHKD:	APPD:	FIGURE NO.:
DATE: 09/27/00	REV: A	FIGURE 2



**GIANT REFINING BLOOMFIELD REFINERY
QUARTERLY POTENTIOMETRIC SURFACE**

JULY, 2000

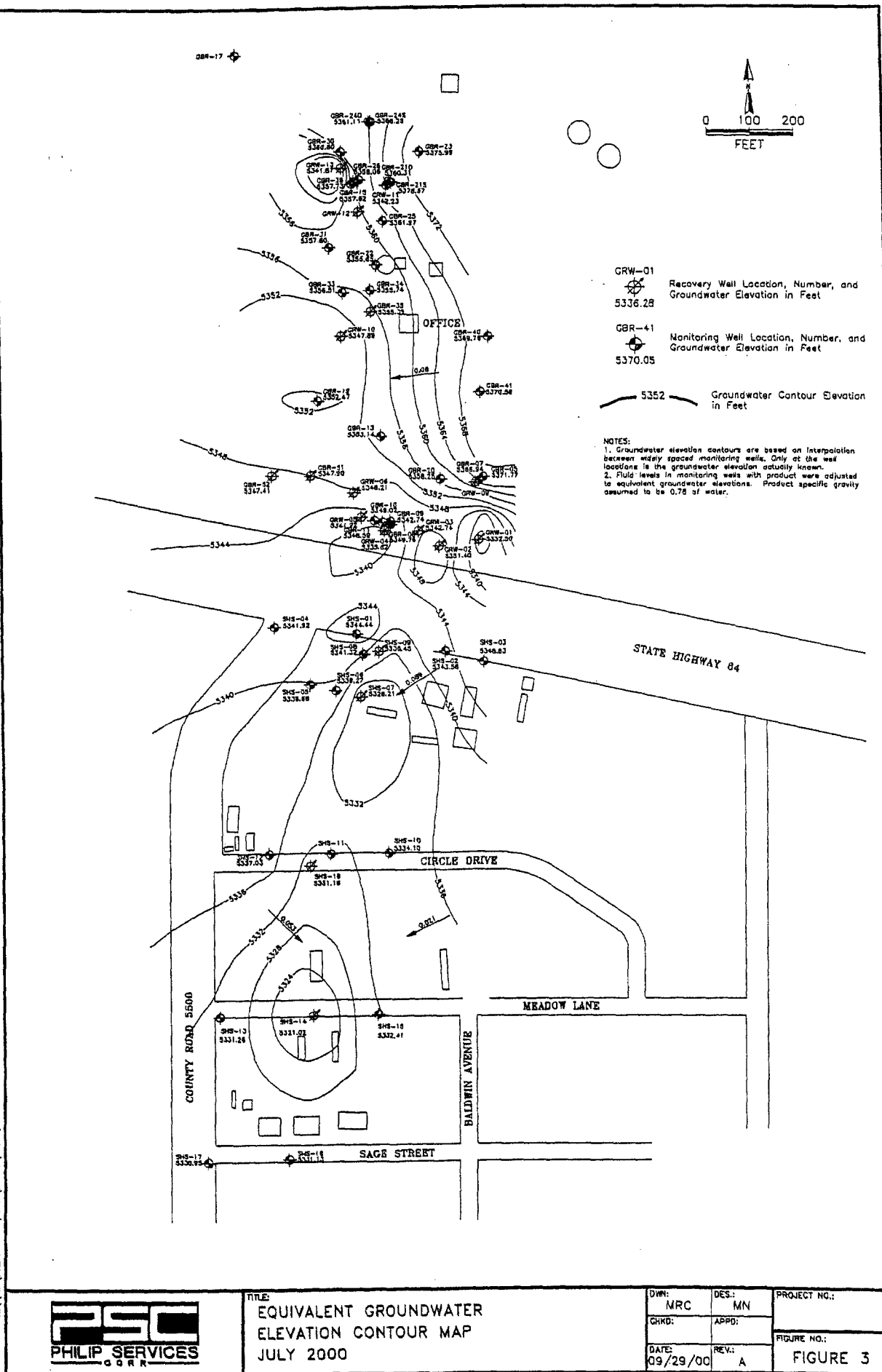
WELL #	WELLHEAD ELEVATION IN FEET	DEPTH TO WATER IN FEET	DEPTH TO PRODUCT IN FEET	PRODUCT THICKNESS IN FEET	ADJUSTED WSEL* IN FEET
GRW-1	5394.30	61.80	61.80	0.00	5332.50
GRW-2	5391.28	39.88	39.88	0.00	5351.40
GRW-3	5388.77	46.03	46.03	0.00	5342.74
GRW-4	5390.02	54.40	54.40	0.00	5335.62
GRW-5	5390.56	48.64	48.64	0.00	5341.92
GRW-6	5390.81	42.60	42.60	0.00	5348.21
GRW-10	5395.02	47.22	46.13	1.09	5348.67
GRW-11	5397.85	55.62	55.62	0.00	5342.23
GRW-12	5397.24	41.55	41.55	0.00	5355.69
GRW-13	5396.90	55.03	55.03	0.00	5341.87
GBR-5	5395.07	23.30	23.30	0.00	5371.77
GBR-6	5395.70	52.50	52.50	0.00	5343.20
GBR-7	5395.85	29.13	26.35	2.78	5368.94
GBR-8	5390.50	40.77	40.35	0.42	5350.07
GBR-9	5389.92	47.18	47.18	0.00	5342.74
GBR-10	5390.57	41.55	41.55	0.00	5349.02
GBR-11	5389.43	40.84	40.84	0.00	5348.59
GBR-13	5393.04	39.90	39.90	0.00	5353.14
GBR-15	5397.99	40.37	40.37	0.00	5357.62
GBR-18	5421.68	33.68	33.68	0.00	5388.00
GBR-19	5393.83	41.42	40.64	0.78	5353.03
GBR-20	5393.47	35.22	35.16	0.06	5358.30
GBR-21S	5400.65	25.02	25.02	0.00	5375.63
GBR-21D	5400.19	39.88	39.88	0.00	5360.31
GBR-22	5395.91	40.33	39.43	0.90	5356.30
GBR-23	5403.72	27.73	27.73	0.00	5373.89
GBR-24S	5396.08	29.83	29.83	0.00	5360.42
GBR-24D	5396.77	35.66	35.66	0.00	5361.11
GBR-25	5396.72	34.75	34.75	0.00	5361.97
GBR-26	5395.59	37.53	37.53	0.00	5358.06
GBR-30	5396.58	35.78	35.78	0.00	5360.80
GBR-31	5394.86	37.06	37.06	0.00	5357.80
GBR-33	5396.28	39.77	39.77	0.00	5356.51
GBR-34	5394.00	38.34	37.30	1.04	5356.49
GBR-35	5393.66	38.35	37.28	1.07	5356.17
GBR-39	5397.55	39.82	39.82	0.00	5357.73
GBR-40	5400.76	31.00	31.00	0.00	5369.76
GBR-41	5396.35	25.77	25.77	0.00	5370.58
GBR-51	5389.68	41.78	41.78	0.00	5347.90
GBR-52	5387.74	40.33	40.33	0.00	5347.41

GIANT REFINING BLOOMFIELD REFINERY
 QUARTERLY POTENTIOMETRIC SURFACE
 JULY, 2000
 Page 2

WELL #	WELLHEAD ELEVATION IN FEET	DEPTH TO WATER IN FEET	DEPTH TO PRODUCT IN FEET	PRODUCT THICKNESS IN FEET	ADJUSTED WSEL* IN FEET
SHS-1	5383.54	39.10	39.10	0.00	5344.44
SHS-2	5381.66	38.08	38.08	0.00	5343.58
SHS-3	5383.33	34.50	34.50	0.00	5348.83
SHS-4	5383.62	41.70	41.70	0.00	5341.92
SHS-5	5378.36	38.68	38.68	0.00	5339.68
SHS-6	5378.17	38.90	38.90	0.00	5339.27
SHS-7	5375.89	47.68	47.68	0.00	5328.21
SHS-8	5380.25	38.93	38.93	0.00	5341.32
SHS-9	5380.79	44.34	44.34	0.00	5336.45
SHS-10	5373.80	39.70	39.70	0.00	5334.10
SHS-12	5373.94	36.91	36.91	0.00	5337.03
SHS-13	5367.81	36.55	36.55	0.00	5331.26
SHS-14	5367.07	46.05	46.05	0.00	5321.02
SHS-15	5366.21	33.80	33.80	0.00	5332.41
SHS-16	5362.58	31.45	31.45	0.00	5331.13
SHS-17	5364.35	33.40	33.40	0.00	5330.95
SHS-18	5373.64	42.46	42.46	0.00	5331.18

* WSEL - WATER SURFACE ELEVATION ADJUSTED FOR PRODUCT DEPTH

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**GIANT REFINING BLOOMFIELD REFINERY
QUARTERLY POTENTIOMETRIC SURFACE**

OCTOBER, 2000

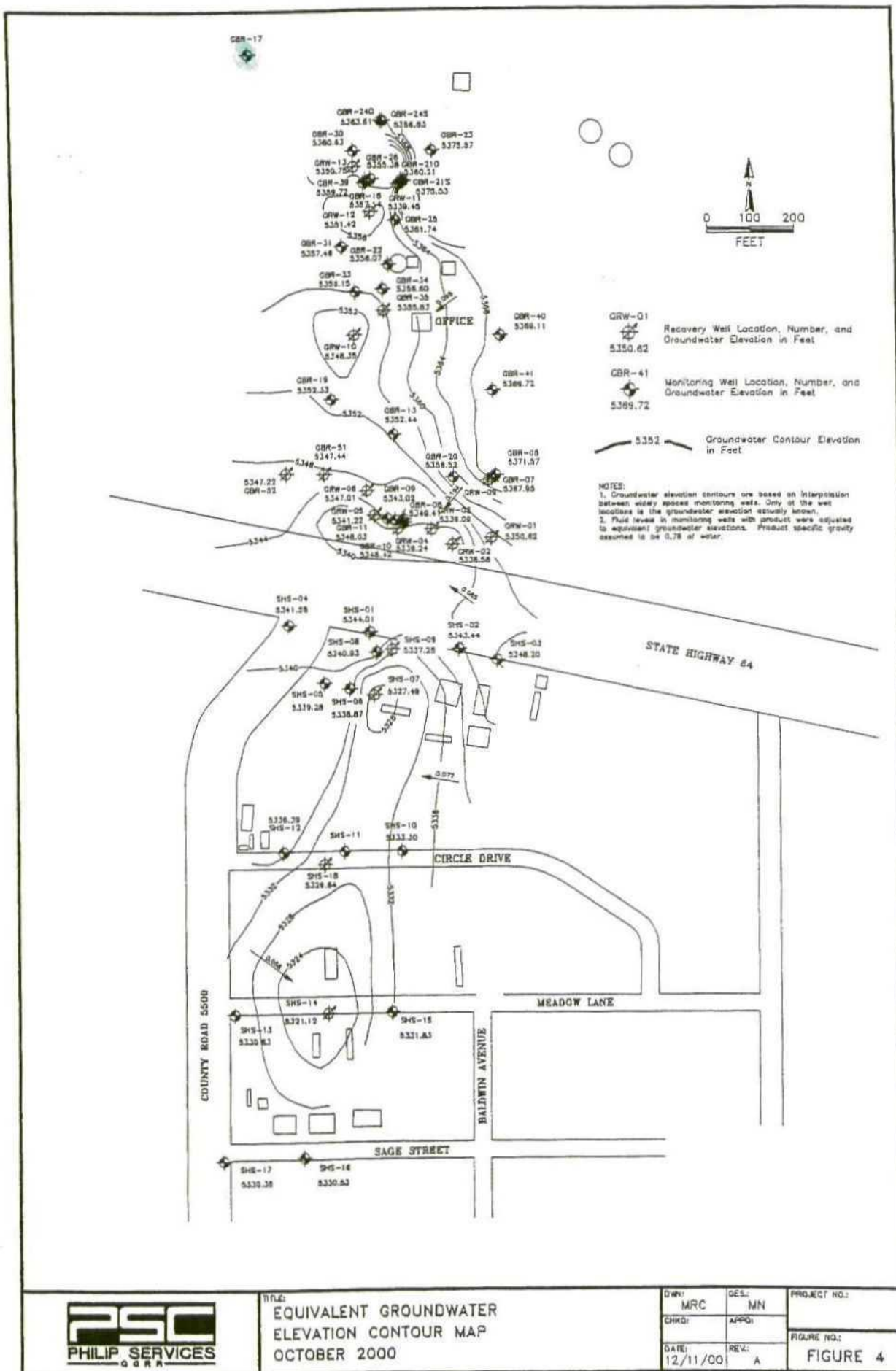
WELL #	WELLHEAD ELEVATION IN FEET	DEPTH TO WATER IN FEET	DEPTH TO PRODUCT IN FEET	PRODUCT THICKNESS IN FEET	ADJUSTED WSEL* IN FEET
GRW-1	5394.30	43.68	43.68	0.00	5350.62
GRW-2	5391.28	52.70	52.70	0.00	5338.58
GRW-3	5388.77	49.68	49.68	0.00	5339.09
GRW-4	5390.02	50.78	50.78	0.00	5339.24
GRW-5	5390.56	49.34	49.34	0.00	5341.22
GRW-6	5390.81	43.80	43.80	0.00	5347.01
GRW-10	5395.02	46.90	46.60	0.30	5348.36
GRW-11	5397.85	58.40	58.40	0.00	5339.45
GRW-12	5397.24	45.82	45.82	0.00	5351.42
GRW-13	5396.90	46.15	46.15	0.00	5350.75
GBR-5	5395.07	23.50	23.50	0.00	5371.57
GBR-6	5395.70	52.20	52.20	0.00	5343.50
GBR-7	5395.85	29.30	27.50	1.80	5367.99
GBR-8	5390.50	41.50	40.98	0.52	5349.42
GBR-9	5389.92	46.90	46.90	0.00	5343.02
GBR-10	5390.57	42.15	42.15	0.00	5348.42
GBR-11	5389.43	41.42	41.40	0.02	5348.03
GBR-13	5393.04	40.60	40.60	0.00	5352.44
GBR-15	5397.99	40.85	40.85	0.00	5357.14
GBR-18	5421.68	34.20	34.20	0.00	5387.48
GBR-19	5393.83	41.91	41.39	0.52	5352.34
GBR-20	5393.47	34.95	34.95	0.00	5358.52
GBR-21S	5400.65	25.12	25.12	0.00	5375.53
GBR-21D	5400.19	39.98	39.98	0.00	5360.21
GBR-22	5395.91	39.84	39.84	0.00	5356.07
GBR-23	5403.72	27.88	27.84	0.04	5374.50
GBR-24S	5396.08	29.25	29.25	0.00	5362.92
GBR-24D	5396.77	33.16	33.16	0.00	5363.61
GBR-25	5396.72	34.98	34.98	0.00	5361.74
GBR-26	5395.59	40.21	40.21	0.00	5355.38
GBR-30	5396.58	35.95	35.95	0.00	5360.63
GBR-31	5394.86	37.40	37.40	0.00	5357.46
GBR-33	5396.28	40.13	40.13	0.00	5356.15
GBR-34	5394.00	37.40	37.40	0.00	5356.60
GBR-35	5393.66	38.10	37.75	0.35	5355.84
GBR-39	5397.55	37.83	37.83	0.00	5359.72
GBR-40	5400.76	31.65	31.65	0.00	5369.11
GBR-41	5396.35	26.63	26.63	0.00	5369.72
GBR-51	5389.68	42.24	42.24	0.00	5347.44
GBR-52	5387.74	40.52	40.52	0.00	5347.22

GIANT REFINING BLOOMFIELD REFINERY
 QUARTERLY POTENTIOMETRIC SURFACE
 OCTOBER, 2000

Page 2

WELL #	WELLHEAD ELEVATION IN FEET	DEPTH TO WATER IN FEET	DEPTH TO PRODUCT IN FEET	PRODUCT THICKNESS IN FEET	ADJUSTED WSEL* IN FEET
SHS-1	5383.54	39.62	39.50	0.12	5344.02
SHS-2	5381.66	38.22	38.22	0.00	5343.44
SHS-3	5383.33	35.13	35.13	0.00	5348.20
SHS-4	5383.62	42.04	42.04	0.00	5341.58
SHS-5	5378.36	39.08	39.08	0.00	5339.28
SHS-6	5378.17	39.30	39.30	0.00	5338.87
SHS-7	5375.89	48.40	48.40	0.00	5327.49
SHS-8	5380.25	39.34	39.32	0.02	5340.93
SHS-9	5380.79	43.51	43.51	0.00	5337.28
SHS-10	5373.80	40.50	40.50	0.00	5333.30
SHS-12	5373.94	37.55	37.55	0.00	5336.39
SHS-13	5367.81	37.18	37.18	0.00	5330.63
SHS-14	5367.07	45.95	45.95	0.00	5321.12
SHS-15	5366.21	34.38	34.38	0.00	5331.83
SHS-16	5362.58	32.05	32.05	0.00	5330.53
SHS-17	5364.35	34.00	34.00	0.00	5330.35
SHS-18	5373.64	44.00	44.00	0.00	5329.64

* WSEL - WATER SURFACE ELEVATION ADJUSTED FOR PRODUCT DEPTH



TITLE:
EQUIVALENT GROUNDWATER
ELEVATION CONTOUR MAP
OCTOBER 2000

DWN:	MRC	DES:	MN	PROJECT NO.:
CHKD:		APPR:		FIGURE NO.:
DATE:	12/11/00	REV.:	A	FIGURE 4

GIANT REFINING COMPANY
BLOOMFIELD REFINERY
VOLUME CHANGE

2000

Tank Number	Beginning Volume	Ending Volume	Net Change
102	4,343	14,086	9,743
106	8,010	8,010	0
21	230,133	230,133	0
22	273,750	260,714	(13,036)
Total Net Volume Change			(3,293)

**GIANT REFINING COMPANY
BLOOMFIELD REFINERY
RECOVERY WELL
VOLUME TABULATION**

2000

Well	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total
GRW-1	62,070	73,810	67,170	51,280	254,330
GRW-2	34,470	33,300	43,660	74,260	185,690
GRW-3	12,150	39,200	64,030	59,160	174,540
GRW-4	47,720	54,010	45,850	45,810	193,390
GRW-5	120,110	206,960	115,760	84,200	527,030
GRW-6	115,040	60,050	88,160	138,110	401,360
GRW-9	54,260	66,530	29,130	50,850	200,770
GRW-10	572,490	529,640	536,490	500,190	2,138,810
GRW-11	123,740	102,960	81,360	44,750	352,810
GRW-12	10,020	7,240	5,000	10,150	32,410
GRW-13	9,710	15,850	19,950	15,490	61,000
SHS-7	21,617	136,771	208,946	198,355	565,689
SHS-9	4,319	8,289	11,789	11,386	35,783
SHS-14	332,327	443,913	351,056	365,950	1,493,246
SHS-18	139,886	202,137	101,102	126,601	569,726
TOTAL VOLUME PUMPED IN GALLONS					7,186,584

**GIANT REFINING COMPANY
BLOOMFIELD REFINERY
TOTAL VOLUME SUMMARY**

2000

Total Volume Of Water Recovered	7,186,584
Net Change In Storage Volume	<u>(3,293)</u>
Total Water Treated And Pumped To The Infiltration Gallery	<u><u>7,189,877</u></u>

GIANT

INDUSTRIES, INC.
SAN JUAN REGIONAL OFFICE

February 15, 2000

Mr. William Olson
Hydrogeologist
New Mexico Oil Conservation Division
Environmental Bureau
2040 S. Pacheco Street
Santa Fe, NM 87505

Dear Mr. Olson:

Enclosed you will find the annual report for Giant Refining Company's Bloomfield Refinery for 1999.

Please contact me if you have any questions.

Sincerely,



Tim Kinney
Remediation Project Manager

/dm

Enclosure

cc w/enc.: Mike Hardy-Giant
Kim Bullerdick-Giant
Jacque Cumbie-Giant
Stephanie Odell-BLM
Maura Hanning-EID
Chris Shuey-SWRIC
Jim Durrett-SJC
Herbert Gorrod-EPA
Denny Foust-OCD

PHONE

505-632-8006

FAX

505-632-4021

III COUNTY
ROAD 4990
BLOOMFIELD
NEW MEXICO
87413

ANNUAL DATA REPORT
GIANT BLOOMFIELD REFINERY

1999

RECEIVED

FEB 18 2000

ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

Prepared By:

GIANT REFINING COMPANY
111 County Road 4990
Bloomfield, NM 87413
(505) 632-8006
FAX (505) 632-4021

TABLE OF CONTENTS

Introduction and Summary	Section 1
Annual Analytical Results	Section 2
Potentiometric Surface Maps	Section 3
Total Volume History	Section 4

INTRODUCTION AND SUMMARY ANNUAL REPORT 1999

INTRODUCTION

Tank 22 is being used for intermediate water storage. All water is treated by the carbon filter unit exclusively. The carbon was replaced in August of 1999.

SUMMARY

Section 2

Section 2 contains a summary of the annual analytical results. Raw data, as received from the laboratory, is available on request as a supplement to the annual report.

Section 3

Potentiometric surface maps, as well as the adjusted water surface elevation and product thickness for each well, are included in Section 3.

Section 4

Section 4 illustrates the volume history for the year. Total volume pumped from each well, as well as current tank volumes and the reinjection volume, is reported. Additional detail, on a weekly basis, is also available if desired.

SECTION 2

The following pages show the annual analytical data for the Giant Refining Remediation Project. The data is broken down into units as described below.

	<u>Unit of Measure</u>
Total dissolved solids (180)	mg/l
Total dissolved solids (calc)	mg/l
Total alkalinity as CaCO ₃	mg/l
Total hardness as CaCO ₃	mg/l
Bicarbonate as HCO ₃	mg/l
Carbonate as CO ₃	mg/l
Chloride	mg/l
Sulfate	mg/l
Calcium	mg/l
Magnesium	mg/l
Potassium	mg/l
Sodium	mg/l

The remainder of the data is measured in ug/l.

GIANT INDUSTRIES, INC.
ONSITE REMEDIATION PROJECT
ANNUAL ANALYTICAL DATA SUMMARY
1999

	JAN	APR	JUN	JUL	OCT	DEC
SYSTEM EFFLUENT						
Lab pH	7.1	7.1		7.1	7.1	
Lab Conductivity @25 C	3190	3130		3220	3090	
Total Dissolved Solids (Calc)	2430	2490		2370	2430	
Total Alkalinity as CaCO3	481	480		428	456	
Total Hardness as CaCO3	1080	922		917	967	
Bicarbonate as HCO3	586	ND		522	556	
Carbonate as CO3	ND	204		ND	ND	
Hydroxide	ND	48		ND	ND	
Chloride	122	155		151	140	
Sulfate	1180	1130		1160	1140	
Calcium	384	318		316	330	
Magnesium	30.4	31.3		31.1	34.8	
Potassium	2.6	3		2.4	2.7	
Sodium	399	394		394	431	
HALOCARBONS						
Bromodichloromethane	ND	ND		ND		
Bromoform	ND	ND		ND		
Bromomethane	ND	ND		ND		
Carbon Tetrachloride	ND	ND		ND		
Chloroethane	ND	ND		ND		
Chloroform	ND	ND		ND		
Chloromethane	ND	ND		ND		
Dibromochloromethane	ND	ND		ND		
1,2-Dibromoethane (EDB)	ND	ND		ND		
1,2-Dichlorobenzene	ND	ND		ND		
1,3-Dichlorobenzene	ND	ND		ND		
1,4-Dichlorobenzene	ND	ND		ND		
1,1-Dichloroethane	ND	ND		ND		
1,2-Dichloroethane (EDC)	ND	ND		ND		
1,1-Dichloroethene	ND	ND		ND		
cis-1,2-Dichloroethene	ND	0.43		0.8		
trans-1,2-Dichloroethene	ND	ND		ND		
1,2-Dichloropropane	ND	ND		ND		
cis-1,3-Dichloropropene	ND	ND		ND		
trans-1,3-Dichloropropene	ND	ND		ND		
Methylene Chloride	ND	ND		ND		
1,1,2,2-Tetrachloroethane	ND	ND		ND		
Tetrachlorethene	ND	ND		ND		
1,1,1-Trichloroethane	ND	ND		ND		
1,1,2-Trichloroethane	ND	ND		ND		
Trichloroethene	ND	ND		ND		
Trichlorofluoromethane	ND	ND		ND		
Vinyl Chloride	ND	ND		ND		

	JAN	APR	JUN	JUL	OCT	DEC
AROMATICS						
Benzene	ND	ND		0.6		
Chlorobenzene	ND	ND		ND		
1,2-Dichlorobenzene	ND	ND		ND		
1,3-Dichlorobenzene	ND	ND		ND		
1,4-Dichlorobenzene	ND	ND		ND		
Ethylbenzene	ND	ND		ND		
Methyl-t-Butyl Ether	ND	ND		ND		
Toluene	ND	ND		ND		
Total Xylenes	ND	ND		ND		
SYSTEM INFLUENT						
Lab pH	7.2	7.0		7.2	7.0	
Lab Conductivity @25 C	3190	3080		3210	3110	
Total Dissolved Solids (Calc)	2420	2480		2430	2420	
Total Alkalinity as CaCO3	469	500		451	449	
Total Hardness as CaCO3	984	917		1040	911	
Bicarbonate as HCO3	572	ND		550	547	
Carbonate as CO3	ND	228		ND	ND	
Hydroxide	ND	41		ND	ND	
Chloride	122	155		121	140	
Sulfate	1190	1130		1430	1140	
Calcium	344	316		357	312	
Magnesium	30.2	31.2		35.3	32.3	
Potassium	2.7	2.8		2.9	3.1	
Sodium	392	394		447	389	
HALOCARBONS						
Bromodichloromethane	ND	ND		ND		
Bromoform	ND	ND		ND		
Bromomethane	ND	ND		ND		
Carbon Tetrachloride	ND	ND		ND		
Chloroethane	ND	ND		ND		
Chloroform	ND	ND		ND		
Chloromethane	ND	ND		ND		
Dibromochloromethane	ND	ND		ND		
1,2-Dibromoethane (EDB)	ND	ND		ND		
1,2-Dichlorobenzene	ND	ND		ND		
1,3-Dichlorobenzene	ND	ND		ND		
1,4-Dichlorobenzene	ND	ND		ND		
1,1-Dichloroethane	ND	ND		ND		
1,2-Dichloroethane (EDC)	ND	ND		ND		
1,1-Dichloroethene	ND	ND		ND		
cis-1,2-Dichloroethene	ND	2.7		0.54		
trans-1,2-Dichloroethene	ND	ND		ND		
1,2-Dichloropropane	ND	ND		ND		
cis-1,3-Dichloropropene	ND	ND		ND		
trans-1,3-Dichloropropene	ND	ND		ND		
Methylene Chloride	ND	ND		ND		
1,1,2,2-Tetrachloroethane	ND	ND		ND		
Tetrachlorethene	ND	1.5		ND		
1,1,1-Trichloroethane	ND	ND		ND		

	JAN	APR	JUN	JUL	OCT	DEC
1,1,2-Trichloroethane	ND	ND		ND		
Trichloroethene	ND	0.6		ND		
Trichlorofluoromethane	ND	ND		ND		
Vinyl Chloride	ND	ND		ND		
AROMATICS						
Benzene	ND	ND		0.84		
Chlorobenzene	ND	ND		ND		
1,2-Dichlorobenzene	ND	ND		ND		
1,3-Dichlorobenzene	ND	ND		ND		
1,4-Dichlorobenzene	ND	ND		ND		
Ethylbenzene	ND	ND		ND		
Methyl-t-Butyl Ether	ND	ND		ND		
Toluene	ND	ND		ND		
Total Xylenes	ND	ND		ND		
GRW-3						
Lab pH	7					
Lab Conductivity @25 C	2810					
Total Dissolved Solids @ 180 C	1840					
Total Alkalinity as CaCO3	1100					
Total Hardness as CaCO3	470					
Bicarbonate as HCO3	1340					
Carbonate as CO3	ND					
Hydroxide	ND					
Chloride	128					
Sulfate	310					
Calcium	132					
Magnesium	34					
Potassium	1.2					
Sodium	570					
HALOCARBONS						
Bromodichloromethane	ND					
Bromoform	ND					
Bromomethane	ND					
Carbon Tetrachloride	ND					
Chloroethane	ND					
Chloroform	ND					
Chloromethane	ND					
Dibromochloromethane	ND					
1,2-Dibromoethane (EDB)	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
1,1-Dichloroethane	ND					
1,2-Dichloroethane (EDC)	ND					
1,1-Dichloroethene	ND					
cis-1,2-Dichloroethene	ND					
trans-1,2-Dichloroethene	ND					
1,2-Dichloropropane	ND					
cis-1,3-Dichloropropene	ND					

	JAN	APR	JUN	JUL	OCT	DEC
trans-1,3-Dichloropropene	ND					
Methylene Chloride	ND					
1,1,2,2-Tetrachloroethane	ND					
Tetrachlorethene	ND					
1,1,1-Trichloroethane	ND					
1,1,2-Trichloroethane	ND					
Trichloroethene	ND					
Trichlorofluoromethane	ND					
Vinyl Chloride	ND					
AROMATICS						
Benzene	24(D5)					
Chlorobenzene	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
Ethylbenzene	130(D5)					
Methyl-t-Butyl Ether	ND					
Toluene	ND					
Total Xylenes	ND					
GRW-6						
Lab pH	7.1					
Lab Conductivity @25 C	2820					
Total Dissolved Solids @ 180 C	1870					
Total Alkalinity as CaCO3	876					
Total Hardness as CaCO3	497					
Bicarbonate as HCO3	1070					
Carbonate as CO3	ND					
Hydroxide	ND					
Chloride	143					
Sulfate	448					
Calcium	169					
Magnesium	18.2					
Potassium	2.3					
Sodium	420					
HALOCARBONS						
Bromodichloromethane	ND					
Bromoform	ND					
Bromomethane	ND					
Carbon Tetrachloride	ND					
Chloroethane	ND					
Chloroform	ND					
Chloromethane	ND					
Dibromochloromethane	ND					
1,2-Dibromoethane (EDB)	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
1,1-Dichloroethane	ND					

	JAN	APR	JUN	JUL	OCT	DEC
1,2-Dichloroethane (EDC)	0.7					
1,1-Dichloroethene	ND					
cis-1,2-Dichloroethene	ND					
trans-1,2-Dichloroethene	ND					
1,2-Dichloropropane	ND					
cis-1,3-Dichloropropene	ND					
trans-1,3-Dichloropropene	ND					
Methylene Chloride	ND					
1,1,2,2-Tetrachloroethane	ND					
Tetrachlorethene	ND					
1,1,1-Trichloroethane	ND					
1,1,2-Trichloroethane	ND					
Trichloroethene	ND					
Trichlorofluoromethane	ND					
Vinyl Chloride	ND					
AROMATICS						
Benzene	0.9					
Chlorobenzene	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
Ethylbenzene	ND					
Methyl-t-Butyl Ether	ND					
Toluene	ND					
Total Xylenes	ND					
GRW-13						
Lab pH	7.1					
Lab Conductivity @25 C	4030					
Total Dissolved Solids @ 180 C	3190					
Total Alkalinity as CaCO3	290					
Total Hardness as CaCO3	1230					
Bicarbonate as HCO3	353					
Carbonate as CO3	ND					
Hydroxide	ND					
Chloride	249					
Sulfate	1760					
Calcium	452					
Magnesium	25.1					
Potassium	6.4					
Sodium	579					
HALOCARBONS						
Bromodichloromethane	ND					
Bromoform	ND					
Bromomethane	ND					
Carbon Tetrachloride	ND					
Chloroethane	ND					
Chloroform	ND					
Chloromethane	ND					

	JAN	APR	JUN	JUL	OCT	DEC
Dibromochloromethane	ND					
1,2-Dibromoethane (EDB)	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
1,1-Dichloroethane	ND					
1,2-Dichloroethane (EDC)	4.8					
1,1-Dichloroethene	ND					
cis-1,2-Dichloroethene	ND					
trans-1,2-Dichloroethene	ND					
1,2-Dichloropropane	ND					
cis-1,3-Dichloropropene	ND					
trans-1,3-Dichloropropene	ND					
Methylene Chloride	ND					
1,1,2,2-Tetrachloroethane	ND					
Tetrachlorethene	ND					
1,1,1-Trichloroethane	ND					
1,1,2-Trichloroethane	ND					
Trichloroethene	ND					
Trichlorofluoromethane	ND					
Vinyl Chloride	ND					
AROMATICS						
Benzene	ND					
Chlorobenzene	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
Ethylbenzene	ND					
Methyl-t-Butyl Ether	ND					
Toluene	ND					
Total Xylenes	ND					
GBR-15						
Lab pH	7.1					
Lab Conductivity @25 C	3400					
Total Dissolved Solids @ 180 C	2520					
Total Alkalinity as CaCO3	199					
Total Hardness as CaCO3	578					
Bicarbonate as HCO3	243					
Carbonate as CO3	ND					
Hydroxide	ND					
Chloride	240					
Sulfate	1100					
Calcium	210					
Magnesium	13					
Potassium	2					
Sodium	470					
HALOCARBONS						
Bromodichloromethane	ND			ND		

	JAN	APR	JUN	JUL	OCT	DEC
Bromoform	ND			ND		
Bromomethane	ND			ND		
Carbon Tetrachloride	ND			ND		
Chloroethane	ND			ND		
Chloroform	ND			ND		
Chloromethane	ND			ND		
Dibromochloromethane	ND			ND		
1,2-Dibromoethane (EDB)	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 (EDC)	ND			3.9		
1,1-Dichloroethene	ND			ND		
cis-1,2-Dichloroethene	ND			ND		
trans-1,2-Dichloroethene	ND			ND		
1,2-Dichloropropane	ND			ND		
cis-1,3-Dichloropropene	ND			ND		
trans-1,3-Dichloropropene	ND			ND		
Methylene Chloride	ND			ND		
1,1,2,2-Tetrachloroethane	ND			ND		
Tetrachlorethene	ND			ND		
1,1,1-Trichloroethane	ND			ND		
1,1,2-Trichloroethane	ND			ND		
Trichloroethene	ND			ND		
Trichlorofluoromethane	ND			ND		
Vinyl Chloride	ND			ND		
AROMATICS						
Benzene	ND			ND		
Chlorobenzene	ND			ND		
1,2-Dichlorobenzene	ND			ND		
1,3-Dichlorobenzene	ND			ND		
1,4-Dichlorobenzene	ND			ND		
Ethylbenzene	ND			ND		
Methyl-t-Butyl Ether	ND			ND		
Toluene	ND			ND		
Total Xylenes	ND			ND		
GBR-17						
Lab pH				7.2		7.1
Lab Conductivity @25 C				2360		2550
Total Dissolved Solids (Calc)				1830		2010
Nitrogen - Nitrate/Nitrite				7.78		--
Total Alkalinity as CaCO3				224		162
Total Hardness as CaCO3				696		799
Bicarbonate as HCO3				273		197
Carbonate as CO3				ND		ND
Hydroxide				ND		ND
Chloride				86		93
Sulfate				887		1150
Calcium				247		284

	JAN	APR	JUN	JUL	OCT	DEC
Magnesium				19.4		21.9
Potassium				0.6		1
Sodium				264		282
HALOCARBONS						
Bromodichloromethane			ND			ND
Bromoform			ND			ND
Bromomethane			ND			ND
Carbon Tetrachloride			ND			ND
Chloroethane			ND			ND
Chloroform			ND			ND
Chloromethane			ND			ND
Dibromochloromethane			ND			ND
1,2-Dibromoethane (EDB)			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 (EDC)			ND			ND
1,1-Dichloroethene			ND			ND
cis-1,2-Dichloroethene			ND			ND
trans-1,2-Dichloroethene			ND			ND
1,2-Dichloropropane			ND			ND
cis-1,3-Dichloropropene			ND			ND
trans-1,3-Dichloropropene			ND			ND
Methylene Chloride			ND			ND
1,1,2,2-Tetrachloroethane			ND			ND
Tetrachlorethene			ND			ND
1,1,1-Trichloroethane			ND			ND
1,1,2-Trichloroethane			ND			ND
Trichloroethene			ND			ND
Trichlorofluoromethane			ND			ND
Vinyl Chloride			ND			ND
AROMATICS						
Benzene			ND			ND
Chlorobenzene			ND			ND
1,2-Dichlorobenzene			ND			ND
1,3-Dichlorobenzene			ND			ND
1,4-Dichlorobenzene			ND			ND
Ethylbenzene			ND			ND
Methyl-t-Butyl Ether			ND			ND
Toluene			ND			ND
Total Xylenes			ND			ND
GBR-24D						
Lab pH	7.8					
Lab Conductivity @25 C	4070					
Total Dissolved Solids @ 180 C	3340					
Total Alkalinity as CaCO3	289					
Total Hardness as CaCO3	1700					
Bicarbonate as HCO3	352					

	JAN	APR	JUN	JUL	OCT	DEC
Carbonate as CO ₃	ND					
Hydroxide	ND					
Chloride	401					
Sulfate	1560					
Calcium	557					
Magnesium	76.6					
Potassium	4.4					
Sodium	353					
HALOCARBONS						
Bromodichloromethane	ND			ND		
Bromoform	ND			ND		
Bromomethane	ND			ND		
Carbon Tetrachloride	ND			ND		
Chloroethane	ND			ND		
Chloroform	ND			ND		
Chloromethane	ND			ND		
Dibromochloromethane	ND			ND		
1,2-Dibromoethane (EDB)	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 (EDC)	12			14		
1,1-Dichloroethene	ND			ND		
cis-1,2-Dichloroethene	ND			ND		
trans-1,2-Dichloroethene	ND			ND		
1,2-Dichloropropane	ND			ND		
cis-1,3-Dichloropropene	ND			ND		
trans-1,3-Dichloropropene	ND			ND		
Methylene Chloride	ND			ND		
1,1,1,2-Tetrachloroethane	ND			ND		
Tetrachlorethene	ND			ND		
1,1,1-Trichloroethane	ND			ND		
1,1,2-Trichloroethane	ND			ND		
Trichloroethene	ND			ND		
Trichlorofluoromethane	ND			ND		
Vinyl Chloride	ND			ND		
AROMATICS						
Benzene	15			10		
Chlorobenzene	ND			ND		
1,2-Dichlorobenzene	ND			ND		
1,3-Dichlorobenzene	ND			ND		
1,4-Dichlorobenzene	ND			ND		
Ethylbenzene	ND			ND		
Methyl-t-Butyl Ether	ND			ND		
Toluene	ND			ND		
Total Xylenes	0.9			ND		
GBR-30						

	JAN	APR	JUN	JUL	OCT	DEC
Lab pH	6.8					
Lab Conductivity @25 C	2680					
Total Dissolved Solids @ 180 C	2120					
Total Alkalinity as CaCO3	344					
Total Hardness as CaCO3	1020					
Bicarbonate as HCO3	419					
Carbonate as CO3	ND					
Hydroxide	ND					
Chloride	107					
Sulfate	1000					
Calcium	357					
Magnesium	32.2					
Potassium	3.4					
Sodium	274					
HALOCARBONS						
Bromodichloromethane	ND			ND		
Bromoform	ND			ND		
Bromomethane	ND			ND		
Carbon Tetrachloride	ND			ND		
Chloroethane	ND			ND		
Chloroform	ND			ND		
Chloromethane	ND			ND		
Dibromochloromethane	ND			ND		
1,2-Dibromoethane (EDB)	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 (EDC)	ND			ND		
1,1-Dichloroethene	ND			ND		
cis-1,2-Dichloroethene	ND			0.8		
trans-1,2-Dichloroethene	ND			ND		
1,2-Dichloropropane	ND			ND		
cis-1,3-Dichloropropene	ND			ND		
trans-1,3-Dichloropropene	ND			ND		
Methylene Chloride	ND			ND		
1,1,2,2-Tetrachloroethane	ND			ND		
Tetrachlorethene	ND			0.54		
1,1,1-Trichloroethane	ND			ND		
1,1,2-Trichloroethane	ND			ND		
Trichloroethene	ND			ND		
Trichlorofluoromethane	ND			ND		
Vinyl Chloride	ND			ND		
AROMATICS						
Benzene	ND					
Chlorobenzene	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
Ethylbenzene	ND					
Methyl-t-Butyl Ether	ND					

	JAN	APR	JUN	JUL	OCT	DEC
Toluene	ND					
Total Xylenes	ND					
GBR-31						
Lab pH	7.1					
Lab Conductivity @25 C	3500					
Total Dissolved Solids @ 180 C	2870					
Total Alkalinity as CaCO3	250					
Total Hardness as CaCO3	1090					
Bicarbonate as HCO3	304					
Carbonate as CO3	ND					
Hydroxide	ND					
Chloride	123					
Sulfate	1670					
Calcium	381					
Magnesium	34.3					
Potassium	2.6					
Sodium	444					
HALOCARBONS						
Bromodichloromethane	ND	ND		ND		
Bromoform	ND	ND		ND		
Bromomethane	ND	ND		ND		
Carbon Tetrachloride	ND	ND		ND		
Chloroethane	ND	ND		ND		
Chloroform	ND	ND		ND		
Chloromethane	ND	ND		ND		
Dibromochloromethane	ND	ND		ND		
1,2-Dibromoethane (EDB)	ND	ND		ND		
1,2-Dichlorobenzene	ND	ND		ND		
1,3-Dichlorobenzene	ND	ND		ND		
1,4-Dichlorobenzene	ND	ND		ND		
1,1-Dichloroethane	ND	ND		ND		
1,2-Dichloroethane (EDC)	ND	ND		ND		
1,1-Dichloroethene	ND	ND		ND		
cis-1,2-Dichloroethene	4.4	0.25		3.8		
trans-1,2-Dichloroethene	ND	ND		ND		
1,2-Dichloropropane	ND	ND		ND		
cis-1,3-Dichloropropene	ND	ND		ND		
trans-1,3-Dichloropropene	ND	ND		ND		
Methylene Chloride	ND	ND		ND		
1,1,2,2-Tetrachloroethane	ND	ND		ND		
Tetrachlorethene	2.3	ND		2.7		
1,1,1-Trichloroethane	ND	ND		ND		
1,1,2-Trichloroethane	ND	ND		ND		
Trichloroethene	0.6	ND		0.92		
Trichlorofluoromethane	ND	ND		ND		
Vinyl Chloride	ND	ND		ND		
AROMATICS						
Benzene	ND	ND		ND		
Chlorobenzene	ND	ND		ND		

	JAN	APR	JUN	JUL	OCT	DEC
1,2-Dichlorobenzene	ND	ND		ND		
1,3-Dichlorobenzene	ND	ND		ND		
1,4-Dichlorobenzene	ND	ND		ND		
Ethylbenzene	ND	ND		ND		
Methyl-t-Butyl Ether	ND	ND		ND		
Toluene	ND	ND		ND		
Total Xylenes	ND	ND		ND		
GBR-32						
Lab pH				7.1		6.6
Lab Conductivity @25 C				6260		6300
Total Dissolved Solids (Calc)				2380		5050
Nitrogen-Nitrate				11.5		--
Total Alkalinity as CaCO3				300		276
Total Hardness as CaCO3				1960		1760
Bicarbonate as HCO3				366		336
Carbonate as CO3				ND		ND
Hydroxide				ND		ND
Chloride				838		839
Sulfate				2000		2340
Calcium				694		606
Magnesium				54.9		60.1
Potassium				4		4.6
Sodium				772		816
HALOCARBONS						
Bromodichloromethane			ND			ND
Bromoform			ND			ND
Bromomethane			ND			ND
Carbon Tetrachloride			ND			ND
Chloroethane			ND			ND
Chloroform			2.2			2.1
Chloromethane			ND			ND
Dibromochloromethane			ND			ND
1,2-Dibromoethane (EDB)			ND			ND
1,2-Dichlorobenzene			ND			ND
1,3-Dichlorobenzene			ND			ND
1,4-Dichlorobenzene			ND			ND
1,1-Dichloroethane			1.4			1.1
1,2-Dichloroethane (EDC)			ND			ND
1,1-Dichloroethene			ND			ND
cis-1,2-Dichloroethene			26.0			23
trans-1,2-Dichloroethene			ND			ND
1,2-Dichloropropane			ND			ND
cis-1,3-Dichloropropene			ND			ND
trans-1,3-Dichloropropene			ND			ND
Methylene Chloride			ND			ND
1,1,2,2-Tetrachloroethane			ND			ND
Tetrachlorethene			6.3			4.7
1,1,1-Trichloroethane			ND			ND
1,1,2-Trichloroethane			ND			ND
Trichloroethene			3.0			2.4

	JAN	APR	JUN	JUL	OCT	DEC
Trichlorofluoromethane			ND			ND
Vinyl Chloride			ND			ND
AROMATICS						
Benzene			ND			ND
Chlorobenzene			ND			ND
1,2-Dichlorobenzene			ND			ND
1,3-Dichlorobenzene			ND			ND
1,4-Dichlorobenzene			ND			ND
Ethylbenzene			ND			ND
Methyl-t-Butyl Ether			ND			ND
Toluene			ND			ND
Total Xylenes			ND			ND
GBR-48						
Lab pH				6.8		6.8
Lab Conductivity @25 C				5650		6450
Total Dissolved Solids (Calc)				4240		4890
Nitrogen - Nitrate/Nitrite				18.7		--
Total Alkalinity as CaCO3				190		200
Total Hardness as CaCO3				1510		1850
Bicarbonate as HCO3				232		243
Carbonate as CO3				ND		ND
Hydroxide				ND		ND
Chloride				814		1130
Sulfate				1700		1910
Calcium				520		646
Magnesium				51.1		58.4
Potassium				4.3		7
Sodium				694		803
HALOCARBONS						
Bromodichloromethane			ND			ND
Bromoform			ND			ND
Bromomethane			ND			ND
Carbon Tetrachloride			ND			ND
Chloroethane			ND			ND
Chloroform			1.6			2.7
Chloromethane			ND			ND
Dibromochloromethane			ND			ND
1,2-Dibromoethane (EDB)			ND			ND
1,2-Dichlorobenzene			ND			ND
1,3-Dichlorobenzene			ND			ND
1,4-Dichlorobenzene			ND			ND
1,1-Dichloroethane			0.3			0.3
1,2-Dichloroethane (EDC)			ND			ND
1,1-Dichloroethene			ND			ND
cis-1,2-Dichloroethene			7.8			14
trans-1,2-Dichloroethene			ND			ND
1,2-Dichloropropane			ND			ND
cis-1,3-Dichloropropene			ND			ND

	JAN	APR	JUN	JUL	OCT	DEC
trans-1,3-Dichloropropene			ND			ND
Methylene Chloride			ND			ND
1,1,2,2-Tetrachloroethane			ND			ND
Tetrachlorethene			2.7			2.7
1,1,1-Trichloroethane			ND			ND
1,1,2-Trichloroethane			ND			ND
Trichloroethene			1.2			1.4
Trichlorofluoromethane			ND			ND
Vinyl Chloride			ND			ND
AROMATICS						
Benzene			ND			ND
Chlorobenzene			ND			ND
1,2-Dichlorobenzene			ND			ND
1,3-Dichlorobenzene			ND			ND
1,4-Dichlorobenzene			ND			ND
Ethylbenzene			ND			ND
Methyl-t-Butyl Ether			ND			ND
Toluene			ND			ND
Total Xylenes			ND			ND
GBR-49						
Lab pH				7.1		6.8
Lab Conductivity @25 C				4650		5090
Total Dissolved Solids (Calc)				3630		4170
Nitrogen - Nitrate/Nitrite				4.7		--
Total Alkalinity as CaCO3				190		266
Total Hardness as CaCO3				1360		1650
Bicarbonate as HCO3				232		325
Carbonate as CO3				ND		ND
Hydroxide				ND		ND
Chloride				438		540
Sulfate				1690		2060
Calcium				472		571
Magnesium				43		54.1
Potassium				3.1		3.8
Sodium				605		645
HALOCARBONS						
Bromodichloromethane			ND			ND
Bromoform			ND			ND
Bromomethane			ND			ND
Carbon Tetrachloride			ND			ND
Chloroethane			ND			ND
Chloroform			0.9			1.2
Chloromethane			ND			ND
Dibromochloromethane			ND			ND
1,2-Dibromoethane (EDB)			ND			ND
1,2-Dichlorobenzene			ND			ND
1,3-Dichlorobenzene			ND			ND
1,4-Dichlorobenzene			ND			ND

	JAN	APR	JUN	JUL	OCT	DEC
1,1-Dichloroethane			1.2			1.1
1,2-Dichloroethane (EDC)			ND			ND
1,1-Dichloroethene			ND			ND
cis-1,2-Dichloroethene			30			29
trans-1,2-Dichloroethene			ND			ND
1,2-Dichloropropane			ND			ND
cis-1,3-Dichloropropene			ND			ND
trans-1,3-Dichloropropene			ND			ND
Methylene Chloride			ND			ND
1,1,2,2-Tetrachloroethane			ND			ND
Tetrachlorethene			3.9			5.5
1,1,1-Trichloroethane			ND			ND
1,1,2-Trichloroethane			ND			ND
Trichloroethene			2			2.4
Trichlorofluoromethane			ND			ND
Vinyl Chloride			ND			ND
AROMATICS						
Benzene			ND			ND
Chlorobenzene			ND			ND
1,2-Dichlorobenzene			ND			ND
1,3-Dichlorobenzene			ND			ND
1,4-Dichlorobenzene			ND			ND
Ethylbenzene			ND			ND
Methyl-t-Butyl Ether			ND			ND
Toluene			ND			ND
Total Xylenes			ND			ND
GBR-50						
Lab pH				7.1		7.2
Lab Conductivity @25 C				3530		3330
Total Dissolved Solids (Calc)				2900		2750
Nitrogen - Nitrate/Nitrite				6.98		--
Total Alkalinity as CaCO3				200		190
Total Hardness as CaCO3				1120		1040
Bicarbonate as HCO3				243		232
Carbonate as CO3				ND		ND
Hydroxide				ND		ND
Chloride				161		112
Sulfate				1580		1690
Calcium				399		369
Magnesium				31.1		28.7
Potassium				2		2.4
Sodium				427		420
HALOCARBONS						
Bromodichloromethane			ND			ND
Bromoform			ND			ND
Bromomethane			ND			ND
Carbon Tetrachloride			ND			ND
Chloroethane			ND			ND

	JAN	APR	JUN	JUL	OCT	DEC
Chloroform			ND			ND
Chloromethane			ND			ND
Dibromochloromethane			ND			ND
1,2-Dibromoethane (EDB)			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 (EDC)			ND			ND
1,1-Dichloroethene			ND			ND
cis-1,2-Dichloroethene			0.5			0.2
trans-1,2-Dichloroethene			ND			ND
1,2-Dichloropropane			ND			ND
cis-1,3-Dichloropropene			ND			ND
trans-1,3-Dichloropropene			ND			ND
Methylene Chloride			ND			ND
1,1,2,2-Tetrachloroethane			ND			ND
Tetrachlorethene			1.0			ND
1,1,1-Trichloroethane			ND			ND
1,1,2-Trichloroethane			ND			ND
Trichloroethene			ND			ND
Trichlorofluoromethane			ND			ND
Vinyl Chloride						
AROMATICS						
Benzene			ND			ND
Chlorobenzene			ND			ND
1,2-Dichlorobenzene			ND			ND
1,3-Dichlorobenzene			ND			ND
1,4-Dichlorobenzene			ND			ND
Ethylbenzene			ND			ND
Methyl-t-Butyl Ether			ND			ND
Toluene			ND			ND
Total Xylenes			ND			ND
GBR-51						
Lab pH	7.1					
Lab Conductivity @25 C	2870					
Total Dissolved Solids @ 180 C	2390					
Total Alkalinity as CaCO3	229					
Total Hardness as CaCO3	1200					
Bicarbonate as HCO3	279					
Carbonate as CO3	ND					
Hydroxide	ND					
Chloride	58					
Sulfate	1410					
Calcium	431					
Magnesium	31.2					
Potassium	2					
Sodium	324					

	JAN	APR	JUN	JUL	OCT	DEC
HALOCARBONS						
Bromodichloromethane	ND					
Bromoform	ND					
Bromomethane	ND					
Carbon Tetrachloride	ND					
Chloroethane	ND					
Chloroform	ND					
Chloromethane	ND					
Dibromochloromethane	ND					
1,2-Dibromoethane (EDB)	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
1,1-Dichloroethane	ND					
1,2-Dichloroethane (EDC)	ND					
1,1-Dichloroethene	ND					
cis-1,2-Dichloroethene	ND					
trans-1,2-Dichloroethene	ND					
1,2-Dichloropropane	ND					
cis-1,3-Dichloropropene	ND					
trans-1,3-Dichloropropene	ND					
Methylene Chloride	ND					
1,1,2,2-Tetrachloroethane	ND					
Tetrachlorethene	ND					
1,1,1-Trichloroethane	ND					
1,1,2-Trichloroethane	ND					
Trichloroethene	ND					
Trichlorofluoromethane	ND					
Vinyl Chloride	ND					
AROMATICS						
Benzene	ND					
Chlorobenzene	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
Ethylbenzene	ND					
Methyl-t-Butyl Ether	ND					
Toluene	ND					
Total Xylenes	ND					
GBR-52						
Lab pH	7.1					
Lab Conductivity @25 C	3070					
Total Dissolved Solids @ 180 C	2660					
Total Alkalinity as CaCO3	199					
Total Hardness as CaCO3	1220					
Bicarbonate as HCO3	ND					
Carbonate as CO3	ND					
Hydroxide	68					
Chloride	54					
Sulfate	1640					

	JAN	APR	JUN	JUL	OCT	DEC
Calcium	431					
Magnesium	35.2					
Potassium	2.1					
Sodium	303					
HALOCARBONS						
Bromodichloromethane	ND					
Bromoform	ND					
Bromomethane	ND					
Carbon Tetrachloride	ND					
Chloroethane	ND					
Chloroform	ND					
Chloromethane	ND					
Dibromochloromethane	ND					
1,2-Dibromoethane (EDB)	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
1,1-Dichloroethane	ND					
1,2-Dichloroethane (EDC)	ND					
1,1-Dichloroethene	ND					
cis-1,2-Dichloroethene	ND					
trans-1,2-Dichloroethene	ND					
1,2-Dichloropropane	ND					
cis-1,3-Dichloropropene	ND					
trans-1,3-Dichloropropene	ND					
Methylene Chloride	ND					
1,1,2,2-Tetrachloroethane	ND					
Tetrachlorethene	ND					
1,1,1-Trichloroethane	ND					
1,1,2-Trichloroethane	ND					
Trichloroethene	ND					
Trichlorofluoromethane	ND					
Vinyl Chloride	ND					
AROMATICS						
Benzene	ND					
Chlorobenzene	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
Ethylbenzene	ND					
Methyl-t-Butyl Ether	ND					
Toluene	ND					
Total Xylenes	ND					
SHS-3						
Lab pH	6.6					
Lab Conductivity @25 C	4480					
Total Dissolved Solids @ 180 C	3970					
Total Alkalinity as CaCO3	223					
Total Hardness as CaCO3	1720					

	JAN	APR	JUN	JUL	OCT	DEC
Bicarbonate as HCO ₃	272					
Carbonate as CO ₃	ND					
Hydroxide	ND					
Chloride	303					
Sulfate	2160					
Calcium	560					
Magnesium	78.5					
Potassium	8.8					
Sodium	460					
HALOCARBONS						
Bromodichloromethane	ND			ND		
Bromoform	ND			ND		
Bromomethane	ND			ND		
Carbon Tetrachloride	ND			ND		
Chloroethane	ND			ND		
Chloroform	ND			ND		
Chloromethane	ND			ND		
Dibromochloromethane	ND			ND		
1,2-Dibromoethane (EDB)	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 (EDC)	ND			ND		
1,1-Dichloroethene	ND			ND		
cis-1,2-Dichloroethene	ND			ND		
trans-1,2-Dichloroethene	ND			ND		
1,2-Dichloropropane	ND			ND		
cis-1,3-Dichloropropene	ND			ND		
trans-1,3-Dichloropropene	ND			ND		
Methylene Chloride	ND			ND		
1,1,2,2-Tetrachloroethane	ND			ND		
Tetrachlorethene	ND			ND		
1,1,1-Trichloroethane	ND			ND		
1,1,2-Trichloroethane	ND			ND		
Trichloroethene	ND			ND		
Trichlorofluoromethane	ND			ND		
Vinyl Chloride	ND			ND		
AROMATICS						
Benzene	ND			ND		
Chlorobenzene	ND			ND		
1,2-Dichlorobenzene	ND			ND		
1,3-Dichlorobenzene	ND			ND		
1,4-Dichlorobenzene	ND			ND		
Ethylbenzene	ND			ND		
Methyl-t-Butyl Ether	ND			ND		
Toluene	ND			ND		
Total Xylenes	ND			ND		
SHS-4						

	JAN	APR	JUN	JUL	OCT	DEC
Lab pH	7.1					
Lab Conductivity @25 C	3090					
Total Dissolved Solids (Calc)	2710					
Total Alkalinity as CaCO3	170					
Total Hardness as CaCO3	1480					
Bicarbonate as HCO3	207					
Carbonate as CO3	ND					
Hydroxide	ND					
Chloride	45					
Sulfate	1830					
Calcium	532					
Magnesium	38.1					
Potassium	1.8					
Sodium	321					
HALOCARBONS						
Bromodichloromethane	ND					
Bromoform	ND					
Bromomethane	ND					
Carbon Tetrachloride	ND					
Chloroethane	ND					
Chloroform	ND					
Chloromethane	ND					
Dibromochloromethane	ND					
1,2-Dibromoethane (EDB)	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
1,1-Dichloroethane	ND					
1,2-Dichloroethane (EDC)	ND					
1,1-Dichloroethene	ND					
cis-1,2-Dichloroethene	ND					
trans-1,2-Dichloroethene	ND					
1,2-Dichloropropane	ND					
cis-1,3-Dichloropropene	ND					
trans-1,3-Dichloropropene	ND					
Methylene Chloride	ND					
1,1,2,2-Tetrachloroethane	ND					
Tetrachlorethene	ND					
1,1,1-Trichloroethane	ND					
1,1,2-Trichloroethane	ND					
Trichloroethene	ND					
Trichlorofluoromethane	ND					
Vinyl Chloride	ND					
AROMATICS						
Benzene	ND					
Chlorobenzene	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
Ethylbenzene	ND					
Methyl-t-Butyl Ether	ND					

	JAN	APR	JUN	JUL	OCT	DEC
Toluene	ND					
Total Xylenes	ND					
SHS-6						
Lab pH	7.1					
Lab Conductivity @25 C	2820					
Total Dissolved Solids @ 180 C	2340					
Total Alkalinity as CaCO3	230					
Total Hardness as CaCO3	860					
Bicarbonate as HCO3	281					
Carbonate as CO3	ND					
Hydroxide	ND					
Chloride	59					
Sulfate	1310					
Calcium	300					
Magnesium	27					
Potassium	2.5					
Sodium	358					
HALOCARBONS						
Bromodichloromethane	ND					
Bromoform	ND					
Bromomethane	ND					
Carbon Tetrachloride	ND					
Chloroethane	ND					
Chloroform	ND					
Chloromethane	ND					
Dibromochloromethane	ND					
1,2-Dibromoethane (EDB)	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
1,1-Dichloroethane	ND					
1,2-Dichloroethane (EDC)	ND					
1,1-Dichloroethene	ND					
cis-1,2-Dichloroethene	ND					
trans-1,2-Dichloroethene	ND					
1,2-Dichloropropane	ND					
cis-1,3-Dichloropropene	ND					
trans-1,3-Dichloropropene	ND					
Methylene Chloride	ND					
1,1,2,2-Tetrachloroethane	ND					
Tetrachlorethene	ND					
1,1,1-Trichloroethane	ND					
1,1,2-Trichloroethane	ND					
Trichloroethene	ND					
Trichlorofluoromethane	ND					
Vinyl Chloride	ND					
AROMATICS						
Benzene	ND					

	JAN	APR	JUN	JUL	OCT	DEC
Chlorobenzene	ND					
1,2-Dichlorobenzene	ND					
1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
Ethylbenzene	ND					
Methyl-t-Butyl Ether	ND					
Toluene	ND					
Total Xylenes	ND					
SHS-10						
Lab pH	7.1					
Lab Conductivity @25 C	3200					
Total Dissolved Solids (Calc)	2570					
Total Alkalinity as CaCO3	373					
Total Hardness as CaCO3	1100					
Bicarbonate as HCO3	455					
Carbonate as CO3	ND					
Hydroxide	ND					
Chloride	93					
Sulfate	1350					
Calcium	341					
Magnesium	59.9					
Potassium	9.6					
Sodium	343					
HALOCARBONS						
Bromodichloromethane	ND	ND		ND		
Bromoform	ND	ND		ND		
Bromomethane	ND	ND		ND		
Carbon Tetrachloride	ND	ND		ND		
Chloroethane	ND	ND		ND		
Chloroform	ND	ND		ND		
Chloromethane	ND	ND		ND		
Dibromochloromethane	ND	ND		ND		
1,2-Dibromoethane (EDB)	ND	ND		ND		
1,2-Dichlorobenzene	ND	ND		ND		
1,3-Dichlorobenzene	ND	ND		ND		
1,4-Dichlorobenzene	ND	ND		ND		
1,1-Dichloroethane	ND	ND		ND		
1,2-Dichloroethane (EDC)	ND	ND		ND		
1,1-Dichloroethene	ND	ND		ND		
cis-1,2-Dichloroethene	ND	ND		ND		
trans-1,2-Dichloroethene	ND	ND		ND		
1,2-Dichloropropane	ND	ND		ND		
cis-1,3-Dichloropropene	ND	ND		ND		
trans-1,3-Dichloropropene	ND	ND		ND		
Methylene Chloride	ND	ND		ND		
1,1,2,2-Tetrachloroethane	ND	ND		ND		
Tetrachlorethene	ND	ND		ND		
1,1,1-Trichloroethane	ND	ND		ND		
1,1,2-Trichloroethane	ND	ND		ND		

	JAN	APR	JUN	JUL	OCT	DEC
Trichloroethene	ND	ND		ND		
Trichlorofluoromethane	ND	ND		ND		
Vinyl Chloride	ND	ND		ND		
AROMATICS						
Benzene	ND	ND		ND		
Chlorobenzene	ND	ND		ND		
1,2-Dichlorobenzene	ND	ND		ND		
1,3-Dichlorobenzene	ND	ND		ND		
1,4-Dichlorobenzene	ND	ND		ND		
Ethylbenzene	ND	ND		ND		
Methyl-t-Butyl Ether	ND	ND		ND		
Toluene	ND	ND		ND		
Total Xylenes	0.6	ND		ND		
SHS-12						
Lab pH	7.1					
Lab Conductivity @25 C	3000					
Total Dissolved Solids @ 180 C	2210					
Total Alkalinity as CaCO3	582					
Total Hardness as CaCO3	787					
Bicarbonate as HCO3	710					
Carbonate as CO3	ND					
Hydroxide	ND					
Chloride	130					
Sulfate	860					
Calcium	281					
Magnesium	20.8					
Potassium	1.3					
Sodium	456					
HALOCARBONS						
Bromodichloromethane	ND	ND		ND		
Bromoform	ND	ND		ND		
Bromomethane	ND	ND		ND		
Carbon Tetrachloride	ND	ND		ND		
Chloroethane	ND	ND		ND		
Chloroform	ND	ND		ND		
Chloromethane	ND	ND		ND		
Dibromochloromethane	ND	ND		ND		
1,2-Dibromoethane (EDB)	ND	ND		ND		
1,2-Dichlorobenzene	ND	ND		ND		
1,3-Dichlorobenzene	ND	ND		ND		
1,4-Dichlorobenzene	ND	ND		ND		
1,1-Dichloroethane	ND	ND		ND		
1,2-Dichloroethane (EDC)	ND	ND		ND		
1,1-Dichloroethene	ND	ND		ND		
cis-1,2-Dichloroethene	ND	ND		ND		
trans-1,2-Dichloroethene	ND	ND		ND		
1,2-Dichloropropane	ND	ND		ND		
cis-1,3-Dichloropropene	ND	ND		ND		

	JAN	APR	JUN	JUL	OCT	DEC
trans-1,3-Dichloropropene	ND	ND		ND		
Methylene Chloride	ND	ND		ND		
1,1,2,2-Tetrachloroethane	ND	ND		ND		
Tetrachlorethene	ND	ND		ND		
1,1,1-Trichloroethane	ND	ND		ND		
1,1,2-Trichloroethane	ND	ND		ND		
Trichloroethene	ND	ND		ND		
Trichlorofluoromethane	ND	ND		ND		
Vinyl Chloride	ND	ND		ND		
AROMATICS						
Benzene	ND	ND		ND		
Chlorobenzene	ND	ND		ND		
1,2-Dichlorobenzene	ND	ND		ND		
1,3-Dichlorobenzene	ND	ND		ND		
1,4-Dichlorobenzene	ND	ND		ND		
Ethylbenzene	ND	ND		ND		
Methyl-t-Butyl Ether	ND	ND		ND		
Toluene	ND	ND		ND		
Total Xylenes	ND	ND		ND		
SHS-13						
Lab pH	7					
Lab Conductivity @25 C	1720					
Total Dissolved Solids @ 180 C	1050					
Total Alkalinity as CaCO3	706					
Total Hardness as CaCO3	230					
Bicarbonate as HCO3	861					
Carbonate as CO3	ND					
Hydroxide	ND					
Chloride	90					
Sulfate	87					
Calcium	65.3					
Magnesium	16.1					
Potassium	1.4					
Sodium	304					
HALOCARBONS						
Bromodichloromethane	ND	ND		ND	ND	
Bromoform	ND	ND		ND	ND	
Bromomethane	ND	ND		ND	ND	
Carbon Tetrachloride	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-Dibromoethane (EDB)	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	
1,1-Dichloroethane	ND	ND		ND	ND	
1,2-Dichloroethane (EDC)	ND	ND		ND	ND	

	JAN	APR	JUN	JUL	OCT	DEC
1,1-Dichloroethene	ND	ND		ND	ND	
cis-1,2-Dichloroethene	ND	ND		ND	ND	
trans-1,2-Dichloroethene	ND	ND		ND	ND	
1,2-Dichloropropane	ND	ND		ND	ND	
cis-1,3-Dichloropropene	ND	ND		ND	ND	
trans-1,3-Dichloropropene	ND	ND		ND	ND	
Methylene Chloride	ND	ND		ND	ND	
1,1,2,2-Tetrachloroethane	ND	ND		ND	ND	
Tetrachlorethene	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	
AROMATICS						
Benzene	ND	ND		ND	ND	
Chlorobenzene	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	
Ethylbenzene	ND	ND		ND	ND	
Methyl-t-Butyl Ether	ND	ND		ND	ND	
Toluene	ND	ND		ND	ND	
Total Xylenes	ND	ND		ND	ND	
SHS-15						
Lab pH	7.1					
Lab Conductivity @25 C	2650					
Total Dissolved Solids (Calc)	2250					
Total Alkalinity as CaCO3	319					
Total Hardness as CaCO3	1280					
Bicarbonate as HCO3	389					
Carbonate as CO3	ND					
Hydroxide	ND					
Chloride	57					
Sulfate	1410					
Calcium	446					
Magnesium	40.9					
Potassium	2.3					
Sodium	222					
HALOCARBONS						
Bromodichloromethane	ND			ND		
Bromoform	ND			ND		
Bromomethane	ND			ND		
Carbon Tetrachloride	ND			ND		
Chloroethane	ND			ND		
Chloroform	ND			2.2		
Chloromethane	ND			ND		
Dibromochloromethane	ND			ND		

	JAN	APR	JUN	JUL	OCT	DEC
1,2-Dibromoethane (EDB)	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 (EDC)	ND			ND		
1,1-Dichloroethene	ND			ND		
cis-1,2-Dichloroethene	ND			ND		
trans-1,2-Dichloroethene	ND			ND		
1,2-Dichloropropane	ND			ND		
cis-1,3-Dichloropropene	ND			ND		
trans-1,3-Dichloropropene	ND			ND		
Methylene Chloride	ND			ND		
1,1,2,2-Tetrachloroethane	ND			ND		
Tetrachlorethene	ND			ND		
1,1,1-Trichloroethane	ND			ND		
1,1,2-Trichloroethane	ND			ND		
Trichloroethene	ND			ND		
Trichlorofluoromethane	ND			ND		
Vinyl Chloride	ND			ND		
AROMATICS						
Benzene	ND			ND		
Chlorobenzene	ND			ND		
1,2-Dichlorobenzene	ND			ND		
1,3-Dichlorobenzene	ND			ND		
1,4-Dichlorobenzene	ND			ND		
Ethylbenzene	ND			ND		
Methyl-t-Butyl Ether	ND			ND		
Toluene	ND			ND		
Total Xylenes	ND			ND		
SHS-16						
Lab pH	7.2					
Lab Conductivity @25 C	2940					
Total Dissolved Solids (Calc)	2500					
Total Alkalinity as CaCO3	289					
Total Hardness as CaCO3	1410					
Bicarbonate as HCO3	352					
Carbonate as CO3	ND					
Hydroxide	ND					
Chloride	76					
Sulfate	1510					
Calcium	487					
Magnesium	47					
Potassium	3					
Sodium	286					
HALOCARBONS						
Bromodichloromethane	ND	ND		ND	ND	
Bromoform	ND	ND		ND	ND	

	JAN	APR	JUN	JUL	OCT	DEC
Bromomethane	ND	ND		ND	ND	
Carbon Tetrachloride	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-Dibromoethane (EDB)	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	
1,1-Dichloroethane	ND	ND		ND	ND	
1,2-Dichloroethane (EDC)	ND	ND		ND	ND	
1,1-Dichloroethene	ND	ND		ND	ND	
cis-1,2-Dichloroethene	ND	ND		ND	ND	
trans-1,2-Dichloroethene	ND	ND		ND	ND	
1,2-Dichloropropane	ND	ND		ND	ND	
cis-1,3-Dichloropropene	ND	ND		ND	ND	
trans-1,3-Dichloropropene	ND	ND		ND	ND	
Methylene Chloride	ND	ND		ND	ND	
1,1,2,2-Tetrachloroethane	ND	ND		ND	ND	
Tetrachlorethene	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	
AROMATICS						
Benzene	ND	ND		ND	ND	
Chlorobenzene	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	
Ethylbenzene	ND	ND		ND	ND	
Methyl-t-Butyl Ether	ND	ND		ND	ND	
Toluene	ND	ND		ND	ND	
Total Xylenes	ND	ND		ND	ND	
<u>SHS-17</u>						
Lab pH	7.2					
Lab Conductivity @25 C	3720					
Total Dissolved Solids (Calc)	3070					
Total Alkalinity as CaCO3	241					
Total Hardness as CaCO3	1380					
Bicarbonate as HCO3	294					
Carbonate as CO3	ND					
Hydroxide	ND					
Chloride	163					
Sulfate	1730					
Calcium	463					
Magnesium	54.7					
Potassium	2.8					

	JAN	APR	JUN	JUL	OCT	DEC
Sodium	492					
HALOCARBONS						
Bromodichloromethane	ND	ND		ND	ND	
Bromoform	ND	ND		ND	ND	
Bromomethane	ND	ND		ND	ND	
Carbon Tetrachloride	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-Dibromoethane (EDB)	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	
1,1-Dichloroethane	ND	ND		ND	ND	
1,2-Dichloroethane (EDC)	ND	ND		ND	ND	
1,1-Dichloroethene	ND	ND		ND	ND	
cis-1,2-Dichloroethene	ND	ND		ND	ND	
trans-1,2-Dichloroethene	ND	ND		ND	ND	
1,2-Dichloropropane	ND	ND		ND	ND	
cis-1,3-Dichloropropene	ND	ND		ND	ND	
trans-1,3-Dichloropropene	ND	ND		ND	ND	
Methylene Chloride	ND	ND		ND	ND	
1,1,2,2-Tetrachloroethane	ND	ND		ND	ND	
Tetrachlorethene	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	
AROMATICS						
Benzene	ND	ND		ND	ND	
Chlorobenzene	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	
Ethylbenzene	ND	ND		ND	ND	
Methyl-t-Butyl Ether	ND	ND		ND	ND	
Toluene	ND	ND		ND	ND	
Total Xylenes	ND	ND		ND	ND	

**GIANT REFINING BLOOMFIELD REFINERY
QUARTERLY POTENTIOMETRIC SURFACE**

JANUARY, 1999

WELL #	WELLHEAD ELEVATION IN FEET	DEPTH TO WATER IN FEET	DEPTH TO PRODUCT IN FEET	PRODUCT THICKNESS IN FEET	ADJUSTED WSEL* IN FEET
GRW-1	5394.30	44.08	44.08	0.00	5350.22
GRW-2	5391.28	40.08	40.08	0.00	5351.20
GRW-3	5388.77	48.94	48.94	0.00	5339.83
GRW-4	5390.02	58.55	58.55	0.00	5331.47
GRW-5	5390.56	64.13	64.13	0.00	5326.43
GRW-6	5390.81	43.34	43.34	0.00	5347.47
GRW-10	5395.02	51.03	50.04	0.99	5344.78
GRW-11	5397.85	59.83	59.83	0.00	5338.02
GRW-12	5397.24	45.50	45.50	0.00	5351.74
GRW-13	5396.90	57.04	57.04	0.00	5339.86
GBR-5	5395.07	24.41	24.40	0.01	5370.67
GBR-6	5395.70	57.50	57.50	0.00	5338.20
GBR-7	5395.85	28.36	27.61	0.75	5368.09
GBR-8	5390.50	40.56	40.45	0.11	5350.03
GBR-9	5389.92	47.51	47.51	0.00	5342.41
GBR-10	5390.57	41.44	41.44	0.00	5349.13
GBR-11	5389.43	40.64	40.64	0.00	5348.79
GBR-13	5393.04	39.56	39.56	0.00	5353.48
GBR-15	5397.99	40.90	40.90	0.00	5357.09
GBR-18	5421.68	34.85	34.85	0.00	5386.83
GBR-19	5393.83	40.92	40.36	0.56	5353.36
GBR-20	5393.47	35.08	35.06	0.02	5358.41
GBR-21S	5400.65	21.73	21.65	0.08	5378.98
GBR-21D	5400.19	34.22	34.22	0.00	5365.97
GBR-22	5395.91	40.34	39.33	1.01	5356.38
GBR-23	5403.72	25.34	25.20	0.14	5376.60
GBR-24S	5396.08	27.23	27.23	0.00	5364.53
GBR-24D	5396.77	31.55	31.55	0.00	5365.22
GBR-25	5396.72	33.63	33.63	0.00	5363.09
GBR-26	5395.59	37.60	37.60	0.00	5357.99
GBR-30	5396.58	35.33	35.33	0.00	5361.25
GBR-31	5394.86	36.81	36.81	0.00	5358.05
GBR-33	5396.28	39.60	39.60	0.00	5356.68
GBR-34	5394.00	37.12	37.10	0.02	5356.90
GBR-35	5393.66	37.57	37.15	0.42	5356.43
GBR-39	5397.55	40.23	40.23	0.00	5357.32
GBR-40	5400.76	26.10	26.10	0.00	5374.66
GBR-41	5396.35	31.66	31.66	0.00	5364.69
GBR-51	5389.68	39.97	39.97	0.00	5349.71
GBR-52	5387.74	41.41	41.41	0.00	5346.33

GIANT REFINING BLOOMFIELD REFINERY
 QUARTERLY POTENTIOMETRIC SURFACE
 JANUARY, 1999
 Page 2

WELL #	WELLHEAD ELEVATION IN FEET	DEPTH TO WATER IN FEET	DEPTH TO PRODUCT IN FEET	PRODUCT THICKNESS IN FEET	ADJUSTED WSEL* IN FEET
SHS-1	5383.54	41.30	41.30	0.00	5342.24
SHS-2	5381.66	34.70	34.70	0.00	5346.96
SHS-3	5383.33	34.94	34.94	0.00	5348.39
SHS-4	5383.62	41.42	41.42	0.00	5342.20
SHS-5	5378.36	38.42	38.42	0.00	5339.94
SHS-6	5378.17	38.62	38.62	0.00	5339.55
SHS-7	5375.89	42.80	42.80	0.00	5333.09
SHS-8	5380.25	40.20	38.66	1.54	5341.28
SHS-9	5380.79	44.25	44.25	0.00	5336.54
SHS-10	5373.80	36.52	36.52	0.00	5337.28
SHS-12	5373.94	39.68	39.68	0.00	5334.26
SHS-13	5367.81	36.37	36.37	0.00	5331.44
SHS-14	5367.07	42.08	42.08	0.00	5324.99
SHS-15	5366.21	33.17	33.17	0.00	5333.04
SHS-16	5362.58	31.22	31.22	0.00	5331.36
SHS-17	5364.35	33.10	33.10	0.00	5331.25
SHS-18	5373.64	39.84	39.84	0.00	5333.80

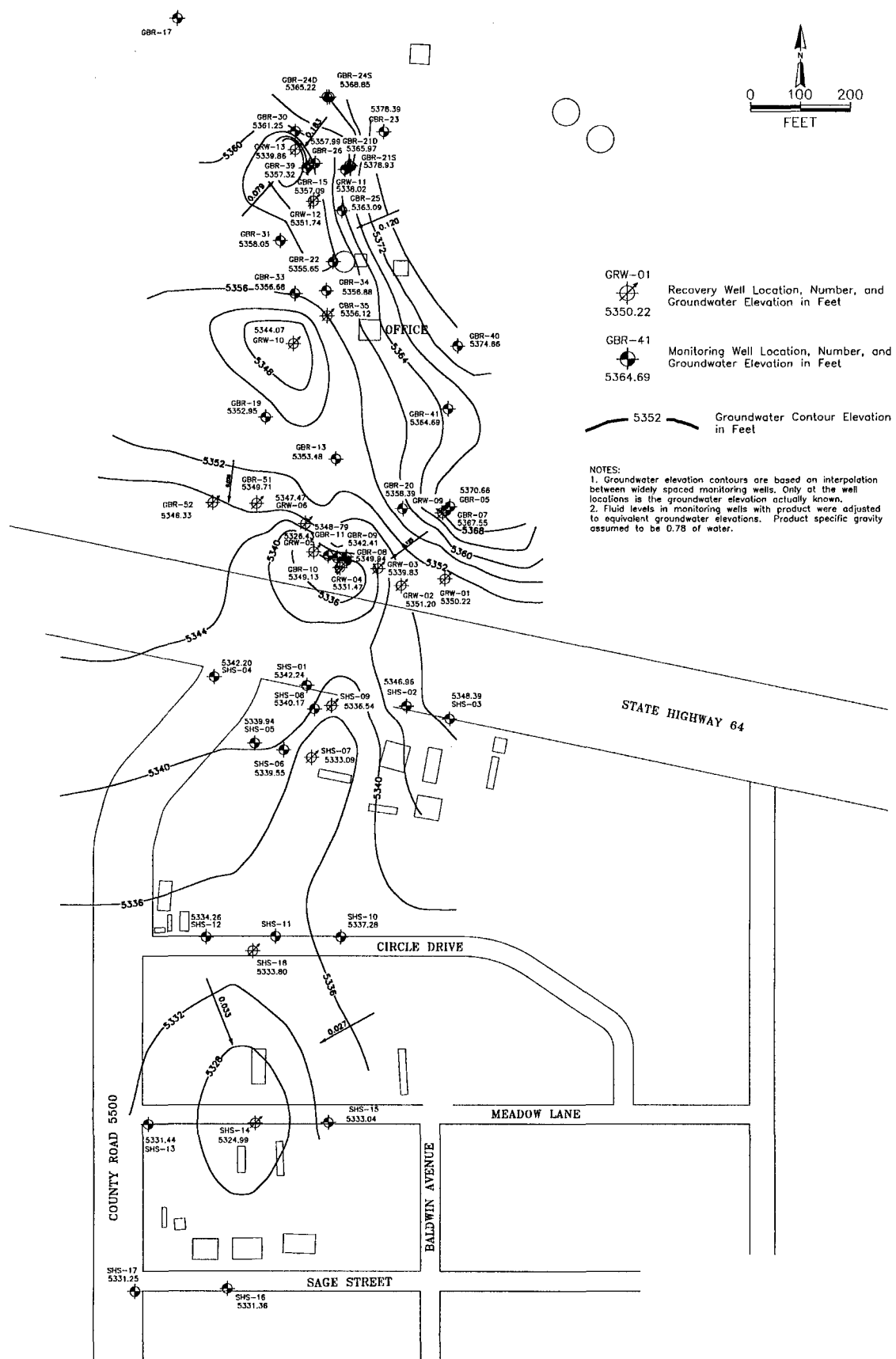
* WSEL - WATER SURFACE ELEVATION ADJUSTED FOR PRODUCT DEPTH

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TITLE:
EQUIVALENT GROUNDWATER
ELEVATION CONTOUR MAPS
JANUARY 1999 3.2

DWN: MRC	DES.: MN	PROJECT NO.:
CHKD:	APPD:	FIGURE NO.:
DATE: 02/01/00	REV.: A	FIGURE 1



**GIANT REFINING BLOOMFIELD REFINERY
QUARTERLY POTENTIOMETRIC SURFACE**

APRIL, 1999

WELL #	WELLHEAD ELEVATION IN FEET	DEPTH TO WATER IN FEET	DEPTH TO PRODUCT IN FEET	PRODUCT THICKNESS IN FEET	ADJUSTED WSEL* IN FEET
GRW-1	5394.30	53.65	53.65	0.00	5340.65
GRW-2	5391.28	42.53	42.53	0.00	5348.75
GRW-3	5388.77	46.13	46.13	0.00	5342.64
GRW-4	5390.02	57.38	57.38	0.00	5332.64
GRW-5	5390.56	62.20	62.20	0.00	5328.36
GRW-6	5390.81	45.13	45.13	0.00	5345.68
GRW-10	5395.02	50.65	50.03	0.62	5344.87
GRW-11	5397.85	61.66	61.66	0.00	5336.19
GRW-12	5397.24	43.96	43.96	0.00	5353.28
GRW-13	5396.90	36.22	36.22	0.00	5360.68
GBR-5	5395.07	23.90	23.90	0.00	5371.17
GBR-6	5395.70	57.80	57.80	0.00	5337.90
GBR-7	5395.85	28.91	27.40	1.51	5368.15
GBR-8	5390.50	49.40	46.75	2.65	5343.22
GBR-9	5389.92	40.53	40.53	0.00	5349.39
GBR-10	5390.57	41.74	41.74	0.00	5348.83
GBR-11	5389.43	40.96	40.96	0.00	5348.47
GBR-13	5393.04	40.06	40.06	0.00	5352.98
GBR-15	5397.99	39.35	39.35	0.00	5358.64
GBR-18	5421.68	32.67	32.67	0.00	5389.01
GBR-19	5393.83	41.46	40.62	0.84	5353.04
GBR-20	5393.47	34.50	34.50	0.00	5358.97
GBR-21S	5400.65	21.97	21.97	0.00	5378.68
GBR-21D	5400.19	34.53	34.53	0.00	5365.66
GBR-22	5395.91	40.33	39.35	0.98	5356.36
GBR-23	5403.72	35.36	35.36	0.00	5376.06
GBR-24S	5396.08	27.66	27.66	0.00	5365.09
GBR-24D	5396.77	30.99	30.99	0.00	5365.78
GBR-25	5396.72	33.91	33.91	0.00	5362.81
GBR-26	5395.59	36.90	36.90	0.00	5358.69
GBR-30	5396.58	36.08	36.08	0.00	5360.50
GBR-31	5394.86	36.99	36.99	0.00	5357.87
GBR-33	5396.28	39.79	39.79	0.00	5356.49
GBR-34	5394.00	38.18	37.28	0.90	5356.54
GBR-35	5393.66	38.05	37.34	0.71	5356.18
GBR-39	5397.55	38.72	38.72	0.00	5358.83
GBR-40	5400.76	31.05	31.05	0.00	5369.71
GBR-41	5396.35	25.92	25.92	0.00	5370.43
GBR-51	5389.68	41.68	41.68	0.00	5348.00
GBR-52	5387.74	40.23	40.23	0.00	5347.51

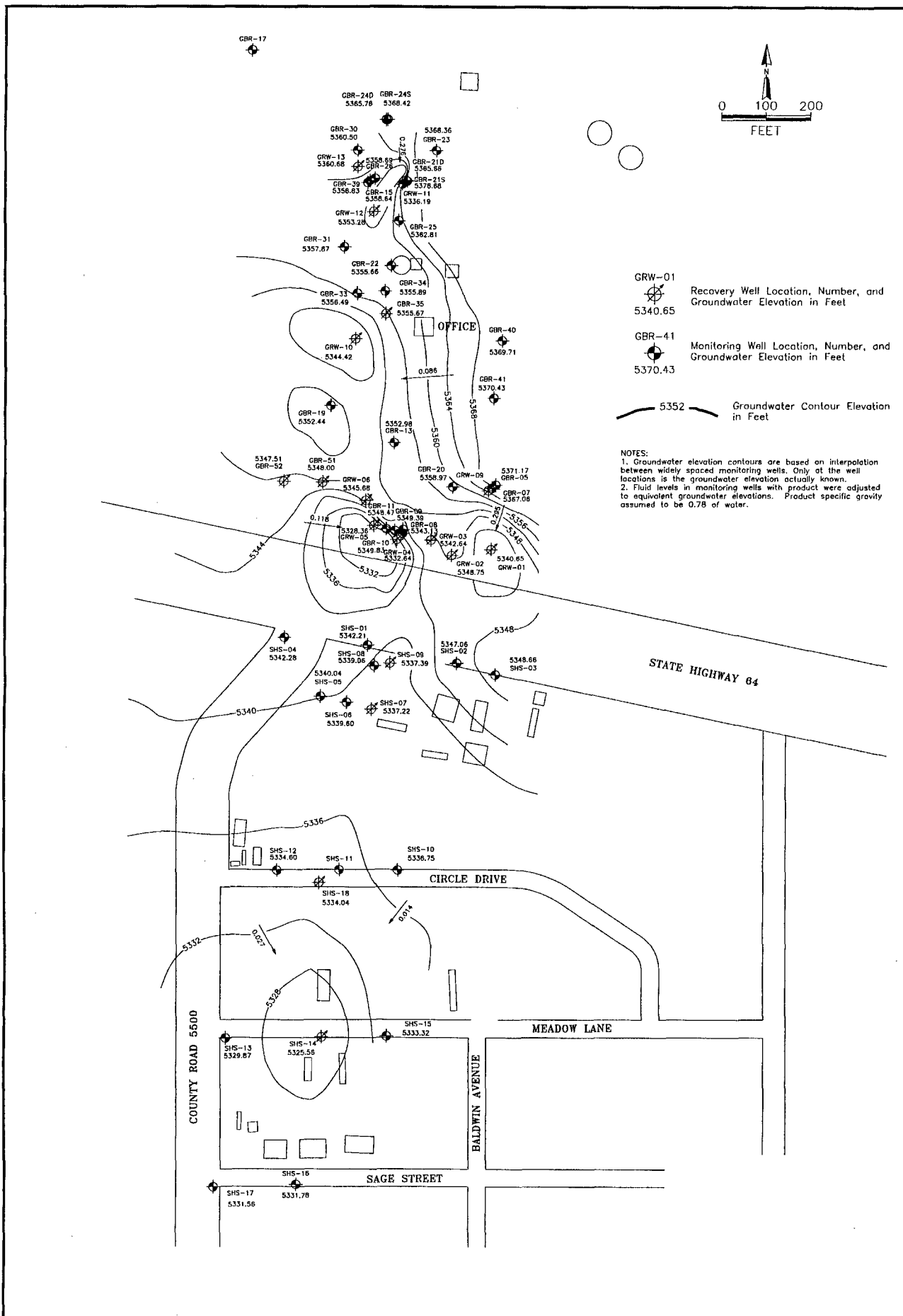
GIANT REFINING BLOOMFIELD REFINERY
QUARTERLY POTENTIOMETRIC SURFACE

APRIL, 1999

Page 2

WELL #	WELLHEAD ELEVATION IN FEET	DEPTH TO WATER IN FEET	DEPTH TO PRODUCT IN FEET	PRODUCT THICKNESS IN FEET	ADJUSTED WSEL* IN FEET
SHS-1	5383.54	41.33	41.33	0.00	5342.21
SHS-2	5381.66	34.60	34.60	0.00	5347.06
SHS-3	5383.33	34.67	34.67	0.00	5348.66
SHS-4	5383.62	41.34	41.34	0.00	5342.28
SHS-5	5378.36	38.32	38.32	0.00	5340.04
SHS-6	5378.17	38.57	38.57	0.00	5339.60
SHS-7	5375.89	38.67	38.67	0.00	5337.22
SHS-8	5380.25	41.40	38.65	2.75	5341.05
SHS-9	5380.79	43.40	43.40	0.00	5337.39
SHS-10	5373.80	37.05	37.05	0.00	5336.75
SHS-12	5373.94	39.34	39.34	0.00	5334.60
SHS-13	5367.81	37.94	37.94	0.00	5329.87
SHS-14	5367.07	41.51	41.51	0.00	5325.56
SHS-15	5366.21	32.89	32.89	0.00	5333.32
SHS-16	5362.58	30.80	30.80	0.00	5331.78
SHS-17	5364.35	32.79	32.79	0.00	5331.56
SHS-18	5373.64	39.60	39.60	0.00	5334.04

* WSEL - WATER SURFACE ELEVATION ADJUSTED FOR PRODUCT DEPTH



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**GIANT REFINING BLOOMFIELD REFINERY
QUARTERLY POTENTIOMETRIC SURFACE**

JULY, 1999

WELL #	WELLHEAD ELEVATION IN FEET	DEPTH TO WATER IN FEET	DEPTH TO PRODUCT IN FEET	PRODUCT THICKNESS IN FEET	ADJUSTED WSEL* IN FEET
GRW-1	5394.30	58.02	58.02	0.00	5336.28
GRW-2	5391.28	40.79	40.79	0.00	5350.49
GRW-3	5388.77	40.11	40.11	0.00	5348.66
GRW-4	5390.02	57.86	57.86	0.00	5332.16
GRW-5	5390.56	53.93	53.93	0.00	5336.63
GRW-6	5390.81	46.80	46.80	0.00	5344.01
GRW-10	5395.02	50.64	49.58	1.06	5345.23
GRW-11	5397.85	62.30	62.30	0.00	5335.55
GRW-12	5397.24	43.56	43.56	0.00	5353.68
GRW-13	5396.90	51.90	51.90	0.00	5345.00
GBR-5	5395.07	24.41	24.41	0.00	5370.66
GBR-6	5395.70	57.06	57.06	0.00	5338.64
GBR-7	5395.85	29.74	27.93	1.81	5367.56
GBR-8	5390.50	41.24	41.14	0.10	5349.34
GBR-9	5389.92	47.08	47.08	0.00	5342.84
GBR-10	5390.57	42.10	42.10	0.00	5348.47
GBR-11	5389.43	41.37	41.35	0.02	5348.08
GBR-13	5393.04	40.55	40.55	0.00	5352.49
GBR-15	5397.99	41.16	41.16	0.00	5356.83
GBR-18	5421.68	33.23	33.23	0.00	5388.45
GBR-19	5393.83	41.83	40.90	0.93	5352.74
GBR-20	5393.47	35.39	35.34	0.05	5358.12
GBR-21S	5400.65	27.29	27.29	0.00	5373.36
GBR-21D	5400.19	23.28	22.90	0.38	5377.21
GBR-22	5395.91	40.31	39.70	0.61	5356.09
GBR-23	5403.72	25.79	25.73	0.06	5374.35
GBR-24S	5396.08	29.42	29.42	0.00	5363.23
GBR-24D	5396.77	32.85	32.85	0.00	5363.92
GBR-25	5396.72	34.20	34.20	0.00	5362.52
GBR-26	5395.59	37.77	37.77	0.00	5357.82
GBR-30	5396.58	35.68	35.68	0.00	5360.90
GBR-31	5394.86	37.17	37.17	0.00	5357.69
GBR-33	5396.28	39.95	39.95	0.00	5356.33
GBR-34	5394.00	38.45	37.50	0.95	5356.31
GBR-35	5393.66	38.36	37.50	0.86	5355.99
GBR-39	5397.55	40.45	40.45	0.00	5357.10
GBR-40	5400.76	31.32	31.32	0.00	5369.44
GBR-41	5396.35	26.30	26.30	0.00	5370.05
GBR-51	5389.68	41.95	41.95	0.00	5347.73
GBR-52	5387.74	40.50	40.50	0.00	5347.24

GIANT REFINING BLOOMFIELD REFINERY
 QUARTERLY POTENTIOMETRIC SURFACE
 JULY, 1999
 Page 2

WELL #	WELLHEAD ELEVATION IN FEET	DEPTH TO WATER IN FEET	DEPTH TO PRODUCT IN FEET	PRODUCT THICKNESS IN FEET	ADJUSTED WSEL* IN FEET
SHS-1	5383.54	41.47	41.47	0.00	5342.07
SHS-2	5381.66	34.30	34.30	0.00	5347.36
SHS-3	5383.33	34.35	34.35	0.00	5348.98
SHS-4	5383.62	41.64	41.64	0.00	5341.98
SHS-5	5378.36	38.48	38.48	0.00	5339.88
SHS-6	5378.17	38.70	38.70	0.00	5339.47
SHS-7	5375.89	37.90	37.90	0.00	5337.99
SHS-8	5380.25	40.26	38.80	1.46	5341.16
SHS-9	5380.79	41.20	41.20	0.00	5339.59
SHS-10	5373.80	36.58	36.58	0.00	5337.22
SHS-12	5373.94	39.56	39.56	0.00	5334.38
SHS-13	5367.81	36.25	36.25	0.00	5331.56
SHS-14	5367.07	41.88	41.88	0.00	5325.19
SHS-15	5366.21	34.32	34.32	0.00	5331.89
SHS-16	5362.58	31.14	31.14	0.00	5331.44
SHS-17	5364.35	33.10	33.10	0.00	5331.25
SHS-18	5373.64	39.66	39.66	0.00	5333.98

* WSEL - WATER SURFACE ELEVATION ADJUSTED FOR PRODUCT DEPTH

**GIANT REFINING BLOOMFIELD REFINERY
QUARTERLY POTENTIOMETRIC SURFACE**

OCTOBER, 1999

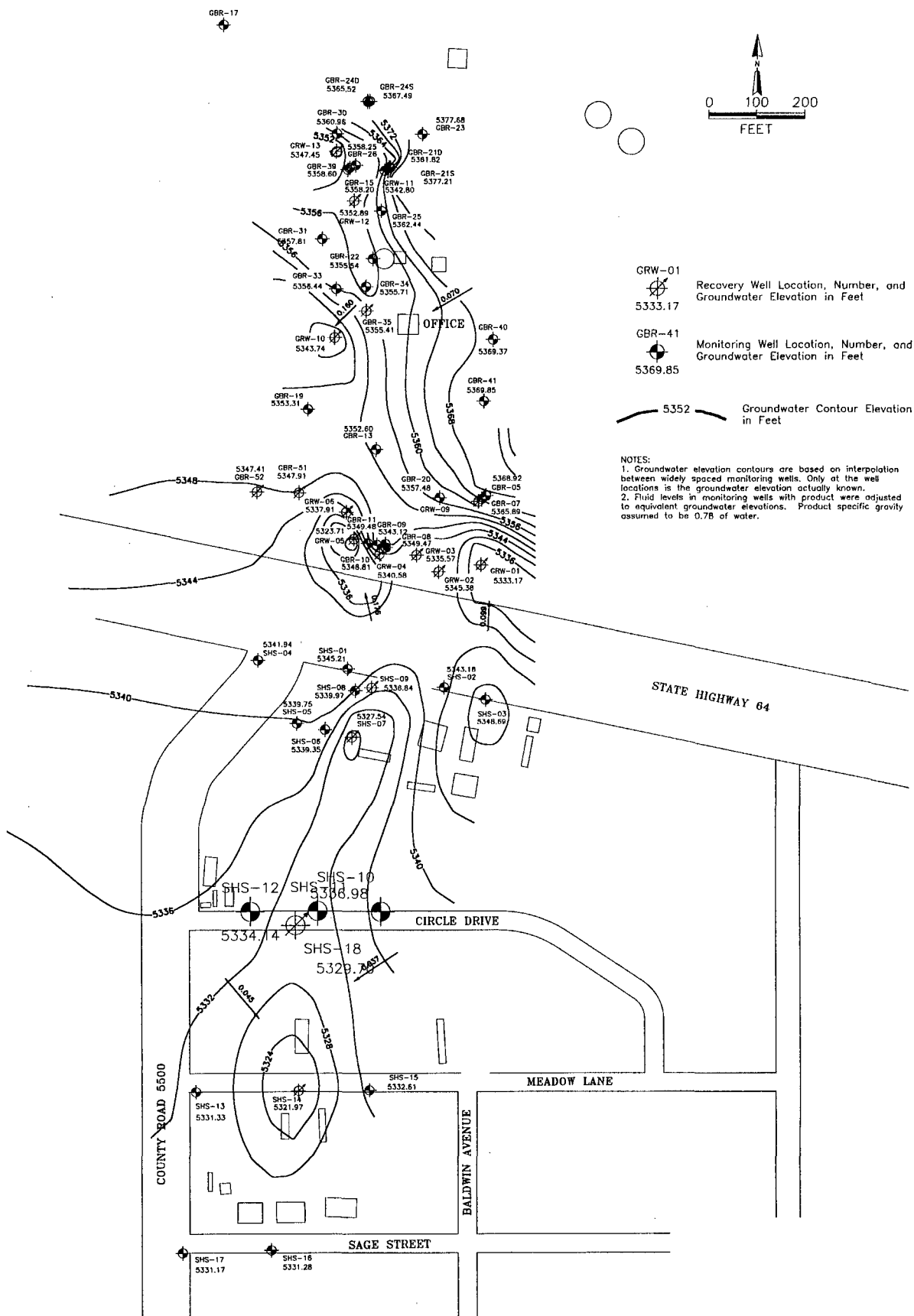
WELL #	WELLHEAD ELEVATION IN FEET	DEPTH TO WATER IN FEET	DEPTH TO PRODUCT IN FEET	PRODUCT THICKNESS IN FEET	ADJUSTED WSEL* IN FEET
GRW-1	5394.30	61.13	61.13	0.00	5333.17
GRW-2	5391.28	45.90	45.90	0.00	5345.38
GRW-3	5388.77	53.20	53.20	0.00	5335.57
GRW-4	5390.02	49.44	49.44	0.00	5340.58
GRW-5	5390.56	66.85	66.85	0.00	5323.71
GRW-6	5390.81	52.90	52.90	0.00	5337.91
GRW-10	5395.02	51.36	50.30	1.06	5344.51
GRW-11	5397.85	55.05	55.05	0.00	5342.80
GRW-12	5397.24	44.35	44.35	0.00	5352.89
GRW-13	5396.90	49.45	49.45	0.00	5347.45
GBR-5	5395.07	26.15	26.15	0.00	5368.92
GBR-6	5395.70	55.25	55.25	0.00	5340.45
GBR-7	5395.85	30.10	28.28	1.82	5367.21
GBR-8	5390.50	41.05	40.85	0.20	5349.61
GBR-9	5389.92	46.80	46.80	0.00	5343.12
GBR-10	5390.57	41.76	41.76	0.00	5348.81
GBR-11	5389.43	39.95	39.95	0.00	5349.48
GBR-13	5393.04	40.44	40.44	0.00	5352.60
GBR-15	5397.99	39.79	39.79	0.00	5358.20
GBR-18	5421.68	33.66	33.66	0.00	5388.02
GBR-19	5393.83	40.56	40.07	0.49	5353.66
GBR-20	5393.47	36.00	35.87	0.13	5357.57
GBR-21S	5400.65	23.45	23.33	0.12	5377.30
GBR-21D	5400.19	38.37	38.37	0.00	5361.82
GBR-22	5395.91	40.45	39.37	1.08	5356.32
GBR-23	5403.72	26.04	26.04	0.00	5375.13
GBR-24S	5396.08	28.59	28.59	0.00	5364.83
GBR-24D	5396.77	31.25	31.25	0.00	5365.52
GBR-25	5396.72	34.28	34.28	0.00	5362.44
GBR-26	5395.59	37.34	37.34	0.00	5358.25
GBR-30	5396.58	35.62	35.62	0.00	5360.96
GBR-31	5394.86	37.05	37.05	0.00	5357.81
GBR-33	5396.28	39.84	39.84	0.00	5356.44
GBR-34	5394.00	38.37	37.30	1.07	5356.49
GBR-35	5393.66	38.32	37.38	0.94	5356.09
GBR-39	5397.55	38.95	38.95	0.00	5358.60
GBR-40	5400.76	31.39	31.39	0.00	5369.37
GBR-41	5396.35	26.50	26.50	0.00	5369.85
GBR-51	5389.68	41.77	41.77	0.00	5347.91
GBR-52	5387.74	40.33	40.33	0.00	5347.41

GIANT REFINING BLOOMFIELD REFINERY
 QUARTERLY POTENTIOMETRIC SURFACE
 OCTOBER, 1999
 Page 2

WELL #	WELLHEAD ELEVATION IN FEET	DEPTH TO WATER IN FEET	DEPTH TO PRODUCT IN FEET	PRODUCT THICKNESS IN FEET	ADJUSTED WSEL* IN FEET
SHS-1	5383.54	38.34	38.25	0.09	5345.27
SHS-2	5381.66	38.48	38.48	0.00	5343.18
SHS-3	5383.33	34.64	34.64	0.00	5348.69
SHS-4	5383.62	41.68	41.68	0.00	5341.94
SHS-5	5378.36	38.61	38.61	0.00	5339.75
SHS-6	5378.17	38.82	38.82	0.00	5339.35
SHS-7	5375.89	48.35	48.35	0.00	5327.54
SHS-8	5380.25	40.40	38.89	1.51	5341.06
SHS-9	5380.79	43.95	43.95	0.00	5336.84
SHS-10	5373.80	36.82	36.82	0.00	5336.98
SHS-12	5373.94	39.80	39.80	0.00	5334.14
SHS-13	5367.81	36.48	36.48	0.00	5331.33
SHS-14	5367.07	45.10	45.10	0.00	5321.97
SHS-15	5366.21	33.60	33.60	0.00	5332.61
SHS-16	5362.58	31.30	31.30	0.00	5331.28
SHS-17	5364.35	33.18	33.18	0.00	5331.17
SHS-18	5373.64	43.94	43.94	0.00	5329.70

* WSEL - WATER SURFACE ELEVATION ADJUSTED FOR PRODUCT DEPTH

G:\UPDATED\GIANT\HYDRO\MAPS\DW-9910.DWG



TITLE:
EQUIVALENT GROUNDWATER
ELEVATION CONTOUR MAP
OCTOBER 1999

DWN: MRC	DES: MN	PROJECT NO.:
CHKD:	APPD:	FIGURE NO.:
DATE: 02/01/00	REV: A	FIGURE 4

**GIANT REFINING COMPANY
BLOOMFIELD REFINERY
VOLUME CHANGE**

1999

Tank Number	Beginning Volume	Ending Volume	Net Change
102	9,508	4,343	(5,165)
106	8,010	8,010	0
21	230,133	230,133	0
22	246,237	273,750	27,513
Total Net Volume Change			22,348

**GIANT REFINING COMPANY
BLOOMFIELD REFINERY
RECOVERY WELL
VOLUME TABULATION**

1999

Well	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total
GRW-1	64,930	56,460	67,490	71,100	259,980
GRW-2	34,080	133,830	100,050	37,100	305,060
GRW-3	60,380	22,240	42,130	42,270	167,020
GRW-4	49,400	45,250	41,540	34,330	170,520
GRW-5	179,600	147,750	34,170	92,450	453,970
GRW-6	77,690	80,840	41,400	81,610	281,540
GRW-9	65,609	58,121	56,540	53,870	234,140
GRW-10	609,340	651,820	617,670	620,790	2,499,620
GRW-11	64,220	106,440	108,770	68,890	348,320
GRW-12	6,350	5,980	9,570	12,090	33,990
GRW-13	13,120	8,190	29,120	15,910	66,340
SHS-7	73,255	63,320	1,644	65,966	204,185
SHS-9	9,398	10,061	1,215	8,363	29,037
SHS-14	216,954	331,153	393,035	255,875	1,197,017
SHS-18	737	1,530	58,695	115,194	176,156
TOTAL VOLUME PUMPED IN GALLONS					6,426,895

**GIANT REFINING COMPANY
BLOOMFIELD REFINERY
TOTAL VOLUME SUMMARY**

1999

Total Volume Of Water Recovered	6,426,895
Net Change In Storage Volume	<u>22,348</u>
Total Water Treated And Pumped To The Infiltration Gallery	<u><u>6,404,547</u></u>

ANNUAL DATA REPORT
GIANT BLOOMFIELD REFINERY
1998

RECEIVED

FEB 01 1998

ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

Prepared By:

GIANT REFINING COMPANY
111 County Road 4990
Bloomfield, NM 87413
(505) 632-8006
FAX (505) 632-4021

INTRODUCTION AND SUMMARY ANNUAL REPORT 1998

INTRODUCTION

Tank 22 is being used for intermediate water storage. All water is treated by the carbon filter unit exclusively.

SUMMARY

Section 2

Section 2 contains a summary of the annual analytical results. Raw data, as received from the laboratory, is available on request as a supplement to the annual report.

Section 3

Potentiometric surface maps, as well as the adjusted water surface elevation and product thickness for each well, are included in Section 3.

Section 4

Section 4 illustrates the volume history for the year. Total volume pumped from each well, as well as current tank volumes and the reinjection volume, is reported. Additional detail, on a weekly basis, is also available if desired.

SECTION 2

The following pages show the annual analytical data for the Giant Refining Remediation Project. The data is broken down into units as described below.

	<u>Unit of Measure</u>
Total dissolved solids (180)	mg/l
Total dissolved solids (calc)	mg/l
Total alkalinity as CaCO ₃	mg/l
Total hardness as CaCO ₃	mg/l
Bicarbonate as HCO ₃	mg/l
Carbonate as CO ₃	mg/l
Chloride	mg/l
Sulfate	mg/l
Calcium	mg/l
Magnesium	mg/l
Potassium	mg/l
Sodium	mg/l

The remainder of the data is measured in ug/l.

GIANT INDUSTRIES, INC.
ONSITE REMEDIATION PROJECT
ANNUAL ANALYTICAL DATA SUMMARY
1998

	JAN	APR	JUNE	JULY	OCT	NOV	DEC
<u>SYSTEM EFFLUENT</u>							
Lab pH		7.0		7.1	7.1		
Lab Conductivity @25 C		3550		2980	3170		
Total Dissolved Solids (Calc)		2630		2570	2520		
Total Alkalinity as CaCO3		376		417	403		
Total Hardness as CaCO3		970		1000	1010		
Bicarbonate as HCO3		459		509	492		
Carbonate as CO3		ND		ND	ND		
Hydroxide		ND		ND	ND		
Chloride		130		137	167		
Sulfate		1110		1260	1140		
Calcium		334		345	351		
Magnesium		33.2		34.9	32.8		
Potassium		4.9		3.8	3		
Sodium		385		415	354		
<u>HALOCARBONS</u>							
Bromodichloromethane	ND	ND		ND		ND	
Bromoform	ND	ND		ND		ND	
Bromomethane	ND	ND		ND		ND	
Carbon Tetrachloride	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-Dibromoethane (EDB)	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	
1,1-Dichloroethane	ND	ND		ND		ND	
1,2-Dichloroethane (EDC)	ND	ND		ND		ND	
1,1-Dichloroethene	ND	ND		ND		ND	
cis-1,2-Dichloroethene	ND	0.3		ND		ND	
trans-1,2-Dichloroethene	ND	ND		ND		ND	
1,2-Dichloropropane	ND	ND		ND		ND	
cis-1,3-Dichloropropene	ND	ND		ND		ND	
trans-1,3-Dichloropropene	ND	ND		ND		ND	
Methylene Chloride	ND	ND		ND		ND	
1,1,2,2-Tetrachloroethane	ND	ND		ND		ND	
Tetrachlorethene	ND	ND		ND		ND	
1,1,1-Trichloroethane	ND	ND		ND		ND	
1,1,2-Trichloroethane	ND	ND		ND		ND	

JAN APR JUNE JULY OCT NOV DEC

Trichloroethene	ND	ND		ND		ND	
Trichlorofluoromethane	ND	ND		ND		ND	
Vinyl Chloride	ND	ND		ND		ND	
AROMATICS							
Benzene	ND	ND		ND		ND	
Chlorobenzene	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	
Ethylbenzene	ND	ND		ND		ND	
Methyl-t-Butyl Ether	ND	ND		ND		ND	
Toluene	ND	ND		ND		ND	
Total Xylenes	ND	ND		ND		ND	
SYSTEM INFLUENT							
Lab pH		7.1		7.2	7.1		
Lab Conductivity @25 C		3690		2990	3150		
Total Dissolved Solids (Calc)		2660		2530	2510		
Total Alkalinity as CaCO3		361		410	388		
Total Hardness as CaCO3		973		938	1040		
Bicarbonate as HCO3		440		500	473		
Carbonate as CO3		ND		ND	ND		
Hydroxide		ND		ND	ND		
Chloride		128		138	166		
Sulfate		1120		1260	1150		
Calcium		335		320	358		
Magnesium		33.3		33.8	35		
Potassium		10.2		2.6	3		
Sodium		388		329	358		
HALOCARBONS							
Bromodichloromethane	ND	ND		ND		ND	
Bromoform	ND	ND		ND		ND	
Bromomethane	ND	ND		ND		ND	
Carbon Tetrachloride	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-Dibromoethane (EDB)	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	
1,1-Dichloroethane	ND	ND		ND		ND	
1,2-Dichloroethane (EDC)	ND	ND		ND		ND	
1,1-Dichloroethene	ND	ND		ND		ND	
cis-1,2-Dichloroethene	ND	0.6		ND		ND	

JAN APR JUNE JULY OCT NOV DEC

trans-1,2-Dichloroethene	ND	ND		ND		ND	
1,2-Dichloropropane	ND	ND		ND		ND	
cis-1,3-Dichloropropene	ND	ND		ND		ND	
trans-1,3-Dichloropropene	ND	ND		ND		ND	
Methylene Chloride	ND	ND		ND		ND	
1,1,2,2-Tetrachloroethane	ND	ND		ND		ND	
Tetrachlorethene	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	
AROMATICS							
Benzene	1.6	0.8		1.3		ND	
Chlorobenzene	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	
Ethylbenzene	ND	ND		ND		ND	
Methyl-t-Butyl Ether	ND	ND		ND		ND	
Toluene	ND	ND		ND		ND	
Total Xylenes	ND	ND		ND		ND	
GRW-3							
Lab pH							
Lab Conductivity @25 C							
Total Dissolved Solids @ 180 C							
Total Dissolved Solids (Calc)							
Total Alkalinity as CaCO3							
Total Hardness as CaCO3							
Bicarbonate as HCO3							
Carbonate as CO3							
Hydroxide							
Chloride							
Sulfate							
Calcium							
Magnesium							
Potassium							
Sodium							
HALOCARBONS							
Bromodichloromethane	ND						
Bromoform	ND						
Bromomethane	ND						
Carbon Tetrachloride	ND						
Chloroethane	ND						
Chloroform	ND						

	JAN	APR	JUNE	JULY	OCT	NOV	DEC
Chloromethane	ND						
Dibromochloromethane	ND						
1,2-Dibromoethane (EDB)	ND						
1,2-Dichlorobenzene	ND						
1,3-Dichlorobenzene	ND						
1,4-Dichlorobenzene	ND						
1,1-Dichloroethane	ND						
1,2-Dichloroethane (EDC)	ND						
1,1-Dichloroethene	ND						
cis-1,2-Dichloroethene	ND						
trans-1,2-Dichloroethene	ND						
1,2-Dichloropropane	ND						
cis-1,3-Dichloropropene	ND						
trans-1,3-Dichloropropene	ND						
Methylene Chloride	ND						
1,1,2,2-Tetrachloroethane	ND						
Tetrachlorethene	ND						
1,1,1-Trichloroethane	ND						
1,1,2-Trichloroethane	ND						
Trichloroethene	ND						
Trichlorofluoromethane	ND						
Vinyl Chloride	ND						
AROMATICS							
Benzene	1.7						
Chlorobenzene	ND						
1,2-Dichlorobenzene	ND						
1,3-Dichlorobenzene	ND						
1,4-Dichlorobenzene	ND						
Ethylbenzene	ND						
Methyl-t-Butyl Ether	ND						
Toluene	ND						
Total Xylenes	ND						
GRW-6							
Lab pH							
Lab Conductivity @25 C							
Total Dissolved Solids @ 180 C							
Total Dissolved Solids (Calc)							
Total Alkalinity as CaCO3							
Total Hardness as CaCO3							
Bicarbonate as HCO3							
Carbonate as CO3							
Hydroxide							
Chloride							
Sulfate							
Calcium							

JAN APR JUNE JULY OCT NOV DEC

Magnesium							
Potassium							
Sodium							
HALOCARBONS							
Bromodichloromethane	ND						
Bromoform	ND						
Bromomethane	ND						
Carbon Tetrachloride	ND						
Chloroethane	ND						
Chloroform	ND						
Chloromethane	ND						
Dibromochloromethane	ND						
1,2-Dibromoethane (EDB)	ND						
1,2-Dichlorobenzene	ND						
1,3-Dichlorobenzene	ND						
1,4-Dichlorobenzene	ND						
1,1-Dichloroethane	ND						
1,2-Dichloroethane (EDC)	1						
1,1-Dichloroethene	ND						
cis-1,2-Dichloroethene	ND						
trans-1,2-Dichloroethene	ND						
1,2-Dichloropropane	ND						
cis-1,3-Dichloropropene	ND						
trans-1,3-Dichloropropene	ND						
Methylene Chloride	ND						
1,1,2,2-Tetrachloroethane	ND						
Tetrachlorethene	ND						
1,1,1-Trichloroethane	ND						
1,1,2-Trichloroethane	ND						
Trichloroethene	ND						
Trichlorofluoromethane	ND						
Vinyl Chloride	ND						
AROMATICS							
Benzene							
Chlorobenzene							
1,2-Dichlorobenzene							
1,3-Dichlorobenzene							
1,4-Dichlorobenzene							
Ethylbenzene							
Methyl-t-Butyl Ether							
Toluene							
Total Xylenes							
GRW-13							
Lab pH							
Lab Conductivity @25 C							

JAN APR JUNE JULY OCT NOV DEC

Total Dissolved Solids @ 180 C							
Total Dissolved Solids (Calc)							
Total Alkalinity as CaCO3							
Total Hardness as CaCO3							
Bicarbonate as HCO3							
Carbonate as CO3							
Hydroxide							
Chloride							
Sulfate							
Calcium							
Magnesium							
Potassium							
Sodium							
HALOCARBONS							
Bromodichloromethane	ND						
Bromoform	ND						
Bromomethane	ND						
Carbon Tetrachloride	ND						
Chloroethane	ND						
Chloroform	ND						
Chloromethane	ND						
Dibromochloromethane	ND						
1,2-Dibromoethane (EDB)	ND						
1,2-Dichlorobenzene	ND						
1,3-Dichlorobenzene	ND						
1,4-Dichlorobenzene	ND						
1,1-Dichloroethane	ND						
1,2-Dichloroethane (EDC)	2.5						
1,1-Dichloroethene	ND						
cis-1,2-Dichloroethene	ND						
trans-1,2-Dichloroethene	ND						
1,2-Dichloropropane	ND						
cis-1,3-Dichloropropene	ND						
trans-1,3-Dichloropropene	ND						
Methylene Chloride	ND						
1,1,2,2-Tetrachloroethane	ND						
Tetrachlorethene	ND						
1,1,1-Trichloroethane	ND						
1,1,2-Trichloroethane	ND						
Trichloroethene	ND						
Trichlorofluoromethane	ND						
Vinyl Chloride	ND						
AROMATICS							
Benzene	ND						
Chlorobenzene	ND						
1,2-Dichlorobenzene	ND						
1,3-Dichlorobenzene	ND						

	JAN	APR	JUNE	JULY	OCT	NOV	DEC
1,4-Dichlorobenzene	ND						
Ethylbenzene	ND						
Methyl-t-Butyl Ether	ND						
Toluene	ND						
Total Xylenes	ND						
GBR-15							
Lab pH							
Lab Conductivity @25 C							
Total Dissolved Solids @ 180 C							
Total Dissolved Solids (Calc)							
Total Alkalinity as CaCO3							
Total Hardness as CaCO3							
Bicarbonate as HCO3							
Carbonate as CO3							
Hydroxide							
Chloride							
Sulfate							
Calcium							
Magnesium							
Potassium							
Sodium							
HALOCARBONS							
Bromodichloromethane	ND			ND			
Bromoform	ND			ND			
Bromomethane	ND			ND			
Carbon Tetrachloride	ND			ND			
Chloroethane	ND			ND			
Chloroform	ND			ND			
Chloromethane	ND			ND			
Dibromochloromethane	ND			ND			
1,2-Dibromoethane (EDB)	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 (EDC)	5.3			4.7			
1,1-Dichloroethene	ND			ND			
cis-1,2-Dichloroethene	ND			ND			
trans-1,2-Dichloroethene	ND			ND			
1,2-Dichloropropane	ND			ND			
cis-1,3-Dichloropropene	ND			ND			
trans-1,3-Dichloropropene	ND			ND			
Methylene Chloride	ND			ND			
1,1,2,2-Tetrachloroethane	ND			ND			
Tetrachlorethene	ND			ND			

	JAN	APR	JUNE	JULY	OCT	NOV	DEC
1,1,1-Trichloroethane	ND			ND			
1,1,2-Trichloroethane	ND			ND			
Trichloroethene	ND			ND			
Trichlorofluoromethane	ND			ND			
Vinyl Chloride	ND			ND			
AROMATICS							
Benzene	0.6			0.6			
Chlorobenzene	ND			ND			
1,2-Dichlorobenzene	ND			ND			
1,3-Dichlorobenzene	ND			ND			
1,4-Dichlorobenzene	ND			ND			
Ethylbenzene	ND			ND			
Methyl-t-Butyl Ether	ND			ND			
Toluene	ND			ND			
Total Xylenes	0.9			1.3			
GBR-17							
Lab pH			7.2				7.2
Lab Conductivity @25 C			3050				2380
Total Dissolved Solids @ 180 C			2140				3410
Total Dissolved Solids (Calc)			1860				--
Total Alkalinity as CaCO3			205				207
Total Hardness as CaCO3			744				989
Bicarbonate as HCO3			250				253
Carbonate as CO3			ND				ND
Hydroxide			ND				ND
Chloride			78				70
Sulfate			1040				1060
Nitrogen - Nitrate			5.95				3.5
Calcium			264				359
Magnesium			21				22.6
Potassium			ND				0.6
Sodium			335				234
HALOCARBONS							
Bromodichloromethane			ND				
Bromoform			ND				
Bromomethane			ND				
Carbon Tetrachloride			ND				
Chloroethane			ND				
Chloroform			ND				
Chloromethane			ND				
Dibromochloromethane			ND				
1,2-Dibromoethane (EDB)			ND				
1,2-Dichlorobenzene			ND				
1,3-Dichlorobenzene			ND				
1,4-Dichlorobenzene			ND				

	JAN	APR	JUNE	JULY	OCT	NOV	DEC
1,1-Dichloroethane			ND				
1,2-Dichloroethane (EDC)			ND				
1,1-Dichloroethene			ND				
cis-1,2-Dichloroethene			ND				
trans-1,2-Dichloroethene			ND				
1,2-Dichloropropane			ND				
cis-1,3-Dichloropropene			ND				
trans-1,3-Dichloropropene			ND				
Methylene Chloride			ND				
1,1,2,2-Tetrachloroethane			ND				
Tetrachlorethene			ND				
1,1,1-Trichloroethane			ND				
1,1,2-Trichloroethane			ND				
Trichloroethene			ND				
Trichlorofluoromethane			ND				
Vinyl Chloride			ND				
AROMATICS							
Benzene			ND				
Chlorobenzene			ND				
1,2-Dichlorobenzene			ND				
1,3-Dichlorobenzene			ND				
1,4-Dichlorobenzene			ND				
Ethylbenzene			ND				
Methyl-t-Butyl Ether			ND				
Toluene			ND				
Total Xylenes			ND				
GBR-24D							
Lab pH							
Lab Conductivity @25 C							
Total Dissolved Solids @ 180 C							
Total Dissolved Solids (Calc)							
Total Alkalinity as CaCO3							
Total Hardness as CaCO3							
Bicarbonate as HCO3							
Carbonate as CO3							
Hydroxide							
Chloride							
Sulfate							
Calcium							
Magnesium							
Potassium							
Sodium							
HALOCARBONS							
Bromodichloromethane		ND		ND			

JAN APR JUNE JULY OCT NOV DEC

Bromoform	ND			ND			
Bromomethane	ND			ND			
Carbon Tetrachloride	ND			ND			
Chloroethane	ND			ND			
Chloroform	ND			ND			
Chloromethane	ND			ND			
Dibromochloromethane	ND			ND			
1,2-Dibromoethane (EDB)	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 (EDC)	7.7			11.0			
1,1-Dichloroethene	ND			ND			
cis-1,2-Dichloroethene	ND			ND			
trans-1,2-Dichloroethene	ND			ND			
1,2-Dichloropropane	ND			ND			
cis-1,3-Dichloropropene	ND			ND			
trans-1,3-Dichloropropene	ND			ND			
Methylene Chloride	ND			ND			
1,1,2,2-Tetrachloroethane	ND			ND			
Tetrachlorethene	ND			ND			
1,1,1-Trichloroethane	ND			ND			
1,1,2-Trichloroethane	ND			ND			
Trichloroethene	ND			ND			
Trichlorofluoromethane	ND			ND			
Vinyl Chloride	ND			ND			
AROMATICS							
Benzene	1.6			8.3			
Chlorobenzene	ND			ND			
1,2-Dichlorobenzene	ND			ND			
1,3-Dichlorobenzene	ND			ND			
1,4-Dichlorobenzene	ND			ND			
Ethylbenzene	0.6			ND			
Methyl-t-Butyl Ether	ND			ND			
Toluene	ND			ND			
Total Xylenes	1.1			1.2			
GBR-30							
Lab pH							
Lab Conductivity @25 C							
Total Dissolved Solids @ 180 C							
Total Dissolved Solids (Calc)							
Total Alkalinity as CaCO3							
Total Hardness as CaCO3							
Bicarbonate as HCO3							

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Carbonate as CO3							
Hydroxide							
Chloride							
Sulfate							
Calcium							
Magnesium							
Potassium							
Sodium							
HALOCARBONS							
Bromodichloromethane	ND			ND			
Bromoform	ND			ND			
Bromomethane	ND			ND			
Carbon Tetrachloride	ND			ND			
Chloroethane	ND			ND			
Chloroform	ND			ND			
Chloromethane	ND			ND			
Dibromochloromethane	ND			ND			
1,2-Dibromoethane (EDB)	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 (EDC)	ND			ND			
1,1-Dichloroethene	ND			ND			
cis-1,2-Dichloroethene	ND			ND			
trans-1,2-Dichloroethene	ND			ND			
1,2-Dichloropropane	ND			ND			
cis-1,3-Dichloropropene	ND			ND			
trans-1,3-Dichloropropene	ND			ND			
Methylene Chloride	ND			ND			
1,1,2,2-Tetrachloroethane	ND			ND			
Tetrachlorethene	ND			ND			
1,1,1-Trichloroethane	ND			ND			
1,1,2-Trichloroethane	ND			ND			
Trichloroethene	ND			ND			
Trichlorofluoromethane	ND			ND			
Vinyl Chloride	ND			ND			
AROMATICS							
Benzene	ND			ND			
Chlorobenzene	ND			ND			
1,2-Dichlorobenzene	ND			ND			
1,3-Dichlorobenzene	ND			ND			
1,4-Dichlorobenzene	ND			ND			
Ethylbenzene	ND			ND			
Methyl-t-Butyl Ether	ND			ND			
Toluene	ND			ND			
Total Xylenes	ND			ND			

JAN APR JUNE JULY OCT NOV DEC

GBR-31							
HALOCARBONS							
Bromodichloromethane	ND	ND		ND		ND	
Bromoform	ND	ND		ND		ND	
Bromomethane	ND	ND		ND		ND	
Carbon Tetrachloride	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-Dibromoethane (EDB)	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	
1,1-Dichloroethane	ND	ND		ND		ND	
1,2-Dichloroethane (EDC)	ND	ND		ND		ND	
1,1-Dichloroethene	ND	ND		ND		ND	
cis-1,2-Dichloroethene	ND	0.7		8.7		4.6	
trans-1,2-Dichloroethene	ND	ND		ND		ND	
1,2-Dichloropropane	ND	ND		ND		ND	
cis-1,3-Dichloropropene	ND	ND		ND		ND	
trans-1,3-Dichloropropene	ND	ND		ND		ND	
Methylene Chloride	ND	ND		ND		ND	
1,1,2,2-Tetrachloroethane	ND	ND		ND		ND	
Tetrachlorethene	ND	ND		3.7		2.1	
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	
AROMATICS							
Benzene	ND	ND		ND			
Chlorobenzene	ND	ND		ND			
1,2-Dichlorobenzene	ND	ND		ND			
1,3-Dichlorobenzene	ND	ND		ND			
1,4-Dichlorobenzene	ND	ND		ND			
Ethylbenzene	ND	ND		ND			
Methyl-t-Butyl Ether	ND	ND		ND			
Toluene	ND	ND		ND			
Total Xylenes	ND	ND		ND			
GBR-32							
Lab pH			7.1				7.1
Lab Conductivity @25 C			6980				5520
Total Dissolved Solids @ 180 C			4720				4540
Total Dissolved Solids (Calc)			4180				--

JAN APR JUNE JULY OCT NOV DEC

Total Alkalinity as CaCO ₃			300				279
Total Hardness as CaCO ₃			1400				1780
Bicarbonate as HCO ₃			365				340
Carbonate as CO ₃			ND				ND
Hydroxide			ND				ND
Chloride			964				713
Nitrogen-Nitrate			8.27				4.1
Sulfate			1650				1980
Calcium			484				621
Magnesium			48				56.8
Potassium			5				3.7
Sodium			838				714
HALOCARBONS							
Bromodichloromethane			ND				
Bromoform			ND				
Bromomethane			ND				
Carbon Tetrachloride			ND				
Chloroethane			ND				
Chloroform			3.2				
Chloromethane			ND				
Dibromochloromethane			ND				
1,2-Dibromoethane (EDB)			ND				
1,2-Dichlorobenzene			ND				
1,3-Dichlorobenzene			ND				
1,4-Dichlorobenzene			ND				
1,1-Dichloroethane			0.9				
1,2-Dichloroethane (EDC)			ND				
1,1-Dichloroethene			ND				
cis-1,2-Dichloroethene			39.0				
trans-1,2-Dichloroethene			ND				
1,2-Dichloropropane			ND				
cis-1,3-Dichloropropene			ND				
trans-1,3-Dichloropropene			ND				
Methylene Chloride			ND				
1,1,2,2-Tetrachloroethane			ND				
Tetrachlorethene			7.3				
1,1,1-Trichloroethane			ND				
1,1,2-Trichloroethane			ND				
Trichloroethene			4.4				
Trichlorofluoromethane			0.5				
Vinyl Chloride			ND				
AROMATICS							
Benzene			ND				
Chlorobenzene			ND				
1,2-Dichlorobenzene			ND				
1,3-Dichlorobenzene			ND				
1,4-Dichlorobenzene			ND				

JAN APR JUNE JULY OCT NOV DEC

Ethylbenzene			ND				
Methyl-t-Butyl Ether			ND				
Toluene			ND				
Total Xylenes			ND				
GBR-42							
HALOCARBONS							
Bromodichloromethane							
Bromoform							
Bromomethane							
Carbon Tetrachloride							
Chloroethane							
Chloroform							
Chloromethane							
Dibromochloromethane							
1,2-Dibromoethane (EDB)							
1,2-Dichlorobenzene							
1,3-Dichlorobenzene							
1,4-Dichlorobenzene							
1,1-Dichloroethane							
1,2-Dichloroethane (EDC)							
1,1-Dichloroethene							
cis-1,2-Dichloroethene							
trans-1,2-Dichloroethene							
1,2-Dichloropropane							
cis-1,3-Dichloropropene							
trans-1,3-Dichloropropene							
Methylene Chloride							
1,1,2,2-Tetrachloroethane							
Tetrachlorethene							
1,1,1-Trichloroethane							
1,1,2-Trichloroethane							
Trichloroethene							
Trichlorofluoromethane							
Vinyl Chloride							
AROMATICS							
Benzene							
Chlorobenzene							
1,2-Dichlorobenzene							
1,3-Dichlorobenzene							
1,4-Dichlorobenzene							
Ethylbenzene							
Methyl-t-Butyl Ether							
Toluene							
Total Xylenes							

JAN APR JUNE JULY OCT NOV DEC

GBR-48							
Lab pH			7.1				7.2
Lab Conductivity @25 C			5880				5800
Total Dissolved Solids @ 180 C			4040				4500
Total Dissolved Solids (Calc)			3250				--
Total Alkalinity as CaCO3			201				239
Total Hardness as CaCO3			1170				1760
Bicarbonate as HCO3			245				292
Carbonate as CO3			ND				ND
Hydroxide			ND				ND
Chloride			651				867
Nitrogen - Nitrate			22.2				20.1
Sulfate			1410				1770
Calcium			403				612
Magnesium			41				55.4
Potassium			4.0				5.2
Sodium			601				725
HALOCARBONS							
Bromodichloromethane			ND				
Bromoform			ND				
Bromomethane			ND				
Carbon Tetrachloride			ND				
Chloroethane			ND				
Chloroform			1.3				
Chloromethane			ND				
Dibromochloromethane			ND				
1,2-Dibromoethane (EDB)			ND				
1,2-Dichlorobenzene			ND				
1,3-Dichlorobenzene			ND				
1,4-Dichlorobenzene			ND				
1,1-Dichloroethane			ND				
1,2-Dichloroethane (EDC)			ND				
1,1-Dichloroethene			ND				
cis-1,2-Dichloroethene			11.0				
trans-1,2-Dichloroethene			ND				
1,2-Dichloropropane			ND				
cis-1,3-Dichloropropene			ND				
trans-1,3-Dichloropropene			ND				
Methylene Chloride			ND				
1,1,2,2-Tetrachloroethane			ND				
Tetrachlorethene			4.3				
1,1,1-Trichloroethane			ND				
1,1,2-Trichloroethane			ND				
Trichloroethene			2.0				
Trichlorofluoromethane			ND				
Vinyl Chloride			ND				

JAN APR JUNE JULY OCT NOV DEC

AROMATICS							
Benzene			ND				
Chlorobenzene			ND				
1,2-Dichlorobenzene			ND				
1,3-Dichlorobenzene			ND				
1,4-Dichlorobenzene			ND				
Ethylbenzene			ND				
Methyl-t-Butyl Ether			ND				
Toluene			ND				
Total Xylenes			ND				
GBR-49							
Lab pH			7.2				7.3
Lab Conductivity @25 C			4880				3870
Total Dissolved Solids @ 180 C			3390				3180
Total Dissolved Solids (Calc)			3080				--
Total Alkalinity as CaCO3			292				279
Total Hardness as CaCO3			1030				1300
Bicarbonate as HCO3			356				340
Carbonate as CO3			ND				ND
Hydroxide			ND				ND
Chloride			387				215
Nitrogen - Nitrate			4.19				2.1
Sulfate			1490				1650
Calcium			361				462
Magnesium			32				36.3
Potassium			5				2.8
Sodium			654				442
HALOCARBONS							
Bromodichloromethane			ND				
Bromoform			ND				
Bromomethane			ND				
Carbon Tetrachloride			ND				
Chloroethane			ND				
Chloroform			ND				
Chloromethane			ND				
Dibromochloromethane			ND				
1,2-Dibromoethane (EDB)			ND				
1,2-Dichlorobenzene			ND				
1,3-Dichlorobenzene			ND				
1,4-Dichlorobenzene			ND				
1,1-Dichloroethane			ND				
1,2-Dichloroethane (EDC)			ND				
1,1-Dichloroethene			ND				
cis-1,2-Dichloroethene			47.0				
trans-1,2-Dichloroethene			ND				

	JAN	APR	JUNE	JULY	OCT	NOV	DEC
1,2-Dichloropropane			ND				
cis-1,3-Dichloropropene			ND				
trans-1,3-Dichloropropene			ND				
Methylene Chloride			ND				
1,1,2,2-Tetrachloroethane			ND				
Tetrachlorethene			4.5				
1,1,1-Trichloroethane			ND				
1,1,2-Trichloroethane			ND				
Trichloroethene			ND				
Trichlorofluoromethane			ND				
Vinyl Chloride			ND				
AROMATICS							
Benzene			ND				
Chlorobenzene			ND				
1,2-Dichlorobenzene			ND				
1,3-Dichlorobenzene			ND				
1,4-Dichlorobenzene			ND				
Ethylbenzene			ND				
Methyl-t-Butyl Ether			ND				
Toluene			ND				
Total Xylenes			ND				
<u>GBR-50</u>							
Lab pH			7.4				7.0
Lab Conductivity @25 C			4020				3450
Total Dissolved Solids @ 180 C			2970				2930
Total Dissolved Solids (Calc)			2460				--
Total Alkalinity as CaCO3			207				199
Total Hardness as CaCO3			897				1270
Bicarbonate as HCO3			253				243
Carbonate as CO3			ND				ND
Hydroxide			ND				ND
Chloride			140				89
Nitrogen - Nitrate			4.97				4.2
Sulfate			1420				1710
Calcium			317				461
Magnesium			26				28.9
Potassium			2				2.4
Sodium			425				401
HALOCARBONS							
Bromodichloromethane			ND				
Bromoform			ND				
Bromomethane			ND				
Carbon Tetrachloride			ND				
Chloroethane			ND				

	JAN	APR	JUNE	JULY	OCT	NOV	DEC
Chloroform			ND				
Chloromethane			ND				
Dibromochloromethane			ND				
1,2-Dibromoethane (EDB)			ND				
1,2-Dichlorobenzene			ND				
1,3-Dichlorobenzene			ND				
1,4-Dichlorobenzene			ND				
1,1-Dichloroethane			ND				
1,2-Dichloroethane (EDC)			ND				
1,1-Dichloroethene			ND				
cis-1,2-Dichloroethene			2.1				
trans-1,2-Dichloroethene			ND				
1,2-Dichloropropane			ND				
cis-1,3-Dichloropropene			ND				
trans-1,3-Dichloropropene			ND				
Methylene Chloride			ND				
1,1,2,2-Tetrachloroethane			ND				
Tetrachlorethene			1.5				
1,1,1-Trichloroethane			ND				
1,1,2-Trichloroethane			ND				
Trichloroethene			ND				
Trichlorofluoromethane			ND				
Vinyl Chloride							
AROMATICS							
Benzene			ND				
Chlorobenzene			ND				
1,2-Dichlorobenzene			ND				
1,3-Dichlorobenzene			ND				
1,4-Dichlorobenzene			ND				
Ethylbenzene			ND				
Methyl-t-Butyl Ether			ND				
Toluene			ND				
Total Xylenes			ND				
<u>GBR-51</u>							
Lab pH							
Lab Conductivity @25 C							
Total Dissolved Solids @ 180 C							
Total Dissolved Solids (Calc)							
Total Alkalinity as CaCO3							
Total Hardness as CaCO3							
Bicarbonate as HCO3							
Carbonate as CO3							
Hydroxide							
Chloride							
Sulfate							

JAN APR JUNE JULY OCT NOV DEC

Calcium							
Magnesium							
Potassium							
Sodium							
HALOCARBONS							
Bromodichloromethane	ND						
Bromoform	ND						
Bromomethane	ND						
Carbon Tetrachloride	ND						
Chloroethane	ND						
Chloroform	ND						
Chloromethane	ND						
Dibromochloromethane	ND						
1,2-Dibromoethane (EDB)	ND						
1,2-Dichlorobenzene	ND						
1,3-Dichlorobenzene	ND						
1,4-Dichlorobenzene	ND						
1,1-Dichloroethane	ND						
1,2-Dichloroethane (EDC)	ND						
1,1-Dichloroethene	ND						
cis-1,2-Dichloroethene	ND						
trans-1,2-Dichloroethene	ND						
1,2-Dichloropropane	ND						
cis-1,3-Dichloropropene	ND						
trans-1,3-Dichloropropene	ND						
Methylene Chloride	ND						
1,1,2,2-Tetrachloroethane	ND						
Tetrachlorethene	ND						
1,1,1-Trichloroethane	ND						
1,1,2-Trichloroethane	ND						
Trichloroethene	ND						
Trichlorofluoromethane	ND						
Vinyl Chloride	ND						
AROMATICS							
Benzene	ND						
Chlorobenzene	ND						
1,2-Dichlorobenzene	ND						
1,3-Dichlorobenzene	ND						
1,4-Dichlorobenzene	ND						
Ethylbenzene	ND						
Methyl-t-Butyl Ether	ND						
Toluene	ND						
Total Xylenes	ND						
GBR-52							
Lab pH							

JAN APR JUNE JULY OCT NOV DEC

Lab Conductivity @25 C							
Total Dissolved Solids @ 180 C							
Total Dissolved Solids (Calc)							
Total Alkalinity as CaCO3							
Total Hardness as CaCO3							
Bicarbonate as HCO3							
Carbonate as CO3							
Hydroxide							
Chloride							
Sulfate							
Calcium							
Magnesium							
Potassium							
Sodium							
HALOCARBONS							
Bromodichloromethane	ND						
Bromoform	ND						
Bromomethane	ND						
Carbon Tetrachloride	ND						
Chloroethane	ND						
Chloroform	ND						
Chloromethane	ND						
Dibromochloromethane	ND						
1,2-Dibromoethane (EDB)	ND						
1,2-Dichlorobenzene	ND						
1,3-Dichlorobenzene	ND						
1,4-Dichlorobenzene	ND						
1,1-Dichloroethane	ND						
1,2-Dichloroethane (EDC)	ND						
1,1-Dichloroethene	ND						
cis-1,2-Dichloroethene	ND						
trans-1,2-Dichloroethene	ND						
1,2-Dichloropropane	ND						
cis-1,3-Dichloropropene	ND						
trans-1,3-Dichloropropene	ND						
Methylene Chloride	ND						
1,1,2,2-Tetrachloroethane	ND						
Tetrachlorethene	ND						
1,1,1-Trichloroethane	ND						
1,1,2-Trichloroethane	ND						
Trichloroethene	ND						
Trichlorofluoromethane	ND						
Vinyl Chloride	ND						
AROMATICS							
Benzene	ND						
Chlorobenzene	ND						
1,2-Dichlorobenzene	ND						

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1,3-Dichlorobenzene	ND					
1,4-Dichlorobenzene	ND					
Ethylbenzene	ND					
Methyl-t-Butyl Ether	ND					
Toluene	ND					
Total Xylenes	ND					
SHS-3						
Lab pH	6.6					
Lab Conductivity @25 C	6500					
Total Dissolved Solids @ 180 C	4060					
Total Dissolved Solids (Calc)	---					
Total Alkalinity as CaCO3	207					
Total Hardness as CaCO3	1940					
Bicarbonate as HCO3	252					
Carbonate as CO3	ND					
Hydroxide	ND					
Chloride	337					
Sulfate	1860					
Calcium	633					
Magnesium	87					
Potassium	7.8					
Sodium	386					
HALOCARBONS						
Bromodichloromethane	ND			ND		
Bromoform	ND			ND		
Bromomethane	ND			ND		
Carbon Tetrachloride	ND			ND		
Chloroethane	ND			ND		
Chloroform	ND			ND		
Chloromethane	ND			ND		
Dibromochloromethane	ND			ND		
1,2-Dibromoethane (EDB)	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 (EDC)	ND			ND		
1,1-Dichloroethene	ND			ND		
cis-1,2-Dichloroethene	ND			ND		
trans-1,2-Dichloroethene	ND			ND		
1,2-Dichloropropane	ND			ND		
cis-1,3-Dichloropropene	ND			ND		
trans-1,3-Dichloropropene	ND			ND		
Methylene Chloride	ND			ND		
1,1,2,2-Tetrachloroethane	ND			ND		

JAN APR JUNE JULY OCT NOV DEC

Tetrachlorethene	ND			ND			
1,1,1-Trichloroethane	ND			ND			
1,1,2-Trichloroethane	ND			ND			
Trichloroethene	ND			ND			
Trichlorofluoromethane	ND			ND			
Vinyl Chloride	ND			ND			
AROMATICS							
Benzene	ND			ND			
Chlorobenzene	ND			ND			
1,2-Dichlorobenzene	ND			ND			
1,3-Dichlorobenzene	ND			ND			
1,4-Dichlorobenzene	ND			ND			
Ethylbenzene	ND			ND			
Methyl-t-Butyl Ether	ND			ND			
Toluene	ND			ND			
Total Xylenes	ND			ND			
SHS-4							
Lab pH	7.2						
Lab Conductivity @25 C	4590						
Total Dissolved Solids (Calc)	2720						
Total Alkalinity as CaCO3	203						
Total Hardness as CaCO3	1240						
Bicarbonate as HCO3	248						
Carbonate as CO3	ND						
Hydroxide	ND						
Chloride	81						
Sulfate	1500						
Calcium	438						
Magnesium	36						
Potassium	1.4						
Sodium	331						
HALOCARBONS							
Bromodichloromethane	ND						
Bromoform	ND						
Bromomethane	ND						
Carbon Tetrachloride	ND						
Chloroethane	ND						
Chloroform	ND						
Chloromethane	ND						
Dibromochloromethane	ND						
1,2-Dibromoethane (EDB)	ND						
1,2-Dichlorobenzene	ND						
1,3-Dichlorobenzene	ND						
1,4-Dichlorobenzene	ND						

	JAN	APR	JUNE	JULY	OCT	NOV	DEC
1,1-Dichloroethane	ND						
1,2-Dichloroethane (EDC)	ND						
1,1-Dichloroethene	ND						
cis-1,2-Dichloroethene	ND						
trans-1,2-Dichloroethene	ND						
1,2-Dichloropropane	ND						
cis-1,3-Dichloropropene	ND						
trans-1,3-Dichloropropene	ND						
Methylene Chloride	ND						
1,1,2,2-Tetrachloroethane	ND						
Tetrachlorethene	ND						
1,1,1-Trichloroethane	ND						
1,1,2-Trichloroethane	ND						
Trichloroethene	ND						
Trichlorofluoromethane	ND						
Vinyl Chloride	ND						
AROMATICS							
Benzene	ND						
Chlorobenzene	ND						
1,2-Dichlorobenzene	ND						
1,3-Dichlorobenzene	ND						
1,4-Dichlorobenzene	ND						
Ethylbenzene	ND						
Methyl-t-Butyl Ether	ND						
Toluene	ND						
Total Xylenes	ND						
SHS-6							
Lab pH	7.2						
Lab Conductivity @25 C	4110						
Total Dissolved Solids @ 180 C	2440						
Total Dissolved Solids (Calc)	---						
Total Alkalinity as CaCO3	212						
Total Hardness as CaCO3	1080						
Bicarbonate as HCO3	259						
Carbonate as CO3	ND						
Hydroxide	ND						
Chloride	35						
Sulfate	1410						
Calcium	385						
Magnesium	28.9						
Potassium	1.6						
Sodium	227						
HALOCARBONS							
Bromodichloromethane	ND						

	JAN	APR	JUNE	JULY	OCT	NOV	DEC
Bromoform	ND						
Bromomethane	ND						
Carbon Tetrachloride	ND						
Chloroethane	ND						
Chloroform	ND						
Chloromethane	ND						
Dibromochloromethane	ND						
1,2-Dibromoethane (EDB)	ND						
1,2-Dichlorobenzene	ND						
1,3-Dichlorobenzene	ND						
1,4-Dichlorobenzene	ND						
1,1-Dichloroethane	ND						
1,2-Dichloroethane (EDC)	ND						
1,1-Dichloroethene	ND						
cis-1,2-Dichloroethene	ND						
trans-1,2-Dichloroethene	ND						
1,2-Dichloropropane	ND						
cis-1,3-Dichloropropene	ND						
trans-1,3-Dichloropropene	ND						
Methylene Chloride	ND						
1,1,2,2-Tetrachloroethane	ND						
Tetrachlorethene	ND						
1,1,1-Trichloroethane	ND						
1,1,2-Trichloroethane	ND						
Trichloroethene	ND						
Trichlorofluoromethane	ND						
Vinyl Chloride	ND						
AROMATICS							
Benzene	ND						
Chlorobenzene	ND						
1,2-Dichlorobenzene	ND						
1,3-Dichlorobenzene	ND						
1,4-Dichlorobenzene	ND						
Ethylbenzene	ND						
Methyl-t-Butyl Ether	ND						
Toluene	ND						
Total Xylenes	ND						
SHS-10							
Lab pH	7.1						
Lab Conductivity @25 C	4250						
Total Dissolved Solids (Calc)	2570						
Total Alkalinity as CaCO3	310						
Total Hardness as CaCO3	1100						
Bicarbonate as HCO3	378						
Carbonate as CO3	ND						
Hydroxide	ND						

JAN APR JUNE JULY OCT NOV DEC

Chloride	20					
Sulfate	1320					
Calcium	345					
Magnesium	58.1					
Potassium	7.5					
Sodium	322					
HALOCARBONS						
Bromodichloromethane	ND	ND		ND		ND
Bromoform	ND	ND		ND		ND
Bromomethane	ND	ND		ND		ND
Carbon Tetrachloride	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-Dibromoethane (EDB)	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
1,1-Dichloroethane	ND	ND		ND		ND
1,2-Dichloroethane (EDC)	ND	ND		ND		ND
1,1-Dichloroethene	ND	ND		ND		ND
cis-1,2-Dichloroethene	ND	ND		ND		ND
trans-1,2-Dichloroethene	ND	ND		ND		ND
1,2-Dichloropropane	ND	ND		ND		ND
cis-1,3-Dichloropropene	ND	ND		ND		ND
trans-1,3-Dichloropropene	ND	ND		ND		ND
Methylene Chloride	ND	ND		ND		ND
1,1,2,2-Tetrachloroethane	ND	ND		ND		ND
Tetrachlorethene	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
AROMATICS						
Benzene	ND	ND		ND		ND
Chlorobenzene	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
Ethylbenzene	ND	ND		ND		ND
Methyl-t-Butyl Ether	ND	ND		ND		ND
Toluene	ND	ND		ND		ND
Total Xylenes	ND	0.7		ND		ND
SHS-12						

JAN APR JUNE JULY OCT NOV DEC

Lab pH	7.2					
Lab Conductivity @25 C	4250					
Total Dissolved Solids @ 180 C	2530					
Total Dissolved Solids (Calc)	---					
Total Alkalinity as CaCO3	347					
Total Hardness as CaCO3	992					
Bicarbonate as HCO3	423					
Carbonate as CO3	ND					
Hydroxide	ND					
Chloride	174					
Sulfate	1110					
Calcium	353					
Magnesium	26.9					
Potassium	2.2					
Sodium	398					
HALOCARBONS						
Bromodichloromethane	ND	ND		ND		ND
Bromoform	ND	ND		ND		ND
Bromomethane	ND	ND		ND		ND
Carbon Tetrachloride	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-Dibromoethane (EDB)	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
1,1-Dichloroethane	ND	ND		ND		ND
1,2-Dichloroethane (EDC)	ND	ND		ND		ND
1,1-Dichloroethene	ND	ND		ND		ND
cis-1,2-Dichloroethene	ND	ND		ND		ND
trans-1,2-Dichloroethene	ND	ND		ND		ND
1,2-Dichloropropane	ND	ND		ND		ND
cis-1,3-Dichloropropene	ND	ND		ND		ND
trans-1,3-Dichloropropene	ND	ND		ND		ND
Methylene Chloride	ND	ND		ND		ND
1,1,2,2-Tetrachloroethane	ND	ND		ND		ND
Tetrachlorethene	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
AROMATICS						
Benzene	ND	ND		ND		ND

JAN APR JUNE JULY OCT NOV DEC

Chlorobenzene	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	
Ethylbenzene	ND	ND		ND		ND	
Methyl-t-Butyl Ether	ND	2.9		ND		ND	
Toluene	ND	ND		ND		ND	
Total Xylenes	ND	ND		ND		ND	
SHS-13							
Lab pH	7.2						
Lab Conductivity @25 C	1620						
Total Dissolved Solids @ 180 C	1070						
Total Dissolved Solids (Calc)	---						
Total Alkalinity as CaCO3	583						
Total Hardness as CaCO3	278						
Bicarbonate as HCO3	711						
Carbonate as CO3	ND						
Hydroxide	ND						
Chloride	91						
Sulfate	86						
Calcium	92.2						
Magnesium	11.6						
Potassium	0.8						
Sodium	206						
HALOCARBONS							
Bromodichloromethane	ND	ND		ND		ND	
Bromoform	ND	ND		ND		ND	
Bromomethane	ND	ND		ND		ND	
Carbon Tetrachloride	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-Dibromoethane (EDB)	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	
1,1-Dichloroethane	ND	ND		ND		ND	
1,2-Dichloroethane (EDC)	ND	ND		ND		1.7	
1,1-Dichloroethene	ND	ND		ND		ND	
cis-1,2-Dichloroethene	ND	ND		ND		ND	
trans-1,2-Dichloroethene	ND	ND		ND		ND	
1,2-Dichloropropane	ND	ND		ND		ND	
cis-1,3-Dichloropropene	ND	ND		ND		ND	
trans-1,3-Dichloropropene	ND	ND		ND		ND	
Methylene Chloride	ND	ND		ND		ND	

JAN APR JUNE JULY OCT NOV DEC

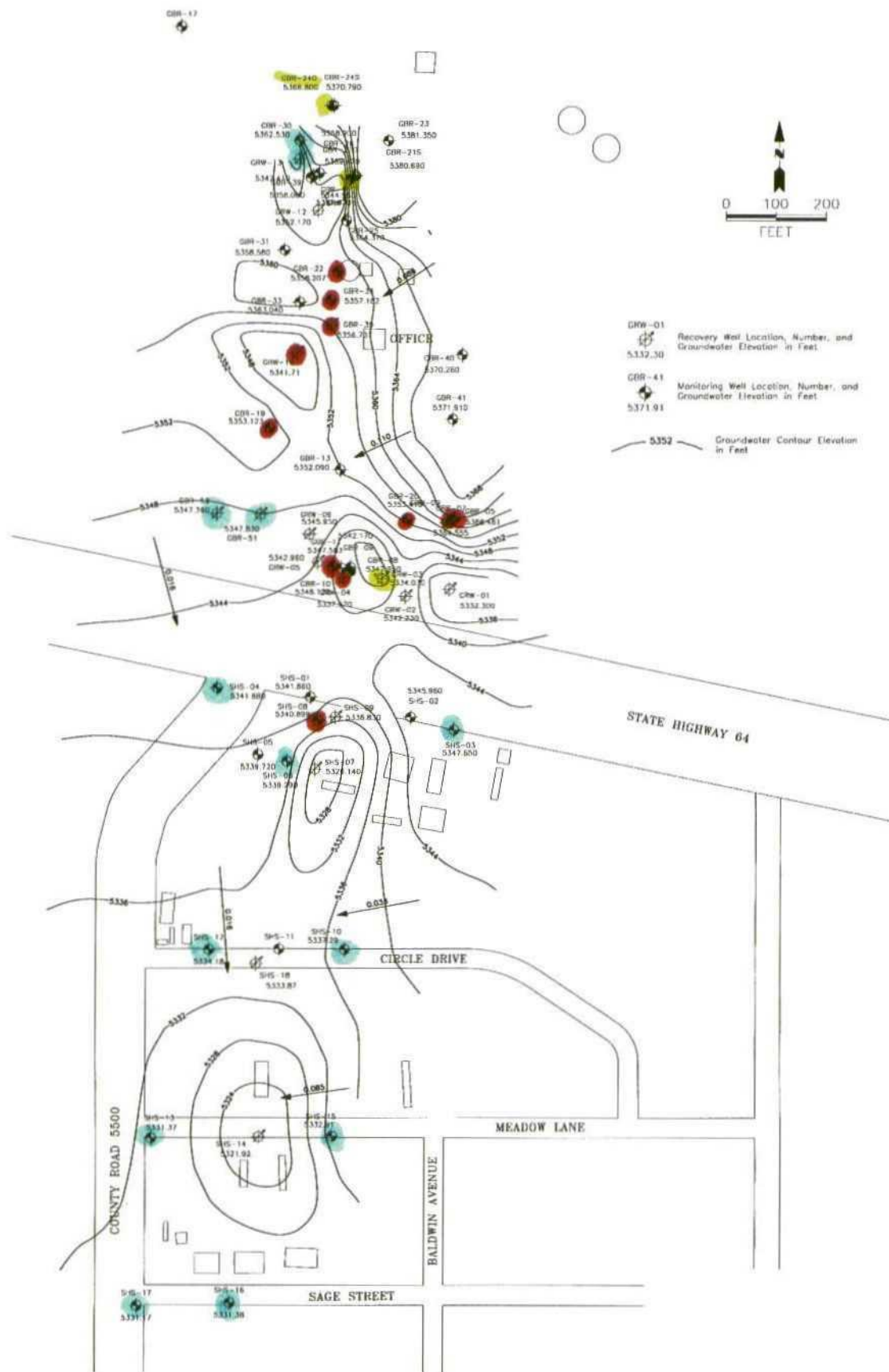
1,1,2,2-Tetrachloroethane	ND	ND		ND		ND	
Tetrachlorethene	ND	ND		ND		ND	
1,1,1-Trichloroethane	ND	ND		ND		ND	
1,1,2-Trichloroethane	ND	ND		ND		ND	
Trichloroethene	ND	ND		ND		ND	
Trichlorofluoromethane	ND	ND		ND		ND	
Vinyl Chloride	ND	ND		ND		ND	
AROMATICS							
Benzene	ND	ND		ND		ND	
Chlorobenzene	ND	ND		ND		ND	
1,2-Dichlorobenzene	ND	ND		ND		ND	
1,3-Dichlorobenzene	ND	ND		ND		ND	
1,4-Dichlorobenzene	ND	ND		ND		ND	
Ethylbenzene	ND	ND		ND		ND	
Methyl-t-Butyl Ether	ND	ND		ND		ND	
Toluene	ND	ND		ND		ND	
Total Xylenes	ND	ND		ND		ND	
SHS-15							
Lab pH	7.2						
Lab Conductivity @25 C	3690						
Total Dissolved Solids (Calc)	2180						
Total Alkalinity as CaCO3	295						
Total Hardness as CaCO3	1050						
Bicarbonate as HCO3	359						
Carbonate as CO3	ND						
Hydroxide	ND						
Chloride	141						
Sulfate	1070						
Calcium	359						
Magnesium	38						
Potassium	2.5						
Sodium	293						
HALOCARBONS							
Bromodichloromethane	ND			ND			
Bromoform	ND			ND			
Bromomethane	ND			ND			
Carbon Tetrachloride	ND			ND			
Chloroethane	ND			ND			
Chloroform	1			ND			
Chloromethane	ND			ND			
Dibromochloromethane	ND			ND			
1,2-Dibromoethane (EDB)	ND			ND			
1,2-Dichlorobenzene	ND			ND			
1,3-Dichlorobenzene	ND			ND			

JAN APR JUNE JULY OCT NOV DEC

1,4-Dichlorobenzene	ND			ND		
1,1-Dichloroethane	ND			ND		
1,2-Dichloroethane (EDC)	ND			ND		
1,1-Dichloroethene	ND			ND		
cis-1,2-Dichloroethene	ND			ND		
trans-1,2-Dichloroethene	ND			ND		
1,2-Dichloropropane	ND			ND		
cis-1,3-Dichloropropene	ND			ND		
trans-1,3-Dichloropropene	ND			ND		
Methylene Chloride	ND			ND		
1,1,2,2-Tetrachloroethane	ND			ND		
Tetrachlorethene	ND			ND		
1,1,1-Trichloroethane	ND			ND		
1,1,2-Trichloroethane	ND			ND		
Trichloroethene	ND			ND		
Trichlorofluoromethane	ND			ND		
Vinyl Chloride	ND			ND		
AROMATICS						
Benzene	ND			ND		
Chlorobenzene	ND			ND		
1,2-Dichlorobenzene	ND			ND		
1,3-Dichlorobenzene	ND			ND		
1,4-Dichlorobenzene	ND			ND		
Ethylbenzene	ND			ND		
Methyl-t-Butyl Ether	ND			ND		
Toluene	ND			ND		
Total Xylenes	ND			ND		
SHS-16						
Lab pH	7.3					
Lab Conductivity @25 C	4380					
Total Dissolved Solids (Calc)	2600					
Total Alkalinity as CaCO3	287					
Total Hardness as CaCO3	1280					
Bicarbonate as HCO3	350					
Carbonate as CO3	ND					
Hydroxide	ND					
Chloride	125					
Sulfate	1330					
Calcium	430					
Magnesium	51					
Potassium	4					
Sodium	276					
HALOCARBONS						
Bromodichloromethane	ND	ND		ND		ND

	JAN	APR	JUNE	JULY	OCT	NOV	DEC
Bromoform	ND	ND		ND		ND	
Bromomethane	ND	ND		ND		ND	
Carbon Tetrachloride	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-Dibromoethane (EDB)	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	
1,1-Dichloroethane	ND	ND		ND		ND	
1,2-Dichloroethane (EDC)	ND	ND		ND		ND	
1,1-Dichloroethene	ND	ND		ND		ND	
cis-1,2-Dichloroethene	ND	ND		ND		ND	
trans-1,2-Dichloroethene	ND	ND		ND		ND	
1,2-Dichloropropane	ND	ND		ND		ND	
cis-1,3-Dichloropropene	ND	ND		ND		ND	
trans-1,3-Dichloropropene	ND	ND		ND		ND	
Methylene Chloride	ND	ND		ND		ND	
1,1,2,2-Tetrachloroethane	ND	ND		ND		ND	
Tetrachlorethene	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	
AROMATICS							
Benzene	ND	ND		ND		ND	
Chlorobenzene	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	
Ethylbenzene	ND	ND		ND		ND	
Methyl-t-Butyl Ether	ND	ND		ND		ND	
Toluene	ND	ND		ND		ND	
Total Xylenes	ND	ND		ND		ND	
SHS-17							
Lab pH	7.2						
Lab Conductivity @25 C	5530						
Total Dissolved Solids (Calc)	3290						
Total Alkalinity as CaCO3	291						
Total Hardness as CaCO3	1350						
Bicarbonate as HCO3	354						
Carbonate as CO3	ND						
Hydroxide	ND						
Chloride	192						

	JAN	APR	JUNE	JULY	OCT	NOV	DEC
Sulfate	1570						
Calcium	446						
Magnesium	56.9						
Potassium	2.4						
Sodium	420						
HALOCARBONS							
Bromodichloromethane	ND	ND		ND		ND	
Bromoform	ND	ND		ND		ND	
Bromomethane	ND	ND		ND		ND	
Carbon Tetrachloride	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-Dibromoethane (EDB)	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	
1,1-Dichloroethane	ND	ND		ND		ND	
1,2-Dichloroethane (EDC)	ND	ND		ND		ND	
1,1-Dichloroethene	ND	ND		ND		ND	
cis-1,2-Dichloroethene	ND	ND		ND		ND	
trans-1,2-Dichloroethene	ND	ND		ND		ND	
1,2-Dichloropropane	ND	ND		ND		ND	
cis-1,3-Dichloropropene	ND	ND		ND		ND	
trans-1,3-Dichloropropene	ND	ND		ND		ND	
Methylene Chloride	ND	ND		ND		ND	
1,1,2,2-Tetrachloroethane	ND	ND		ND		ND	
Tetrachlorethene	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	
AROMATICS							
Benzene	ND	ND		ND		ND	
Chlorobenzene	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	
Ethylbenzene	ND	ND		ND		ND	
Methyl-t-Butyl Ether	ND	ND		ND		ND	
Toluene	ND	ND		ND		ND	
Total Xylenes	ND	ND		ND		ND	



**GIANT REFINING BLOOMFIELD REFINERY
QUARTERLY POTENTIOMETRIC SURFACE**

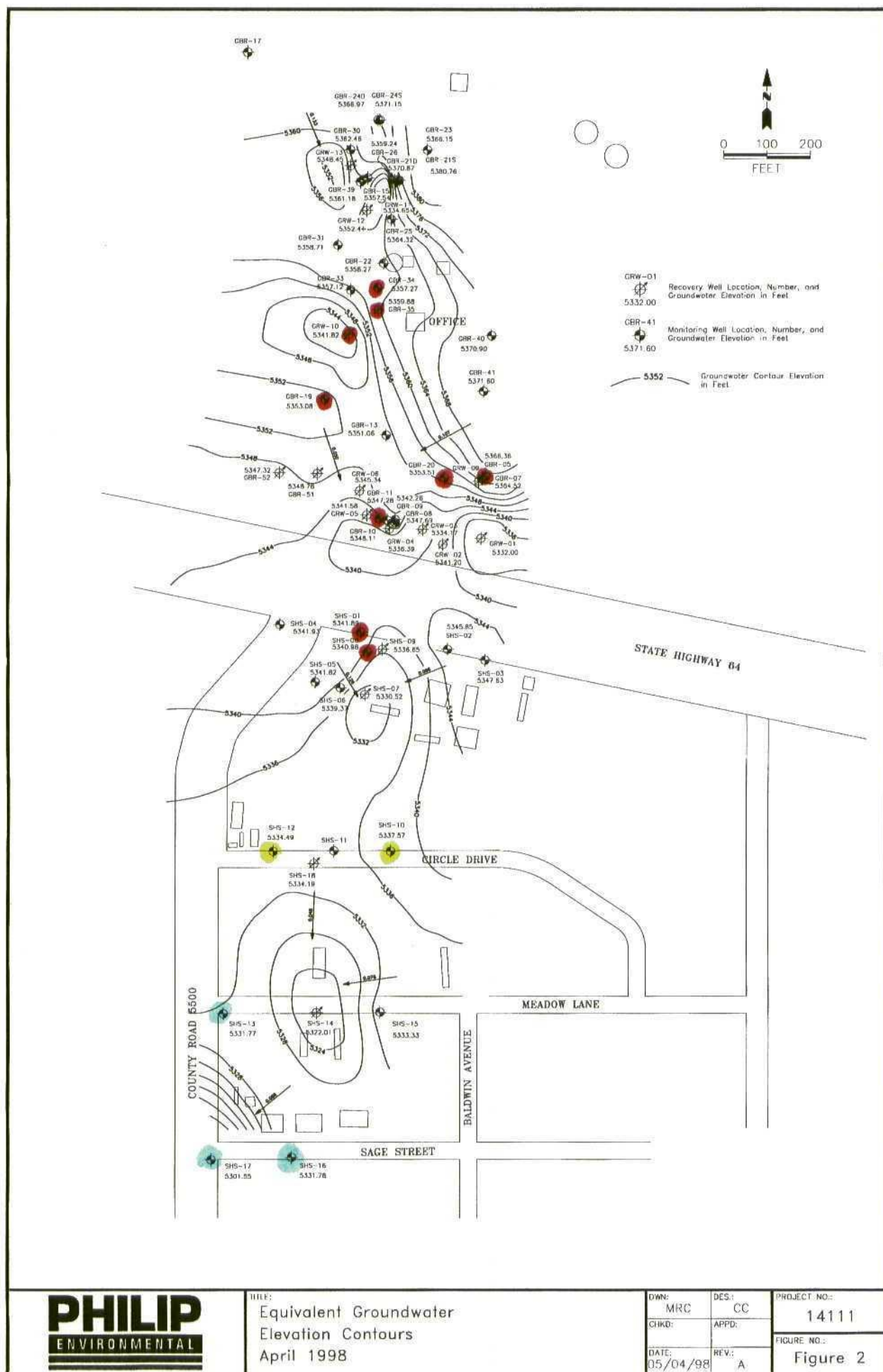
JANUARY, 1998

WELL #	WELLHEAD ELEVATION IN FEET	DEPTH TO WATER IN FEET	DEPTH TO PRODUCT IN FEET	PRODUCT THICKNESS IN FEET	ADJUSTED WSEL* IN FEET
GRW-1	5394.30	62.00	62.00	0.00	5332.30
GRW-2	5391.28	49.05	49.05	0.00	5342.23
GRW-3	5388.77	54.74	54.74	0.00	5334.03
GRW-4	5390.02	52.45	52.45	0.00	5337.57
GRW-5	5390.56	47.60	47.60	0.00	5342.96
GRW-6	5390.81	44.86	44.86	0.00	5345.95
GRW-10	5395.02	53.45	53.27	0.18	5341.71
GRW-11	5397.85	52.89	52.89	0.00	5344.96
GRW-12	5397.24	45.07	45.07	0.00	5352.17
GRW-13	5396.90	54.49	54.49	0.00	5342.41
GBR-5	5395.07	28.62	28.58	0.04	5366.48
GBR-6	5395.70	58.20	58.20	0.00	5337.50
GBR-7	5395.85	31.81	31.15	0.66	5364.57
GBR-8	5390.50	42.55	42.55	0.00	5347.95
GBR-9	5389.92	47.75	47.75	0.00	5342.17
GBR-10	5390.57	42.45	42.45	0.00	5348.12
GBR-11	5389.43	42.00	41.83	0.17	5347.57
GBR-13	5393.04	40.95	40.95	0.00	5352.09
GBR-15	5397.99	40.32	40.32	0.00	5357.67
GBR-18	5421.68	32.17	32.17	0.00	5389.51
GBR-19	5393.83	41.44	40.50	0.94	5353.14
GBR-20	5393.47	40.77	39.86	0.91	5353.43
GBR-21S	5400.65	19.96	19.96	0.00	5380.69
GBR-21D	5400.19	30.72	30.72	0.00	5369.47
GBR-22	5395.91	38.53	37.47	1.06	5358.23
GBR-23	5403.72	22.37	22.37	0.00	5378.43
GBR-24S	5396.08	25.29	25.29	0.00	5366.11
GBR-24D	5396.77	29.97	29.97	0.00	5366.80
GBR-25	5396.72	32.35	32.35	0.00	5364.37
GBR-26	5395.59	36.69	36.69	0.00	5358.90
GBR-30	5396.58	34.05	34.05	0.00	5362.53
GBR-31	5394.86	36.28	36.28	0.00	5358.58
GBR-33	5396.28	33.24	33.24	0.00	5363.04
GBR-34	5394.00	37.20	36.71	0.49	5357.19
GBR-35	5393.66	37.29	36.82	0.47	5356.75
GBR-39	5397.55	39.55	39.55	0.00	5358.00
GBR-40	5400.76	30.50	30.50	0.00	5370.26
GBR-41	5396.35	24.44	24.44	0.00	5371.91
GBR-51	5389.68	41.85	41.85	0.00	5347.83
GBR-52	5387.74	40.38	40.38	0.00	5347.36

GIANT REFINING BLOOMFIELD REFINERY
 QUARTERLY POTENTIOMETRIC SURFACE
 JANUARY, 1998
 Page 2

WELL #	WELLHEAD ELEVATION IN FEET	DEPTH TO WATER IN FEET	DEPTH TO PRODUCT IN FEET	PRODUCT THICKNESS IN FEET	ADJUSTED WSEL* IN FEET
SHS-1	5383.54	41.68	41.68	0.00	5341.86
SHS-2	5381.66	35.70	35.70	0.00	5345.96
SHS-3	5383.33	35.68	35.68	0.00	5347.65
SHS-4	5383.62	41.74	41.74	0.00	5341.88
SHS-5	5378.36	38.64	38.64	0.00	5339.72
SHS-6	5378.17	38.88	38.88	0.00	5339.29
SHS-7	5375.89	49.75	49.75	0.00	5326.14
SHS-8	5380.25	40.95	38.90	2.05	5340.94
SHS-9	5380.79	43.96	43.96	0.00	5336.83
SHS-10	5373.80	36.51	36.51	0.00	5337.29
SHS-12	5373.94	39.76	39.76	0.00	5334.18
SHS-13	5367.81	36.44	36.44	0.00	5331.37
SHS-14	5367.07	45.15	45.15	0.00	5321.92
SHS-15	5366.21	33.30	33.30	0.00	5332.91
SHS-16	5362.58	31.20	31.20	0.00	5331.38
SHS-17	5364.35	33.18	33.18	0.00	5331.17
SHS-18	5373.64	39.77	39.77	0.00	5333.87

* WSEL - WATER SURFACE ELEVATION ADJUSTED FOR PRODUCT DEPTH



**GIANT REFINING BLOOMFIELD REFINERY
QUARTERLY POTENTIOMETRIC SURFACE**

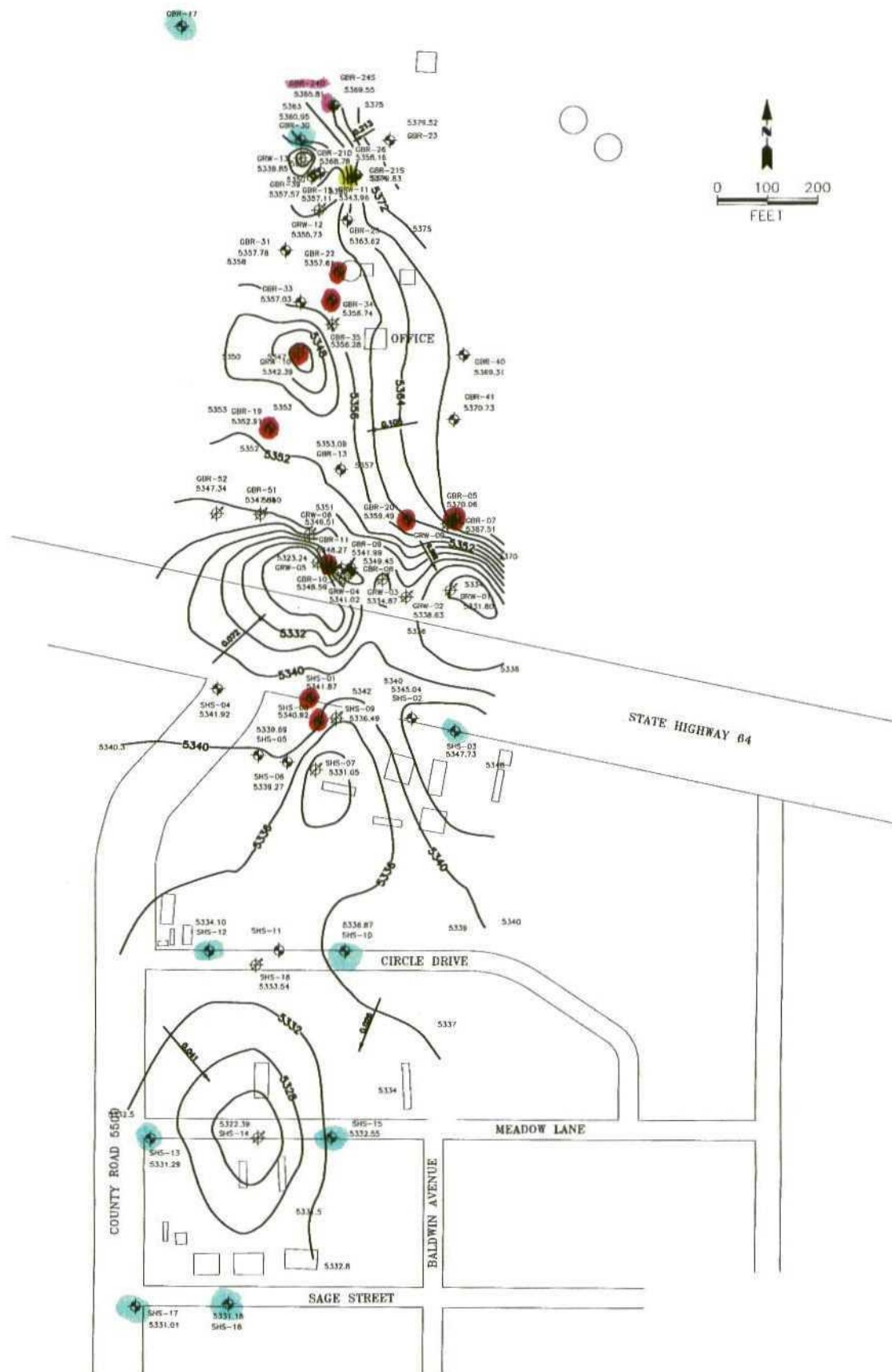
APRIL, 1998

WELL #	WELLHEAD ELEVATION IN FEET	DEPTH TO WATER IN FEET	DEPTH TO PRODUCT IN FEET	PRODUCT THICKNESS IN FEET	ADJUSTED WSEL* IN FEET
GRW-1	5394.30	62.30	62.30	0.00	5332.00
GRW-2	5391.28	50.08	50.08	0.00	5341.20
GRW-3	5388.77	54.60	54.60	0.00	5334.17
GRW-4	5390.02	53.63	53.63	0.00	5336.39
GRW-5	5390.56	48.98	48.98	0.00	5341.58
GRW-6	5390.81	45.47	45.47	0.00	5345.34
GRW-10	5395.02	53.20	52.00	1.20	5342.78
GRW-11	5397.85	63.20	63.20	0.00	5334.65
GRW-12	5397.24	44.80	44.80	0.00	5352.44
GRW-13	5396.90	48.45	48.45	0.00	5348.45
GBR-5	5395.07	28.74	28.70	0.04	5366.36
GBR-6	5395.70	60.45	60.45	0.00	5335.25
GBR-7	5395.85	31.80	31.20	0.60	5364.53
GBR-8	5390.50	42.81	42.81	0.00	5347.69
GBR-9	5389.92	47.66	47.66	0.00	5342.26
GBR-10	5390.57	42.46	42.46	0.00	5348.11
GBR-11	5389.43	42.35	42.10	0.25	5347.28
GBR-13	5393.04	41.98	41.98	0.00	5351.06
GBR-15	5397.99	40.45	40.45	0.00	5357.54
GBR-18	5421.68	31.84	31.84	0.00	5389.84
GBR-19	5393.83	41.48	40.54	0.94	5353.10
GBR-20	5393.47	40.55	39.80	0.75	5353.52
GBR-21S	5400.65	19.89	19.89	0.00	5380.76
GBR-21D	5400.19	29.32	29.32	0.00	5370.87
GBR-22	5395.91	37.64	37.64	0.00	5358.27
GBR-23	5403.72	37.57	37.57	0.00	5378.79
GBR-24S	5396.08	24.93	24.93	0.00	5366.28
GBR-24D	5396.77	29.80	29.80	0.00	5366.97
GBR-25	5396.72	32.40	32.40	0.00	5364.32
GBR-26	5395.59	36.35	36.35	0.00	5359.24
GBR-30	5396.58	34.12	34.12	0.00	5362.46
GBR-31	5394.86	36.15	36.15	0.00	5358.71
GBR-33	5396.28	39.16	39.16	0.00	5357.12
GBR-34	5394.00	37.15	36.61	0.54	5357.28
GBR-35	5393.66	33.80	33.78	0.02	5359.88
GBR-39	5397.55	36.37	36.37	0.00	5361.18
GBR-40	5400.76	29.86	29.86	0.00	5370.90
GBR-41	5396.35	24.75	24.75	0.00	5371.60
GBR-51	5389.68	41.90	41.90	0.00	5347.78
GBR-52	5387.74	40.42	40.42	0.00	5347.32

GIANT REFINING BLOOMFIELD REFINERY
 QUARTERLY POTENTIOMETRIC SURFACE
 APRIL, 1998
 Page 2

WELL #	WELLHEAD ELEVATION IN FEET	DEPTH TO WATER IN FEET	DEPTH TO PRODUCT IN FEET	PRODUCT THICKNESS IN FEET	ADJUSTED WSEL* IN FEET
SHS-1	5383.54	41.74	41.63	0.11	5341.89
SHS-2	5381.66	35.81	35.81	0.00	5345.85
SHS-3	5383.33	35.70	35.70	0.00	5347.63
SHS-4	5383.62	41.69	41.69	0.00	5341.93
SHS-5	5378.36	36.54	36.54	0.00	5341.82
SHS-6	5378.17	38.80	38.80	0.00	5339.37
SHS-7	5375.89	45.37	45.37	0.00	5330.52
SHS-8	5380.25	40.65	38.88	1.77	5341.02
SHS-9	5380.79	44.14	44.14	0.00	5336.65
SHS-10	5373.80	36.23	36.23	0.00	5337.57
SHS-12	5373.94	39.45	39.45	0.00	5334.49
SHS-13	5367.81	36.04	36.04	0.00	5331.77
SHS-14	5367.07	45.06	45.06	0.00	5322.01
SHS-15	5366.21	32.88	32.88	0.00	5333.33
SHS-16	5362.58	30.80	30.80	0.00	5331.78
SHS-17	5364.35	32.80	32.80	0.00	5331.55
SHS-18	5373.64	39.45	39.45	0.00	5334.19

* WSEL - WATER SURFACE ELEVATION ADJUSTED FOR PRODUCT DEPTH



TITLE:
Equivalent Groundwater
Elevation Contours
July 1998

DWN: MRC
CHKD:
DATE: 09/29/98

DES: MN
APPD:
REV: A

PROJECT NO.: 14111
FIGURE NO.: Figure 1

**GIANT REFINING BLOOMFIELD REFINERY
QUARTERLY POTENTIOMETRIC SURFACE**

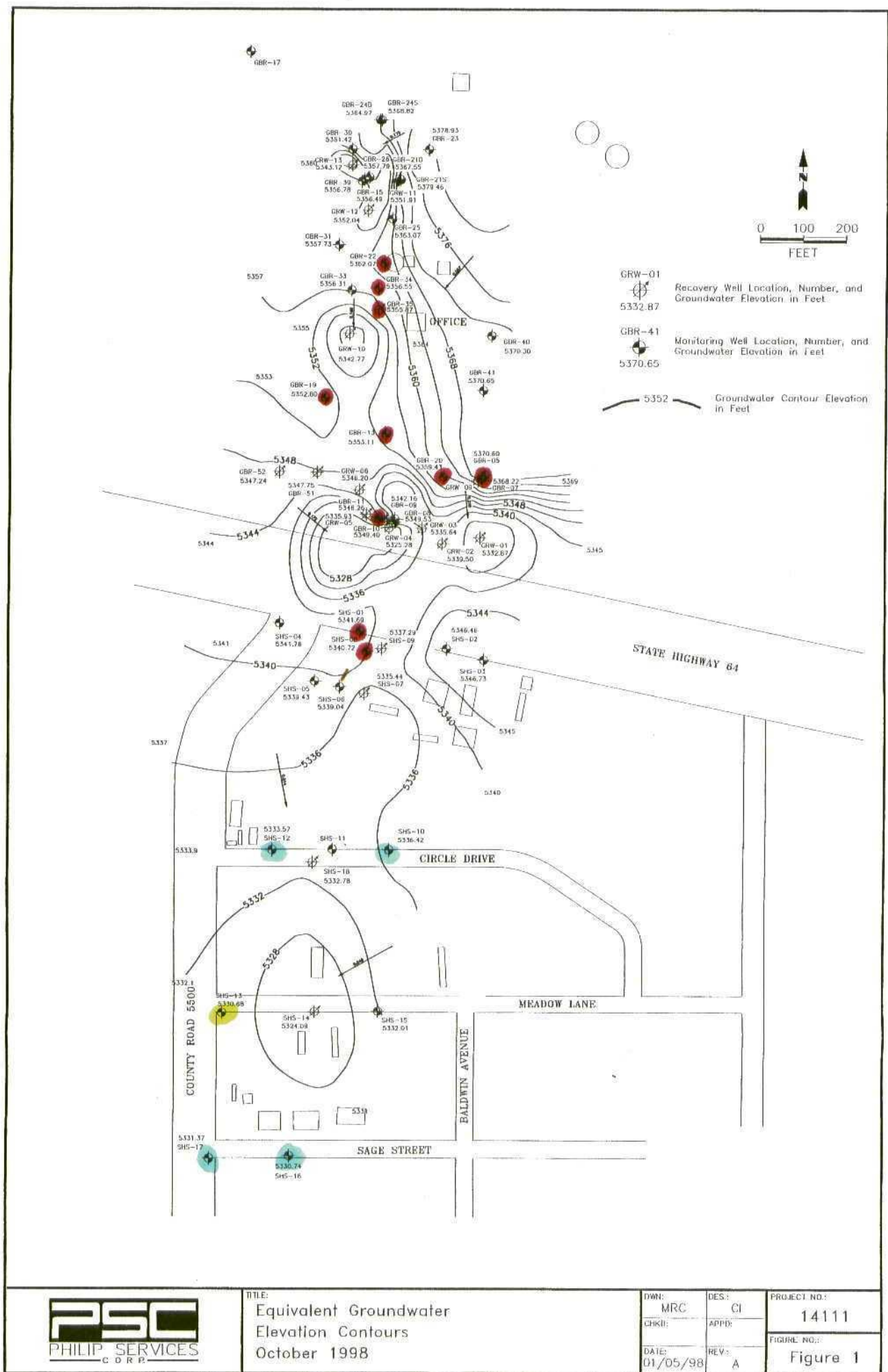
JULY, 1998

WELL #	WELLHEAD ELEVATION IN FEET	DEPTH TO WATER IN FEET	DEPTH TO PRODUCT IN FEET	PRODUCT THICKNESS IN FEET	ADJUSTED WSEL* IN FEET
GRW-1	5394.30	62.50	62.50	0.00	5331.80
GRW-2	5391.28	52.65	52.65	0.00	5338.63
GRW-3	5388.77	53.90	53.90	0.00	5334.87
GRW-4	5390.02	49.00	49.00	0.00	5341.02
GRW-5	5390.56	67.32	67.32	0.00	5323.24
GRW-6	5390.81	44.30	44.30	0.00	5346.51
GRW-10	5395.02	52.70	52.61	0.09	5342.39
GRW-11	5397.85	53.89	53.89	0.00	5343.96
GRW-12	5397.24	41.51	41.51	0.00	5355.73
GRW-13	5396.90	57.05	57.05	0.00	5339.85
GBR-5	5395.07	25.02	25.01	0.01	5370.06
GBR-6	5395.70	55.90	55.90	0.00	5339.80
GBR-7	5395.85	28.82	28.20	0.62	5367.53
GBR-8	5390.50	41.05	41.05	0.00	5349.45
GBR-9	5389.92	47.93	47.93	0.00	5341.99
GBR-10	5390.57	41.98	41.98	0.00	5348.59
GBR-11	5389.43	41.20	41.15	0.05	5348.27
GBR-13	5393.04	39.95	39.95	0.00	5353.09
GBR-15	5397.99	40.88	40.88	0.00	5357.11
GBR-18	5421.68	32.68	32.68	0.00	5389.00
GBR-19	5393.83	41.71	40.70	1.01	5352.93
GBR-20	5393.47	34.10	33.95	0.15	5359.49
GBR-21S	5400.65	20.82	20.82	0.00	5379.83
GBR-21D	5400.19	31.41	31.41	0.00	5368.78
GBR-22	5395.91	38.32	38.30	0.02	5357.61
GBR-23	5403.72	24.20	24.20	0.00	5377.19
GBR-24S	5396.08	26.53	26.53	0.00	5365.12
GBR-24D	5396.77	30.96	30.96	0.00	5365.81
GBR-25	5396.72	33.10	33.10	0.00	5363.62
GBR-26	5395.59	37.43	37.43	0.00	5358.16
GBR-30	5396.58	35.63	35.63	0.00	5360.95
GBR-31	5394.86	37.08	37.08	0.00	5357.78
GBR-33	5396.28	39.25	39.25	0.00	5357.03
GBR-34	5394.00	37.29	37.25	0.04	5356.74
GBR-35	5393.66	37.38	37.38	0.00	5356.28
GBR-39	5397.55	39.98	39.98	0.00	5357.57
GBR-40	5400.76	31.45	31.45	0.00	5369.31
GBR-41	5396.35	25.62	25.62	0.00	5370.73
GBR-51	5389.68	41.84	41.84	0.00	5347.84
GBR-52	5387.74	40.40	40.40	0.00	5347.34

GIANT REFINING BLOOMFIELD REFINERY
 QUARTERLY POTENTIOMETRIC SURFACE
 JULY, 1998
 Page 2

WELL #	WELLHEAD ELEVATION IN FEET	DEPTH TO WATER IN FEET	DEPTH TO PRODUCT IN FEET	PRODUCT THICKNESS IN FEET	ADJUSTED WSEL* IN FEET
SHS-1	5383.54	41.70	41.66	0.04	5341.87
SHS-2	5381.66	36.62	36.62	0.00	5345.04
SHS-3	5383.33	35.60	35.60	0.00	5347.73
SHS-4	5383.62	41.70	41.70	0.00	5341.92
SHS-5	5378.36	38.67	38.67	0.00	5339.69
SHS-6	5378.17	38.90	38.90	0.00	5339.27
SHS-7	5375.89	44.84	44.84	0.00	5331.05
SHS-8	5380.25	40.66	38.95	1.71	5340.96
SHS-9	5380.79	44.30	44.30	0.00	5336.49
SHS-10	5373.80	36.93	36.93	0.00	5336.87
SHS-12	5373.94	39.84	39.84	0.00	5334.10
SHS-13	5367.81	36.52	36.52	0.00	5331.29
SHS-14	5367.07	44.68	44.68	0.00	5322.39
SHS-15	5366.21	33.66	33.66	0.00	5332.55
SHS-16	5362.58	31.40	31.40	0.00	5331.18
SHS-17	5364.35	33.34	33.34	0.00	5331.01
SHS-18	5373.64	40.10	40.10	0.00	5333.54

* WSEL - WATER SURFACE ELEVATION ADJUSTED FOR PRODUCT DEPTH



**GIANT REFINING BLOOMFIELD REFINERY
QUARTERLY POTENTIOMETRIC SURFACE**

OCTOBER, 1998

WELL #	WELLHEAD ELEVATION IN FEET	DEPTH TO WATER IN FEET	DEPTH TO PRODUCT IN FEET	PRODUCT THICKNESS IN FEET	ADJUSTED WSEL* IN FEET
GRW-1	5394.30	61.43	61.43	0.00	5332.87
GRW-2	5391.28	51.78	51.78	0.00	5339.50
GRW-3	5388.77	53.13	53.13	0.00	5335.64
GRW-4	5390.02	64.74	64.74	0.00	5325.28
GRW-5	5390.56	54.63	54.63	0.00	5335.93
GRW-6	5390.81	44.61	44.61	0.00	5346.20
GRW-10	5395.02	52.25	52.25	0.00	5342.77
GRW-11	5397.85	45.94	45.94	0.00	5351.91
GRW-12	5397.24	45.20	45.20	0.00	5352.04
GRW-13	5396.90	53.78	53.78	0.00	5343.12
GBR-5	5395.07	24.49	24.47	0.02	5370.60
GBR-6	5395.70	57.62	57.62	0.00	5338.08
GBR-7	5395.85	28.15	27.49	0.66	5368.23
GBR-8	5390.50	40.97	40.97	0.00	5349.53
GBR-9	5389.92	47.76	47.76	0.00	5342.16
GBR-10	5390.57	41.17	41.17	0.00	5349.40
GBR-11	5389.43	41.20	41.16	0.04	5348.26
GBR-13	5393.04	39.94	39.93	0.01	5353.11
GBR-15	5397.99	41.50	41.50	0.00	5356.49
GBR-18	5421.68	33.22	33.22	0.00	5388.46
GBR-19	5393.83	41.85	40.80	1.05	5352.82
GBR-20	5393.47	34.20	34.00	0.20	5359.43
GBR-21S	5400.65	21.19	21.19	0.00	5379.46
GBR-21D	5400.19	32.64	32.64	0.00	5367.55
GBR-22	5395.91	33.86	33.84	0.02	5362.07
GBR-23	5403.72	24.79	24.79	0.00	5376.46
GBR-24S	5396.08	27.26	27.26	0.00	5364.28
GBR-24D	5396.77	31.80	31.80	0.00	5364.97
GBR-25	5396.72	33.65	33.65	0.00	5363.07
GBR-26	5395.59	37.80	37.80	0.00	5357.79
GBR-30	5396.58	35.16	35.16	0.00	5361.42
GBR-31	5394.86	37.13	37.13	0.00	5357.73
GBR-33	5396.28	39.97	39.97	0.00	5356.31
GBR-34	5394.00	37.50	37.44	0.06	5356.55
GBR-35	5393.66	38.45	37.60	0.85	5355.89
GBR-39	5397.55	40.77	40.77	0.00	5356.78
GBR-40	5400.76	30.97	30.97	0.00	5369.79
GBR-41	5396.35	25.70	25.70	0.00	5370.65
GBR-51	5389.68	41.93	41.93	0.00	5347.75
GBR-52	5387.74	40.50	40.50	0.00	5347.24

GIANT REFINING BLOOMFIELD REFINERY
 QUARTERLY POTENTIOMETRIC SURFACE
 OCTOBER, 1998
 Page 2

WELL #	WELLHEAD ELEVATION IN FEET	DEPTH TO WATER IN FEET	DEPTH TO PRODUCT IN FEET	PRODUCT THICKNESS IN FEET	ADJUSTED WSEL* IN FEET
SHS-1	5383.54	41.93	41.83	0.10	5341.69
SHS-2	5381.66	35.20	35.20	0.00	5346.46
SHS-3	5383.33	36.60	36.60	0.00	5346.73
SHS-4	5383.62	41.86	41.86	0.00	5341.76
SHS-5	5378.36	38.93	38.93	0.00	5339.43
SHS-6	5378.17	39.13	39.13	0.00	5339.04
SHS-7	5375.89	40.45	40.45	0.00	5335.44
SHS-8	5380.25	40.85	39.16	1.69	5340.75
SHS-9	5380.79	43.50	43.50	0.00	5337.29
SHS-10	5373.80	37.38	37.38	0.00	5336.42
SHS-12	5373.94	40.37	40.37	0.00	5333.57
SHS-13	5367.81	37.13	37.13	0.00	5330.68
SHS-14	5367.07	42.98	42.98	0.00	5324.09
SHS-15	5366.21	34.20	34.20	0.00	5332.01
SHS-16	5362.58	31.84	31.84	0.00	5330.74
SHS-17	5364.35	32.98	32.98	0.00	5331.37
SHS-18	5373.64	40.86	40.86	0.00	5332.78

* WSEL - WATER SURFACE ELEVATION ADJUSTED FOR PRODUCT DEPTH

**GIANT REFINING COMPANY
BLOOMFIELD REFINERY
VOLUME CHANGE**

1998

Tank Number	Beginning Volume	Ending Volume	Net Change
102	9,508	9,508	0
106	8,010	8,010	0
21	230,133	230,133	0
22	246,237	246,237	0
Total Net Volume Change			0

**GIANT REFINING COMPANY
BLOOMFIELD REFINERY
RECOVERY WELL
VOLUME TABULATION**

1998

Well	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total
GRW-1	27,356	41,890	52,520	63,840	185,606
GRW-2	22,748	45,740	95,130	21,450	185,068
GRW-3	46,760	66,950	74,740	93,770	282,220
GRW-4	32,474	38,350	45,290	50,510	166,624
GRW-5	101,180	139,300	159,350	208,040	607,870
GRW-6	66,780	79,480	50,200	43,080	239,540
GRW-9	15,110	31,800	27,730	48,860	123,500
GRW-10	621,050	637,720	684,310	664,330	2,607,410
GRW-11	82,870	115,130	34,160	52,000	284,160
GRW-12	15,600	14,220	7,590	10,510	47,920
GRW-13	16,400	15,860	16,390	17,840	66,490
SHS-7	49,132	52,560	49,077	79,851	230,620
SHS-9	9,213	10,289	8,523	8,930	36,955
SHS-14	410,710	453,801	406,152	338,172	1,608,835
SHS-18	640	5,527	708	713	7,588
TOTAL VOLUME PUMPED IN GALLONS					6,680,406

**GIANT REFINING COMPANY
BLOOMFIELD REFINERY
TOTAL VOLUME SUMMARY**

1998

Total Volume Of Water Recovered	6,680,406
Net Change In Storage Volume	<u>0</u>
Total Water Treated And Pumped To The Infiltration Gallery	<u><u>6,680,406</u></u>