

GW - 040

**2005 MONITORING
REPORTS**

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GW-040

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ANNUAL DATA REPORT
GIANT BLOOMFIELD REFINERY

March 2006

Prepared By:

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



Lodestar Services, Incorporated

April 28, 2006

Mr. Wayne Price
New Mexico Oil Conservation Division
Environmental Bureau
1220 S. St. Francis Drive
Santa Fe, NM 87504

Dear Mr. Wayne Price:

On behalf of Giant Industries Arizona, Inc., Lodestar Services, Incorporated is pleased to present to you *Annual Data Report, Giant Bloomfield Refinery, March, 2006*.

Should you have any questions or require additional information please do not hesitate to call Bill Robertson of Giant at (505) 632-4077.

Sincerely,
LODESTAR SERVICES, INCORPORATED

Martin Nee

Enclosure

cc w/enc.: Luke Wethers-Giant
David Kirby-Giant
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INTRODUCTION AND SUMMARY ANNUAL REPORT 2005

1.0 INTRODUCTION AND METHODOLOGY

Introduction

The following annual report describes work completed at Giant Industries, Inc.'s (Giant's) former refinery in Bloomfield, New Mexico since the previous annual report submitted in March 2005. The report contains data collected during that time including:

- Analytical data from ground water sampling;
- Ground water elevations;
- Tank volume data;
- Product levels from monitoring wells.

The refinery is located in the NW ¼ of Section 27 and the SW ¼ of Section 22, Township 29 N, Range 12W in San Juan County, New Mexico. It is approximately 5 miles west of the town of Bloomfield, New Mexico. The facility consists of the Giant Bloomfield Refinery and associated remedial equipment both within and south of the refinery boundary. The refinery operated from 1974 to 1982 and is presently inactive.

A remedial system was installed in stages beginning in 1988 and has gradually been simplified over time. The remediation was designed to treat ground water affected by various releases during operation of the former refinery and periodic spills at the truck unloading facility. It consists of a series of ground water monitoring wells, ground water recovery wells, water treatment facilities and treated water infiltration trenches (Figure 1). These facilities are located both north and south of Highway 64. The system processed approximately 4,655,006 gallons of water in 2005.

Methodology

Figure 2 is a simplified diagram representation of ground water recovery, treatment and disposal at the site. Recovery wells are utilized to recover free-floating product and impacted ground water from the aquifer and to create a hydraulic barrier to prevent migration of impacted water beyond the well. Impacted ground water is pumped from the aquifer through the recovery wells, which are located strategically throughout the site. The water is collected in Storage Tank 102 and subsequently treated by carbon adsorption. The water is discharged into the aquifer through an infiltration trench. Influent and effluent water quality is monitored quarterly to verify compliance with New Mexico Water Quality Control Commission (NMWQCC) standards. All water was

treated by the carbon filter unit exclusively. All treated water was discharged into the southern infiltration field. Additionally, oil absorbent socks are installed in all monitoring wells showing free-phase hydrocarbons. These socks are checked quarterly and replaced as necessary.

Monitoring consists of regular inspections and maintenance of facilities, as well as consistent ground water evaluations. Numerous monitor wells are located within and south of the refinery (Figure 1). Water samples are collected and analyzed on a regular basis. Lab results are presented in Section 2. In addition to sampling, water and product levels in each well are determined quarterly. Water levels are included in Section 3. Product levels are also shown. Section 5 contains sampling frequency and analytical requirements for applicable wells.

Modifications to the Treatment System

Giant Industries requested approval from the New Mexico Oil Conservation Division (NMOCD) to plug and abandon nine ground water monitoring wells and one ground water recovery well located down gradient of the refinery. The NMOCD did not approve of this proposal. Subsequently, Giant submitted a revised sample schedule in Discharge Plan GW040 in 2005 to remove the wells listed below from the sampling matrix and discontinue pumping well SHS-14 based on the number of clean reporting quarters, as noted.

Type of Well	Identification	Years of Monitoring Beneath Standards
Monitoring	SHS-3	7
Monitoring	SHS-4	8
Monitoring	SHS-6	8
Monitoring	SHS-10	8
Monitoring	SHS-12	8
Monitoring	SHS-13	8
Recovery	SHS-14	3
Monitoring	SHS-15	8
Monitoring	SHS-16	8
Monitoring	SHS-17	7

Surrounding Construction

Construction of county road 350 adjacent to the refinery was ongoing during 2005. Construction resulted in removal of the tops of well casings for monitoring wells GBR-19, GBR-31 and GBR-33. New casing elevations for GBR-19 and GBR-31 have been applied to the ground water elevation data. The amount of casing removed from GBR-33 was not recorded; therefore, ground water levels from the well were not used to calculate ground water elevation at the site.

2.0 ANNUAL ANALYTICAL RESULTS

Section 2 contains a summary of the 2005 analytical results. Raw data, as received from the laboratory, is available on request as a supplement to the annual report.

The following pages show the annual analytical data for the Giant Refining Remediation Project. The data are 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
Laboratory Conductivity	umhos/cm

The remainder of the data is measured in ug/l. Monitoring well GBR-31 inaccessible during January 2005 due to the construction of County Road 350 and was not sampled.

TABLE 2.1
GIANT INDUSTRIES, INC.
ONSITE REMEDIATION PROJECT
2005 ANNUAL ANALYTICAL DATA SUMMARY

	JAN	APR	JUL	OCT	DEC
<u>SYSTEM EFFLUENT</u>					
Lab pH	6.7	7.0	6.8	7.0	
Lab Conductivity@25C	3000	2800	2900	3240	
Total Dissolved Solids (Calc)	2500	2500	2240	2400	
Total Alkalinity as CaCO3	330	360	338	273	
Total Hardness as CaCO3	970	880	868	1050	
Bicarbonate as HCO3	330	360	336	273	
Carbonate as CO3	1.0	nd	2.12	1.0	
Hydroxide	nc	nd	nd	nd	
Chloride	81	81	108	80.1	
Sulfate	1300	1200	709	1520	
Calcium	340	310	301	318	
Magnesium	29	28	28.4	27.4	
Potassium	3.8	3.6	7.6	6.34	
Sodium	410	420	405	410	
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-Dibromomethane (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	
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	
Tetrachloroethane	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	

TABLE 2.1
GIANT INDUSTRIES, INC.
ONSITE REMEDIATION PROJECT
2005 ANNUAL ANALYTICAL DATA SUMMARY

	JAN	APR	JUL	OCT	DEC
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	
2-Methylnaphthalene	nd			nd	
Benzo(a)pyrene	nd			nd	
Napthalene	nd			nd	
METALS (mg/l)					
Antimony	nd				
Arsenic	nd				
Beryllium	nd				
Cadmium	nd				
Chromium	nd				
Copper	0.022				
Lead	nd				
Nickel	0.024				
Selenium	nd				
Silver	nd				
Thallium	nd				
Zinc	nd				
Mercury	nd				
<u>SYSTEM INFLUENT</u>					
Lab pH	6.6	6.9	6.7	6.9	
Lab Conductivity@25C	3000	2700	2760	3490	
Total Dissolved Solids (Calc)	2300	2700	2260	2470	
Total Alkalinity as CaCO3	390	350	365	241	
Total Hardness as CaCO3	920	880	778	1200	
Bicarbonate as HCO3	390	350	365	241	
Carbonate as CO3	1.0	1.0	1.0	1.0	
Hydroxide	nd	nd	nd	1.0	
Chloride	84	81	188	78.7	
Sulfate	1300	1200	1270	1340	
Calcium	320	310	270	341	
Magnesium	29	28	25.4	28.7	
Potassium	3.8	3.7	6.72	8.9	

TABLE 2.1
GIANT INDUSTRIES, INC.
ONSITE REMEDIATION PROJECT
2005 ANNUAL ANALYTICAL DATA SUMMARY

	JAN	APR	JUL	OCT	DEC
Sodium	420	420	359	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-Dibromomethane (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	
trans-1,2-Dichloroethene	nd	nd	nd	nd	
1,2-Dichloropropane	nd	nd	nd	nd	
cis-1,2-Dichloropropene	nd	nd	nd	nd	
trans-1,2-Dichloropropene	nd	nd	nd	nd	
Methylene Chloride	nd	nd	nd	nd	
1,1,2,2-Tetrachloroethane	nd	nd	nd	nd	
Tetrachloroethane	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	
GRW-3					
Lab pH	6.8				
Lab Conductivity@25C	4100				
Total Dissolved Solids (Calc)	3300				

TABLE 2.1
GIANT INDUSTRIES, INC.
ONSITE REMEDIATION PROJECT
2005 ANNUAL ANALYTICAL DATA SUMMARY

	JAN	APR	JUL	OCT	DEC
Total Alkalinity as CaCO ₃	250				
Total Hardness as CaCO ₃	1100				
Bicarbonate as HCO ₃	250				
Carbonate as CO ₃	nd				
Hydroxide	nd				
Chloride	36				
Sulfate	2000				
Calcium	390				
Magnesium	20				
Potassium	6.8				
Sodium	620				
HALOCARBONS					
Bromodichloromethane	nd				
Bromoform	nd				
Bromomethane	nd				
Carbon Tetrachloride	nd				
Chloroethane	nd				
Chloroform	nd				
Chloromethane	nd				
Dibromochloromethane	nd				
1,2-Dibromomethane (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				
trans-1,2-Dichloroethene	nd				
1,2-Dichloropropane	nd				
cis-1,2-Dichloropropene	nd				
trans-1,2-Dichloropropene	nd				
Methylene Chloride	nd				
1,1,2,2-Tetrachloroethane	nd				
Tetrachloroethane	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				

TABLE 2.1
GIANT INDUSTRIES, INC.
ONSITE REMEDIATION PROJECT
2005 ANNUAL ANALYTICAL DATA SUMMARY

	JAN	APR	JUL	OCT	DEC
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				
Napthalene	nd				
GRW-6					
Lab pH	6.8				
Lab Conductivity@25C	2400				
Total Dissolved Solids (Calc)	1600				
Total Alkalinity as CaCO3	720				
Total Hardness as CaCO3	440				
Bicarbonate as HCO3	720				
Carbonate as CO3	nd				
Hydroxide	nd				
Chloride	96				
Sulfate	440				
Calcium	140				
Magnesium	22				
Potassium	1.8				
Sodium	420				
HALOCARBONS					
Bromodichloromethane	nd				
Bromoform	nd				
Bromomethane	nd				
Carbon Tetrachloride	nd				
Chloroethane	nd				
Chloroform	nd				
Chloromethane	nd				
Dibromochloromethane	nd				
1,2-Dibromomethane (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				
trans-1,2-Dichloroethene	nd				
1,2-Dichloropropane	nd				

TABLE 2.1
GIANT INDUSTRIES, INC.
ONSITE REMEDIATION PROJECT
2005 ANNUAL ANALYTICAL DATA SUMMARY

	JAN	APR	JUL	OCT	DEC
cis-1,-Dichloropropene	nd				
trans-1,2-Dichloropropene	nd				
Methylene Chloride	nd				
1,1,2,2-Tetrachloroethane	nd				
Tetrachloroethane	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-Methylnapthalene	nd				
2-Methylnapthalene	nd				
Benzo(a)pyrene	nd				
Napthalene	nd				
<u>GBR-17</u>					
Lab pH					7.4
Lab Conductivity@25C					2900
Total Dissolved Solids (Calc)					2200
Total Alkalinity as CaCO3					210
Total Hardness as CaCO3					970
Bicarbonate as HCO3					210
Carbonate as CO3					nd
Hydroxide					nd
Chloride					48
Sulfate					1000
Calcium					340
Magnesium					30
Potassium					4.4
Sodium					300
HALOCARBONS					
Bromodichloromethane					nd

TABLE 2.1
GIANT INDUSTRIES, INC.
ONSITE REMEDIATION PROJECT
2005 ANNUAL ANALYTICAL DATA SUMMARY

	JAN	APR	JUL	OCT	DEC
Bromoform					nd
Bromomethane					nd
Carbon Tetrachloride					nd
Chloroethane					nd
Chloroform					nd
Chloromethane					nd
Dibromochloromethane					nd
1,2-Dibromomethane (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
trans-1,2-Dichloroethene					nd
1,2-Dichloropropane					nd
cis-1,2-Dichloropropene					nd
trans-1,2-Dichloropropene					nd
Methylene Chloride					nd
1,1,2,2-Tetrachloroethane					nd
Tetrachloroethane					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
<u>GBR-24D</u>					
Lab pH	7.0				
Lab Conductivity@25C	4300				
Total Dissolved Solids (Calc)	3400				
Total Alkalinity as CaCO3	260				
Total Hardness as CaCO3	1500				
Bicarbonate as HCO3	260				
Carbonate as CO3	1				

TABLE 2.1
GIANT INDUSTRIES, INC.
ONSITE REMEDIATION PROJECT
2005 ANNUAL ANALYTICAL DATA SUMMARY

	JAN	APR	JUL	OCT	DEC
Hydroxide	nd				
Chloride	310				
Sulfate	1900				
Calcium	520				
Magnesium	47				
Potassium	9.2				
Sodium	560				
HALOCARBONS					
Bromodichloromethane	nd				
Bromoform	nd				
Bromomethane	nd				
Carbon Tetrachloride	nd				
Chloroethane	nd				
Chloroform	nd				
Chloromethane	nd				
Dibromochloromethane	nd				
1,2-Dibromomethane (EDB)	nd				
1,2-Dichlorobenzene	0.8				
1,3-Dichlorobenzene	nd				
1,4-Dichlorobenzene	nd				
1,1-Dichloroethane	0.5				
1,2-Dichloroethane (EDC)	18				
1,1-Dichloroethene	nd				
trans-1,2-Dichloroethene	nd				
1,2-Dichloropropane	nd				
cis-1,2-Dichloropropene	nd				
trans-1,2-Dichloropropene	nd				
Methylene Chloride	nd				
1,1,2,2-Tetrachloroethane	nd				
Tetrachloroethane	nd				
1,1,1-Trichloroethane	nd				
1,1,2-Trichloroethane	nd				
Trichloroethene	nd				
Trichlorofluoromethane	nd				
Vinyl Chloride	nd				
AROMATICS					
Benzene	0.6				
Chlorobenzene	nd				
1,2-Dichlorobenzene	nd				
1,3-Dichlorobenzene	nd				
1,4-Dichlorobenzene	nd				
Ethylbenzene	0.9				
Methyl-t-Butyl Ether	nd				
Toluene	nd				

TABLE 2.1
GIANT INDUSTRIES, INC.
ONSITE REMEDIATION PROJECT
2005 ANNUAL ANALYTICAL DATA SUMMARY

	JAN	APR	JUL	OCT	DEC
Total Xylenes	nd				
PAH					
1-Methylnaphthalene	5.4				
2-Methylnaphthalene	nd				
Benzo(a)pyrene	nd				
Napthalene	nd				
<u>GBR-30</u>					
Lab pH	7.3				
Lab Conductivity@25C	4600				
Total Dissolved Solids (Calc)	3500				
Total Alkalinity as CaCO3	220				
Total Hardness as CaCO3	1400				
Bicarbonate as HCO3	220				
Carbonate as CO3	<1				
Hydroxide	<1				
Chloride	35				
Sulfate	1800				
Calcium	500				
Magnesium	47				
Potassium	6.8				
Sodium	610				
HALOCARBONS					
Bromodichloromethane	nd				
Bromoform	nd				
Bromomethane	nd				
Carbon Tetrachloride	nd				
Chloroethane	nd				
Chloroform	nd				
Chloromethane	nd				
Dibromochloromethane	nd				
1,2-Dibromomethane (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				
trans-1,2-Dichloroethene	nd				
1,2-Dichloropropane	nd				
cis-1,2-Dichloropropene	nd				
trans-1,2-Dichloropropene	nd				
Methylene Chloride	nd				
1,1,2,2-Tetrachloroethane	nd				

TABLE 2.1
GIANT INDUSTRIES, INC.
ONSITE REMEDIATION PROJECT
2005 ANNUAL ANALYTICAL DATA SUMMARY

	JAN	APR	JUL	OCT	DEC
Tetrachloroethane	nd				
1,1,1-Trichloroethane	nd				
1,1,2-Trichloroethane	nd				
Trichloroethene	nd				
Trichlorofluoromethane	0.8				
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-Methylnapthalene	nd				
2-Methylnapthalene	nd				
Benzo(a)pyrene	nd				
Napthalene	nd				
<u>GBR-31</u>					
Lab pH					
Lab Conductivity@25C					
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					
Bromoform					
Bromomethane					
Carbon Tetrachloride					
Chloroethane					

TABLE 2.1
GIANT INDUSTRIES, INC.
ONSITE REMEDIATION PROJECT
2005 ANNUAL ANALYTICAL DATA SUMMARY

	JAN	APR	JUL	OCT	DEC
Chloroform					
Chloromethane					
Dibromochloromethane					
1,2-Dibromomethane (EDB)					
1,2-Dichlorobenzene					
1,3-Dichlorobenzene					
1,4-Dichlorobenzene					
1,1-Dichloroethane					
1,2-Dichloroethane (EDC)					
1,1-Dichloroethene					
trans-1,2-Dichloroethene					
1,2-Dichloropropane					
cis-1,2-Dichloropropene					
trans-1,2-Dichloropropene					
Methylene Chloride					
1,1,2,2-Tetrachloroethane					
Tetrachloroethane					
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					
PAH					
1-Methylnaphthalene					
2-Methylnaphthalene					
Benzo(a)pyrene					
Napthalene					
GBR-32					
Lab pH					7.3
Lab Conductivity@25C					7300
Total Dissolved Solids (Calc)					4400
Total Alkalinity as CaCO3					240
Total Hardness as CaCO3					1600

TABLE 2.1
GIANT INDUSTRIES, INC.
ONSITE REMEDIATION PROJECT
2005 ANNUAL ANALYTICAL DATA SUMMARY

	JAN	APR	JUL	OCT	DEC
Bicarbonate as HCO ₃					240
Carbonate as CO ₃					nd
Hydroxide					nd
Chloride					520
Sulfate					1700
Calcium					550
Magnesium					57
Potassium					9.0
Sodium					800
HALOCARBONS					
Bromodichloromethane					nd
Bromoform					nd
Bromomethane					nd
Carbon Tetrachloride					nd
Chloroethane					nd
Chloroform					nd
Chloromethane					nd
Dibromochloromethane					nd
1,2-Dibromomethane (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
trans-1,2-Dichloroethene					nd
1,2-Dichloropropane					nd
cis-1,2-Dichloropropene					nd
trans-1,2-Dichloropropene					nd
Methylene Chloride					nd
1,1,2,2-Tetrachloroethane					nd
Tetrachloroethane					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

TABLE 2.1
GIANT INDUSTRIES, INC.
ONSITE REMEDIATION PROJECT
2005 ANNUAL ANALYTICAL DATA SUMMARY

	JAN	APR	JUL	OCT	DEC
Methyl-t-Butyl Ether					nd
Toluene					nd
Total Xylenes					nd
<u>GBR-48</u>					
Lab pH					7.2
Lab Conductivity@25C					5700
Total Dissolved Solids (Calc)					3400
Total Alkalinity as CaCO3					230
Total Hardness as CaCO3					1200
Bicarbonate as HCO3					230
Carbonate as CO3					nd
Hydroxide					nd
Chloride					420
Sulfate					1300
Calcium					390
Magnesium					44
Potassium					10
Sodium					660
HALOCARBONS					
Bromodichloromethane					nd
Bromoform					nd
Bromomethane					nd
Carbon Tetrachloride					nd
Chloroethane					nd
Chloroform					nd
Chloromethane					nd
Dibromochloromethane					nd
1,2-Dibromomethane (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
trans-1,2-Dichloroethene					nd
1,2-Dichloropropane					nd
cis-1,2-Dichloropropene					nd
trans-1,2-Dichloropropene					nd
Methylene Chloride					nd
1,1,2,2-Tetrachloroethane					nd
Tetrachloroethane	+				2.3
1,1,1-Trichloroethane					nd
1,1,2-Trichloroethane					nd
Trichloroethene					0.9

TABLE 2.1
GIANT INDUSTRIES, INC.
ONSITE REMEDIATION PROJECT
2005 ANNUAL ANALYTICAL DATA SUMMARY

	JAN	APR	JUL	OCT	DEC
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					6.9
Lab Conductivity@25C					7900
Total Dissolved Solids (Calc)					4900
Total Alkalinity as CaCO3					290
Total Hardness as CaCO3					1900
Bicarbonate as HCO3					290
Carbonate as CO3					nd
Hydroxide					nd
Chloride					530
Sulfate					1900
Calcium					670
Magnesium					61
Potassium					<20
Sodium					850
HALOCARBONS					
Bromodichloromethane					nd
Bromoform					nd
Bromomethane					nd
Carbon Tetrachloride					nd
Chloroethane					nd
Chloroform					nd
Chloromethane					nd
Dibromochloromethane					nd
1,2-Dibromomethane (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

TABLE 2.1
GIANT INDUSTRIES, INC.
ONSITE REMEDIATION PROJECT
2005 ANNUAL ANALYTICAL DATA SUMMARY

	JAN	APR	JUL	OCT	DEC
trans-1,2-Dichloroethene					nd
1,2-Dichloropropane					nd
cis-1,2-Dichloropropene					nd
trans-1,2-Dichloropropene					nd
Methylene Chloride					nd
1,1,2,2-Tetrachloroethane					nd
Tetrachloroethane					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
<u>GBR-50</u>					
Lab pH					7.3
Lab Conductivity@25C					3800
Total Dissolved Solids (Calc)					2700
Total Alkalinity as CaCO3					210
Total Hardness as CaCO3					1100
Bicarbonate as HCO3					210
Carbonate as CO3					nd
Hydroxide					nd
Chloride					51
Sulfate					1300
Calcium					400
Magnesium					35
Potassium					10
Sodium					420
HALOCARBONS					nd
Bromodichloromethane					nd
Bromoform					nd
Bromomethane					nd
Carbon Tetrachloride					nd
Chloroethane					nd

TABLE 2.1
GIANT INDUSTRIES, INC.
ONSITE REMEDIATION PROJECT
2005 ANNUAL ANALYTICAL DATA SUMMARY

	JAN	APR	JUL	OCT	DEC
Chloroform					nd
Chloromethane					nd
Dibromochloromethane					nd
1,2-Dibromomethane (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
trans-1,2-Dichloroethene					nd
1,2-Dichloropropane					nd
cis-1,2-Dichloropropene					nd
trans-1,2-Dichloropropene					nd
Methylene Chloride					nd
1,1,2,2-Tetrachloroethane					nd
Tetrachloroethane					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
<u>GBR-51</u>					
Lab pH	7.8				
Lab Conductivity@25C	3000				
Total Dissolved Solids (Calc)	2400				
Total Alkalinity as CaCO3	220				
Total Hardness as CaCO3	1100				
Bicarbonate as HCO3	220				
Carbonate as CO3	1				
Hydroxide	<1				
Chloride	61				
Sulfate	1400				
Calcium	400				

TABLE 2.1
GIANT INDUSTRIES, INC.
ONSITE REMEDIATION PROJECT
2005 ANNUAL ANALYTICAL DATA SUMMARY

	JAN	APR	JUL	OCT	DEC
Magnesium	31				
Potassium	1.4				
Sodium	310				
HALOCARBONS					
Bromodichloromethane	nd				
Bromoform	nd				
Bromomethane	nd				
Carbon Tetrachloride	nd				
Chloroethane	nd				
Chloroform	nd				
Chloromethane	nd				
Dibromochloromethane	nd				
1,2-Dibromomethane (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				
trans-1,2-Dichloroethene	nd				
1,2-Dichloropropane	nd				
cis-1,2-Dichloropropene	nd				
trans-1,2-Dichloropropene	nd				
Methylene Chloride	nd				
1,1,2,2-Tetrachloroethane	nd				
Tetrachloroethane	nd				
1,1,1-Trichloroethane	nd				
1,1,2-Trichloroethane	nd				
Trichloroethene	nd				
Trichlorofluoromethane	5.2				
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	6.9				

TABLE 2.1
GIANT INDUSTRIES, INC.
ONSITE REMEDIATION PROJECT
2005 ANNUAL ANALYTICAL DATA SUMMARY

	JAN	APR	JUL	OCT	DEC
Lab Conductivity@25C	3200				
Total Dissolved Solids (Calc)	2800				
Total Alkalinity as CaCO ₃	200				
Total Hardness as CaCO ₃	1400				
Bicarbonate as HCO ₃	200				
Carbonate as CO ₃	nd				
Hydroxide	nd				
Chloride	67				
Sulfate	1700				
Calcium	520				
Magnesium	36				
Potassium	2.0				
Sodium	330				
HALOCARBONS					
Bromodichloromethane	nd				
Bromoform	nd				
Bromomethane	nd				
Carbon Tetrachloride	nd				
Chloroethane	nd				
Chloroform	nd				
Chloromethane	nd				
Dibromochloromethane	nd				
1,2-Dibromomethane (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				
trans-1,2-Dichloroethene	nd				
1,2-Dichloropropane	nd				
cis-1,2-Dichloropropene	nd				
trans-1,2-Dichloropropene	nd				
Methylene Chloride	nd				
1,1,2,2-Tetrachloroethane	nd				
Tetrachloroethane	nd				
1,1,1-Trichloroethane	nd				
1,1,2-Trichloroethane	nd				
Trichloroethene	nd				
Trichlorofluoromethane	nd				
Vinyl Chloride	nd				
AROMATICS					
Benzene	nd				
Chlorobenzene	nd				

TABLE 2.1
GIANT INDUSTRIES, INC.
ONSITE REMEDIATION PROJECT
2005 ANNUAL ANALYTICAL DATA SUMMARY

	JAN	APR	JUL	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				
<u>SHS-4</u>					
Lab pH	7.3				
Lab Conductivity@25C	3200				
Total Dissolved Solids (Calc)	2700				
Total Alkalinity as CaCO3	210				
Total Hardness as CaCO3	1400				
Bicarbonate as HCO3	210				
Carbonate as CO3	1.0				
Hydroxide	nd				
Chloride	63				
Sulfate	1600				
Calcium	490				
Magnesium	39				
Potassium	5.1				
Sodium	320				
HALOCARBONS					
Bromodichloromethane	nd				
Bromoform	nd				
Bromomethane	nd				
Carbon Tetrachloride	nd				
Chloroethane	nd				
Chloroform	nd				
Chloromethane	nd				
Dibromochloromethane	nd				
1,2-Dibromomethane (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				
trans-1,2-Dichloroethene	nd				
1,2-Dichloropropane	nd				
cis-1,2-Dichloropropene	nd				
trans-1,2-Dichloropropene	nd				
Methylene Chloride	nd				
1,1,2,2-Tetrachloroethane	nd				

TABLE 2.1
GIANT INDUSTRIES, INC.
ONSITE REMEDIATION PROJECT
2005 ANNUAL ANALYTICAL DATA SUMMARY

	JAN	APR	JUL	OCT	DEC
Tetrachloroethane	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@25C	2900				
Total Dissolved Solids (Calc)	2300				
Total Alkalinity as CaCO3	230				
Total Hardness as CaCO3	1100				
Bicarbonate as HCO3	230				
Carbonate as CO3	nd				
Hydroxide	nd				
Chloride	61				
Sulfate	1300				
Calcium	390				
Magnesium	32				
Potassium	3.1				
Sodium	300				
HALOCARBONS					
Bromodichloromethane	nd				
Bromoform	nd				
Bromomethane	nd				
Carbon Tetrachloride	nd				
Chloroethane	nd				
Chloroform	nd				
Chloromethane	nd				
Dibromochloromethane	nd				
1,2-Dibromomethane (EDB)	nd				
1,2-Dichlorobenzene	nd				
1,3-Dichlorobenzene	nd				

TABLE 2.1
GIANT INDUSTRIES, INC.
ONSITE REMEDIATION PROJECT
2005 ANNUAL ANALYTICAL DATA SUMMARY

	JAN	APR	JUL	OCT	DEC
1,4-Dichlorobenzene	nd				
1,1-Dichloroethane	nd				
1,2-Dichloroethane (EDC)	nd				
1,1-Dichloroethene	nd				
trans-1,2-Dichloroethene	nd				
1,2-Dichloropropane	nd				
cis-1,2-Dichloropropene	nd				
trans-1,2-Dichloropropene	nd				
Methylene Chloride	nd				
1,1,2,2-Tetrachloroethane	nd				
Tetrachloroethane	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				
<u>SHS-19</u>					
Lab pH	7.3				
Lab Conductivity@25C	2600				
Total Dissolved Solids (Calc)	1700				
Total Alkalinity as CaCO3	660				
Total Hardness as CaCO3	630				
Bicarbonate as HCO3	660				
Carbonate as CO3	2.0				
Hydroxide	nd				
Chloride	110				
Sulfate	580				
Calcium	210				
Magnesium	26				
Potassium	2.5				
Sodium	390				
HALOCARBONS					
Bromodichloromethane	nd				

TABLE 2.1
GIANT INDUSTRIES, INC.
ONSITE REMEDIATION PROJECT
2005 ANNUAL ANALYTICAL DATA SUMMARY

	JAN	APR	JUL	OCT	DEC
Bromoform	nd				
Bromomethane	nd				
Carbon Tetrachloride	nd				
Chloroethane	nd				
Chloroform	nd				
Chloromethane	nd				
Dibromochloromethane	nd				
1,2-Dibromomethane (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				
trans-1,2-Dichloroethene	nd				
1,2-Dichloropropane	nd				
cis-1,2-Dichloropropene	nd				
trans-1,2-Dichloropropene	nd				
Methylene Chloride	nd				
1,1,2,2-Tetrachloroethane	nd				
Tetrachloroethane	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	1.2				
Methyl-t-Butyl Ether	nd				
Toluene	nd				
Total Xylenes	nd				
<u>SHS-10</u>					
Lab pH	7.2				
Lab Conductivity@25C	3100				
Total Dissolved Solids (Calc)	2300				
Total Alkalinity as CaCO3	440				
Total Hardness as CaCO3	950				
Bicarbonate as HCO3	430				
Carbonate as CO3	1.0				

TABLE 2.1
GIANT INDUSTRIES, INC.
ONSITE REMEDIATION PROJECT
2005 ANNUAL ANALYTICAL DATA SUMMARY

	JAN	APR	JUL	OCT	DEC
Hydroxide	nd				
Chloride	100				
Sulfate	1100				
Calcium	290				
Magnesium	55				
Potassium	12				
Sodium	390				
HALOCARBONS					
Bromodichloromethane	nd				
Bromoform	nd				
Bromomethane	nd				
Carbon Tetrachloride	nd				
Chloroethane	nd				
Chloroform	nd				
Chloromethane	nd				
Dibromochloromethane	nd				
1,2-Dibromomethane (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				
trans-1,2-Dichloroethene	nd				
1,2-Dichloropropane	nd				
cis-1,2-Dichloropropene	nd				
trans-1,2-Dichloropropene	nd				
Methylene Chloride	nd				
1,1,2,2-Tetrachloroethane	nd				
Tetrachloroethane	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				

TABLE 2.1
GIANT INDUSTRIES, INC.
ONSITE REMEDIATION PROJECT
2005 ANNUAL ANALYTICAL DATA SUMMARY

	JAN	APR	JUL	OCT	DEC
Total Xylenes	1.0				
<u>SHS-12</u>					
Lab pH	7.1				
Lab Conductivity@25C	2900				
Total Dissolved Solids (Calc)	2100				
Total Alkalinity as CaCO3	470				
Total Hardness as CaCO3	840				
Bicarbonate as HCO3	470				
Carbonate as CO3	1.0				
Hydroxide	nd				
Chloride	96				
Sulfate	1000				
Calcium	300				
Magnesium	22				
Potassium	1.8				
Sodium	420				
HALOCARBONS					
Bromodichloromethane	nd				
Bromoform	nd				
Bromomethane	nd				
Carbon Tetrachloride	nd				
Chloroethane	nd				
Chloroform	nd				
Chloromethane	nd				
Dibromochloromethane	nd				
1,2-Dibromomethane (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				
trans-1,2-Dichloroethene	nd				
1,2-Dichloropropane	nd				
cis-1,2-Dichloropropene	nd				
trans-1,2-Dichloropropene	nd				
Methylene Chloride	nd				
1,1,2,2-Tetrachloroethane	nd				
Tetrachloroethane	nd				
1,1,1-Trichloroethane	nd				
1,1,2-Trichloroethane	nd				
Trichloroethene	nd				
Trichlorofluoromethane	nd				
Vinyl Chloride	nd				

TABLE 2.1
GIANT INDUSTRIES, INC.
ONSITE REMEDIATION PROJECT
2005 ANNUAL ANALYTICAL DATA SUMMARY

	JAN	APR	JUL	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				
<u>SHS-13</u>					
Lab pH	6.8				
Lab Conductivity@25C	3900				
Total Dissolved Solids (Calc)	3100				
Total Alkalinity as CaCO3	650				
Total Hardness as CaCO3	1600				
Bicarbonate as HCO3	650				
Carbonate as CO3	1.0				
Hydroxide	nd				
Chloride	170				
Sulfate	1500				
Calcium	550				
Magnesium	54				
Potassium	3.2				
Sodium	410				
HALOCARBONS					
Bromodichloromethane	nd				
Bromoform	nd				
Bromomethane	nd				
Carbon Tetrachloride	nd				
Chloroethane	nd				
Chloroform	nd				
Chloromethane	nd				
Dibromochloromethane	nd				
1,2-Dibromomethane (EDB)	nd				
1,2-Dichlorobenzene	nd				
1,3-Dichlorobenzene	nd				
1,4-Dichlorobenzene	nd				
1,1-Dichloroethane	nd				
1,2-Dichloroethane (EDC)	1.5				
1,1-Dichloroethene	nd				
trans-1,2-Dichloroethene	nd				
1,2-Dichloropropane	nd				

TABLE 2.1
GIANT INDUSTRIES, INC.
ONSITE REMEDIATION PROJECT
2005 ANNUAL ANALYTICAL DATA SUMMARY

	JAN	APR	JUL	OCT	DEC
cis-1,-Dichloropropene	nd				
trans-1,2-Dichloropropene	nd				
Methylene Chloride	nd				
1,1,2,2-Tetrachloroethane	nd				
Tetrachloroethane	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				
<u>SHS-14</u>					
Lab pH	7.3				
Lab Conductivity@25C	2500				
Total Dissolved Solids (Calc)	2000				
Total Alkalinity as CaCO3	290				
Total Hardness as CaCO3	1400				
Bicarbonate as HCO3	290				
Carbonate as CO3	1.0				
Hydroxide	nd				
Chloride	51				
Sulfate	1100				
Calcium	490				
Magnesium	49				
Potassium	5.2				
Sodium	210				
HALOCARBONS					
Bromodichloromethane	nd				
Bromoform	nd				
Bromomethane	nd				
Carbon Tetrachloride	nd				
Chloroethane	nd				
Chloroform	nd				
Chloromethane	nd				

TABLE 2.1
GIANT INDUSTRIES, INC.
ONSITE REMEDIATION PROJECT
2005 ANNUAL ANALYTICAL DATA SUMMARY

	JAN	APR	JUL	OCT	DEC
Dibromochloromethane	nd				
1,2-Dibromomethane (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				
trans-1,2-Dichloroethene	nd				
1,2-Dichloropropane	nd				
cis-1,2-Dichloropropene	nd				
trans-1,2-Dichloropropene	nd				
Methylene Chloride	nd				
1,1,2,2-Tetrachloroethane	nd				
Tetrachloroethane	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				
<u>SHS-15</u>					
Lab pH	7.2				
Lab Conductivity@25C	2500				
Total Dissolved Solids (Calc)	2000				
Total Alkalinity as CaCO3	280				
Total Hardness as CaCO3	1200				
Bicarbonate as HCO3	280				
Carbonate as CO3	1.0				
Hydroxide	nd				
Chloride	53				
Sulfate	1100				
Calcium	400				
Magnesium	42				
Potassium	2.9				

TABLE 2.1
GIANT INDUSTRIES, INC.
ONSITE REMEDIATION PROJECT
2005 ANNUAL ANALYTICAL DATA SUMMARY

	JAN	APR	JUL	OCT	DEC
Sodium	220				
HALOCARBONS					
Bromodichloromethane	nd				
Bromoform	nd				
Bromomethane	nd				
Carbon Tetrachloride	nd				
Chloroethane	nd				
Chloroform	nd				
Chloromethane	nd				
Dibromochloromethane	nd				
1,2-Dibromomethane (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				
trans-1,2-Dichloroethene	nd				
1,2-Dichloropropane	nd				
cis-1,2-Dichloropropene	nd				
trans-1,2-Dichloropropene	nd				
Methylene Chloride	nd				
1,1,2,2-Tetrachloroethane	nd				
Tetrachloroethane	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-16					
Lab pH	7.3				
Lab Conductivity@25C	2700				
Total Dissolved Solids (Calc)	2300				

TABLE 2.1
GIANT INDUSTRIES, INC.
ONSITE REMEDIATION PROJECT
2005 ANNUAL ANALYTICAL DATA SUMMARY

	JAN	APR	JUL	OCT	DEC
Total Alkalinity as CaCO ₃	400				
Total Hardness as CaCO ₃	1000				
Bicarbonate as HCO ₃	400				
Carbonate as CO ₃	1.0				
Hydroxide	nd				
Chloride	44				
Sulfate	1300				
Calcium	360				
Magnesium	35				
Potassium	2.9				
Sodium	220				
HALOCARBONS					
Bromodichloromethane	nd				
Bromoform	nd				
Bromomethane	nd				
Carbon Tetrachloride	nd				
Chloroethane	nd				
Chloroform	nd				
Chloromethane	nd				
Dibromochloromethane	nd				
1,2-Dibromomethane (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				
trans-1,2-Dichloroethene	nd				
1,2-Dichloropropane	nd				
cis-1,2-Dichloropropene	nd				
trans-1,2-Dichloropropene	nd				
Methylene Chloride	nd				
1,1,2,2-Tetrachloroethane	nd				
Tetrachloroethane	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				

TABLE 2.1
GIANT INDUSTRIES, INC.
ONSITE REMEDIATION PROJECT
2005 ANNUAL ANALYTICAL DATA SUMMARY

	JAN	APR	JUL	OCT	DEC
1,4-Dichlorobenzene	nd				
Ethylbenzene	nd				
Methyl-t-Butyl Ether	nd				
Toluene	nd				
Total Xylenes	nd				
<u>SHS-17</u>					
Lab pH	7.2				
Lab Conductivity@25C	3400				
Total Dissolved Solids (Calc)	2500				
Total Alkalinity as CaCO3	310				
Total Hardness as CaCO3	1100				
Bicarbonate as HCO3	300				
Carbonate as CO3	1.0				
Hydroxide	nd				
Chloride	260				
Sulfate	1100				
Calcium	380				
Magnesium	46				
Potassium	4.5				
Sodium	320				
HALOCARBONS					
Bromodichloromethane	nd				
Bromoform	nd				
Bromomethane	nd				
Carbon Tetrachloride	nd				
Chloroethane	nd				
Chloroform	nd				
Chloromethane	nd				
Dibromochloromethane	nd				
1,2-Dibromomethane (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				
trans-1,2-Dichloroethene	nd				
1,2-Dichloropropane	nd				
cis-1,2-Dichloropropene	nd				
trans-1,2-Dichloropropene	nd				
Methylene Chloride	nd				
1,1,2,2-Tetrachloroethane	nd				
Tetrachloroethane	nd				
1,1,1-Trichloroethane	nd				

TABLE 2.1
GIANT INDUSTRIES, INC.
ONSITE REMEDIATION PROJECT
2005 ANNUAL ANALYTICAL DATA SUMMARY

	JAN	APR	JUL	OCT	DEC
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				

3.0 POTENTIOMETRIC SURFACE MAPS

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

Table 3.1
Giant Refining Company
Bloomfield Refinery
Quarterly Potentiometric Surface
January 2005

Well #	Wellhead Elevation (ft)	Depth to Water (ft)	Depth to Product (ft)	Product Thickness (ft)	Adjusted WSEL* (ft)
GRW-1	5394.30	56.85	56.85	0.00	5337.45
GRW-2	5391.28	49.35	49.35	0.00	5341.93
GRW-3	5388.77	53.74	53.74	0.00	5335.03
GRW-4	5390.02	56.10	56.10	0.00	5333.92
GRW-5	5390.56	63.22	63.22	0.00	5327.34
GRW-6	5390.81	53.44	53.44	0.00	5337.37
GRW-10	5395.02	56.16	56.16	0.00	5338.86
GRW-11	5397.85	56.60	56.60	0.00	5341.25
GRW-12	5397.24	45.70	45.70	0.00	5351.54
GRW-13	5396.90	57.35	57.35	0.00	5339.55
GBR-5	5395.07	25.04	25.04	0.00	5370.03
GBR-6	5395.70	52.35	52.35	0.00	5343.35
GBR-7	5395.85	29.08	29.08	0.00	5366.77
GBR-8	5390.50	42.90	42.90	0.00	5347.60
GBR-9	5389.92	47.93	47.93	0.00	5341.99
GBR-10	5390.57	42.49	42.49	0.00	5348.08
GBR-11	5389.43	42.98	42.98	0.00	5346.45
GBR-13	5393.04	43.40	43.40	0.00	5349.64
GBR-15	5397.99	41.78	41.78	0.00	5356.21
GBR-18	5421.68	35.60	35.60	0.00	5386.08
GBR-19	5393.83	43.56	43.52	0.04	5350.34
GBR-20	5393.47	36.24	36.24	0.00	5357.23
GBR-21S	5400.65	26.80	26.80	0.00	5373.85
GBR-21D	5400.19	41.17	41.17	0.00	5359.02
GBR-22	5395.91	DRY	DRY	0.00	5395.91
GBR-23	5403.72	29.25	29.25	0.00	5374.47
GBR-24S	5396.08	33.56	33.54	0.02	5362.56
GBR-24D	5396.77	41.17	41.17	0.00	5355.60
GBR-25	5396.72	40.85	38.68	2.17	5359.78
GBR-26	5395.59	38.32	38.32	0.00	5357.27
GBR-30	5396.58	36.49	36.49	0.00	5360.09
GBR-31	5394.86	NA	NA	NA	NA
GBR-33	5396.28	41.78	41.78	0.00	5354.50
GBR-34	5394.00	39.65	39.65	0.00	5354.35

Table 3.1
Giant Refining Company
Bloomfield Refinery
Quarterly Potentiometric Surface
January 2005

Well #	Wellhead Elevation (ft)	Depth to Water (ft)	Depth to Product (ft)	Product Thickness (ft)	Adjusted WSEL* (ft)
GBR-35	5393.66	35.98	35.75	0.23	5358.09
GBR-39	5397.55	40.67	40.67	0.00	5356.88
GBR-40	5400.76	33.84	33.84	0.00	5366.92
GBR-41	5396.35	27.91	27.91	0.00	5368.44
GBR-51	5389.68	44.02	44.02	0.00	5345.66
GBR-52	5387.74	42.62	42.62	0.00	5345.12
SHS-1	5383.54	40.30	40.30	0.00	5343.24
SHS-2	5381.66	36.80	36.80	0.00	5344.86
SHS-3	5383.33	36.64	36.64	0.00	5346.69
SHS-4	5383.62	43.00	43.00	0.00	5340.62
SHS-5	5378.36	38.80	38.80	0.00	5339.56
SHS-6	5378.17	40.10	40.10	0.00	5338.07
SHS-8	5380.25	40.48	40.48	0.00	5339.77
SHS-9	5380.79	41.90	41.90	0.00	5338.89
SHS-10	5373.80	38.25	38.25	0.00	5335.55
SHS-12	5373.94	41.10	41.10	0.00	5332.84
SHS-13	5367.81	37.65	37.65	0.00	5330.16
SHS-14	5367.07	42.40	42.40	0.00	5324.67
SHS-15	5366.21	34.80	34.80	0.00	5331.41
SHS-16	5362.58	32.48	32.48	0.00	5330.10
SHS-17	5364.35	34.90	34.90	0.00	5329.45
SHS-18	5373.64	41.90	41.90	0.00	5331.74
SHS-19	5378.89	44.70	44.70	0.00	5334.19

*WSEL = Water Surface Elevation Adjusted for Product Depth

Table 3.2
Giant Refining Company
Bloomfield Refinery
Quarterly Potentiometric Surface
April 2005

Well #	Wellhead Elevation (ft)	Depth to Water (ft)	Depth to Product (ft)	Product Thickness (ft)	Adjusted WSEL* (ft)
GRW-1	5394.30	61.60	61.60	0.00	5332.70
GRW-2	5391.28	47.78	47.78	0.00	5343.50
GRW-3	5388.77	53.15	53.15	0.00	5335.62
GRW-4	5390.02	48.85	48.85	0.00	5341.17
GRW-5	5390.56	65.54	65.54	0.00	5325.02
GRW-6	5390.81	43.30	43.30	0.00	5347.51

Table 3.2
Giant Refining Company
Bloomfield Refinery
Quarterly Potentiometric Surface
April 2005

Well #	Wellhead Elevation (ft)	Depth to Water (ft)	Depth to Product (ft)	Product Thickness (ft)	Adjusted WSEL* (ft)
GRW-10	5395.02	51.92	51.82	0.10	5343.18
GRW-11	5397.85	57.80	57.80	0.00	5340.05
GRW-12	5397.24	44.70	44.70	0.00	5352.54
GRW-13	5396.90	55.22	55.22	0.00	5341.68
GBR-5	5395.07	24.84	24.84	0.00	5370.23
GBR-6	5395.70	50.40	50.40	0.00	5345.30
GBR-7	5395.85	28.46	28.46	0.00	5367.39
GBR-8	5390.50	41.70	41.70	0.00	5348.80
GBR-9	5389.92	46.52	46.52	0.00	5343.40
GBR-10	5390.57	42.46	42.46	0.00	5348.11
GBR-11	5389.43	42.46	42.46	0.00	5346.97
GBR-13	5393.04	42.25	42.25	0.00	5350.79
GBR-15	5397.99	41.20	41.20	0.00	5356.79
GBR-18	5421.68	35.34	35.34	0.00	5386.34
GBR-19	5393.83	cannot access	cannot access	NA	NA
GBR-20	5393.47	35.75	35.75	0.00	5357.72
GBR-21S	5400.65	27.00	27.00	0.00	5373.65
GBR-21D	5400.19	40.90	40.90	0.00	5359.29
GBR-22	5395.91	DRY	DRY	NA	NA
GBR-23	5403.72	30.04	30.04	0.00	5373.68
GBR-24S	5396.08	33.86	33.86	0.00	5362.22
GBR-24D	5396.77	34.83	34.83	0.00	5361.94
GBR-25	5396.72	39.82	39.82	0.00	5356.90
GBR-26	5395.59	38.25	38.25	0.00	5357.34
GBR-30	5396.58	36.50	36.50	0.00	5360.08
GBR-31	5394.86	cannot access	cannot access	NA	NA
GBR-33	5396.28	42.31	42.31	0.00	5353.97
GBR-34	5394.00	39.48	39.48	0.00	5354.52
GBR-35	5393.66	39.62	39.60	0.02	5354.06
GBR-39	5397.55	40.68	40.68	0.00	5356.87
GBR-40	5400.76	32.00	32.00	0.00	5368.76
GBR-41	5396.35	26.70	26.70	0.00	5369.65
GBR-51	5389.68	43.85	43.85	0.00	5345.83
GBR-52	5387.74	42.47	42.47	0.00	5345.27
SHS-1	5383.54	40.90	40.90	0.00	5342.64
SHS-2	5381.66	36.72	36.72	0.00	5344.94
SHS-3	5383.33	cannot access	cannot access	NA	NA
SHS-4	5383.62	43.00	43.00	0.00	5340.62
SHS-5	5378.36	39.80	39.80	0.00	5338.56
SHS-6	5378.17	40.00	40.00	0.00	5338.17

Table 3.2
Giant Refining Company
Bloomfield Refinery
Quarterly Potentiometric Surface
April 2005

Well #	Wellhead Elevation (ft)	Depth to Water (ft)	Depth to Product (ft)	Product Thickness (ft)	Adjusted WSEL* (ft)
SHS-8	5380.25	40.44	40.44	0.00	5339.81
SHS-9	5380.79	44.75	44.75	0.00	5336.04
SHS-10	5373.80	37.98	37.98	0.00	5335.82
SHS-12	5373.94	40.67	40.67	0.00	5333.27
SHS-13	5367.81	37.11	37.11	0.00	5330.70
SHS-14	5367.07	42.15	42.14	0.01	5324.93
SHS-15	5366.21	34.30	34.30	0.00	5331.91
SHS-16	5362.58	31.93	31.93	0.00	5330.65
SHS-17	5364.35	33.82	33.82	0.00	5330.53
SHS-18	5373.64	40.75	40.75	0.00	5332.89
SHS-19	5378.89	52.60	52.60	0.00	5326.29

*WSEL = Water Surface Elevation Adjusted for Product Depth

Table 3.3
Giant Refining Company
Bloomfield Refinery
Quarterly Potentiometric Surface
July 2005

Well #	Wellhead Elevation (ft)	Depth to Water (ft)	Depth to Product (ft)	Product Thickness (ft)	Adjusted WSEL* (ft)
GRW-1	5394.30	58.31	58.31	0.00	5335.99
GRW-2	5391.28	48.75	48.75	0.00	5342.53
GRW-3	5388.77	53.80	53.80	0.00	5334.97
GRW-4	5390.02	46.10	46.10	0.00	5343.92
GRW-5	5390.56	66.35	66.35	0.00	5324.21
GRW-6	5390.81	43.23	43.23	0.00	5347.58
GRW-10	5395.02	53.76	53.70	0.06	5341.31
GRW-11	5397.85	61.66	61.66	0.00	5336.19
GRW-12	5397.24	44.70	44.70	0.00	5352.54
GRW-13	5396.90	56.90	56.90	0.00	5340.00
GBR-5	5395.07	25.87	24.84	1.03	5370.02
GBR-6	5395.70	51.15	51.15	0.00	5344.55
GBR-7	5395.85	28.04	28.04	0.00	5367.81
GBR-8	5390.50	41.65	41.65	0.00	5348.85
GBR-9	5389.92	44.27	44.27	0.00	5345.65
GBR-10	5390.57	42.51	42.51	0.00	5348.06
GBR-11	5389.43	42.42	42.42	0.00	5347.01
GBR-13	5393.04	42.42	42.42	0.00	5350.62

Table 3.3
Giant Refining Company
Bloomfield Refinery
Quarterly Potentiometric Surface
July 2005

Well #	Wellhead Elevation (ft)	Depth to Water (ft)	Depth to Product (ft)	Product Thickness (ft)	Adjusted WSEL* (ft)
GBR-15	5397.99	41.30	41.30	0.00	5356.69
GBR-18	5421.68	36.26	36.26	0.00	5385.42
GBR-19	5393.83	42.82	42.82	0.00	5351.01
GBR-20	5393.47	36.08	36.08	0.00	5357.39
GBR-21S	5400.65	26.02	26.02	0.00	5374.63
GBR-21D	5400.19	41.55	41.55	0.00	5358.64
GBR-22	5395.91	DRY	DRY	NA	NA
GBR-23	5403.72	30.05	30.05	0.00	5373.67
GBR-24S	5396.08	33.75	33.75	0.00	5362.33
GBR-24D	5396.77	34.96	34.96	0.00	5361.81
GBR-25	5396.72	39.58	39.52	0.06	5357.19
GBR-26	5395.59	36.56	36.26	0.30	5359.27
GBR-30	5396.58	36.57	36.57	0.00	5360.01
GBR-31	5394.86	37.86	37.86	0.00	5357.00
GBR-33	5396.28	42.30	42.30	0.00	5353.98
GBR-34	5394.00	39.85	39.85	0.00	5354.15
GBR-35	5393.66	40.32	40.32	0.00	5353.34
GBR-39	5397.55	40.67	40.67	0.00	5356.88
GBR-40	5400.76	32.05	32.05	0.00	5368.71
GBR-41	5396.35	27.16	27.16	0.00	5369.19
GBR-51	5389.68	43.60	43.60	0.00	5346.08
GBR-52	5387.74	42.57	42.57	0.00	5345.17
SHS-1	5383.54	40.68	40.68	0.00	5342.86
SHS-2	5381.66	36.36	36.36	0.00	5345.30
SHS-3	5383.33	DRY	DRY	NA	NA
SHS-4	5383.62	42.96	42.96	0.00	5340.66
SHS-5	5378.36	39.80	39.80	0.00	5338.56
SHS-6	5378.17	40.09	40.09	0.00	5338.08
SHS-8	5380.25	40.48	40.48	0.00	5339.77
SHS-9	5380.79	43.50	43.50	0.00	5337.29
SHS-10	5373.80	37.70	37.70	0.00	5336.10
SHS-12	5373.94	40.93	40.93	0.00	5333.01
SHS-13	5367.81	37.45	37.45	0.00	5330.36
SHS-14	5367.07	41.10	41.10	0.00	5325.97
SHS-15	5366.21	35.86	35.46	0.40	5331.07
SHS-16	5362.58	32.36	32.36	0.00	5330.22
SHS-17	5364.35	34.21	24.21	10.00	5348.14
SHS-18	5373.64	41.40	41.40	0.00	5332.24
SHS-19	5378.89	50.62	50.62	0.00	5328.27

Table 3.3
Giant Refining Company
Bloomfield Refinery
Quarterly Potentiometric Surface
July 2005

Well #	Wellhead Elevation (ft)	Depth to Water (ft)	Depth to Product (ft)	Product Thickness (ft)	Adjusted WSEL* (ft)
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*WSEL = Water Surface Elevation Adjusted for Product Depth

Table 3.4
Giant Refining Company
Bloomfield Refinery
Quarterly Potentiometric Surface
October 2005

Well #	Wellhead Elevation (ft)	Depth to Water (ft)	Depth to Product (ft)	Product Thickness (ft)	Adjusted WSEL* (ft)
GRW-1	5394.30	59.50	59.50	0.00	5334.80
GRW-2	5391.28	49.45	49.45	0.00	5341.83
GRW-3	5388.77	53.80	53.80	0.00	5334.97
GRW-4	5390.02	59.20	59.20	0.00	5330.82
GRW-5	5390.56	67.04	67.04	0.00	5323.52
GRW-6	5390.81	43.82	43.82	0.00	5346.99
GRW-10	5395.02	56.64	56.60	0.04	5338.41
GRW-11	5397.85	59.07	59.07	0.00	5338.78
GRW-12	5397.24	water below pump	water below pump	NA	NA
GRW-13	5396.90	56.52	56.52	0.00	5340.38
GBR-5	5395.07	30.50	30.50	0.00	5364.57
GBR-6	5395.70	52.27	52.27	0.00	5343.43
GBR-7	5395.85	31.83	31.83	0.00	5364.02
GBR-8	5390.50	43.17	43.17	0.00	5347.33
GBR-9	5389.92	47.87	47.87	0.00	5342.05
GBR-10	5390.57	42.50	42.50	0.00	5348.07
GBR-11	5389.43	43.15	43.15	0.00	5346.28
GBR-13	5393.04	43.73	43.73	0.00	5349.31
GBR-15	5397.99	40.56	40.56	0.00	5357.43
GBR-18	5421.68	36.20	36.20	0.00	5385.48
GBR-19**	5393.13	42.83	42.83	0.00	5350.30
GBR-20	5393.47	39.25	39.25	0.00	5354.22
GBR-21S	5400.65	25.60	25.60	0.00	5375.05
GBR-21D	5400.19	40.79	40.79	0.00	5359.40
GBR-22	5395.91	DRY	DRY	NA	NA
GBR-23	5403.72	29.52	29.52	0.00	5374.20
GBR-24S	5396.08	32.78	32.78	0.00	5363.30
GBR-24D	5396.77	34.17	34.17	0.00	5362.60
GBR-25	5396.72	37.44	37.44	0.00	5359.28

Table 3.4
Giant Refining Company
Bloomfield Refinery
Quarterly Potentiometric Surface
October 2005

Well #	Wellhead Elevation (ft)	Depth to Water (ft)	Depth to Product (ft)	Product Thickness (ft)	Adjusted WSEL* (ft)
GBR-26	5395.59	37.60	37.60	0.00	5357.99
GBR-30	5396.58	35.78	35.78	0.00	5360.80
GBR-31**	5393.69	37.10	37.10	0.00	5356.59
GBR-33†	5396.28	38.72	38.72	0.00	5357.56
GBR-34	5394.00	38.42	38.42	0.00	5355.58
GBR-35	5393.66	38.75	38.75	0.00	5354.91
GBR-39	5397.55	40.00	40.00	0.00	5357.55
GBR-40	5400.76	32.88	32.88	0.00	5367.88
GBR-41	5396.35	29.85	29.85	0.00	5366.50
GBR-51	5389.68	43.83	43.83	0.00	5345.85
GBR-52	5387.74	42.38	42.38	0.00	5345.36
SHS-1	5383.54	40.75	40.75	0.00	5342.79
SHS-2	5381.66	36.95	36.95	0.00	5344.71
SHS-3	5383.33	cannot access	cannot access	NA	NA
SHS-4	5383.62	43.00	43.00	0.00	5340.62
SHS-5	5378.36	39.89	39.89	0.00	5338.47
SHS-6	5378.17	40.12	40.12	0.00	5338.05
SHS-8	5380.25	40.54	40.54	0.00	5339.71
SHS-9	5380.79	40.84	40.84	0.00	5339.95
SHS-10	5373.80	37.65	37.65	0.00	5336.15
SHS-12	5373.94	41.04	41.04	0.00	5332.90
SHS-13	5367.81	97.56	97.56	0.00	5330.20
SHS-14	5367.07	43.05	43.05	0.00	5324.02
SHS-15	5366.21	34.90	34.90	0.00	5331.31
SHS-16	5362.58	32.45	32.45	0.00	5330.13
SHS-17	5364.35	34.32	34.32	0.00	5330.03
SHS-18	5373.64	41.30	41.30	0.00	5332.34
SHS-19	5378.89	43.00	43.00	0.00	5335.89

*WSEL = Water Surface Elevation Adjusted for Product Depth

** Wellhead elevations have been corrected after road construction.

† Wellhead elevation has not been corrected after road construction.

TABLE 3.5
Giant Refining Company
Bloomfield Refinery
2005 Product Levels

Well #	Product Level (ft) Apr 2005	Product Level (ft) July 2005	Product Level (ft) October 2005	Product Level (ft) January 2006
GBR-10	0	0	0	0

TABLE 3.5
Giant Refining Company
Bloomfield Refinery
2005 Product Levels

GBR-7	0	0	0	0
GBR-11	0	0	0	0
GBR-13	0	0	0	0
GBR-19	NO ACCESS	NO ACCESS	NO ACCESS	0.38
GBR-20	0	0	0	0
GBR-23	0	0	0	0
GBR-21S	0	0	0	0
GBR-21D	0	0	0	0
GBR-24D	0	0	0	0
GBR-24S	0	0	0	0
GBR-25	0	0.05	0.03	0
GBR-34	0.01	0	0	0.03
GBR-35	0.07	0	0	0.03
SHS-1	0	0	0	0
SHS-8	0	0	0	0

4.0 TOTAL VOLUME HISTORY

Section 4 illustrates the volume of ground water managed for the year. Total volume pumped from each well, current tank volumes and the re-injection volume is reported. Tanks 21, 22, 101, and 106 are no longer in use for water storage.

TABLE 4.1 Giant Refining Company Bloomfield Refinery 2005 Tank Volume Change			
Tank Number	Beginning Volume (Gallons)	Ending Volume (Gallons)	Change (Gallons)
102	14,984	11,670	3,314
106	0	0	0
21	0	0	0
22	0	0	0
Total Net Volume Change:			3,314

TABLE 4.2 Giant Refining Company Bloomfield Refinery 2005 Recovery Well Volume Tabulation			
Well	Jan-Jul	Jul-Dec	Total
GRW-1	61,650	24,490	86,140
GRW-2	27,880	19,190	47,070
GRW-3	63,930	52,610	116,540
GRW-4	61,310	36,110	97,420
GRW-5	144,860	158,640	303,500
GRW-6	43,490	44,020	87,510
GRW-9	84,310	41,030	125,340
GRW-10	1,552,450	1,245,700	2,798,150
GRW-11	132,600	146,100	159,360
GRW-12	960	20	980
GRW-13	20,710	20,290	40,991
SHS-9	7,883	1,591	9,494
SHS-14	66,055	24,086	90,140
SHS-18	3	932	935
SHS-19	442,946	245,176	688,122
Total Volume Pumped in Gallons:			4,651,692

TABLE 4.3
Giant Refining Company
Bloomfield Refinery
2005 Total Volume Summary

Total Volume of Water Recovered:	4,651,692 gallons
Net Change in Storage Volume:	3,314 gallons
Total Water Treated and Pumped to the Infiltration Gallery:	4,655,006 gallons

5.0 SAMPLE SCHEDULE

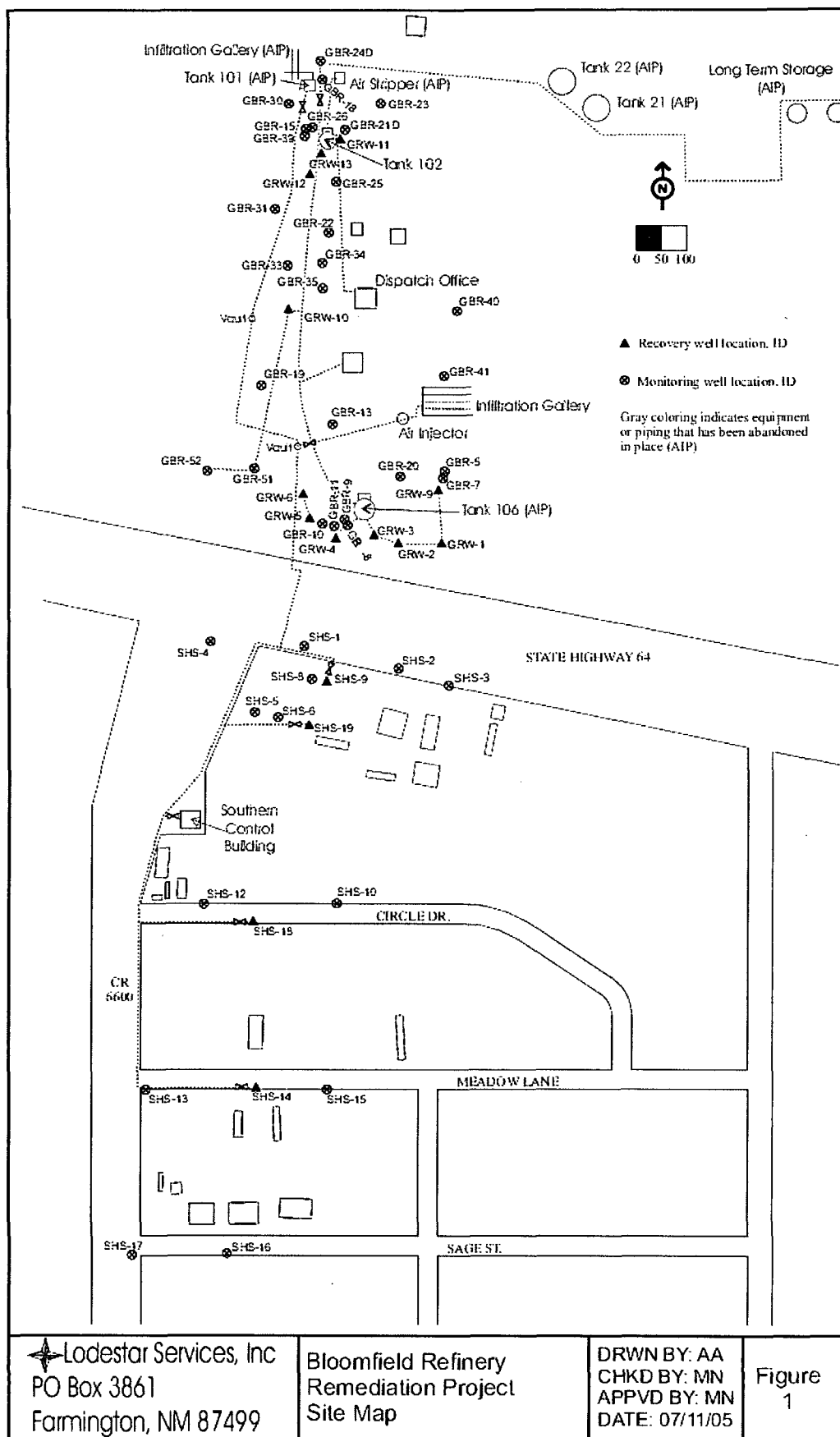
GIANT INDUSTRIES, INC. BLOOMFIELD REFINERY SAMPLE SCHEDULE, Revised 04/2006

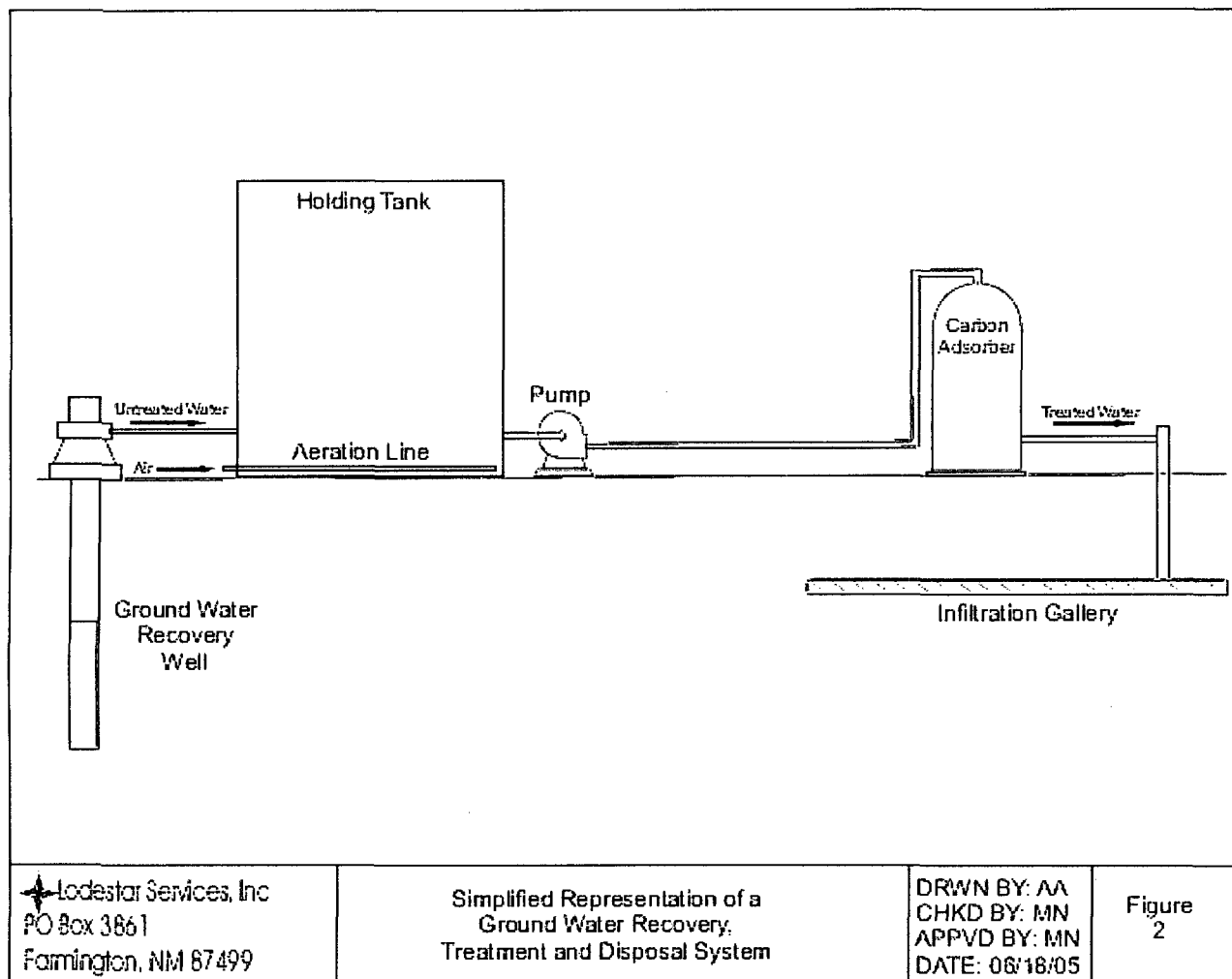
LOCATION	MONTHLY	QUARTERLY	SEMI-ANNUALLY	ANNUALLY
System Influent		601 602 GWC	601 602 GWC	601 602 GWC
System Effluent		601 602 GWC	601 602 GWC	601 602 GWC Metals PAH
GRW-3				601 602 GWC PAH
GRW-6				601 602 GWC PAH
GRW-13				
GBR-15				
GBR-17				601 602 GWC PAH
GBR-24D				601 602 GWC PAH
GBR-30				601 602 GWC PAH
GBR-31				601 602 GWC PAH
SHS-3				
SHS-4				
SHS-6				
SHS-10				
SHS-12				
SHS-13				
SHS-14				
SHS-15				

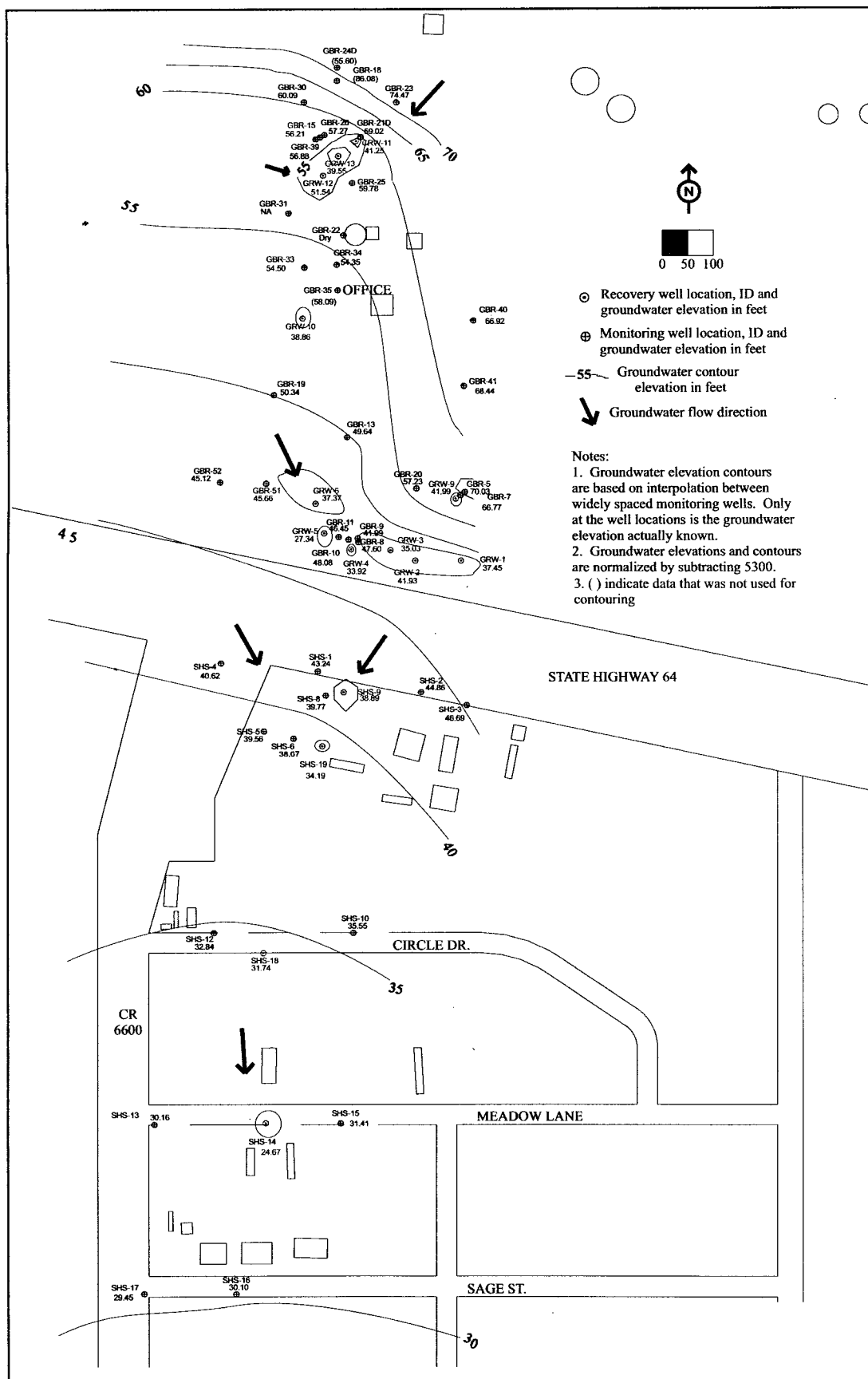
LOCATION	MONTHLY	QUARTERLY	SEMI- ANNUALLY	ANNUALLY
SHS-16				
SHS-17				
SHS-7				601 602 GWC
SHS-9				
SHS-18				601 602 GWC
GBR-51				601 602 GWC
GBR-52				601 602 GWC
GBR-32				601 602 GWC Metals
GBR-48				601 602 GWC Metals
GBR-49				601 602 GWC Metals
GBR-50				601 602 GWC Metals

NOTES: All wells will have water and free product elevations determined on a quarterly basis.
Wells exhibiting free product will not be sampled.

6.0 FIGURES



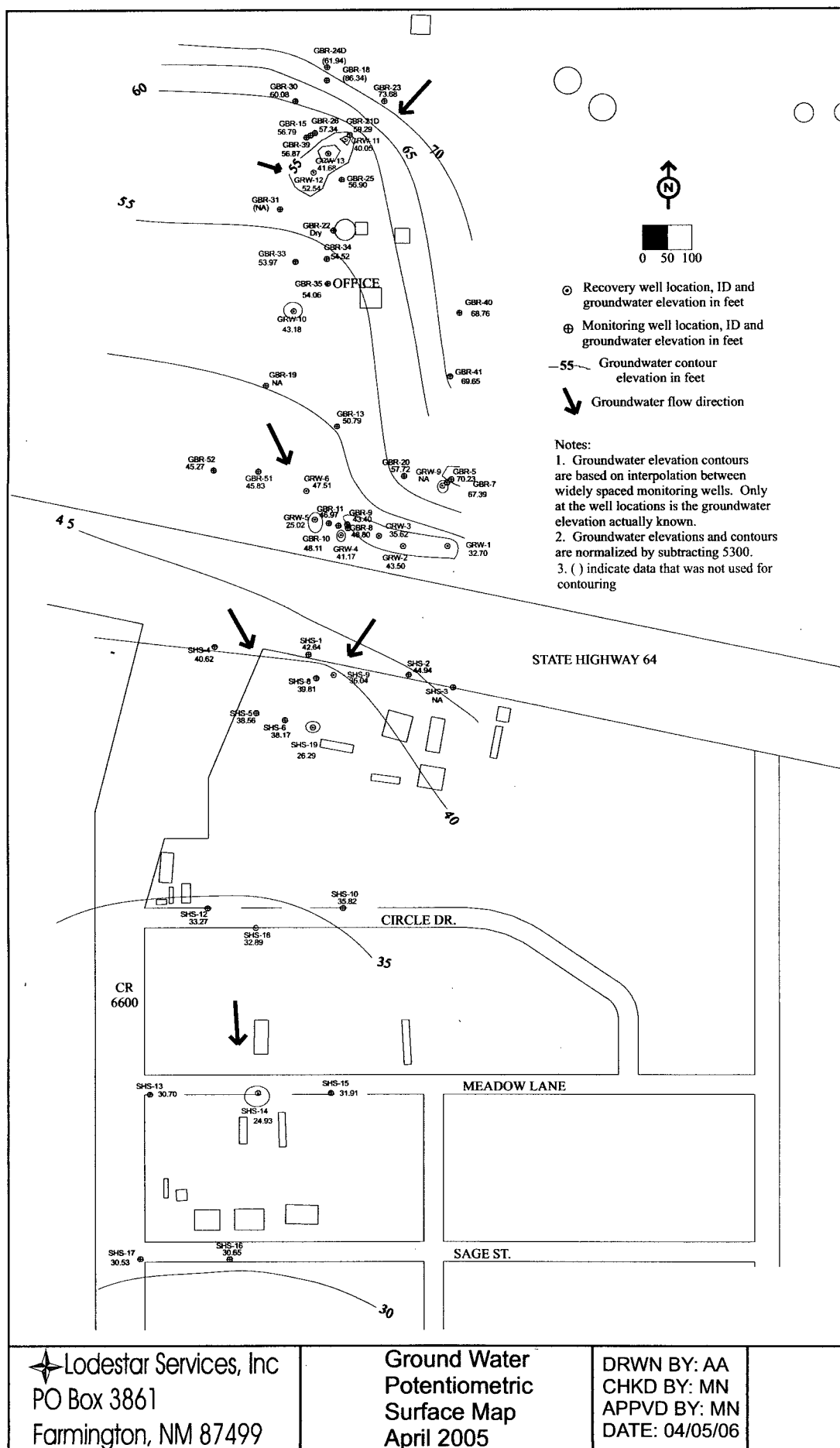


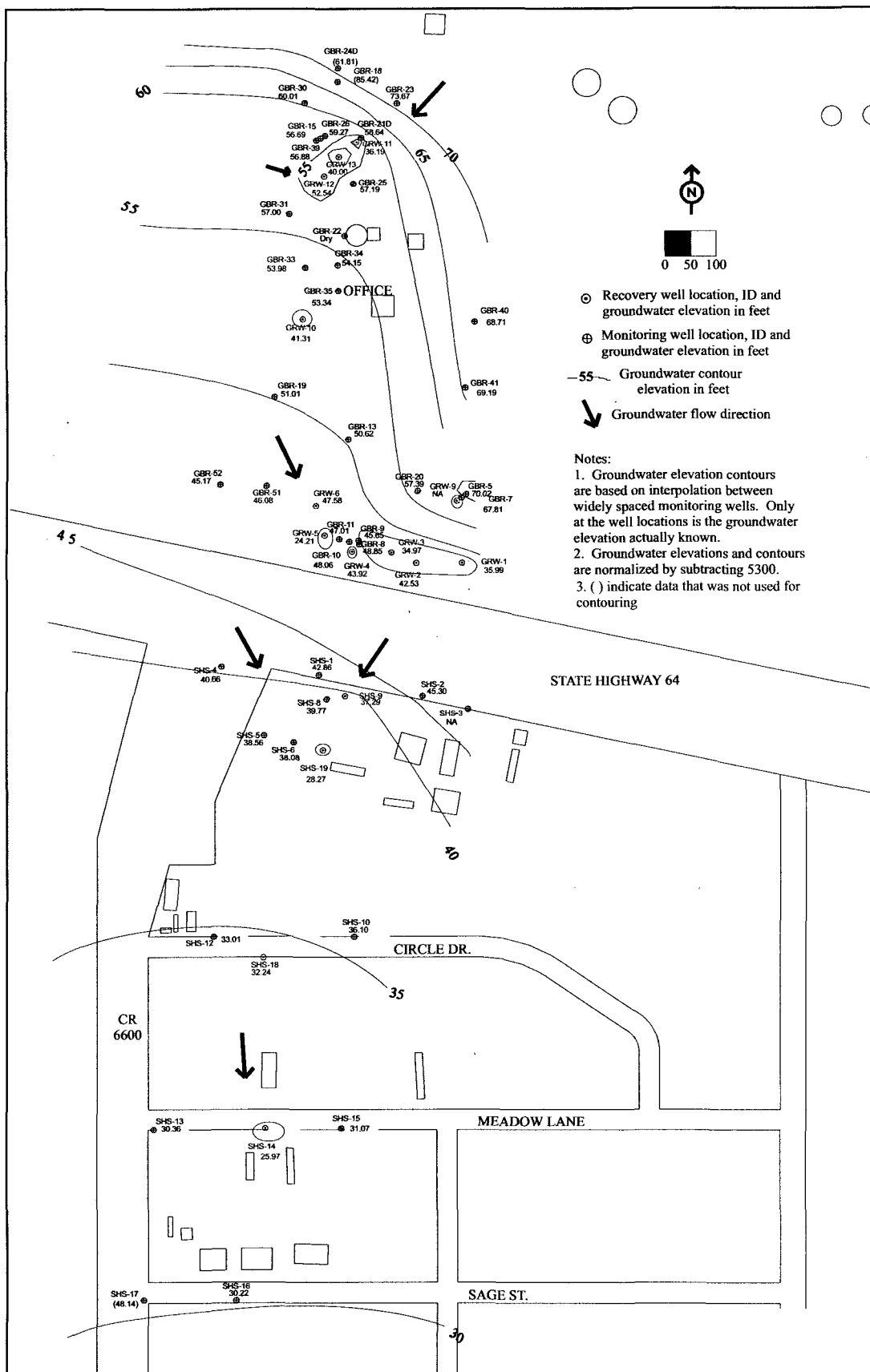


Lodestar Services, Inc
PO Box 3861
Farmington, NM 87499

Ground Water
Potentiometric
Surface Map
January 2005

DRWN BY: AA
CHKD BY: MN
APPVD BY: MN
DATE: 04/05/06

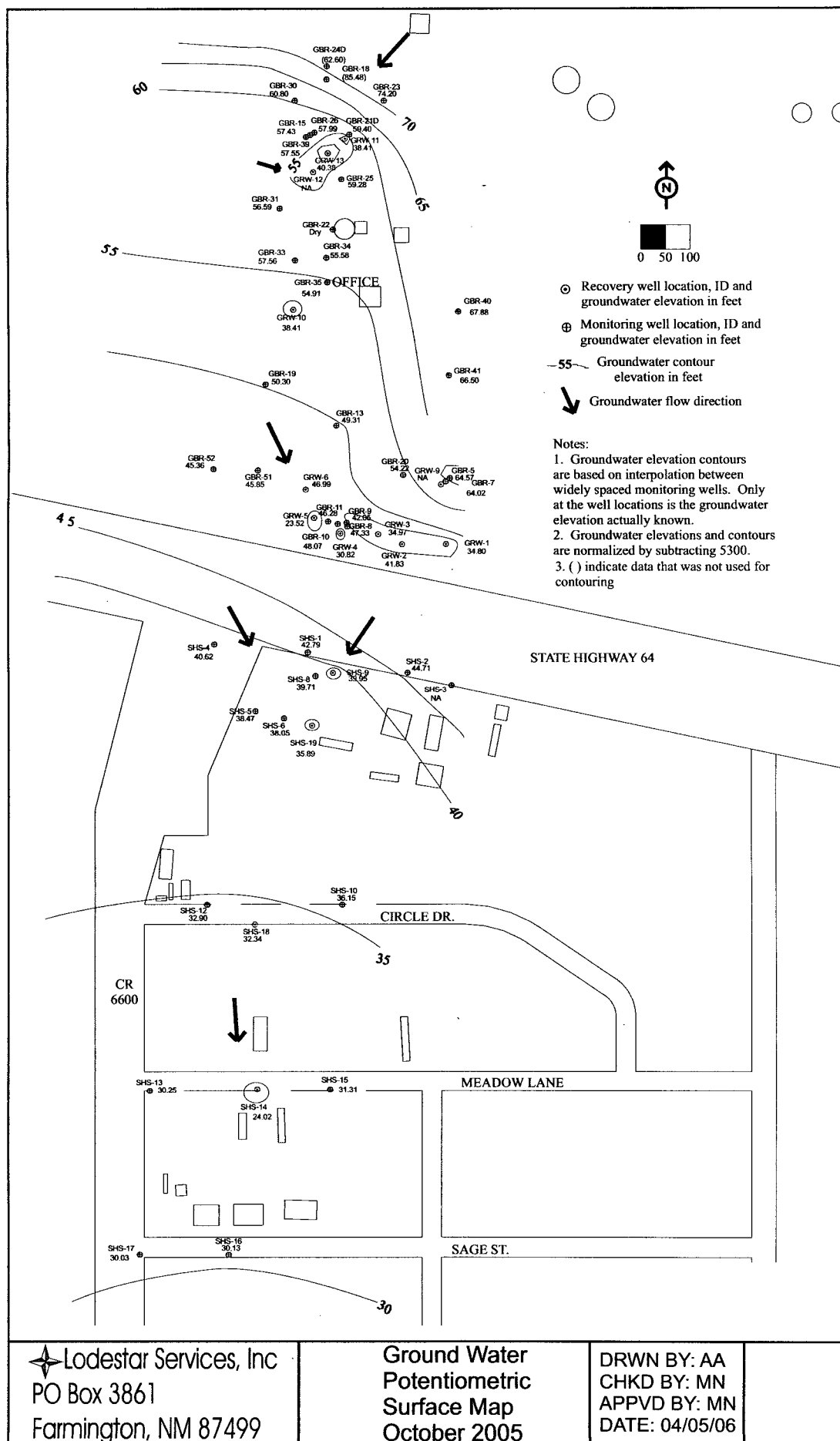




Lodestar Services, Inc
PO Box 3861
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Ground Water
Potentiometric
Surface Map
July 2005

DRWN BY: AA
CHKD BY: MN
APPVD BY: MN
DATE: 04/05/06



Lodestar Services, Inc
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Ground Water
Potentiometric
Surface Map
October 2005

DRWN BY: AA
CHKD BY: MN
APPVD BY: MN
DATE: 04/05/06