GW - 032 REPORTS Year(s)

Revised 2006 Annual GW Report 3/13/2008

REVISED OIL CONSERVATION DIVISION 2006 ANNUAL GROUNDWATER REPORT (AND OCD ADDENDUM)

Binder 1: Annual Groundwater Report (Revised) Giant Refining Company – Gallup Refinery McKinley County, New Mexico



March 13, 2008

EPA ID No. NMD000333211

Discharge Permit No. GW-032



GALLUP REFINERY



March 13, 2008

Hope Monzeglio Environmental Specialist New Mexico Environment Department Hazardous Waste Bureau 2905 Rodeo Park Drive East, BLDG 1 Santa Fe NM 87505

Carl Chavez, Environmental Engr. Oil Conservation Division 1220 S. Saint Francis Santa Fe, NM 87505

RE: Revised 2006 Annual Groundwater Report, Discharge Permit GW-032

Dear Hope and Carl:

Western Refining – Gallup has prepared a revised 2006 ground water report according to the requirements in NMED's notice of disapproval letter dated January 16, 2008. The revised Binder 1 is enclosed. Also included is the revisions cross reference list required by the notice of disapproval.

In reference to NMED's comment 3, Western performed visual checks for water in wells OW-1 and OW-10 on 3/9/06, 6/27/06, 7/26/06, and 10/13/06. The wells were not checked in June, September, and December because new staff began in the environmental department in 2006 that were not cognizant of the importance of spreading the checks over evenly spaced periods. In the future, Giant will make every attempt to monitor these wells at points equally spaced in the quarters so seasonal fluctuations can be determined.

In reference to NMED's Comment 10, Western Refining – Gallup has purchased a Solinst Model 122 Oil Water interface depth measurement device with depth increments marked in one hundredths of a foot. Hence, future water and interface measurements will always be recorded in the nearest 0.01 foot.

In reference to NMED's Comment 12, the 250 gallons amount reported in OCD's C-141 form was a preliminary early estimate of the spill amount from Tank 102. Upon further investigation, carried out by Giant lab staff and completed after the C-141 Form was submitted, the total spill amount was determined by Gint lab staff to be more on the order of 50 barrels or 2,100 gallons (42 gallons/barrel x 50 barrels = 2,100 gallons).

If you have any questions please contact me at (505) 722-0227 or Ed Riege at (505) 722-0217.

Sincerely,

1.A 5

Jim Lieb, Environmental Engineer Western Refining - Gallup Refinery

cc: Ed Riege w/o report

Cross Reference Chart Revised Oil Conservation Division 2006 Groundwater Report Giant Refining Company, Gallup Refinery, HWB-GRCC-06-003 EPA ID#: NMD000333211

NMED Comment Number	Revised Report Revision Location
1	Addressed in the Executive Summary and in Section 6 (Page 40).
2	Reference to Giant New Mexico was changed to Jamestown New Mexico (page 8).
3	Addressed in cover letter and Page 14.
4	Correct sample date is August 2, 2006. Correction on Page 23.
5	Table showing tests used was revised to "Total Recoverable Metals" (top of Page 14)
6	Table on Page 24 revised to eliminate the two BW-3B columns and to show entire table.
7	Tables in Section 4 revised to include the 11 ug/I EPA Region 6 screening level for MTBE.
8	Metals table was re-titled as "Total Metals" on Pages 29 and 30.
9	The sentence on Page 59 was revised to include the correct 2006 sampling months.
10	Tables in section 7 have been revised to show measurements in units of hundreths of feet.
11	Future GW reports will include OCDs Discharge Plan requirements .
12	Discrepancy addressed in cover letter.



BILL RICHARDSON Governor

DIANE DENISH Lieutenant Governor

NEW MEXICO ENVIRONMENT DEPARTMENT

Hazardous Waste Bureau

2905 Rodeo Park Drive East, Building 1 Santa Fe, New Mexico 87505-6303 Phone (505) 476-6000 Fax (505) 476-6030



RON CURRY Secretary

JON GOLDSTEIN Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

January 16, 2008

Mr. Ed Riege Environmental Superintendent Giant Refining Company Route 3, Box 7 Gallup, New Mexico 87301

RE: NOTICE OF DISAPPROVAL OIL CONSERVATION DIVISION (OCD) 2006 ANNUAL GROUNDWATER REPORT (AND OCD ADDENDUM) GIANT REFINING COMPANY, CINIZA REFINERY; HWB-GRCC-07-004 EPA ID # NMD000333211

Dear Mr. Riege:

The New Mexico Environment Department (NMED) has completed its review of the *Oil Conservation Division 2006 Annual Groundwater Report (and OCD Addendum)* (Report), dated August 31, 2007, submitted on behalf of Giant Refining Company, Gallup Refinery (Permittee). NMED hereby issues this Notice of Disapproval (NOD) and provides the following comments.

Comments 1-11 Apply to Binder 1: Annual Groundwater Report

Comment 1

The Permittee states in the Executive Summary on page 3, paragraph 2 that "[t]he monitoring in 2006 has shown that although contamination has entered the shallow perched groundwater at one location (OW-14), the contamination is limited in extent and has not migrated to the wells that that were placed nearby OW-14, (OW-12, OW-13, OW-29, OW-30)."

This statement is not accurate. *MTBE* was detected in OW-30 from an October 27, 2006 sampling event. (see "VOLATILES 8021B" table found in Section 4 (Groundwater Monitoring Results)). The Permittee must revise the above statement to indicate contamination was detected in OW-30. The Permittee must also revise the sentence under "OW-14 Recommendation" found in Section 6 (Summary of Groundwater Testing) accordingly.

Comment 2

The Permittee states in Section 1.2 (Background Information) in paragraph 1 that "[t]he Gallup Refinery is located within a rural and sparsely populated section of McKinley County in Giant New Mexico."

NMED is assuming the reference to "Giant New Mexico" should be to Jamestown, New Mexico. The Permittee must revise this sentence.

Comment 3

The Permittee states in Section 2 (Scope of Activities) on page 14, second paragraph that "[q]uarterly visual checks for artesian flow conditions at OW-1 and level measurements at OW-10 were conducted on 3-9-06, 6-27-06, 7-26-06, and 10-13-06."

The data were collected four times in 2006, but not on a quarterly basis. Quarterly measurements for OW-1 and OW-10 began on March 9, 2007; the quarterly measurements should have occurred in June, September, and December. The Permittee must ensure the visual checks are collected on a quarterly basis in order to determine if there is seasonal fluctuation. This must be corrected for the next annual report. Additionally, the Permittee must provide an explanation as to why the measurements were not collected on a quarterly basis.

Comment 4

Section 2 (Scope of Activities) on page 13 identifies GWM-1 as being sampled on August 2, 2006. Section 4 (Groundwater Monitoring Results) on page 23 identifies GWM-1 as being sampled on August 8, 2006.

The Permittee must revise the Report to provide the correct date that GWM-1 was sampled.

Comment 5

Section 2 (Scope of Activities), page 14, states that samples collected from well PW-3 were analyzed for RCRA 8 metals. The table (on page 15) that presents the "observation, measurement, sampling frequency, and type of analysis" indicates that PW-3 samples were analyzed for heavy metals.

The Permittee must revise the tables to clarify the actual metals analyses.

Comment 6

There is a typographical error in the table presented in Section 4 (Groundwater Monitoring Results), page 24, which identifies two wells as BW-3B.

The Permittee must revise the table to provide the correct well names with the correct data. In addition, the last column in this table is cut off; the revised table must be presented in its entirety.

Comment 7

In Section 4 (Groundwater Monitoring Results), the Permittee uses 0.62 as the WQCC standard for methyl tertbutyl ether (MTBE). There is no WQCC standard for MTBE. The 2007 EPA Region 6 Human Health Medium Specific Screening Level for MTBE for Tap Water is $11 \mu g/L$.

The Permittee must revise the tables containing the MTBE standard to cite the correct MTBE cleanup level and source.

Comment 8

The Permittee provides a "Dissolved Metals" table containing data for the boundary well in Section 4.0 (Groundwater Monitoring Results). The boundary wells were analyzed for total metals, not dissolved metals.

The Permittee must revise the table to identify the correct analyses.

Comment 9

The Permittee states in Appendix A (Gallup Field Sampling Collection and Handling Procedures) under "Field Data Collection" that "[a]ll facility monitoring wells were gauged in January, March, May, June, July, October, and December of 2005."

The Permittee must revise this sentence to identify what sampling activities occurred in 2006.

Comment 10

The Permittee states in Appendix A (Gallup Field Sampling Collection and Handling Procedures), paragraph 2 that "[a]ll water/product levels are measured to an accuracy of the nearest 0.01 foot using an electrical conductance based meter." This statement is not accurate. Tables provided in Section 7 (List of Tables) of the Report present water or product levels in inches (e.g., RW-1 Hydrocarbon Recovery Log, Quarterly measurements of product layer thickness and bailing of product sheets, and Well Inspection sheets).

Reporting of water/product levels in inches is an on-going problem. NMED made similar comments in the "Notice of Deficiency Oil Conservation Division (ODC) 2005 Annual Groundwater Report (And OCD Addendum)" dated October 31, 2006 and water/product measurements are still being reported in inches. The Permittee must revise all tables in the Report to report all water/product measurements in units of hundredths of a foot. All future reports must report water/product measurements in hundredths of a foot and not in inches.

Comment 11

The Permittee must ensure the next annual groundwater monitoring report incorporates OCD's Discharge Plan requirements, including the most current groundwater sampling schedule.

Comment 12

In Binder 2, Section 3e. (Summary of All Leaks, Spills & Releases & Corrective Actions), the Permittee presents (in the last row of the table) information concerning the "Tank 102 Spill" of 2,100 gallons on December 31, 2006. The Form C-141 submitted to NMED reporting this same spill reported the release volume as 250 gallons.

The Permittee must provide an explanation why the release volumes were reported differently, or otherwise resolve this discrepancy.

The Permittee must submit a revised report addressing all comments contained in this NOD and submit a revised Binder 1: Annual Groundwater Report. The revised report must include a response letter that details where all revisions have been made, cross-referencing NMED's numbered comments. All requirements must be incorporated in future groundwater monitoring reports unless the requirement was specific to this reporting period. The revised report must be submitted to NMED no later than March 16, 2008.

If you have questions regarding this Notice of Disapproval please contact Hope Monzeglio of my staff at 505-476-6045.

Sincerely,

James P. Bearzi Chief Hazardous Waste Bureau

cc: J. Kieling, NMED HWB
D. Cobrain NMED HWB
C. Frishkorn, NMED HWB
H. Monzeglio NMED HWB
W. Price, OCD
S. Morris, GRCC
J. Lieb, GRCC
File: Reading File and GRCC 2008 File
HWB-GRCC-07-004

REVISED OIL CONSERVATION DIVISION 2006 ANNUAL GROUNDWATER REPORT (AND OCD ADDENDUM)

Binder 1: Annual Groundwater Report (Revised) Giant Refining Company – Gallup Refinery McKinley County, New Mexico



March 13, 2008

EPA ID No. NMD000333211

Discharge Permit No. GW-032

Prepared By : Vim Lieb, Environmental Engineer, Giant Refining – Gallup Refinery Signature: ______, Date: ______, Date: ______

Certified By: Mark Turri, General Manager, Giant Refining – Gallup Refinery Signature: Signature: 3/13/08

Giant Refining – Revised Gallup Refinery, 2006 Groundwater Report

Page 1 of 74

Giant Refining - Revised Gallup Refinery, 2006 Groundwater Report

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Executive Summary

The purpose of groundwater sampling performed in 2006 at Gallup Refinery is to determine whether contamination resulting from refinery related activities has entered groundwater at the facility. Twenty monitoring wells are distributed within the boundaries of the refinery and 9 monitoring wells are located along the perimeter of the lagoons and ponds. The ground water monitoring is conducted at the Gallup Refinery located approximately 17 miles east of Gallup and approximately 1 mile north of Interstate I-40 at Exit 39. The facility is owned and operated by Giant Refining, Inc. with headquarters in El Paso, Texas. U.S. EPA permit ID No. NMD000333211 pertains to the facility.

The monitoring in 2006 has shown that MTBE contamination has entered the shallow perched groundwater at two well locations (OW-14 and OW-30). The contamination is limited in extent and has not migrated to other nearby wells (OW-12, OW-13, and OW-29). The monitoring performed in 2006 has shown that, at the OW-14 location where contamination exists, the contamination has remained relatively constant in concentration in comparison to sampling conducted in past years and the concentrations have not appreciably increased.

Monitoring of well GWM-1 in 2005 has shown benzene in concentrations (June 2005 = 0.010 mg/l and September 2005 = 0.081 mg/l) exceeding the NM Water Quality Control Commission standard (0.01 mg/l) and the U.S. EPA MCL (0.005 mg/l). Giant conducted annual sampling of GWM-1 on August 4, 2006. The benzene concentration in this sample was 0.012 mg/l.

Elevated levels of fluoride and total dissolved solids (TDS) have shown up in some of the boundary wells in 2006, 2005 and 2004.

The Ciniza Refinery is now to be known as the *Gallup* Refinery.

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- 3. OCD Permit Condition 21:
 - a. Summary of All Major Refinery Activities or Events
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I. Annual Groundwater Report (Binder 1)

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Section 1 Introduction

1.1 Facility Description

This annual groundwater report pertains to the Giant Refining Company refinery located at Exit 39 on Interstate I-40. This refinery is known as the Gallup Refinery and is located at Jamestown New Mexico, approximately 17 miles east of Gallup. Figure 1 shows the location of the Gallup Refinery.

The owner is:

	Giant Refining, Inc. 23733 North Scottsdale Road Scottsdale, AZ 85255	(parent corporation)
Operator:	Giant Refining Company Route 3, Box 7 Gallup, New Mexico 87301	(postal address)
	Giant Refining Company I-40, Exit 39 Jamestown, New Mexico 87347	(physical address)

SIC code 2911 (petroleum refining) pertains to the Gallup Refinery.

The following permits pertain to the Gallup Refinery:

- U.S. EPA ID Number NMD000333211
- OCD Discharge Permit No. GW-032

The facility status is corrective action/compliance. Annual and quarterly groundwater sampling is conducted at the facility to evaluate present contamination.

The refinery is situated on an 810 acre irregular shaped tract of land that is substantially located within the lower one quarter of Section 28 and throughout Section 33 of Township 15 North, Range 15 West of the New Mexico Prime Meridian. A small component of the property lies within the northeastern one quarter of Section 4 of Township 14 North, Range 15 West. Figure 2 is a topographic map showing the general layout of the refinery in comparison to the local topography.

1.2 Background Information

The Gallup Refinery is located within a rural and sparsely populated section of McKinley County in Jamestown New Mexico. The setting is a high desert plain on the western slope of the continental divide. The nearest population centers are the Pilot (formerly Giant) Travel Center refueling plaza, the Interstate 40 highway corridor, and a small cluster of residential homes located on the south side of Interstate 40 approximately 2 miles southwest of the refinery (Jamestown). The surrounding land is comprised primarily of public lands and is used for cattle and sheep grazing at a density of less than six cattle or 30 sheep per section. Except for Gallup, McKinley County is predominantly rural, as are the adjoining portions of neighboring counties.

The refinery primarily receives crude oil via two 6 inch diameter pipelines; Bisti Pipeline comes down from the Four Corners Area and enters the refinery property from the north and Hospah Pipeline comes in from the northeast and is an interconnection with a main interstate pipeline. In addition, the refinery also receives natural gasoline feedstocks via a 4-inch diameter pipeline that comes in from the west along the Interstate 40 corridor from the Conoco gas plant. These feedstocks are then stored in tanks until refined into products. The refinery has an overall capacity to process up to 32,000 barrels per day of crude oil and natural gasoline feedstocks.

The refinery incorporates various processing units that convert crude oil and natural gasoline into finished products. These units are briefly described as follows.

- The <u>crude distillation unit</u> separates crude oil into various fractions; including gas, naphtha, light oil, heavy oil, and residual.
- The <u>fluidized catalytic cracking unit (FCCU)</u> breaks up (cracks) long-chain hydrocarbon molecules into smaller molecules, and essentially converts heavier oils into naphtha and lighter oils.
- The <u>alkylation unit</u> combines specific types of hydrocarbon molecules into a high octane gasoline blending component.
- The <u>reforming unit</u> combines low octane naphtha molecules to form high octane naphtha.
- The <u>hydrotreating unit</u> removes undesirable sulfur and nitrogen compounds from intermediate feedstocks, and also saturates the feedstocks with hydrogen.
- The <u>isomerization unit</u> converts low octane hydrocarbon molecules into high octane molecules.
- The <u>treater units</u> remove impurities from various intermediate and blending feedstocks in order to produce finished products that comply with sales specifications.

• The <u>sulfur recovery unit</u> converts and recovers various sulfur compounds from other processing units and then produces a solid elemental sulfur byproduct.

As a result of these processing steps, the refinery produces a wide range of petroleum products including propane, butane, unleaded gasoline, diesel, kerosene, and residual fuel. In addition to the aforementioned processing units, various other equipment and systems support the operation of the refinery and are briefly described as follows.

Storage tanks are used throughout the refinery to hold and store crude oil, natural gasoline, intermediate feedstocks, finished products, chemicals, and water. These tanks are all located aboveground and range in size from 80,000 barrels to less than a 1,000 barrels. A grouping of tanks is commonly referred to as a "tank farm" such as the hot oil "tank farm".

Pumps, valves, and piping systems are used throughout the refinery to transfer various liquids among storage tanks and processing units.

A railroad spur track and a railcar loading rack are used to transfer feed-stocks and products from refinery storage tanks into and out of railcars.

Several tank truck loading racks are used at the refinery to load out finished products and also may receive crude oil, other feedstocks, additives, and chemicals.

A pipeline from the refinery carries diesel fuel to the Pilot (formerly Giant) Travel Center. Gasoline is delivered to the Pilot Center via tanker truck.

A firefighting training facility is used to conduct employee firefighting training. Waste water from the facility, when training is conducted, is pumped into a tank which is then pumped out by a vac truck. The vac truck pumps the oily water into a process sewer leading to the New API Separator (NAPIS).

The process wastewater system is a network of curbing, paving, catch basins, and underground piping that collects waste water effluent from various processing areas within the refinery and then conveys this wastewater to the new API separator. A separate storm water collection system routes storm water to the old API separator (OAPIS). Water from the OAPIS is pumped to the NAPIS for processing and benzene stripping.

The NAPIS is a two compartment oil water separator. Oil is separated from water based on the principle that, given a quiet surface, oil will float to the water surface where it can be skimmed off. The skimmed slop oil is passed to a collection chamber where it is pumped back into the refinery process. The clarified water is piped to the top of dual stripping columns where benzene is removed. The stripped water flows into the first aeration lagoon. Sludge sinks to the bottom of the separator which is periodically vacuumed out by a vac truck and disposed as hazardous waste at an approved landfill.

At the stripping columns, ambient air is blown upwards through the falling cascade of clarified wastewater as it passes through distillation column packing. Countercurrent desorption of

benzene from the water occurs due to the high volume of air passing over the relatively large surface area provided by the packing. The desorbed benzene is absorbed into the air stream and vented to the atmosphere. Effluent from the stripper columns gravity flows through piping into the first aeration lagoon.

At the aeration basins, the treated wastewater is mixed with air in order to oxidize any remaining organic constituents and increase the dissolved oxygen concentration available in the water for growth of bacteria and other microbial organisms. The microbes degrade hydrocarbons into carbon dioxide and water. Three 15-hp mechanical aerators provide aeration in the first aeration lagoon with two 15-hp aerators providing aeration in the second lagoon. Effluent from the second aeration lagoon flows onward into the first of several evaporation ponds of various sizes.

At the evaporation ponds, wastewater is converted into vapor via solar and mechanical windeffect evaporation. No wastewater is discharged from the refinery to surface waters of the state because all of the waste water evaporates. Therefore, the refinery is not required to have a NPDES discharge permit for discharge of treated process water. However, the Gallup refinery does have a NPDES permit for storm water discharge.

The storm water system is a network of valves, gates, berms, embankments, culverts, trenches, ditches, natural arroyos, and retention ponds that collect, convey, control, treat, and release storm water that falls within or passes through refinery property. Storm water discharge from the refinery is very infrequent due to the arid desert-like nature of the surrounding geographical area. The Gallup Refinery maintains a storm water pollution prevention plan (SWPPP) that includes Best Management Practices (BMPs) for effective storm water pollution prevention. The refinery has recently constructed several new berms in the "grassy area" and improved outfalls (installed barrier dams equipped with gate valves) to minimize the possibility of contaminated runoff leaving the refinery property.

1.3 Site Characteristics

The Gallup Refinery is located within a rural and sparsely populated section of McKinley County. It is situated in the high desert plain on the western flank of the continental divide approximately 17 miles east of Gallup. The surrounding land is comprised primarily of public lands and is used for cattle and sheep grazing at a density of less than six cattle or 30 sheep per section. Surface vegetation consists of native xerophytic vegetation including grasses, shrubs, small junipers, and some prickly pear cacti. Average rainfall is less than 7 inches per year.

Local topography consists of a gradually inclined down-slope from high ground in the southeast to a lowland fluvial plain in the northwest. The highest point on refinery property is located at the southeast corner boundary (elevation approximately 7,040 feet) and the lowest point is located at the northwest corner boundary (elevation approximately 6,860 feet). The refinery processing facility is located on a flat man-made terrace at an elevation of approximately 6,950 feet.

Surface water in this region consists of the man-made evaporation ponds and aeration basins located within the refinery, a cattle watering pond (Jon Myer's Pond) located east of the refinery, two small unnamed spring fed ponds located south of the refinery, and the South Fork of the Puerco River and its tributary arroyos. The various ponds and basins typically contain water consistently throughout the year. The South Fork of the Puerco River and its tributaries are intermittent and generally contain water only during, and immediately after, the occurrence of precipitation.

The 810 acre refinery property site is located on a layered geologic formation. Surface soils generally consist of fluvial and alluvial deposits; primarily clay and silt with minor inter-bedded sand layers. Below this surface layer is the Chinle Formation, which consists of very low permeability claystones and siltstones that comprise the shales of this formation. As such, the Chinle Formation effectively serves as an aquiclude. Inter-bedded within the Chinle Formation is the Sonsela Sandstone bed, which represents the uppermost potential aquifer in the region.

The Sonsela Sandstone bed lies within and parallels the dip of the Chinle Formation. As such, its high point is located southeast of the refinery and it slopes downward to the northwest as it passes under the refinery. Due to the confinement of the Chinle Formation aquiclude, the Sonsela Sandstone bed acts as a water-bearing reservoir and is artesian at its lower extremis. Artesian conditions exist throughout the central and western portions of the refinery property.

Groundwater flow within the Chinle Formation is extremely slow and typically averages less than 10⁻¹⁰ centimeters per second (less than 0.01 feet per year). Groundwater flow within the surface soil layer above the Chinle Formation is highly variable due to the presence of complex and irregular stratiography; including sand stringers, cobble beds, and dense clay layers. As such, hydraulic conductivity may range from less than 10⁻² centimeters per second in the gravelly sands immediately overlying the Chinle Formation up to 10⁻⁸ centimeters per second in the clay soil layers located near the surface.

Shallow groundwater located under refinery property generally flows along the upper contact of the Chinle Formation. The prevailing flow direction is from the southeast and toward the northwest; however, a subsurface ridge has been identified and is thought to deflect some flow in a northeasterly direction in the vicinity of the refinery tank farm.

2. Scope of Activities



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Well	Date Sampled	Parameters of Analysis
OW-11	10-26-06	General
		Chem/VOCs/SVOCs/BTEX/MTBE and
		RCRA 8 Metals
OW-12	10-27-06	BTEX and MTBE
OW-13	10-27-06	BTEX and MTBE
OW-14	10-29-06 and 12-28-06	BTEX and MTBE
OW-29	10-27-06	BTEX and MTBE
OW-30	10-27-06	BTEX and MTBE
BW-1A	Dry	
BW-1B	Not enough to sample (<1 foot)	
BW-1C	10-28-06	General
		Chem/VOCs/SVOCs/BTEX/MTBE and
		RCRA 8 Metals
BW-2A	10-28-06	General
		Chem/VOCs/SVOCs/BTEX/MTBE and
		RCRA 8 Metals
BW-2B	10-28-06	General
		Chem/VOCs/SVOCs/BTEX/MTBE/RCRA
		8 Metals (Selenium on 7-19-06)
BW-2C	10-28-06	General
		Chem/VOCs/SVOCs/BTEX/MTBE/RCRA
		8 Metals
BW-3A	Drv	
BW-3B	10-29-06	General
DIV 0D	10 29 00	Chem/VOCs/SVOCs/BTEX/MTBE/RCRA
		8 Metals
BW-3C	10-29-06	General
Dirioc		Chem/VOCs/SVOCs/BTEX/MTBE/RCRA
		8 Metals
GWM-1	8-2-06	General
		Chem/VOCs/SVOCs/BTEX/MTBE/RCRA
		8 Metals
GWM-2	Dry	
GWM-3	Dry	
MW-1	10-26-06	DRO/GRO/General
		Chem/VOCs/SVOCs/RCRA 8 Metals
MW-4	Not required to be sampled in	
	2006	
MW-5	Not required to be sampled in	•

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	2006	
SMW-2	Not required to be sampled in	
	2006	
SMW-4	Not required to be sampled in	
	2006	
PW-3	10-27-06	General Chem/nitrates/ VOCs/SVOCs/
		and Total Recoverable Metals*
RW-1	3-16, 6-6, 7-31, and 12-21-06	Measure product layer thickness
RW-2	No product present	Measure product layer thickness
RW-5	3-16, 6-1, 7-26, and 10-16-06	Measure product layer thickness
RW-6	3-17, 6-7, 7-26, and 10-16-06	Measure product layer thickness
*Cyanide was	s specified to be analyzed on the C-O	-C but lab did not perform the analysis.

The results of the annual sampling event are summarized in tables provided in Section 4 (Groundwater Monitoring Events).

Visual checks for artesian flow conditions at OW-1 and level measurements at OW-10 were conducted on 3-9-06, 6-27-06, 7-26-06, and 10-13-06. The wells were not checked in June, September, and December because new staff began in the environmental department that were not cognizant of the importance of spreading the checks over evenly spaced periods. In the future, Giant will make every attempt to monitor these wells at points equally spaced in the quarters so seasonal fluctuations can be determined. Checks for water in GWM-1, GWM-2, and GWM-3 were conducted on 1-18-06, 3-9-06, 5-26-06, 7-26-06, and 10-13-06. The visual checks are documented on the forms provided in Section 8 - Well Inspection Logs.

The following table summarizes all the currently active monitoring wells and sampling frequencies:

The observation, measurement, sampling frequency, and type of analysis are as follows.

Well ID	Frequency	Measurement ⁴ / Analysis	
OW-1	Quarterly	Visual check for artesian flow conditions	
OW-10	Quarterly	Level measurement of the Sonsela Aquifer water table	
GWM-1	Quarterly Annual	Q: Check for indication of aeration basin leakage. A: General chemistry /VOC/SVOC/BTEX/MTBE/RCR 8 metals	
GWM-2	Quarterly	Check for indication of aeration basin leakage.	
GWM-3	Quarterly	Check for indication of aeration basin leakage.	
OW-11	Annual	General chemistry/VOC/SVOC /BTEX/MTBE/ RCRA 8 metals	
OW-12	Annual	BTEX / MTBE	
OW-13 ²	Annual	BTEX / MTBE	
OW-14	SemiAnnual	BTEX / MTBE	
OW-29	Annual	BTEX / MTBE	

Well ID	Frequency	Measurement ⁴ / Analysis		
OW-30	Annual	BTEX / MTBE		
BW-1-A ³	Annual	General chemistry / VOC / SVOC / BTEX / MTBE / RCRA 8 metals		
BW-1-B ³	Annual	General chemistry / VOC / SVOC / BTEX / MTBE /RCRA 8 metals		
BW-1-C ³	Annual	General chemistry / VOC / SVOC / BTEX / MTBE / RCRA 8 metals		
BW-2-A ³	Annual	General chemistry / VOC / SVOC / BTEX / MTBE / RCRA 8 metals		
BW-2-B ³	Annual	General chemistry / VOC / SVOC / BTEX / MTBE / RCRA 8 metals		
BW-2-C ³	Annual	General chemistry / VOC / SVOC / BTEX / MTBE / RCRA 8 metals		
BW-3-A ³	Annual	General chemistry / VOC / SVOC / BTEX / MTBE / RCRA 8 metals		
BW-3-B ³	Annual	General chemistry / VOC / SVOC / BTEX / MTBE / RCRA 8 metals		
BW-3-C ³	Annual	General chemistry / VOC / SVOC / BTEX / MTBE / RCRA 8 metals		
MW-1	Annual	General chemistry / RCRA list constituents⁵		
MW-4	Annual in 05,07,09	General chemistry / RCRA list constituents ⁵ Modified Skinner List and organics		
MW-5	Annual in 05,07,09	General chemistry / RCRA list constituents ⁵ Modified Skinner List and organics		
SMW-2	Annual in 05,07,09	General chemistry / RCRA list constituents ⁵ Modified Skinner List and organics		
SMW-4	Annual in 05,07,09	General chemistry / RCRA list constituents ⁵ Modified Skinner List and organics		
RW-1	Annual	Measurement of product layer thickness, if present		
RW-2	Annual	Measurement of product layer thickness, if present		
RW-5	Annual	Measurement of product layer thickness, if present		
RW-6	Annual	Measurement of product layer thickness, if present		
PW-2 (Process)	2008, then every 3 yrs thereafter	SVOCs, VOCs, Metals, Cyanide, Nitrates		
PW-3 (Drinking/ Process)	Every 3 yrs starting with 2006	SVOCs, VOCs, Metals, Cyanide, Nitrates		

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Well ID	Frequency	Measurement ⁴ / Analysis	
PW-4 (Process)	Every 3 yrs starting with 2004	SVOCs, VOCs, Metals, Cyanide, Nitrates	
Pond 1 Inlet (EP1- IN)	Semi- Annual	BTEX, SVOCs, RCRA 8 metals	
Pilot Wastewater	Quarterly	TCLP (EPA Method 1311 and BOD)	

¹ This is the new well installed down gradient of the aeration basins.

² When OW-14 is cleaned up, then monitoring of OW-13 shall be discontinued.

³ These are the new wells installed at the northwest corner boundary of the refinery. BW-1-A, BW-1-B, and BW-3-A were dry at the time of drilling.

⁴ To the extent practicable, water table depth shall be measured at each well annually.

⁵ Frequency of sampling shall be per RCRA post closure schedule.

In addition to groundwater monitoring, surface water monitoring shall also be conducted as follows.

• On an annual basis, a grab sample of the inlet water to Pond #2 shall be collected and analyzed for BOD, COD, TDS, BTEX, and MTBE.

On an annual basis, a grab sample of evaporation pond water shall be collected and analyzed for general chemistry parameters. The evaporation pond selected for sampling shall be the pond, considered by refinery personnel, to most likely contain the highest salinity or TDS. In addition, the selected pond shall be alternated from year-toyear in order to provide a broader indication of analysis.

Groundwater Monitoring Well Installations in 2006

No monitoring wells were installed in 2006.

Two new shallow ground water monitoring wells were installed in the early fall of 2005 near GWM-1 which is located at the south west corner of evaporation pond 1. GWM-2 was placed at the northwest corner of evaporation pond 2 and GWM-3 was placed at the northwest corner of evaporation pond 1. GWM-1, GWM-2, and GWM-3 were placed to determine whether any leakage from the lagoons and or evaporation ponds is occurring. GWM-2 is screened at 18.95 feet and GWM-3 is screened at 17.95 feet.

Ground water remediation activities are conducted at the Gallup refinery including the pumping of 24.4 gallons of product from recovery well No.1 (RW-1) in 2006.

Old API Oil Water Separator

The old API Separator (OAPIS) was removed from service on October 6, 2004 and the start up of the new API Separator (NAPIS) occurred on the same date. Work to remove the OAPIS from service as an oil water separator was described in the 2004 report. Once the OAPIS was removed from oil/water separator service, its use as a storm water catch basin commenced. Beginning in early 2005, Giant began pumping accumulated storm water from the OAPIS into the NAPIS so that the water would undergo treatment in the benzene stripping columns.

Perimeter Search

Giant conducts a perimeter search of the refinery property on a bimonthly basis starting in December 2004. The inspection focuses on hydrocarbon staining or any release that could result in contamination leaving the property boundary. Giant has prepared an inspection checklist to be completed and signed by the environmental employee conducting the inspection. Completed inspection sheets are maintained onsite.

3. Regulatory Criteria

No site-specific groundwater risk based screening levels have been established for the Gallup refinery so the criteria that Gallup groundwater samples are compared with are the New Mexico Water Quality Control Commission Standards 20.6.2.3103 and the U. S. EPA's National Primary Drinking Water Quality Standards (MCLs) and the NMED total petroleum hydrocarbon (TPH) screening guidelines. Tables comparing the results of sampling with the standards are provided in Section 4.

MCL'S SEPA National Primary Drinking Water Standards

	Contaminant	MCL or TT1	Potential health effects from	Common sources of	Public
	Containniant	(mg/L)2	exposure above the MCL	. contaminant in drinking water	Health Goal
	Acrylamide	TT8	Nervous system or blood problems;	Added to water during	zero
OC .	-			sewage/wastewater increased	
				risk of cancer treatment	
	Alachlor	0.002	Eye, liver, kidney or spleen problems;	Runoff from herbicide used on	zero
			anemia; increased risk of cancer	row crops	
	Alpha particles	15 picocuries	Increased risk of cancer	Erosion of natural deposits of	zero
	, ,	per Liter		certain minerals that are	
R		(pCi/L)		radioactive and may emit a form	
				of radiation known as alpha	
				radiation	
223	Antimony	0.006	Increase in blood cholesterol; decrease in	Discharge from petroleum	0.006
100			blood sugar	refineries; fire retardants;	
	· · · · · · · · · · · · · · · · · · ·			ceramics; electronics; solder	
18 S	Arsenic	0.010 as of	Skin damage or problems with circulatory	Erosion of natural deposits; runoff	0
100		1/23/06	systems, and may have increased risk of	from orchards, runoff from glass &	
			getting cancer	electronics production wastes	
	Asbestos (fibers >10	7 million	Increased risk of developing benign intestinal	Decay of asbestos cement in	7 MFL
00.	micrometers)	fibers per	polyps	water mains; erosion of natural	
		Liter (MFL)		deposits	
ഹി	Atrazine	0.003	Cardiovascular system or reproductive	Runoff from herbicide used on	0.003
	·	ļ	problems	row crops	
	Barium	2 .	Increase in blood pressure	Discharge of drilling wastes;	2 :
00		1		discharge from metal refineries;	
		0.005		erosion of natural deposits	
	Benzene	0.005	Anemia; decrease in blood platelets;	Discharge from factories;	zero
0.6		}	Increased risk of cancer	leaching from gas storage tanks	
		0.0002	Deproductive difficultion increased right of	and lanolilis	
$\mathbf{\alpha}$	Belizo(a)pyrene (PARS)	0.0002	capeor	storage tanks and distribution	Zero
	Bervllium	0.004	Intestinal lesions	Discharge from metal refineries	0.004
	Berymann	0.004		and coal-burning factories:	0.004
102		Į		discharge from electrical.	
		i i		aerospace, and defense	
				industries	
	Beta particles and photon	4 millirems	Increased risk of cancer	Decay of natural and man-made	zero
	emitters	per year		deposits of certain minerals that	
R				are radioactive and may emit	
			- -	forms of radiation known as	
				photons and beta radiation	
neip.	Bromate	0,010	Increased risk of cancer	Byproduct of drinking water	zero
		0.005		disinfection	
	Cadmium	0.005	Kidney damage	Corrosion of galvanized pipes;	0.005
	•			displayed from motol references	
				uischarge nom metal reinferies;	
				nainte	
	Carbofuran	0.04	Problems with blood pervous system or	Leaching of soil fumidant used on	0.04
00	ca.porutum	0.01	reproductive system	rice and alfalfa	0.04
	Carbon tetrachloride	0.005	Liver problems; increased risk of cancer	Discharge from chemical plants	7ern
66				and other industrial activities	
D.	Chloramines (as Cl2)	MRDL=4.01	Eye/nose irritation; stomach discomfort,	Water additive used to control	MRDI G=41
_U/			anemia	microbes	

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Dinsinfectant (<u>)</u> Disinfection Byproduct

Inorganic Chemical - 10 P Microorganism н Ц.



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	Contaminant	MCL or TT1 (mg/L)2	Potential health effects from exposure above the MCL	Common sources of contaminant in drinking water	Public Health Goal
OC	Chlordane	0.002	Liver or nervous system problems; increased risk of cancer	Residue of banned termiticide	zero
D	Chlorine (as Cl2)	MRDL=4.01	Eye/nose irritation; stomach discomfort	Water additive used to control microbes	MRDLG=41
Ď	Chlorine dioxide (as ClO ₂)	MRDL=0.81	Anemia; infants & young children: nervous system effects	Water additive used to control microbes	MRDLG=0.81
DIP.	Chlorite	1.0	Anemia; infants & young children: nervous system effects	Byproduct of drinking water disinfection	0.8
1900 -	Chlorobenzene	, 0.1	Liver or kidney problems	Discharge from chemical and agricultural chemical factories	0.1
100	Chromium (total)	0.1	Allergic dermatitis	Discharge from steel and pulp mills; erosion of natural deposits	0.1
Ĩ <u>ŌĊ</u>	Copper	TT7; Action Level = 1.3	Short term exposure: Gastrointestinal distress. Long term exposure: Liver or kidney damage. People with Wilson's Disease should consult their personal doctor if the amount of copper in their water exceeds the action level	Corrosion of household plumbing systems; erosion of natural deposits	1.3
W	Cryptosporidium	TT3	Gastrointestinal illness (e.g., diarrhea, vomiting, cramps)	Human and animal fecal waste	zero
100	Cyanide (as free cyanide)	0.2	Nerve damage or thyroid problems	Discharge from steel/metal factories; discharge from plastic and fertilizer factories	0.2
OC .	2,4-D	0.07	Kidney, liver, or adrenal gland problems	Runoff from herbicide used on row crops	0.07
. OC	Dalapon	0.2	Minor kidney changes	Runoff from herbicide used on rights of way	0.2
OC	1,2-Dibromo-3-chloropropa ne (DBCP)	0.0002	Reproductive difficulties; increased risk of cancer	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards	zero
00	o-Dichlorobenzene	0.6	Liver, kidney, or circulatory system problems	Discharge from industrial chemical factories	0.6
OC .	p-Dichlorobenzene	0.075	Anemia; liver, kidney or spleen damage; changes in blood	Discharge from industrial chemical factories	0.075
OC	1,2-Dichloroethane	0.005	Increased risk of cancer	Discharge from industrial chemical factories	zero
00	1,1-Dichloroethylene	0.007	Liver problems	Discharge from industrial chemical factories	0.007
00	cis-1,2-Dichloroethylene	0.07	Liver problems	Discharge from industrial chemical factories	0.07
OC	trans-1,2-Dichloroethylene	0.1	Liver problems	Discharge from industrial chemical factories	0.1
OC	Dichloromethane	0.005	Liver problems; increased risk of cancer	Discharge from drug and chemical factories	zero
0C	1,2-Dichloropropane	0.005	Increased risk of cancer	Discharge from industrial chemical factories	zero
OC	Di(2-ethylhexyl) adipate	0.4	Weight loss, live problems, or possible reproductive difficulties	Discharge from chemical factories	0.4
00	Di(2-ethylhexyl) phthalate	0.006	Reproductive difficulties; liver problems; increased risk of cancer	Discharge from rubber and chemical factories	zero
00	Dinoseb	0.007	Reproductive difficulties	Runoff from herbicide used on soybeans and vegetables	0.007
0C	Dioxin (2,3,7,8-TCDD)	0.00000003	Reproductive difficulties; increased risk of cancer	Emissions from waste incineration and other combustion; discharge from chemical factories	zero
00	Diquat	0.02	Cataracts	Runoff from herbicide use	0.02
	Endothall	0.1	Stomach and intestinal problems	Runoff from herbicide use	0.1

LEGEND





Microorganism

IOC Inorganic Chemical

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Radionuclides

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	Contaminant	MCL or TT ¹ (mg/L)2	Potential health effects from exposure above the MCL	Common sources of contaminant in drinking water	Public Health Goal
001	Endrin	0.002	Liver problems	Residue of banned insecticide	0.002
	Epichlorohydrin	TT8	Increased cancer risk, and over a long period	Discharge from industrial	zero
			of time, stomach problems	chemical factories; an impurity of	
			, ,	some water treatment chemicals	
	Ethylbenzene	0.7	Liver or kidneys problems	Discharge from petroleum	0.7
00				refineries	
	Ethylene dibromide	0.00005	Problems with liver stomach reproductive	Discharge from petroleum	760
00		0.00000	system or kidneys; increased risk of cancer	refineries	2010
	Eluorida	10	Bone disease (nain and tondernoss of the	Water additive which promotes	40
	Thuuride	4.0	bone disease (pair and tenderness of the	strong tooth; crossion of patural	4.0
		}	bones), oniorennay get notied teem	deposite: discharge from fertilizer	
				and aluminum fastation	
	Olevelia la estric		Control to al illege days disarted	the and an infinitian factories	
	Giardia iambila	TT3	Gastrointestinal liness (e.g., diarmea,	Human and animal recal waste	zero
			vomiting, cramps)		
<u> 199</u>	Glyphosate	0.7	Kidney problems; reproductive difficulties	Runoff from herbicide use	0.7
353-5-	Haloacetic acids (HAA5)	0.060	Increased risk of cancer	Byproduct of drinking water	n/a6
				disinfection	
ાભ	Heptachlor	0.0004	Liver damage; increased risk of cancer	Residue of banned termiticide	zero
00	Heptachlor epoxide	0.0002	Liver damage; increased risk of cancer	Breakdown of heptachlor	zero
	Heterotrophic plate count	ТТ3	HPC has no health effects; it is an analytic	HPC measures a range of	n/a
	(HPC)		method used to measure the variety of	bacteria that are naturally present	
	(-)		bacteria that are common in water. The lower	in the environment	
СЩ.			the concentration of bacteria in drinking		
28			water the better maintained the water		
			system is		
	Hexachlorobenzene	0.001	Liver or kidney problems: reproductive	Discharge from metal refineries	780
	TICKEDITION	0.001	difficulties: increased risk of cancer	and agricultural chemical	2010
		[factorias	
	Hexachlorocyclopentadien	0.05	Kidriev or stomach problems	Discharge from chemical	0.05
- 66		0.00		factories	0.00
	l ead	TT7.	Infants and children: Delays in physical or	Corresion of household plumbing	7010
	2000	l II4,	mantal development: children could show	sustants: orogion of natural	2010
		ACIION	slight deficits is attention apon and learning	depente	
		Level =	slight beliefs in allemon span and learning	depusits	
		0.015	abilities, Aduits. Multey problems, high blood		
<u>648</u>	l anionalla				
	Legionella	(1)	Legionnalie's Disease, a type of pheumonia	Found naturally in water;	zero
	l'had a se	0.0000		multiplies in neating systems	0.0000
08	Lindane	0.0002	Liver of kidney problems	Runom/leaching from insecticide	0.0002
	· · · · · · · · · · · · · · · · · · ·	0.000		used on cattle, lumber, garoens	0.000
	mercury (inorganic)	0.002	Noney damage	Erosion of natural deposits;	0.002
100-				discharge from refineries and	
				factories; runoff from landfills and	
27,52				croplands	
	Methoxychlor	0.04	Reproductive difficulties	Runoff/leaching from insecticide	0.04
				used on fruits, vegetables, altalta,	
				livestock	1
	Nitrate (measured as	10	Infants below the age of six months who drink	Runoff from fertilizer use;	10
1241	Nítrogen)		water containing nitrate in excess of the MCL	leaching from septic tanks,	ļ
			could become seriously ill and, if untreated,	sewage; erosion of natural	
		[may die. Symptoms include shortness of	deposits	1
			breath and blue-baby syndrome.		
330	Nitrite (measured as	1	Infants below the age of six months who drink	Runoff from fertilizer use;	1
	Nitrogen)		water containing nitrite in excess of the MCL	leaching from septic tanks,	
100			could become seriously ill and, if untreated,	sewage; erosion of natural	
			may die. Symptoms include shortness of	deposits	
		}	breath and blue-baby syndrome		1

LEGEND



Disinfection Byproduct

Inorganic Chemical Microorganism

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	Contaminant	MCL or TT ¹ (mg/L)2	Potential health effects from exposure above the MCL	Common sources of contaminant in drinking water	Public Health Goal
ÖĞ	Oxamyl (Vydate)	0.2	Slight nervous system effects	Runoff/leaching from insecticide used on apples, potatoes, and tomatoes	0.2
00:	Pentachlorophenol	0.001	Liver or kidney problems; increased cancer risk	Discharge from wood preserving factories	zero
09	Picloram	0.5	Liver problems	Herbicide runoff	0.5
00	Polychlorinated biphenyls (PCBs)	0.0005	Skin changes; thymus gland problems; immune deficiencies; reproductive or nervous system difficulties; increased risk of cancer	Runoff from landfills; discharge of waste chemicals	zero
R	Radium 226 and Radium 228 (combined)	5 pCi/L	Increased risk of cancer	Erosion of natural deposits	zero
ାତତ	Selenium	0.05	Hair or fingernail loss; numbness in fingers or toes; circulatory problems	Discharge from petroleum refineries; erosion of natural deposits; discharge from mines	0.05
OC	Simazine	0.004	Problems with blood	Herbicide runoff	0.004
OC	Styrene	0.1	Liver, kidney, or circulatory system problems	Discharge from rubber and plastic factories; leaching from landfills	0.1
ÔĈ	Tetrachloroethylene	0.005	Liver problems; increased risk of cancer	Discharge from factories and dry cleaners	zero
100	I hallum	0.002	Hair loss; changes in blood; kidney, intestine, or liver problems	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories	0.0005
. OC :	Toluene	1	Nervous system, kidney, or liver problems	Discharge from petroleum factories	1
N	Total Coliforms (including fecal coliform and <i>E. coli</i>)	5.0%4	Not a health threat in itself; it is used to indicate whether other potentially harmful bacteria may be present ⁵	Coliforms are naturally present in the environment as well as feces; fecal coliforms and <i>E. coli</i> only come from human and animal fecal waste.	zero
DEP	Total Trihalomethanes (TTHMs)	0.10 0.080 after 12/31/03	Liver, kidney or central nervous system problems; increased risk of cancer	Byproduct of drinking water disinfection	n/a6
00	Toxaphene	0.003	Kidney, liver, or thyroid problems; increased risk of cancer	Runoff/leaching from insecticide used on cotton and cattle	zero
00	2,4,5-TP (Silvex)	0.05	Liver problems	Residue of banned herbicide	0.05
. 90	1,2,4-Trichlorobenzene	0.07	Changes in adrenal glands	Discharge from textile finishing factories	0.07
00		0.2	Liver, nervous system, or circulatory problems	Discharge from metal degreasing sites and other factories	0.20
(OC	Trichlessothuloos	0.005		chemical factories	0.003
00		0.005	Turbiditule employues of the cloudinese of	sites and other factories	zero
M	I UIDIOIIY	20	water. It is used to indicate water quality and filtration effectiveness (e.g., whether disease-causing organisms are present). Higher turbidity levels are often associated with higher levels of disease-causing micro-organisms such as viruses, parasites and some bacteria. These organisms can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.		n/a
R	Uranium	30 ug/L as of 12/08/03	Increased risk of cancer, kidney toxicity	Erosion of natural deposits	zero

LEGEND

Dinsinfectant



Inorganic Chemical Microorganism



4

	Contaminant	MCL or TT1 (mg/L)2	Potential health effects from exposure above the MCL	Common sources of contaminant in drinking water	Public Health Goal
0 0)	Vinyl chloride	0.002	Increased risk of cancer	Leaching from PVC pipes; discharge from plastic factories	zero
前	Viruses (enteric)	TT3	Gastrointestinal illness (e.g., diarrhea, vomiting, cramps)	Human and animal fecal waste	zero
ÖČ.	Xylenes (total)	10	Nervous system damage	Discharge from petroleum factories; discharge from chemical factories	10

NOTES

- 1 Definitions
 - · Maximum Contaminant Level Goal (MCLG)-The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety and are non-enforceable public health goals.
 - Maximum Contaminant Level (MCL)—The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to MCLGs as feasible using the best available treatment technology and taking cost into consideration. MCLs are enforceable standards.
 - · Maximum Residual Disinfectant Level Goal (MRDLG)---The level of a drinking water disinfectant below which there is no known or expected risk to heatth. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
 - Maximum Residual Disinfectant Level (MRDL)—The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant level (MRDL)—The highest level of a disinfectant allowed in drinking water.
 - Treatment Technique (TT)—A required process intended to reduce the level of a contaminant in drinking water.
- 2 Units are in milligrams per liter (mg/L) unless otherwise noted. Milligrams per liter are equivalent to parts per million (ppm).
- 3 EPA's surface water treatment rules require systems using surface water or ground water under the direct influence of surface water to (1) disinfect their water, and (2) filter their water or meet criteria for avoiding filtration so that the following contaminants are controlled at the following levels;
- Cryptosporidium (as of 1/1/02 for systems serving >10.000 and 1/14/05 for systems serving <10.000) 99% removal.
- · Giardia lamblia: 99.9% removal/inactivation
- Viruses: 99.99% removal/inactivation
- · Legionella: No limit, but EPA believes that if Giardia and viruses are removed/inactivated, Legionella will also be controlled,
- Turbidity: Al no time can turbidity (cloudiness of water) go above 5 nephelolometric turbidity units (NTU); systems that filter must ensure that the turbidity go no higher than 1 NTU (0.5 NTU for conventional or direct filtration) in al least 95% of the daily samples in any month. As of January 1, 2002, for systems servicing >10,000, and January 14, 2005, for systems servicing <10,000, turbidity may never exceed 1 NTU, and must not exceed 0.3 NTU in 95% of daily samples in any month.
- HPC: No more than 500 bacterial colonies per milliliter
- Long Term 1 Enhanced Surface Water Treatment (Effective Date: January 14, 2005); Surface water systems or (GWUDI) systems serving fewer than 10,000 people must comptly with the applicable Long Term 1 Enhanced Surface Water Treatment Rule provisions (e.g. turbidity standards, individual filter monitoring, Cryptosporidium removal requirements, updated watershed control requirements for unfiltered systems).
- Filter Backwash Recycling: The Filter Backwash Recycling Rule requires systems that recycle to return specific recycle flows through all processes of the system's existing conventional or direct filtration system or at an alternate location approved by the state.
- 4 No more than 5.0% samples total coliform-positive in a month. (For water systems that collect fewer than 40 routine samples per month, no more than one sample can be total coliform-positive per month.) Every sample that has total coliform must be analyzed for either fecal coliforms or *E. coli* if two consecutive TC-positive samples, and one is also positive for *E. coli* fecal coliforms, system has an acute MCL violation.
- 5 Fecal coliform and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Disease-causing microbes (pathogens) in these wastes can cause diarrhea, cramps, nausea, headaches, or other symptoms. These pathogens may pose a special health risk for infants, young children, and people with severely compromised immune systems.
- 8 Although there is no collective MCLG for this confaminant group, there are individual MCLGs for some of the individual contaminants:
 - Haloacetic acids: dichloroacetic acid (zero): trichloroacetic acid (0.3 mo/L)
 - Trihalomethanes: bromodichloromethane (zero); bromoform (zero); dibromochloromethane (0.06 mg/L)
- 7 Lead and copper are regulated by a Treatment Technique that requires systems to control the corrosiveness of their water. If more than 10% of tap water samples exceed the action level, water systems must take additional steps, For copper, the action level is 1.3 mg/L, and for lead is 0.015 mg/L.
- 8 Each water system must certify, in writing, to the state (using third-party or manufacturers certification) that when it uses acrylamide and/or epichlorohydrin to treat water, the combination (or product) of dose and monomer level does not exceed the levels specified, as follows: Acrylamide = 0.05% dosed at 1 mg/L (or equivalent); Epichlorohydrin = 0.01% dosed at 20 mg/L (or equivalent).

LEGEND D

Dinsinfectant Disinfection Byproduct Inorganic Chemical

Microorganism



Organic Chemical

National Secondary Drinking Water Standards

National Secondary Drinking Water Standards are non-enforceable guidelines regulating contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water. EPA recommends secondary standards to water systems but does not require systems to comply. However, states may choose to adopt them as enforceable standards.

Contaminant	Secondary Standard
Aluminum	0.05 to 0.2 mg/L
Chloride	250 mg/L
Color	15 (color units)
Copper	1.0 mg/L
Corrosivity	noncorrosive
Fluoride	2.0 mg/L
Foaming Agents	0.5 mg/L
Iron	0.3 mg/L
Manganese	0.05 mg/L
Odor	3 threshold odor number
pН	6.5-8.5
Silver	0.10 mg/L
Sulfate	250 mg/L
Total Dissolved Solids	500 mg/L
Zinc	5 mg/L

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C. The standards are not intended as maximum ranges and concentrations for use, and nothing herein contained shall be construed as limiting the use of waters containing higher ranges and concentrations. [2-18-77; 20.6.2.3101 NMAC - Rn, 20 NMAC 6.2.III.3101, 1-15-01]

20.6.2.3102: [RESERVED]

[12-1-95; 20.6.2.3102 NMAC - Rn, 20 NMAC 6.2.III.3102, 1-15-01]

20.6.2.3103 STANDARDS FOR GROUND WATER OF 10,000 mg/I TDS CONCENTRATION OR

LESS: The following standards are the allowable pH range and the maximum allowable concentration in ground water for the contaminants specified unless the existing condition exceeds the standard or unless otherwise provided in Subsection D of Section 20.6.2.3109 NMAC. Regardless of whether there is one contaminant or more than one contaminant present in ground water, when an existing pH or concentration of any water contaminant exceeds the standard specified in Subsection A, B, or C of this section, the existing pH or concentrations shall be the allowable limit, provided that the discharge at such concentrations will not result in concentrations at any place of withdrawal for present or reasonably foreseeable future use in excess of the standards of this section. These standards shall apply to the dissolved portion of the contaminants specified with a definition of dissolved being that given in the publication "*methods for chemical analysis of water and waste of the U.S. environmental protection agency*," with the exception that standards for mercury, organic compounds and non-aqueous phase liquids shall apply to the total unfiltered concentrations of the contaminants.

A. Human Health Standards-Ground water shall meet the standards of Subsection A and B of this section unless otherwise provided. If more than one water contaminant affecting human health is present, the toxic pollutant criteria as set forth in the definition of toxic pollutant in Section 20.6.2.1101 NMAC for the combination of contaminants, or the Human Health Standard of Subsection A of Section 20.6.2.3103 NMAC for each contaminant shall apply, whichever is more stringent. Non-aqueous phase liquid shall not be present floating atop of or immersed within ground water, as can be reasonably measured.

Arsenic (As)	0.1 mg/l
Barium (Ba)	1.0 mg/l
Cadmium (Cd)	0.01 mg/l
Chromium (Cr)	0.05 mg/l
Cyanide (CN)	0.2 mg/l
Fluoride (F)	1.6 mg/l
Lead (Pb)	0.05 mg/l
Total Mercury (Hg)	0.002 mg/l
Nitrate (NO ₃ as N)	10.0 mg/l
Selenium (Se)	0.05 mg/l
Silver (Ag)	0.05 mg/l
Uranium (U)	0.03 mg/l
Radioactivity: Combined Radium-226 & Radium-228	
Benzene	0.01 mg/l
Polychlorinated biphenyls (PCB's)	0.001 mg/l
Toluene	0.75 mg/l
Carbon Tetrachloride	0.01 mg/l
1,2-dichloroethane (EDC)	0.01 mg/l
1,1-dichloroethylene (1,1-DCE)	0.005 mg/l
1,1,2,2-tetrachloroethylene (PCE)	0.02 mg/l
1,1,2-trichloroethylene (TCE)	0.1 mg/l
ethylbenzene	0.75 mg/l
total xylenes	0.62 mg/l
methylene chloride	0.1 mg/l
chloroform	0.1 mg/l
1,1-dichloroethane	0.025 mg/l
ethylene dibromide (EDB)	0.0001 mg/l
1,1,1-trichloroethane	0.06 mg/l
1,1,2-trichloroethane	0.01 mg/l
1,1,2,2-tetrachloroethane	0.01 mg/l
vinyl chloride	0.001 mg/l
	Arsenic (As) Barium (Ba) Cadmium (Cd) Chromium (Cr) Cyanide (CN) Fluoride (F) Lead (Pb) Total Mercury (Hg) Nitrate (NO ₃ as N) Selenium (Se) Silver (Ag) Uranium (U) Radioactivity: Combined Radium-226 & Radium-228 Benzene Polychlorinated biphenyls (PCB's) Toluene Carbon Tetrachloride 1,2-dichloroethane (EDC) 1,1-dichloroethylene (1,1-DCE) 1,1,2,2-tetrachloroethylene (PCE) 1,1,2-trichloroethylene (TCE) ethylbenzene total xylenes methylene chloride 1,1-dichloroethane 1,1-dichloroethane 1,1,2-trichloroethane 1,1,2-trichloroethane 1,1,2-trichloroethane 1,1,2-trichloroethane 1,1,2-trichloroethane 1,1,2-trichloroethane 1,1,2-trichloroethane 1,1,2-trichloroethane 1,1,2-trichloroethane 1,1,2-trichloroethane 1,1,2-trichloroethane 1,1,2,2-tetrachloroethane 1,2,2-tetrachloroethane 1,2,2-tetrachloroethane 1,2,2-tetrachloroethane 1,2,2-tetrachloroethane 1,2,2-tetrachloroethane 1,2,2-tetrachloroethane 1,2,2-

(32)	PAHs: total naphthalene plus monomethylnaphthalenes	0.03 mg/l
(33)	benzo-a-pyrene	0.0007 mg/l
B.	Other Standards for Domestic Water Supply	
(1)	Chloride (Cl)	
(2)	Copper (Cu)	1.0 mg/l
(3)	Iron (Fe)	1.0 mg/l
(4)	Manganese (Mn)	0.2 mg/l
(6)	Phenols	0.005 mg/l
(7)	Sulfate (SO ₄)	600.0 mg/l
(8)	Total Dissolved Solids (TDS)	
(9)	Zinc (Zn)	
(10)	pH	between 6 and 9
C.	Standards for Irrigation Use - Ground water shall meet	the standards of Subsection A, B,
and C of this see	ction unless otherwise provided.	
(1)	Aluminum (Al)	5.0 mg/l

(1)	Aluminum (Al)	
(2)	Boron (B)	0.75 mg/l
(3)	Cobalt (Co)	0.05 mg/l
(4)	Molybdenum (Mo)	1.0 mg/l
(5)	Nickel (Ni)	0.2 mg/l
[2-18-77, 1-29-82	2, 11-17-83, 3-3-86, 12-1-95; 20.6.2.3103 NMAC	- Rn, 20 NMAC 6.2.III.3103, 1-15-01; A, 9-26-

041

[Note: For purposes of application of the amended numeric uranium standard to past and current water discharges (as of 9-26-04), the new standard will not become effective until June 1, 2007. For any new water discharges, the uranium standard is effective 9-26-04.]

20.6.2.3104 DISCHARGE PERMIT REQUIRED: Unless otherwise provided by this Part, no person shall cause or allow effluent or leachate to discharge so that it may move directly of indirectly into ground water unless he is discharging pursuant to a discharge permit issued by the secretary. When a permit has been issued, discharges must be consistent with the terms and conditions of the permit. In the event of a transfer of the ownership, control, or possession of a facility for which a discharge permit is in effect, the transferee shall have authority to discharge under such permit, provided that the transferee has complied with Section 20.6.2.3111 NMAC, regarding transfers. [2-18-77, 12-24-87, 12-1-95; Rn & A, 20.6.2.3104 NMAC - 20 NMAC 6.2.III.3104, 1-15-01; A, 12-1-01]

20.6.2.3105 EXEMPTIONS FROM DISCHARGE PERMIT REQUIREMENT: Sections 20.6.2.3104 and 20.6.2.3106 NMAC do not apply to the following:

A. Effluent or leachate which conforms to all the listed numerical standards of Section 20.6.2.3103 NMAC and has a total nitrogen concentration of 10 mg/l or less, and does not contain any toxic pollutant. To determine conformance, samples may be taken by the agency before the effluent or leachate is discharged so that it may move directly or indirectly into ground water; provided that if the discharge is by seepage through non-natural or altered natural materials, the agency may take samples of the solution before or after seepage. If for any reason the agency does not have access to obtain the appropriate samples, this exemption shall not apply;

B. Effluent which is discharged from a sewerage system used only for disposal of household and other domestic waste which is designed to receive and which receives 2,000 gallons or less of liquid waste per day;

C. Water used for irrigated agriculture, for watering of lawns, trees, gardens or shrubs, or for irrigation for a period not to exceed five years for the revegetation of any disturbed land area, unless that water is received directly from any sewerage system;

D. Discharges resulting from the transport or storage of water diverted, provided that the water diverted has not had added to it after the point of diversion any effluent received from a sewerage system, that the source of the water diverted was not mine workings, and that the secretary has not determined that a hazard to public health may result;

E. Effluent which is discharged to a watercourse which is naturally perennial; discharges to dry arroyos and ephemeral streams are not exempt from the discharge permit requirement, except as otherwise provided in this section;

F. Those constituents which are subject to effective and enforceable effluent limitations in a National Pollutant Discharge Elimination System (NPDES) permit, where discharge onto or below the surface of the ground so that water contaminants may move directly or indirectly into ground water occurs downstream from the outfall
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In some instances, it may be practical to assess areas of soil contamination that are the result of releases of petroleum products such as jet fuel and diesel, using total petroleum hydrocarbon (TPH) analyses. TPH results may be used to delineate the extent of petroleum-related contamination at these sites and ascertain if the residual level of petroleum products in soil represents an unacceptable risk to future users of the site. Petroleum hydrocarbons represent complex mixtures of compounds, some of which are regulated constituents and some compounds that are not regulated. In addition, the amount and types of the constituent compounds in a petroleum hydrocarbon release differ widely depending on what type of product was spilled and how the spill has weathered. This variability makes it difficult to determine the toxicity of weathered petroleum products in soil solely from TPH results; however, these results can be used to approximate risk in some cases, depending upon the nature of the petroleum product, the release scenario, how well the site has been characterized, and anticipated potential future land uses. In some cases, site clean up cannot be based solely on results of TPH sampling. The New Mexico Environment Department (NMED) will make these determinations on a case by case basis. If NMED determines that additional data are necessary, these TPH guidelines must be used in conjunction with the screening guidelines for individual petroleum-related contaminants in Table 3 and other contaminants, as applicable.

The screening levels for each petroleum carbon range from the Massachusetts Department of Environmental Protection (MADEP) Volatile Petroleum Hydrocarbons/Extractable Petroleum Hydrocarbons (VPH/EPH) approach and the percent composition table below were used to generate screening levels corresponding to total TPH. Except for waste oil, the information in the compositional assumptions table was obtained from the Massachusetts Department of Environmental Protection guidance document *Implementation of the MADEP VPH/EPH Approach* (October 31, 2002). TPH toxicity was based only on the weighted sum of the toxicity of the hydrocarbon fractions listed in Table 1.

Petroleum Product	C11-C22 Aromatics	C9-C18 Aliphatics	C19-C36 Aliphatics
Diesel #2/ new crankcase oil	60%	40%	0%
#3 and #6 Fuel Oil	70%	30%	0%
Kerosene and jet fuel	30%	70%	0%
Mineral oil dielectric fluid	20%	40%	40%
Unknown oil ^a	100%	0%	0%
Waste Oil ^b	0%	0%	100%

Table 1. 1PH Compositional Assumptions	is in Soil	l
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Sites with oil from unknown sources must be tested for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, and polychlorinated biphenyls (PCBs) to determine if other potentially toxic constituents are present. The TPH guidelines in Table 2 are not designed to be protective of exposure to these constituents therefore they must be tested for, and compared to, their individual NMED soil screening guidelines.

Compositional assumption for waste oil developed by NMED is based on review of chromatographs of several types of waste oil. Sites with waste oil must be tested for VOCs, SVOCs, metals, and PCBs to determine if other potentially toxic constituents are present. The TPH guidelines in Table 2 are not designed to be protective of exposure to these constituents therefore they must be tested for, and compared to, their individual NMED soil screening guidelines.

November 2005 Page 1 of 5 A TPH screening guideline was calculated for each of the types of petroleum product based on the assumed composition from Table 1 for petroleum products and the direct soil standards incorporating ceiling concentrations given in the MADEP VPH/EPH Excel spreadsheet for each of the carbon fractions. Groundwater concentrations are based on the weighted sum of the noncarcinogenic toxicity of the petroleum fractions.

Method 1 from the MADEP VPH/EPH document was applied, which represents generic cleanup standards for soil and groundwater. Method 1 applies if contamination exists in only soil and groundwater. The MADEP VPH/EPH further divides groundwater into standards. Standard GW-1 applies when groundwater may be used for drinking water purposes. GW-1 standards are based upon ingestion and use of groundwater as a potable water supply. The TPH screening guidelines for sites with potable groundwater are presented in Table 2a.

	TPH		
Petroleum Product	Residential Direct Exposure (mg/kg)	Industrial Direct Exposure (mg/kg)	Concentration in Groundwater (mg/L)
Diesel #2/crankcase oil	520	1120	1.72
#3 and #6 Fuel Oil	440	890	1.34
Kerosene and jet fuel	760	1810	2.86
Mineral oil dielectric fluid	1440	3040	3.64
Unknown oil	200	200	0.2
Waste Oil	2500	- 5000	Petroleum-Related Contaminants
Gasoline	Not applicable	Not applicable	Petroleum-Related Contaminants

Table 2a. TPH Screening Guidelines for Potable Groundwater (GW-1)

Sites with oil from unknown sources must be tested for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, and polychlorinated biphenyls (PCBs) to determine if other potentially toxic constituents are present. The TPH guidelines in Table 2 are not designed to be protective of exposure to these constituents therefore they must be tested for, and compared to, their individual NMED soil screening guidelines.

Compositional assumption for waste oil developed by NMED is based on review of chromatographs of several types of waste oil. Sites with waste oil must be tested for VOCs, SVOCs, metals, and PCBs to determine if other potentially toxic constituents are present. The TPH guidelines in Table 2 are not designed to be protective of exposure to these constituents therefore they must be tested for, and compared to, their individual NMED soil screening guidelines.

The second standard is GW-2, which is applicable for sites where the depth to groundwater is less than 15 feet from the ground surface and within 30 feet of an occupied structure. The structure may be either residential or industrial. GW-2 standards are based upon "inhalation exposures that could occur to occupants of the building impacted by volatile compounds, which partition from the groundwater" (MADEP 2001). The GW-2 screening guidelines ONLY apply for the evaluation of inhalation exposures. If potential ingestion or contact with contaminated soil and/or

November 2005 Page 2 of 5 groundwater could occur, then the screening guidelines provided in Table 2.a should be applied. Table 2.b lists the TPH screening guidelines for the inhalation scenario.

	TPH		
Petroleum Product	Residential Direct Exposure (mg/kg)	Industrial Direct Exposure (mg/kg)	Concentration in Groundwater (mg/L)
Diesel #2/crankcase oil	880	2200	30.4
#3 and #6 Fuel Oil	860	2150	35.3
Kerosene and jet fuel	940	2350	15.7
Mineral oil dielectric fluid	1560	3400	10.4
Unknown oil ²	800	2000	50.0
Waste Oil	2500	5000	Petroleum-Related Contaminants
Gasoline	Not applicable	Not applicable	Petroleum-Related Contaminants

Table 2b. TPH Screening Guidelines – Vapor Migration and Inhalation of Groundwater (GW-2)

Sites with oil from unknown sources must be tested for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, and polychlorinated biphenyls (PCBs) to determine if other potentially toxic constituents are present. The TPH guidelines in Table 2 are not designed to be protective of exposure to these constituents therefore they must be tested for, and compared to, their individual NMED soil screening guidelines.

Compositional assumption for waste oil developed by NMED is based on review of chromatographs of several types of waste oil. Sites with waste oil must be tested for VOCs, SVOCs, metals, and PCBs to determine if other potentially toxic constituents are present. The TPH guidelines in Table 2 are not designed to be protective of exposure to these constituents therefore they must be tested for, and compared to, their individual NMED soil screening guidelines.

Mineral oil based hydraulic fluids can be evaluated for petroleum fraction toxicity using the screening guidelines from Tables 2a and 2b specified for waste oil, because this type of hydraulic fluid is composed of approximately the same range of carbon fractions as waste oil. However, these hydraulic fluids often contain proprietary additives that may be significantly more toxic than the oil itself; these additives must be considered on a site- and product-specific basis (see ATSDR hydraulic fluids profile reference). Use of alternate screening guideline values requires prior written approval from the New Mexico Environment Department. TPH screening guidelines in Tables 2a and 2b must be used in conjunction with the screening levels for petroleum-related contaminants given in Table 3 because the TPH screening levels are NOT designed to be protective of exposure to these individual petroleum-related contaminants. Table 3 petroleum-related contaminants screening levels are based on the New Mexico Environment screening levels Department soil (SSLs) released in February 2004.

The list of petroleum-related contaminants does not include polyaromatic hydrocarbons (PAHs) with individual screening levels that would exceed the total TPH screening levels (acenaphthene, anthracene, flouranthene, flourene, and pyrene). In addition, these TPH screening guidelines are based solely on human health, not ecological risk considerations, protection of surface water, or

November 2005 Page 3 of 5 potential indoor air impacts from soil vapors. Potential soil vapor impacts to structures or utilities are not addressed by these guidelines. Site-specific investigations for potential soil vapor impacts to structures or utilities must be done to assure that screenings are consistently protective of human health, welfare or use of the property. NMED believes that use of these screening guidelines will allow more efficient screenings of petroleum release sites at sites while protecting human health and the environment. Copies of the references cited below are available on the MADEP website at http://www.state.ma.us/dep/bwsc/vph_eph.htm and the NMED website at http://www.nmenv.state.nm.us/HWB/guidance.html.

Petroleum-Related	Values for Dire So	ct Exposure to il	NMED DAF ^a 20 GW	NMED DAF							
Containmants	NMED residential SSL (mg/kg)	NMED Industrial SSL (mg/kg)	protection (mg/kg in soil)	protection (mg/kg in soil)							
Benzene	2.70E+01	7.36E+01	2.83E-02	1.41E-03							
Toluene	2.48E+02	2.48E+02	6.80E+00	3.40E-01							
Ethyl benzene	1.06E+04	2.54E+04	1.05E+01	5.25E-01							
Xylene	1.32E+02	1.32E+02	1.01E+01	5.07E-01							
Naphthalene	7.19E+01	9.83E+01	3.93E-01	1.97E-02							
2-methyl naphthalene	1.00E+03	2.50E+03	d 	d 							
Benzo(a)anthracene	6.21E+00	2.34E+01	1.10E+00	5.49E-02							
Benzo(b)fluoranthene	6.21E+00	2.34E+01	3.40E+00	1.7E-01							
Benzo(k)fluoranthene	6.21E+01	2.34E+02	3.40E+01	1.70E+00							
Benzo(a)pyrene	6.21E-01	2.34E+00	6.12E+00	3.06E-01							
Chrysene	6.21E+02	2.34E+03	1.10E+02	5.49E+00							
Dibenz(a,h) anthracene	6.21E-01	2:34E+00	1.05E+00	5.24E-02							
Indeno(1,2,3-c,d) pyrene	6.21E+00	2.34E+01	9.58E+00	4.79E-01							
DAF – Dilution Attenuation Factor For contaminated soil in contact with groundwater											

Table 3. Petroleum-Related Contaminants Screening Guidelines

No NMED value available, value taken from MADEP 2002

References

Agency for Toxic Substances and Disease Registry (ATSDR). 1997. Toxicological Profile for Hydraulic fluids.

Massachusetts Department of Environmental Protection, Bureau of Waste Site Cleanup and Office of Research and Standards. 1994. "Background Documentation for the Development of the MCP Numerical Standards."

November 2005 Page 4 of 5 Massachusetts Department of Environmental Protection, Bureau of Waste Site Cleanup and Office of Research and Standards. 2002. "Characterizing Risks Posed by Petroleum Contaminated Sites: Implementation of the MADEP VPH/EPH Approach," Policy, October 31, 2002.

Massachusetts Department of Environmental Protection, Bureau of Waste Site Cleanup and Office of Research and Standards. 2003. "Updated Petroleum Hydrocarbon Fraction Toxicity Values for the VPH/EPH/APH Methodology." November 2003.

New Mexico Environment Department, Hazardous Waste Bureau and Groundwater Quality Bureau Voluntary Remediation Program. 2004. "Technical Background Document for Development of Soil Screening Levels." February 2004. Revision 2.0.

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4. Groundwater Monitoring Results

Results of the annual groundwater sampling are summarized in tables presented in this section.

Benzene in the two samples taken from Well OW-14 in 2006 were less than the NMWQS.

No semi-volatile compounds were detected in any of the ground water samples except there was a single hit of 2, 4-Dimethylphenol (85 ug/l) in GWM-1 in the sample taken on 8-2-06.

Elevated levels of fluoride and total dissolved solids (TDS) have shown up in some of the boundary wells in 2006, 2005 and 2004. Chloride was detected in elevated concentration in GWM-1 in 2006 at 3,700 mg/l (2,000 mg/l in 2005).

Arsenic showed up in the August 2006 analysis of water from GMW-1 at 0.077 mg/l which exceeds the NMWQS of 0.050 mg/l.

Selenium showed up in boundary well 2B in August 2004 at 0.069 mg/l which is greater than the WQCC standard of 0.05 mg/l however sampling results in 2006 showed less than 0.05 mg/l of selenium.

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		POT	ABLE W	ELLS #2,	#3, AND #	ŧ 4			
	mg/L	DATE SAMPLED	PW PW PW N Well #2 Well #4 Well #3		WQCC 20 NMAC 6 2 3103	MCL'S	EPA Region 6 Screening Level MTBE		
· · · · · · · · · · · · · · · · · · ·		27-Oct-06			<0.001		<u></u>		
	Benzene	Not sampled in 2005*							
	201120110	04-Aug-04		<0.001		0.01	0.005		
		09-Dec-04	<0.001						
		27-Oct-06			<0.001				
	Toluene	Not sampled in 2005*							
		04-Aug-04		<0.001		0.75	1		
		09-Dec-04	<0.001						
		27-Oct-06			<0.001				
	EthylBon	Not sampled in 2005*							
	Linyiden	04-Aug-04		<0.001		0.75	0.7		
		09-Dec-04	<0.001						
		27-Oct-06			<0.001				
	Xvlene	Not sampled in 2005*							
	, ty tente	04-Aug-04		<0.001		0.62	10		
		19-Nov-04	0.005						
		27-Oct-06			<0.001				
	MTBE	Not sampled in 2005*						0,01/	

*The potable water supply wells were not required to be sampled in 2005.

	IN	IFLUENT TO EV	APORATION	POND 1		
	mg/L	DATE	_ EP1	WQCC20 NMAC	MCL'S	EPA Region 6 Screening Level MTBE
		SAMPLED	INFLUENT	6.2.3103		
	Benzene	March 30, 2006	0.210	0.01	0.005	
		October 30, 2006	<0.010			
	Ethvl Benzene	March 30, 2006	0.060	0.75	0.7	
		October 30, 2006	<0.010			
	MTBE	March 30, 2006	<0.075			0.011
		October 30, 2006	<0.015			0.011
EPA	Toluene	March 30, 2006	0.440	0.75	1	
MET		October 30, 2006	<0.010	0.75	1	
ГНО	Xylenes	March 30, 2006	0.430	0.62	10	
D 82		October 30, 2006	0.062	0.02	10	
60B	1-Methylnaphthalene	March 30, 2006	0.410			
VOI	1-wemymaphthatene	October 30, 2006	0.440			
ATI	2-Methylnaphthalene	March 30, 2006	0.620	0.03		
LES		October 30, 2006	0.550	0.05		
	1.2.4-trimethylbenzene	March 30, 2006	0.170			
		October 30, 2006	0.110			
	2-butanone	March 30, 2006	0.820			
		October 30, 2006	0.110			
	Naphthalene	March 30, 2006	0.200	-		
		October 30, 2006	0.054			
н	Hg	March 30, 2006	0.0017	0.002	0.002	
PA N	0	October 30, 2006	0.0011		0.002	
IETH	Ba	March 30, 2006	0.22		2	
OD		October 30, 2006	0.16			
5010B	Cr	March 30, 2006	0.010		0.1	
ME		October 30, 2006	0.011			
FALS	Pb	March 30, 2006	0.011		0.015	
		October 30, 2006	0.018		0.015	

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100 gala

	Se	March 30, 2006	<0.050	0.2**							
	50	October 30, 2006	< 0.050	0.2							
	۸a	March 30, 2006	<0.0050	10.0*							
	Ag	October 30, 2006	<0.0050								
G	roundwater standards from N	MAC are human health based	d standards except	as indicated below	<i>.</i>						
*S	*Standard for domestic water supply.										
**S	"Standard for domestic water supply. **Standard for irrigation use.										

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	VOLATILES 8021B													
	mg/L	DATE SAMPLE D	OW #12	OW 13	OW 14	OW 29	OW 30	POND #2	GWM 1*	WQCC 20 NMAC 6.2.3103	EPA MCLs	EPA Region6 Screening Level MTBE		
		28-Dec-06			0.0042									
		27-Oct-06	<0.001	<0.001	0.0034	<0.001	<0.001	<0.010	0.012					
		27-Sep-05	<0.0005	<0.0005	0.017	<0.0005	<0.0005		0.081					
	Benzene	28-Jun-05			-				0.010	0.01	0.005			
		15-Feb-05				-			0.005					
		08-Dec-04	<0.0005	<0.0005		<0.0005	<0.0005							
		09-Dec-04			0.23				0.0044					
		28-Dec-06			<0.001		:							
		27-Oct-06	<0.001	< 0.001	⊲0.001	<0.001	<0.001	0.022	<0.010		.75 1			
	Toluene	27-Sep-05	<0.0005	<0.0005	0.0022	<0.0005	<0.0005		0.0046	0.75				
EPA N		28-Jun-05							<.0025	0.75				
		15-Feb-05							0.0024					
AET		08-Dec-04	<0.0005	<0.0005	0.0025	<0.0005	<0.0005		0.0032					
HOD		28-Dec-06			0.0025						0.7			
802		27-Oct-06	<0.001	<0.001	<0.001	<0.001	<0.001	<0.010	<0.010					
1B V	FthulBon	27-Sep-05	<0.0005	<0.0005	0.0023	<0.0005	<0.0005		0.0028	0.75				
/JO		28-Jun-05							0.0035	0.75				
ATH		15-Feb-05							0.0026		:			
,ES		08-Dec-04	<0.0005	<0.0005	0.0029	<0.0005	<0.0005		0.0021					
		28-Dec-06			<0.003									
		27-Oct-06	<0.003	<0.003	<0.003	<0.003	<0.003	0.045	<0.030					
		27-Sep-05	<0.0005	<0.0005	0.0014	<0.0005	<0.0005		0.010	0.62	10			
	Xylene	28-Jun-05							0.041	0.62	10			
		15-Feb-05							0.031					
		08-Dec-04	<0.0005	<0.0005	0.003	<0.0005	<0.0005		0.0024					
		28-Dec-06			0.180									
		27-Oct-06	<0.0025	<0.0025	0.016	<0.0025	0.018	<0.0025	0.160					
	MIBE	27-Sep-05	<0.0025	<0.0025	0.077	<0.0025	<0.0025		0.170					
		08-Dec-04	<0,0025	< 0.0025	0.065	<0.0025	< 0.0025		0.048			0.011		
L		1	1		2007	J		I		1	L	1		

*GWM-1 was sampled on August 2, 2006.

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						.,	VOL	ATILE	ES 826	0B		999 - 999 - 90 - 90 - 90 - 90 - 90 - 90		
	mg/L	DATE SAMPLED	OW 11**	BW 1A	BW 1B	BW 2A	BW 2B	BW 3B	BW 1C	BW 2C	BW 3C	WQCC 20 NMAC 6.2.3103	MCL'S	EPA Region Screening Lev MTBE
EPA		28/29-Oct- 06	<0.001	DRY	DRY	<0.001	⊲0.001	<0.001	<0.001	<0.001	<0.001			
METH	Benzene	17/20-Oct- 05	<0.001	DRY	DRY	⊲0.001	<0.001	<0.001	⊲0.001	<0.001	<0.001	0.01	0.005	
Q		08-Dec-04	< 0.001	DRY	DRY									
3 826		04-Aug-04		DRY	DRY	<0.001	<0.001	<0.001	<0.001	<0.01	0.0052			
OB VO		28/29-Oct- 06	<0.001	DRY	DRY	⊲0.001	<0.001	⊲0.001	⊲0.001	<0.001	<0.001			
DLATI	Toluene	17/20-Oct- 05	<0.001	DRY	DRY	⊲0.001	⊲0.001	<0.001	<0.001	<0.001	<0.001	0.75	1	
LES		08-Dec-04	< 0.001	DRY	DRY									0.011
		04-Aug-04		DRY	DRY	⊲0.001	<0.001	<0.001	⊲0.001	<0.01	0.001			
		28/29-Oct- 06	<0.001	DRY	DRY	⊲0.001	<0.001	<0.001	⊲0.001	<0.001	<0.001		0.7	
	EthylBen	17/20-Oct- 05	<0.001	DRY	DRY	<0.001	⊲0.001	⊲0.001	<0.001	<0.001	<0.001	0.75		
		08-Dec-04	<0.001	DRY	DRY									
		04-Aug-04		DRY	DRY	<0.001	⊲0.001	<0.001	⊲0.001	< 0.01	< 0.001			
		28/29-Oct-	<0.003			<0003	<003	<0003	<0.003	<0.003	<0.003			
		17/20-Oct-	<0.005			-0.000	N .000	- 	<u> <u> 0.000</u></u>	~0.003	<0.005			
	Xylene	05	< 0.001	DRY	DRY	<0.001	⊲0.001	<0.001	<0.001	< 0.001	< 0.001	0.62	10	
		08-Dec-04	<0.001	DRY	DRY									
		04-Aug-04		DRY	DRY	<0.001	⊲0.001	<0.001	<0.001	< 0.01	0.0015			
		28/29-Oct-	<0.0015		DRV	<00115	⊲00015	<0.0015	<00015	<0.0015	<0.0015			
	MTBE	17/20-Oct- 05	< 0.001	DRY	DRY	<0.001	<0.001	<0.001	<0.001	< 0.001	< 0.001			
		08-Dec-04	< 0.001	DRY	DRY]		
		04-Aug-04		DRY	DRY	<0.001	⊲0.001	⊲0.001	<0.001	<0.01	0.001			

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**OW-11 was sampled in 2006 on October 26, 2006. BW3A was dry.

						VOI	LATILI	ES 8260E	3			
			mg/L	DATE SAMPLED	MW-1	MW-4	MW-5	SMW-2	SMW-4	WQCC 20 NMAC 6.2.3103	MCLs	EPA Region6 Screening Leve MTBE
		EPA		26-Oct-06	<0.001					0.01	0.005	
	MET	MET	Benzene	12-Oct-05	<0.001	<0.001	<0.001	<0.001	<0.001	0.01	0.005	
		HOL		26-Oct-06	<0.001					0.77	_	
		8260	Toluene	12-Oct-05	<0.001	<0.001	<0.001	<0.001	<0.001	0.75	1	
)B VC	EthylBen	26-Oct-06	<0.001		•			0.75	07	
)LATI		12-Oct-05	<0.001	<0.001	<0.001	<0.001	<0.001	0.75	0.7	
		LES		26-Oct-06	<0.003					0.62	10	
			Xylene	29-Sep-05	<0.001	<0.001	<0.001	<0.001	<0.001	0.02	10	
			26-Oct-06	<0.0015							0.071	
	N		MTBE	29-Sep-05	< 0.001	<0.001	< 0.001	0.0083	<0.001			0.011

Note: Wells MW-4, MW-5, SMW-2, and SMW-4 were not required to be sampled in 2006.

TPH, METALS, AND GENERAL CHEMISTRY											
	mg/L	DATE SAMPLED	GW M-1	MW- 1	MW- 4*	MW- 5*	SMW- 2*	SMW- 4*	WQCC 20 NMAC 6.2.3103	MCLs	
EPA 8015	DRO	October 26, 2006		<1.0							
;B	MRO	October 26, 2006		<5.0			1				
hod	GRO	October 26, 2006		<0.05	•						
	Fluoride	October 26, 2006	2.0	0.84					1.6	4.0	
EP/	Chloride	October 26, 2006	3,700	46					250**		
30	Phosphorus	October 26, 2006	<2.5	< 0.5							
1et	Sulfate	October 26, 2006	120	150					600**		
hod	Nitrogen- Nitrate+Nitrite	October 26, 2006	<2.0	<0.5		•			10 nitrate	10 nitrate 1 nitrite	
EPA 245.1	Нg	October 26, 2006	<0.000 2	<0.000 2					0.002	0.002	
	Total Recoverable Metals				· ·						
	Ar	October 26, 2006	0.077	<0.020					0.1	0.010	
	Ba	October 26, 2006	0.53	<0.020				,	1.0	2	
	Ca	October 26, 2006	380	23	•						
E	Cd	October 26, 2006	<0.002	<0.002					0.01	0.005	
À	Со	2006							0.05***		
Me	Cr	October 26, 2006	<0.006	<0.006					0.05	0.1	
th	K	October 26, 2006	4.2	<1.0							
bd	Pb	October 26, 2006	<0.005	<0.005					0.05	0.015	
601	Mg	October 26, 2006	93	<1.0							
0	Na	October 26, 2006	1,400	280							
	Ni	2006							0.2***		
	Se	October 26, 2006	< 0.05	< 0.05					0.05	0.05	
	Ag	October 26, 2006	<0.005	<0.005					0.05		
	Va	2006	1					· · · ·			
	Zn	2006	· · ·								
EPA Method 15.1	рН	October 26, 2006	6.87	8.98					6 <ph<9< th=""><th></th></ph<9<>		

*Wells MW-4, MW-5, SMW-2, and SMW-4 were not required to be sampled in 2006.

Groundwater standards from NMAC are human health based standards except as indicated below:

**Standard for domestic water supply.

***Standard for irrigation use.

GWM-1 was sampled on August 2, 2006.

						(GENE	RAL C	HEŅI	STRY						
	mg/L	DATE	ow	BW	BW	BW	BW	BW	BW	BW	BW	BW	POND	WELL	WQCC 20 NMAC	MCL'S
		SAMPLED	11**	1A	1B	2A	2B	3A	3B	1C	2C	3C	#7	#3	6.2.3103	
	Fluorido	Oct-06 17/20-Oct- 05	2.5	DRY DRY	DRY DRY	1.3	1.9 1.7	DRY DRY	1.7	2.7	2.4	1.9	31	0.19	16	4
	riuonae	08-Dec-04	2.3	DRY	DRY	1.1	1.7		1.1		1.5	1.0			1.0	4
		04-Aug-04		DRY	DRY	1.2	1.7	DRY	1.4	2	2.2	0.95		0.21		
		Oct-06	86	DRY	DRY	39	31	DRY	33	36	42	38	42,000	14		
	Chloride	17/20-Oct- 05	87	DRY	DRY	39	29	DRY	34	34	42	37			250	250
		08-Dec-04	80	DRY	DRY											
		04-Aug-04		DRY	DRY	40	32	DRY	35	38	46	25				
0		Oct-06	<.50	DRY	DRY	⊲050	<0.50	DRY	<0.50	<0.50	<0.50	<0.50	<0.10	<0.50		
ethod 300.	Nitrogen-	17/20-Oct- 05	⊲0.1	DRY	DRY	⊲050	<0.50	DRY	<0.10	<0.50	<0.50	<0.10				_
	Nitrite	08-Dec-04	<.50	DRY	DRY											1
M		04-Aug-04		DRY	DRY	<0.10	<0.10	DRY	<0.10	<0.10	<0.10	<0.10				
EPA		09-Dec-04														
		28-Oct-06		DRY	DRY											
	Bromide	17/20-Oct- 05		DRY	DRY											
		08-Dec-04	<0.10	DRY	DRY											
		04-Aug-04		DRY	DRY	0.4	1.3	DRY	0.49	0.32	0.78	1.2				
		Oct-06	<.50	DRY	DRY	<0.50	<0.50	DRY	<0.50	<0.50	<0.50	<0.50	<0.10	<0.50		
	Nitrogen-	17/20-Oct- 05	0.72	DRY	DRY	<0.50	<0.5 0	DRY	<0.10	<0.50	<0.50	<0.10				
	Nitrate	08-Dec-04	<0.50	DRY	DRY				•						10	
		04-Aug-04		DRY	DRY	<0.10	<0.10	DRY	<0.10	<0.10	<0.10	<0.10		0.12		
		09-Dec-04														
		Oct-06	<.50	DRY	DRY	0.64	<0.50	DRY	1.1	⊲0.50	<0.50	<0.50	⊲0.50	<0.50	<u> </u>	
	_	17/20-Oct- 05	<0.50	DRY	DRY	0.59	0.64	DRY	1.0	<0.50	<0.50	<0.50				
	Р	08-Dec-04	<0.50	DRY	DRY											
		04-Aug-04		DRY	DRY	0.57	<0.50	DRY	1.2	<0.50	<0.50	<0.50				
		09-Dec-04								r			. .			

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							GE	NERA	L CH	EMIS	ΓRY					
	mg/L	DATE SAMPLED	OW 11**	BW 1A	BW 1B	BW 2A	BW 2B	BW 3A	BW 3B	.BW 1C	BW 2C	BW 3C	PON D #7	WEL L #3	WQCC 20 NMAC 6.2.3103	MCL'S
		28-Oct-06	1100	DRY	DRY	7.5	140	DRY	.53	250	270	280	7,000	490		
		17/20-Oct- 05	990	DRY	DRY	6.9	130	DRY	56	240	270	350			(00)	
	Sulfate	08-Dec-04	1100	DRY	DRY										600	
		04-Aug-04		DRY	DRY	9.6	140	DRY	63	210	230	440				
		09-Dec-04														
		31-Oct-06		DRY	DRY											
	TDS	17/20-Oct-05		DRY	DRY										1000	500
		08-Dec-04	1900	DRY	DRY										_	
		04-Aug-04		DRY	DRY	1100	1500	DRY	1000	970	970	940	3800			
EPA		Oct-06	8.40	DRY	DRY	8.27	8.10	DRY	8.12	8.39	8.52	8.39	7.46	7.89		
ME	рН	29-Sep-05	8.44	DRY	DRY					-					6.5 - 8.5	Betwee
TH	F	08-Dec-04	8.48	DRY	DRY					•						6 and 9
DD.		04-Aug-04		DRY	DRY	8.4	8.35	DRY	8.5	9.36	8.84	8.87			m	
160.		Oct-06	3100	DRY	DRY	1400	2400	DRY	1500	1400	1300	1400	150000	1200		
	SP COND	17-Oct-05		DRY	DRY	1400	2500	DRY	1600	1400	1500	1400				
		04-Aug-04		DRY	DRY	1447	2280	DRY	1534	1280	1401	1380			,	
	Tem	p (°F)	56	DRY	DRY	56	56	56		57	56	56				
	Depth to	water (ft)	21.10	DRY	DRY	31.9 8	27.78	32.75		7.55	20.26	8.40		·		

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**OW-11 was sampled on September 29, 2005.

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Wells 2 and 4 were not required to be sampled in 2006, hence they are not listed on the table.

						TOT	AL M	ETALS			, 				
mg/L	DATE SAMPLE D	OW 11	BW 1A	BW 1B	BW 2A	BW 2B	BW 3A	BW 3B	BW 1C	BW 2C	BW 3C	POND #7	WELL #3	WQCC 20 NMAC	MCL'S
	28-Oct-06	<0.020	DRY	DRY	<0.020	<0.020	DRY	0.021	<0.020	<0.020	<0.020		<0.020		
	29-Sep-05	<0.020													
Arsenic	08-Dec-04	<0.020								×				0.1	0.01
	04-Aug-04		DRY	DRY	<0.020	<0.020	DRY	<0.020	<0.020	<0.020	<0.020				
	19-Nov-04											<0.020			
	28-Oct-06	<0.020	DRY	DRY	0.15	0.071	DRY	0.11	<0.020	0.031	0.029		<0.020		
:	29-Sep-05	<0.020													
Barium	08-Dec-04	<0.020												1.0	2
	04-Aug-04		DRY	DRY	0.12	<0.0020	DRY	0.13	<0.0020	0.047	0.051				
	19-Nov-04											0.14			
	28-Oct-06	0.0020	DRY	DRY	< 0.002	<0.002	DRY	< 0.002	< 0.002	<0.002	< 0.002		< 0.002		
Cadmium	29-Sep-05	0.0020													
	08-Dec-04	0.0020					,	1 . A.						0.01	0.005
4	04-Aug-04		DRY	DRY	< 0.002	<0.0020	DRY	<0.0020	<0.0020	< 0.0020	<0.0020	·			
-	19-Nov-04	:			:							<0.002 0			
	28-Oct-06	12	DRY	DRY	9.7	20	DRY	9.0	3.4	5.8	6.0		190		
Calcium	17-Oct-05	10			10	- 23	DRY	9.9	3.1	140	6.1				
culcium	08-Dec-04	9.6													
	04-Aug-04		DRY	DRY	6.7	14	DRY	11	3.8	5.6	45				
	28-Oct-06	<0.0060	DRY	DRY	<0.0060	<0.0060	DRY	<0.0060	0.011	<0.0060	<0.0060			-	
	29-Sep-05	<0.0060													
Cr	08-Dec-04	<0.0060												0.05	0.1
	04-Aug-04		DRY	DRY	<0.0060	<0.0060	DRY	<0.0060	<0.0060	<0.0060	<0.0060				
	19-Nov-04											0.012			
	28-Oct-06	<0.0050	DRY	DRY	<0.0050	<0.0050	DRY	<0.0050	<0.0050	0.0054	<0.0050	-	<0.006		
	29-Sep-05	<0.0050													
Lead	08-Dec-04	<0.0050												0.05	0.015
	04-Aug-04		DRY	DRY	0.0059	0.0064	DRY	0.006	<0.0050	<0.0050	<0.0050				
	19-Nov-04	-					 			-	<u>.</u>	0.0075	 		
tury	28-Oct-06	<0.0002	DRY	DRY	<0.00020	<0.00020	DRY	<0.00020	<0.00020	<0.00020	<0.00020		<0.00020	0.002	0.002

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						Ť	OTAL	METAI	S			_			
J/L	DATE SAMPLE D	OW 11	BW 1A	BW 1B	BW 2A	BW 2B	BW 3A	BW 3B	BW 1C	BW 2C	BW 3C	PON D #7	WELL #3	WQCC 20 NMAC	MCL's
	28-Oct-06	1.4			3.5	3.8	DRY	2.7	<1.0	<1.0			43		
	17-Oct-05	1.2			3.6	3.9	DRY	2.9	<1.0	7.7	1.1				
Mg	08-Dec-04	1.1				-									
	04-Aug-04		DRY	DRY	2.5	3.2	DRY	3.1	<1.0	1.5	9.8				
	19-Nov- 04														
	28-Oct-06	1.6	DRY	DRY	<1.0	1.6	DRY	<1.0	<1.0	<1.0	<1.0		1.1		
к	17-Oct-05	1.7			1.1	2.1	DRY	1.4	1.5	2.5	1.8				
R	08-Dec-04	1.9													
	04-Aug-04		DRY	DRY	<1.0	4.7	DRY	1.3	2	2	5.3				
	28-Oct-06	<0.050	DRY	DRY	<0.050	<0.050	DRY	<0.050	<0.050	<0.050	<0.050		<0.05		
	29-Sep-05	< 0.050													
Se	08-Dec-04	0.005												0.05	0.05
	04-Aug-04		DRY	DRY	<0.050	0.069	DRY	< 0.050	< 0.050	< 0.050	< 0.050	<0.05			0.05
	19-Nov-04					-						0.05			
	09-Dec-04														
	28-Oct-06	<0.0050	DRY	DRY	<0.0050	<0.005	DRY	<0.005	<0.005	<0.005	<0.005		< 0.005	-	
	29-Sep-05	<0.005 0													
Silver	08-Dec-04	<0.005 0							•					0.05	0.10
	04-Aug-04		DRY	DRY	<0.0050	<0.0050	DRY	<0.0050	DRY	DRY	<0.0050	<0.00 5	DRY		
	19-Nov-04					-						<0.005 0	•		
	09-Dec-04														
	29-Sep-05	620											28		
	08-Dec-04	620													
Sodium	04-Aug-04		DRY	DRY	220	540	DRY	340	200	300	230				
	19-Nov-04				×										
	09-Dec-04					-									
	29-Sep-05							:							
Iranium	08-Dec-04					3								0.02	0.020
Jiamum	04-Aug-04		DRY	DRY	<0.10	<0.10	DRY	<0.10	<0.10	<0.10	< 0.10			0.03	0.030
	09-Dec-04														

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BOD - PILOT TRAVEL CENTER AND	TRUCK	STOP	
	Date of Analysis	· BOD Results (mg/l)	Detection Limit (mg/l)
	3-30-06	886	2
	6-9-06	472	2
$\mathbb{P}^{\mathbb{P}}$			



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5. Groundwater Chemical Analytical Data

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COVER LETTER

Friday, November 17, 2006

Steve Morris Giant Refining Co Rt. 3 Box 7 Gallup, NM 87301

TEL: (505) 722-3833 FAX (505) 722-0210

RE: Annual Ground Water 2006-Ciniza

Order No.: 0611014

Dear Steve Morris:

Hall Environmental Analysis Laboratory, Inc. received 9 sample(s) on 11/1/2006 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com

Date: 17-Nov-06

	8021B. VOLATILES					Analyst: N		
Analyses		Result	PQL Qual	Units	DF	Date Analyzed		
Lab ID:	0611014-01			Matrix:	AQUE	AQUEOUS		
Project:	Annual Ground Wate	r 2006-Ciniza		Date Received:	11/1/2	006		
Lab Order:	0611014			Collection Date:	10/27/	2006 9:15:00 AM		
CLIENT:	Giant Refining Co		C	lient Sample ID:	OW-1	2		

Methyl tert-butyl ether (MTBE)	ND	2.5	µg/L	1	11/3/2006 11:26:32 AM
Benzene	ND	1.0	µg/L	1	11/3/2006 11:26:32 AM
Toluene	ND	1.0	µg/L	1	11/3/2006 11:26:32 AM
Ethylbenzene	ND	1.0	µg/L	1	11/3/2006 11:26:32 AM
Xylenes, Total	ND	3.0	µg/L	1	11/3/2006 11:26:32 AM
Surr: 4-Bromofluorobenzene	82.7	72.2-125	%REC	1	11/3/2006 11:26:32 AM

Oualifiers :	*	Value exce
Q		

Value exceeds Maximum Contaminant Level

Е Value above quantitation range

- J Analyte detected below quantitation limits ND
- Not Detected at the Reporting Limit
- Spike recovery outside accepted recovery limits 1/34S
- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- Reporting Limit RL

 •	,

Date: 17-Nov-06

CLIENT:	Giant Refining Co			Client Sample	ID: OW-1	3
Lab Order:	0611014			Collection D	ate: 10/27	/2006 10:30:00 AM
Project:	Annual Ground Wate	er 2006-Ciniza		Date Recei	2006	
Lab ID:	0611014-02			Mat	rix: AQU	EOUS
Analyses		Result	PQL Q	al Units	DF	Date Analyzed
EPA METHOD	8021B: VOLATILES					Analyst: NSB
Methyl tert-buty	/I ether (MTBE)	ND	2.5	µg/L	1	11/3/2006 11:56:36 AM
Benzene		ND	1.0	μg/L	1	11/3/2006 11:56:36 AM
Toluene		ND	1.0	µg/L	1	11/3/2006 11:56:36 AM
Ethylbenzene		ND	1.0	µg/L	1	11/3/2006 11:56:36 AM
Xylenes, Total ND			3.0	µg/L	1	11/3/2006 11:56:36 AM
Surr: 4-Brom	ofluorobenzene	83.8	72.2-125	%REC	1	11/3/2006 11:56:36 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit S
 - Spike recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- Holding times for preparation or analysis exceeded Н
- MCL Maximum Contaminant Level
- RL Reporting Limit

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Hall Envir	II Environmental Analysis Laboratory, Inc. Date: 17-100v-0 ENT: Giant Refining Co Client Sample ID: OW-14 Order: 0611014 Collection Date: 10/29/200 ject: Annual Ground Water 2006-Ciniza Date Received: 11/1/2006 ID: 0611014-03 Matrix: AQUEOU ilyses Result PQL Qual Units DF AMETHOD 8021B: VOLATILES 16 2.5 µg/L 1 1 inzene 3.4 1.0 µg/L 1 1 iuene ND 1.0 µg/L 1 1 ivylbenzene ND 1.0 µg/L 1 1		<i></i>					
CLIENT:	Giant Refining Co			Client Sample ID	: OW-1	4		
Lab Order: 0611014				Collection Date:	: 10/29	/2006 1:30:00 PM		
Project: Annual Ground W		ater 2006-Ciniza		Date Received:	: 11/1/2	11/1/2006		
Lab ID:	0611014-03			Matrix	AQUEOUS			
Analyses		Result	PQL Q	ual Units	DF	Date Analyzed		
EPA METHOD	8021B: VOLATILES					Analyst: NSB		
Methyl tert-buty	/I ether (MTBE)	16	2.5	µg/L	1	11/3/2006 12:29:21 PM		
Benzene		3.4	1.0	µg/L	1	11/3/2006 12:29:21 PM		
Toluene		ND	1.0	µg/L	1	11/3/2006 12:29:21 PM		
Ethylbenzene		ND	1.0	µg/L	1	11/3/2006 12:29:21 PM		
Xylenes, Total		ND	3.0	µg/L	1	11/3/2006 12:29:21 PM		

72.2-125

%REC

84.9

Surr: 4-Bromofluorobenzene

Qualifiers:

* Value exceeds Maximum Contaminant Level

Ε Value above quantitation range

- J Analyte detected below quantitation limits ND
- Not Detected at the Reporting Limit
- Spike recovery outside accepted recovery limits 3 / 34 S
- В Analyte detected in the associated Method Blank

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Holding times for preparation or analysis exceeded Н

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MCL Maximum Contaminant Level

RL Reporting Limit

Page 3 of 22

1

11/3/2006 12:29:21 PM

Surr: 4-Bromofluorobenzene

Date: 17-Nov-06

1

11/3/2006 1:29:18 PM

CLIENT: Lab Order: Project: Lab ID:	Giant Refining Co 0611014 Annual Ground Wa 0611014-04	ter 2006-Ciniza		Client Sample II Collection Dat Date Received Matrix): OW-2 e: 10/27 f: 11/1/2 k: AQUI	-29 7/2006 12:30:00 PM /2006 JEOUS		
Analyses		Result	PQL Qu	al Units	DF	Date Analyzed		
EPA METHOD	8021B: VOLATILES					Analyst: NSB		
Methyl tert-buty	/I ether (MTBE)	ND	2.5	µg/L	1	11/3/2006 1:29:18 PM		
Benzene		ND	1.0	µg/L	1	11/3/2006 1:29:18 PM		
Toluene		ND	1.0	µg/L	1	11/3/2006 1:29:18 PM		
Ethylbenzene		ND	1.0	µg/L	1	11/3/2006 1:29:18 PM		
Xylenes, Total		ND	3.0	μg/L	1	11/3/2006 1:29:18 PM		

72.2-125

%REC

84.2

Qualifiers:

* Value exceeds Maximum Contaminant Level

Е Value above quantitation range

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

Spike recovery outside accepted recovery limits 4/34 S

В Analyte detected in the associated Method Blank

- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 4 of 22

Н Holding times for preparation or analysis exceeded

Date: 17-Nov-06

CLIENT.	Circt Defining Co			Client Somple	\mathbf{m}	·^		
CLIENT:	Giant Relining Co			Chefft Sample	ID: Ow-5	Ow-30		
Lab Order:	o Order: 0611014			Collection D	ate: 10/27	/2006 2:00:00 PM		
Project:	roject: Annual Ground Water 2006-Ciniza			Date Receiv	/ed: 11/1/2	2006		
Lab ID:	0611014-05			Mat	rix: AQUI	AQUEOUS		
Analyses		Result	PQL	Qual Units	DF	Date Analyzed		
EPA METHOD	8021B: VOLATILES					Analyst: NSB		
Methyl tert-buty	/I ether (MTBE)	18	2.5	µg/L	1	11/3/2006 1:59:29 PM		
Benzene		ND	1.0	µg/L	1	11/3/2006 1:59:29 PM		
Toluene		ŃD	1.0	µg/L	1	11/3/2006 1:59:29 PM		
Ethylbenzene		ND	1.0	µg/L	1	11/3/2006 1:59:29 PM		
Xylenes, Total		ND	3.0	μg/L	1	11/3/2006 1:59:29 PM		
Surr: 4-Brom	ofluorobenzene	86.2	72.2-125	%REC	1	11/3/2006 1:59:29 PM		

Qualifiers:

* Value exceeds Maximum Contaminant Level

E Value above quantitation range

- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- Spike recovery outside accepted recovery limits 5 / 34 S

B Analyte detected in the associated Method Blank

- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

CLIENT:	Giant Refining Co			C	lient Sample	ID:	OW-1	1
Lab Order:	0611014				Collection D	ate:	10/26	/2006 2:00:00 PM
Project:	Annual Ground Wat	er 2006-Ciniza			Date Receiv	/ed:	11/1/2	2006
Lab ID:	0611014-06				Mat	rix:	AQUI	EOUS
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD	300.0: ANIONS	<u> </u>						Analyst: TES
Fluoride		2.5	0.10		mg/L		1	11/3/2006 11:57:39 PM
Chloride		86	0.50		mg/L		5	11/6/2006 2:21:59 PM
Nitrate (As N)+	⊦Nitrite (As N)	ND	0.50		mg/L		5	11/4/2006 12:49:51 AM
Phosphorus, C	rthophosphate (As P)	ND	0.50	н	mg/L		1	11/3/2006 11:57:39 PM
Sulfate		1100	10		mg/L		20	11/7/2006 10:40:32 AM
								Analyst MAP
Mercury		ND	0.00020		mg/L		1	11/9/2006
EPA 6010B: T	OTAL RECOVERABLE	METALS	0.000					Analyst: NMO
Arsenic		ND	0.020		mg/L		Т 	11/15/2006 8:13:48 PM
Barium		ND	0.020		mg/L		1	11/15/2006 8:13:48 PM
Cadmium		ND	0.0020		mg/L		1	11/15/2006 8:13:48 PM
Calcium		12	1.0		mg/L		1	11/15/2006 8:13:48 PM
Chromium		ND	0.0060		mg/L		1	11/15/2006 8:13:48 PM
Lead		ND	0.0050		mg/L		1	11/15/2006 8:13:48 PM
Magnesium		1.4	1.0		mg/L		1	11/15/2006 8:13:48 PM
Potassium		1.6	1.0		mg/L		1	11/15/2006 8:13:48 PM
Selenium		ND	0.050		mg/L		1	11/15/2006 8:13:48 PM
Silver		ND	0.0050		mg/L		1	11/15/2006 8:13:48 PM
Sodium		660	10		mg/L		10	11/16/2006 10:33:42 AN
EPA METHOD	8270C: SEMIVOLATIL	ES						Analyst: BL
Acenaphthene	2	ND	10		hð/F		1	11/14/2006
Acenaphthyler	ne	ND	10		hð\r		1	11/14/2006
Aniline		ND	20		µg/L		1	11/14/2006
Anthracene		ND	10		µg/L		1	11/14/2006
Azobenzene		ND	10		µg/L		1	11/14/2006
Benz(a)anthra	cene	ND	15		µg/L		1	11/14/2006
Benzo(a)pyrer	ne	ND	15		µg/L		1	11/14/2006
Benzo(b)fluora	anthene	ND	15		hð\r		1	11/14/2006
Benzo(g,h,i)pe	erylene	ND	10		μg/Ľ		1	11/14/2006
Benzo(k)fluora	anthene	ND	10		µg/L		1	11/14/2006
Benzoic acid		ND	50		hð\r		1	11/14/2006
Benzyl alcoho	1	ND	20		µg/L		1	11/14/2006
Bis(2-chloroet	hoxy)methane	ND	10		µg/L		1	11/14/2006
Bis(2-chloroet	hyl)ether	ND	15		µg/L		1	11/14/2006
Bis(2-chloroise	opropyl)ether	ND	15		µġ/L		1	11/14/2006
Bis(2-ethylhex	xyl)phthalate	ND	15		µg/L		1	11/14/2006
Qualifiers:	* Value exceeds Maximu	m Contaminant Leve	1		B Analyte de	tected	in the a	ssociated Method Blank
	E Value above quantitatio	n range			H Holding tin	nes for	prepar	ation or analysis exceeded
	J Analyte detected below	quantitation limits		א	MCL Maximum	Contar	ninant	Level
	ND Not Detected at the Rep	orting Limit			RL Reporting	Limit		_
	S Spike recovery outside	accepted recovery lin	$\frac{1}{6/3}$	4	-			Page 6 of
			_	1.1				

11.2

Date: 17-Nov-06

Date: 17-Nov-06

CLIENT:	Giant Refining Co	Client Sample ID:	OW-11
Lab Order:	0611014	Collection Date:	10/26/2006 2:00:00 PM
Project:	Annual Ground Water 2006-Ciniza	Date Received:	11/1/2006
Lab ID:	0611014-06	Matrix:	AQUEOUS

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATI	ES				Analyst: BL
4-Bromophenyl phenyl ether	ND	10	µg/L	1	11/14/2006
Butyl benzyl phthalate	ND	15	µg/L	1	11/14/2006
Carbazole	ND	10	µg/L	1	11/14/2006
4-Chloro-3-methylphenol	ND	20	µg/L	1	11/14/2006
4-Chloroaniline	ND	20	µg/L	1	11/14/2006
2-Chloronaphthalene	ND	10	µg/L	1	11/14/2006
2-Chlorophenol	ND	10	µg/L	1	11/14/2006
4-Chlorophenyl phenyl ether	ND	15	µg/L	1	11/14/2006
Chrysene	ND	15	µg/L	1	11/14/2006
Di-n-butyl phthalate	ND	10	µg/L	1	11/14/2006
Di-n-octyl phthalate	ND	15	µg/L	1	11/14/2006
Dibenz(a,h)anthracene	ND	10	µg/L	1	11/14/2006
Dibenzofuran	ND	10	µg/L	1	11/14/2006
1,2-Dichlorobenzene	ND	10	µg/L	1	11/14/2006
1,3-Dichlorobenzene	ND	10	µg/L	1	11/14/2006
1,4-Dichlorobenzene	ND	10	µg/L	1	11/14/2006
3,3'-Dichlorobenzidine	ND	15	µg/L	1	11/14/2006
Diethyl phthalate	ND	10	µg/L	1	11/14/2006
Dimethyl phthalate	ND	10	µg/L	1	11/14/2006
2,4-Dichlorophenol	ND	10	µg/L	1	11/14/2006
2,4-Dimethylphenol	ND	10	µg/L	1	11/14/2006
4,6-Dinitro-2-methylphenol	ND	50	µg/L	1	11/14/2006
2,4-Dinitrophenol	ND	50	μg/L	1	11/14/2006
2,4-Dinitrotoluene	ND	10	µg/L	1	11/14/2006
2,6-Dinitrotoluene	ND	10	µg/L	1	11/14/2006
Fluoranthene	ND	10	µg/L	1	11/14/2006
Fluorene	ND	10	µg/L	1	11/14/2006
Hexachlorobenzene	ND	10	µg/L	1	11/14/2006
Hexachlorobutadiene	ND	10	µg/L	1	11/14/2006
Hexachlorocyclopentadiene	ND	10	µg/L	1	11/14/2006
Hexachloroethane	ND	10	µg/L	1	11/14/2006
Indeno(1,2,3-cd)pyrene	ND	10	µg/L	1	11/14/2006
Isophorone	ND	10	µg/L	1	11/14/2006
2-Methylnaphthalene	ND	10	µg/L	1	11/14/2006
2-Methylphenol	ND	15	µg/L	1	11/14/2006
3+4-Methylphenol	. ND	20	µg/L	1	11/14/2006
N-Nitrosodi-n-propylamine	ND	10	µg/L	1	11/14/2006
N-Nitrosodimethylamine	ND	10	hð\r	1	11/14/2006
N-Nitrosodiphenylamine	ND	10	µg/L	1	11/14/2006
Naphthalene	ND	10	µg/L	1	11/14/2006



Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- } Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

H Holding times for preparation or analysis exceeded MCL Maximum Contaminant Level

B Analyte detected in the associated Method Blank

RL Reporting Limit

CLIENT:	Giant Refining Co			Client Sample ID:	OW-2	11	
Lab Order:	0611014			Collection Date:	10/26	/2006 2:00:00 PM	
Project: Lab ID:	Annual Ground Water 0611014-06	2006-Ciniza		Date Received: Matrix:	eived: 11/1/2006 Iatrix: AQUEOUS		
Analyses		Result	PQL Qua	Units	DF	Date Analyzed	
EPA METHOD	8270C: SEMIVOLATILES	;				Analyst: B	
2-Nitroaniline		ND	50	µg/L	1	11/14/2006	
3-Nitroaniline		ND	50	µg/L	1	11/14/2006	
4-Nitroaniline		ND	20	µg/L	1	11/14/2006	
Nitrobenzene		ND	10	µg/L	1	11/14/2006	
2-Nitrophenol		ND	15	µg/L	1	11/14/2006	
4-Nitrophenol		ND	50	µg/L	1	11/14/2006	
Pentachlorophe	nol	ND	50	µg/L	1	11/14/2006	
Phenanthrene		ND	10	µg/L	1	11/14/2006	
Phenol		ND	10	µg/L	1	11/14/2006	
Pyrene		ND	15	µg/L	1	11/14/2006	
Pyridine		ND	30	µg/L	1	11/14/2006	



Pyrene	ND	15	µg/L	1	11/14/2006
Pyridine	ND	30	µg/L	1	11/14/2006
1,2,4-Trichlorobenzene	ND	10	µg/L	1	11/14/2006
2,4,5-Trichlorophenol	ND	10	µg/L	1	11/14/2006
2,4,6-Trichlorophenol	ND	15	µg/L	1	11/14/2006
Surr: 2,4,6-Tribromophenol	63.0	16.6-150	%REC	1	11/14/2006
Surr: 2-Fluorobiphenyl	63.7	19.6-134	%REC	1	11/14/2006
Surr: 2-Fluorophenol	48.1	9.54-113	%REC	1	11/14/2006
Surr: 4-Terphenyl-d14	72.9	22.7-145	%REC	1	11/14/2006
Surr: Nitrobenzene-d5	63.4	14.6-134	%REC	1	11/14/2006
Surr: Phenol-d5	36.2	10.7-80.3	%REC	1	11/14/2006
EPA METHOD 8260B: VOLATILES					Analyst: LMM
Benzene	ND	1.0	µg/L	1	11/7/2006
Toluene	ND	1.0	µg/L	1	11/7/2006
Ethylbenzene	ND	1.0	µg/L	1	11/7/2006
Methyl tert-butyl ether (MTBE)	ND	1.5	µg/L	1	11/7/2006
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1	11/7/2006
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1	11/7/2006
1,2-Dichloroethane (EDC)	ND	1.0	µg/L	1	11/7/2006
1,2-Dibromoethane (EDB)	ND	1.0	µg/L	1	11/7/2006
Naphthalene	ND	2.0	µg/L	1	11/7/2006
1-Methylnaphthalene	ND	4.0	µg/L	1	11/7/2006
2-Methylnaphthalene	ND	4.0	µg/L	1	11/7/2006
Acetone	ND	10	µg/L	1	11/7/2006
Bromobenzene	ND	1.0	µg/L	1	11/7/2006
Bromochloromethane	ND	1.0	µg/L	1	11/7/2006
Bromodichloromethane	ND	1.0	µg/L	1	11/7/2006
Bromoform	ND	1.0	µg/L	1	11/7/2006
Bromomethane	ND	2.0	µg/L	1	11/7/2006
2-Butanone	ND	10	µg/L	1	11/7/2006



- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit

Spike recovery outside accepted recovery limits 8 / 34 S

- ed in the associated Method Blank ١y
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level

CLIENT:	Giant Refining Co			Client Sample ID:	OW-1	1	
Lab Order:	0611014			Collection Date:	10/26/	/2006 2:00:00 PM	
Project:	Annual Ground Water	2006-Ciniza		Date Received:	11/1/2	2006	
Lab ID:	0611014-06	1014-06 Matrix: AQU				EOUS	
Analyses		Result	PQL Q	al Units	DF	DF Date Analyzed	
EPA METHOD	8260B: VOLATILES					Analyst: LMN	
Carbon disulfide	e	ND	10	µg/L	1	11/7/2006	
Carbon Tetrach	loride	ND	2.0	µg/L	1	11/7/2006	
Chlorobenzene		ND	1.0	µg/L	1	11/7/2006	
Chloroethane		ND	2.0	µg/L	1	11/7/2006	
Chloroform		ND	1.0	µg/L	1	11/7/2006	
Chloromethane		ND	1.0	µg/L	1	11/7/2006	
2-Chlorotoluene	e	ND	1.0	µg/L	1	11/7/2006	
4-Chlorotoluene	e	ND	1.0	µg/L	1	11/7/2006	
cis-1,2-DCE		ND	1.0	µg/L	1	11/7/2006	
cis-1,3-Dichloro	propene	ND	1.0	µg/L	1	11/7/2006	
1,2-Dibromo-3-	chloropropane	ND	2.0	µg/L	1	11/7/2006	
Dibromochlorom	nethane	ND	1.0	µg/L	1	11/7/2006	
Dibromomethar	ne	ND	2.0	µg/L	1	11/7/2006	
1,2-Dichlorober	izene	ND	1.0	µg/L	1	11/7/2006	
1,3-Dichlorober	nzene	ND	1.0	μg/L	1	11/7/2006	
1,4-Dichlorober	izene	ND	1.0	µg/L	1	11/7/2006	
Dichlorodifluoro	omethane	ND	1.0	µg/L	1	11/7/2006	
1,1-Dichloroeth	ane	ND	2.0	µg/L	1	11/7/2006	
1,1-Dichloroeth	ene	ND	1.0	µg/L	1	11/7/2006	
1,2-Dichloropro	pane	ND	1.0	µg/L	1	11/7/2006	
1.3-Dichloropro	pane	ND	1.0	µa/L	1	11/7/2006	

			F Q =		
1,1-Dichloroethene	ND	1.0	µg/L	1	11/7/2006
1,2-Dichloropropane	ND	1.0	µg/L	1	11/7/2006
1,3-Dichloropropane	ND	1.0	µg/L	1	11/7/2006
2,2-Dichloropropane	ND	2.0	µg/L	1	11/7/2006
1,1-Dichloropropene	ND	1.0	µg/L	1	11/7/2006
Hexachlorobutadiene	ND	2.0	µg/L	1	11/7/2006
2-Hexanone	ND	10	µg/Ľ	1	11/7/2006
Isopropylbenzene	ND	1.0	μg/L	1	11/7/2006
4-Isopropyltoluene	ND	1.0	µg/L	1	11/7/2006
4-Methyl-2-pentanone	ND	10	µg/L	1	11/7/2006
Methylene Chloride	ND	3.0	µg/L	1	11/7/2006
n-Butylbenzene	ND	1.0	µg/L	1	11/7/2006
n-Propylbenzene	ND	1.0	µg/L	1	11/7/2006
sec-Butylbenzene	ND	2.0	µg/L	1	11/7/2006
Styrene	ND	1.5	µg/L	1	11/7/2006
tert-Butylbenzene	ND	1.0	µg/L	1	11/7/2006
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1	11/7/2006
1,1,2,2-Tetrachloroethane	ND	1.0	µg/L	1	11/7/2006
Tetrachloroethene (PCE)	ND	1.0	µg/L	1	11/7/2006
trans-1,2-DCE	ND	1.0	µg/L	1	11/7/2006
trans-1,3-Dichloropropene	ND	1.0	µg/L	1	11/7/2006

ND

Qualifiers:

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1,2,3-Trichlorobenzene

- * Value exceeds Maximum Contaminant Level
- Value above quantitation range Е

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- J Analyte detected below quantitation limits
- Not Detected at the Reporting Limit ND
- S Spike recovery outside accepted recovery limits

RL Reporting Limit

MCL Maximum Contaminant Level

1

Analyte detected in the associated Method Blank

Holding times for preparation or analysis exceeded

11/7/2006

.....

µg/L

В

H

1.0
CLIENT:	Giant Refining Co			С	lient Sample ID:	OW-1	1	
Lab Order:	0611014				Collection Date:	10/26	/2006 2:00:00 PM	
Project:	Annual Ground Water 2	2006-Ciniza			Date Received:	11/1/2	2006	
Lab ID:	0611014-06				Matrix: AQUEOUS			
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed	
EPA METHOD	8260B: VOLATILES						Analyst: LMM	
1,2,4-Trichlorobenzene		ND	1.0		µg/L	1	11/7/2006	
1,1,1-Trichloroethane		ND	1.0		µg/L	1	11/7/2006	
1,1,2-Trichloroethane		ND	1.0		µg/L	1	11/7/2006	
Trichloroethene (TCE)		ND	1.0		µg/L	1	11/7/2006	
Trichlorofluoromethane		ND	1.0		hð\r	1	11/7/2006	
1,2,3-Trichloropropane		ND	2.0		µg/L	1	11/7/2006	
Vinyl chloride		ND	1.0		µg/L	1	11/7/2006	
Xylenes, Total		ND	3.0		µg/L	1	11/7/2006	
Surr: 1,2-Dic	hloroethane-d4	85.9	69.9-130		%REC	1	11/7/2006	
Surr: 4-Brom	ofluorobenzene	101	75-139		%REC	1	11/7/2006	
Surr: Dibrom	ofluoromethane	90.8	57.3-135		%REC	1	11/7/2006	
Surr: Toluen	e-d8	98.2	81.9-122		%REC	1	11/7/2006	
EPA 120.1: SP	ECIFIC CONDUCTANCE						Analyst: CMS	
Specific Condu	ctance	3100	0.010		µmhos/cm	1	11/1/2006	
EPA METHOD	150.1: PH						Analyst: CMS	
рH		8.40	0.010		pH units	1	11/1/2006	

Date: 17-Nov-06

Qualifiers:

* Value exceeds Maximum Contaminant Level

E Value above quantitation range

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

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CLIENT:	Giant Refining Co			C	Client Sample	ID: MW-	1
Lab Order:	0611014				Collection D	ate: 10/26	/2006 11:00:00 AM
Project:	Annual Ground Water	2006-Ciniza			Date Receiv	/ed: 11/1/	2006
Lab ID:	0611014-07				Mat	rix: AQU	EOUS
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE						Analyst: SCC
Diesel Range (Drganics (DRO)	ND	1.0		mg/L	1	11/2/2006 12:35:58 PN
Motor Oil Rang	e Organics (MRO)	ND	5.0		mg/L	1	11/2/2006 12:35:58 PN
Surr: DNOP		138	58-140		%REC	1	11/2/2006 12:35:58 PN
EPA METHOD	8015B: GASOLINE RANG	GE					Analyst: NSE
Gasoline Rang	e Organics (GRO)	ND	0.050		mg/L	1	11/3/2006 6:16:41 PM
Surr: BFB	2 ()	106	84.5-129		%REC	1	11/3/2006 6:16:41 PM
	300 0. ANIONS						Analyst TES
Fluoride		0.84	0.10		ma/L	1	11/4/2006 1:07:15 AM
Chloride		46	0.50		mg/L	5	11/6/2006 2:56:48 PM
Nitrate (As N)+	Nitrite (As N)	ND	0.50		mg/L	5	11/4/2006 1:24:39 AM
Phosphorus, O	rthophosphate (As P)	ND	0.50	н	mg/L	1	11/4/2006 1:07:15 AM
Sulfate		150	2.5		mg/L	5	11/6/2006 2:56:48 PM
FPA METHOD	7470 MERCURY						Analyst: MA
Mercury		ND	0.00020		mg/L	1	11/9/2006
		ETALS					
Arsenic			0.020		ma/l	1	Analyst. Nim 11/15/2006 8:17:58 PM
Barium		ND	0.020		mg/L	1	11/15/2006 8:17:58 PM
Cadmium		ND	0.020		mg/L	1	11/15/2006 8:17:58 PM
Calcium		2.3	1.0		mg/L	1	11/15/2006 8:17:58 PM
Chromium		ND	0.0060		ma/t	1	11/15/2006 8:17:58 PM
Lead		ND	0.0050		ma/L	1	11/15/2006 8:17:58 PM
Magnesium		ND	1.0		mg/L	1	11/15/2006 8:17:58 PM
Potassium		ND	1.0		mg/L	1	11/15/2006 8:17:58 PM
Selenium		ND	0.050		mg/L	1	11/15/2006 8:17:58 PM
Silver		ND	0.0050		mg/L	1	11/15/2006 8:17:58 PM
Sodium		280	10		mg/L	10	11/16/2006 10:36:47 A
EPA METHOD	8270C: SEMIVOLATILES	6					Analvst: BL
Acenaphthene		ND	10		µg/L	1	11/14/2006
Acenaphthyler	e	ND	10		µg/L	1	11/14/2006
Aniline		ND	20		µg/L	1	11/14/2006
Anthracene		ND	10		µg/L	1	11/14/2006
Azobenzene		ND	10		µg/L	1	11/14/2006
Benz(a)anthra	cene	ND	15		yg/L	1	11/14/2006
Qualifiers:	* Value exceeds Maximum (Contaminant Leve	el		B Analyte der	lected in the a	associated Method Blank
	value above quantilation r	ange		,	п Holding tin	nes for prepar	ation or analysis exceeded
	Analyte detected below qu	antitation limits		i	NICL Maximum	Contaminant	Level
	Not Detected at the Report	ing Limit			KL Keporting	Limit	Page 11
	SDIKE JECOVELY OUISIDE BCC	edica recovery III	IIIIIS				

Date: 17-Nov-06

Date: 17-Nov-06

CLIENT:	Giant Refining Co	Client Sample ID:	MW-1
Lab Order:	0611014	Collection Date:	10/26/2006 11:00:00 AM
Project:	Annual Ground Water 2006-Ciniza	Date Received:	11/1/2006
Lab ID:	0611014-07	Matrix:	AQUEOUS

Analyses	Result	PQL	Qual U	Jnits	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: BL
Benzo(a)pyrene	ND	15	μ	ıg/L	1	11/14/2006
Benzo(b)fluoranthene	ND	15	μ	ıg/L	1	11/14/2006
Benzo(g,h,i)perylene	ND	10	μ	ıg∕L	1	11/14/2006
Benzo(k)fluoranthene	ND	10	ц	ıg/L	1	11/14/2006
Benzoic acid	NĎ	50	μ	ıg∕L	1	11/14/2006
Benzyl alcohol	ND	20	μ	ıg/L	1	11/14/2006
Bis(2-chloroethoxy)methane	ND	10	μ	ıg/L	1	11/14/2006
Bis(2-chloroethyl)ether	ND	15	μ	ıg/L	1	11/14/2006
Bis(2-chloroisopropyl)ether	ND	15	μ	ıg/L	1	11/14/2006
Bis(2-ethylhexyl)phthalate	ND	15	μ	Jg/L	1	11/14/2006
4-Bromophenyl phenyl ether	ND	10	μ	ıg/L	1	11/14/2006
Butyl benzyl phthalate	ND	15	μ	Jg/L	1	11/14/2006
Carbazole	ND	10	μ	ug/L	1	11/14/2006
4-Chloro-3-methylphenol	ND	20	Ļ	ug/L	1	11/14/2006
4-Chloroaniline	ND	20	۲	Jg/L	1	11/14/2006
2-Chloronaphthalene	ND	10	H	ug/L	. 1	11/14/2006
2-Chlorophenol	ND	10	Ļ	ıg/L	1	11/14/2006
4-Chlorophenyl phenyl ether	ND	15	F	Jg/L	1	11/14/2006
Chrysene	ND	15	F	ug/L	1	11/14/2006
Di-n-butyl phthalate	ND	10	4	ug/L	1	11/14/2006
Di-n-octyl phthalate	ND	15	F	ug/L	1	11/14/2006
Dibenz(a,h)anthracene	ND	10	۲	ug/L	1	11/14/2006
Dibenzofuran	ND	10	۲	Jg/L	1	11/14/2006
1,2-Dichlorobenzene	ND	10	ł	Jg/L	1	11/14/2006
1,3-Dichlorobenzene	ND	10	ŀ	ug/L	1	11/14/2006
1,4-Dichlorobenzene	ND	10	ŀ	Jg/L	1	11/14/2006
3,3 [°] -Dichlorobenzidine	ND	15	ł	Jg/L	1	11/14/2006
Diethyl phthalate	ND	10	ł	Jg/L	1	11/14/2006
Dimethyl phthalate	ND	10	ł	ug/L	1	11/14/2006
2,4-Dichlorophenol	ND	10	ł	ug/L	1	11/14/2006
2,4-Dimethylphenol	ND	10	ŀ	ug/L	1	11/14/2006
4,6-Dinitro-2-methylphenol	ND	50	ŀ	ug/L	1	11/14/2006
2,4-Dinitrophenol	ND	50	ł	ug/L	1	11/14/2006
2,4-Dinitrotoluene	ND	10	ŀ	ug/L	1	11/14/2006
2,6-Dinitrotoluene	ND	10	ŀ	Jg/L	1	11/14/2006
Fluoranthene	ND	10	ł	ug/L	1	11/14/2006
Fluorene	ND	10	ł	ug/L	1	11/14/2006
Hexachlorobenzene	ND	10	ł	ug/L	1	11/14/2006
Hexachlorobutadiene	ND	10	ŀ	ug/L	. 1	11/14/2006
Hexachlorocyclopentadiene	ND	10	ŀ	ug/L	1	11/14/2006

Qualifiers:

- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

^{*} Value exceeds Maximum Contaminant Level

CLIENT:	Giant Refining Co			Client Sample	e ID: MW-	1		
Lab Order:	0611014			Collection I	Date: 10/26	10/26/2006 11:00:00 AM		
Project:	Annual Ground Wat	er 2006-Ciniza		Date Recei	ived: 11/1/2	2006		
Lab ID:	0611014-07			Ma	trix: AQUI	EOUS		
Analyses		Result	PQL Q	ual Units	DF	Date Analyzed		
	8270C: SEMIVOLATILE	ES				Analyst: BL		
Hexachloroeth	ane	ND	10	µg/L	1	11/14/2006		
Indeno(1,2,3-c	d)pyrene	ND	10	µg/L	1	11/14/2006		
Isophorone		ND	10	µg/L	1	11/14/2006		
2-Methylnapht	halene	ND	10	µg/L	1	11/14/2006		
2-Methylphend	bl	ND	15	µg/L	1	11/14/2006		
3+4-Methylphe	enol	ND	20	µg/L	1	11/14/2006		
N-Nitrosodi-n-	propylamine	ND	10	µg/L	1	11/14/2006		
N-Nitrosodime	thylamine	ND	10	µg/L	1	11/14/2006		
N-Nitrosodiphe	enylamine	ND	10	µg/L	1	11/14/2006		
Naphthalene		ND	10	µg/L	1	11/14/2006		
2-Nitroaniline		ND	50	µg/L	1	11/14/2006		
3-Nitroaniline		ND	50	µg/L	1	11/14/2006		
4-Nitroaniline		ND	20	µg/L	1	11/14/2006		
Nitrobenzene		ND	10	µg/L	1	11/14/2006		
2-Nitrophenol		ND	15	µg/L	1	11/14/2006		
4-Nitrophenol		ND	50	µg/L	1	11/14/2006		
Pentachloroph	enol	ND	50	µg/L	1	11/14/2006		
Phenanthrene		ND	10	µg/L	1	11/14/2006		
Phenol		ND	10	µg/L	1	11/14/2006		
Pyrene		ND	15	µg/L	1	11/14/2006		
Pyridine		ND	30	µg/L	1	11/14/2006		
1,2,4-Trichlord	benzene	ŃD	10	µg/L	1	11/14/2006		
2,4,5-Trichlord	phenol	ND	10	ug/L	1	11/14/2006		
2,4,6-Trichlord	phenol	ND	15	µg/L	1	11/14/2006		
Surr: 2,4,6-	Tribromophenol	63.8	16.6-150	%REC	1	11/14/2006		
Surr: 2-Fluc	robiphenyl	68.2	19.6-134	%REC	1	11/14/2006		
Surr: 2-Fluc	rophenol	55.1	9.54-113	%REC	1	11/14/2006		
Surr: 4-Terr	bhenyl-d14	68.7	22.7-145	%REC	1	11/14/2006		
Surr: Nitrob	enzene-d5	72.7	14.6-134	%REC	1	11/14/2006		
Surr: Pheno	ol-d5	40.8	10.7-80.3	%REC	1	11/14/2006		
ΕΡΑ ΜΕΤΗΟΕ	8260B: VOLATILES					Analyst: LMN		
Benzene		ND	1.0	µg/L	1	11/7/2006		
Toluene		ND	1.0	µg/L	1	11/7/2006		
Ethylbenzene		ND	1.0	µg/L	1	11/7/2006		
Methyl tert-bu	tyl ether (MTBE)	ND	1.5	μg/L	1	11/7/2006		
1,2,4-Trimethy	lbenzene	ND	1.0	μg/L	1	11/7/2006		
1,3,5-Trimethylbenzene		ND	1.0	μg/L	1	11/7/2006		
1,2-Dichloroethane (EDC)		ND	1.0	μg/L	1	11/7/2006		
1,2-Dibromoe	hane (EDB)	ND	1.0	µg/L	1.	11/7/2006		
Qualifiers:	* Value exceeds Maximu	n Contaminant Leve	:	B Analyte d	etected in the a	ssociated Method Blank		
-	E Value above quantitatio	n range		H Holding ti	ation or analysis exceeded			
	J Analyte detected below	quantitation limits		MCL Maximum	Contaminant I	r preparation or analysis exceeded		
	ND Not Detected at the Rep	orting Limit		RL Reporting	Limit			
	S Spike recovery outside a	accepted recovery lin	mits	E		Page 13 c		
			13/34					

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Date: 17-Nov-06

CLIENT:	Giant Refining Co			C	Client Sample ID:	MW-	1	
Lab Order:	0611014				Collection Date:	10/26/2006 11:00:00 AM		
Project:	Project: Annual Ground Wate				Date Received:	11/1/2006		
Lab ID:	0611014-07				Matrix:	AQUEOUS		
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed	
EPA METHOD	8260B: VOLATILES				· · · · · · · · · · · · · · · · · · ·		Analyst: LMI	
Naphthalene		ND	2.0		µg/L	1	11/7/2006	
1-Methylnaphth	alene	ND	4.0		µg/L	1	11/7/2006	
2-Methylnaphth	alene	ND	4.0		µg/L	1	11/7/2006	
Acetone		ND	10		µg/L	1	11/7/2006	
Bromobenzene		ND	1.0		µg/L	1	11/7/2006	
Bromochlorome	ethane	ND	1.0		µg/L	1	11/7/2006	
Bromodichloron	nethane	ND	1.0		µg/L	1	11/7/2006	
Bromoform		ND	1.0		µg/L	1	11/7/2006	
Bromomethane		ND	2.0		µg/L	1	11/7/2006	
2-Butanone		ND	10		µg/L	1	11/7/2006	
Carbon disulfid	e	ND	10		µg/L	1	11/7/2006	
Carbon Tetrach	nloride	ND	2.0		µg/L	1	11/7/2006	
Chlorobenzene		ND	1.0		µg/L	1	11/7/2006	
Chloroethane		ND	2.0		µg/L	1	11/7/2006	
Chloroform		ND	1.0		µg/L	1	11/7/2006	
Chloromethane	•	ND	1.0		µg/L	1	11/7/2006	
2-Chlorotoluene	9	ND	1.0		µg/L	1	11/7/2006	
4-Chlorotoluene	e	ND	1.0		µg/L	1	11/7/2006	
cis-1,2-DCE		ND	1.0		µg/L	1	11/7/2006	
cis-1,3-Dichlord	propene	ND	1.0		µg/L	1	11/7/2006	
1,2-Dibromo-3-	chloropropane	ND	2.0		µg/L	1	11/7/2006	
Dibromochloror	nethane	ND	1.0		µg/L	1 /	11/7/2006	
Dibromomethar	ne	ND	2.0		µg/L	1	11/7/2006	
1,2-Dichlorober	nzene	ND	1.0		µg/L	1	11/7/2006	
1,3-Dichlorober	nzene	ND	1.0		µg/L	1	11/7/2006	
1,4-Dichlorober	nzene	ND	1.0		µg/L	1	11/7/2006	
Dichlorodifluoro	omethane	ND	1.0		μg/L	1	11/7/2006	
1,1-Dichloroeth	ane	ND	2.0		μg/L	1	11/7/2006	
1,1-Dichloroeth	iene	ND	1.0		µg/L	1	11/7/2006	
1,2-Dichloropro	pane	ND	1.0		µg/L	1	11/7/2006	
1,3-Dichloropro	pane	ND	1.0		µg/L	1	11/7/2006	
2,2-Dichloropro	pane	ND	2.0		µg/L	1	11/7/2006	
1,1-Dichloropro	pene	ND	1.0		µg/L	1	11/7/2006	
Hexachlorobuta	adiene	ND	2.0		µg/L	1	11/7/2006	

11 1



2-Hexanone

Isopropylbenzene

4-Isopropyltoluene

Methylene Chloride

n-Butylbenzene

.......

Qualifiers:

4-Methyl-2-pentanone

- * Value exceeds Maximum Contaminant Level
- Е Value above quantitation range
- j Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- Holding times for preparation or analysis exceeded

1

1

1

1

1

1

Analyte detected in the associated Method Blank

11/7/2006

11/7/2006

11/7/2006

11/7/2006

11/7/2006

11/7/2006

MCL Maximum Contaminant Level RL Reporting Limit

10

1.0

1.0

10

3.0

1.0

µg/L

µg/L

µg/L

µg/L

µg/L

µg/L

В

н

ND

ND

ND

ND

ND

ND

CLIENT: G	iant Refining Co			C	lient Sample ID:	MW-J	l		
Lab Order: 0	611014				Collection Date:	10/26/2006 11:00:00 AM			
Project: A	nnual Ground Water 2	2006-Ciniza			Date Received:	11/1/2	11/1/2006		
Lab ID: 0	611014-07			Matrix:		AQUEOUS			
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed		
EPA METHOD 8260	B: VOLATILES						Analyst: LMM		
n-Propylbenzene		ND	1.0		µg/L	1	11/7/2006		
sec-Butylbenzene		ND	2.0		µg/L	1	11/7/2006		
Styrene		ND	1.5		µg/L	1	11/7/2006		
tert-Butylbenzene		ND	1.0		µg/L	1	11/7/2006		
1,1,1,2-Tetrachloroel	thane	ND	1.0		µg/L	1	11/7/2006		
1,1,2,2-Tetrachloroel	thane	ND	1.0		µg/L	1	11/7/2006		
Tetrachloroethene (F	PCE)	ND	1.0		µg/L	1	11/7/2006		
trans-1,2-DCE		ND	1.0		µg/L	1	11/7/2006		
trans-1,3-Dichloropro	opene	ND	1.0		µg/L	1	11/7/2006		
1,2,3-Trichlorobenze	ne	ND	1.0		µg/L	1	11/7/2006		
1,2,4-Trichlorobenze	ne	ND	1.0		µg/L	1	11/7/2006		
1,1,1-Trichloroethan	е	ND	1.0		µg/L	1	11/7/2006		
1,1,2-Trichloroethan	e	ND	1.0		µg/L	1	11/7/2006		
Trichloroethene (TCI	E)	ND	1.0		µg/L	1	11/7/2006		
Trichlorofluorometha	ne	ND	1.0		µg/L	1	11/7/2006		
1,2,3-Trichloropropa	ne	ND	2.0		µg/L	1	11/7/2006		
Vinyl chloride		ND	1.0		µg/L	1	11/7/2006		
Xylenes, Total		ND	3.0		µg/L	1	11/7/2006		
Surr: 1,2-Dichloro	ethane-d4	84.4	69.9-130		%REC	1	11/7/2006		
Surr: 4-Bromofluo	robenzene	112	75-139		%REC	1	11/7/2006		
Surr: Dibromofluo	romethane	88.0	57.3-135		%REC	1	11/7/2006		
Surr: Toluene-d8		98.4	81.9-122		%REC	1	11/7/2006		
EPA 120.1: SPECIF	IC CONDUCTANCE						Analyst: CM		
Specific Conductanc	e	970	0.010		µmhos/cm	1	11/1/2006		
EPA METHOD 150.	1: PH						Analyst: CM		
рН		8.98	0.010		pH units	1	11/1/2006		

Date: 17-Nov-06



- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
 - H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

CLIENT: Lab Order:	Giant Refining Co 0611014			C	Client Sa Collecti	mple ID: ion Date:	PW-3 10/27/	/2006 2:45:00 PM
Project: Lab ID:	Annual Ground Wate	er 2006-Ciniza			Date F	Received: Matrix:	11/1/2 AQUI	2006 EOUS
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
	300 0. ANIONS							Analyst [.] TES
Fluoride		0.19	0.10		ma/L		1	11/4/2006 1:42:03 AM
Chloride		14	0.10		ma/L		1	11/4/2006 1:42:03 AM
Nitrate (As N)-	+Nitrite (As N)	ND	0.50		ma/L		5	11/4/2006 1:59:28 AM
Phosphorus (Orthophosphate (As P)	ND	0.50	н	ma/L		1	11/4/2006 1:42:03 AM
Sulfate		490	5.0		mg/L		10	11/6/2006 3:14:12 PM
	0 7470: MERCURY							Analyst: MAP
Mercury		ND	0.00020		mg/L		1	11/9/2006
EPA 6010B: T	OTAL RECOVERABLE	METALS						Analyst: NMO
Arsenic		ND	0.020		mg/L		1	11/15/2006 8:22:09 PM
Barium		ND	0.020		mg/L		1	11/15/2006 8:22:09 PM
Cadmium		ND	0.0020		mg/L		1	11/15/2006 8:22:09 PM
Calcium		190	10		mg/L		10	11/16/2006 10:41:19 AM
Chromium		ND	0.0060		mg/L		1	11/15/2006 8:22:09 PM
Lead		ND	0.0050		mg/L		1	11/15/2006 8:22:09 PM
Magnesium		43	1.0		mg/L		1	11/15/2006 8:22:09 PM
Potassium		1.1	1.0		mg/L		1	11/15/2006 8:22:09 PM
Selenium		ND	0.050		mg/L		1	11/15/2006 8:22:09 PM
Silver		ND	0.0050		mg/L		1	11/15/2006 8:22:09 PM
Sodium		28	1.0		mg/L		1	11/15/2006 8:22:09 PM
EPA METHO	0 8270C: SEMIVOLATILI	ES						Analyst: BL
Acenaphthene	9	ND	10		µg/L		1	11/14/2006
Acenaphthyle	ne	ND	10		µg/L		1	11/14/2006
Aniline		ND	20		µg/L		1	11/14/2006
Anthracene		ND	10		µg/L		1	11/14/2006
Azobenzene		ND	10		µg/L		1	11/14/2006
Benz(a)anthra	icene	ND	15		µg/L		1	11/14/2006
Benzo(a)pyrei	ne	ND	15		µg/L		1	11/14/2006
Benzo(b)fluora	anthene	ND	15		µg/L		1	11/14/2006
Benzo(g,n,i)pe	erylene	ND	10		µg/L		1	11/14/2006
Benzo(K)fluora	anmene		10		µg/L		1	11/14/2006
Benzoic acio		ND	00		µg/L		1	11/14/2006
Derizyi alcono	n hovu)mothanc		20		µg/L		1	11/14/2006
Bis(2 chlorest	hullether	<u>טא</u> ו תוא	10		µg/L		1	11/14/2000
Dis(2-Chioroet	apropulation		10		µg/L		1	11/14/2000
Bis(2-ethylhe)	kyl)phthalate	ND	15		µg/L		1	11/14/2006
Qualifiers:	* Value exceeds Maximu	n Contaminant Leve	:]		B Ana	Analyte detected in the associated Method Blank		
	E Value above quantitation	n range			H Hol	ding times f	or prepar	ation or analysis exceeded
	J Analyte detected below	quantitation limits			MCL Max	kimum Cont	aminant	Level
	ND Not Detected at the Rep	orting Limit			RL Rep	orting Limit	l	Page 16 o
	S Spike recovery outside a	iccepted recovery hi	niis 16/3	34				- 450 - 00

onmontal Analysis I aboratory Inc Ua 11

Date: 17-Nov-06

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Hall Envir	onmental Analysis Labor	atory, Inc.	Date:	17-No	v-06
CLIENT:	Giant Refining Co		Client Sample ID:	PW-3	
Lab Order:	0611014		Collection Date:	10/27/	2006 2:45:00 PM
Project:	Annual Ground Water 2006-Ciniz	a	Date Received:	11/1/2	006
Lab ID:	0611014-08	· .	Matrix:	AQUI	EOUS
Analyses	Result	PQL Qua	l Units	DF	Date Analyzed
EPA METHOD	8270C: SEMIVOLATILES				Analyst: B



Oualifiers:

Naphthalene

- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank

1

H Holding times for preparation or analysis exceeded

11/14/2006

MCL Maximum Contaminant Level

µg/Ĺ

RL Reporting Limit

10

ND

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CLIENT:	(Giant Refining Co			С	lient Sample ID:	PW-3	
Lab Order:	(0611014			-	Collection Date:	10/27	/2006 2·45·00 PM
Project:		Annual Ground Water	2006-Ciniza			Data Passivad	11/1/2	2000 2: 15:00 110
Lab ID:	(611014-08				Matrix:	AQUI	EOUS
Analyses		· · · ·	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHO	D 827	C: SEMIVOLATILES					··· · <u>· ·</u>	Analyst: Bl
2-Nitroaniline			ND	50		µg/L	1	11/14/2006
3-Nitroaniline			ND	50		µg/L	1	11/14/2006
4-Nitroaniline			ND	20		µg/L	1	11/14/2006
Nitrobenzene			ND	10		µg/L	1	11/14/2006
2-Nitrophenol	ł		ND	15		µa/L	1	11/14/2006
4-Nitrophenol	Ì		ND	50		µg/=	1	11/14/2006
Pentachloroni	henol		ND	50		µg/L	1	11/14/2006
Phenanthrene	<u>م</u>		ND	10		µg/L	1	11/14/2006
Phenol	-		ND	10		10/l	1	11/14/2006
Pyrene				15		ру/- 	1	11/14/2000
Pyridine				61 00		μg/τ. υρ/Ι	1	11/14/2000
1 2 A Trichlor	ohon-	200		30		µy/L	1	11/14/2000
	openze			10		µg/∟	1	11/14/2006
2,4,5-1 richlor	opnen ,	וכ •	ND	10		µg/L	1	11/14/2006
2,4,6-1 richlor	opnen		ND	15		µg/L	1	11/14/2006
Surr: 2,4,6	- I ribro	mophenol	50.4	16.6-150		%REC	1	11/14/2006
Surr: 2-Flu	orobip	nenyl	61.1	19.6-134		%REC	1	11/14/2006
Surr: 2-Flu	orophe	nol	43.6	9.54-113		%REC	1	11/14/2006
Surr: 4-Ter	pheny	-d14	67.3	22.7-145		%REC	1	11/14/2006
Surr: Nitrot	benzer	ie-d5	61.4	14.6-134		%REC	1	11/14/2006
Surr: Phen	ol-d5		33.1	10.7-80.3		%REC	1	11/14/2006
	D 826	0B: VOLATILES						Analyst: LM
Benzene			ND	1.0		µg/L	1	11/7/2006
Toluene			ND	1.0		µg/L	1	11/7/2006
Ethvibenzene	<u>}</u>		ND	1.0		µg/L	1	11/7/2006
Methyl tert-bu	utvl eth	er (MTBE)	ND	1.5		µg/L	1	11/7/2006
1.2.4-Trimeth	vlbenz	ene	ND	1.0		г9/- иа/L	1	11/7/2006
1.3.5-Trimeth	vlbenz	ene	ND	1.0		ua/)	1	11/7/2006
1 2-Dichloroe	thane	(FDC)	ND	1.0		р <u>9</u> /с ид/I	1	11/7/2006
1.2-Dibromoe	thane	(FDB)	ND	1.0		rg/⊑ uo/l	1	11/7/2000
Nanhthalene	anane	()		י.ט מי כ		ру/с ца/I	1	11/7/2000
1-Methylnanh	nthalen	P	חוא	2.0		ру/с ug/l	1	11/7/2000
2-Mathylaach	haton			4.U A A		μg/L	1	11/7/2000
	naieli	6		4.0		µg/L	1 1	11///2000
Bromohonon	00			10		µg/L	1	11///2006
Bromochler	mother	20		1.0		µy/∟	+	11///2006
Bromediate	methar			1.0		µg/L	1	11///2006
Bromotionior	uneth	ane		1.0		µg/L	Т	11///2006
Bromotorm			ND	1.0		µg/L	1	11/7/2006
Bromomethal 2-Butanone	ne		ND ND	2.0 10		μg/L μg/L	1 1	11/7/2006. 11/7/2006
Onalifiers	*	Value exceeds Maximum (ontaminant leve			B Applyte detector	l in the c	Scoriated Method Dia-ly
E Value above quantitation range			inge	-		 B Analyte detected in the associated Method Blar H Holding times for any set of the set of the		
	L	+ and above quantitation la				in instanting times fo	n prepara	ition of analysis exceeded
	1	Analyte detected below and	intitation limite		•			01/0
	J	Not Detected at the Report	intitation limits		N	ICL Maximum Conta	aminant l	_evel



Hall Envir	onmental Analys	Date:	: 17-Nov-06				
CLIENT:	Giant Refining Co			C	lient Sample ID:	PW-3	
Lab Order:	rder: 0611014				Collection Date:	10/27	/2006 2:45:00 PM
Project:	Annual Ground Water	· 2006-Ciniza			Date Received:		2006
I sh ID.	0611014-08				Matrix:	AOUI	FOUS
	0011014-08						
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD	8260B: VOLATILES						Analyst: LMN
Carbon disulfide	e	ND	10		µg/L	1	11/7/2006
Carbon Tetrach	nloride	ND	2.0		µg/L	1	11/7/2006
Chlorobenzene		ND	1.0		µg/L	1	11/7/2006
Chloroethane		ND	2.0		µg/L	1	11/7/2006
Chloroform		ND	1.0		µg/L	1	11/7/2006
Chloromethane		ND	1.0		µg/L	1	11/7/2006
2-Chlorotoluen	e	ND	1.0		µg/L	1	11/7/2006
4-Chlorotoluene	e	ND	1.0		µg/L	1	11/7/2006
cis-1,2-DCE		ND	1.0		µg/L	1	11/7/2006
cis-1,3-Dichlord	propene	ND	1.0		µg/L	1	11/7/2006
1,2-Dibromo-3-	chloropropane	ND	2.0		µg/L	1	11/7/2006
Dibromochloror	methane	ND	1.0		µg/L	1	11/7/2006
Dibromometha	ne	ND	2.0		µg/L	1	11/7/2006
1,2-Dichlorober	nzene	ND	1.0		µg/L	1	11/7/2006
1,3-Dichlorober	nzene	ND	1.0		µg/L	1	11/7/2006
1,4-Dichlorober	nzene	ND	1.0		µg/L	1	11/7/2006
Dichlorodifluoro	omethane	ND	1.0		µg/L	1	11/7/2006
1,1-Dichloroeth	ane	ND	2.0		µg/L	1	11/7/2006
1,1-Dichloroeth	nene	ND	1.0		µg/L	1	11/7/2006
1.2-Dichloropro	pane	ND	1.0		ua/L	1	11/7/2006

Dichlorodifluoromethane	ND	1.0	µg/L	1
1,1-Dichloroethane	ND	2.0	µg/L	1
1,1-Dichloroethene	ND	1.0	µg/L	1
1,2-Dichloropropane	ND	1.0	µg/L	1
1,3-Dichloropropane	ND	1.0	µg/L	1
2,2-Dichloropropane	ND	2.0	µg/L	1
1,1-Dichloropropene	ND	1.0	µg/L	1
Hexachlorobutadiene	ND	2.0	µg/L	1
2-Hexanone	ND	10	µg/L	1
Isopropylbenzene	ND	1.0	µg/L	1
4-isopropyltoluene	ND	1.0	µg/L	1
4-Methyl-2-pentanone	ND	10	µg/L	1
Methylene Chloride	ND	3.0	µg/L	1
n-Butylbenzene	ND	1.0	µg/L	1
n-Propylbenzene	ND	1.0	µg/L	1
sec-Butylbenzene	ND	2.0	µg/L	1
Styrene	ND	1.5	µg/L	1
tert-Butylbenzene	ND	1.0	µg/L	1
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1
1,1,2,2-Tetrachloroethane	ND	1.0	µg/L	1
Tetrachloroethene (PCE)	ND	1.0	µg/L	1
trans-1,2-DCE	ND	1.0	µg/L	1
trans-1,3-Dichloropropene	ND	1.0	µg/L	1

ND

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. Qualifiers:

1,2,3-Trichlorobenzene

- Е Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank

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- Н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level

µg/L

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RL Reporting Limit

1.0

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11/7/2006

11/7/2006

11/7/2006

^{*} Value exceeds Maximum Contaminant Level

CLIENT: Lab Order: Project:	Giant Refining Co 0611014 Annual Ground Water 2	2006-Ciniza		Cl (ient Sample ID: Collection Date: Date Received:	PW-3 10/27/ 11/1/2	/2006 2:45:00 PM 2006
Lab ID:	0611014-08				Matrix:	AQUI	EOUS
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD	8260B: VOLATILES						Analyst: LMM
1,2,4-Trichloroi	penzene	ND	1.0		µg/L	1	11/7/2006
1,1,1-Trichloroe	ethane	ND	1.0		μg/L	1	11/7/2006
1,1,2-Trichloroe	ethane	ND	1.0		µg/L	1	11/7/2006
Trichloroethene	e (TCE)	ND	1.0		µg/L	1	11/7/2006
Trichlorofluoror	nethane	ND	1.0		µg/L	1	11/7/2006
1,2,3-Trichloro	oropane	ND	2.0		µg/L	1	11/7/2006
Vinyl chloride		ND	1.0		µg/L	1	11/7/2006
Xylenes, Total		ND	3.0		µg/L	1	11/7/2006
Surr: 1,2-Dic	hloroethane-d4	85.3	69.9-130		%REC	1	11/7/2006
Surr: 4-Brom	nofluorobenzene	101	75-139		%REC	1	11/7/2006
Surr: Dibrom	ofluoromethane	89.4	57.3-135		%REC	1	11/7/2006
Surr: Toluen	e-d8	89.0	81.9-122		%REC	1	11/7/2006
EPA 120.1: SP	ECIFIC CONDUCTANCE						Analyst: CMS
Specific Condu	ictance	1200	0.010		µmhos/cm	1	11/1/2006
EPA METHOD	150.1: PH						Analyst: CMS
pН		7.89	0.010		pH units	1	11/1/2006

Date: 17-Nov-06



Quanners. value ex	Qualifiers:	*	Value exc
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- ceeds Maximum Contaminant Level
- Е Value above quantitation range
- Analyte detected below quantitation limits J ND Not Detected at the Reporting Limit
- Spike recovery outside accepted recovery limits 20 / 34 S
- B Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Envir	onmental Analysis Laboratory, Inc.	Date:	17-Nov-06
CLIENT:	Giant Refining Co	Client Sample ID:	Trip Blank
Lab Order:	0611014	Collection Date:	
Project:	Annual Ground Water 2006-Ciniza	Date Received:	11/1/2006
Lab ID:	0611014-09	Matrix:	TRIP BLANK

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES					Analyst: LMM
Benzene	ND	1.0	µg/L	1	11/7/2006
Toluene	ND	1.0	µg/L	1	11/7/2006
Ethylbenzene	ND	1.0	µg/L	1	11/7/2006
Methyl tert-butyl ether (MTBE)	ND	1.5	µg/L	1	11/7/2006
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1	11/7/2006
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1	11/7/2006
1,2-Dichloroethane (EDC)	ND	1.0	µg/L	1	11/7/2006
1,2-Dibromoethane (EDB)	ND	1.0	µg/L	1	11/7/2006
Naphthalene	ND	2.0	hð\r	1	11/7/2006
1-Methylnaphthalene	ND	4.0	µg/L	1	11/7/2006
2-Methylnaphthalene	ND	4.0	µg/L	1	11/7/2006
Acetone	ND	10	µg/L	1	11/7/2006
Bromobenzene	ND	1.0	µg/L	1	11/7/2006
Bromochloromethane	ND	1.0	µg/L	1	11/7/2006
Bromodichloromethane	ND	1.0	µg/L	1	11/7/2006
Bromoform	ND	1.0	µg/L	1	11/7/2006
Bromomethane	ND	2.0	µg/L	1	11/7/2006
2-Butanone	ND	10	µg/L	1	11/7/2006
Carbon disulfide	ND	10	µg/L	1	11/7/2006
Carbon Tetrachloride	ND	2.0	µg/L	1	11/7/2006
Chlorobenzene	ND	1.0	µg/L	1	11/7/2006
Chloroethane	ND	2.0	µg/L	1	11/7/2006
Chloroform	ND	1.0	µg/L	1	11/7/2006
Chloromethane	ND	1.0	µg/L	1	11/7/2006
2-Chlorotoluene	ND	1.0	µg/L	1	11/7/2006
4-Chlorotoluene	ND	1.0	µg/L	1	11/7/2006
cis-1,2-DCE	ND	1.0	μg/L	1	11/7/2006
cis-1,3-Dichloropropene	ND	1.0	µg/L	1	11/7/2006
1,2-Dibromo-3-chloropropane	ND	2.0	µg/L	1	11/7/2006
Dibromochloromethane	ND	1.0	µg/L	1	11/7/2006
Dibromomethane	ND	2.0	µg/L	1	11/7/2006
1,2-Dichlorobenzene	ND	1.0	hð\r	1	11/7/2006
1,3-Dichlorobenzene	ND	1.0	µg/L	1	11/7/2006
1,4-Dichlorobenzene	ND	1.0	µg/L	1	11/7/2006











Dichlorodifluoromethane

1,1-Dichloroethane

1,1-Dichloroethene

Qualifiers:

- Value above quantitation range
- E J
- Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit S
 - Spike recovery outside accepted recovery limits

ND

ND

ND

ND

ND

ND

В Analyte detected in the associated Method Blank

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11/7/2006

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11/7/2006

- Holding times for preparation or analysis exceeded Н
- MCL Maximum Contaminant Level
- RL Reporting Limit

µg/L

µg/L

µg/L

µg/L

µg/L

µg/L

1.0

2.0

1.0

1.0

1.0

2.0

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Hall Envir	onmental Anal	ysis Laborate	ory, In	c.	Date	: 17-No	-06
CLIENT:	Giant Refining Co			C	lient Sample ID	: Trip I	Blank
Lab Order:	0611014				Collection Date	:	
Project: Lab ID:	Annual Ground Wa 0611014-09	nter 2006-Ciniza			Date Received Matrix	: 11/1/2 : TRIP	2006 BLANK
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD	8260B: VOLATILES						Analyst: LMN
1,1-Dichloropro	pene	ND	1.0		µg/L	1	11/7/2006
Hexachlorobuta	adiene	ND	2.0		µg/L	1	11/7/2006
2-Hexanone		ND	10		µg/L	1	11/7/2006
Isopropylbenze	ene	ND	1.0		µg/L	1	11/7/2006
4-Isopropyltolu	ene	ND	1.0		µg/L	1	11/7/2006
4-Methyl-2-pen	Itanone	ND	10		µg/L	1	11/7/2006
Methylene Chlo	oride	ND	3.0		µg/L	1	11/7/2006
n-Butylbenzene	9	ND	1.0		µg/L	1	11/7/2006
n-Propylbenzer	ne	ND	1.0		µg/L	1	11/7/2006
sec-Butvibenze	ene	ND	2.0		υα/Ι	1	11/7/2006



The Bacyle and		110	P.9.4	•	11/1/2000
n-Propylbenzene	ND	1.0	µg/L	1	11/7/2006
sec-Butylbenzene	ND	2.0	µg/L	1	11/7/2006
Styrene	ND	1.5	µg/L	1	11/7/2006
tert-Butylbenzene	ND	1.0	µg/L	1	11/7/2006
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1	11/7/2006
1,1,2,2-Tetrachloroethane	ND	1.0	µg/L	1	11/7/2006
Tetrachloroethene (PCE)	ND	1.0	µg/L	1	11/7/2006
trans-1,2-DCE	ND	1.0	µg/L	1	11/7/2006
trans-1,3-Dichloropropene	ND	1.0	µg/L	1	11/7/2006
1,2,3-Trichlorobenzene	ND	1.0	µg/L	1	11/7/2006
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1	11/7/2006
1,1,1-Trichloroethane	ND	1.0	µg/L	1	11/7/2006
1,1,2-Trichloroethane	ND	1.0	µg/L	1	11/7/2006
Trichloroethene (TCE)	ND	1.0	µg/L ∘	1	11/7/2006
Trichlorofluoromethane	ND	1.0	µg/L	1	. 11/7/2006
1,2,3-Trichloropropane	ND	2.0	µg/L	1	11/7/2006
Vinyl chloride	ND	1.0	µg/L	1	11/7/2006
Xylenes, Total	ND	3.0	µg/L	1	11/7/2006
Surr: 1,2-Dichloroethane-d4	85.9	69.9-130	%REC	1	11/7/2006
Surr: 4-Bromofluorobenzene	108	75-139	%REC	1	11/7/2006
Surr: Dibromofluoromethane	87.8	57.3-135	%REC	1	11/7/2006
Surr: Toluene-d8	96.4	81.9-122	%REC	1	11/7/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S

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Not Detected at the responses Spike recovery outside accepted recovery limits 22/34

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- В Analyte detected in the associated Method Blank
- н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level

RL Reporting Limit

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LABORATORY ANALYTICAL REPORT

Client:	Hall Environmental-Albuquerque	Report Date:	11/14/06
Project:	Proj. 0611014	Collection Date:	10/26/06 11:00
Lab ID:	B06110241-001	DateReceived:	11/03/06
Client Sample ID	0611014-07E, MW-1	Matrix:	Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
INORGANICS Cyanide, Total Manual Distillation	ND	mg/L		0.005		E335.4	11/03/06 12:42 / kjp

Report Definitions:

RL - Analyte reporting limit. QCL - Quality control limit.

MCL - Maximum contaminant level. ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client:	Hall Environmental-Albuquerque	Report Date:	11/14/06
Project:	Proj. 0611014	Collection Date:	10/27/06 14:45
Lab ID:	B06110241-002	DateReceived:	11/03/06
Client Sample ID	0611014-08E, PW-3	Matrix:	Aqueous
-			

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
INORGANICS Cyanide, Total Manual Distillation	ND	mg/L		0.005		E335.4	11/03/06 12:44 / kjp







RL - Analyte reporting limit. QCL - Quality control limit.

MCL - Maximum contaminant level. ND - Not detected at the reporting limit.



QA/QC Summary Report

Client: Hall Environmental-Albuquerque Project: Proj. 0611014 Report Date: 11/08/06 Work Order: B06110241

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E335.4							Batch: A2	2006-11-03_4	_CN01
Sample ID: B06110241-002AMS	Sample Matrix	Spike			Run: AUTO	DAN201-B_06	1103A	11/03	3/06 12:46
Cyanide, Total Manual Distillation	0.113	mg/L	0.0050	113	90	110			S
Sample ID: B06110241-002AMSD	Sample Matrix	Spike Duplicate			Run: AUTO	DAN201-B_06	1103A	11/03	8/06 12:47
Cyanide, Total Manual Distillation	0.112	mg/L	0.0050	112	90	110	1.3	10	S
Sample ID: LFB Laboratory Fortified Blank					Run: AUTC	DAN201-B_06	1103A	11/03	06 11:52
Cyanide, Total Manual Distillation	0.0986	mg/L	0.0050	99	90	110			
Sample ID: MBLK	Method Blank				Run: AUTC	DAN201-B_06	1103A	11/03	06 11:54
Cyanide, Total Manual Distillation	ND	mg/L	0.001						



RL - Analyte reporting limit.

S - Spike recovery outside of advisory limits.

ND - Not detected at the reporting limit.

Client: Giant Refining	g Co							
oject: Annual Groun	nd Water 2	2006-Ciniza					Worl	Order: 0611014
Analyte	Result	Units	PQL	%Rec	LowLimit H	lighLimit	%RPD RF	DLimit Qual
Method: E300								
Sample ID: MBLK		MBLK			Batch ID	R21288	Analysis Date:	11/3/2006 11:11:41 AM
Fluoride	ND	mg/L	0.10					
Chloride	ND	mg/L	0.10					
Nitrate (As N)+Nitrite (As N)	ND	mg/L	0.10					
Phosphorus, Orthophosphate (As P)	ND	mg/L	0.50					
Sulfate	ND	mg/L	0.50					
Sample ID: MBLK		MBLK			Batch ID	: R21305	Analysis Date:	11/6/2006 10:00:52 AM
Fluoride	ND	mg/L	0.10					
Chloride	ND	mg/L	0.10					
Nitrate (As N)+Nitrite (As N)	ND	mg/L	0.10					
Phosphorus, Orthophosphate (As P)	ND	mg/L	0.50					
Sulfate	ND	mg/L	0.50					
Sample ID: LCS ST300-06019		LCS			Batch ID	: R21288	Analysis Date:	11/3/2006 11:29:05 AM
Fluoride	0.5273	mg/L	0.10	105	90	110		
Chloride	4.899	mg/L	0.10	98.0	90	110		
Nitrate (As N)+Nitrite (As N)	3.461	mg/L	0.10	98.9	90	110		
Phosphorus, Orthophosphate (As P)	4.997	mg/L	0.50	99.9	90	110		
Sulfate	9.674	mg/L	0.50	96.7	90	110		
Sample ID: LCS ST300-06019		LCS			Batch ID	R21305	Analysis Date:	11/6/2006 10:18:16 AM
oride	0.5066	mg/L	0.10	101	90	110		
loríde	4.862	mg/L	0.10	97.2	90	110		
Nitrate (As N)+Nitrite (As N)	3.426	mg/L	0.10	97.9	90	110		
Phosphorus, Orthophosphate (As P)	4.905	mg/L	0.50	98.1	90	110		
Sulfate	9.652	mg/L	0.50	96.5	90	110		· · · · · · · · · · · · · · · · · · ·
Method: SW8015								
Sample ID: MB-11640		MBLK			Batch ID	11640	Analysis Date:	11/2/2006 1:11:03 PM
Diesel Range Organics (DRO)	NĎ	mg/L	1.0					
Motor Oil Range Organics (MRO)	ND	mg/L	5.0		~			
Sample ID: LCS-11640		LCS			Batch ID	11640	Analysis Date:	11/2/2006 11:26:05 AM
Diesel Range Organics (DRO)	5.830	mg/L	1.0	117	74	157		
Sample ID: LCSD-11640		LCSD			Batch ID	11640	Analysis Date:	11/2/2006 12:00:55 PM
Diesel Range Organics (DRO)	6.008	mg/L	1.0	120	74	157	3.01	23
Mathad: SW/9045								······································
Sample ID: 5ML RB		MBLK			Batch ID	R21285	Analysis Date:	11/3/2006 8:46:30 AM
Gasoline Range Organics (GRO) Sample ID: 2.5UG GRO LCS	ND	mg/L LCS	0.050		Batch ID	R21285	Analysis Date:	11/3/2006 7·17·11 PM
Gasoline Range Organics (GRO)	0 4740	mo/l	0.050	94 R	73 3	110		
Casoline Range Organics (GRO)	0.7740	mg/L	0.000	04.0	10.0	113		

alifiers:

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

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Client:	Giant Refinin	ig Co									
iect:	Annual Grou	nd Water 2	2006-Ciniza	_					Work (Order	: 0611014
Analyte		Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPD	Limit	Qual
Method: SW8021											
Sample ID: 061101	14-01A MSD		MSD			Batch	ID: R21286	Analysis (Date:	11/3/2	2006 8:10:59 PM
Methyl tert-butyl ethe	er (MTBE)	38.73	µg/L	2.5	96.8	51.2	138	1.19	28		
Benzene		19.96	µg/L	1.0	99.8	85	115	2.15	27		
Toluene		20.31	µg/L	1.0	102	85	118	3.09	19		
Ethylbenzene		20.26	µg/L	1.0	101	85	116	2.06	10		
Xylenes, Total		61.04	µg/L	3.0	102	85	119	2.62	13		
Sample ID: 5ML R	EAGENT BLA		MBLK			Batch	ID: R21286	Analysis [Date:	11/3/:	2006 8:55:37 AM
Methyl tert-butyl ethe	er (MTBE)	ND	µg/L	2.5							
Benzene		ND	µg/L	1.0							
Toluene		ND	µg/L	1.0							
Ethylbenzene		ND	µg/L	1.0							
Xylenes, Total		ND	µg/L	3.0							
Sample ID: 100NG	BTEX LCS		LCS			Batch	ID: R21286	Analysis [Date:	11/3/:	2006 7:10:49 PM
Methyl tert-butyl eth	er (MTBE)	40.12	µg/L	2.5	100	51.2	138				
Benzene		19.8 9	µg/L	1.0	99.4	85	115				
Toluene		20.41	µg/L	1.0	102	85	118				
Ethylbenzene		20.50	µg/L	1.0	103	85	116				
Xylenes, Total		61.61	µg/L	3.0	103	85	119				
Sample ID: 06110	14-01A MS		MS			Batch	ID: R21286	Analysis I	Date:	11/3/	2006 7:40:53 PM
thyl tert-butyl eth	er (MTBE)	39.20	µg/L	2.5	98.0	51.2	138				
Lanzene		20.39	µg/L	1.0	102	85	115				
Toluene		20.95	µg/L	1.0	105	85	118				
Ethylbenzene		20.68	µg/L	1.0	103	85	116				
Xylenes, Total		62.66	µg/L	3.0	104	85	119				



- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

Client: Coject: A	Giant Refining Annual Ground	Co Wate <mark>r</mark> 2	2006-Ciniza							Work Ord	er:	0611014
Analyte		Result	Units	PQL	%Rec	LowLimit	Higł	nLimit	%RPD	RPDLim	it Qu	al
Method: SW8270C	;											
Sample ID: MB-1164	11		MBLK			Batch	ID:	11641	Analysis	Date:		11/14/2006
Acenanhthene		ND	uo/I	10								
Acenaphthylene		ND	μ <u>α/</u> L	10								
Aniline		ND	49/L	20								
Anthracene		ND	µg/L	10								
Azobenzene		ND	µa/L	10								
Benz(a)anthracene		ND	µg/L	15								
Benzo(a)pyrene		ND	μg/L	15								
Benzo(b)fluoranthene		ND	μg/L	15								
Benzo(g,h,i)perylene		ND	uq/L	10								
Benzo(k)fluoranthene		ND	μg/L	10								
Benzoic acid		ND	μg/L	50								
Benzyl alcohoł		ND	μg/L	20								
Bis(2-chloroethoxy)me	ethane	ND	µg/L	10								
Bis(2-chloroethyl)ethe	r	ND	μg/L	15								
Bis(2-chloroisopropyl)	ether	ND	μg/L	15								
Bis(2-ethylhexyl)phtha	late	ND	μg/L	15								
4-Bromophenyl pheny	lether	ND	µg/L	10								
Butyl benzyl phthalate		ND	µg/L	15								
Carbazole		ND	ug/L	10								
hloro-3-methylphe	nol	ND	ug/L	20								
Chloroaniline		ND	. 9 µg/L	20								
2-Chloronaphthalene		ND	μg/L	10								
2-Chlorophenol		ND	μg/L	10								
4-Chlorophenyl pheny	l ether	ND	μg/L	15								
Chrysene		ND	µg/L	15								
Di-n-butyl phthalate		ND	µg/L	10								
Di-n-octyl phthalate		ND	µg/L	15								
Dibenz(a,h)anthracene	9	ND	µg/L	10								
Dibenzofuran		ND	µg/L	10								
1,2-Dichlorobenzene		ND	µg/L	10								
1,3-Dichlorobenzene		ND	µg/L	10								
1,4-Dichlorobenzene		ND	µg/L	10								
3,3'-Dichlorobenzidine	\$	ND	µg/L	15								
Diethyl phthalate		ND	µg/L	10								
Dimethyl phthalate		ND	µg/L	10								
2,4-Dichlorophenol		ND	µg/L	10								
2,4-Dimethylphenol		ND	µg/L	10								
4,6-Dinitro-2-methylph	enol	ND	µg/L	50								
2,4-Dinitrophenol		ND	µg/L	50								
2,4-Dinitrotoluene		ND	hð\r	10								
2,6-Dinitrotoluene		ND	µg/L	10								
Fluoranthene		ND	µg/L	10								
Fluorene		ND	µg/L	10								
Hexachlorobenzene		ND	µg/L	10								
						·····						
E Volumeheure	antitation reason			11	ปลาสา	times for	o me t	ou 1 '	• •			
E value above qu	anutation range			н	Holding	umes for prep	aration	or analysi	s exceeded			

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

Client: Giar	nt Refining Co									
Ann	ual Ground Water 2								Work Order	: 0611014
Analyte	Result	Units	PQL	%Rec	LowLimit	High	Limit	%RPD	RPDLimit	Qual
Method: SW8270C										
Sample ID: MB-11641		MBLK			Batch	ID:	11641	Analysis [Date:	11/14/2006
Hexachlorobutadiene	ND	µg/L	10							
Hexachlorocyclopentadier	ne ND	µg/L	10							
Hexachloroethane	ND	µg/L	10							
Indeno(1,2,3-cd)pyrene	ND	µg/L	10							
Isophorone	ND	µg/L	10							
2-Methylnaphthalene	ND	µg/L	10							
2-Methylphenol	ND	µg/L	15							
3+4-Methylphenol	ND	µg/L	20							
N-Nitrosodi-n-propylamine	e ND	µg/L	10							
N-Nitrosodimethylamine	ND	µg/L	10							
N-Nitrosodiphenylamine	ND	µg/L	10							
Naphthalene	ND	µg/L	10							
2-Nitroaniline	ND	µg/L	50							
3-Nitroaniline	ND	µg/L	50							
4-Nitroaniline	ND	µg/L	20							
Nitrobenzene	ND	µg/L	10							
2-Nitrophenol	ND	µg/L	15							
4-Nitrophenol	ND	µg/L	50							
Pentachlorophenol	ND	µg/L	50							
a enanthrene	ND	µg/L	10							
Phenol	ND	µg/L	10							
Pyrene	ND	µg/L	15							
Pyridine	ND	µg/L	30							
1,2,4-Trichlorobenzene	ND	µg/L	10							
2,4,5-Trichlorophenol	ND	µg/L	10							
2,4,6-Trichlorophenol	ND	µg/L	15							
Sample ID: LCS-11641		LCS			Batch	ID:	11641	Analysis I	Date:	11/14/2006
Acenaphthene	75.56	µg/L	10	75.6	11	123	3			
4-Chloro-3-methylphenol	128.8	µg/L	20	64.4	15.4	119)			
2-Chlorophenol	109.7	µg/L	10	54.9	12.2	122	2			
1,4-Dichlorobenzene	44.08	µg/L	10	44.1	16.9	100)			
2,4-Dinitrotoluene	70.12	µg/L	10	70.1	13	138	3			
N-Nitrosodi-n-propylamine	e 59.72	µg/L	10	59.7	9.93	122	2			
4-Nitrophenol	61.04	µg/L	50	30.5	12.5	87.4	4			
Pentachlorophenol	89.54	µg/L	50	44.8	3.55	114	1			
Phenol	60.02	µg/L	10	30.0	7.53	73.	1			
Pyrene	74.84	µg/L	15	74.8	12.6	14()			
1,2,4-Trichlorobenzene	49.74	µg/L	10	49.7	17.4	98.	7			
Sample ID: LCSD-1164	1	LCSD			Batch	ID:	11641	Analysis I	Date:	11/14/2006
Acenaphthene	72.80	µg/L	10	72.8	11	123	3	3.72	30.5	
4-Chloro-3-methylphenol	129.7	µg/L	20	64.8	15.4	119	Э	0.697	28.6	
2-Chlorophenol	129.1	µg/L	10	. 64.5	12.2	122	2	16.2	107	
1,4-Dichlorobenzene	48.32	µg/L	10 -	48.3	16.9	100)	9.18	62.1	
24-Dinitrotoluene	64.96	µg/L	10	65.0	13	138	3	7.64	14.7	
ualifiers:		·····				• • • •	··· ··		· · · · ·	

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

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	Client:
1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	oject:

Giant Refining Co Annual Ground Water 2006-Ciniza

oject: Annual Grou	und Water 20	06-Ciniza							Work Order	r: 0611014
Analyte	Result	Units	PQL	%Rec	LowLimit	High	Limit	%RPD	RPDLimit	Qual
Method: SW8270C									······	
Sample ID: LCSD-11641		LCSD			Batch	ID:	11641	Analysis	Date:	11/14/2006
N-Nitrosodi-n-propylamine	60.62	µg/L	10	60.6	9.93	12	2	1.50	30.3	
4-Nitrophenol	75.92	µg/L	50	38.0	12.5	87.	4	21.7	36.3	
Pentachlorophenol	127.0	µg/L	50	63.5	3.55	11	4	34.6	49	
Phenol	72.86	µg/L	10	36.4	7.53	73.	1	19.3	52.4	
Pyrene	71.16	µg/L	15	71.2	12.6	14	0	5.04	16.3	
1,2,4-Trichlorobenzene	52.72	µg/L	10	52.7	17.4	98.	7	5.82	36.4	
Method: SW7470										
Sample ID: 0611014-08C MSD		MSD			Batch	ID:	11711	Analysis	Date:	11/9/2006
Mercury	0.004725	mg/L	0.00020	94.5	75	12	5	2.25	20	
Sample ID: MB-11711		MBLK			Batch	ID:	11711	Analysis	Date:	11/9/2006
Mercury	ND	mg/L	0.00020							
Sample ID: LCS-11711		LCS			Batch	ID:	11711	Anałysis	Date:	11/9/2006
Mercury	0.004815	mg/L	0.00020	96.3	80	12	0			
Sample ID: 0611014-08C MS		MS			Batch	ID:	11711	Analysis	Date:	11/9/2006
Mercury	0.004620	mg/L	0.00020	92.4	75	12	5			





E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

Client: Gian roject: Ann	nt Refining Co Jual Ground Water 2	006-Ciniza					Work	Order: 0611014
Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD RP	DLimit Qual
Method: SW6010A								
Sample ID: MB-11746		MBLK			Batch I	D: 11746	Analysis Date:	11/16/2006 8:58:41 AM
Arsenic	ND	mg/L	0.020					
Barium	ND	mg/L	0.020					
Cadmium	ND	mg/L	0.0020					
Calcium	ND	mg/L	1.0					
Chromium	ND	mg/L	0.0060					
Lead	ND	mg/L	0.0050					
Magnesium	ND	mg/L	1.0					
Potassium	ND	mg/L	1.0					
Selenium	ND	mg/L	0.050					
Silver	ND	mg/L	0.0050					
Sodium	ND	mg/L	1.0					
Sample ID: MB-11746		MBLK			Batch I	D: 11746	Analysis Date:	11/15/2006 7:10:00 PM
Cadmium	ND	mg/L	0.0020					
Chromium	ND	mg/L	0.0060					
Magnesium	ND	mg/L	1.0					
Potassium	ND	mg/L	1.0					
Sample ID: MB-11746		MBLK			Batch I	D: 11746	Analysis Date:	11/16/2006 8:58:41 AM
Calcium	ND	mg/L	1.0					
odium	ND	mg/L	1.0					
ample ID: LCS-11746		LCS			Batch I	D: 11746	Analysis Date:	11/16/2006 8:53:16 AM
Arsenic	0.5143	mg/L	0.020	103	80	120		
Barium	0.4951	mg/L	0.020	99.0	80	120		
Cadmium	0.5012	mg/L	0.0020	100	80	120		
Calcium	53.42	mg/L	1.0	107	80	120		
Chromium	0.5086	mg/L	0.0060	102	80	120		
Lead	0.4945	mg/L	0.0050	98.9	80	120		
Magnesium	53.81	mg/L	1.0	108	80	120		
Potassium	57.58	mg/L	1.0	115	80	120		
Selenium	0.4749	mg/L	0.050	95.0	80	120		
Silver	0.5011	mg/L	0.0050	100	80	120		
Sodium	57.46	mg/L	1.0	115	80	120		
Sample ID: LCS-11746		LCS			Batch I	D: 11746	Analysis Date:	11/15/2006 7:13:04 PM
Cadmium	0.4806	mg/L	0.0020	96.1	80	120		
Chromium	0.4878	mg/L	0.0060	97.6	80	120		
Magnesium	54.21	mg/L	1.0	108	80	120		
Potassium	56.75	mg/L	1.0	114	80	120		
Sample ID: LCS-11746		LCS			Batch I	D: 11746	Analysis Date:	11/16/2006 8:53:16 AM
Calcium	53.42	mg/L	1.0	107	80	120		
Sodium	57.46	mg/L	1.0	115	80	120		
		-						

Qualifiers:

- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
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Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimi	Qual
Method: SW8260B									
Sample ID: 5mL rb		MBLK			Batch	ID: R2132	1 Analysis	Date:	11/7/2006
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.5						
1,2,4-Trimethylbenzene	ND	µg/L	1.0						
1,3,5-Trimethylbenzene	ND	µg/L	1.0						
1,2-Dichloroethane (EDC)	ND	µg/L	1.0						
1,2-Dibromoethane (EDB)	ND	µg/L	1.0						
Naphthalene	ND	µg/L	2.0						
1-Methylnaphthalene	ND	µg/L	4.0						
2-Methylnaphthalene	ND	µg/L	4.0						
Acetone	ND	µg/L	10						
Bromobenzene	ND	µg/L	1.0						
Bromochloromethane	ND	µg/L	1.0						
Bromodichloromethane	ND	μg/L	1.0						
Bromoform	ND	µg/L	1.0						
Bromomethane	ND	μg/L	2.0						
2-Butanone	ND	µg/L	10						
Carbon disulfide	ND	µg/L	10						
bon Tetrachloride	ND	ug/L	2.0						
Chlorobenzene	ND	µg/L	1.0						
Chloroethane	ND	µg/L	2.0						
Chloroform	ND	ug/L	1.0						
Chloromethane	ND	ua/L	1.0						
2-Chlorotoluene	ND	ua/L	1.0						
4-Chlorotoluene	ND	ua/L	1.0						
cis-1.2-DCE	ND	ua/L	1.0						
cis-1.3-Dichloropropene	ND	ua/L	1.0						
1 2-Dibromo-3-chloropropane	ND	µg/L	2.0						
Dibromochloromethane	ND	ua/L	1.0						
Dibromomethane	ND	µg/L	2.0						
1,2-Dichlorobenzene	ND	µg/L	1.0						
1,3-Dichlorobenzene	ND	µg/L	1.0						
1.4-Dichlorobenzene	ND	µq/L	1.0						
Dichlorodifluoromethane	ND	µg/L	1.0						
1,1-Dichloroethane	ND	µg/L	2.0						
1,1-Dichloroethene	ND	µg/L	1.0						
1,2-Dichloropropane	ND	µg/L	1.0						
1,3-Dichloropropane	ND	µg/L	1.0						
2,2-Dichloropropane	ND	µg/L	2.0						
1,1-Dichloropropene	ND	μg/L	1.0						
Hexachlorobutadiene	ND	µg/L	2.0						
2-Hexanone	ND	µg/L	10						
Isopropylbenzene	ND	uo/l	10						

- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

Analyte Result Units PQL %Rec LowLimit HighLimit %RPD RPDLimit Qual Method: SW8260B Sample ID: SmL rb MBLK Batch ID: R21321 Analysis Date: 11/7/2006 4-Isopropylioluene ND µg/L 1.0 4.4 Matyperzene ND µg/L 10 Methylene Chloride ND µg/L 3.0 n-Butyberzene ND µg/L 1.0 -Propylenezene ND µg/L 1.0 1.1	Client: Giant Ref	ining Co round Water 2	2006-Ciniza						Work Order	
Method: SW260B Sample ID: SmL rb MBLK Batch ID: R21321 Analysis Date: 11/7/2006 4-Isopropyloluene ND µg/L 1.0 11/7/2006 4-Methyl-2-pentanone ND µg/L 1.0 11/7/2006 n-Butylbenzene ND µg/L 1.0 1.0 n-Propylbenzene ND µg/L 1.0 1.0 n-Propylbenzene ND µg/L 1.0 1.1 ser-Butylbenzene ND µg/L 1.0 1.1 1.1.2-Tetrachloroethane ND µg/L 1.0 1.1 1.1.2-Tetrachloroethane ND µg/L 1.0 1.1 1.2.3-Trickloroethane ND µg/L 1.0 1.1 1.2.4-Trickloroethane ND µg/L 1.0 1.1	Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mithol. Strozebb Batch ID: R21321 Analysis Date: 11/7/2006 4-Isopropylloluene ND µg/L 1.0	Mothod: SW/2260P							· · · · · ·	· · · · · · · · · · · · · · · · · · ·	
Allsopropylialuene ND µg/L 1.0 4-Mathyl-2-pentanone ND µg/L 10 Methylene Chloride ND µg/L 10 n-Butylbenzene ND µg/L 10 n-Protyblenzene ND µg/L 10 sec-Butylbenzene ND µg/L 1.0 styrene ND µg/L 1.0 1,1,1.2-Tetrachloroethane ND µg/L 1.0 1,1,2.7-Tetrachloroethane ND µg/L 1.0 1,1,2.7-Tetrachloroethane ND µg/L 1.0 1,2,3-Trichlorobenzene ND µg/L 1.0 1,2,3-Trichloroethane ND µg/L 1.0 1,1,2-Trichloroethane ND µg/L 1.0	Sample ID: 5ml rh		MRIK			Batch	ID. P21321	Analysis F	lato.	11/7/2006
4-isopropylotice ND $\mu g/L$ 1.0 4-Methyle-Chloride ND $\mu g/L$ 3.0 n-Butylbenzene ND $\mu g/L$ 3.0 n-Propylbenzene ND $\mu g/L$ 1.0 sec-Butylbenzene ND $\mu g/L$ 1.0 styrene ND $\mu g/L$ 1.0 1,1,2.7-Ertachloroethane ND $\mu g/L$ 1.0 trans-1,2-DCE ND $\mu g/L$ 1.0 trans-1,2-DCE ND $\mu g/L$ 1.0 trans-1,3-Dichloropropene ND $\mu g/L$ 1.0 1,2,3-Trichlorobenzene ND $\mu g/L$ 1.0 1,1,2-Trichlorobenzene ND $\mu g/L$ 1.0 1,1,2-Trichloroptane ND $\mu g/L$ 1.0 1,1,2-Trichloroptane ND $\mu g/L$ 1.0 Trichloroptopane ND $\mu g/L$ 1.0			WIBER .	4.0		Daton	10. K21521	Analysis L		11/1/2000
4Methylere Chloride ND μg/L 10 Methylere Chloride ND μg/L 1.0 n-Butylbenzene ND μg/L 1.0 n-Propylbenzene ND μg/L 1.0 sec-Butylbenzene ND μg/L 1.0 styrene ND μg/L 1.0 1,1,1,2-Tetrachloroethane ND μg/L 1.0 1,1,1,2-Tetrachloroethane ND μg/L 1.0 trans-1,2-DCE ND μg/L 1.0 trans-1,2-DCE ND μg/L 1.0 trans-1,3-Dichloropropene ND μg/L 1.0 trans-1,3-Dichloropropene ND μg/L 1.0 trans-1,3-Dichlorophrapene ND μg/L 1.0 1,1,1-Tichloroethane ND μg/L 1.0 1,1,2-Trichloroethane ND μg/L 1.0 1,1,2-Tichloroptane ND μg/L 1.0 2,3-Tichloropropane ND μg/L 1.0 2	4-Isopropyltoluene	ND	µg/L	1.0						
Methylene Chlorode ND µg/L 3.0 n-Butylbenzene ND µg/L 1.0 n-Propylbenzene ND µg/L 1.0 sec-Butylbenzene ND µg/L 2.0 Styrene ND µg/L 1.0 1,1,1,2-Tetrachloroethane ND µg/L 1.0 1,1,1,2-Tetrachloroethane ND µg/L 1.0 1,1,2-Tetrachloroethane ND µg/L 1.0 Trans-1,3-Dichloropropene ND µg/L 1.0 1,2,3-Trichlorobenzene ND µg/L 1.0 1,1,4-Trichloroethane ND µg/L 1.0 1,1,2-Trichloroethane ND µg/L 1.0 1,1,2-Trichloroethane ND µg/L 1.0 1,1,2-Trichloroethane ND µg/L 1.0 1,1,2-Trichloroethane ND µg/L 1.0 Trichloroethane (TCE) ND µg/L 1.0 Yelens, Total ND µg/L 1.0	4-Methyl-2-pentanone	ND	µg/L	10						
n-Backyloberzene ND $\mu g/L$ 1.0 n-Propylobrzene ND $\mu g/L$ 1.0 sec-Butylberzene ND $\mu g/L$ 1.5 tert-Butylberzene ND $\mu g/L$ 1.0 1,1,2.2-Tetrachloroethane ND $\mu g/L$ 1.0 1,1,2.2-Tetrachloroethane ND $\mu g/L$ 1.0 Tetrachloroethane ND $\mu g/L$ 1.0 Tetrachloroethane ND $\mu g/L$ 1.0 trans-1.2-DCE ND $\mu g/L$ 1.0 trans-1.3-Dichloropopene ND $\mu g/L$ 1.0 1,2,2-Trichlorobenzene ND $\mu g/L$ 1.0 1,2,3-Trichlorobenzene ND $\mu g/L$ 1.0 1,1,2-Trichlorobenzene ND $\mu g/L$ 1.0 1,1,2-Trichlorobenzene ND $\mu g/L$ 1.0 1,1,2-Trichlorobenzene ND $\mu g/L$ 1.0 1,1,2-Trichloropthane ND $\mu g/L$ 1.0 2,3-Trichloropthane ND $\mu g/L$ 1.0 2,3-Trichloropthane ND $\mu g/L$ <td>Methylene Chloride</td> <td>ND</td> <td>µg/L</td> <td>3.0</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Methylene Chloride	ND	µg/L	3.0						
n-Propylobenzene ND μg/L 1.0 sec-Butylbenzene ND μg/L 2.0 Styrene ND μg/L 1.5 tert-Butylbenzene ND μg/L 1.0 1,1,1,2-Tetrachloroethane ND μg/L 1.0 1,1,2,2-Tetrachloroethane ND μg/L 1.0 Tetrachloroethene (PCE) ND μg/L 1.0 trans-1,2-DCE ND μg/L 1.0 trans-1,3-Dichloropropene ND μg/L 1.0 1,2,3-Trichlorobenzene ND μg/L 1.0 1,1,2-Trichloroethane ND μg/L 1.0 1,1,1-Trichloroethane ND μg/L 1.0 1,1,1-Trichloroethane ND μg/L 1.0 Trichlorofluoromethane ND μg/L 1.0	n-Butylbenzene	ND	µg/L	1.0						
sec-Butylbenzene ND $\mu g/L$ 2.0 Styrene ND $\mu g/L$ 1.5 tert-Butylbenzene ND $\mu g/L$ 1.0 1,1,1,2-Tetrachloroethane ND $\mu g/L$ 1.0 1,1,1,2-Tetrachloroethane ND $\mu g/L$ 1.0 Tetrachloroethane (PCE) ND $\mu g/L$ 1.0 trans-1,3-Dichloropropene ND $\mu g/L$ 1.0 1,2,3-Trichlorobenzene ND $\mu g/L$ 1.0 1,2,4-Trichlorobenzene ND $\mu g/L$ 1.0 1,2,3-Trichlorobenzene ND $\mu g/L$ 1.0 1,1,1-Trichloroethane ND $\mu g/L$ 1.0 1,1,1-Trichloroethane ND $\mu g/L$ 1.0 1,1,2-Trichloroftane ND $\mu g/L$ 1.0 Trichloroftane ND $\mu g/L$ 1.0 Trichloroftane ND $\mu g/L$ 1.0 Trichloroftane ND $\mu g/L$ 1.0 Nyl chloride ND $\mu g/L$ 1.0 Sample ID: 100ng Ics-b LCS Batch ID: <	n-Propylbenzene	ND	µg/L	1.0						
Styrene ND µg/L 1.5 tert-Butylbenzene ND µg/L 1.0 1,1,1,2-Tetrachloroethane ND µg/L 1.0 Tetrachloroethane ND µg/L 1.0 Tetrachloroethane ND µg/L 1.0 trans-1,2-DCE ND µg/L 1.0 trans-1,3-Dichloropropene ND µg/L 1.0 1,2,2-Trichlorobenzene ND µg/L 1.0 1,2,3-Trichlorobenzene ND µg/L 1.0 1,2,3-Trichlorobenzene ND µg/L 1.0 1,1,1-Trichlorobenzene ND µg/L 1.0 1,1,1-Trichloroethane ND µg/L 1.0 1,1,2-Trichloroethane ND µg/L 1.0 Trichlorofluoromethane ND µg/L 1.0 Trichlorofluoromethane ND µg/L 1.0 Yalenes, Total ND µg/L 1.0 Sample ID: 100ng Ics-b LCS Eatch ID: R21321 <td>sec-Butylbenzene</td> <td>ND</td> <td>µg/L</td> <td>2.0</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	sec-Butylbenzene	ND	µg/L	2.0						
tert-Butylbenzene ND $\mu g/L$ 1.0 1,1,1,2-Tetrachloroethane ND $\mu g/L$ 1.0 1,1,2,2-Tetrachloroethane ND $\mu g/L$ 1.0 Tetrachloroethane (PCE) ND $\mu g/L$ 1.0 trans-1,2-DCE ND $\mu g/L$ 1.0 trans-1,3-Dichloropropene ND $\mu g/L$ 1.0 1,2,3-Trichlorobenzene ND $\mu g/L$ 1.0 1,2,4-Trichloroethane ND $\mu g/L$ 1.0 1,2,4-Trichlorobenzene ND $\mu g/L$ 1.0 1,1,2-Trichloroethane ND $\mu g/L$ 1.0 1,1,2-Trichloroethane ND $\mu g/L$ 1.0 Trichloroethane ND $\mu g/L$ 1.0 Trichlorophane ND $\mu g/L$ 1.0 Ylenes, Total ND $\mu g/L$ 1.0 Sample ID: 100ng Ics-b LCS Batch ID: R21321 Analysis Date: 11/7/2006 Benzene 18.27 $\mu g/L$ 1.0 91.4 74.9 113 11/7/2006 Benzene 18	Styrene	ND	µg/L	1.5						
1,1,1,2-Tetrachloroethane ND $\mu g/L$ 1.0 1,1,2,2-Tetrachloroethane ND $\mu g/L$ 1.0 Tetrachloroethane (PCE) ND $\mu g/L$ 1.0 trans-1,2-DCE ND $\mu g/L$ 1.0 trans-1,3-Dichloropropene ND $\mu g/L$ 1.0 1,2,3-Trichlorobenzene ND $\mu g/L$ 1.0 1,2,4-Trichloroethane ND $\mu g/L$ 1.0 1,1,2-Trichloroethane ND $\mu g/L$ 1.0 1,1,2-Trichloroethane ND $\mu g/L$ 1.0 1,1,2-Trichloroethane ND $\mu g/L$ 1.0 Trichloroethane (TCE) ND $\mu g/L$ 1.0 Trichloroptopane ND $\mu g/L$ 1.0 Xylenes, Total ND $\mu g/L$ 1.0 Sample ID: 100 ng Ics-b LCS Batch ID: R21321 Analysis Date: 11/7/2006	tert-Butylbenzene	ND	µg/L	1.0						
1,1,2,2-Tetrachloroethane ND $\mu g/L$ 1.0 Tetrachloroethene (PCE) ND $\mu g/L$ 1.0 trans-1,2-DCE ND $\mu g/L$ 1.0 trans-1,3-Dichloropropene ND $\mu g/L$ 1.0 1,2,3-Trichlorobenzene ND $\mu g/L$ 1.0 1,2,4-Trichlorobenzene ND $\mu g/L$ 1.0 1,2,4-Trichlorobenzene ND $\mu g/L$ 1.0 1,1,2-Trichlorobenzene ND $\mu g/L$ 1.0 1,1,1-Trichloroethane ND $\mu g/L$ 1.0 Trichlorofluoromethane ND $\mu g/L$ 1.0 Trichlorofluoromethane ND $\mu g/L$ 1.0 J.3-Trichloropropane ND $\mu g/L$ 1.0 Sample ID: 100 ng Ics-b LCS Batch ID: R21321 Analysis Date: 11/7/2006 Benzene 18.27 $\mu g/L$ 1.0	1,1,1,2-Tetrachloroethane	ND	µg/L	1.0						
Tetrachloroethene (PCE) ND $\mu g/L$ 1.0 trans-1,2-DCE ND $\mu g/L$ 1.0 trans-1,3-Dichloropropene ND $\mu g/L$ 1.0 1,2,3-Trichlorobenzene ND $\mu g/L$ 1.0 1,2,4-Trichlorobenzene ND $\mu g/L$ 1.0 1,2,4-Trichlorobenzene ND $\mu g/L$ 1.0 1,1,1-Trichloroethane ND $\mu g/L$ 1.0 1,1,2-Trichloroethane ND $\mu g/L$ 1.0 Trichloroethane ND $\mu g/L$ 1.0 Trichlorofluoromethane ND $\mu g/L$ 1.0 Trichlorofluoromethane ND $\mu g/L$ 1.0 Yelnes, Total ND $\mu g/L$ 1.0 Sample ID: 100 ng Ics-b LCS Batch ID: R21321 Analysis Date: 11/7/2006 Benzene 18.27 $\mu g/L$ 1.0 91.4 74.9 113 Toluene 17.05 $\mu g/L$ 1.0 85.3 80.4 111 Chlorobenzene 20.26 $\mu g/L$ 1.0 91.6 <th< td=""><td>1,1,2,2-Tetrachloroethane</td><td>ND</td><td>μg/L</td><td>1.0</td><td></td><td></td><td></td><td></td><td></td><td></td></th<>	1,1,2,2-Tetrachloroethane	ND	μg/L	1.0						
trans-1.2-DCE ND $\mu g/L$ 1.0 trans-1,3-Dichloropropene ND $\mu g/L$ 1.0 1,2,3-Trichlorobenzene ND $\mu g/L$ 1.0 1,2,4-Trichlorobenzene ND $\mu g/L$ 1.0 1,1,1-Trichloroethane ND $\mu g/L$ 1.0 1,1,2-Trichloroethane ND $\mu g/L$ 1.0 1,1,2-Trichloroethane ND $\mu g/L$ 1.0 Trichloroethane ND $\mu g/L$ 1.0 Trichloroethane ND $\mu g/L$ 1.0 Trichlorofluoromethane ND $\mu g/L$ 1.0 Yalenes, Total ND $\mu g/L$ 1.0 Yalenes, Total ND $\mu g/L$ 1.0 Sample ID: 100ng Ics-b LCS Batch ID: R21321 Analysis Date: 11/7/2006 Benzene 18.27 $\mu g/L$ 1.0 91.4 74.9 113 Toluene 17.05 $\mu g/L$ 1.0 85.3 80.4 111 Chlorobenzene 20.26 $\mu g/L$ 1.0 91.6 72 <t< td=""><td>Tetrachloroethene (PCE)</td><td>ND</td><td>µg/L</td><td>1.0</td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	Tetrachloroethene (PCE)	ND	µg/L	1.0						
trans-1,3-Dichloropropene ND $\mu g/L$ 1.0 1,2,3-Trichlorobenzene ND $\mu g/L$ 1.0 1,2,4-Trichlorobenzene ND $\mu g/L$ 1.0 1,1,1-Trichlorobenzene ND $\mu g/L$ 1.0 1,1,1-Trichloroethane ND $\mu g/L$ 1.0 1,1,2-Trichloroethane ND $\mu g/L$ 1.0 Trichloroethane ND $\mu g/L$ 1.0 Trichlorofluoromethane ND $\mu g/L$ 1.0 Trichlorofluoromethane ND $\mu g/L$ 1.0 2,3-Trichloropropane ND $\mu g/L$ 1.0 Yelnes, Total ND $\mu g/L$ 3.0 Sample ID: 100ng Ics-b LCS Batch ID: R21321 Analysis Date: 11/7/2006 Benzene 18.27 $\mu g/L$ 1.0 91.4 74.9 113 Toluene 17.05 $\mu g/L$ 1.0 85.3 80.4 111 Chlorobenzene 20.26 $\mu g/L$ 1.0 101 83.2 120 1,1-Dichloroethene 18.32 <td< td=""><td>trans-1,2-DCE</td><td>ND</td><td>µg/L</td><td>1.0</td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	trans-1,2-DCE	ND	µg/L	1.0						
1,2,3-Trichlorobenzene ND $\mu g/L$ 1.0 1,2,4-Trichlorobenzene ND $\mu g/L$ 1.0 1,1,1-Trichloroethane ND $\mu g/L$ 1.0 1,1,2-Trichloroethane ND $\mu g/L$ 1.0 1,1,2-Trichloroethane ND $\mu g/L$ 1.0 Trichloroethane ND $\mu g/L$ 1.0 Trichlorofluoromethane ND $\mu g/L$ 1.0 2,3-Trichloropropane ND $\mu g/L$ 1.0 Xylenes, Total ND $\mu g/L$ 1.0 Sample ID: 100ng Ics-b LCS Batch ID: R21321 Analysis Date: 11/7/2006 Benzene 18.27 $\mu g/L$ 1.0 91.4 74.9 113 Toluene 17.05 $\mu g/L$ 1.0 85.3 80.4 111 Chlorobenzene 20.26 $\mu g/L$ 1.0 101 83.2 120 1,1-Dichloroethene 18.32 $\mu g/L$ 1.0 91.6 72 127 Tribloroethene 18.32 $\mu g/L$ 1.0 91.6 72 <td>trans-1,3-Dichloropropene</td> <td>ND</td> <td>µg/L</td> <td>1.0</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	trans-1,3-Dichloropropene	ND	µg/L	1.0						
1,2,4-Trichlorobenzene ND µg/L 1.0 1,1,1-Trichloroethane ND µg/L 1.0 1,1,2-Trichloroethane ND µg/L 1.0 Trichloroethane (TCE) ND µg/L 1.0 Trichlorofluoromethane ND µg/L 1.0 ?,3-Trichloropropane ND µg/L 1.0 ?,3-Trichloropropane ND µg/L 1.0 ?,3-Trichloropropane ND µg/L 1.0 ?,3-Trichloropropane ND µg/L 3.0 Sample ID: 100ng Ics-b LCS Batch ID: R21321 Analysis Date: 11/7/2006 Benzene 18.27 µg/L 1.0 91.4 74.9 113 Toluene 17.05 µg/L 1.0 85.3 80.4 111 Chlorobenzene 20.26 µg/L 1.0 101 83.2 120 1,1-Dichloroethene 18.32 µg/L 1.0 91.6 72 127 Tribloroethene 18.32 µg/L 1.0 91.6 72 127 <td>1,2,3-Trichlorobenzene</td> <td>ND</td> <td>µg/L</td> <td>1.0</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	1,2,3-Trichlorobenzene	ND	µg/L	1.0						
1,1,1-Trichloroethane ND µg/L 1.0 1,1,2-Trichloroethane ND µg/L 1.0 Trichloroethane (TCE) ND µg/L 1.0 Trichlorofluoromethane ND µg/L 1.0 2,3-Trichloropropane ND µg/L 1.0 Xylenes, Total ND µg/L 3.0 Sample ID: 100 ng Ics-b LCS Batch ID: R21321 Analysis Date: 11/7/2006 Benzene 18.27 µg/L 1.0 91.4 74.9 113 Toluene 17.05 µg/L 1.0 85.3 80.4 111 Chlorobenzene 20.26 µg/L 1.0 10 83.2 120 1,1-Dichloroethene 18.32 µg/L 1.0 91.6 72 127 Teichloroethene 18.32 µg/L 1.0 91.6 72 121	1,2,4-Trichlorobenzene	ND	µg/L	1.0						
1,1,2-Trichloroethane ND µg/L 1.0 Trichloroethene (TCE) ND µg/L 1.0 Trichlorofluoromethane ND µg/L 1.0 P,3-Trichloropropane ND µg/L 2.0 Inyl chloride ND µg/L 1.0 Xylenes, Total ND µg/L 3.0 Sample ID: 100ng Ics-b LCS Batch ID: R21321 Analysis Date: 11/7/2006 Benzene 18.27 µg/L 1.0 91.4 74.9 113 Toluene 17.05 µg/L 1.0 85.3 80.4 111 Chlorobenzene 20.26 µg/L 1.0 101 83.2 120 1,1-Dichloroethene 18.32 µg/L 1.0 91.6 72 127 Trickloroethene 17.05 µg/L 1.0 91.6 72 127 Trickloroethene 17.05 µg/L 1.0 91.6 72 127	1,1,1-Trichloroethane	ND	µg/L	1.0						
Trichloroethene (TCE) ND $\mu g/L$ 1.0 Trichlorofluoromethane ND $\mu g/L$ 1.0 P2,3-Trichloropropane ND $\mu g/L$ 2.0 Inyl chloride ND $\mu g/L$ 1.0 Xylenes, Total ND $\mu g/L$ 3.0 Sample ID: 100 ng Ics-b LCS Batch ID: R21321 Analysis Date: 11/7/2006 Benzene 18.27 $\mu g/L$ 1.0 91.4 74.9 113 Toluene 17.05 $\mu g/L$ 1.0 85.3 80.4 111 Chlorobenzene 20.26 $\mu g/L$ 1.0 91.6 72 127 Trichloroethene 18.32 $\mu g/L$ 1.0 91.6 72 127 Trichlorophonethene 18.32 $\mu g/L$ 1.0 91.6 72 127 Trichlorophonethene 17.25 $\mu g/L$ 1.0 92.6 58.2 121	1,1,2-Trichloroethane	ND	µg/L	1.0						
Trichlorofluoromethane ND µg/L 1.0 2,3-Trichloropropane ND µg/L 2.0 Inyl chloride ND µg/L 1.0 Xylenes, Total ND µg/L 3.0 Sample ID: 100ng Ics-b LCS Batch ID: R21321 Analysis Date: 11/7/2006 Benzene 18.27 µg/L 1.0 91.4 74.9 113 Toluene 17.05 µg/L 1.0 85.3 80.4 111 Chlorobenzene 20.26 µg/L 1.0 101 83.2 120 1,1-Dichloroethene 18.32 µg/L 1.0 91.6 72 127	Trichloroethene (TCE)	ND	μg/L	1.0						
P.3-Trichloropropane ND μg/L 2.0 Inyl chloride ND μg/L 1.0 Xylenes, Total ND μg/L 3.0 Sample ID: 100 ng Ics-b LCS Batch ID: R21321 Analysis Date: 11/7/2006 Benzene 18.27 μg/L 1.0 91.4 74.9 113 Toluene 17.05 μg/L 1.0 85.3 80.4 111 Chlorobenzene 20.26 μg/L 1.0 101 83.2 120 1,1-Dichloroethene 18.32 μg/L 1.0 91.6 72 127 Trichloroethene 17.25 μg/L 1.0 91.6 72 127	Trichlorofluoromethane	ND	μg/L	1.0						
ND µg/L 1.0 Xylenes, Total ND µg/L 3.0 Sample ID: 100ng Ics-b LCS Batch ID: R21321 Analysis Date: 11/7/2006 Benzene 18.27 µg/L 1.0 91.4 74.9 113 Toluene 17.05 µg/L 1.0 85.3 80.4 111 Chlorobenzene 20.26 µg/L 1.0 101 83.2 120 1,1-Dichloroethene 18.32 µg/L 1.0 91.6 72 127 Trisbloroethene 13.25 µg/L 1.0 91.6 72 127	2,3-Trichloropropane	ND	μα/L	2.0						
Xylenes, Total ND µg/L 3.0 Sample ID: 100ng Ics-b LCS Batch ID: R21321 Analysis Date: 11/7/2006 Benzene 18.27 µg/L 1.0 91.4 74.9 113 Toluene 17.05 µg/L 1.0 85.3 80.4 111 Chlorobenzene 20.26 µg/L 1.0 101 83.2 120 1,1-Dichloroethene 18.32 µg/L 1.0 91.6 72 127 Trisbloroethene 17.25 µg/L 1.0 91.6 72 127	vinyl chloride	ND	ua/L	1.0						
Sample ID: 100ng Ics-b LCS Batch ID: R21321 Analysis Date: 11/7/2006 Benzene 18.27 µg/L 1.0 91.4 74.9 113 Toluene 17.05 µg/L 1.0 85.3 80.4 111 Chlorobenzene 20.26 µg/L 1.0 101 83.2 120 1,1-Dichloroethene 18.32 µg/L 1.0 91.6 72 127 Trisblargethene (TCE) 17.25 µg/L 1.0 96.3 59.3 131	Xvlenes, Total	ND	µg/L	3.0						
Benzene 18.27 μg/L 1.0 91.4 74.9 113 Toluene 17.05 μg/L 1.0 85.3 80.4 111 Chlorobenzene 20.26 μg/L 1.0 101 83.2 120 1,1-Dichloroethene 18.32 μg/L 1.0 91.6 72 127	Sample ID: 100ng Ics-b		LCS			Batch	ID: R21321	Analysis [Date:	11/7/2006
Toluene 17.05 µg/L 1.0 85.3 80.4 111 Chlorobenzene 20.26 µg/L 1.0 101 83.2 120 1,1-Dichloroethene 18.32 µg/L 1.0 91.6 72 127 Trisbloroethene 17.25 µg/L 1.0 96.2 59.2 131	Benzene	18.27	µq/L	1.0	91.4	74.9	113			
Chlorobenzene 20.26 µg/L 1.0 101 83.2 120 1,1-Dichloroethene 18.32 µg/L 1.0 91.6 72 127 Trisbloroethene 17.25 µg/L 1.0 96.3 59.3 131	Toluene	17.05	µg/L	1.0	85.3	80.4	111			
1,1-Dichloroethene 18.32 µg/L 1.0 91.6 72 127	Chlorobenzene	20.26	μα/L	1.0	101	83.2	120			
Trichlarge have (TCE) = 17.25	1.1-Dichloroethene	18.32	μα/L	1.0	91.6	72	127			
	Trichloroethene (TCE)	17.25	ua/L	1.0	86.2	58.2	131			

ualifiers:

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

San	nple Receipt Ch	necklist		
Client Name GIANTREFIN		Date and Tim	e Received:	11/1/2006
Work Order Number 0611014		Received b	y AT	
Checklist completed by	Date		106	
Matrix Carrier na	ame <u>Client drop-c</u>	off		
Shipping container/cooler in good condition?	Yes 🔽	No 🗔	Not Present	
Custody seals intact on shipping container/cooler?	Yes 🗌	No 🗌	Not Present	Not Shipped
Custody seals intact on sample bottles?	Yes	No 🗹	N/A	
Chain of custody present?	Yes 🗹	No 🗌		
Chain of custody signed when relinquished and received?	Yes 🗹	No 🗔		
Chain of custody agrees with sample labels?	Yes 🗹	No 🗌		
Samples in proper container/bottle?	Yes 🔽	No 🗌		
Sample containers intact?	Yes 🗹	No 🗌		
Sufficient sample volume for indicated test?	Yes 🔽	No 🗌		
All samples received within holding time?	Yes 🗹	No 🗔		
Water - VOA vials have zero headspace? No VOA vials	submitted	Yes 🗹	No 🗌	
Water - pH acceptable upon receipt?	Yes 🗹	No 🗍	N/A	
Container/Temp Blank temperature?	3°	4° C ± 2 Accept If given sufficier	table nt time to cool.	
COMMENTS:				
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Client contacted Date contacted	:	Pe	son contacted	
Contacted by: Regarding				
Comments:		· <u>-</u> ··· · · .		
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Corrective Action		·· ·		
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ANALYSIS REQUEST.	ده (802 ۱) (fs (802 ۱) (fasoline Only) (for (for N) (for N) (for N) (for N) (for N)	18E + 400 190 190 190 190 190 190 190 190 190 1	BIEX + MI BIEX + MI BIEX + MI BIEX + Mi TPH Metho BIPH (Metho BIPH								Remarks: Son, Chem. = Calibra Donumes
ad/ GC Package: Std □ Level 4 □ Other: Project Name: Dunual Fround Math 2006- Cinized Project #:	Project Manager:	Sampler: Marker Sample Temperature: 7	Number/Volume HgC1 ₂ HNO ₃ CO// C / H		N M		Ϋ́.				Received By: (Signature) 11/1/UC Received By: (Signature)
CHAIN-OF-CUSTODY RECORD Client Custon Record Company Cinical Address: Rute S on 7	Fallup, NM 8730/	Phone #: 505 722 5933 Fax #: 505 722 0210	Date Time Matrix Sample I.D. No.	10 27.06 0915 N20 0W- 12	10.27.06 10.30 >> 0 W-15	10.27.06 1230 12 0 W- 29	10.27.06 1400 " OW-30	10 illiole 1400 >> 0 [U-1]	10.26.06/100/1 MW-1	10/27/16/14/5 12 PW-3	1/2 Pate: Time: Relinquished By: (Signature) 1/2 - 06 1/0 0 Relinquished By: (Signature) Date: Time: Relinquished By: (Signature)



COVER LETTER

Monday, November 27, 2006

Steve Morris Giant Refining Co Rt. 3 Box 7 Gallup, NM 87301

TEL: (505) 722-3833 FAX (505) 722-0210

RE: Annual Groundwater Samples 2006 Ponds 1

Order No.: 0611018

Dear Steve Morris:

Hall Environmental Analysis Laboratory, Inc. received 3 sample(s) on 11/1/2006 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109 505.345.3975 ■ Fax 505.345.4107 www.hallenvironmental.com

CLIENT:	Giant Refining Co			Client Sample ID:	Pond	l Inlet
Lab Order:	0611018			Collection Date:	10/30	/2006 2:00:00 PM
Project:	Annual Groundwat	er Samples 2006	Ponds 1&2	Date Received:	11/1/2	2006
Lab ID:	0611018-01			Matrix:	AQU	EOUS
Analyses		Result	PQL Qua	l Units	DF	Date Analyzed
EPA METHO	D 8021B: VOLATILES					Analyst: NSI
Methyl tert-b	utyl ether (MTBE)	ND	25	µg/L	10	11/3/2006 3:37:33 PM
Benzene	, , ,	ND	10	µg/L	10	11/3/2006 3:37:33 PM
Toluene		ND	10	µg/L	10	11/3/2006 3:37:33 PM
Ethylbenzen	e	13	10	µg/L	10	11/3/2006 3:37:33 PM
Xylenes, Tota	al	79	30	ug/L	10	11/3/2006 3:37:33 PM
Surr: 4-Bro	omofluorobenzene	88.0	72.2-125	%REC	10	11/3/2006 3:37:33 PM
	D 7470' MERCURY					Apolyst: MA
Mercury		0.00057	0.00020	mg/L	1	11/16/2006
EPA 6010B:	TOTAL RECOVERABLE	EMETALS				Analyst: NM
Arsenic		ND	0.020	mg/L	1	11/15/2006 9:35:51 PM
Barium		0.15	0.020	mg/L	1	11/15/2006 9:35:51 PM
Cadmium		ND	0.0020	mg/L	1	11/15/2006 9:35:51 PM
Chromium		0.012	0.0060	ma/L	1	11/15/2006 9:35:51 PM
Lead		0.015	0.0050	ma/L	1	11/15/2006 9:35:51 PM
Selenium		ND	0.050	ma/L	1	11/15/2006 9:35:51 PM
Silver		ND	0.0050	mg/L	1	11/15/2006 9:35:51 PM
EPA METHO	D 8270C: SEMIVOLATI	ES				Analyst: Bl
Acenaphther	ne .	ND	25	ua/L	1	11/14/2006
Acenaphthyl	ene	ND	25	ua/L	1	11/14/2006
Aniline		ND	50	ua/L	1	11/14/2006
Anthracene		ND	25	ua/L	1	11/14/2006
Azobenzene		ND	25	ua/L	1	11/14/2006
Benz(a)anthi	racene	ND	38	µa/L	1	11/14/2006
Benzo(a)pyre	ene	ND	38	ha/L	1	11/14/2006
Benzo(b)fluo	ranthene	ND	38	µg/L	1	11/14/2006
Benzo(a.h.i)	perylene	ND	25	μα/ζ	1	11/14/2006
Benzo(k)fluo	ranthene	ND	25	μα/L	1	11/14/2006
Benzoic acid		ND	120	µg/L	1	11/14/2006
Benzyl alcoh	ol	ND	50	µg/L	1	11/14/2006
Bis(2-chloroe	ethoxy)methane	ND	25	μα/L	1	11/14/2006
Bis(2-chloroe	ethyl)ether	ND	38	ua/L	1	11/14/2006
Bis(2-chloroi	sopropyl)ether	ND	38	ua/L	1	11/14/2006
Bis(2-ethvlhe	exvl)phthalate	ND	38	µ a/ _ ua/L	1	11/14/2006
4-Bromonhe	nyl phenyl ether	ND	25	μα/L	1	11/14/2006
Butvl henzvl	phthalate	ND	38	- <u>-</u>	' 1	11/14/2006
Carbazole		ND	25	µg/L	1	11/14/2006
Qualifiers: * Value exceeds Maximum Contaminant Level B Analyt				B Analyte detected	in the a	ssociated Method Blank
	E Value above quantitati	on range		H Holding times fo	г ргерага	ation or analysis exceeded
	J Analyte detected below	v quantitation limits		MCL Maximum Conta	minant l	Level
	ND Not Detected at the Re	porting Limit		RL Reporting Limit		
	S Spike recovery outside	accepted recovery lir	nits 1 / 1 2			Page 1

CLIENT:	Giant Refining Co			Client Sample	ID: Pond	l Inlet
Lab Order:	0611018			Collection D	ate: 10/30/	2006 2:00:00 PM
Project:	Annual Groundwater Sa	mples 2006	Ponds 1&2	Date Recei	ved: 11/1/2	006
Lab ID:	0611018-01			Ma	trix: AQUE	EOUS
Analyses		Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD	8270C: SEMIVOLATILES					Analyst: BL
4-Chloro-3-met	hylphenol	ND	50	µg/L	1	11/14/2006
4-Chloroaniline		ND	50	µg/L	1	11/14/2006
2-Chloronaphth	alene	ND	25	µg/L	1	11/14/2006
2-Chlorophenol		ND	25	µg/L	1	11/14/2006
4-Chlorophenyl	phenyl ether	ND	38	µg/L	1	11/14/2006
Chrysene		ND	38	µg/L	1	11/14/2006
Di-n-butyl phtha	alate	ND	25	µg/L	1	11/14/2006
Di-n-octyl phtha	alate	ND	38	µg/L	1	11/14/2006
Dibenz(a,h)anth	nracene	ND	25	µg/L	1	11/14/2006
Dibenzofuran		ND	25	µg/L	1	11/14/2006
1,2-Dichlorober	izene	ND	25	µg/L	1	11/14/2006
1,3-Dichlorober	nzene	ND	25	µg/L	1	11/14/2006
1,4-Dichlorober	izene	ND	25	µg/L	1	11/14/2006
3,3 ⁻ -Dichlorobe	nzidine	ND	38	µg/L	1	11/14/2006
Diethyl phthalai	te	· ND	25	µg/L	1	11/14/2006
Dimethyl phtha	late	ND	25	µg/L	1	11/14/2006
2,4-Dichlorophe	enol	ND	25	µg/L	1	11/14/2006
2,4-Dimethylph	enol	110	25	µg/L	1	11/14/2006
4,6-Dinitro-2-m	ethylphenol	ND	120	µg/L	1	11/14/2006
2,4-Dinitrophen	01	ND	120	µg/L	1	11/14/2006
2,4-Dinitrotolue	ne	ND	25	µg/L	1	11/14/2006
2,6-Dinitrotolue	ne	ND	25	µg/L	1	11/14/2006
Fluoranthene		ND	25	µg/L	1	11/14/2006
Fluorene		ND	25	µg/L	1	11/14/2006
Hexachloroben	zene	ND	25	µg/L	1	11/14/2006
Hexachlorobuta	adiene	ND	25	µg/L	1	11/14/2006
Hexachlorocycl	opentadiene	ND	25	µg/L	1	11/14/2006
Hexachloroetha	ane	ND	25	µg/L	1	11/14/2006
Indeno(1,2,3-co	d)pyrene	ND	25	µg/L	1	11/14/2006
Isophorone		ND	25	µg/L	1	11/14/2006
2-Methylnaphth	nalene	320	25	µg/L	1	11/14/2006
2-Methylpheno	ł	220	38	µg/L	1	11/14/2006
3+4-Methylphe	nol	88	50	µg/L	1	11/14/2006
N-Nitrosodi-n-p	ropylamine	ND	25	µg/L	1	11/14/2006
N-Nitrosodimet	hylamine	27	25	µg/L	1	11/14/2006
N-Nitrosodiphe	nylamine	ND	25	µg/Ľ	1	11/14/2006
Naphthalene		48	25	µg/L	1	11/14/2006
2-Nitroaniline		ND	120	µg/L	1	11/14/2006
3-Nitroaniline		ND	120	µg/L	1	11/14/2006
4-Nitroaniline		ND	50	µg/L	1	11/14/2006

Date: 27-Nov-06



Qualifiers:

* Value exceeds Maximum Contaminant Level

- Е Value above quantitation range
- Analyte detected below quantitation limits J
- ND Not Detected at the Reporting Limit

Spike recovery outside accepted recovery limits S

- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Envir	onmental Analys	Date:	27-Nov-06					
CLIENT:	Giant Refining Co		(Client Sample ID:	Pond	Pond 1 Inlet		
Lab Order:	0611018			Collection Date:	10/30	/2006 2:00:00 PM		
Project:	Annual Groundwater S	Samples 2006	Ponds 1&2	Date Received:	11/1/2	2006		
Lab ID:	0611018-01			Matrix:	AQU	EOUS		
Analyses		Result	PQL Qual	Units	DF	Date Analyzed		
EPA METHOD	8270C: SEMIVOLATILES	;				Analyst: BL		
Nitrobenzene		ND	25	µg/L	1	11/14/2006		
2-Nitrophenol		ND	38	µg/L	1	11/14/2006		
4-Nitrophenol		ND	120	µg/L	1	11/14/2006		
Pentachlorophe	enol	ND	120	µg/L	1	11/14/2006		
Phenanthrene		460	25	µg/L	1	11/14/2006		
Phenol		130	25	µg/L	1	11/14/2006		
Pyrene		96	38	µg/L	1	11/14/2006		
Pyridine		ND	75	µg/L	1	11/14/2006		
1,2,4-Trichlorot	penzene	ND	25	µg/L	1	11/14/2006		
2,4,5-Trichlorop	phenol	ND	25	µg/L	1	11/14/2006		
2,4,6-Trichlorop	phenol	ND	38	µg/L	1	11/14/2006		
Surr: 2,4,6-T	ribromophenol	87.9	16.6-150	%REC	1	11/14/2006		
Surr: 2-Fluor	obiphenyl	68.8	19.6-134	%REC	1	11/14/2006		
Surr: 2-Fluor	ophenol	44.2	9.54-113	%REC	1	11/14/2006		
Surr: 4-Terpl	henyl-d14	69.8	22.7-145	%REC	1	11/14/2006		
Surr: Nitrobe	enzene-d5	67.3	14.6-134	%REC	1	11/14/2006		

10.7-80.3

%REC

1

11/14/2006

37.7

Qualifiers:

Surr: Phenol-d5

* Value exceeds Maximum Contaminant Level

Е Value above quantitation range

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

Spike recovery outside accepted recovery limits S

В Analyte detected in the associated Method Blank

Date: 27-Nov-06

- Н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level

RL Reporting Limit

Date: 27-Nov-06

CLIENT: Lab Order: Project: Lab ID:	Giant Refining Co 0611018 Annual Groundwater 0611018-02	Samples 2006	5 Ponds 1&2	Client Sample ID: Collection Date: Date Received: Matrix:	Pond 2 Inlet 10/31/2006 11:00:00 AM 11/1/2006 AQUEOUS			
Analyses		Result	PQL Qua	l Units	DF	Date Analyzed		
EPA METHOD	8021B: VOLATILES					Analyst: NSB		
Methyl tert-buty	yl ether (MTBE)	ND	25	µg/L	10	11/3/2006 4:10:13 PM		
Benzene		ND	10	µg/L	10	11/3/2006 4:10:13 PM		
Toluene		22	10	µg/L	10	11/3/2006 4:10:13 PM		
Ethylbenzene		ND	10	µg/L	10	11/3/2006 4:10:13 PM		
Xylenes, Total		45	30	µg/L	10	11/3/2006 4:10:13 PM		
Surr: 4-Brom	nofluorobenzene	85.0	72.2-125	%REC	10	11/3/2006 4:10:13 PM		
EPA METHOD	160.1: TDS					Analyst: KS		
Total Dissolved	d Solids	1800	40	mg/L	1	11/7/2006		

Qualifiers:

* Value exceeds Maximum Contaminant Level

- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

CLIENT:	Giant Refining Co			C	Client Sample ID:	Pond 7 Gen Chem			
Lab Order:				Collection Date:	10/31/2006 2:30:00 PM				
Project:Annual GroundwaLab ID:0611018-03		amples 2006 I	Ponds 1&2	2					Date Received:
					Matrix:	AQUEOUS			
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed		
EPA METHOD 3	300.0: ANIONS						Analyst: TES		
Fluoride		31	10		mg/L	100	11/6/2006 1:12:21 PM		
Chloride		42000	200		mg/L	2000	11/6/2006 2:04:34 PM		
Nitrate (As N)+Nitrite (As N)		ND	10		mg/L	100	11/7/2006 10:23:07 AM		
Phosphorus, Orthophosphate (As P)		ND	50	Н	mg/L	100	11/6/2006 1:12:21 PM		
Sulfate		7000	250		mg/L	500	11/6/2006 1:29:45 PM		
EPA 6010B: TO	TAL RECOVERABLE ME	TALS					Analyst: IC		
Calcium		810	20		mg/L	20	11/27/2006 11:38:49 AM		
Magnesium		970	20		mg/L	20	11/27/2006 11:38:49 AM		
Potassium		1400	20		mg/L	20	11/27/2006 11:38:49 AM		
Sodium		29000	500		mg/L	500	11/27/2006 2:53:48 PM		
EPA 120.1: SPE	CIFIC CONDUCTANCE						Analyst: CMS		
Specific Conduc	tance	150000	0.10		µmhos/cm	10	11/1/2006		
EPA METHOD 1	150.1: PH						Analyst: CMS		
pН		7.46	0.010		pH units	1	11/1/2006		

Qualifiers:

E Value above quantitation range

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank

Date: 27-Nov-06

- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 5 of 5



HALL ENVIRONMENTAL

4901 HAWKINS NE, SUITE D

attn: ANDY FREEMAN

ALBUQUERQUE

ASSAIGAI ANALYTICAL LABORATORIES, INC.

NM 87109-4372

4301 Masthead NE • Albuquerque, New Mexico 87109 • (505) 345-8964 • FAX (505) 345-7259

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Explanation of codesBAnalyte Detected in Method BlankEResult is EstimatedHAnalyzed Out of Hold TimeNTentatively Identified CompoundSSubcontracted1-9See Footnote

Assaigai Analytical Laboratories, Inc.

STANDARD

Certificate of Analysis

All samples are reported on an "as received" basis, unless otherwise noted (i.e. - Dry Weight).

Client:	HALL ENVIE	CONMENT	AL									
Project:	0611018	۰					. 10 /	1 ()				
Order:	0611031	HAL03	Receip	Receipt: 11-02-06		William P.	ur. Viava: Presi	ident of Assaig	ai Analytical Lab	oratories, In	C.	
Sample:	0611018-020	POND 2	INLET	<u> </u>	Collected:	10-31-0	06 11:00:	00 By:				
Matrix:	AQUEOUS											
QC Group	Run Sequ	ence CA	\S #	Analyte	Res	ult	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0611031-00	001A	EPA	405.1 Bioche	mical Oxygen Demand					By:	NJL		
BOD06131	WC.2006.2	307.13 10-	26-4 Bioc	hemical Oxygen Deman	d 58	6	mg/L	1	2		11-02-06	11-07-06
Sample:	0611018-02L	POND 2	NLET		Collected:	10-31-0	6 11:00:	00 By:			_	
Matrix:	AQUEOUS											
								Dilution	Detection		Prep	Run
QC Group	Run Sequ	ence CA	S #	Analyte	Res	ult	Units	Factor	Limit	Code	Date	Date
0611031-00	002A	EPA 4	410.1 Chemic	al Oxygen Demand					By:	NJL		
WCOD06070	WC.2006.28	349.5 C-0	004 Ch	emical Oxygen Demand	124	0	mg/L	1	10		11-15-06	11-15-06

Unless otherwise noted, all samples were received in acceptable condition and all sampling was performed by client or client representative. Sample result of ND indicates Not Detected, ie result is less than the sample specific Detection Limit. Sample specific Detection Limit is determined by multiplying the sample Dilution Factor by the listed Reporting Detection Limit. All results relate only to the items tested. Any miscellaneous workorder information or foonotes will appear below.

Analytical results are not corrected for method blank or field blank contamination.



Client:
roject:

Giant Refining Co Annual Groundwater Samples 2006 Ponds 1&2

Work Order: 0611018

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD F	RPDLimit Qual
Method: E300								
Sample ID: MBLK		MBLK			Batch I	D: R21288	Analysis Date	: 11/3/2006 11:11:41 AM
Fluoride	ND	mg/L	0.10					
Chloride	ND	mg/L	0.10					
Nitrate (As N)+Nitrite (As N)	ND	mg/L	0.10					
Phosphorus, Orthophosphate (As P)	ND	mg/L	0.50					
Sulfate	ND	mg/L	0.50					
Sample ID: MBLK		MBLK			Batch I	D: R21305	Analysis Date	: 11/6/2006 10:00:52 AM
Fluoride	ND	mg/L	0.10					
Chloride	ND	mg/L	0.10					
Nitrate (As N)+Nitrite (As N)	ND	mg/L	0.10					
Phosphorus, Orthophosphate (As P)	ND	mg/L	0.50					
Sulfate	ND	mg/L	0.50					
Sample ID: LCS ST300-06019		LCS			Batch I	D: R21288	Analysis Date	: 11/3/2006 11:29:05 AM
Fluoride	0.5273	mg/L	0.10	105	90	110		
Chloride	4.899	mg/L	0.10	98.0	90	110		
Nitrate (As N)+Nitrite (As N)	3.461	mg/L	0.10	98.9	90	110		
Phosphorus, Orthophosphate (As P)	4.997	mg/L	0.50	99.9	90	110		
Sulfate	9.674	mg/L	0.50	96.7	90	110		
Sample ID: LCS ST300-06019		LCS			Batch I	D: R21305	Analysis Date	: 11/6/2006 10:18:16 AM
ıoride	0.5066	mg/L	0.10	101	90	110		
enloride	4.862	mg/L	0.10	97.2	90	110		
Nitrate (As N)+Nitrite (As N)	3.426	mg/L	0.10	97.9	90	110		
Phosphorus, Orthophosphate (As P)	4.905	mg/L	0.50	98.1	90	110		
Sulfate	9.652	mg/L	0.50	96.5	90	110		
Method: SW8021								
Sample ID: 5ML REAGENT BLA		MBLK			Batch I	D: R21286	Analysis Date	: 11/3/2006 8:55:37 AM
Methyl tert-butyl ether (MTBE)	ND	µg/L	2.5				-	
Benzene	ND	ug/L	1.0					
Toluene	ND	µg/L	1.0					
Ethylbenzene	ND	µg/L	1.0					
Xylenes, Total	ND	µg/L	3.0					
Sample ID: 100NG BTEX LCS		LCS			Batch I	D: R21286	Analysis Date:	11/3/2006 7:10:49 PM
Methyl tert-butyl ether (MTBE)	40.12	µg/L	2.5	100	51.2	138		
Benzene	19.8 9	μg/L	1.0	99.4	85	115		
Toluene	20.41	µg/L	1.0	102	85	118		
Ethylbenzene	20.50	µg/L	1.0	103	85	116		
Xylenes, Total	61.61	µg/L	3.0	103	85	119		

- ualifiers:
- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits 7 / 12

oject: Annual Gr	ning Co oundwater Sa	mples 2006	Ponds 1&	2					Work Order	: 0611018
Analyte	Result	Units	PQL	%Rec	LowLimit	Hig	hLimit	%RPD	RPDLimit	Qual
Method: SW8270C										
Sample ID: MB-11641		MBLK			Batch	ID:	11641	Analysis [Date:	11/14/2006
Acenaphthene	ND	µg/L	10							
Acenaphthylene	ND	µg/L	10							
Aniline	ND	µg/L	20							
Anthracene	ND	µg/L	10							
Azobenzene	ND	µg/L	10							
Benz(a)anthracene	ND	µg/L	15							
Benzo(a)pyrene	ND	µg/L	15							
Benzo(b)fluoranthene	ND	µg/L	15							
Benzo(g,h,i)perylene	ND	µg/L	10							
Benzo(k)fluoranthene	ND	µg/L	10							
Benzoic acid	ND	µg/L	50							
Benzyl alcohol	ND	μg/L	20							
Bis(2-chloroethoxy)methane	ND	ug/L	10							
Bis(2-chloroethyl)ether	ND	ua/L	15							
Bis(2-chloroisopropyl)ether	ND	μα/L	15							
Bis(2-ethylbexyl)obthalate	ND	µg/L	15							
4-Bromophenyl phenyl ether	ND	µg/l	10							
Butyl benzyl obtbalate	ND	µg/L	15							
	ND	µg/L	10							
bloro-3-methylobenol	ND	µg/L	20							
4-Chloroaniline	ND	р <u>9</u> /С ца/1	20							
2-Chloronanbthalene	ND	µg/L	10							
2-Chlorophenol	ND	P9/C	10							
4-Chlorophenyl phenyl ether		μg/L	15							
Chrysene	ND	р <u>д</u> /L	15							
Di-n-butyl obtholate	ND	µg/L	10							
	ND	μg/L	15							
		µg/L	10							
Dibenzefuran	ND	µg/L	10							
1.2-Dichlorobopzepo		μg/L	10							
1.3-Dichlorobenzene		pg/L ug/l	10							
1 4-Dichlorobenzene		μ <u>α</u> /Ι	10							
3 3'-Dichlorobenzidine	ND	μο/l	15							
Diethyl obthalate	ND	μα/l	10							
Dimethyl ohthalate		µg/L	10							
2 4-Dichlorophenol		µg/L	10							
2.4-Dimethylphenol	ND	₽9/E UQ/I	10							
4.6-Dinitro-2-methylphenol		µg/L	50							
2 4-Dinitronbenol		29/5 10/1	50							
2.4-Dinitrotolueno		µ9/⊑ ua/!	10							
		μg/L μg/l	10							
Eluoranthene		ug/L	10							
		μg/L	10							
Herachlorobenzono		μ <u>α</u> /Ι	10							
T TEXAGRIDI ODENZENE	NU	hð r	10							

ualifiers:

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits 8 / 12

_	Client:	
	roject:	

Giant Refining Co Annual Groundwater Samples 2006 Ponds 1&2

Work Order: 0611018

Analyte	Result	Units	PQL	%Rec	LowLimit	High	Limit	%RPD	RPDLimit	Qual
Method: SW8270C	<u></u>			· · · · · ·						
Sample ID: MB-11641		MBLK			Batch I	D:	11641	Analysis D	ate:	11/14/2006
Hexachlorobutadiene	ND	µg/L	10							
Hexachlorocyclopentadiene	ND	µg/L	10							
Hexachloroethane	ND	µg/L	10							
Indeno(1,2,3-cd)pyrene	ND	µg/L	10							
Isophorone	ND	µg/L	10							
2-Methylnaphthalene	ND	µg/L	10							
2-Methylphenol	ND	µg/L	15							
3+4-Methylphenol	ND	µg/L	20							
N-Nitrosodi-n-propylamine	ND	µg/L	10							
N-Nitrosodimethylamine	ND	µg/L	10							
N-Nitrosodiphenylamine	ND	µg/L	10							
Naphthalene	ND	µg/L	10							
2-Nitroaniline	ND	µg/L	50							
3-Nitroaniline	ND	µg/L	50							
4-Nitroaniline	ND	µg/L	20							
Nitrobenzene	ND	µg/L	10							
2-Nitrophenol	ND	µg/L	15							
4-Nitrophenol	ND	µg/L	50							
Pentachlorophenol	ND	µg/L	50							
enanthrene	ND	µg/L	10							
Phenol	ND	µg/L	10							
Pyrene	ND	µg/L	15							
Pyridine	ND	µg/L	30							
1,2,4-Trichlorobenzene	ND	µg/L	10							
2,4,5-Trichlorophenol	ND	µg/L	10							
2,4,6-Trichlorophenol	ND	µg/L	15							
Sample ID: LCS-11641		LCS			Batch	ID:	11641	Analysis D	Date:	11/14/2006
Acenaphthene	75.56	µg/L	10	75.6	11	12	3			
4-Chloro-3-methylphenol	128.8	µg/L	20	64.4	15.4	11	9			
2-Chiorophenol	109.7	µg/L	10	54.9	12.2	12	2			
1,4-Dichlorobenzene	44.08	µg/L	10	44.1	16.9	10	0			
2,4-Dinitrotoluene	70.12	μg/L	10	70.1	13	13	8			
N-Nitrosodi-n-propylamine	59.72	µg/L	10	59.7	9.93	12	2			
4-Nitrophenol	61.04	µg/L	50	30.5	12.5	87.	.4			
Pentachlorophenol	89.54	µg/L	50	44.8	3.55	11	4			
Phenol	60.02	µg/L	10	30.0	7.53	73.	.1			
Pyrene	74.84	µg/L	15	74.8	12.6	14	0			
1,2,4-Trichlorobenzene	49.74	µg/L	10	49.7	17.4	98.	.7			
Sample ID: LCSD-11641		LCSD			Batch	ID:	11641	Analysis E	Date:	11/14/2006
Acenaphthene	72.80	µg/L	10	72.8	11	12	3	3.72	30.5	
4-Chloro-3-methylphenol	129.7	µg/L	20	64.8	15.4	11	9	0.697	28.6	
2-Chlorophenol	129.1	µg/L	10	64.5	12.2	12	2	16.2	107	
1,4-Dichlorobenzene	48.32	µg/L	10	48.3	16.9	10	0	9.18	62.1	
2.4-Dinitrotoluene	64.96	µg/L	10	65.0	13	13	8	7.64	14.7	

- Qualifiers:
- E Value above quantitation range
- J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits 9 / 12
QA/QC SUMMARY REPORT

Client:	Giant Refining Co
roject:	Annual Groundwater Samples 2006 Ponds 1&2

Work Order: 0611018

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8270C Sample ID: LCSD-11641		LCSD			Batch	ID: 11641	Analysis)ate:	11/14/2006
N-Nitrosodi-n-propylamine	60.62		10	60.6		122	1 50	30.3	
4-Nitrophenol	75.92	μg/L μα/l	50	38.0	3.55 12.5	87.4	21.7	36.3	
Pentachlorophenol	127.0	µg/L	50	63.5	3.55	114	34.6	49	
Phenol	72.86	μg/L	10	36.4	7.53	73.1	19.3	52.4	
Pyrene	71.16	µg/L	15	71.2	12.6	140	5.04	16.3	
1,2,4-Trichlorobenzene	52.72	µg/L	10	52.7	17.4	98.7	5.82	36.4	
Method: SW7470									
Sample ID: MB-11774		MBLK			Batch	ID: 11774	Analysis [Date:	11/16/2006
Mercury	ND	mg/L	0.00020						
Sample ID: LCS-11774		LCS			Batch	ID: 11774	Analysis [Date:	11/16/2006
Mercury	0.005025	mg/L	0.00020	100	80	120			

ualifiers:

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits 10/12

QA/QC SUMMARY REPORT

Client: roject: Giant Refining Co Annual Groundwater Samples 2006 Ponds 1&2

Work Order: 0611018

Analyte	Result	Units	PQL	%Rec	LowLimit	High	Limit	%RPD RF	PDLimit Qual
Method: SW6010A									
Sample ID: MB-11746		MBLK			Batch	ID:	11746	Analysis Date:	11/16/20068:58:41 AM
Arsenic	ND	mg/L	0.020						
Barium	ND	mg/L	0.020						
Cadmium	ND	mg/L	0.0020						
Chromium	ND-	mg/L	0.0060						
Lead	ND	mg/L	0.0050						
Selenium	ND	mg/L	0.050						
Silver	ND	mg/L	0.0050						
Sample ID: MB-11746		MBLK			Batch	ID:	11746	Analysis Date:	11/15/20067:10:00 PM
Cadmium	ND	mg/L	0.0020						
Chromium	ND	mg/L	0.0060						
Sample ID: MB-11761		MBLK			Batch	ID:	11761	Analysis Date:	11/22/2006 1:16:09 PM
Calcium	ND	mg/L	1.0						
Magnesium	ND	mg/L	1.0						
Potassium	ND	mg/L	1.0						
Sodium	ND	mg/L	1.0						
Sample ID: LCS-11746		LCS			Batch	ID:	11746	Analysis Date:	11/16/2006 8:53:16 AM
Arsenic	0.5143	mg/L	0.020	103	80	12	0		
_Barium	0.4951	mg/L	0.020	99.0	80	12	0		
admium	0.5012	mg/L	0.0020	100	80	12	0		
Chromium	0.5086	mg/L	0.0060	102	80	12	0		
Lead	0.4945	mg/L	0.0050	98.9	80	12	0		
Selenium	0.4749	mg/L	0.050	95.0	80	12	0		
Silver	0.5011	mg/L	0.0050	100	80	12	0		
Sample ID: LCS-11746		LCS			Batch	ID:	11746	Analysis Date:	11/15/2006 7:13:04 PM
Cadmium	0.4806	mg/L	0.0020	96.1	80	12	0		
Chromium	0.4878	mg/L	0.0060	97.6	80	12	0		
Sample ID: LCS-11761		LCS			Batch	ID:	11761	Analysis Date:	11/22/2006 11:04:34 AM
Calcium	51.40	mg/L	1.0	103	80	12	0		
Magnesium	53.28	mg/L	1.0	106	80	12	0		
Potassium	55.78	mg/L	1.0	111	80	12	0		
Sodium	57.07	mg/L	1.0	113	80	12	0		
Method: E160.1									
Sample ID: MB-11691		MBLK			Batch	ID:	11691	Analysis Date:	11/7/2006
Total Dissolved Solids	ND	ma/L	20					-	
Sample ID: LCS-11691		LCS			Batch	ID:	11691	Analysis Date:	11/7/2006
Total Dissolved Solids	1010	mg/L	20	101	80	12	0	2	

Qualifiers:

- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
 - 11/12

Sam	ple Receipt Ch	ecklist		
Client Name GIANTREFIN		Date and Time	e Received:	11/1/2006
Work Order Number 061/018		Received by	AT	
Checklist completed by Signature	Date	<u>ii 1 0</u>	6	
Matrix Carrier nar	ne <u>Client drop-ot</u>	ff		
Shipping container/cooler in good condition?	Yes 🔽	No 🗌	Not Present	
Custody seals intact on shipping container/cooler?	Yes 🗌	No 🗌	Not Present	Not Shipped
Custody seals intact on sample bottles?	Yes 🗋	No 🗹	N/A	
Chain of custody present?	Yes 🗹	No 🗌		
Chain of custody signed when relinquished and received?	Yes 🗹	No 🗌		
Chain of custody agrees with sample labels?	Yes 🗹	No 🗌		
Samples in proper container/bottle?	Yes 🔽	No 🗌		
Sample containers intact?	Yes 🗹	No 🗌		
Sufficient sample volume for indicated test?	Yes 🗹	No 🗌		
All samples received within holding time?	Yes 🗌	No 🔽		
Water - VOA vials have zero headspace? No VOA vials of	submitted	Yes 🗹	No 🗌	
Water - pH acceptable upon receipt?	Yes 🗹	No 🗌	N/A	
Container/Temp Blank temperature?	3°	4° C ± 2 Accepta If given sufficien	able t time to cool.	
COMMENTS:				
			··· · · · · · ·	
Client contacted Date contacted:	<u>.</u>	Pers	son contacted	
Contacted by: Regarding				
comments: <u>per sm</u> Pond	7 Lalle	tom.	Fine 1.4-	30 1171/05
		· · · · · · · · · · · · · · · · · · ·	····	
Corrective Action		····		
7				
	····	· · · ·		······································

12/12

	(N no Y) eseqsbeeH no seiddu8 niA		T. Yun
HALL ENVIRONMENTAL ANALYSIS LABORATORY 4901 Hawkins NE, Suite D Albuquerque, New Mexico 87109 Tel. 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com	EDC (Method 8021) 8310 (PNA or PAH) RCRA 8 Metals Texture Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄) 8081 Pesticides / PCB's (8082) 8081 Pesticides / PCB's (8082) 8260B (VOA) 8260B (VOA) 8260B (VOA) 8270 (Semi-VOA) 8270 (Smi-VOA) 8270 (Smi-VOA) 8270 (Smi-VOA) 8270		Chem. = Calione, Cini
	EDB (Wethod 504.1) EDB (Wethod 418.1) TPH Method 8015B (Gas/Diesel) TPH Method 8015B (Gas/Diesel)		F F F F
QA/ QC Package. Std D Level 4 D Other: Project Name: annal Erennes Project Name: annal Erennes Project #:	Project Manager: Sampler: Sample Temperature: Sample Temperature: Number/Volume HgC1 ₂ HN0 ₃		Received By: (Signature) ////00 R Received By: (Signature) ///00
CUSTODY RECORD	NM 87301 72235933 72255933 Matrix Sample I.D. No.	H2UI ond Ichnest) Pond Zchnest) fond Foon Clen	Relinquished By: (Signature)
Client: ChaiN-OF	Fax#: 505 Phone #: 505 Fax #: 505	131/00/02/120 1/00/02/120 131/00/120	-/- OG Ilme: Date: Time: I



COVER LETTER

Wednesday, November 15, 2006

Steve Morris Giant Refining Co Rt. 3 Box 7 Gallup, NM 87301

TEL: (505) 722-3833 FAX (505) 722-0210

RE: NMED Quarterly Samples 4th Qtr. 2006

Order No.: 0611012

Dear Steve Morris:

Hall Environmental Analysis Laboratory, Inc. received 4 sample(s) on 11/1/2006 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 BFax 505.345.4107 www.hallenvironmental.com

Date: 15-Nov-06

CLIENT:Giant Refining CoProject:NMED Quarterly Samples 4th Qtr. 2006Lab Order:0611012

CASE NARRATIVE

Analytical Comments for METHOD 8015GRO_W, SAMPLE 0611012-01A: Elevated surrogate due to matrix interference.See Corrective Action: [400] Low recovery for Se in 0611012-2 MS/MSD.

	Giant Retining Co			C	thent Sample ID:	: AL-2 to EP-1		
Lab Order:	0611012				Collection Date:	10/30/	/2006 3:45:00 PM	
Project:	NMED Quarterly Sam	ples 4th Qtr.	2006		Date Received:	11/1/2006		
Lab ID: 0611012-01					Matrix:	: AQUEOUS		
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed	
	<u> </u>			<u> </u>	·····			
EPA METHOD B	D15B: GASOLINE RANG	SE	0.50				Analyst: NSE	
Gasoline Range	Organics (GRO)	28	0.50		mg/L	10	11/6/2006 12:19:30 PM	
SULL REB		142	84.5-129	S	%REC	10	11/6/2005 12:19:30 PM	
EPA METHOD 7	470: MERCURY						Analyst: CMS	
Mercury		0.0011	0.00020		mg/L	1	11/8/2006	
Armania	IAL RECOVERABLE MI	LIALS	0.000		mali	4	Analyst: NMC	
Alsellic			0.020		mg/L	1 -	11/9/2006 2:35:03 PM	
Barium		0.16	0.020		mg/L	1	11/9/2006 2:35:03 PM	
Caomium			0.0020		mg/L	1	11/9/2006 2:35:03 PM	
Chromium		0.011	0.0060		mg/L	1	11/9/2006 2:35:03 PM	
Leao Sala dina		0.018	0.0050		mg/L	1	11/9/2006 2:35:03 PM	
Selenium		ND	0.050		mg/L	1	11/9/2006 2:35:03 PM	
Silver			0.0050		mg/L	1	11/9/2006 2:35:03 PM	
EPA METHOD 8	260B: VOLATILES						Analyst: LMM	
Benzene		ND	10		µg/L	10	11/8/2006	
Toluene		ND	10		µg/L	10	11/8/2006	
Elhylbenzene		ND	10		μg/L	10	11/8/2006	
Methyl tert-bulyl (ether (MTBE)	ND	15		µg/L	10	11/8/2006	
1,2,4-Trimethylbe	nzene	110	10		μg/L	10	11/8/2006	
1,3,5-Trimethylbe	nzene	30	. 10		µg/L	10	11/B/2006	
1,2-Dichloroethar	ie (EDC)	ND	10		µg/L	10	11/B/2006	
1,2-Dibromoelha	ne (EDB)	ND	10		µg/L	10	11/8/2006	
Naphthalene		54	20		µg/L	10	11/8/2006	
1-Melhyinaphthal	ene	440	40		µg/L	10	11/8/2006	
2-Methylnaphthal	ene	550	40		µg/L	10	11/8/2006	
Acetone		1100	100		μg/L	10	11/8/2006	
Bromobenzene		ND	10		µg/L	10	11/8/2006	
Bromochlorometh	lane	ND	10		µg/L	10	11/8/2006	
Bromodichlorome	lhane	ND	10		µg/L	10	11/8/2006	
Bromoform		ND	10		μg/L	10	11/8/2006	
Bromomelhane		ND	20		µg/L	10	11/8/2006	
2-Bulanone		110	100		μg/L	10	11/8/2006	
Carbon disulfide		ND	100		μg/L	10	11/8/2006	
Carbon Tetrachlo	ride	ND	20		µg/L	10	11/8/2006	
Chlorobenzene		ND	10		µg/L	10	11/8/2006	
Chloroethane		ND	20		hð\r	10	11/8/2006	
Chloroform		ND	10		hð/L	10	11/8/2006	
Qualifiers: *	Value exceeds Maximum C	ontaminant Lev	el	• • • • • •	B Analyte detected	in the as	sociated Method Blank	
					-			



RL Reporting Limit

Page 1 of 10

Date: 15-Nov-06

CLIENT:	Giant Refining Co			C	lient Sample ID:	AL-2	to EP-1	
Lab Order:	0611012				Collection Date:	10/30	/2006 3:45:00 PM	
Project:	NMED Quarterly Sam	ples 4th Qtr. 2	006		Date Received:	11/1/2006		
Lab ID:	0611012-01				Matrix:	AQUI	EOUS	
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed	
EPA METHOD	8260B: VOLATILES	_					Analyst: LMM	
Chloromethane	!	ND	10		µg/L	10	11/8/2006	
2-Chlorololuena	2	ND	10		µg/L	10	11/8/2006	
4-Chlorololuene	9	ND	10		µg/L	10	11/8/2006	
cis-1,2-DCE		ND	10		µg/L	10	11/8/2006	
cis-1,3-Dichloro	propene	ND	10		μg/L	10	11/8/2006	
1,2-Dibromo-3-	chloropropane	ND	20		µg/L	10	11/8/2006	
Dibromochloror	nethane	ND	10		μg/L	10	11/8/2006	
Dibromomethar	те	ND	20		μg/L	10	11/8/2006	
1,2-Dichlorober	zene	ND	10		µg/L	10	11/8/2006	
1.3-Dichlorober	nzene	ND	10		µg/L	10	11/8/2006	
1,4-Dichlorober	nzene	ND	10		µg/L	10	11/8/2006	
Dichlorodifluoro	methane	ND	10		µg/L	10	11/8/2006	
1,1-Dichloroeth	ane	ND	20		µg/L	10	11/8/2006	
1,1-Dichloroeth	ene	ND	10		µg/L	10	11/8/2006	
1,2-Dichloropro	рапе	ND	10		µg/L	10	11/8/2006	
1,3-Dichloropro	pane	ND	10		µg/L	10	11/8/2006	
2,2-Dichloropro	pane	ND	20		μg/L	10	11/8/2006	
1,1-Dichloropro	pene	ND	10		μg/L	10	11/8/2006	
Hexachlorobuta	diene	ND	. 20		μg/L	10	11/8/2006	
2-Hexanone		ND	100		µg/L	10	11/8/2006	
Isopropylbenze	ne	ND	10		ua/L	10	11/8/2006	
4-Isopropyltolue	ene	ND	10		µa/L	10	11/8/2006	
4-Methyl-2-pen	алопе	ND	100		uo/I	10	11/8/2006	
Methylene Chlo	ride	ND	30		H9/	10	11/8/2006	
n-Butylbenzene		47	10		pg/~	10	11/8/2006	
n-Pronvibenzen	A	ND	10		20/l	10	11/8/2006	
sec-Butvibenze	ne	ND	20		un/l	10	11/8/2006	
Sivrene		ND	15		р <u>а</u> п-	10	11/8/2006	
led-Butylbenzer	ne -	ND	10		μο/l	10	11/8/2006	
1 1 1 2-Teirach	loroelhane	ND	10		ug/l	10	11/8/2006	
1 1 2 2-Tetrach	loroelhane	ND	10		10/I	10	11/8/2006	
Telrachlomeihe	ne (PCE)	ND	. 10		uo/i	10	11/8/2006	
Irans-1 2-DCF		ND	10		29/- VO/I	10	11/8/2006	
Irans-1 3-Dichlo	οτορτορέπε	ND	10		10/A	10	11/8/2006	
1.2.3-Trichloroh	enzene	ND	10		ua/L	10	11/8/2006	
1.2.4-Trichloroh	enzene	ND	10		ua/L	10	11/8/2006	
1 1 1-Trichlorog	Ibane	ND	10		uo/l	10	11/8/2006	
1 1 2-Trichloros	Ihane	ND	10		r=:= uo/t	10	11/8/2006	
Trichloroethene	(TCE)		10		uo/l	10	11/8/2006	
Trichlorofluorog		ND	10		P9/F	10	11/8/2000	
		1 NLP	10		- 'eq	10	(1/0/2000	

Qualifiers:

Value exceeds Maximum Contaminant Level

..... B Analyte detected in the associated Method Blank

E Value above quantitation range

1 Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit Spike recovery outside accepted recovery limits S

H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

.....

Hall Environmental Analysis Laboratory, Inc.				ic.	Dat	e: 15-Na	15-Nov-06		
CLIENT:	Giant Refining Co			C	lient Sample N): AL-2	to EP-1		
Lab Order:	0611012	Collection Date: 1			e: 10/30	1 0/ 30/2006 3:45:00 PM			
Project:	NMED Quarterly San	mples 4th Qtr.	Qtr. 2006 Date Received:		d: 11/1/2	11/1/2006			
Lab ID:	0611012-01			Matrix:			AQUEOUS		
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed		
EPA METHOD	8260B: VOLATILES						Analyst: LMM		
1,2,3-Trichlorop	oropane	ND	20		μg/L	10	11/8/2006		
Vinyl chloride		ND	10		μg/L	10	11/8/2006		
Xylenes, Total		62	30		µg/L	10	11/8/2006		
Surr: 1,2-Dic	hloroethane-d4	84.2	69.9-130		%REC	10	11/8/2006		
Surr. 4-Brom	ofluorobenzene	109	75-139		%REC	10	11/8/2006		
Surr: Dibrom	ofluoromethane	89.1	57.3-135		%REC	10	11/8/2006		
Surr: Toluen	e-d8	86.0	81.9-122		%REC	10	11/8/2006		

B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

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Qualifiers:

- E Value above quantitation range
 - J Analyte detected below quantitation limits
 - ND Not Detected at the Reporting Limit
 - S Spike recovery outside accepted recovery limits

* Value exceeds Maximum Contaminant Level

Lab Order: Project: Lab ID: Analyses EPA METHOD & Gasoline Range Surr: BFB EPA METHOD 7 Mercury EPA 6010B: TO Arsenic Barium Cadmium Cadmium	0611012 NMED Quarterly Samp 0611012-02 3015B: GASOLINE RANG Organics (GRO) 7470: MERCURY	Result Result 0.17 103 ND ETALS ND	PQL (0.10 84.5-129 0.00020	Colli Dat Jual Uni mg/L %RE mg/L	ection Date: te Received: Matrix: ts ts	10/30/ 11/1/2 AQUJ DF 2 2	/2006 2:45:00 PM 2006 EOUS Date Analyzed Analyst: NSI 11/6/2006 2:30:16 PM 11/6/2006 2:30:16 PM
Project: Lab ID: Analyses EPA METHOD & Gasoline Range Surr: BFB EPA METHOD 7 Mercury EPA 6010B: TO Arsenic Barium Cadmium Cadmium	NMED Quarterly Sam 0611012-02 3015B: GASOLINE RANG Organics (GRO) 7470: MERCURY	Result Result 0.17 103 ND ETALS ND	PQL (0.10 84.5-129 0.00020	Dat Qual Uni mg/L %RE mg/L	te Received: Matrix: ts :: :C	11/1/2 AQUJ DF 2 2	2006 EOUS Date Analyzed Analyst: NSI 11/6/2006 2:30:16 PM 11/6/2006 2:30:16 PM
Lab ID: Analyses EPA METHOD & Gasoline Range Surr: BFB EPA METHOD 7 Mercury EPA 6010B: TO Arsenic Barlum Cadmium Chromium	0611012-02 3015B: GASOLINE RANG Organics (GRO) 7470: MERCURY	Result BE 0.17 103 ND ETALS ND	PQL (0.10 84.5-129 0.00020	Qual Uni mg/L %RE mg/L	Matrix: ts C	AQUI DF 2 2	EOUS Date Analyzed Analysi: NSI 11/6/2006 2:30:16 PM 11/6/2006 2:30:16 PM
Analyses EPA METHOD & Gasoline Range Surr: BFB EPA METHOD 7 Mercury EPA 6010B: TO Arsenic Barium Cadmium Cadmium	3015B: GASOLINE RANG Organics (GRO) 7470: MERCURY	Result 6E 0.17 103 ND ETALS ND	PQL (0.10 84.5-129 0.00020)ual Uni mg/L %RE mg/L	ts EC	DF 2 2	Date Analyzed Analysi: NSI 11/6/2006 2:30:16 PM 11/6/2006 2:30:16 PM
EPA METHOD & Gasoline Range Surr: BFB EPA METHOD 7 Mercury EPA 6010B: TO Arsenic Barium Cadmium Chromium	3015B: GASOLINE RANG Organics (GRO) 7470: MERCURY TAL RECOVERABLE ME	6E 0.17 103 ND ETALS ND	0.10 84.5-129 0.00020	mg/L %RE mg/L	- 	2 2	Analysi: NSi 11/6/2006 2:30:16 PM 11/6/2006 2:30:16 PM
EPA METHOD & Gasoline Range Surr: BFB EPA METHOD 7 Mercury EPA 6010B: TO Arsenic Barium Cadmium Chromium	Organics (GRO) 7470: MERCURY	0.17 103 ND ETALS ND	0.10 84.5-129 0.00020	mg/L %RE mg/L	EC	2 2	Analyst, 143 11/6/2006 2:30:16 PM 11/6/2006 2:30:16 PM
EPA METHOD 7 Mercury EPA 6010B: TO Arsenic Barium Cadmium Chromium	7470: MERCURY	ND TALS ND	0.10	mg/L	ĒC	2	11/6/2006 2:30:16 PM
EPA METHOD ; Mercury EPA 6010B: TO Arsenic Barium Cadmium Cadmium	7470: MERCURY TAL RECOVERABLE ME	ND TALS ND	0.00020	mg/L		Z	
EPA METHOD 7 Mercury EPA 6010B: TO Arsenic Barium Cadmium Chromium	7470: MERCURY TAL RECOVERABLE ME	ND ETALS ND	0.00020	mg/l			
Mercury EPA 6010B: TO Arsenic Barium Cadmium Chromium	TAL RECOVERABLE ME	ND ETALS ND	0.00020	mg/L			Analyst: CM
EPA 6010B: TO Arsenic Barium Cadmium Chromium	TAL RECOVERABLE ME	TALS ND			-	1	11/8/2006
EPA 6010B: TC Arsenic Barium Cadmium Chromium	TAL RECOVERABLE ME	TALS ND					
Arsenic Barium Cadmium Chromium		ND					Analyst: NM
Barium Cadmium Chromium	·		0.020	mg/L	-	1	11/9/2006 2:37:44 PM
Cadmium Chromium		ND	0.020	mg/L	-	1	11/9/2006 2:37:44 PM
Chromium		ND	0.0020	mg/L	-	1	11/9/2006 2:37:44 PM
		ND	0.0060	mg/L	-	1	11/9/2006 2:37:44 PM
Lead		ND	0.0050	mg/l	-	1	11/9/2006 2:37:44 PM
Selenium		ND	0.050	mg/l	-	1	11/9/2006 2:37:44 PM
Silver		ND	0.0000	mg/L	-	t	T 1/9/2006 2:37:44 PM
EPA METHOD	3260B: VOLATILES						Analyst: LM
Benzene		ND	1.0	µg/L		1	11/13/2006
Toluene		5.1	1.0	րց/Ր		1	11/13/2006
Ethylbenzene		ND	1.0	µg/L		1	11/13/2006
Methyl tert-bulyl	ether (MTBE)	ND	1.5	րց/Ր		1	11/13/2006
1,2,4-Trimethylb	enzene	ND	1.0	µg/L		1	11/13/2006
1,3,5-Trimethylb	enzene	ND	1.0	µg/L		1	11/13/2006
1,2-Dichloroetha	ane (EDC)	ND	1.0	µg/L		1	11/13/2006
1,2-Dibromoetha	ane (EDB)	ND	1.0	µg/L		1	11/13/2006
Naphlhalene		ND	2.0	ից/Ն		1	11/13/2006
1-Methylnaphtha	alene	ND	4.0	µg/L		1	11/13/2006
2-Melhylnaphtha	alene	ND	4.0	µg/L		1	11/13/2006
Acelone		150	10	µg/L		1	11/13/2006
Bromobenzene		ND	1.0	µg/L		1	11/13/2006
Bromochlorome	thane	ND	1.0	hð\r		1	11/13/2006
Bromodichlorom	lelhane	ND	1.0	µg/L		1	11/13/2006
Bromoform		ND	1.0	hð\r		1	11/13/2006
oromomethane		ND	2.0	μg/L		1	11/13/2006
Z-BUIANONE			10	hðyr Ngyr		1	11/13/2006
Carbon disulide	: Iorido		טו חכ	hQ/F		1	11/13/2006
			2.0 1 M	1 TUL		1	11/13/2000
Chloraethana			20	երեր Մահ		1	11/13/2000
Chloroform		1.8	1.0	μg/L		1	11/13/2006
Qualifiere	Value exceeds Maximum C	ontaminant Leve		В	Analyte detected	in the a	ssociated Method Blank
~~~~ III 3.	<ul> <li>Value above quantitation in</li> </ul>	npe		н	Holding times fo	r prenarz	ation or analysis exceeded
	Analyte detected below our	e-		MCL I	Maximum Conta	uninani 1	Level
N	D Not Detected at the Renorti	ng Limit		RL	Reporting Limit		
	S Spike recovery outside acce	pted recovery lin	nits		, <u>e</u>		Page 4

Page 4 of 10

CLIENT:	Giant Refining Co			Client Sampl	e ID:	Pilot 7	IC Eff	
Lab Order:	0611012			Collection 1	Date:	10/30/	2006 2:45:00 PM	
Project:	NMED Quarterly Sam	ples 4th Qtr. 2	2006	Date Rece	ived:	11/1/2006		
Lab ID:	0611012-02			Ma	trix:	AQUI	EOUS	
Analyses		Result	PQL Q	ual Units		DF	Date Analyzed	
EPA METHOD	260B: VOLATILES						Analyst: LMN	
Chloromethane		ND	1.0	µg/L		1	11/13/2006	
2-Chlorotoluene		ND	1.0	μg/L		1	11/13/2006	
4-Chlorotoluene		ND	1.0	µg/L		1	11/13/2006	
cis-1,2-DCE		ND	1.0	μg/L		1	11/13/2006	
cis-1,3-Dichlorop	propene	ND	1.0	µg/L		1	11/13/2006	
1,2-Dibromo-3-c	hloropropane	ND	2.0	μg/L		1	11/13/2006	
Dibromochlorom	ethane	ND	1.0	μg/L		1	11/13/2006	
Dibromomethan	e	ND	2.0	µg/L		1	11/13/2006	
1,2-Dichloroben:	zene	ND	1.0	µg/L		1	11/13/2006	
1,3-Dichloroben	zene	ND	1.0	μg/L		1	11/13/2006	
1,4-Dichloroben	zene	2.8	1.0	µg/L		1	11/13/2006	
Dichlorodifluoror	nethane	ND	1.0	µg/L		1	11/13/2006	
1,1-Dichloroetha	ne	ND	2.0	µg/L		1	11/13/2006	
1,1-Dichloroethe	ine	ND	1.0	halfr		1	11/13/2006	
1,2-Dichloroprop	ane	ND	1.0	µg/L		1	11/13/2006	
1,3-Dichloroprop	ane	ND	1.0	µg/L		1	11/13/2006	
2,2-Dichloroprop	ane	ND	2.0	µg/L		1	11/13/2006	
1,1-Dichloroprop	ene	ND	1.0	µg/L		1	11/13/2006	
Hexachlorobutad	tiene	ND	2.0	μg/L		1	11/13/2006	
2-Hexanone		ND	10	μg/L		1	11/13/2006	
Isopropylbenzen	e	ND	1.0	µg/L		1	11/13/2006	
4-Isopropyllolue	ne	1.6	1.0	µg/L		1	11/13/2006	
4-Methyl-2-penta	anone	ND	10	µg/L		1	11/13/2006	
Methylene Chlor	ide	ND	. 3.0	µg/L		1	11/13/2006	
n-Butylbenzene		ND	1.0	μg/L		1	11/13/2006	
n-Propylbenzene	3	ND	1.0	μg/L		1	11/13/2006	
sec-Butylbenzen	e	ND	2.0	μg/L		1	11/13/2006	
Styrene		ND	1.5	µg/L		1	11/13/2006	
tert-Butylbenzen	e	ND	1.0	μg/L		1	11/13/2006	
1,1,1,2-Tetrachle	proelhane	ND	1.0	μg/L		1	11/13/2006	
1,1,2,2-Tetrachle	proelhane	ND	1.0	μg/L		1	11/13/2006	
Tetrachloroether	ie (PCE)	ND	1.0	μg/L		1	11/13/2006	
trans-1,2-DCE		ND	1.0	µg/L		1	11/13/2006	
trans-1,3-Dichlor	горгорепе	ND	1.0	μg/L		1	11/13/2006	
1,2,3-Trichlorobe	enzene	ND	1.0	µg/L		1	11/13/2006	
1,2,4-Trichlorobe	enzene	ND	1.0	μg/L		1	11/13/2006	
1,1,1-Trichloroet	hane	ND	1.0	µg/L		1	11/13/2006	
1,1,2-Trichloroet	hane	ND	1.0	μg/L		1	11/13/2006	
Trichloroethene	(TCE)	ND	1.0	μg/L		1	11/13/2006	
Trichlorofluorom	ethane	ND	1.0			1	11/13/2006	

Date: 15-Nov-06

Qualifiers:

E Value above quantitation range

- Analyte detected below quantitation limits 1
- ND Not Detected at the Reporting Limit

Spike recovery outside accepted recovery limits S

H Holding times for preparation or analysis exceeded

B Analyte detected in the associated Method Blank

... ---- . . . . . . .

- MCL Maximum Containinant Level
- RL Reporting Limit

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^{*} Value exceeds Maximum Contaminant Level

Date: 15-Nov-06

CLIENT:	Giant Refining Co			Client Sample	D: Pilot	TC Eff		
Lab Order:	0611012			Collection <b>D</b>	ate: 10/30	10/30/2006 2:45:00 PM		
Project:	NMED Quarterly Sam	ples 4th Qtr.	2006	Date Recei	ved: 11/1/2	11/1/2006		
Lab ID:	b ID: 0611012-02 Matrix:				trix: AQU	AQUEOUS		
Analyses		Result	PQL	Qual Units	DF	Date Analyzed		
EPA METHOD	8260B: VOLATILES					Analyst: LMM		
1,2,3-Trichlorop	propane	ND	2.0	µg/L	1	11/13/2006		
Vinyl chloride		ND	1.0	µg/L	1	11/13/2006		
Xylenes, Total		ND	3.0	µg/L	1	11/13/2006		
Surr: 1,2-Dic	hloroelhane-d4	86.3	69.9-130	%REC	1	11/13/2006		
Surr: 4-Brom	ofluorobenzene	120	75-139	%REC	1	11/13/2006		
Surr: Dibrom	ofluoromethane	93.2	57.3-135	%REC	1	11/13/2006		
Surr. Toluen	e-d8	91.0	81.9-122	%REC	1	11/13/2006		

Qualifiers:

- Value exceeds Maximum Contaminant Level
- E Value above quantitation range

. .......

- J Analyte detected below quantitation limits
- 140 Not Detected at the Reporting Limit
- Spike recovery outside accepted recovery limits 5
- ------- .... B Analyte detected in the associated Method Blank
  - H Holding times for preparation or analysis exceeded
  - MCL Maximum Contaminant Level
  - RL Reporting Limit

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. . ._

CLIENT:	Giant Refining Co			С	lient Sample ID:	NAPI	S Eff		
Lab Order:	0611012				Collection Date:	10/30/	2006 3:15:00 PM		
Project:	NMED Quarterly Sam	ples 4th Qtr.	2006		Date Received:	11/1/2006			
Lab ID:	0611012-03				Matrix:		AQUEOUS		
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed		
			· · · <u>, ,</u>						
EPA METHOD 8	3015B: GASOLINE RAN	3E				~~	Analyst: NSI		
Gasoline Range	Organics (GRO)	39	1.0		mg/L	20	11/6/2006 1:24:52 PM		
Surr: BFB		103	84.5-129		%REC	20	11/6/2006 1:24:52 PM		
	3260B. VOLATILES						Analyst: 1 Mi		
Benzene	SECOL. VOLUMELO	6600	100		U0/]	100	11/8/2006		
Toluene		9800	100		רשיב נוסו/)	100	11/8/2006		
Fihvihenzene		760	100		H3/5	100	11/8/2006		
Methyl tert-hulvi	elber (MTBE)	300	150		на/н По/н	100	11/8/2006		
124-Trimethylh	enzene	570	100		ra/-	100	11/8/2006		
1.3.5-Trimethulh	enzene	170	100		rg/	100	11/8/2000		
1 2-Dichloroelba	ane (EDC)	ND	100		µg/L	100	11/8/2006		
1.2-Dibromoeth:	ane (EDB)	ND	100		10/1	100	11/8/2006		
Nanhthalene		330	200		voli	100	11/8/2005		
1-Methylnanhlh	alene		400		pg/c	100	11/8/2006		
2-Methylnaphih	alene	ND	400		uo/l	100	11/8/2006		
Acelone		1800	1000		р <u>а</u> ,с	100	11/8/2006		
Bromohenzene		ND	100		р <u>э</u> гс ца/1	100	11/8/2006		
Bromochlorome	Ihane	ND	100		р <u>а</u> /2	100	11/8/2006		
Bromodichloror	helbane	ND	100		ug/l	100	11/8/2000		
Bromoform	latione	ND	100		р <u>а</u> /с ид/i	100	11/8/2006		
Bromomethane		ND	200		р <u>а</u> /с ио/I	100	11/8/2006		
2-Butanope			1000		µg/L	100	11/8/2006		
Carbon disulfide	1		1000		ug/L	100	11/8/2000		
Carbon Tetracit	, Ioride		200		uo/I	100	11/8/2006		
Chlorobenzene			100		pg/L	100	11/9/2006		
Chloroethane		ND	200		un/l	100	11/8/2006		
Chloraform			100		pg/c ug/l	100	11/9/2006		
Chloromethane		ם א רזוא	100		pg/c	100	11/8/2000		
2-Chlorotoluene	1	ND	100		up/l	100	11/8/2006		
4-Chlorololuene		лы ЛИ	100		uo/l	100	11/8/2006		
cis-1 2-DCE		ND	100		10/L	100	11/8/2006		
cis-1 3-Dichloro	nrónene	ND	100		49/C	100	11/8/2006		
1 2-Dibromo-3-r	chloropronané	ND	200		F3/2 10/}	100	11/8/2006		
Dibromochlorom	nethane	ND	100		uo/L	100	11/8/2006		
Dibromomethar	18	ND	200		ua/L	100	11/8/2006		
1.2-Dichloroben	zene	ND	100		ла/L	100	11/8/2006		
1.3-Dichloroben	izene	ND	100		ua/L	100	11/8/2006		
1.4-Dichlorober	IZENE	ND	100		µa/L	100	11/8/2006		
Dichlorodifluoro	methane	ND	100			100	11/8/2006		
		ND	007		rgr-	100	11(0)2000		

E Value above quantitation range

J Analyte detected below quantitation limits

ND Not Deserved at the Reporting Limit

H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

MD – Not Derected at the response according to the second seco

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CLIENT:	Giant Refining Co			(	Client Sample ID:	NAPI	S Eff
Lab Order:	0611012				Collection Date:	10/30/	/2006 3:15:00 PM
Project:	NMED Quarterly San	aples 4th Qtr. 1	2006		Date Received:	11/1/2006	
Lab ID:	0611012-03				Matrix:	AQUI	EOUS
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD	8260B: VOLATILES						Analyst: LN
1,1-Dichloroeth	iene	ND	100		µg/L	100	11/8/2006
1,2-Dichloropro	pane	ND	100		µg/L	100	11/8/2006
1,3-Dichloropro	pane	ND	100		µg/L	100	11/8/2006
2,2-Dichloropro	ppane	ND	200		µg/L	100	11/8/2006
1,1-Dichloropro	pene	ND	100		µg/L	100	11/8/2006
Hexachlorobula	adiene	ND	200		µg/L	100	11/8/2006
2-Hexanone		NÐ	1000		µg/L	100	11/8/2006
Isopropyibenze	ene	ND	100		µg/L	100	11/8/2006
4-Isopropyltolu	ene	ND	100		µg/L	100	11/8/2006
4-Methyl-2-рел	lanone	ND	1000		µg/L	100	11/8/2006
Methylene Chlo	oride	ND	300		µg/L	100	11/8/2006
n-Butylbenzene	2	ND	100		hð\r	100	11/8/2006
n-Propylbenzer	пе	ND	100		µg/L	100	11/8/2006
sec-Butylbenze	ene	ND	200		µg/L	100	11/8/2006
Styrene		ND	150		µg/L	100	11/8/2006
tert-Butylbenze	ene	ND	100		µg/L	100	11/8/2006
1,1,1,2-Tetrach	nloroethane	ND	100		μg/L	100	11/8/2006
1,1,2,2-Tetrach	loroethane	ND	100		µg/L	100	11/8/2006
Tetrachloroeth	ene (PCE)	ND	100		µg/L	100	11/8/2006
trans-1,2-DCE		ND	100		µg/L	100	11/8/2006
trans-1,3-Dichl	oropropene	ND	100		µg/L	100	11/8/2006
1,2,3-Trichlorol	benzene	ND	100		μg/L	100	11/8/2006
1,2,4-Trichlorol	benzene	ND	100		hð\r	100	11/8/2006
1,1,1-Trichlord	elhane	ND	10D		µg/L	100	11/8/2006
1,1,2-Trichloro	ethane	ND	100		µg/L	100	11/8/2006
Trichloroethen	e (TCE)	ND	100		hð\r	100	11/8/2006
Trichlarafluoro	methane	ND	100		μg/L	100	11/8/2006
1,2,3-Trichloro	propane	ND	200		µg/L	100	11/8/2006
Vinyl chloride		ND	100		µg/L	100	11/8/2006
Xylenes, Total		3500	300		µg/L	100	11/8/2006
Surr: 1,2-Die	chloroethane-d4	89.3	69.9-130		%REC	100	11/B/2006
Surr: 4-Bron	nofluorobenzene	89.1	75-139		%REC	100	11/8/2006
Surr: Dibron	nofluoromethane	97.8	57.3-135		%REC	100	11/8/2006
Surr: Toluer	ie-d8	87.0	81.9-122		%REC	100	11/8/2006

... . .. Qualifiers:

Value exceeds Maximum Contaminant Level

- E Value above quantitation mage
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit

Spike reporent to this constant of more limits
 Spike reporent to this constant of more limits

- ----------B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Recording Limit

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# COVER LETTER

Thursday, January 04, 2007

Steve Morris Giant Refining Co Rt. 3 Box 7 Gallup, NM 87301

TEL: (505) 722-3833 FAX (505) 722-0210

RE: Groundwater 2006-0W-14

Dear Steve Morris:

Order No.: 0612343

Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 12/28/2006 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com

Hall Envir	onmental Ana	Date: 04	-Jan-07					
CLIENT:	Giant Refining Co			Client Samp	le ID: OV	W-14		
Lab Order:	0612343			Collection	Date: 12/	12/28/2006 10:30:00 PM 12/28/2006 AQUEOUS		
Project:	Groundwater 2006	-0W-14		Date Rece	eived: 12/			
Lab ID:	0612343-01			Μ	atrix: AQ			
Analyses		Result	PQL	Qual Units	DF	Date Analyzed		
EPA METHOD	8260: VOLATILES SH	HORT LIST				Analyst: SMP		
Benzene		4.2	1.0	μg/L	1	1/3/2007		
Toluene		ND	1.0	µg/L	1	1/3/2007		
Ethylbenzene	thylbenzene 2.5 1.0 µg/L		1	1/3/2007				
Methyl tert-buty	Methyl tert-butyl ether (MTBE) 180 1.5 µg/L		µg/L	1	1/3/2007			
Xylenes, Total		ND	3.0 µg/L		1	1/3/2007		
Surr: 4-Bromofluorobenzene 105 71.2-		71.2-123	%REC	1	1/3/2007			

*

- Value exceeds Maximum Contaminant Level E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S
- Spike recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- Holding times for preparation or analysis exceeded Н
- MCL Maximum Contaminant Level
- RL Reporting Limit

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# **QA/QC SUMMARY REPORT**

Client: Client	Giant Refini Groundwate	ing Co er 2006-0W-	-14					v	Work Order	. 00	512343
Analyte		Result	Units	PQL	%Rec	LowLimit H	lighLimit	%RPD	RPDLimit	Qual	
Method: SW8260B											
Sample ID: 5ml rb			MBLK			Batch ID:	R21999	Analysis D	)ate:		1/3/2007
Benzene		ND	µg/L	1.0							
Toluene		ND	µg/L	1.0							
Ethylbenzene		ND	µg/L	1.0							
Methyl tert-butyl ether	(MTBE)	ND	µg/L	1.5							
Xylenes, Total		ND	µg/L	3.0							
Sample ID: 100ng Ic	s		LCS			Batch ID:	R21999	Analysis D	Date:		1/3/2007
Benzene		19.37	µg/L	1.0	96.8	75.6	111				
Toluene		19.64	µg/L	1.0	98.2	69.6	113				

### Qualifiers:

- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
  - 2/3

Page I

Gani	ple Receipt Ch	eckiist		
Client Name GIANTREFIN		Date and Time	Received:	12/28/2006
Work Order Number 0612343		Received by	AT	
Checklist completed by	2   Date	28/06		
Matrix Carrier nan	ne <u>Client drop-o</u>	<u>ff</u>		
Shipping container/cooler in good condition?	Yes 🗹	No 🗌	Not Present	]
Custody seals intact on shipping container/cooler?	Yes 🗋	No 🗌	Not Present	Not Shipped 🗹
Custody seals intact on sample bottles?	Yes 🗌	No 🗹	N/A	כ
Chain of custody present?	Yes 🗹	No 🗌		
Chain of custody signed when relinquished and received?	Yes 🗹	No 🗌		
Chain of custody agrees with sample labels?	Yes 🗹	No 🗌		
Samples in proper container/bottle?	Yes 🔽	No 🗆		·
Sample containers intact?	Yes 🗹	No 🗌		
Sufficient sample volume for indicated test?	Yes 🗹	No 🗌		
All samples received within holding time?	Yes 🗹	No 🗌		
Water - VOA vials have zero headspace? No VOA vials s	submitted	Yes 🗹	No 🗌	
Water - pH acceptable upon receipt?	Yes 🗌	No 🗌	N/A 🗹	
Container/Temp Blank temperature?	1°	4° C ± 2 Accepta	able t time to cool.	
COMMENTS:				
Client contacted Date contacted:		Pers	son contacted	
Contacted by: Regarding				
Comments:				
				<u>i</u>
	· · ·			······································
Corrective Action				
l				

HALLENVIRONMENTAL HALLENVIRONMENTAL ANALYSIS LABORATORY 4901 Hawkins NE, Suite D Albuquerque, New Mexico 87109 Tel. 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com	آلجیفی د (۲508)         ۲۲         ۲۲         ۲۲         ۲۲         ۲۲         ۲۲         ۲۲         ۲۲         ۲۲         ۲۲         ۲۲         ۲۲         ۲۲         ۲۲         ۲۲         ۲۲         ۲۲         ۲۲         ۲۲         ۲۲         ۲۲         ۲۲         ۲۲         ۲۲         ۲۲         ۲۲         ۲۲         ۲۲         ۲۲         ۲۲         ۲۲         ۲۲         ۲۲         ۲۲         ۲۲         ۲۲         ۲۲         ۲۲         ۲۲         ۲۲         ۲۶         ۲۶         ۲۶         ۲۶         ۲۶         ۲۶         ۲۶         ۲۶         ۲۶         ۲۶         ۲۶         ۲۶         ۲۶         ۲۶<		Remarks:
Project #: Project #:	Project Manager: Sampler: Sample Temperature: Number/Volume HgCl, HN03 Manager: HBAL No.		Received By: (Signature) / 12 /2 8 / 0 (* Received By: (Signature)
CHAIN-OF-CUSTODY RECORD Client Cultury Client Cultury Address: Lant Son T	Sattley WH	2.2.26 1830 Vate 0 W - 14	Date:     Time:     Relinquished By: (Signature)       2-28-06/525     26/525       Date:     Time:       Date:     Time:



### COVER LETTER

Wednesday, April 12, 2006

Steve Morris Giant Refining Co Rt. 3 Box 7 Gallup, NM 87301 TEL: (505) 722-3833

FAX (505) 722-0210

RE: NMED Mntly & OCD Qtly Samp 3/30/06

Order No.: 0603345

Dear Steve Morris:

Hall Environmental Analysis Laboratory received 3 sample(s) on 3/31/2006 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

<u>___</u>

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE I Suite D Albuquerque, NM 87109 505.345.3975 I Fax 505.345.4107 www.hallenvironmental.com

Date: 12-Apr-06

CLIENT:Giant Refining CoProject:NMED Mntly & OCD Qtly Samp 3/30/06Lab Order:0603345

# CASE NARRATIVE

_____

Analytical Comments for METHOD 8260_W, SAMPLE 0603345-01a: Dilution necessary due to sulfur dioxide

Hall Environmental Analysis Laboratory				Date: 12-Apr-06				
CLIENT:	Giant Refining Co			Client Sample	ID: Pilot	Eſſ		
Lab Order:	0603345			Collection Da	te: 3/30/2	2006 9:45:00 AM		
Project:	NMED Mntly & OCD	Qtly Samp 3	3/30/06	Date Receiv	ed: 3/31/2	2006		
Lab ID:	0603345-01			Matr	ix: AQU	EOUS		
Analyses		Result	PQL	Qual Units	DF	Date Analyzed		
EPA METHOD	8015B: DIESEL RANGE					Analyst: SCC		
Diesel Range C	)rganics (DRO)	22	3.0	mg/L	1	4/4/2006 9:22:58 AM		
Molor Oil Rang	e Organics (MRO)	ND	15	mg/L	1	4/4/2006 9:22:58 AM		
Surr: DNOP		96.4	58-140	%REC	1	4/4/2006 9:22:58 AM		
	8015B: GASOLINE RAN	GE				Analyst: NSB		
Gasoline Range	Ornanics (GRO)	0.078	0.050	mn/l	1	4/10/2006 2:01:51 PM		
Sure BEB	e organica (orce)	114	79 7-119	Mg/C	1	4/10/2006 2:01:51 PM		
		111	10.1 110		ı			
EPA METHOD	7470: MERCURY					Analyst: CMC		
Mercury		ND	0.00020	mg/L.	1	4/5/2006		
EPA 6010: TOT	AL RECOVERABLE ME	TALS				Analyst: NMO		
Arsenic		ND	0.020	mg/L	1	4/11/2006 2:50:18 PM		
Barium		0.15	0.020	mg/L	1	4/11/2006 2:50;18 PM		
Cadmium		0.0027	0.0020	mg/L	1	4/11/2006 2:50:18 PM		
Chromium		0.023	0.0060	mg/L	1	4/11/2006 2:50:18 PM		
Lead		0.0081	0.0050	mg/L	1	4/11/2006 2:50:18 PM		
Selenium		ND	0.050	mg/L	1	4/11/2006 2:50:18 PM		
Silver		0.0061	0.0050	mg/L	1	4/11/2006 6:03:48 PM		
						Applyst: Rt		
Acenaphthene		, ND	100	un/l	2	4/11/2006		
Acenaphihylene	3	ND	100	No/L	2	4/11/2006		
Aniline		ND	200	ua/L	2	4/11/2006		
Anthracene		ND	100	ua/L	2	4/11/2006		
Azobenzene		ND	100	uo/L	2	4/11/2006		
Benz(a)anihrac	ene	ND	150	μg/L	2	4/11/2006		
Benzo(a)pyrene	2	ND	150	µg/L	2	4/11/2006		
Benzo(b)fluorar	nthene	ND	150	μg/L	2	4/11/2006		
Benzo(g,h,i)per	ylene	ND	100	µg/L	2	4/11/2006		
Benzo(k)/luoran	Ilhene	ND	100	μg/L	2	4/11/2006		
Benzoic acid		1300	500	µg/L	2	4/11/2006		
Benzyl alcohol		ND	200	µg/L	2	4/11/2006		
Bis(2-chloroethe	oxy)methane	ND	100	µg/L	2	4/11/2006		
Bis(2-chloroethy	yl)elher	ND	150	µg/L	2	4/11/2006		
Bis(2-chloroisop	propyl)elher	ND	150	µg/L	2	4/11/2006		
Bis(2-ethylhexy	l)phthalate	ND	150	µg/L	2	4/11/2006		
4-Bromophenyl	phenyi elher	ND	100	μg/L	2	4/11/2006		

Qualifiers: + Value exceeds Maximum Contaminant Level

J

Е

B Analyte detected in the associated Method Blank Н Holding times for preparation or analysis exceeded

Value above quantitation range

Analyte detected below quantitation limits

Spike Recovery outside accepted recovery limits S

Hall Environmental Analysis Laboratory				Date:	12-Apr-06			
CLIENT: Lab Order:	Giant Refining Co 0603345			C	lient Sample ID: Collection Date:	: Pilot Eff : 3/30/2006 9:45:00 AM		
Project:	NMED Mntly & OCE	CD Qtly Samp 3/30/06			Date Received:	3/31/2	2006	
I oh ID.	0603345 01				Matrix:	AQUEQUS		
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed	
EPA METHOD	8270C: SEMIVOLATILES	6					Analyst: BL	
Butyl benzyl ph	Ihalate	ND	150		µg/L	2	4/11/2006	
Carbazole		ND	100		μg/L	2	4/11/2006	
4-Chioro-3-met	hylphenol	ND	200		μg/L	2	4/11/2006	
4-Chloroaniline		ND	200		µg/L	2	4/11/2006	
2-Chloronaphth	alene	ND	100		μg/L	2	4/11/2006	
2-Chlorophenol		ND	100		µg/L	2	4/11/2006	
4-Chlorophenyl	phenyl ether	ND	150		µg/L	2	4/11/2006	
Chrysene		ND	150		µg/L	2	4/11/2006	
Di-n-butvt phtha	alale	ND	100		µg/L	2	4/11/2006	
Di-n-octvl ohtha	alate	ND	150		ug/L	2	4/11/2006	
Dibenz(a.h)anti	hracene	ND	100		ua/L	2	4/11/2006	
Dibenzoluran		ND	100		ua/L	2	4/11/2006	
1.2-Dichlorober	nzene	ND	100		μα/L	2	4/11/2005	
1.3-Dichlorober	Izene	ND	100		up/l.	2	4/11/2006	
1 4-Dichlorober	17606	ND	100		νο/L	2	4/11/2006	
3.3'-Dichlorobe	nzidine	ND	150		19:- 10/1	2	4/11/2006	
Diethyl ohthata	te	ND	100		10/l	2	4/11/2006	
Dimethyl ohtha	lale	ND	100		19/→ 110/L	2	4/11/2006	
2 4-Dichloroph	200	ND	100		uo/l	2	4/11/2006	
2.4-Dimethylph	enol	ND	100		uo/i	2	4/11/2006	
4 6-Dinitro-2-m	ethylnhenal	ND	500		10/l	2	4/11/2006	
2 4-Dinitrophen	ol	ND	500		ug/l	2	4/11/2006	
2.4-Dinitrophen		ND	100		ug/L	- 7	4/11/2006	
2.6 Disitrolokus		ND	100			2 2	4/11/2000	
Elucraphano		ND	100		uo/l	2	4/11/2006	
Fluoraninene			100		hau	2 2	4/11/2000	
Hovooblaroba	2000	ND	100		pgrc ug/l	2	4/11/2000	
Hexachloroben	Zelle		100		hðir.	2	4/11/2000	
Hexachiorooula	eneriadione		100		µg/L	2	4/11/2000	
Hexachlorocycl	openiaoiene		100		ug/L	2	4/11/2000	
riexachioroethe			100		hā.	2	4/11/2000	
	уруне		100		haur haur	4	4/11/2000	
Isophorone			100		µg/L	2	4/11/2000	
	1010110 	םאי	150		pgrc un/l	د ۲	4/11/2000	
2+4 Malbulaba	nol	370	200		µg/L	2	4/11/2000	
NLNitrosodi-e e	ronvlamine	ND	100		un/l	~ 7	4/11/2006	
N Nitrocodient	hulamine		100		pgre vo/l	2 ว		
	nyianinite pylamine		100		have nove	∠ ۲	4/11/2000	
	пуалиле		100		py/L	2	4/11/2006	
Naphinalene		NU	100		pg/L	2	4/11/2006	
2-Nitroaniline		ND	500		րց/Լ	2	4/11/2006	

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B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded

J Analyte detected below quantitation limits

S Spike Recovery outside accepted recovery limits

Value exceeds Maximum Contaminant Level
 E Value above quantitation range

Hall Environmental Analysis Laboratory				Date	12-Apr-06			
CLIENT:	Giant Refining Co			Client Sample ID:	Pilot	Eſſ		
Lab Order:	0603345			Collection Date:	3/30/:	3/30/2006 9:45:00 AM		
Project:	NMED Mntly & OCD	Qtly Samp	3/30/06	Date Received:	3/31/2	2006		
Lab ID:	0603345-01			Matrix:	AQU	AQUEOUS		
Analyses	·····	Result	PQL	Qual Units	DF	Date Analyzed		
EPA METHOD	8270C: SEMIVOLATILES					Analyst: Bl		
3-Nilroaniline		ND	500	uo/L	2	4/11/2006		
4-Nitroaniline		ND	200	µа/L	2	4/11/2006		
Nitrobenzene		ND	100	ua/L	2	4/11/2006		
2-Nilrophenol		ND	150	ualL	2	4/11/2006		
4-Nitrophenol		ND	500	ua/L	2	4/11/2006		
Pentachlorophe	nol	ND	500	ua/L	2	4/11/2006		
Phenanthrene		ND	100	µg/L	2	4/11/2006		
Phenol		ND	100	19/- 10/L	2	4/11/2006		
Pyrene		ND	150	₽ <u>3</u> /2	2	4/11/2006		
Pyridine		ND	300	ug/L	2	4/11/2006		
1 2 4-Trichloroh	enzene	ND	100	F8/-	2	4/11/2006		
2.4.5-Trichlorop	henol	ND	100	10/	2	4/11/2006		
2.4.6-Trichlorop	henol	ND	150	10/	2	4/11/2006		
Surr 2 4 6-Tr	ihromophenol	96.5	16 6-150	%RFC	~ 2	4/11/2006		
Surr 2-Fluor	obinhenvl	67 B	19.6-134	%REC	2	4/11/2006		
Surn 2-Fluore	ophenol	59.3	9 54-113	%REC	2	4/11/2008		
Stur: 4-Ternh	apricitor	61.8	22 7-145	%REC	2	4/11/2000		
Sur Nilrohe		65.3	14 6.134	%REC	2	4/11/2006		
Surr: Phenol-	d5	47.0	10.7-80,3	%REC	2	4/11/2006		
EPA METHOD	8260B: VOLATILES					Analyst: HLM		
Benzene		ND	10	μq/L	10	4/4/2006		
Toluene		10	10	ug/L	10	4/4/2006		
Ethylbenzene		ND	10	μg/L	10	4/4/2006		
Methyl tert-buty	l ether (MTBE)	ND	15	ua/L	10	4/4/2006		
1,2,4-Trimethylt	релделе	ND	10	µg/L	10	4/4/2006		
1.3.5-Trimethvilt	enzene	ND	10	ua/L	10	4/4/2006		
1.2-Dichloroeth	ane (EDC)	ND	10	µa/L	10	4/4/2006		
1.2-Dibromoeth	ane (EDB)	ND	10	ua/L	10	4/4/2006		
Naphthalene	( )	ND	20	uo/L	10	4/4/2006		
1-Methvinaphth	alene	ND	40	uo/L	10	4/4/2006		
2-Methvinaphth	alene	ND	40	ua/L	10	4/4/2006		
Acelone		ND	100	uo/L	10	4/4/2006		
Bromobenzene		ND	10	µg/L	10	4/4/2006		
Bromochlorome	lhane	ND	10	µg/L	10	4/4/2006		
Bromodichloron	rethane	ND	10	ug/L	10	4/4/2006		
Bromoform		ND	10	µg/L	10	4/4/2006		
Bromomethane		ND	20	ua/L	10	4/4/2006		
2-Bulanone		ND	100	ua/L	10	4/4/2006		
Carbon disulfide	2	ND	100	1 5/= 10/l	10	4/4/2006		

* Value exceeds Maximum Contaminant Level Ε

В Analyte detected in the associated Method Blank Н

Value above quantitation range ł

Analyte detected below quantitation limits

S Spike Recovery outside accepted recovery limits

Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit

4/22

Hall Envir	is Labora		Date: 12-Apr-06					
CLIENT:Giant Refining CoLab Order:0603345Project:NMED Mntly & OLab ID:0603345-01		Qtly Samp 3/	30/06	C	lient Sample ID: Collection Date: Date Received: Matrix:	Pilot Eff 3/30/2006 9:45:00 AM 3/31/2006 AOUEOUS		
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed	
	8260B: VOI ATILES						Analyst: HLM	
Cathon Tetrach		ND	20		un/l	10	4/4/2006	
Chiorobenzene		ND	10		uo/l	10	4/4/2006	
Chloroethane		ND	20		ue/l	10	4/4/2008	
Chloroform		20	10		uo/l	10	4/4/2006	
Chloromelbane		20	10		ug/l	10	4/4/2000 A/A/2006	
2-Chlorotoluene		ND	10		pg/c	10	4/4/2000	
A-Chlorotoluene	- -		10		un/i	10	4/4/2006	
	•		10		uo/l	10	4/4/2000	
cis-1 3-Dichloro	000000	ND	10		10/1	10	4/4/2000	
1.2-Dibromo-3-	chlorontonana		20		µg/t.	10	4/4/2000	
Dibromochloror	nethane		10		ug/L	10		
Dibromomelbar			20		ug/t	10	4/4/2000	
1.2-Dichlorober			10		µg/t	10	4/4/2000	
1,2-Dichlerober			10		µg/c ug/l	10	4/4/2000	
1.4 Dichleraber	12000		10		have	10	4/4/2000	
Disblassdiftussa		ND	10		hður Hall	10	4/4/2006	
		ND	10		µy/L	10	4/4/2006	
	ane		20		µg/L	10	4/4/2006	
	ene	<b>ט</b> א אס	10		hâur Hâur	10	4/4/2006	
1,2-Dichloropro	pane	ND	10		µg/L	10	4/4/2006	
1,3-Dichieropro	pane	ND	10		µg/L	10	4/4/2006	
2,2-Dichioropro	pane	ND	20		hð\r	10	4/4/2006	
1,1-Dichloropro	pene 	ND	10		hðvr	10	4/4/2006	
Hexachlorobula	idiene	ND	20		µg/L	10	4/4/2006	
2-Hexanone		ND	100		µg/L	10	4/4/2006	
Isopropylbenze	ne	ND	10		µg/L	10	4/4/2006	
4-Isopropyllolue	ene	ND	10		hð\r	10	4/4/2006	
4-Methyl-2-pen	lanone	ND	100		hð\r	10	4/4/2006	
Methylene Chio	nide	ND	30		µg/L	10	4/4/2006	
n-Butylbenzene	2	ND	10		μg/L	10	4/4/2006	
n-Propylbenzen	16	ND	10		havr	10	4/4/2006	
sec-Bulylbenze	ne	ND	20		hð\r	10	4/4/2006	
Styrene		ND	15		hð\r	10	4/4/2006	
tert-Butylbenze	ne	ND	10		µg/L	10	4/4/2006	
1,1,1,2-Tetrach	loroethane	ND	10		µg/L	10	4/4/2006	
1,1,2,2-Tetrach	loroethane	ND	10		μg/L	10	4/4/2006	
l etrachloroethe	ene (PGE)	ND	10		μg/L	10	4/4/2006	
trans-1,2-DCE		ND	10		μg/L 	10	4/4/2006	
trans-1,3-Dichlo	propropene	ND	10		hð\r	10	4/4/2006	
1,2,3-Trichlorob	enzene	ND	10		µg/∟	10	4/4/2006	
1,2,4-Trichlorob	benzene	ND	10		µg/L	10	4/4/2006	

* Value exceeds Maximum Contaminant Level

J

B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded

E Value above quantitation range

Analyte detected below quantitation limits

S Spike Recovery outside accepted recovery limits

Hall Envir	ronmental Analys	is Labora		Date: 12-Apr-06			
CLIENT:	Giant Refining Co	an a		C	Client Sample ID:	Eſſ	
Lab Order:	0603345				Collection Date: 3/30/2006 9:45:00 AM		
Project:	NMED Mnily & OCD	/ & OCD Qtly Samp 3/30/06			Date Received:	3/31/2	2006
Lab ID:	0603345-01				Matrix:		EOUS
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD	8260B: VOLATILES						Analyst: HLM
1,1,1-Trichloroe	ethane	ND	10		µg/L	10	4/4/2006
1,1,2-Trichlorod	ethane	ND	10		µg/L	1D	4/4/2006
Trichloroethene	e (TCE)	ND	10		µg/L	10	4/4/2006
Trichlarofluoror	nethane	ND	10		µg/L	10	4/4/2006
1,2,3-Trichlorop	propane	ND	20		µg/L	10	4/4/2006
Vinyl chloride		ND	10		µg/L	10	4/4/2006
Xylenes, Total		ND	30		µg/L	10	4/4/2006
Surr. 1,2-Dic	hloroethane-d4	101	69.9-130		%REC	10	4/4/2006
Surr: 4-Brom	nofluorobenzene	90.4	71.2-123		%REC	10	4/4/2006
Surr: Dibrom	ofluoromethane	108	57.3-135		%REC	10	4/4/2006
Surr: Toluen	e-d8	98.6	81.9-122		%REC	10	4/4/2006

* Value exceeds Maximum Contaminant Level Value above quantitation range

Е

Analyte detected below quantitation limits J

S Spike Recovery outside accepted recovery limits

- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Hall Envir		Date: 12-Apr-06					
CLIENT: Lab Order: Project: Lab ID:	Giant Refining Co 0603345 NMED Mntly & OCD 0603345-02	9 Qtly Samp 3/30/06			Client Sample ID: Collection Date: Date Received: Matrix:		S Eff 2006 10:10:00 AM 2006 EOUS
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE				·····		Analyst: SCC
Diesel Range C	Organics (DRO)	520	30		mg/L	10	4/4/2006 11:45:13 AM
Motor Oil Rang	e Organics (MRO)	ND	150		mg/L	10	4/4/2006 11:45:13 AM
Surr: DNOP		118	58-140		%REC	10	4/4/2006 11:45:13 AM
EPA METHOD	8015B: GASOLINE RANG	3E					Analyst: NSB
Gasoline Rang	e Organics (GRO)	64	12		mg/L	250	4/7/2006 1:41:57 PM
Surr. BFB	5	103	79.7-118		%REC	250	4/7/2006 1:41:57 PM
EPA METHOD	8260B: VOLATILES						Analyst: HLM
Benzene		8600	250		ug/L	250	4/4/2006
Toluene		12000	250		ug/L	250	4/4/2006
Ethvibenzene		790	250		ug/L	250	4/4/2006
Melhyl tert-buty	/l ether (MTBE)	1500	380		uo/L	250	4/4/2006
1 2 4-Trimethyl	benzene	1000	250		ua/I	250	4/4/2006
1.3.5-Trimelhyl	benzene	NÐ	250		uo/l	250	4/4/2006
1 2-Dichloroeth	ane (EDC)	ND	250		10/l	250	4/4/2006
1.2-Dibromoeth	iane (FDB)	ND	250		ug/i	250	4/4/2006
Nanhihalene		1100	500		uo/l	250	4/4/2006
1-Melhvinaphth	alene	ND	1000		49/5 40/1	250	4/4/2006
2-Melhyinaphth	alene	1200	1000		P9/5	250	4/4/2006
Acetone		42000	2500		pgrc un/l	250	4/4/2000
Bromohenzene		-2000 ND	250		10/l	250	4/4/2000
Bromachiarame	alhane		250		µg/L	250	4/4/2006
Bromadichloron	nelinane	ND	250		µg/L	250	4/4/2000
Bromoform			250		29/C	250	4/4/2000
Bromomelhane			500		pgrc vo/l	250	4/4/2000
2-Butanone		15000	2500		pgrc vg/l	250	4/4/2000
Carbon disulfide	<b>a</b>		2500		pg/L	200	4/4/2000
Carbon Tetrach	- Ioride		500		на.r по\	250	1/1/2000 ////2006
Chlornhenzene	lionue	ND	250		рg/с µg/I	250	4/4/2000
Chlornethane		ND	500		ra.e	250	1/4/2000 /////2006
Chloroform			250		ругс uo/l	200	4/4/2000 ////2000
Chloromethase			250		pgrc ua/l	250	4/4/2000
2.Chiorotoluene	<u>ـ</u>	ND	250		no/l	250	1/4/2000 ////2006
4-Chlorotoluona	,	עזי הא	250		rait in the second s	200	4/4/2000
ris-1 2-DCF			250		P9/C	250	4/4/2000 A/A/2006
rie_1 3-Dichloro	DIODEDO		200 250		ryr- uo/i	200	4/4/2000
1.2. Dibramo 2.4	chloronionane		500		ryr- uall	200 250	1/4/2000
Dibromochlo	notopoparie		250		ויייו	200	4/4/2000
Distantaction	петале	ND	200		ից/ե	250	4/4/2006

Qualifiers: * Value exceeds Maximum Contaminant Level

Н

В Analyte detected in the associated Method Blank Holding times for preparation or analysis exceeded

Е Value above quantitation range J

Analyte detected below quantitation limits S

Spike Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory				Date:	12-Apr-06			
CLIENT:	Giant Refining Co			CI	lient Sample ID:	NAPIS Eff		
Lab Order:	0603345	CD Qtly Samp 3/30/06			Collection Date:	: 3/30/2006 10:10:00 AM		
Project:	NMED Mntly & OCE				Date Received:	3/31/2	2006	
Lab ID: 0603345-02					Matrix:	AOUEOUS		
					** *			
Analyses	<u></u>	Result	PQL	Qual	Units	DF	Date Analyzed	
EPA METHOD	8260B: VOLATILES						Analyst: HLM	
Dibromometha	ne	ND	500		μg/L	250	4/4/2006	
1,2-Dichlorober	nzene	ND	250		μg/L	250	4/4/2006	
1,3-Dichlorober	пzепе	ND	250		μg/L	250	4/4/2006	
1,4-Dichlorober	nzene	ND	250		μα/Γ	250	4/4/2006	
Dichlorodifluoro	omethane	ND	250		μg/L	250	4/4/2006	
1,1-Dichloroeth	iane	ND	500		µg/L	250	4/4/2006	
1,1-Dichloroeth	iene	ND	250		hð\r	250	4/4/2006	
1,2-Dichloropro	opane	ND	250		μg/L	250	4/4/2006	
1,3-Dichloropro	opane	ND	250		μg/L	250	4/4/2006	
2,2-Dichloropro	opane	ND	500		нд/Г	250	4/4/2006	
1,1-Dichloropro	реле	ND	250		µg/L	250	4/4/2006	
Hexachiorobuta	adiene	ND	500		hð\r	250	4/4/2006	
2-Hexanone		ND	2500		µg/L	250	4/4/2006	
isopropylbenze	ene	ND	250		μg/L	250	4/4/2006	
4-Isopropyllolu	ene	ND	250		49/L	250	4/4/2006	
4-Melhyl-2-pen	lanone	ND	2500		μg/L	250	4/4/2006	
Methylene Chic	oride	ND	750		µg/L	250	4/4/2006	
n-Bulyibenzene	9	ND	250		µg/L	250	4/4/2006	
n-Propylbenzer	ne	ND	250		µg/L	250	4/4/2006	
sec-Butylbenze	ene	ND	500		µa/L	250	4/4/2006	
Styrene		ND	380		μο/L	250	4/4/2006	
tert-Butvibenze	ne	ND	250		ua/L	250	4/4/2006	
1.1.1.2-Tetrach	loroethane	ND	250		μο/L	250	4/4/2006	
1.1.2.2-Tetrach	loroethane	ND	250		ua/L	250	4/4/2006	
Tetrachloroethe	ene (PCE)	ND	250		ha/L	250	4/4/2006	
trans-1.2-DCE		ND	250		ug/L	250	4/4/2006	
trans-1.3-Dichlo	oropropene	ND	250		νσ/L	250	4/4/2006	
1.2.3-Trichlorot	benzene	ND	250		ua/L	250	4/4/2006	
1.2.4-Trichlorot	benzene	ND	250		μα/L	250	4/4/2006	
1.1.1-Trichloroe	elhane	ND	250		uo/L	250	4/4/2006	
1.1.2-Trichloroe	elhane	ND	250		ua/L	250	4/4/2006	
Trichloroethene	e (TCE)	ND	250		μg/L	250	4/4/2006	
Trichlorofluoror	melhane	ND	250		но/L	250	4/4/2006	
1.2.3-Trichloro	oropane	ND	500		ug/L	250	4/4/2006	
Vinvl chloride		ND	250		uo/L	250	4/4/2006	
Xvienes, Total		4700	750		ug/L	250	4/4/2006	
Surn 1.2-Dir	chloroelhane-d4	107	69.9-130		%REC	250	4/4/2006	
Surr: 4-Brom	nofluorobenzene	90.6	71,2-123		%REC	250	4/4/2006	
Sure Dibror	ofluoromethane	92.4	57,3-135		%REC	250	4/4/2006	
Surr: Toluen	ie-d8	102	81.9-122		%REC	250	4/4/2006	

1		
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Qualifiers: * Value exceeds Maximum Contaminant Level E

J

Value above quantitation range

В Analyte detected in the associated Method Blank Н Holding times for preparation or analysis exceeded

Analyte detected below quantitation limits

S Spike Recovery outside accepted recovery limits



Hall Envir	onmental Analys	Date: 12-Apr-06						
CLIENT:	CLIENT: Giant Refining Co			Client Sample ID	: AL-2	AL-2 to EP-1		
Lab Order: 0603345				Collection Date	: 3/30/	2006 10:30:00 AM		
Project:	roject: NMED Mntly & OCD Otly Samp 3/30/06 Date Receive		Date Received	: 3/31/	2006			
Lab ID:	0603345-03			Matrix	: AQU	EOUS		
Analyses		Result	PQL	Qual Units	DF	Date Analyzed		
EPA METHOD	8015B: DIESEL RANGE					Analyst: SCC		
Diesel Range C	Organics (DRO)	64	3.0	mg/L	1	4/4/2006 10:08:17 AM		
Motor Oil Rang	e Organics (MRO)	ND	15	ma/L	1	4/4/2006 10:08:17 AM		
Sur: DNOP	5	90.2	58-140	%REC	1.	4/4/2006 10:08:17 AM		
EPA METHOD	8015B: GASOLINE RANG	GE				Analyst: NSB		
Gasoline Rang	e Organics (GRO)	3.5	2.5	mg/L	50	4/7/2006 2:40:33 PM		
Surr: BFB		109	79.7-118	%REC	50	4/7/2006 2:40:33 PM		
EPA METHOD	7470: MERCURY	0.0047	0 00000	+ N		Analyst: CMC		
wercury		0.0017	0.00020	mg/L	3	4/5/2006		
EPA 6010: TO	TAL RECOVERABLE ME	TALS				Analyst: NMO		
Arsenic		ND	0.020	mg/L	1	4/11/2006 2:53:13 PM		
Barium		0.22	0.020	mg/L	1	4/11/2006 2:53:13 PM		
Cadmium		ND	0.0020	mg/L	1	4/11/2006 2:53:13 PM		
Chromium		0.010	0.0060	mg/L	1	4/11/2006 2:53:13 PM		
Lead		0.011	0.0050	mg/L	1	4/11/2006 2:53:13 PM		
Selenium		ND	0.050	mg/L	1	4/11/2006 2:53:13 PM		
Silver		ND	0.0050	mg/L	1	4/11/2006 6:06:18 PM		
FPA METHOD	8260B- VOLATILES							
Benzene	DZOUD. VOLATILLO	210	50	ua/l	50			
Toluene		440	50	pgrc un/l	50	4/4/2000		
Ethylbenzene		60	50	µg/L	50	4/4/2006		
Methvi tert-butv	l ether (MTBE)	ND	75	P9/-	50	4/4/2006		
1.2.4-Trimethyl	benzene	170	50	ug/L	50	4/4/2006		
1,3,5-Trimethyl	benzene	ND	50	ua/L	50	4/4/2006		
1,2-Dichloroeth	ane (EDC)	ND	50	μα/L	50	4/4/2006		
1,2-Dibromoeth	ane (EDB)	ND	50	μg/L	50	4/4/2006		
Naphthalene	· -	200	100	ug/L	50	4/4/2006		
1-Methylnaphth	alene	410	200	μg/L	50	4/4/2006		
2-Methylnaphth	alene	620	200	μα/Γ	50	4/4/2006		
Acetone		2500	500	µg/L	50	4/4/2006		
Bromobenzene	1	ND	50	μg/L	50	4/4/2006		
Bromochlorome	elhane	ND	50	μg/L	50	4/4/2006		
Bromodichlorur	nelhane	ND	50	hð\r	50	4/4/2006		
Bromoform		ND	50	μg/L	50	4/4/2006		
Bromomethane	:	ND	100	µg/L	50	4/4/2005		

J

Value above quantitation range

Analyte detected below quantitation limits

Spike Recovery outside accepted recovery limits S

В Analyte detected in the associated Method Blank

Н Holding times for preparation or analysis exceeded

Value exceeds Maximum Contaminant Level E

Hall Environmental Analysis Laboratory					Date: 12-Apr-06				
CLIENT:	Giant Refining Co			C	lient Sample ID:	AL-2	to EP-1		
Lab Order:	0603345				<b>Collection Date:</b>	3/30/2	006 10:30:00 AM		
Project:	NMED Mntly & OCE	Otly Samp 3/	30/06		Date Received:	3/31/2	006		
Lob ID.	0602345.02				Matrix:	AOUT	EOUS		
Cap 10:	0003343-03								
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed		
EPA METHOD	8260B: VOLATILES						Analyst: HL		
2-Bulanone		820	500		µg/L	50	4/4/2006		
Carbon disulfide	e	ND	500		hð\r	5D	4/4/2006		
Carbon Tetrach	nloride	ND	100		μg/L	50	4/4/2006		
Chlorobenzene		ND	50		μg/L	50	4/4/2006		
Chloroelhane		ND	100		µg/L	50	4/4/2006		
Chloroform		ND	50		µg/L	50	4/4/2006		
Chloromethane	2	ND	50		µg/L	50	4/4/2006		
2-Chlorotoluena	8	ND	50		µg/L	50	4/4/2006		
4-Chlorotoluene	9	ND	50		μg/L	50	4/4/2006		
cis-1,2-DCE		ND	50		µg/L	50	4/4/2006		
cis-1,3-Dichloro	propene	ND	50		µg/L	50	4/4/2006		
1,2-Dibromo-3-(	chloropropane	ND	100		µg/L	50	4/4/2006		
Dibromochloror	nelhane	ND	. 50		hð\r	50	4/4/2006		
Dibromomelhar	ne	ND	100		µg/L	50	4/4/2006		
1,2-Dichlorober	nzene	ND	50		µg/L	50	4/4/2006		
1,3-Dichlorober	тгепе	ND	50		µg/L	50	4/4/2006		
1,4-Dichlorober	nzene	ND	50		µg/L	50	4/4/2006		
Dichlorodifluoro	omethane	ND	50		µg/L	50	4/4/2006		
1,1-Dichloroeth	ane	ND	100		µg/L	50	4/4/2006		
1,1-Dichloroeth	ene	ND	50		µg/L	50	4/4/2006		
1,2-Dichloropro	pane	ND	50		µg/L	50	4/4/2006		
1,3-Dichloropro	pane	ND	50		µg/L	50	4/4/2006		
2,2-Dichloropro	pane	ND	100		µg/L	50	4/4/2006		
1,1-Dichloropro	pene	ND	50		µg/L	50	4/4/2006		
Hexachlorobuta	adiene	ND	100		µg/L	50	4/4/2006		
2-Hexanone		ND	500		µg/L	50	4/4/2006		
Isopropylbenze	ne	ND	50		μg/L	50	4/4/2006		
4-Isopropyltolue	ene	ND	50		µg/L	50	4/4/2006		
4-Methyl-2-pent	апопе	ND	500		μg/L	50	4/4/2006		
Methylene Chlo	pride	ND	150		µg/L	50	4/4/2006		
n-Butylbenzene	3	ND	50		µg/L	50	4/4/2006		
n-Propylbenzer	ne	ND	50		µg/L	50	4/4/2006		
sec-Bulylbenze	ne	ND	100		µg/L	50	4/4/2005		
Styrene		ND	75		μg/L	50	4/4/2006		
tert-Butylbenzer	ne	ND	50		μg/L	50	4/4/2006		
1,1,1,2-Tetrach	loroelhane	ND	50		µg/L	50	4/4/2006		
1,1,2,2-Telrach	loroethane	ND	50		μg/L	50	4/4/2006		
Tetrachloroethe	ene (PCE)	ND	50		µg/L	50	4/4/2006		
trans-1,2-DCE		ND	50		μg/L	50	4/4/2006		
trans-1.3-Dichir	oropropene	ND	50		µg/L	50	4/4/2006		

S

Analyte detected below quantitation limits

Spike Recovery outside accepted recovery limits

Value exceeds Maximum Contaminant Level Ε

В Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded

Value above quantitation range J

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Date: 12-Apr-06

CLIENT:	Giant Refining Co			Client Sampl	eID: AL-2	2 to EP-1
Lab Order:	0603345			Collection 2	Date: 3/30/	2006 10:30:00 AM
Project:	NMED Mntly & OCE	Qtly Samp 3	/30/06	Date Rece	ived: 3/31/	2006
Lab ID:	0603345-03			Ma	trix: AQU	IEOUS
Analyses		Result	PQL (	Qual Units	DF	Date Analyzed
EPA METHOD	8260B: VOLATILES					Analyst: HLM
1,2,3-Trichlarob	enzene	ND	50	μg/L	50	4/4/2006
1,2,4-Trichlorob	Jenzene	ND	50	µg/L	50	4/4/2006
1,1,1-Trichloroe	alhane	ND	50	µg/L	50	4/4/2006
1,1,2-Trichloroe	ethane	ND	50	μg/L	50	4/4/2006
Trichloroelhene	e (TCE)	ND	50	µg/L	50	4/4/2006
Trichlorolluoron	nelhane	ND	50	µg/L	50	4/4/2006
1,2,3-Trichlorop	propane	ND	100	рgЛ	50	4/4/2006
Vinyl chloride		ND	50	µg/L	50	4/4/2006
Xylenes, Total		430	150	µg/L	50	4/4/2006
Surr. 1,2-Dic	hloroelhane-d4	94.5	69.9-130	%REC	50	4/4/2006
Sun: 4-Brom	oliuorobenzene	84.4	71.2-123	%REC	50	4/4/2006
Surr. Dibrom	ofluoromelhane	105	57.3-135	%REC	50	4/4/2006
Surr: Tolueni	e-d8	96.4	81.9-122	%REC	50	4/4/2006

Qualifiers:

*

Value exceeds Maximum Contaminant Level Value above quantitation range

E Value above quantitation rangeJ Analyte detected below quantitation limits

J Analyte detected below quantitation limitsS Spike Recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded

	Explanation of codes					
В	Analyte Detected in Method Blank					
E	Result is Estimated					
н	Analyzed Out of Hold Time					
Ν	Tentatively Identified Compound					
S	Subcontracted					
1-9	See Foolnole					

STANDARD

Assaigai Analytical Laboratories, Inc.

NM 87109-4372

# Certificate of Analysis

All samples are reported on an "as received" basis, unless otherwise noted (i.e. - Dry Weight).

Client:	HALL ENV	IRONM	IENTAL									
Project:	0603345											
Order:	0603760	HAL	03	Receipt:	03-31-06	William	n P., Blava: Presi	dent of Assalg	al Analytical Labi	oratories, In	с.	
Sample:	0603345-0	1D/PIL	OT EFF		(	Collected: 03-3	30-06 9:45:0	0 By:				
Matrix:	AQUEOUS	;										
								Dilution	Detection		Prep	Flun
QC Group	o Run Se	quence	CAS #		Analyte	Result	Units	Factor	Limit	Code	Date	Date
0603769-0	0001A		EPA 405.1	l Biochemi	cal Oxygen Demand				By:	NJL		
BOD06041	WC.2008	6.856.15	10-26-4	Bloche	mical Oxygen Demand	886	mg/L	1	2		03-31-06	04-05-06

Unless otherwise noted, all samples were received in acceptable condition and all sampling was performed by client or client representative. Sample result of ND indicates Not Detected, is result is less than the sample specific Detection Limit. Sample specific Detection Limit is determined by multiplying the sample Dilution Factor by the listed Reporting Detection Limit. All results relate only to the items tested. Any miscellaneous workorder information or foonotes will appear below.

Analytical results are not corrected for method blank or field blank contamination.

HALL ENVIRONMENTAL attn: ANDY FREEMAN 4901 HAWKINS NE, SUITE D

ALBUQUERQUE



# COVER LETTER

Friday, November 17, 2006

Steve Morris Giant Refining Co Rt. 3 Box 7 Gallup, NM 87301

TEL: (505) 722-3833 FAX (505) 722-0210

RE: Annual GW Samples 2006 Ciniza

Dear Steve Morris:

Order No.: 0611016

Hall Environmental Analysis Laboratory, Inc. received 7 sample(s) on 11/1/2006 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109 505.345.3975 ■ Fax 505.345.4107 www.hallenvironmental.com

CLIENT:Giant Refining CoLab Order:0611016Project:Annual GW SamplLab ID:0611016-01		s 2006 Ciniza		C	lient Sample ID: Collection Date: Date Received: Matrix:	BW-1C 10/28/2006 10:15:00 AM 11/1/2006 AOUEOUS		
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed	
EPA METHOD	) 300.0: ANIONS		·····			· · · · · · · · · · · · · · · · · · ·	Analyst: TES	
Fluoride		2.7	0.10		ma/L	1	11/4/2006 2:16:52 AM	
Chloride		36	0.10		mg/l	1	11/4/2006 2:16:52 AM	
Nitrate (As N)-	+Nitrite (As N)	ND	0.50		ma/L	5	11/4/2006 2:34:16 AM	
Phosphorus, C	Orthophosphate (As P)	ND	0.50	н	ma/l	1	11/4/2006 2:16:52 AM	
Sulfate		250	2.5		mg/L	5	11/6/2006 3:31:36 PM	
	7470: MERCURY						Analyst: MAP	
Mercury		ND	0.00020		mg/L	1	11/14/2006	
EPA 6010B: T		METALS					Analyst: NMC	
Arsenic		ND	0.020		mg/L	1	11/15/2006 8:26:20 PM	
Barium		ND	0.020		mg/L	1	11/15/2006 8:26:20 PM	
Cadmium		ND	0.0020		mg/L	1	11/15/2006 8:26:20 PM	
Calcium		3.4	1.0		mg/L	1	11/15/2006 8:26:20 PM	
Chromium		0.011	0.0060		mg/L	1	11/15/2006 8:26:20 PM	
Lead		ND	0.0050		mg/L	1	11/15/2006 8:26:20 PM	
Magnesium		ND	1.0		mg/L	1	11/15/2006 8:26:20 PM	
Potassium		ND	1.0		mg/L	1	11/15/2006 8:26:20 PM	
Selenium		ND	0.050		mg/L	1	11/15/2006 8:26:20 PM	
Silver		ND	0.0050		mg/L	1	11/15/2006 8:26:20 PM	
Sodium		320	10		mg/L	10	11/16/2006 10:44:19 Al	
ЕРА МЕТНОГ	8270C: SEMIVOLATILE	ES					Analyst: <b>BL</b>	
Acenaphthene		ND	10		µg/L	1	11/14/2006	
Acenaphthyler	ne	ND	10		µg/L	1	11/14/2006	
Aniline		ND	20		µg/L	1	11/14/2006	
Anthracene		ND	10		µg/L	1	11/14/2006	
Azobenzene		ND	10		µg/Ľ	1	11/14/2006	
Benz(a)anthra	cene	ND	15		µg/L	1	11/14/2006	
Benzo(a)pyrer	ne	ND	15		µg/L	1	11/14/2006	
Benzo(b)fluora	anthene	ND	15		µg/L	1	11/14/2006	
Benzo(g,h,i)pe	erylene	ND	10		µg/L	1	11/14/2006	
Benzo(k)fluora	anthene	ND	10		µg/L	1	11/14/2006	
Benzoic acid		ND	50		µg/L	1	11/14/2006	
Benzyl alcoho	1	ND	20		µg/L	1	11/14/2006	
Bis(2-chloroet	hoxy)methane	ND	10		µg/L	1	11/14/2006	
Bis(2-chloroet	hyl)ether	ND	15		µg/L	1	11/14/2006	
Bis(2-chlorois	opropyl)ether	ND	15		µg/L	1	11/14/2006	
DIS(2-ethylnex		NU	15		нд/г 	٦ 	11/14/2006	
Qualifiers:	<ul> <li>Value exceeds Maximum</li> </ul>	n Contaminant Leve	el		B Analyte detected	d in the as	ssociated Method Blank	
	E Value above quantitation	1 range			H Holding times f	or prepara	ation or analysis exceeded	
	J Analyte detected below of	quantitation limits		Ν	ACL Maximum Cont	aminant L	_evel	
	S Spike recovery outside a	ccepted recovery lin	mits <b>1</b> / 4 '	,	KL Reporting Limit		Page 1 c	

Date: 17-Nov-06

CLIENT:	Giant Refining Co			<b>Client Sample ID:</b>	BW-1	С
Lab Order: 0611016			Collection Date:	10/28/2006 10·15·00 AM		
roject:	Annual GW Samples 2	2006 Ciniza		Date Received:	11/1/2	2006
sh ID.	0611016 01			Date Receiveu. Matrix:		
ad ID:	0011010-01		· ·			
nalyses		Result	PQL Q	ual Units	DF	Date Analyzed
PA METHOD	8270C: SEMIVOLATILES	5				Analyst: B
4-Bromophenyl	phenyl ether	ND	10	µg/L	1	11/14/2006
Butyl benzyl pht	halate	ND	15	µg/L	1	11/14/2006
Carbazole		ND	10	µg/L	1	11/14/2006
4-Chloro-3-meth	hylphenol	ND	20	µg/L	1	11/14/2006
4-Chloroaniline		ND	20	µg/L	1	11/14/2006
2-Chloronaphth	alene	ND	10	µg/L	1	11/14/2006
2-Chlorophenol		ND	10	µg/L	1	11/14/2006
4-Chlorophenyl	phenyl ether	ND	15	µg/L	1	11/14/2006
Chrysene		ND	15	µg/L	1	11/14/2006
Di-n-butyl phtha	late	ND	10	µg/L	1	11/14/2006
Di-n-octyl phtha	late	ND	15	µg/L	1	11/14/2006
Dibenz(a,h)anth	iracene	ND	10	µg/L	1	11/14/2006
Dibenzofuran		ND	10	µg/L	1	11/14/2006
1,2-Dichloroben	zene	ND	10	µg/L	1	11/14/2006
1,3-Dichloroben	zene	ND	10	µg/L	1	11/14/2006
1,4-Dichloroben	izene	ND	10	µg/L	1	11/14/2006
3,3'-Dichlorobe	nzidine	ND	15	μg/L	1	11/14/2006
Diethyl phthalat	e	ND	10	µg/L	1	11/14/2006
Dimethyl phthal	ate	ND	10	µg/L	1	11/14/2006
2,4-Dichlorophe	enol	ND	10	µg/L	1	11/14/2006
2,4-Dimethylphe	enol	ND	10	να/L	1	11/14/2006
4.6-Dinitro-2-me	ethylphenol	ND	50	ua/L	1	11/14/2006
2.4-Dinitrophen	ol	ND	50	ua/L	1	11/14/2006
2.4-Dinitrotolue	ne	ND	10	μα/L	1	11/14/2006
2.6-Dinitrotolue	ne	ND	10	µg/l	1	11/14/2006
Fluoranthene		ND	10	µg/=	1	11/14/2006
Fluorene		ND	10	ua/l	1	11/14/2006
Hexachloroben	zene	ND	10	ua/L	1	11/14/2006
Hexachlorobuta	diene	ND	10	ua/L	1	11/14/2006
Hexachlorocycle	opentadiene	ND	10	ua/l	1	11/14/2006
Hexachloroetha	ine	ND	10	ua/L	1	11/14/2006
Indeno(12.3-cc	)pyrene	ND	10	µa/L	1	11/14/2006
Isophorone	<i>n y</i> ====	ND	10	ua/L	1	11/14/2006
2-Methvlnaphth	alene	ND	10	ua/L	1	11/14/2006
2-Methvlohenol		ND	15	ua/L	` 1	11/14/2006
3+4-Methvlohe	nol	ND	20	ua/l	1	11/14/2006
N-Nitrosodi-n-n	ropylamine	ND	-0 10	uo/)	, 1	11/14/2000
N-Nitrosodimet	hvlamine	ND	10	10/l	, 1	11/14/2000
N-Nitrosodinber	nylamine	ND	10	P9'E	1	11/14/2000
	nyionneic		10	руг. 110/1	1	11/14/2000

E Value above quantitation range

Analyte detected below quantitation limits J

ND Not Detected at the Reporting Limit

н Holding times for preparation or analysis exceeded

- MCL Maximum Contaminant Level RL Reporting Limit

Spike recovery outside accepted recovery limits 2/42 S

^{*} Value exceeds Maximum Contaminant Level

CLIENT:	Giant Refining Co		(	Client Sample ID:	BW-1	С
Lab Order:	0611016			<b>Collection Date:</b>	10/28/	/2006 10:15:00 AM
Project: Annual GW Samples		06 Ciniza		Date Received:	11/1/2	006
Lab ID:	0611016-01			Matrix:	AQUI	EOUS
Analyses	·	Result	PQL Qual	Units	DF	Date Analyzed
EPA METHOD 82	70C: SEMIVOLATILES					Analyst: BL
2-Nitroaniline		ND	50	µg/L	1	11/14/2006
3-Nitroaniline		ND	50	µg/L	1	11/14/2006
4-Nitroaniline		ND	20	µg/L	1	11/14/2006
Nitrobenzene		ND	10	µg/L	1	11/14/2006
2-Nitrophenol		ND	15	µg/L	1	11/14/2006
4-Nitrophenol		ND	50	µg/L	1	11/14/2006
Pentachlorophenol		ND	50	ug/L	1	11/14/2006
Phenanthrene		ND	10	ua/L	1	11/14/2006
Phenol		ND	10	ua/L	1	11/14/2006
Pvrene		ND	15	ua/L	1	11/14/2006
Pyridine		ND	30	µg/L	1	11/14/2006
1 2 4-Trichlorobenz	7ene	ND	10	μg/L	1	11/14/2006
2 4.5-Trichloropher		ND	10	µg/L	1	11/14/2006
2 4 6-Trichloropher		ND	15	µg/L	1	11/14/2006
Surr: 2.4.6-Tribri	omophenol	53.3	16 6-150	%REC	1	11/14/2006
Surr: 2-Eluorobir	henvl	63.4	19 6-134	%REC	1	11/14/2006
Surr: 2-Eluoroph	enol	40.2	9 54-113	%REC	1	11/14/2006
Surr: 4-Teroben	wl-d14	66.1	22 7-145	%REC	1	11/14/2006
Surr: Nitrobenze		61.4	14 6-134	%REC	1	11/14/2006
Surr: Phenol-d5		29.4	10.7-80.3	%REC	1	11/14/2006
PARMETHOD 02	OUD. VOLATILES	ND	1.0	200	4	Analyst: LIVIN
Tolyono		ND	1.0	pg/L	1	11/7/2000
Ethylhonzono		ND	1.0	µg/L	1	11/7/2000
Motbul tort butul of			1.0	µg/L	1	11/7/2006
1.2.4 Trimothylbon		ND	1.5	µg/L	1	11/7/2006
1,2,4-Trimethylben		ND	1.0	µg/L	1	11/7/2006
1,3,5- mineinyiden		ND	1.0	µg/L	1	11/7/2006
1.2 Dibromoethane			1.0	µg/L	1	11/7/2006
Naabtbalana	3 (CDB)		2.0	µg/L	1	11/7/2006
1 Mothulaashthala	20		2.0	µg/L	1	11/7/2006
2. Methylopobtbolo	ne		4.0	hður noll	1	11/7/2000
			4.0	ру/ц ио/I	ו 1	11/7/2000
Bromobonzono			10	µy/L	1	11/7/2000
Bromochloromoth		סאי	1.0	µу/∟ 	1	11/7/2000
Bromodiobloromot	hane		1.0	μg/L	1	11/7/2000
Bromoform	llaue		1.0	μg/L	1	11/7/2006
Bromomotheste			1.0	µg/L	1	11/7/2006
2-Butanone		םא חוא	2.U 10	μg/L ug/l	1	11/7/2006
		שאו		ру.г		
Qualifiers: *	Value exceeds Maximum Co	ontaminant Lev	el	B Analyte detected	in the a	ssociated Method Blank
E	Value above quantitation rat	nge		H Holding times fo	or prepar	ation or analysis exceeded
1	Analyte detected below qua	ntitation limits		MCL Maximum Cont	aminant	Level

RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 17-Nov-06

S Spike recovery outside accepted recovery limits 3/42


Date: 17-Nov-06

CLIENT:	Giant Refining Co	Client Sample ID	: BW-1	С
Lab Order:	0611016	Collection Date	: 10/28/	2006 10:15:00 AM
Project:	Annual GW Samples 2006 Ciniza	Date Received	: 11/1/2	006
Lab ID:	0611016-01	Matrix	: AQUE	EOUS
Analyses	Result	POL Oual Units	DF	Date Analyzed

EPA METHOD 8260B: VOLATILES					Analyst: LMM	
Carbon disulfide	ND	10	µg/L	1	11/7/2006	
Carbon Tetrachloride	ND	2.0	µg/L	1	11/7/2006	
Chlorobenzene	ND	1.0	µg/L	1	11/7/2006	
Chloroethane	ND	2.0	µg/L	1	11/7/2006	
Chloroform	ND	1.0	µg/L	1	11/7/2006	
Chloromethane	ND	1.0	µg/L	1	11/7/2006	
2-Chlorotoluene	ND	1.0	µg/L	1	11/7/2006	
4-Chlorotoluene	ND	1.0	µg/L	1	11/7/2006	
cis-1,2-DCE	ND	1.0	µg/L	1	11/7/2006	
cis-1,3-Dichloropropene	ND	1.0	µg/L	1	11/7/2006	
1,2-Dibromo-3-chloropropane	ND	2.0	µg/L	1	11/7/2006	
Dibromochloromethane	ND	1.0	hð\r	1	11/7/2006	
Dibromomethane	ND	2.0	µg/L	1	11/7/2006	
1,2-Dichlorobenzene	ND	1.0	µg/L	1	11/7/2006	
1,3-Dichlorobenzene	ND	1.0	µg/L	1	11/7/2006	
1,4-Dichlorobenzene	ND	1.0	µg/L	1	11/7/2006	
Dichlorodifluoromethane	ND	1.0	µg/L	1	11/7/2006	
1,1-Dichloroethane	ND	2.0	µg/L	1	11/7/2006	
1,1-Dichloroethene	ND	1.0	μg/L	1	11/7/2006	
1,2-Dichloropropane	ND	1.0	µg/L	1	11/7/2006	
1,3-Dichloropropane	ND	1.0	μg/L	1	11/7/2006	
2,2-Dichloropropane	ND	2.0	µg/L	1	11/7/2006	
1,1-Dichloropropene	ND	1.0	µg/L	1	11/7/2006	
Hexachlorobutadiene	ND	2.0	µg/L	1	11/7/2006	
2-Hexanone	ND	10	µg/L	1	11/7/2006	
Isopropylbenzene	ND	1.0	μg/L	1	11/7/2006	
4-Isopropyltoluene	ND	1.0	µg/L	1	11/7/2006	
4-Methyl-2-pentanone	ND	10	hð\r	1	11/7/2006	
Methylene Chloride	ND	3.0	hð\r	1	11/7/2006	
n-Butylbenzene	ND	1.0	µg/L	1	11/7/2006	
n-Propylbenzene	ND	1.0	µg/L	1	11/7/2006	
sec-Butylbenzene	ND	2.0	hð\r	1	11/7/2006	
Styrene	ND	1.5	μg/L	1	11/7/2006	
tert-Butylbenzene	ND	1.0	µg/L	1	11/7/2006	
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1	11/7/2006	
1,1,2,2-Tetrachloroethane	ND	1.0	µg/L	1	11/7/2006	
Tetrachloroethene (PCE)	ND	1.0	µg/L	1	11/7/2006	
trans-1,2-DCE	ND	1.0	µg/L	1	11/7/2006	
trans-1,3-Dichloropropene	ND	1.0	µg/L	1	11/7/2006	
1,2,3-Trichlorobenzene	ND	1.0	µg/L	1.	11/7/2006	

Qualifiers:

* Value exceeds Maximum Contaminant Level

E Value above quantitation range

- ----

S

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

Spike recovery outside accepted recovery limits 4 / 42

B Analyte detected in the associated Method Blank

MCL Maximum Contaminant Level

RL Reporting Limit

H Holding times for preparation or analysis exceeded

CLIENT: Lab Order: Project: Lab ID:	Giant Refining Co 0611016 Annual GW Samples 20 0611016-01	)06 Ciniza	(	Client Sample ID: Collection Date: Date Received: Matrix:	BW-1C 10/28/2006 10:15:00 AM 11/1/2006 AQUEOUS	
Analyses		Result	PQL Qua	Units	DF	Date Analyzed
EPA METHOD	8260B: VOLATILES					Analyst: LMM
1,2,4-Trichlorot	penzene	ND	1.0	μg/L	1	11/7/2006
1,1,1-Trichloroe	ethane	ND	1.0	µg/L	1	11/7/2006
1,1,2-Trichloroe	ethane	ND	1.0	µg/L	1	11/7/2006
Trichloroethene	e (TCE)	ND	1.0	µg/L	1	11/7/2006
Trichlorofluoror	methane	ND	1.0	µg/L	1	11/7/2006
1,2,3-Trichlorog	propane	ND	2.0	µg/L	1	11/7/2006
Vinyl chloride		ND	1.0	µg/L	1	11/7/2006
Xylenes, Total		ND	3.0	µg/L	1	11/7/2006
Surr: 1,2-Dic	chloroethane-d4	97.3	69.9-130	%REC	1	11/7/2006
Surr: 4-Brom	ofluorobenzene	97.8	75-139	%REC	1	11/7/2006
Surr: Dibrom	ofluoromethane	105	57.3-135	%REC	1	11/7/2006
Surr: Toluen	e-d8	90.9	81.9-122	%REC	1	11/7/2006
EPA 120.1: SP	ECIFIC CONDUCTANCE					Analyst: CMS
Specific Condu	ctance	1400	0.010	µmhos/cm	1	11/1/2006
EPA METHOD	150.1: PH					Analyst: CMS
рH		8.72	0.010	pH units	1	11/1/2006

Date: 17-Nov-06

Qualifiers:

* Value exceeds Maximum Contaminant Level

E Value above quantitation range

- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits 5 / 4
- B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

- MCL Maximum Contaminant Level
- RL Reporting Limit

CLIENT:	Giant Refining Co			C	lient Sample II	<b>D:</b> BW-2	2A		
Lab Order:	0611016				<b>Collection Dat</b>	e: 10/28	10/28/2006 11:30:00 AM 11/1/2006		
Project:	Annual GW Samples 2	2006 Ciniza			Date Receive	d: 11/1/2			
Lab ID:	0611016-02				Matri	x: AQU	EOUS		
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed		
EPA METHOD	300 0' ANIONS						Analyst: TES		
Fluoride		1.3	0.10		mg/L	1	11/4/2006 2:51:41 AM		
Chloride		39	0.50		ma/L	5	11/6/2006 3:49:00 PM		
Nitrate (As N)+I	Nitrite (As N)	ND	0.50		ma/L	5	11/4/2006 3:09:05 AM		
Phosphorus, Or	rthophosphate (As P)	0.64	0.50	н	ma/L	1	11/4/2006 2:51:41 AM		
Sulfate		7.5	0.50		mg/L	1	11/4/2006 2:51:41 AM		
							Analyst: MAR		
Marcuny	THIO. MERCORT	ND	0 00020		ma/l	1	11/14/2006		
Wercury		NO	. 0.00020		ing/E	I	11/14/2000		
EPA 6010B: TO	OTAL RECOVERABLE M	ETALS					Analyst: NMC		
Arsenic		ND	0.020		mg/L	1	11/15/2006 8:32:14 PM		
Barium		0.15	0.020		mg/L	1	11/15/2006 8:32:14 PN		
Cadmium		ND	0.0020		mg/L	1	11/15/2006 8:32:14 PN		
Calcium		9.7	1.0		mg/L	1	11/15/2006 8:32:14 PM		
Chromium		ND	0.0060		mg/L	1	11/15/2006 8:32:14 PN		
Lead		ND	0.0050		mg/L	1	11/15/2006 8:32:14 PM		
Magnesium		3.5	1.0		mg/L	1	11/15/2006 8:32:14 PN		
Potassium		ND	1.0		mg/L	1	11/15/2006 8:32:14 PN		
Selenium		ND	0.050		mg/L	1	11/15/2006 8:32:14 PM		
Silver		ND	0.0050		mg/L	1	11/15/2006 8:32:14 PM		
Sodium		340	10		mg/L	10	11/16/2006 10:47:22 A		
EPA METHOD	8270C: SEMIVOLATILES	5					Analyst: BI		
Acenaphthene		ND	10		µg/L	1	11/14/2006		
Acenaphthylen	e	ND	10		hð\r	1	11/14/2006		
Aniline		ND	20		hð\r	1	11/14/2006		
Anthracene		ND	10		µg/L	1	11/14/2006		
Azobenzene		ND	10		µg/L	1	11/14/2006		
Benz(a)anthrac	cene	ND	15		μg/L	1	11/14/2006		
Benzo(a)pyrene	e	ND	15		μg/L	1	11/14/2006		
Benzo(b)fluorar	nthene	ND	15		µg/L	1	11/14/2006		
Benzo(g,h,i)per	rylene	ND	10		µg/L	1	11/14/2006		
Benzo(k)fluorar	nthene	ND	10		µg/L	1	11/14/2006		
Benzoic acid		ND	50		µg/L	1	11/14/2006		
Benzyi alcohol		ND	20		µg/L	1	11/14/2006		
Bis(2-chloroeth	noxy)methane	ND	10		µg/L	1	11/14/2006		
Bis(2-chloroeth	yl)ether	ND	15		µg/L	1	11/14/2006		
Bis(2-chloroiso	propyl)ether	ND	15		μg/L	1	11/14/2006		
Bis(2-ethylhexy	yl)phthalate	ND	15		µg/L	1	11/14/2006		
Qualifiers:	* Value exceeds Maximum	Contaminant Lev	el		B Analyte deter	ted in the a	ssociated Method Blank		
	E Value above quantitation a	ange			H Holding time	s for prepar	ation or analysis exceeded		
	J Analyte detected below qu	antitation limits		١	ACL Maximum Co	ontaminant	Level		
٢	ND Not Detected at the Repor	ling Limit			RL Reporting Li	mit	m - 1		
	S Spike recovery outside acc	epted recovery li	$\frac{1}{6}/42$	2			Page 6 c		

Date: 17-Nov-06

Hall Environmental Analysis Laboratory, Inc. Date:						17-Nov-06		
CLIENT:	Giant Refining Co			Client Sample ID:	BW-2	A		
Lab Order:	0611016			10/28/2006 11:30:00 AM				
Project.	Annual GW Samples	2006 Ciniza		Data Rassivad	11/1/	2000 11.20100 12.2		
Allitation Samp		Looo Chinza		Date Received:				
Lab ID:	0611016-02				AQU			
Analyses		Result	PQL Q	ual Units	DF	Date Analyzed		
EPA METHOD	8270C: SEMIVOLATILES	5				Analyst: B		
4-Bromophenyl	I phenyl ether	ND	10	µg/L	1	11/14/2006		
Butyl benzyl ph	nthalate	ND	15	µg/L	1	11/14/2006		
Carbazole		ND	10	µg/L	1	11/14/2006		
4-Chloro-3-met	thylphenol	ND	20	µg/L	1	11/14/2006		
4-Chloroaniline	)	ND	20	μg/L	1	11/14/2006		
2-Chloronaphth	nalene	ND	10	μg/L	1	11/14/2006		
2-Chloropheno	1	ND	10	μg/L	1	11/14/2006		
4-Chlorophenv	l phenyl ether	ND	15	μg/L	1	11/14/2006		
Chrysene	· •	ND	15	μg/L	1	11/14/2006		
Di-n-butyl phth	alate	ND	10	ua/L	1	11/14/2006		
Di-n-octvl phtha	alate	ND	15	uo/L	1	11/14/2006		
Dibenz(a h)ant	hracene	ND	10	µg/l	1	11/14/2006		
Dibenzofuran		ND	10	P9/-	1	11/14/2006		
1 2-Dichlorobe	nzene	ND	10	µg/L	1	11/14/2006		
1.3-Dichlorobe	nzene	ND	10	μg/L	1	11/14/2006		
1.4-Dichlorobe	nzene	ND	10	р <u>д</u> /с	1	11/14/2006		
3 3'-Dichlorobe	nzidine	ND	15	pg/c	1	11/14/2006		
Diethyl nhthala	ite	ND	10	µg/L	1	11/14/2006		
Dimethyl ohtha	late	ND	10	µg/L	1	11/14/2006		
2.4-Dicbloroph	enol	ND	10	µg/L	1	11/14/2006		
2.4-Dimethylph		ND	10	μg/L	1	11/14/2006		
4.6-Dinitro-2-m	ethylobenol	ND	50	р <u>9</u> /L	1	11/14/2000		
2.4.Dinitropher	ol	ND	50	µg/L	1	11/14/2006		
2.4-Dinitropher			10	μ <u>υ</u> /L	1	11/14/2000		
2.6-Dipitrotoluc			10	pg/L	1	11/14/2000		
Eluoranthana	סווכ	עא סא	10	μg/t ug/l	1	11/14/2006		
Fluoranthene			10	µg/∟	1	11/14/2006		
Hevachlorobon	17000	טא סא	10	μg/L	1	11/14/2006		
Hevechlorobut	adiana	<b>ח</b> א חוא	10	μg/L μg/l	1	11/14/2006		
Hexachloroouc	lonentadiene		10	µg/L	1	11/14/2000		
Hevechorooth	ano	םא חוא	10	μg/L	1	11/14/2000		
	d)pyrene		10	pg/L	1	11/14/2000		
Indeno(1,2,3-0	аурунене	<b>ט</b> או חוא	10	µg/L	1	11/14/2006		
2 Mothulaacht	balana		10	µg/L	1	11/14/2006		
2-ivieu iyinaphu			10	µg/L	1	11/14/2006		
			CI	µg/∟	1	11/14/2006		
S+4-ivietnyiphe			20	µg/L	1	11/14/2006		
	biopyramine		10	µg/∟	1	11/14/2006		
N-Nitrosodime	inyiamine	ND	10	hð\r h	1	11/14/2006		
N-Nitrosodiphe	enylamine	ND	10	hð\r	1	11/14/2006		
Naphthalene		ND	10	µg/L	1	11/14/2006		

Qualifiers: * Value exceeds Maximum Contaminant Level

Е Value above quantitation range

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits B Analyte detected in the associated Method Blank

· H Holding times for preparation or analysis exceeded

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MCL Maximum Contaminant Level

RL Reporting Limit

7/42

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Date: 17-Nov-06

CLIENT:	Giant Refining Co		(	Client Sample ID:	BW-2	A	
Lab Order:	0611016			<b>Collection Date:</b>	10/28/	/2006 11:30:00 AM	
Project:	Annual GW Samples 2	2006 Ciniza		Date Received:	11/1/2006		
Lab ID:	0611016-02			Matrix:	AQUI	EOUS	
Analyses	·	Result	PQL Qual	Units	DF	Date Analyzed	
EPA METHOD	8270C: SEMIVOLATILES	· · · · · · · · · ·		······		Analyst: Bl	
2-Nitroaniline		ND	50	µg/L	1	11/14/2006	
3-Nitroaniline		ND	50	µg/L	1	11/14/2006	
4-Nitroaniline		ND	20	µg/L	1	11/14/2006	
Nitrobenzene		ND	10	µg/L	1	11/14/2006	
2-Nitrophenol		ND	15	µg/L	1	11/14/2006	
4-Nitrophenol		ND	50	µg/L	1	11/14/2006	
Pentachlorophe	nol	ND	50	µg/L	1	11/14/2006	
Phenanthrene		ND	10	ua/L	1	11/14/2006	
Phenol		ND	10	µa/L	1	11/14/2006	
Pyrene		ND	15	ha\r	1	11/14/2006	
Pyridine		ND	30	µg/=	1	11/14/2006	
1 2 4-Trichlorob	enzene	ND	10	µg/L µg/l	1	11/14/2006	
2 4 5-Trichlorop	henol	ND	10	μg/L	1	11/14/2006	
2.4.6-Trichlorop	henol	ND	15	₽ <u>9</u> /2	1	11/14/2006	
Surr: 2.4.6-Ti	ribromonhenol	51.3	16 6-150	%REC	1	11/14/2006	
Surr: 2-Eluorobiphenyl		62.8	19.6-134	%REC	1	11/14/2006	
Surr: 2-Eluorophenol		49.7	9 54-113	%REC	1	11/14/2006	
Surr: 4-Ternh	aenvl-d14	69.4	22 7-145	%REC	1	11/14/2006	
Surr: Nitrobe	nzene-d5	64.3	14 6-134	%REC	1	11/14/2006	
Surr: Phenol-	-d5	36.4	10.7-80.3	%REC	1	11/14/2006	
	8260B: VOLATILES		1.0		4	Analyst: LI	
Benzene	,	ND	1.0	µg/L	1	11/7/2006	
loiuene		ND	1.0	µg/L	1	11/7/2006	
Ethylbenzene		ND	1.0	µg/L	1	11/7/2006	
Methyl tert-buty	i ether (MIBE)	ND	1.5	μg/L	1	11/7/2006	
1,2,4-Trimetnyi	benzene		1.0	µg/L	1	11/7/2006	
1,3,5-1 rimetnyll			1.0	µg/L	1	11/7/2006	
			1.0	µg/∟	1	11/7/2006	
I,2-Dibromoeth	ane (EDB)		1.0	µg/L	1.	11/7/2006	
Naphinalene			2.0	µg/L	1	11/7/2006	
			4.0	µg/L	1	11/7/2006	
	alene		4.0	µg/L	1	11/7/2006	
Acelone			10	µg/L	1	11/7/2006	
Bromobenzene			1.0	µg/L	1	11/7/2006	
Bromochlorome	eulane	UN	1.0	µg/L	1	11/7/2006	
Bromodichloror	neunane		1.0	µg/L	1	11/7/2006	
Bromotorm			1.0	µg/L	1	11/7/2006	
Bromomethane	2	ND	2.0	µg/L	1	11/7/2006	
2-Butanone		ND	10	µg/L	1	11/7/2006	
Qualifiers:	* Value exceeds Maximum (	Contaminant Lev	/el	B Analyte detected	d in the a	ssociated Method Blank	
	E Value above quantitation r	ange		H Holding times for	or prepara	ation or analysis exceeded	
	J Analyte detected below qu	antitation limits		MCL Maximum Conta	aminant l	Level	
1	ND Not Detected at the Report	ing Limit		RL Reporting Limit		_	

S Spike recovery outside accepted recovery limits 8 / 42

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Date: 17-Nov-06

CLIENT:	Giant Refining Co	Client Sample ID:	BW-2A
Lab Order:	0611016	Collection Date:	10/28/2006 11:30:00 AM
Project:	Annual GW Samples 2006 Ciniza	Date Received:	11/1/2006
Lab ID:	0611016-02	Matrix:	AQUEOUS
Analyses	Result	PQL Qual Units	DF Date Analyzed

EPA METHOD 8260B: VOLATILES					Analyst: LMM
Carbon disulfide	ND	10	μg/L	1	11/7/2006
Carbon Tetrachloride	ND	2.0	µg/L	1	11/7/2006
Chlorobenzene	ND	1.0	µg/L	1	11/7/2006
Chloroethane	ND	2.0	µg/L	1	11/7/2006
Chloroform	ND	1.0	µg/L	1	11/7/2006
Chloromethane	ND	1.0	µg/L	1	11/7/2006
2-Chlorotoluene	ND	1.0	µg/L	1	11/7/2006
4-Chlorotoluene	ND	1.0	µg/L	1	11/7/2006
cis-1,2-DCE	ND	1.0	µg/L	1	11/7/2006
cis-1,3-Dichloropropene	ND	1.0	µg/L	1	11/7/2006
1,2-Dibromo-3-chloropropane	ND	2.0	µg/L	1	11/7/2006
Dibromochloromethane	ND	1.0	µg/L	1	11/7/2006
Dibromomethane	ND	2.0	µg/L	1	11/7/2006
1,2-Dichlorobenzene	ND	1.0	µg/L	1	11/7/2006
1,3-Dichlorobenzene	ND	1.0	µg/L	1	11/7/2006
1,4-Dichlorobenzene	ND	1.0	µg/L	1	11/7/2006
Dichlorodifluoromethane	ND	1.0	µg/L	1	11/7/2006
1,1-Dichloroethane	ND	2.0	µg/L	1	11/7/2006
1,1-Dichloroethene	ND	1.0	µg/L	1	11/7/2006
1,2-Dichloropropane	ND	1.0	µg/L	1	11/7/2006
1,3-Dichloropropane	ND	1.0	µg/L	1	11/7/2006
2,2-Dichloropropane	ND	2.0	µg/L	1	11/7/2006
1,1-Dichloropropene	ND	1.0	µg/L	1	11/7/2006
Hexachlorobutadiene	ND	2.0	µg/L	1	11/7/2006
2-Hexanone	ND	10	µg/L	1	11/7/2006
Isopropylbenzene	ND	1.0	μg/L	1	11/7/2006
4-Isopropyltoluene	ND	1.0	µg/L	1	11/7/2006
4-Methyl-2-pentanone	ND	10	µg/L	1	11/7/2006
Methylene Chloride	ND	3.0	µg/L	1	11/7/2006
n-Butylbenzene	ND	1.0	µg/L	1	11/7/2006
n-Propylbenzene	ND	1.0	µg/L	1	11/7/2006
sec-Butylbenzene	ND	2.0	µg/L	1	11/7/2006
Styrene	ND	1.5	µg/L	1	11/7/2006
tert-Butylbenzene	ND	1.0	µg/L	1	11/7/2006
1,1,1,2-Tetrachloroethane	ND	1.0	hð\r	1	11/7/2006
1,1,2,2-Tetrachloroethane	ND	1.0	µg/L	1	11/7/2006
Tetrachloroethene (PCE)	ND	1.0	µg/L	1	11/7/2006
trans-1,2-DCE	ND	1.0	µg/L	1	11/7/2006
trans-1,3-Dichloropropene	ND	1.0	µg/L	1	11/7/2006
1,2,3-Trichlorobenzene	ND	1.0	µg/L	1	11/7/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- Spike recovery outside accepted recovery limits 9/42 S
- B Analyte detected in the associated Method Blank
- н Holding times for preparation or analysis exceeded

- MCL Maximum Contaminant Level
- RL Reporting Limit

. ...

CLIENT:	Giant Refining Co			C	lient Sample ID:	BW-2A			
Lab Order:	0611016			Collection Date: 10		10/28	10/28/2006 11:30:00 AM		
Project: Annual GW Sampl		006 Ciniza			Date Received:	11/1/2	2006		
Lab ID:	0611016-02			Matrix:		AQUI	AQUEOUS		
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed		
EPA METHOD	8260B: VOLATILES						Analyst: LMM		
1,2,4-Trichlorol	benzene	ND	1.0		µg/L	1	11/7/2006		
1,1,1-Trichloroethane		ND	1.0		µg/L	1	11/7/2006		
1,1,2-Trichloroethane		ND	1.0		µg/L	1	11/7/2006		
Trichloroethen	e (TCE)	ND	1.0		µg/L	1	11/7/2006		
Trichlorofluoromethane		ND	1.0		µg/L	1	11/7/2006		
1,2,3-Trichloro	propane	ND	2.0		µg/L	1	11/7/2006		
Vinyl chloride		ND	1.0		µg/L	1	11/7/2006		
Xylenes, Total		ND	3.0		µg/L	1	11/7/2006		
Surr: 1,2-Dic	chloroethane-d4	83.7	69.9-130		%REC	1	11/7/2006		
Surr: 4-Brom	nofluorobenzene	109	75-139		%REC	1	11/7/2006		
Surr: Dibrorr	nofluoromethane	90.7	57.3-135		%REC	1	11/7/2006		
Surr: Toluen	ne-d8	94.4	81.9-122		%REC	1	11/7/2006		
EPA 120.1: SP	PECIFIC CONDUCTANCE						Analyst: CMS		
Specific Condu	uctance	1400	0.010		µmhos/cm	1	11/1/2006		
EPA METHOD	150.1: PH						Analyst: CMS		
nН		8.27	0.010		oH units	1	11/1/2006		

Date: 17-Nov-06

- * Value exceeds Maximum Contaminant Level
- Е Value above quantitation range
- Analyte detected below quantitation limits J
- ND Not Detected at the Reporting Limit
- Spike recovery outside accepted recovery limits 10 / 42S
- В Analyte detected in the associated Method Blank

- Н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- Reporting Limit RL

CLIENT:		Giant Refining Co			C	lient Sample ID	: BW-2	В
Lab Order:		0611016				<b>Collection Date:</b>	: 10/28/	/2006 1:30:00 PM
Project:		Annual GW Samples 2	006 Ciniza			Date Received	: 11/1/2	2006
Lab ID:		0611016-03				Matrix	AQUI	EOUS
Analyses			Result	PQL	Qual	Units	DF	Date Analyzed
	D 300	.0: ANIONS		-				Analyst: TES
Fluoride			1.9	0.10		mg/L	1	11/4/2006 3:26:30 AM
Chloride			31	0.10		mg/L	1	11/4/2006 3:26:30 AM
Nitrate (As N)	)+Nitrii	te (As N)	ND	0.50		mg/L	5	11/4/2006 4:18:43 AM
Phosphorus, (	Orthop	phosphate (As P)	ND	0.50	Н	mg/L	1	11/4/2006 3:26:30 AM
Sulfate			140	2.5		mg/L	5	11/6/2006 4:41:13 PM
	ד <i>י</i> ע ד							Analyst: MAP
Mercury	0 141	U, MEROORT	ND	0.00020		ma/l	1	11/14/2006
Weredry			110	0.00020		ilig/L	I	11114/2000
EPA 6010B: 1	τοτα	L RECOVERABLE MI	ETALS					Analyst: NMO
Arsenic			ND	0.020		mg/L	1	11/15/2006 8:36:34 PM
Barium			0.071	0.020		mg/L	1	11/15/2006 8:36:34 PM
Cadmium			ND	0.0020		mg/L	1	11/15/2006 8:36:34 PM
Calcium			20	1.0		mg/L	1	11/15/2006 8:36:34 PM
Chromium			ND	0.0060		mg/L	1	11/15/2006 8:36:34 PM
Lead			ND	0.0050		mg/L	1	11/15/2006 8:36:34 PM
Magnesium			3.8	1.0		mg/L	1	11/15/2006 8:36:34 PM
Potassium			1.6	1.0		mg/L	1	11/15/2006 8:36:34 PM
Selenium			ND	0.050		mg/L	1	11/15/2006 8:36:34 PM
Silver			ND	0.0050		mg/L	1	11/15/2006 8:36:34 PM
Sodium			580	10		mg/L	10	11/16/2006 10:50:27 AN
EPA METHO	D 827	0C: SEMIVOLATILES						Analyst: BI
Acenaphthen	e 02.	•	ND	10		ua/L	1	11/14/2006
Acenaphthyle	ene		ND	10		ua/L	1	11/14/2006
Aniline			ND	20		µg/L	1	11/14/2006
Anthracene			ND	10		ha/L	1	11/14/2006
Azobenzene			ND	10		µg/L	1	11/14/2006
Benz(a)anthra	acene		ND	15		μg/L	1	11/14/2006
Benzo(a)pyre	ene		ND	15		µg/L	1	11/14/2006
Benzo(b)fluor	ranthe	ne	ND	15		µg/L	1	11/14/2006
Benzo(g,h,i)p	eryler	ne	ND	10		µg/L	1	11/14/2006
Benzo(k)fluor	ranthe	ne	ND	10		µg/L	1	11/14/2006
Benzoic acid			ND	50		µg/L	1	11/14/2006
Benzyl alcoho	ol		ND	20		µg/L	1	11/14/2006
Bis(2-chloroe	thoxy)	)methane	ND	10		µg/L	1	11/14/2006
Bis(2-chloroe	thyl)e	ther	ND	15		µg/L	1	11/14/2006
Bis(2-chlorois	soprop	oyl)ether	ND	15	•	µg/L	1	11/14/2006
Bis(2-ethylhe	xyl)ph	thalate	ND	15		µg/L	1	11/14/2006
Qualifiers:	*	Value exceeds Maximum (	Contaminant Leve	:		B Analyte detecte	d in the as	ssociated Method Blank
	Е	Value above quantitation ra	inge			H Holding times f	or prepara	ation or analysis exceeded
	J	Analyte detected below qua	intitation limits		N	ICL Maximum Con	aminant L	_evel
	ND	Not Detected at the Report	ng Limit			RL Reporting Limi	t	<b>D</b>
	S	Spike recovery outside acce	epted recovery lin	^{nit:} 11/4	2			Page 11 0

Date: 17-Nov-06

CLIENT:	Giant Refining Co			Cl	ient Sample ID:	BW-2	В	
Lab Order:	0611016				Collection Date:	10/28/	2006 1:30:00 PM	
Project:	Annual GW Samples 2	006 Ciniza			Date Received:	11/1/2006		
Lab ID:	0611016-03				Matrix:	AQUI	EOUS	
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed	
PA METHOD	8270C: SEMIVOLATILES						Analyst: Bl	
4-Bromophenyl	phenyl ether	ND	10		µg/L	1	11/14/2006	
Butyl benzyl pht	thalate	ND	15		µg/L	1	11/14/2006	
Carbazole		ND	10		μg/L	1	11/14/2006	
4-Chloro-3-meth	nylphenol	ND	20		µg/L	1	11/14/2006	
4-Chloroaniline		ND	20		µg/L	1	11/14/2006	
2-Chloronaphth	alene	ND	10		µg/L	1	11/14/2006	
2-Chlorophenol		ND	10		µg/L	1	11/14/2006	
4-Chlorophenyl	phenyl ether	ND	15		µg/L	1	11/14/2006	
Chrysene	-	ND	15		μg/L	1	11/14/2006	
Di-n-butyl phtha	late	ND	10		µg/L	1	11/14/2006	
Di-n-octyl phtha	late	ND	15		µg/L	1	11/14/2006	
Dibenz(a,h)anth	nracene	ND	10		µg/L	1	11/14/2006	
Dibenzofuran		ND	10		µg/L	1	11/14/2006	
1,2-Dichloroben	zene	ND	10		µg/L	1	11/14/2006	
1,3-Dichloroben	zene	ND	10		µg/L	1	11/14/2006	
1,4-Dichlorober	zene	ND	10		µg/L	1	11/14/2006	
3.3'-Dichlorobe	nzidine	ND	15		μα/L	1	11/14/2006	
Diethyl phthalat	е	ND	10		µa/L	1	11/14/2006	
Dimethyl phthal	ate	ND	10		µa/L	1	11/14/2006	
2 4-Dichlorophe	enol	ND	10		μα/L	1	11/14/2006	
2 4-Dimethylph	enol	ND	10		µg/L	1	11/14/2006	
4 6-Dinitro-2-me	ethvlphenol	ND	50		µg/=	1	11/14/2006	
2 4-Dinitrophen	ol	ND	50		µg/L	1	11/14/2006	
2.4-Dinitrotolue	ne	ND	10		µg/l	1	11/14/2006	
2.6-Dinitrotolue	ne	ND	10		µg/L	1	11/14/2006	
Eluoranthene		ND	10		µg/L	1	11/14/2006	
Fluorene		ND	10		р <u>9</u> ,с ug/l	1	11/14/2006	
Hexachloroben	zene	ND	10		nd\  hA\r	1	11/14/2006	
Hexachlorobuta	diene	ND	10		HQ/I	1	11/14/2006	
Hevachlorocycl	opentadiene	ND	10		ру/с uo/l	, 1	11/14/2000	
Hevachloroetha	ine		10		µg/⊑ µg/l	, 1	11/14/2006	
			10			1	11/14/2006	
Isonhorone		ND	10		на/I	' 1	11/14/2006	
2-Methylnanhth	alene	ND	10		uo/l	1	11/14/2006	
2-Methylohenol		ND	15		на/I	, 1	11/14/2000	
	nol		20		ру/с uo/l	' 1	11/14/2000	
N-Nitrosodi-n-n	ronvlamine		10		ру/с ug/l	1	11/14/2000	
N-Nitrosodimot	hylamine		10		ру/с uo/l	י 1	11/14/2000	
N Nitrosodineu	nylamine		10		pg/L	1	11/14/2000	
	пуютте		10		µy/L	1	11/14/2006	
Naphthalene		ND	10		µg/L	1	11/14/2006	

Date: 17-Nov-06

E Value above quantitation range J Analyte detected below quantitation limits

- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level

RL Reporting Limit

ND Not Detected at the Reporting Limit

Spike recovery outside accepted recovery limits 12/42 S

CLIENT:	Giant Refining Co			Client Samp	le ID:	BW-2	В
Lab Order:	0611016			Collection	Date:	10/28/	/2006 1:30:00 PM
Project:	Annual GW Samples 2	.006 Ciniza		Date Rec	eived:	11/1/2	2006
Lab ID:	0611016-03			M	atrix:	AQUI	EOUS
Analyses		Result	PQL Qu	al Units		DF	Date Analyzed
EPA METHOD	8270C: SEMIVOLATILES	-					Analyst: Bl
2-Nitroaniline		ND	50	µg/L		1	11/14/2006
3-Nitroaniline		ND	50	µg/L		1	11/14/2006
4-Nitroaniline		ND	20	µg/L		1	11/14/2006
Nitrobenzene		ND	10	µg/L		1	11/14/2006
2-Nitrophenol		ND	15	µg/L		1	11/14/2006
4-Nitrophenol		ND	50	µg/L		1	11/14/2006
Pentachlorophe	nol	ND	50	µg/L		1	11/14/2006
Phenanthrene		ND	10	µg/L		1	11/14/2006
Phenol		ND	10	µg/L		1	11/14/2006
Pyrene		ND	15	µg/L		1	11/14/2006
Pyridine		ND	30	µg/L		1	11/14/2006
1,2,4-Trichlorob	enzene	ND	10	µg/L		1	11/14/2006
2,4,5-Trichlorop	henol	ND	10	µg/L		1	11/14/2006
2,4,6-Trichlorop	henol	ND	15	µg/L		1	11/14/2006
Surr: 2,4,6-Tr	ibromophenol	55.5	16.6-150	%REC		1	11/14/2006
Surr: 2-Fluor	obiphenyl	57.0	19.6-134	%REC		1	11/14/2006
Surr: 2-Fluoro	phenol	43.6	9.54-113	%REC		1	11/14/2006
Surr: 4-Terph	ienvl-d14	64.4	22.7-145	%REC		1	11/14/2006
Surr: Nitrober	nzene-d5	53.6	14.6-134	%REC		1	11/14/2006
Surr: Phenol-	d5	32.7	10.7-80.3	%REC		1	11/14/2006
EPA METHOD	8260B: VOLATILES						Analyst: I
Benzene		ND	1.0	ua/L		1	11/7/2006
Toluene		ND	1.0	ua/L		1	11/7/2006
Ethylbenzene		ND	1.0	μα/i		1	11/7/2006
Methyl tert-buty	(ether (MTBE)	ND	1.5	µg/L		1	11/7/2006
1.2.4-Trimethylt	penzene	ND	1.0	µg/L		1	11/7/2006
1.3.5-Trimethylt	penzene	ND	1.0	µg/l		1	11/7/2006
1.2-Dichloroeth	ane (EDC)	ND	1.0	µg/L		1	11/7/2006
1.2-Dibromoeth	ane (EDB)	ND	1.0	µg/L		1	11/7/2006
Naphthalene		ND	2.0	µg/L		1	11/7/2006
1-Methylnaphth	alene	ND	4.0	µg/1		1	11/7/2006
2-Methvinanhth	alene	ND	4.0	µg/l		1	11/7/2006
Acetone		ND	10	µg/l		1	11/7/2006
Bromobenzene		ND	1.0	µg/l		1	11/7/2006
Bromochlorome	thane	ND	1.0	на/I		1	11/7/2006
Bromodichloron	nethane	ND	1.0	μα/l		1	11/7/2006
Bromoform	· · · · · · ·	ND	1.0	ug/l		1	11/7/2006
Bromomethane		ND	20	μα/I		1	11/7/2000
2-Butanone		ND	10	μg/L		1	11/7/2006
Qualifiers:	* Value exceeds Maximum C	ontaminant Lev		B Analvie	detected	in the av	ssociated Method Rlank
-	E Value above quantitation ra	inge		H Holding	times fo	r prenarz	ation or analysis exceeded
	J Analyte detected below one	intitation limits		MCL Maximu	m Conte	uninant I	_evel
N	ID Not Detected at the Report	ng Limit		RL Reportin	e Limit		20.01
	S Spike recovery outside acce	epted recovery li	^{mitr} 13/42				Page 12

CLIENT: Giant Refining Co		Client Sample ID: BW-2B						
Lab Order:	0611016			Collection Date:	10/28	/2006 1:30:00 PM		
Project:	Annual GW Samples	2006 Ciniza		Date Received:	11/1/2	2006		
	0611016 02			Matrix:	AOU	FOUS		
	0011010-05							
Analyses		Result	PQL Qu	al Units	DF	Date Analyzed		
EPA METHOD	8260B: VOLATILES					Analyst: LMM		
Carbon disulfid	e	ND	10	µg/L	1	11/7/2006		
Carbon Tetrach	nloride	ND	2.0	µg/L	1	11/7/2006		
Chlorobenzene		ND	1.0	µg/L	1	11/7/2006		
Chloroethane		ND	2.0	µg/L	1	11/7/2006		
Chloroform		ND	1.0	µg/L	1	11/7/2006		
Chloromethane	•	ND	1.0	µg/L	1	11/7/2006		
2-Chlorotoluene	е	ND	1.0	µg/L	1	11/7/2006		
4-Chlorotoluene	e	ND	1.0	µg/L	1	11/7/2006		
cis-1,2-DCE		ND	1.0	µg/L	1	11/7/2006		
cis-1,3-Dichloro	propene	ND	1.0	µg/L	1	11/7/2006		
1,2-Dibromo-3-	chloropropane	ND	2.0	µg/L	1	11/7/2006		
Dibromochloror	methane	ND	1.0	µg/L	1	11/7/2006		
Dibromomethar	ne	ND	2.0	µg/L	1	11/7/2006		
1,2-Dichlorober	nzene	ND	1.0	µg/L	1	11/7/2006		
1,3-Dichlorober	nzene	ND	1.0	µg/L	1	11/7/2006		
1,4-Dichlorober	nzene	ND	1.0	µg/L	1	11/7/2006		
Dichlorodifluoro	omethane	ND	1.0	µg/L	1	11/7/2006		
1,1-Dichloroeth	ane	ND	2.0	µg/L	1	11/7/2006		
1,1-Dichloroeth	ene	ND	1.0	µg/L	1	11/7/2006		
1,2-Dichloropro	pane	ND	1.0	µg/L	1	11/7/2006		
1,3-Dichloropro	pane	ND	1.0	µg/L	1	11/7/2006		
2,2-Dichloropro	pane	ND	2.0	µg/L	1	11/7/2006		
1,1-Dichloropro	pene	ND	1.0	µg/L	1	11/7/2006		
Hexachlorobuta	adiene	ND	2.0	µg/L	1	11/7/2006		
2-Hexanone		ND	10	μg/L	1	11/7/2006		
Isopropylbenze	ne	ND	1.0	µg/L	1	11/7/2006		
4-Isopropyltolue	ene	ND	1.0	µg/L	1	11/7/2006		
4-Methyl-2-pen	tanone	ND	. 10	µg/L	1	11/7/2006		
Methylene Chlo	oride	ND	3.0	µg/L	1	11/7/2006		
n-Butylbenzene	9	ND	1.0	µg/L	1	11/7/2006		
n-Propylbenzer	ne	ND	1.0	µg/L	1	11/7/2006		
sec-Butylbenze	ene	ND	2.0	µg/L	1	11/7/2006		
Styrene		ND	1.5	µg/L	1	11/7/2006		
tert-Butylbenze	ne	ND	1.0	µg/L	1	11/7/2006		
1,1,1,2-Tetrach	loroethane	ND	1.0	μg/L	1	11/7/2006		
1,1,2,2-Tetrach	loroethane	ND	1.0	µg/L	1	11/7/2006		
Tetrachloroethe	ene (PCE)	ND	1.0	hð\r	1	11/7/2006		
trans-1,2-DCE		ND	1.0	µg/L	1	11/7/2006		
trans-1,3-Dichle	oropropene	ND	1.0	µg/L	1	11/7/2006		
1,2,3-Trichlorol	benzene	ND	1.0	µg/L	1	11/7/2006		

Date: 17-Nov-06

Qualifiers:

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- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S

Spike recovery outside accepted recovery limits 14/42

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В Analyte detected in the associated Method Blank Н Holding times for preparation or analysis exceeded

- MCL Maximum Contaminant Level
- RL Reporting Limit

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^{*} Value exceeds Maximum Contaminant Level E Value above quantitation range

CLIENT:	Giant Refining Co			С	lient Sample ID:	BW-2	2B		
Lab Order:	0611016				Collection Date:	10/28	/2006 1:30:00 PM		
Project:	Annual GW Samples 20	006 Ciniza			Date Received:	11/1/2	11/1/2006		
Lab ID:	0611016-03				Matrix:	AQU	EOUS		
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed		
EPA METHOD	8260B: VOLATILES						Analyst: LMM		
1,2,4-Trichlorob	enzene	ND	1.0		µg/L	1	11/7/2006		
1,1,1-Trichloroe	ethane	ND	1.0		µg/L	1	11/7/2006		
1,1,2-Trichloroe	ethane	NÐ	1.0		µg/L	1	11/7/2006		
Trichloroethene	e (TCE)	ND	1.0		µg/L	1	11/7/2006		
Trichlorofluoron	nethane	ND	1.0		µg/L	1	11/7/2006		
1,2,3-Trichlorop	propane	ND	2.0		µg/L	1	11/7/2006		
Vinyl chloride		ND	1.0		µg/L	1	11/7/2006		
Xylenes, Totai		ND	3.0		µg/L	1	11/7/2006		
Surr: 1,2-Dic	hloroethane-d4	87.6	69.9-130		%REC	1	11/7/2006		
Surr: 4-Brom	ofluorobenzene	104	75-139		%REC	1	11/7/2006		
Surr: Dibrom	ofluoromethane	90.9	57.3-135		%REC	1	11/7/2006		
Surr: Toluene	e-d8	92.4	81.9-122		%REC	1	11/7/2006		
EPA 120.1: SP	ECIFIC CONDUCTANCE						Analyst: CMS		
Specific Condu	ctance	2400	0.010		µmhos/cm	1	11/1/2006		
EPA METHOD	150.1: PH						Analyst: CMS		
рH		8.10	0.010		pH units	1	11/1/2006		

Qualifiers:

* Value exceeds Maximum Contaminant Level

Е Value above quantitation range

J Analyte detected below quantitation limits ND Not Detected at the Reporting Limit

Spike recovery outside accepted recovery limits 15/42S

В Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

Date: 17-Nov-06

MCL Maximum Contaminant Level

RL Reporting Limit

CLIENT:	Giant Refining Co			C	lient Sample	ID: BW-2	2C
Lab Order:	0611016				<b>Collection Da</b>	ate: 10/28	2/2006 3:00:00 PM
Project:	Annual GW Samples	s 2006 Ciniza			Date Receiv	ed: 11/1/	2006
Lab ID:	0611016-04				Mati	rix: AQU	EOUS
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD	300.0: ANIONS				<u></u>		Analyst: TES
Fluoride		2.4	0.10		ma/L	1	11/4/2006 4:36:07 AM
Chloride		42	0.50		ma/L	5	11/6/2006 4:58:38 PM
Nitrate (As N)+	Nitrite (As N)	ND	0.50		ma/L	5	11/4/2006 4:53:31 AM
Phosphorus, O	rthophosphate (As P)	ND	0.50	н	ma/L	1	11/4/2006 4·36·07 AM
Sulfate		270	2.5		mg/L	5	11/6/2006 4:58:38 PM
EPA METHOD	7470 MERCURY						Analyst: MAF
Mercury		ND	0.00020		mg/L	1	11/14/2006
EPA 6010B: T(		METALS					Analyst: NMC
Arsenic		ND	0.020		mg/L	1	11/15/2006 8:40:46 PM
Barium		0.031	0.020		ma/L	1	11/15/2006 8:40:46 PM
Cadmium		ND	0.0020		ma/L	1	11/15/2006 8:40:46 PM
Calcium		5.8	1.0		mg/L	1	11/15/2006 8:40:46 PM
Chromium		ND	0.0060		ma/L	1	11/15/2006 8:40:46 PM
Lead		0.0054	0.0050		mg/L	1	11/15/2006 8:40:46 PM
Magnesium		ND	1.0		ma/l	1	11/15/2006 8:40:46 PM
Potassium		ND	1.0		ma/l	1	11/15/2006 8:40:46 PM
Selenium		ND	0.050		mg/L	1	11/15/2006 8:40:46 PM
Silver		ND	0.0050		ma/l	1	11/15/2006 8:40:46 PM
Sodium		310	10		mg/L	10	11/16/2006 10:53:31 A
EPA METHOD	8270C: SEMIVOLATILE	ES					Analyst: Bl
Acenaphthene		ND	10		µg/L	1	11/14/2006
Acenaphthylen	e	ND	10		µg/L	1	11/14/2006
Aniline		ND	20		µg/L	1	11/14/2006
Anthracene		ND	10		µg/L	1	11/14/2006
Azobenzene		ND	10		µg/L	1	11/14/2006
Benz(a)anthrad	cene	ND	15		µg/L	1	11/14/2006
Benzo(a)pyren	e	ND	15		µg/L	1	11/14/2006
Benzo(b)fluora	nthene	ND	15		µg/L	1	11/14/2006
Benzo(g,h,i)pe	rylene	ND	10		µg/L	1	11/14/2006
Benzo(k)fluora	nthene	ND	10		µg/L	1	11/14/2006
Benzoic acid		ND	50		µg/L	1	11/14/2006
Benzyl alcohol		ND	20		μg/L	1	11/14/2006
Bis(2-chloroeth	noxy)methane	ND	10		µg/L	1	11/14/2006
Bis(2-chloroeth	nyl)ether	ND	15		µg/L	1	11/14/2006
Bis(2-chloroiso	propyl)ether	ND	15		µg/L	1 ·	11/14/2006
Bis(2-ethylhex	yl)phthalate	ND	15		µg/L	1	11/14/2006
Qualifiers:	* Value exceeds Maximur	n Contaminant Lev	el	• •	B Analyte det	ected in the a	associated Method Blank
	E Value above quantitation	n range			H Holding tim	ies for prepar	ration or analysis exceeded
	J Analyte detected below	quantitation limits		١	MCL Maximum	Contaminant	Level
i	ND Not Detected at the Rep	orting Limit			RL Reporting 1	.imit	×
							Deee 16

Date: 17-Nov-06

S Spike recovery outside accepted recovery limits 16/42

Date: 17-Nov-06

CLIENT: Lab Order:	Giant Refining Co 0611016	<u> </u>		Clie	nt Sample ID: ollection Date:	BW-2	C 2006 3:00:00 PM	
Project.	Annual GW Samples	2006 Ciniza		r	Note Dessived.	: 11/1/2006		
riojeci.		2000 Clinza		L	Jale Received:			
	0611016-04	-				AQUI		
Analyses		Result	PQL	Qual U	nits	DF	Date Analyzed	
EPA METHOD	8270C: SEMIVOLATILE	S					Analyst: BL	
4-Bromophenyl	phenyl ether	ND	10	μ	g/L	1	11/14/2006	
Butyl benzyl phi	thalate	ND	15	μ	g/L	1	11/14/2006	
Carbazole		ND	10	hi	g/L	1	11/14/2006	
4-Chloro-3-metl	hylphenol	ND	20	μ	g/L	1	11/14/2006	
4-Chloroaniline		ND	20	há	g/L	1	11/14/2006	
2-Chloronaphth	alene	ND	10	μ	g/L	1	11/14/2006	
2-Chlorophenol		ND	10	hi	g/L	1	11/14/2006	
4-Chlorophenyl	phenyl ether	ND	15	рq	g/L	1	11/14/2006	
Chrysene		ND	15	hi	g/L	1	11/14/2006	
Di-n-butyl phtha	late	ND	10	h	g/L	1	11/14/2006	
Di-n-octyl phtha	late	ND	15	μ	g/L	1	11/14/2006	
Dibenz(a,h)anth	racene	ND	10	μ	- g/L	1	11/14/2006	
Dibenzofuran		ND	10	Ч	g/L	1	11/14/2006	
1,2-Dichlorober	izene	ND	10	μ	- g/L	1	11/14/2006	
1,3-Dichlorober	izene	ND	10	μ	g/L	1	11/14/2006	
1,4-Dichlorober	zene	ND	10	μ	g/L	1	11/14/2006	
3,3'-Dichlorobe	nzidine	ND	15	μ	g/L	1	11/14/2006	
Diethyl phthalat	e	· ND	10	μ	g/L	1	11/14/2006	
Dimethyl phthal	late	ND	10	μ	g/L	1	11/14/2006	
2,4-Dichlorophe	enol	ND	10	Li	a/L	1	11/14/2006	
2.4-Dimethylph	enol	ND	10	u.	a/L	1	11/14/2006	
4.6-Dinitro-2-m	ethylphenol	ND	50	, D	o/l.	1	11/14/2006	
2 4-Dinitrophen	0	ND	50	г Ц	g/l	1	11/14/2006	
2 4-Dinitrotolue	ne	ND	10		g/l	1	11/14/2006	
2.6-Dinitrotolue	ne	ND	10	۳ ۱۱	g/ _ g/l	, 1	11/14/2006	
Fluoranthene		ND	10	۳ ۱	g, <u>c</u> a/l	1	11/14/2006	
Fluorene	•	ND	10	۹ ۱۱	9/ – a/l	1	11/14/2006	
Hexachloroben	Zene	ND	10	ч Ц	g/L a/l	1	11/14/2006	
Hexachlorobuta	adiene	ND	10	Р U	g/ _ g/l	1	11/14/2006	
Hexachlorocycl	opentadiene	ND	10	ې ۱۱	a/L	1	11/14/2006	
Hexachloroetha	ine	ND	10	ч 11	σ/l	1	11/14/2006	
Indeno(1.2.3-cc	1)ovrene	ND	10	ч 11	σ/l	, 1	11/14/2006	
Isophorope	-,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	ND	10	4	σ.⊐ α/l	1	11/14/2006	
2-Methylnanhth	alene	ND	10	ч 11	 α/t	1	11/14/2006	
2-Methvinhenol		ND	15	ч ч	σ- <b>-</b> α/Ι	1	11/14/2006	
3+4-Methylahe	nol	ND	20	ч	σ. – α/Ι	1	11/14/2006	
N-Nitrosodi_n_n	ronvlamine	ND	10	ч	9. – n/l	, 1	11/14/2006	
N-Nitrosodimot	hylamine		10	μ	9, - 0/l	1	11/14/2006	
N Nitrocodinho	nylamine	מא	10	μ	9'- 0/I	1	11/14/2000	
N bit stars	nyiantine		10	h T	9/L	1	11/14/2000	

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Qualifiers:

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* Value exceeds Maximum Contaminant Level

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_. ..... B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

- Е Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- Spike recovery outside accepted recovery limits 17 / 42 S

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MCL Maximum Contaminant Level RL Reporting Limit

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Date: 17-Nov-06

CLIENT:	Giant Refining Co			Client Sample I	<b>D</b> : BW-2	2C		
Lab Order:	0611016			Collection Da	te: 10/28	10/28/2006 3:00:00 PM		
Project:	Annual GW Samples 20	06 Ciniza		Date Receive	d• 11/1/2	2006		
Lab ID:	0611016-04			Matri	x: AQU	EOUS		
Analyses		Result	PQL Q	ual Units	DF	Date Analyzed		
EPA METHOD	8270C: SEMIVOLATILES					Analyst: BL		
2-Nitroaniline		ND	50	µg/L	1	11/14/2006		
3-Nitroaniline		ND	50	µg/L	1	11/14/2006		
4-Nitroaniline		ND	20	µg/L	1	11/14/2006		
Nitrobenzene		ND	10	µg/L	1	11/14/2006		
2-Nitrophenol		ND	15	µg/L	1	11/14/2006		
4-Nitrophenol		ND	50	ua/L	1	11/14/2006		
Pentachlorophe	nol	ND	50	ug/L	1	11/14/2006		
Phenanthrene		ND	10	F9/= uo/l	1	11/14/2006		
Phenol		ND	10	uo/l	1	11/14/2006		
Pyrene		ND	15	µg/L	1	11/14/2006		
Dyridino		ND	30	P9/E	1	11/14/2006		
1 2 4 Trichloroh	007000	ND	10	ug/L	1	11/14/2006		
2.4.5 Trichlorop	basel	ND	10	р <u>9</u> /с	1	11/14/2006		
2,4,5-Trichlorop	hand	ND	10	µg/L	1	11/14/2006		
2,4,6-1 richiorop	nenol		10 0 150	µg/L KACO	1	11/14/2006		
Surr: 2,4,6-11	ribromophenol	64.4	16.6-150	%REC	1	11/14/2006		
Surr: 2-Fluor	obiphenyl	66.5	19.6-134	%REC	1	11/14/2006		
Surr: 2-Fluor	ophenol	48.6	9.54-113	%REC	1	11/14/2006		
Surr: 4-Terph	nenyl-d14	70.2	22.7-145	%REC	1	11/14/2006		
Surr: Nitrobe	nzene-d5	62.7	14.6-134	%REC	1	11/14/2006		
Surr: Phenol-	-d5	35.8	10.7-80.3	%REC	1	11/14/2006		
EPA METHOD	8260B: VOLATILES					Analyst: LMM		
Benzene		ND	1.0	hð\r	1	11/7/2006		
Toluene		ND	1.0	µg/L	1	11/7/2006		
Ethylbenzene		ND	1.0	µg/L	1	11/7/2006		
Methyl tert-buty	/I ether (MTBE)	ND	1.5	µg/L	1	11/7/2006		
1,2,4-Trimethyl	benzene	ND	1.0	µg/L	1	11/7/2006		
1.3.5-Trimethyl	benzene	ND	1.0	μg/L	1	11/7/2006		
1,2-Dichloroeth	ane (EDC)	ND	1.0	µg/L	1	11/7/2006		
1.2-Dibromoeth	nane (EDB)	ND	1.0	µa/L	1	11/7/2006		
Naphthalene		ND	2.0	µa/L	1	11/7/2006		
1-Methylnaphth	alene	ND	4.0	ua/L	1	11/7/2006		
2-Methylnaphth	alene	ND	4.0	ua/L	1	11/7/2006		
Acetone		ND	10	uo/1	1	11/7/2006		
Bromobenzene		ND	10	µg/1	1	11/7/2006		
Bromochlorom	ethane	ND	1.0	но/I	1	11/7/2006		
Bromodichloro	mothane		1.0	pg/c ug/l	1	11/7/2000		
Bromoform	nemane		1.0	μg/∟ μg/Ι	1	11/7/2000		
Bromomethe			1.0	μg/L	1	11/1/2000		
	÷		2.0	µg/L	1	11//2000		
Z-BUIGHONE		(NL)	IU	µy/∟	l 	Π1///ΖΟΟδ		
Qualifiers:	* Value exceeds Maximum C	ontaininant Lev	el	B Analyte dete	cted in the a	associated Method Blank		
	E Value above quantitation rat	nge		H Holding time	es for prepai	ration or analysis exceeded		
	J Analyte detected below qua	ntitation limits		MCL Maximum C	ontaminant	Level		
)	ND Not Detected at the Reporting	ng Limit		RL Reporting L	mit			

S Spike recovery outside accepted recovery limits 18 / 42

Hall Environmental Analysis Laboratory, Inc.					Date: 17-Nov-06		
CLIENT:	Giant Refining Co			C	lient Sample ID:	BW-2	2C
Lab Order:	0611016				Collection Date:	10/28	/2006 3:00:00 PM
Project.	Annual GW Samples	2006 Ciniza			Data Pacaiyad	11/1/2006	
i i ojeci.		cooo Chiiza			Date Receiveu:	11/1/2006	
Lab ID:	0611016-04					AQUEOUS	
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD	8260B: VOLATILES						Analyst: LMM
Carbon disulfic	te	ND	10		µg/L	1	11/7/2006
Carbon Tetrac	hloride	ND	2.0		µg/L	1	11/7/2006
Chlorobenzene	e	ND	1.0		µg/L	1	11/7/2006
Chloroethane		ND	2.0		µg/L	1	11/7/2006
Chloroform		ND	1.0		µg/L	1	11/7/2006
Chloromethan	e	ND	1.0		µg/L	1	11/7/2006
2-Chlorotoluer	ne	ND	1.0		µg/L	1	11/7/2006
4-Chlorotoluer	ne	ND	1.0		µg/L	1	11/7/2006
cis-1,2-DCE		ND	1.0		µg/L	1	11/7/2006
cis-1,3-Dichlor	opropene	ND	1.0		µg/L	1	11/7/2006
1,2-Dibromo-3	-chloropropane	ND	2.0		µg/L	1	11/7/2006
Dibromochloro	omethane	ND	1.0		µg/L	1	11/7/2006
Dibromometha	ane	ND	2.0		µg/L	1	11/7/2006
1,2-Dichlorobe	enzene	ND	1.0		µg/L	1	11/7/2006
1,3-Dichlorobe	enzene	ND	1.0		µg/L	1	11/7/2006
1,4-Dichlorobe	enzene	ND	1.0		µg/L	1	11/7/2006
Dichlorodifluor	romethane	ND	1.0		µg/L	1	11/7/2006
1,1-Dichloroet	hane	ND	2.0		µg/L	1	11/7/2006
1,1-Dichloroet	hene	ND	1.0		µg/L	1	11/7/2006
1,2-Dichloropr	opane	ND	1.0		µg/L	1	11/7/2006
1,3-Dichloropr	opane	ND	1.0		µg/L	1	11/7/2006
2,2-Dichloropr	opane	ND	2.0		μg/L	1	11/7/2006
1,1-Dichloropr	opene	ND	1.0		µg/L	1	11/7/2006
Hexachlorobu	tadiene	ND	2.0		µg/L	1	11/7/2006
2-Hexanone		ND	10		µg/L	1	11/7/2006
Isopropylbenz	ene	ND	1.0		µg/L	1	11/7/2006
4-Isopropyltol	uene	ND	1.0		µg/L	1	11/7/2006
4-Methyl-2-pe	ntanone	ND	10		μg/L	1	11/7/2006
Methylene Ch	loride	ND	3.0		µg/L	1	11/7/2006
n-Butylbenzer	ne	ND	1.0		μg/L	1	11/7/2006
n-Propylbenze	ene	ND	1.0		µg/L	1	11/7/2006
sec-Butylbenz	tene	ND	2.0		µg/L	1	11/7/2006
Styrene		ND	1.5		µg/L	1	11/7/2006

(	Qu	ali	fie	er	s:

tert-Butylbenzene

trans-1,2-DCE

1,1,1,2-Tetrachloroethane

1,1,2,2-Tetrachloroethane

Tetrachloroethene (PCE)

trans-1,3-Dichloropropene

1,2,3-Trichlorobenzene

- Value exceeds Maximum Contaminant Level
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Not Detected at the Reporting Limit ND
- Spike recovery outside accepted recovery limits 19/42 S

ND

ND

ND

ND

ND

ND

ND

Analyte detected in the associated Method Blank

1

1

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11/7/2006

11/7/2006

11/7/2006

11/7/2006

11/7/2006

11/7/2006

11/7/2006

- н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

µg/L

µg/L

µg/L

µg/L

µg/L

µg/L

µg/L

В

1.0

1.0

1.0

1.0

1.0

1.0

1.0

1		
	<b>.</b>	

Date: 17-Nov-06

CLIENT: Lab Order: Project: Lab ID:	Giant Refining Co 0611016 Annual GW Samples 20 0611016-04	006 Ciniza	(	Client Sample ID: Collection Date: Date Received: Matrix:	BW-2 10/28/ 11/1/2 AQUI	C /2006 3:00:00 PM 2006 EOUS
Analyses		Result	PQL Qual	Units	DF	Date Analyzed
EPA METHOD	8260B: VOLATILES			· · ·		Analyst: LMM
1,2,4-Trichlorot	penzene	ND	1.0	µg/L	1	11/7/2006
1,1,1-Trichloroe	ethane	ND	1.0	µg/L	1	11/7/2006
1,1,2-Trichloroe	ethane	ND	1.0	µg/L	1	11/7/2006
Trichloroethene (TCE)		ND	1.0	µg/L	1	11/7/2006
Trichlorofluoror	nethane	ND	1.0	µg/L	1	11/7/2006
1,2,3-Trichlorop	propane	ND	2.0	µg/L	1	11/7/2006
Vinyl chloride		ND	1.0	µg/L	1	11/7/2006
Xylenes, Total		ND	3.0	µg/L	1	11/7/2006
Surr: 1,2-Dic	hloroethane-d4	84.9	69.9-130	%REC	1	11/7/2006
Surr: 4-Brom	ofluorobenzene	107	75-139	%REC	1	11/7/2006
Surr: Dibrom	ofluoromethane	95.0	57.3-135	%REC	1	11/7/2006
Surr: Toluen	e-d8	89.9	81.9-122	%REC	1	11/7/2006
EPA 120.1: SP	ECIFIC CONDUCTANCE					Analyst: CMS
Specific Condu	ictance	1300	0.010	µmhos/cm	1	11/1/2006
EPA METHOD	150.1: PH					Analyst: CMS
рH		8.76	0.010	pH units	1	11/1/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level Е Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- Spike recovery outside accepted recovery limits 20 / 42 S
- B Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

CLIENT: Lab Order: Project: Lab ID:	Giant Refin 0611016 Annual GW 0611016-05	ing Co Samples 2006 Ciniza		C	lient Sample Collection D Date Recei Mat	ID: Date: ved: trix:	BW-3 10/29/ 11/1/2 AQUE	B /2006 10:00:00 AM :006 EOUS
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD	300.0: ANIONS	;						Analyst: TES
Fluoride		1.7	0.10		mg/L		1	11/4/2006 5:10:56 AM
Chloride		33	0.50		mg/L		5	11/6/2006 5:16:03 PM
Nitrate (As N)+	Nitrite (As N)	ND	0.50		mg/L		5	11/4/2006 5:28:21 AM
Phosphorus, O	rthophosphate (As	s P) 1.1	0.50	н	mg/L		1	11/4/2006 5:10:56 AM
Sulfate	,	53	0.50		mg/L		1	11/4/2006 5:10:56 AM
EPA METHOD	7470: MERCUI	RY						Analyst: MAP
Mercury		ND	0.00020		mg/L		1	11/14/2006
EPA 6010B: T	OTAL RECOVE	RABLE METALS						Analyst: NMO
Arsenic		0.021	0.020		mg/L		1	11/15/2006 9:26:01 PM
Barium		0.11	0.020		mg/L		1	11/15/2006 9:26:01 PM
Cadmium		ND	0.0020		mg/L		1	11/15/2006 9:26:01 PM
Calcium		9.0	1.0		mg/L		1	11/15/2006 9:26:01 PM
Chromium		ND	0.0060		mg/L		1	11/15/2006 9:26:01 PM
Lead		ND	0.0050		mg/L		1	11/15/2006 9:26:01 PM
Magnesium		2.7	1.0		mg/L		1	11/15/2006 9:26:01 PM
Potassium		ND	1.0		mg/L		1	11/15/2006 9:26:01 PM
Selenium		ND	0.050		mg/L		1	11/15/2006 9:26:01 PM
Silver		ND	0.0050		mg/L		1	11/15/2006 9:26:01 PM
Sodium		380	10		mg/L		10	11/16/2006 11:10:42 AM
EPA METHOD	8270C: SEMIV	OLATILES						Analyst: BL
Acenaphthene	!	ND	10		µg/L		1	11/14/2006
Acenaphthyler	ie	ND	10		µg/L		1	11/14/2006
Aniline		ND	20		µg/L		1	11/14/2006
Anthracene		ND	10		µg/L		1	11/14/2006
Azobenzene		ND	10		µg/L		1	11/14/2006
Benz(a)anthra	cene	ND	15		µg/L		1	11/14/2006
Benzo(a)pyrer	ie	ND	15		µg/L		1	11/14/2006
Benzo(b)fluora	inthene	ND	15		µg/L		1	11/14/2006
Benzo(g,h,i)pe	erylene	ND	10		µg/L		1	11/14/2006
Benzo(k)fluora	Inthene	ND	10		µg/L		1	11/14/2006
Benzoic acid		ND	50		µg/L		1	11/14/2006
Benzyl alcohol	l	ND	20		µg/L		1	11/14/2006
Bis(2-chloroetl	noxy)methane	ND	10		µg/L		1	11/14/2006
Bis(2-chloroet	hyl)ether	ND	15		µg/L		1	11/14/2006
Bis(2-chloroisc	opropyl)ether	ND	15		µg/L		1	11/14/2006
Bis(2-ethylhex	yl)phthalate	ND	15	·	µg/L		1	11/14/2006
Qualifiers:	* Value exceed	s Maximum Contaminant Lev	el		B Analyte de	etected	in the as	ssociated Method Blank
	E Value above	quantitation range			H Holding ti	mes for	r prepara	ation or analysis exceeded
	J Analyte detec	ted below quantitation limits		1	MCL Maximum	Conta:	minant l	Level
	ND Not Detected S Spike recove	at the Reporting Limit y outside accepted recovery li	mits <b>71</b> /	1.2	KL Reporting	Limit		Page 21 of

Date: 17-Nov-06

Date: 17-Nov-06

Lab ID:	0611016-05	Matri Matri	<b>x:</b> AQUI	EOUS
Analyses	Result	POL Qual Units	DF	Date Analyzed

EPA METHOD 8270C: SEMIVOLATILES					Analyst: BL	
4-Bromophenyl phenyl ether	ND	10	µg/L	1	11/14/2006	
Butyl benzyl phthalate	ND	15	µg/L	1	11/14/2006	
Carbazole	ND	10	µg/L	1	11/14/2006	
4-Chloro-3-methylphenol	ND	20	µg/L	1	11/14/2006	
4-Chloroaniline	ND	20	µg/L	1	11/14/2006	
2-Chloronaphthalene	ND	10	µg/L	1	11/14/2006	
2-Chlorophenol	ND	10	µg/L	1	11/14/2006	
4-Chlorophenyl phenyl ether	ND	15	μg/L	1	11/14/2006	
Chrysene	ND	15	µg/L	1	11/14/2006	
Di-n-butyl phthalate	ND	10	µg/L	1	11/14/2006	
Di-n-octyl phthalate	ND	15	µg/L	1	11/14/2006	
Dibenz(a,h)anthracene	ND	10	µg/L	1	11/14/2006	
Dibenzofuran	ND	10	µg/L	1	11/14/2006	
1,2-Dichlorobenzene	ND	10	µg/L	1	11/14/2006	
1,3-Dichlorobenzene	ND	10	μg/L	1	11/14/2006	
1,4-Dichlorobenzene	ND	10	µg/L	1	11/14/2006	
3,3'-Dichlorobenzidine	ND	15	µg/L	1	11/14/2006	
Diethyl phthalate	ND	10	µg/L	1	11/14/2006	
Dimethyl phthalate	ND	10	µg/L	1	11/14/2006	
2,4-Dichlorophenol	ND	10	µg/L	1	11/14/2006	
2,4-Dimethylphenol	ND	10	µg/L	1	11/14/2006	
4,6-Dinitro-2-methylphenol	ND	50	µg/L	1	11/14/2006	
2,4-Dinitrophenol	NÐ	50	µg/L	1	11/14/2006	
2,4-Dinitrotoluene	ND	10	µg/L	1	11/14/2006	
2,6-Dinitrotoluene	ND	10	µg/L	1	11/14/2006	
Fluoranthene	ND	10	µg/L	1	11/14/2006	
Fluorene	ND	10	µg/L	1	11/14/2006	
Hexachlorobenzene	ND	10	µg/L	1	11/14/2006	
Hexachlorobutadiene	ND	10	µg/L	. 1	11/14/2006	
Hexachlorocyclopentadiene	ND	10	µg/L	1	11/14/2006	
Hexachloroethane	ND	10	µg/L	1	11/14/2006	
Indeno(1,2,3-cd)pyrene	ND	10	µg/L	1	11/14/2006	
Isophorone	ND	10	µg/L	1	11/14/2006	
2-Methylnaphthalene	ND	10	µg/L	1	11/14/2006	
2-Methylphenol	ND	15	µg/L	1	11/14/2006	
3+4-Methylphenol	ND	20	µg/L	1	11/14/2006	
N-Nitrosodi-n-propylamine	ND	10	µg/L	1	11/14/2006	
N-Nitrosodimethylamine	ND	10	µg/L	1	11/14/2006	
N-Nitrosodiphenylamine	ND	10	µg/L	1	11/14/2006	
Naphthalene	ND	10	µg/L	1	11/14/2006	

Qualifiers:

Е Value above quantitation range

- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit

Spike recovery outside accepted recovery limits 22/42 S

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B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

- MCL Maximum Contaminant Level

RL Reporting Limit

^{*} Value exceeds Maximum Contaminant Level

CLIENT: Lab Order:	Giant Refining Co			C	lient Sample ID: Collection Date:	BW-3	3B //2006 10:00:00 AM
Project:	Annual GW Samples 20	06 Ciniza			Data Dessived.	11/1/	72000 10.00.00 PMV
Trojeci.	Annual O w Samples 20				Date Receiveu:		
Lab ID:	0611016-05				Matrix:	AQU	EUUS
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 82	70C: SEMIVOLATILES						Analyst: BL
2-Nitroaniline		ND	50		µg/L	1	11/14/2006
3-Nitroaniline		ND	50		µg/L	1	11/14/2006
4-Nitroaniline		ND	20		µg/L	1	11/14/2006
Nitrobenzene		ND	10		µg/L	1	11/14/2006
2-Nitrophenol		ND	15		µg/L	1	11/14/2006
4-Nitrophenol		ND	50		µg/L	1	11/14/2006
Pentachloropheno	1	ND	50		µg/L	1	11/14/2006
Phenanthrene		ND	10		µg/L	1	11/14/2006
Phenol		ND	10		µg/L	1	11/14/2006
Pyrene		ND	15		µg/L	1	11/14/2006
Pyridine		ND	30		µg/L	1	11/14/2006
1,2,4-Trichloroben	zene	ND	10		µg/L	1	11/14/2006
2,4,5-Trichlorophe	nol	ND	10		µg/L	1	11/14/2006
2,4,6-Trichlorophe	nol	ND	15		µg/L	1	11/14/2006
Surr: 2,4,6-Tribr	romophenol	61.7	16.6-150		%REC	1	11/14/2006
Surr: 2-Fluorobi	phenyl	60.1	19.6-134		%REC	1	11/14/2006
Surr: 2-Fluoroph	nenol	47.8	9.54-113		%REC	1	11/14/2006
Surr: 4-Terpher	vl-d14	65.4	22.7-145		%REC	1	11/14/2006
Surr: Nitrobenze	ene-d5	56.4	14.6-134		%REC	1	11/14/2006
Surr: Phenol-d5	5	35.4	10.7-80.3		%REC	1	11/14/2006
							Analyst: I MM
Renzene	.00D. VOLANELO	ND	1.0		ua/l	1	11/7/2006
Toluene		ND	1.0		μg/L	1	11/7/2006
Ethylbenzone			1.0		μg/L	1	11/7/2006
Methyl tert butyl o	ther (MTRE)	ND	1.0		µg/L	1	11/7/2006
1.2.4-Trimothylbo		ND	1.0		μg/L	1	11/7/2006
1,2,4-Trimethylbe	nzene		1.0		μg/L	1	11/7/2006
1,2,0-minethype		ND	1.0		μg/L	1	11/7/2006
1,2-Dibromoethan		ND	1.0		μg/L	1	11/7/2006
Nanhthalono		ND	2.0		μg/L	1	11/7/2006
1.Methylpaphtbal	200		2.0		µg/L	1	11/7/2006
2-Methylnaphthal		ND	4.0		μg/L μg/l	1	11/7/2006
			10		μg/C	1	11/7/2006
Bromobenzono			10		29/5 110/l	' 1	11/7/2006
Bromochloromoth	200		1.0		р <u>9</u> /с ug/l	1	11/7/2006
Bromodiobleroma	thane		1.0		μο/l	י 1	11/7/2000
Bromoform	marte		1.0		ру/с ug/l	1	11/7/2000
Bromomatha			1.0		pg/c	1	11/7/2000
			2.0		μg/c vo/l	1	11/7/2006
Z-Bulanone		NU	10		µy/∟	1	11/7/2006
Qualifiers: *	Value exceeds Maximum C	ontaminant Lev	vel		B Analyte detected	d in the a	associated Method Blank
	Analyte detected below one	ntitation limits		,	MCL Maximum Cont	aminant	l evel

RL Reporting Limit

## Hall Environmental Analysis Laboratory, Inc.

Date: 17-Nov-06

ND Not Detected at the Reporting Limit S

Spike recovery outside accepted recovery limits 23/42

Page 23 of 32

Date: 17-Nov-06

CLIENT:	Giant Refining Co			Client Sample ID:	BW-3	B	
Lab Order:	0611016			<b>Collection Date:</b>	10/29	/2006 10:00:00 AM	
Project:	Annual GW Sample	es 2006 Ciniza		Date Received.	11/1/2006		
Lab ID:	0611016-05			Matrix:	AQUEOUS		
Analyses		Result	PQL Qu	al Units	DF	Date Analyzed	
EPA METHOD	8260B: VOLATILES					Analyst: LMM	
Carbon disulfic	le	ND	10	µg/L	1	11/7/2006	
Carbon Tetrac	hloride	ND	2.0	ug/L	1	11/7/2006	
Chlorobenzene	2	ND	1.0	ua/L	1	11/7/2006	
Chloroethane		ND	2.0	µg/L	1	11/7/2006	
Chloroform		ND	1.0	µa/L	1	11/7/2006	
Chloromethan	e	ND	1.0	µa/L	1	11/7/2006	
2-Chlorotoluer	ne l	ND	1.0	ug/L	1	11/7/2006	
4-Chlorotoluen	ie	ND	1.0	µg/L	1	11/7/2006	
cis-1.2-DCE		ND	1.0	ua/L	1	11/7/2006	
cis-1.3-Dichlor	opropene	ND	1.0	ua/L	1	11/7/2006	
1.2-Dibromo-3	-chloropropane	ND	2.0	ua/L	1	11/7/2006	
Dibromochloro	methane	ND	1.0	ua/L	1	11/7/2006	
Dibromometha	ine	ND	2.0	µg/L	1	11/7/2006	
1.2-Dichlorobe	nzene	ND	1.0	ug/L	1	11/7/2006	
1 3-Dichlorobe	nzene	ND	1.0	µg/L	1	11/7/2006	
1.4-Dichlorobe	nzene	ND	1.0	ua/L	1	11/7/2006	
Dichlorodifluor	omethane	ND	1.0	µg/l	1	11/7/2006	
1 1-Dichloroet	hane	ND	2.0	₽9/= U0/l	1	11/7/2006	
1 1-Dichloroet	hene	ND	1.0	μα/)	1	11/7/2006	
1 2-Dichloropr	opane	ND	1.0	µg/L	1	11/7/2006	
1.3-Dichloropr	onane	ND	1.0	29/1 20/1	1	11/7/2006	
2 2-Dichloropr	opane	ND	2.0	ug/L	1	11/7/2006	
1 1-Dichloropr	opene	ND	1.0	µg/l	1	11/7/2006	
Hexachlorobu	tadiene	ND	2.0	µg/1	1	11/7/2006	
2-Hexanone		ND	10	P9/=	1	11/7/2006	
Isopropylbenz	ene	ND	10	19/- 10/l	1	11/7/2006	
4-Isopropyltoli	lene	ND	1.0	µg/=	1	11/7/2006	
4-Methyl-2-pe	ntanone	ND	10	µg/⊑ uo/l	1	11/7/2006	
Methylene Ch	loride	ND	3.0	μ <u>α/L</u>	1	11/7/2006	
n-Butvibenzer	ie.	ND	1.0	ug/L	1	11/7/2006	
n-Propylbenze	ne	ND	1.0	49/L	1	11/7/2006	
sec-Butylbenz	ene	ND	2.0	19/L	1	11/7/2006	
Styrene		ND	1.5	ug/L	1	11/7/2006	
tert-Butvlbenz	ene	ND	1.0	µa/L	1	11/7/2006	
1.1.1.2-Tetrac	hloroethane	ND	1.0	µa/L	1	11/7/2006	
1.1.2.2-Tetrac	hloroethane	ND	1.0	ua/L	1	11/7/2006	
Tetrachloroeth	nene (PCE)	ND	1.0	ua/L	1	11/7/2006	
trans-1 2-DCF		ND	1.0	ua/L	1	11/7/2006	
trans-1 3-Dich	loropropene	ND	1.0	ua/L	1	11/7/2006	
1.2.3-Trichlor	obenzene	ND	1.0	ua/L	1	11/7/2006	
1210 111011010				r 3' - '		1002000	

Qualifiers:

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- * Value exceeds Maximum Contaminant Level
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- Spike recovery outside accepted recovery limits 24/42S

. . . . . .

- -----B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

----- . _ . . .

CLIENT:	Giant Refining Co			Client Sample II	<b>):</b> BW-3	B	
Lab Order:	0611016			Collection Date	e: 10/29	10/29/2006 10:00:00 AM	
Project:	Annual GW Samples 20	06 Ciniza		Date Received	<b>1:</b> 11/1/2	2006	
Lab ID:	0611016-05			Matrix	: AQU	EOUS	
Analyses		Result	PQL	Qual Units	DF	Date Analyzed	
EPA METHOD 82	260B: VOLATILES					Analyst: LMM	
1,2,4-Trichlorobe	nzene	ND	1.0	µg/L	1	11/7/2006	
1,1,1-Trichloroeth	nane	ND	1.0	µg/L	1	11/7/2006	
1,1,2-Trichloroeth	ane	ND	1.0	µg/L	1	11/7/2006	
Trichloroethene (	TCE)	ND	1.0	µg/L	1	11/7/2006	
Trichlorofluorome	ethane	ND	1.0	µg/L	1	11/7/2006	
1,2,3-Trichloropro	opane	ND	2.0	µg/L	1	11/7/2006	
Vinyl chloride		ND	1.0	µg/L	1	11/7/2006	
Xylenes, Total		ND	3.0	µg/L	1	11/7/2006	
Surr: 1,2-Dichl	oroethane-d4	86.8	69. <del>9</del> -130	%REC	1	11/7/2006	
Surr: 4-Bromot	fluorobenzene	114	75-139	%REC	1	11/7/2006	
Surr: Dibromof	fluoromethane	93.0	57.3-135	%REC	1	11/7/2006	
Surr: Toluene-	d8	96.4	81.9-122	%REC	1	11/7/2006	
EPA 120.1: SPE	CIFIC CONDUCTANCE					Analyst: CMS	
Specific Conduct	ance	1500	0.010	µmhos/cm	1	11/1/2006	
EPA METHOD 1	50.1: PH					Analyst: CMS	
рH		8.12	0.010	pH units	1	11/1/2006	

Date: 17-Nov-06

. . . . . . Qualifiers:

- Value exceeds Maximum Contaminant Level *
- Е Value above quantitation range

. ......

- J Analyte detected below quantitation limits
- Not Detected at the Reporting Limit ND
- Spike recovery outside accepted recovery limits 25/42 S
- B Analyte detected in the associated Method Blank

------

- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

.... . . . . .

CLIENT:	Giant Refining Co			C	Client	Sample ID:	BW-3	SC
Lab Order:	0611016				Colle	ction Date:	10/29	/2006 10:45:00 AM
Project:	Annual GW Samples	2006 Ciniza			Data Dagaiyadı		11/1/2	2006
ah ID:	0611016-06				Dat	Matrix:	AOU	EOUS
		Decult		Qual	Unit		<u> </u>	Data Analyzad
		Result	FQL	Quai	Unit	.5	Dr	
PA METHOD	300.0: ANIONS							Analyst: TES
Fluoride		1.9	0.10		mg/L		1	11/4/2006 5:45:46 AM
Chloride		38	0.50		mg/L		5	11/6/2006 5:33:27 PM
Nitrate (As N)+I	Nitrite (As N)	ND	0.50		mg/L		5	11/4/2006 6:03:10 AM
Phosphorus, O	rthophosphate (As P)	ND	0.50	н	mg/L		1	11/4/2006 5:45:46 AM
Sulfate		280	2.5	.*	mg/L		5	11/6/2006 5:33:27 PM
	7470 MERCURY							Analyst: MAR
Mercury		ND	0.00020		mg/L		1	11/14/2006
DA 6040D. T								
	JIAL RECOVERABLE N		0.000				1	Analyst: NMC
Arsenic			0.020		mg/L		1	11/15/2006 9:29:53 PN
Barium		0.029	0.020		mg/L		1	11/15/2006 9:29:53 PM
Cadmium		ND	0.0020		mg/L		1	11/15/2006 9:29:53 PM
Calcium		6.0	1.0		mg/L		1	11/15/2006 9:29:53 PN
Chromium		ND	0.0060		mg/L		1	11/15/2006 9:29:53 PN
Lead		ND	0.0050		mg/L		1	11/15/2006 9:29:53 PN
Magnesium		ND	1.0		mg/L		1	11/15/2006 9:29:53 PN
Potassium		ND	1.0		mg/L		1	11/15/2006 9:29:53 PN
Selenium		ND	0.050		mg/L		1	11/15/2006 9:29:53 PN
Silver		ND	0.0050		mg/L		1	11/15/2006 9:29:53 PN
Sodium		320	10		mg/L		10	11/16/2006 11:16:50 A
EPA METHOD	8270C: SEMIVOLATILE	s						Analyst: BL
Acenaphthene		ND	10		µg/L		1	11/14/2006
Acenaphthylen	e	ND	10		µa/L		1	11/14/2006
Aniline		ND	20		µg/L		1	11/14/2006
Anthracene		ND	10		µg/L		1	11/14/2006
Azobenzene		ND	10		ua/L		1	11/14/2006
Benz(a)anthrac	cene	ND	15		µa/L		1	11/14/2006
Benzo(a)pvren	e	ND	15		µa/L		1	11/14/2006
Benzo(b)fluora	nthene	ND	15		µa/L		1	11/14/2006
Benzo(a.h.i)pe	rvlene	ND	10		µa/L		1	11/14/2006
Benzo(k)fluora	nthene	ND	10		µa/l		1	11/14/2006
Benzoic acid		ND	50		μα/L		1	11/14/2006
Benzvi alcohol		ND	20		ua/l		1	11/14/2006
Bis(2-chloroeth	noxy)methane	ND	 10		µ0/l		1	11/14/2006
Bis(2-chloroeth	vi)ether	ND	15		ua/l		1	11/14/2006
Bis(2-chloroiso	pronvl)ether	ND	. 15		9/E		, 1	11/14/2006
Bis(2-ethylhexy	yl)phthalate	ND	15		μg/L		1	11/14/2006
Qualifiers:	* Value exceeds Maximum	Contaminant Lev	el		в и	Analyte detected	l in the a	ssociated Method Blank
-	E Value above quantitation	range			нн	Holding times fo	or prepar	ation or analysis exceeded
	J Analyte detected below a	uantitation limits		İ	MCL N	Maximum Conta	aminant	Level
	ND Not Detected at the Report	rting Limit			RL I	Reporting Limit		
		-			-	, .		Page 26

CLIENT:	Giant Refining Co	Client Sample ID:	BW-3C	
Lab Order:	0611016	Collection Date:	10/29/2006 10:45:00 AM	
Project:	Annual GW Samples 2006 Ciniza	Date Received:	11/1/2006	
Lab ID:	0611016-06	Matrix:	AQUEOUS	
Analyses	Result	PQL Qual Units	DF Date Analyzed	

10

15

10

20

20

10

10

15

15

10

15

10

10

10

10

10

15

10

10

10

10

10

µg/L

μg/L

µg/L

µg/L

µg/L

#### Date: 17-Nov-06 Hall Environmental Analysis Laboratory, Inc.

ND

**EPA METHOD 8270C: SEMIVOLATILES** 

4-Bromophenyl phenyl ether

Butyl benzyl phthalate

2-Chloronaphthalene

Di-n-butyl phthalate

Di-n-octyl phthalate

Dibenzofuran

Dibenz(a,h)anthracene

1,2-Dichlorobenzene

1,3-Dichlorobenzene

1,4-Dichlorobenzene

Diethyl phthalate

Dimethyl phthalate

2,4-Dichlorophenol

3.3'-Dichlorobenzidine

4-Chloro-3-methylphenol

4-Chlorophenyl phenyl ether

Carbazole

4-Chloroaniline

2-Chlorophenol

Chrysene



Qualifiers:

N-Nitrosodiphenylamine

E

Naphthalene

В Analyte detected in the associated Method Blank

Holding times for preparation or analysis exceeded

1

1

- Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit S
  - Spike recovery outside accepted recovery limits 27 / 42
- MCL Maximum Contaminant Level Reporting Limit RL

µg/L

µg/L

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Analyst: BL

11/14/2006

11/14/2006

11/14/2006

11/14/2006

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11/14/2006

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^{*} Value exceeds Maximum Contaminant Level

CLIENT: Lab Order: Project: Lab ID:	Giant Refining Co 0611016 Annual GW Samples 2 0611016-06	006 Ciniza		Clien Co D	nt Sample ID: ollection Date: Pate Received: Matrix:	BW-3 10/29/ 11/1/2 AQUI	C /2006 10:45:00 AM 2006 EOUS
Analyses		Result	PQL	Qual U	nits	DF	Date Analyzed
EPA METHOD	8270C: SEMIVOLATILES						Analyst: BL
2-Nitroaniline		ND	50	hð	p/L	1	11/14/2006
3-Nitroaniline		ND	50	hđ	J/L	1	11/14/2006
4-Nitroaniline		ND	20	μg	µ∕∟	1	11/14/2006
Nitrobenzene		ND	10	hđ	J/L_	1	11/14/2006
2-Nitrophenol		ND	15	hđ	J/L	1	11/14/2006
4-Nitrophenol		ND	50	hđ	J∕L	1	11/14/2006
Pentachlorophe	enol	ND	50	μg	J/L	1	11/14/2006
Phenanthrene		ND	10	þð	J∕L	1	11/14/2006
Phenol		ND	10	μg	j/L	1	11/14/2006
Pyrene		ND	15	μg	ĵ/L	1	11/14/2006
Pyridine		ND	30	μg	g/L	1	11/14/2006
1,2,4-Trichlorot	penzene	ND	10	μο	g/L	1	11/14/2006
2,4,5-Trichlorop	phenol	ND	10	μg	g/L	1	11/14/2006
2,4,6-Trichlorop	phenol	ND	15	μg	g/L	1	11/14/2006
Surr: 2,4,6-T	ribromophenol	66.1	16.6-150	%	REC	1	11/14/2006
Surr: 2-Fluor	obiphenyl	54.6	19.6-134	%	REC	1	11/14/2006
Surr: 2-Fluor	rophenol	44.3	9.54-113	%	REC	1	11/14/2006
Surr: 4-Terpl	henyl-d14	66.5	22.7-145	%	REC	1	11/14/2006
Surr: Nitrobe	enzene-d5	50.6	14.6-134	%	REC	1	11/14/2006
Surr: Phenol	-d5	32.0	10.7-80.3	%	REC	1	11/14/2006
	8260B: VOLATILES						Applyst: I M
Renzene	OLOOD. VOLATILEO	ND	10	110	٦/I	1	11/8/2006
Toluene		ND	1.0	P:	g/⊑ ⊐/l	1	11/8/2006
Ethylbenzene		ND	1.0	PS	g/⊑ ⊐/l	1	11/8/2006
Methyl tert-but	vl.etber (MTRE)		1.0	μ μ	g/∟ n/l	1	11/8/2000
1 2 4-Trimethyl		ND	1.0	μι 	y/∟ >/l	1	11/8/2006
1.3.5-Trimethyl	lbenzene	ND	1.0	P: 11	a, ⊑ ⊃/l	1	11/8/2006
1 2-Dichloroeth	ane (EDC)	ND	1.0	P: 10	g,⊆ n/l	1	11/8/2006
1.2-Dibromoeth	hane (EDB)	ND	1.0	29 11	g/⊑ n/l	, 1	11/8/2006
Naphthalene		ND	2.0	P:	∍/ _ ⊐/I	1	11/8/2006
1-Methylnapht	halene	ND	4.0	P:	∍, <b>_</b> ⊃/l	1	11/8/2006
2-Methylnapht	halene	ND	4.0	P:	9/2 h/l	1	11/8/2006
Acetone		ND	10	P:	9/2 7/1	1	11/8/2006
Bromobenzene	2	ND	10	P:	9/ <b>-</b> 7/I	1	11/8/2006
Bromochlorom	ethane	ND	1.0	11 11		1	11/8/2006
Bromodichloro	methane	ND	1.0	ци Р(		1	11/8/2006
Bromoform		ND	1.0	11/ 12	∍· n/l	' 1	11/8/2006
Bromomethan	e	ND	20		9. – n/l	1	11/8/2006
2-Butanone	~	ND	10	рі рі	9/L	, 1	11/8/2006
Q., . 11 5	* Value even de Manimum (	Contominant I				1:_0	
Quanners:	F Value above avertifation	Loniaininant Lév	·C1	н В	Analyte detected	in the a	ssociated Method Blank
	E value above quantilation r	ange		H	riolding times fo	or prepar	ation or analysis exceeded
	ND Not Detected at the Report	ing Limit			Reporting Limit	annnant	
				112	were chung		

Date: 17-Nov-06



Date: 17-Nov-06

CLIENT:	Giant Refining Co	Client Sample ID:	BW-3C
Lab Order:	0611016	Collection Date:	10/29/2006 10:45:00 AM
Project:	Annual GW Samples 2006 Ciniza	Date Received:	11/1/2006
Lab ID:	0611016-06	Matrix:	AQUEOUS
Analyses	Result	POL Qual Units	DF Date Analyzed

Analyses	ittoun			DI	Date Analyzed
EPA METHOD 8260B: VOLATILES					Analyst: LMM
Carbon disulfide	ND	10	µg/L	1	11/8/2006
Carbon Tetrachloride	ND	2.0	µg/L	1	11/8/2006
Chlorobenzene	ND	1.0	µg/L	1	11/8/2006
Chloroethane	ND	2.0	µg/L	1	11/8/2006
Chloroform	ND	1.0	µg/L	1	11/8/2006
Chloromethane	ND	1.0	µg/L	1	11/8/2006
2-Chlorotoluene	ND	1.0	µg/L	1	11/8/2006
4-Chlorotoluene	ND	1.0	µg/L	1	11/8/2006
cis-1,2-DCE	ND	1.0	µg/L	1	11/8/2006
cis-1,3-Dichloropropene	ND	1.0	µg/L	1	11/8/2006
1,2-Dibromo-3-chloropropane	ND	2.0	µg/L	1 .	11/8/2006
Dibromochloromethane	ND	1.0	µg/L	1	11/8/2006
Dibromomethane	ND	2.0	µg/L	1	11/8/2006
1,2-Dichlorobenzene	ND	1.0	µg/L	1	11/8/2006
1,3-Dichlorobenzene	ND	1.0	μg/L	1	11/8/2006
1,4-Dichlorobenzene	ND	1.0	µg/L	1	11/8/2006
Dichlorodifluoromethane	ND	1.0	µg/L	1	11/8/2006
1,1-Dichloroethane	ND	2.0	μg/L	1	11/8/2006
1,1-Dichloroethene	ND	1.0	µg/L	1	11/8/2006
1,2-Dichloropropane	ND	1.0	µg/Ľ	1	11/8/2006
1,3-Dichloropropane	ND	1.0	µg/L	1	11/8/2006
2,2-Dichloropropane	ND	2.0	µg/L	1	11/8/2006
1,1-Dichloropropene	ND	1.0	µg/L	1	11/8/2006
Hexachlorobutadiene	ND	2.0	µg/L	1	11/8/2006
2-Hexanone	ND	10	µg/L	1	11/8/2006
Isopropylbenzene	ND	1.0	µg/L	1	11/8/2006
4-Isopropyltoluene	ND	1.0	µg/L	1	11/8/2006
4-Methyl-2-pentanone	ND	10	µg/L	1	11/8/2006
Methylene Chloride	ND	3.0	µg/L	1	11/8/2006
n-Butylbenzene	ND	1.0	µg/L	1	11/8/2006
n-Propylbenzene	ND	1.0	µg/L	1	11/8/2006
sec-Butylbenzene	ND	2.0	µg/L	1	11/8/2006
Styrene	ND	1.5	µg/L	1	11/8/2006
tert-Butylbenzene	ND	1.0	µg/L	1	11/8/2006
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1	11/8/2006
1,1,2,2-Tetrachloroethane	ND	1.0	µg/L	1	11/8/2006
Tetrachloroethene (PCE)	ND	1.0	µg/L	1	11/8/2006
trans-1,2-DCE	ND	1.0	µg/L	1	11/8/2006
trans-1,3-Dichloropropene	ND	1.0	µg/L	1	11/8/2006
1,2,3-Trichlorobenzene	ND	1.0	µg/L	1	11/8/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- Spike recovery outside accepted recovery limite 29 / 42 S
- B Analyte detected in the associated Method Blank
- Holding times for preparation or analysis exceeded Н
- MCL Maximum Contaminant Level
- RL Reporting Limit

. ...



Date: 17-Nov-06

CLIENT:	Giant Refining Co			С	lient Sample ID:	BW-3	С
Lab Order:	0611016				<b>Collection Date:</b>	10/29/	/2006 10:45:00 AM
Project:	Annual GW Samples 20	)06 Ciniza			Date Received:	11/1/2	2006
Lab ID:	0611016-06		Matrix		AQUEOUS		
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD	8260B: VOLATILES						Analyst: LMM
1,2,4-Trichlorot	penzene	ND	1.0		µg/L	1	11/8/2006
1,1,1-Trichloroe	ethane	ND	1.0		µg/L	1	11/8/2006
1,1,2-Trichloroe	ethane	ND	1.0		µg/L	1	11/8/2006
Trichloroethene	e (TCE)	ND	1.0		µg/L	1	11/8/2006
Trichlorofluoror	nethane	ND	1.0		µg/L	1	11/8/2006
1,2,3-Trichlorop	propane	ND	2.0		hð\r	1	11/8/2006
Vinyl chloride		ND	1.0		µg/L	1	11/8/2006
Xylenes, Total		ND	3.0		µg/L	1	11/8/2006
Surr: 1,2-Dic	hloroethane-d4	89.8	69.9-130		%REC	1	11/8/2006
Surr: 4-Brom	ofluorobenzene	97.9	75-139		%REC	1	11/8/2006
Surr: Dibrom	ofluoromethane	99.9	57.3-135		%REC	1	11/8/2006
Surr: Toluen	e-d8	94.5	81. <del>9</del> -122		%REC	1	11/8/2006
EPA 120.1: SP	ECIFIC CONDUCTANCE						Analyst: CMS
Specific Condu	ctance	1400	0.010		µmhos/cm	1	11/1/2006
EPA METHOD	150.1: PH						Analyst: CMS
рH		8.72	0.010		pH units	1	11/1/2006

Qualifiers:

* Value exceeds Maximum Contaminant Level

Е Value above quantitation range

- Analyte detected below quantitation limits J
- ND Not Detected at the Reporting Limit
- Spike recovery outside accepted recovery limits 30/42S
- . . . ..... В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL
  - Reporting Limit

Page 30 of 32

Date: 17-Nov-06

CLIENT:	Giant Refining Co	Client Sample ID:	Trip B	lank		
Lab Order:	0611016	Collection Date:				
Project:	Annual GW Samples 2006 Ciniza	Date Received:	11/1/2	11/1/2006		
Lab ID:	0611016-07	Matrix:	TRIP I	BLANK		
Analyses	Result	PQL Qual Units	DF	Date Analyzed		

	·····				· · · · · · · · · · · · · · · · · · ·	
EPA METHOD 8260B: VOLATILES					Analyst: LM	М
Benzene	ND	1.0	µg/L	1	11/7/2006	
Toluene	ND	1.0	µg/L	1	11/7/2006	
Ethylbenzene	ND	1.0	µg/L	1	11/7/2006	
Methyl tert-butyl ether (MTBE)	ND	1.5	µg/L	1	11/7/2006	
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1	11/7/2006	
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1	11/7/2006	
1,2-Dichloroethane (EDC)	ND	1.0	µg/L	1	11/7/2006	
1,2-Dibromoethane (EDB)	ND	1.0	µg/L	1	11/7/2006	
Naphthalene	ND	2.0	µg/L	1	11/7/2006	
1-Methylnaphthalene	ND	4.0	µg/L	1	11/7/2006	
2-Methylnaphthalene	ND	4.0	µg/L	1	11/7/2006	
Acetone	ND	10	µg/L	1	11/7/2006	
Bromobenzene	ND	1.0	µg/L	1	11/7/2006	
Bromochloromethane	ND	1.0	µg/L	1	11/7/2006	
Bromodichloromethane	ND	1.0	µg/L	1	11/7/2006	
Bromoform	ND	1.0	µg/L	1	11/7/2006	
Bromomethane	ND	2.0	µg/L	1	11/7/2006	
2-Butanone	ND	10	µg/L	1	11/7/2006	
Carbon disulfide	ND	10	µg/L	1	11/7/2006	
Carbon Tetrachloride	ND	2.0	µg/L	1	11/7/2006	
Chlorobenzene	ND	1.0	µg/L	1	11/7/2006	
Chloroethane	ND	2.0	µg/L	1	11/7/2006	
Chloroform	ND	1.0	µg/L	1	11/7/2006	
Chloromethane	ND	1.0	µg/L	1	11/7/2006	
2-Chlorotoluene	ND	1.0	µg/L	1	11/7/2006	
4-Chlorotoluene	ND	1.0	µg/L	1	11/7/2006	
cis-1,2-DCE	ND	1.0	µg/L	1	11/7/2006	
cis-1,3-Dichloropropene	ND	1.0	µg/L	1	11/7/2006	
1,2-Dibromo-3-chloropropane	ND	2.0	µg/L	1	11/7/2006	
Dibromochloromethane	ND	1.0	µg/L	1	11/7/2006	
Dibromomethane	ND	2.0	µg/L	1	11/7/2006	
1,2-Dichlorobenzene	ND	1.0	µg/L	1	11/7/2006	
1,3-Dichlorobenzene	ND	1.0	µg/L	1	11/7/2006	
1,4-Dichlorobenzene	ND	1.0	µg/L	1	11/7/2006	
Dichlorodifluoromethane	ND	1.0	µg/L	1	11/7/2006	
1,1-Dichloroethane	ND	2.0	µg/L	1	11/7/2006	
1,1-Dichloroethene	ND	1.0	µg/L	1	11/7/2006	
1,2-Dichloropropane	ND	1.0	µg/L	1	11/7/2006	
1,3-Dichloropropane	ND	1.0	µg/L	1	11/7/2006	
2,2-Dichloropropane	ND	2.0	µg/L	1	11/7/2006	



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Qualifiers:

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- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range

**.**........

- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- Spike recovery outside accepted recovery limitr 31/42 S
- ------B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

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CLIENT:	Giant Refining Co			Cl	ient Sample ID:	Trip E	Blank	
Lab Order:	0611016			(	Collection Date:	:		
Project:	Annual GW Samples	2006 Ciniza			Date Received:			
Lab ID:	0611016-07		N N			TRIP	BLANK	
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed	
EPA METHOD	8260B: VOLATILES	<u></u>					Analyst: LMM	
1,1-Dichloropro	ppene	ND	1.0		µg/L	1	11/7/2006	
Hexachlorobuta	adiene	ND	2.0		µg/L	1	11/7/2006	
2-Hexanone		ND	10		μg/L	1	11/7/2006	
lsopropylbenze	ene	ND	1.0		µg/L	1	11/7/2006	
4-Isopropyltolu	ene	ND	1.0		µg/L	1	11/7/2006	
4-Methyl-2-per	itanone	ND	10		µg/L	1	11/7/2006	
Methylene Chl	oride	ND	3.0		µg/L	1	11/7/2006	
n-Butylbenzene	е	ND	1.0		µg/L	1	11/7/2006	
n-Propylbenze	ne	ND	1.0		µg/L	1	11/7/2006	
sec-Butylbenze	ene	ND	2.0		µg/L	1	11/7/2006	
Styrene		ND	1.5		µg/L	1	11/7/2006	
tert-Butylbenze	ene	ND	1.0		µg/L	1	11/7/2006	
1,1,1,2-Tetrach	hloroethane	ND	1.0		µg/L	1	11/7/2006	
1,1,2,2-Tetrach	nloroethane	ND	1.0		µg/L	1	11/7/2006	
Tetrachloroeth	ene (PCE)	ND	1.0		µg/L	1	11/7/2006	
trans-1,2-DCE		ND	1.0		µg/L	1	11/7/2006	
trans-1,3-Dichl	oropropene	ND	1.0		µg/L	1	11/7/2006	
1,2,3-Trichloro	benzene	ND	1.0		µg/L	1	11/7/2006	
1,2,4-Trichloro	benzene	ND	1.0		µg/L	1	11/7/2006	
1,1,1-Trichloro	ethane	ND	1.0		µg/L	1	11/7/2006	
1,1,2-Trichloro	ethane	ND	1.0		µg/L	1	11/7/2006	
Trichloroethen	e (TCE)	ND	1.0		µg/L	1	11/7/2006	
Trichlorofluoro	methane	ND	1.0		µg/L	1	11/7/2006	
1,2,3-Trichloro	propane	ND	2.0		µg/L	1	11/7/2006	
Vinyl chloride		ND	1.0		µg/L	1	11/7/2006	
Xylenes, Total		ND	3.0		µg/L	1	11/7/2006	
Surr: 1,2-Did	chloroethane-d4	88.6	69.9-130		%REC	1	11/7/2006	
Surr: 4-Bron	nofluorobenzene	104	75-139		%REC	1	11/7/2006	
Surr: Dibron	nofluoromethane	95.4	57.3-135		%REC	1	11/7/2006	

Date: 17-Nov-06

Surr: Toluene-d8

- * Value exceeds Maximum Contaminant Level
- Е Value above quantitation range

. . ...

- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- Spike recovery outside accepted recovery limits 32/42 S

95.1

81.9-122

B Analyte detected in the associated Method Blank

11/7/2006

- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level

1

RL Reporting Limit

%REC

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oject: Annual GW S	amples 20	006 Ciniza					Wor	k Order: 0611016
Analyte	Result	Units	PQL	%Rec	LowLimit H	lighLimit	%RPD R	PDLimit Qual
Method: E300								
Sample ID: MBLK		MBLK			Batch ID:	R21288	Analysis Date:	11/3/2006 11:11:41 AM
Fluoride	ND	mg/L	0.10					
Chloride	ND	mg/L	0.10					
Nitrate (As N)+Nitrite (As N)	ND	mg/L	0.10					
Phosphorus, Orthophosphate (As P)	ND	mg/L	0.50					
Sulfate	ND	mg/L	0.50					
Sample ID: MBLK		MBLK			Batch ID	R21305	Analysis Date:	11/6/2006 10:00:52 AM
Fluoride	ND	mg/L	0.10					
Chloride	ND	mg/L	0.10					
Nitrate (As N)+Nitrite (As N)	ND	mg/L	0.10					
Phosphorus, Orthophosphate (As P)	ND	mg/L	0.50					
Sulfate	ND	mg/L	0.50					
Sample ID: LCS ST300-06019		LCS			Batch ID	: R21288	Analysis Date	: 11/3/2006 11:29:05 AM
Fluoride	0.5273	mg/L	0.10	105	90	110		
Chloride	4.899	mg/L	0.10	98.0	90	110		
Nitrate (As N)+Nitrite (As N)	3.461	mg/L	0.10	98.9	90	110		
Phosphorus, Orthophosphate (As P)	4.997	mg/L	0.50	99.9	90	110		
Sulfate	9.674	mg/L	0.50	96.7	90	110		
Sample ID: LCS ST300-06019		LCS			Batch ID	: R21305	Analysis Date	: 11/6/2006 10:18:16 AM
loride	0.5066	mg/L	0.10	101	90	110		
Chloride	4.862	mg/L	0.10	97.2	90	110		
Nitrate (As N)+Nitrite (As N)	3.426	mg/L	0.10	97.9	90	110		
Phosphorus, Orthophosphate (As P)	4.905	mg/L	0.50	98.1	90	110		
Sulfate	9.652	mg/L	0.50	96.5	90	110		

Qualifiers:

- E Value above quantitation range
- J Analyte detected below quantitation limits
- R
  - RPD outside accepted recovery limits

- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- Spike recovery outside accepted recovery limits S
  - 33/42

Analyte	Result	Units	PQL	%Rec	LowLimit	Hig	hLimit	%RPD	RPDLimit	Qual
Method: SW8270C										
Sample ID: MB-11641		MBLK			Batch	ID:	11641	Analysis [	Date:	11/14/200
Acenaphthene	ND	µg/L	10							
Acenaphthylene	ND	µg/L	10							
Aniline	ND	µg/L	20							
Anthracene	ND	µg/L	10							
Azobenzene	ND	µg/L	10							
Benz(a)anthracene	ND	µg/L	15							
Benzo(a)pyrene	ND	µg/L	15							
Benzo(b)fluoranthene	ND	µg/L	15							
Benzo(g,h,i)perylene	ND	µg/L	10							
Benzo(k)fluoranthene	ND	µg/L	10							
Benzoic acid	ND	µg/L	50							
Benzyl alcohol	ND	µg/L	20							
Bis(2-chloroethoxy)methane	ND	µg/L	10							
Bis(2-chloroethyl)ether	ND	µg/L	15							
Bis(2-chloroisopropyl)ether	ND	µg/L	15							
Bis(2-ethylhexyl)phthalate	ND	µg/L	15							
4-Bromophenyl phenyl ether	ND	µg/L	10							
Butyl benzyl phthalate	ND	µg/L	15							
arbazole	ND	µg/L	10							
Chloro-3-methylphenol	ND	µg/L	20							
4-Chloroaniline	ND	μg/L	20							
2-Chloronaphthalene	ND	µg/L	10							
2-Chlorophenol	ND	µg/L	10							
4-Chlorophenyl phenyl ether	ND	μg/L	15							
Chrysene	ND	µg/L	15							
Di-n-butyl phthalate	ND	μg/L	10							
Di-n-octyl phthalate	ND	μg/L	15							
Dibenz(a,h)anthracene	ND	μg/L	10							
Dibenzofuran	ND	µg/L	10							
1.2-Dichlorobenzene	ND	µg/L	10							
1,3-Dichlorobenzene	ND	μg/L	10							
1,4-Dichlorobenzene	ND	µg/L	10							
3,3 ⁻ -Dichlorobenzidine	ND	µg/L	15							
Diethyl phthalate	ND	µg/L	10							
Dimethyl phthalate	ND	µg/L	10							
2,4-Dichlorophenol	ND	µg/L	10							
2,4-Dimethylphenol	ND	µg/L	10							
4,6-Dinitro-2-methylphenol	ND	µg/L	50							
2,4-Dinitrophenol	ND	µg/L	50							
2,4-Dinitrotoluene	ND	µg/L	10							
2,6-Dinitrotoluene	ND	µg/L	10							
Fluoranthene	ND	µg/L	10							
Fluorene	ND	µg/L	10							
Hexachlorobenzene	ND	µg/L	10							

- ٩u ng
- Analyte detected below quantitation limits J

R RPD outside accepted recovery limits

- prepa ng i
- ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits 34/42

Page 2

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Analyte	Result	Units	PQL	%Rec	LowLimit	High	Limit	%RPD		Qual
Method: SW8270C										
Sample ID: MB-11641		MBLK			Batch	ID:	11641	Analysis [	Date:	11/14/2006
Hexachlorobutadiene	ND	µg/L	10							
Hexachlorocyclopentadier	ie ND	µg/L	10							
-lexachloroethane	ND	µg/L	10							
ndeno(1,2,3-cd)pyrene	ND	µg/L	10							
sophorone	ND	µg/L	10							
2-Methylnaphthalene	ND	µg/L	10							
2-Methylphenol	ND	µg/L	15							
3+4-Methylphenol	ND	µg/L	20							
N-Nitrosodi-n-propylamine	e ND	µg/L	10							
N-Nitrosodimethylamine	ND	µg/L	10							
N-Nitrosodiphenylamine	ND	µg/L	10							
Naphthalene	ND	µg/L	10							
2-Nitroaniline	ND	µg/L	50			•				
3-Nitroaniline	ND	µg/L	50							
4-Nitroaniline	ND	µg/L	20							
Nitrobenzene	ND	µg/L	10							
2-Nitrophenol	ND	µg/L	15							
4-Nitrophenol	ND	µg/L	50							
ntachlorophenol	ND	µg/L	50							
enanthrene	ND	µg/L	10							
Phenol	ND	µg/L	10							
Pyrene	ND	µg/L	15							
Pyridine	ND	µg/L	30							
1,2,4-Trichlorobenzene	ND	µg/L	10							
2,4,5-Trichlorophenol	ND	µg/L	10							
2,4,6-Trichlorophenol	ND	µg/L	15							
Sample ID: LCS-11641		LCS			Batch	ID:	11641	Analysis I	Date:	11/14/200
Acenaphthene	75.56	µg/L	10	75.6	11	12	:3			
4-Chloro-3-methylphenol	128.8	µg/L	20	64.4	15.4	11	9			
2-Chlorophenol	109.7	µg/L	10	54.9	12.2	12	2			
1,4-Dichlorobenzene	44.08	µg/L	10	44.1	16.9	10	0			
2,4-Dinitrotoluene	70.12	µg/L	10	70.1	13	13	8			
N-Nitrosodi-n-propylamin	e 59.72	µg/L	10	59.7	9.93	12	22			
4-Nitrophenol	61.04	µg/L	50	30.5	12.5	87	.4			
Pentachlorophenol	89.54	µg/L	50	44.8	3.55	11	4			
Phenol	60.02	µg/L	10	30.0	7.53	73	.1			
Pyrene	74.84	µg/L	15	74.8	12.6	14	10			
1,2,4-Trichlorobenzene	49.74	µg/L	10	49.7	17.4	98	.7			
Sample ID: LCSD-1164	1	LCSD			Batch	ID:	11641	Analysis I	Date:	11/14/200
Acenaphthene	72.80	µg/L	10	72.8	11	12	23	3.72	30.5	
4-Chloro-3-methylphenol	129.7	µg/L	20	64.8	15.4	11	9	0.697	28.6	
2-Chlorophenol	129.1	µg/L	10	64.5	12.2	12	22	16.2	107	
1,4-Dichlorobenzene	48.32	µg/L	10	48.3	16.9	10	00	9.18	62.1	
4-Dinitrotoluene	64.96	µg/L	10	65.0	13	13	38	7.64	14.7	

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits 35/42

Date: 17-Nov-06

Slient:
roject:

Giant Refining Co Annual GW Samples 2006 Ciniza

Work Order: 0611016

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8270C									
Sample ID: LCSD-11641		LCSD			Batch	ID: 1164	1 Analysis (	Date:	11/14/2006
N-Nitrosodi-n-propylamine	60.62	µg/L	10	60.6	9.93	122	1.50	30.3	
4-Nitrophenol	75.92	µg/L	50	38.0	12.5	87.4	21.7	36.3	
Pentachlorophenol	127.0	µg/L	50	63.5	3.55	114	34.6	49	
Phenol	72.86	µg/L	10	36.4	7.53	73.1	19.3	52.4	
Pyrene	71.16	µg/L	15	71.2	12.6	140	5.04	16.3	
1,2,4-Trichlorobenzene	52.72	µg/L	10	52.7	17.4	98.7	5.82	36.4	
Method: SW7470									
Sample ID: 0611016-06D msd		MSD			Batch	ID: 1174	7 Analysis I	Date:	11/14/2006
Mercury	0.005025	mg/L	0.00020	100	75	125	2.07	20	
Sample ID: MB-11747		MBLK			Batch	ID: 1174	7 Analysis I	Date:	11/14/2000
Mercury	ND	mg/L	0.00020						
Sample ID: LCS-11747		LCS			Batch	ID: 1174	7 Analysis I	Date:	11/14/200
Mercury	0.005385	mg/L	0.00020	108	80	120			
Sample ID: 0611016-06D ms		MS			Batch	ID: 1174	7 Analysis	Date:	11/14/200
Mercury	0.005130	mg/L	0.00020	103	75	125			



#### Qualifiers:

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits  $3\,6\,/\,4\,2$ 

0611016

Work Order:

## **QA/QC SUMMARY REPORT**

ient:
oject:

Giant Refining Co Annual GW Samples 2006 Ciniza

Analyte	Result	Units	PQL	%Rec	LowLimit	High	Limit	%RPD RP	DLimit Qual
Aethod: SW6010A									
Sample ID: MB-11746		MBLK			Batch	ID:	11746	Analysis Date:	11/16/2006 8:58:41 AM
Arsenic	ND	mo/l	0.020					-	
Barium	ND	mg/L	0.020						
Cadmium	ND	ma/l	0.020						
Calcium	ND	ma/l	1.0						
Chromium	ND	ma/L	0.0060						
_ead	ND	ma/L	0.0050						
Maonesium	ND	ma/L	1.0						
Potassium	ND	ma/L	1.0						
Selenium	ND	ma/L	0.050						
Silver	ND	mg/L	0.0050						
Sodium	ND	mg/L	1.0						
Sample ID: MB-11746		MBLK			Batch	ID:	11746	Analysis Date:	11/15/2006 7:10:00 PM
Cadmium	ND	mg/L	0.0020						
Chromium	ND	mg/L	0.0060						
Magnesium	ND	mg/L	1.0						
Potassium	ND	mg/L	1.0						
Sample ID: MB-11746		MBLK			Batch	ID:	11746	Analysis Date:	11/16/2006 8:58:41 AM
alcium	ND	mg/L	1.0						
dium	ND	mg/L	1.0						
Sample ID: LCS-11746		LCS			Batch	n ID:	11746	Analysis Date:	11/16/2006 8:53:16 AM
Arsenic	0.5143	mg/L	0.020	103	80	12(	)		
Barium	0.4951	mg/L	0.020	99.0	80	120	)		
Cadmium	0.5012	mg/L	0.0020	100	80	120	)		
Calcium	53.42	mg/L	1.0	107	80	120	)		
Chromium	0.5086	mg/L	0.0060	102	80	120	)		
_ead	0.4945	mg/L	0.0050	98.9	80	12(	)		
Vagnesium	53.81	mg/L	1.0	108	80	120	)		
Potassium	57.58	mg/L	1.0	115	80	120	)		
Selenium	0.4749	mg/L	0.050	95.0	80	12(	)		
Silver	0.5011	mg/L	0.0050	100	80	120	)		
Sodium	57.46	mg/L	1.0	115	80	120	)		
Sample ID: LCS-11746		LCS			Batch	ו ID:	11746	Analysis Date:	11/15/2006 7:13:04 PM
Cadmium	0.4806	mg/L	0.0020	96.1	80	120	)		
Chromium	0.4878	mg/L	0.0060	97.6	80	120	)		
Magnesium	54.21	mg/L	1.0	108	80	120	)		
Potassium	56.75	mg/L	1.0	114	80	120	)		
Sample ID: LCS-11746		LCS			Batch	n ID:	11746	Analysis Date:	11/16/2006 8:53:16 AM
Calcium	53.42	mg/L	1.0	107	80	120	)		
Sodium	57.46	mg/L	1.0	115	80	120	)		

- Qualifiers:
- E Value above quantitation range
- Analyte detected below quantitation limits J
- R RPD outside accepted recovery limits

- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S
  - Spike recovery outside accepted recovery limits 37/42

	lient:
1.0	oject:

Giant Refining Co Annual GW Samples 2006 Ciniza

oject: Annual GW	/ Samples 20	006 Ciniza						Work Order	: 0611016
Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8260B		MSD			Patab	ID: D21224	Analysia		11/7/2000
-		10130			Daton	ID. K21321	Analysis L	Jale.	11/12000
Benzene	18.60	µg/L	1.0	93.0	74.9	113	3.52	15	
Toluene	17.00	µg/L	1.0	85.0	80.4	111	1.44	15	
Chlorobenzene	19.68	µg/L	1.0	98.4	83.2	120	3.82	15	
1,1-Dichloroethene	18.95	µg/L	1.0	94.8	72	127	2.72	17.8	
Frichloroethene (TCE)	16.61	µg/L	1.0	83.1	58.2	131	3.36	19.8	44/7/000
Sample ID: 5mL rb		MBLK			Batch	ID: R21321	Analysis L	Date:	11///2006
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	ha\r	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.5						
1,2,4-Trimethylbenzene	ND	µg/L	1.0						
1,3,5-Trimethylbenzene	ND	µg/L	1.0						
1,2-Dichloroethane (EDC)	ND	µg/L	1.0						
1,2-Dibromoethane (EDB)	ND	µg/L	1.0						
Naphthalene	ND	µg/L	2.0						
1-Methylnaphthalene	ND	µg/L	4.0						
2-Methylnaphthalene	ND	µg/L	4.0						
Acetone	ND	µg/L	10						
mobenzene	ND	µg/L	1.0						
omochloromethane	ND	µg/L	1.0						
Bromodichloromethane	ND	µg/L	1.0						
Bromoform	ND	µg/L	1.0						
Bromomethane	ND	µg/L	2.0						
2-Butanone	ND	µg/L	10						
Carbon disulfide	ND	µg/L	10						
Carbon Tetrachloride	ND	µg/L	2.0						
Chlorobenzene	ND	µg/L	1.0						
Chloroethane	ND	µg/L	2.0						
Chloroform	ND	µg/L	1.0						
Chloromethane	ND	µg/L	1.0						
2-Chlorotoluene	ND	µg/L	1.0						
4-Chlorotoluene	ND	µg/L	1.0						
cis-1,2-DCE	ND	µg/L	1.0						
cis-1,3-Dichloropropene	ND	µg/L	1.0						
1,2-Dibromo-3-chloropropane	ND	µg/L	2.0						
Dibromochloromethane	ND	µg/L	1.0						
Dibromomethane	ND	µg/L	2.0						
1,2-Dichlorobenzene	ND	µg/L	1.0						
1,3-Dichlorobenzene	ND	hð\r	1.0						
1,4-Dichlorobenzene	ND	hð\r	1.0						
Dichlorodifluoromethane	ND	µg/L	1.0						
1,1-Dichloroethane	ND	µg/L	2.0						
1,1-Dichloroethene	ND	µg/L	1.0						
2-Dichloropropane	ND	µg/L	1.0						

#### Qualifiers:

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S 38/42 covery outside accepted recovery limits

Analyte	Result	Units	PQL	%Rec	LowLimit	Hig	hLimit	%RPD	RPDLimit	Qual
Method: SW8260B										
Sample ID: 5mL rb		MBLK			Batch	ID:	R21321	Analysis [	Date:	11/7/2006
1,3-Dichloropropane	ND	µg/L	1.0							
2,2-Dichloropropane	ND	µg/L	2.0							
1,1-Dichloropropene	ND	µg/L	1.0							
Hexachlorobutadiene	ND	µg/L	2.0							
2-Hexanone	ND	µg/L	10							
Isopropylbenzene	ND	µg/L	1.0							
4-Isopropyltoluene	ND	µg/L	1.0							
4-Methyl-2-pentanone	ND	µg/L	10							
Methylene Chloride	ND	µg/L	3.0							
n-Butylbenzene	ND	µg/L	1.0							
n-Propylbenzene	ND	µg/L	1.0							
sec-Butylbenzene	ND	µg/L	2.0							
Styrene	ND	µg/L	1.5							
tert-Butylbenzene	ND	µg/L	1.0							
1,1,1,2-Tetrachloroethane	ND	µg/L	1.0							
1,1,2,2-Tetrachloroethane	ND	µg/L	1.0							
Tetrachloroethene (PCE)	ND	µg/L	1.0							
trans-1,2-DCE	ND	µg/L	1.0							
ns-1,3-Dichloropropene	ND	µg/L	1.0							
3-Trichlorobenzene	ND	µg/L	1.0							
1,2,4-Trichlorobenzene	ND	µg/L	1.0							
1,1,1-Trichloroethane	ND	µg/L	1.0							
1,1,2-Trichloroethane	ND	µg/L	1.0							
Trichloroethene (TCE)	ND	µg/L	1.0							
Trichlorofluoromethane	ND	µg/L	1.0							
1,2,3-Trichloropropane	ND	µg/L	2.0							
Vinyl chloride	ND	µg/L	1.0							
Xylenes, Total	ND	µg/L	.3.0							
Sample ID: 5mL rb		MBLK			Batch	ID:	R21342	Analysis	Date:	11/8/200
Benzene	ND	μg/L	1.0							
Toluene	ND	µg/L	1.0							
Ethylbenzene	ND	µg/L	1.0							
Methyl tert-butyl ether (MTBE	) ND	µg/L	1.5							
1,2,4-Trimethylbenzene	ND	µg/L	1.0							
1,3,5-Trimethylbenzene	ND	µg/L	1.0							
1,2-Dichloroethane (EDC)	ND	µg/L	1.0							
1,2-Dibromoethane (EDB)	ND	µg/L	1.0							
Naphthalene	ND	µg/L	2.0	•						
1-Methylnaphthalene	ND	µg/Ľ	4.0							
2-Methylnaphthalene	ND	µg/L	4.0							
Acetone	ND	µg/L	10							
Bromobenzene	ND	µg/L	1.0							
Bromochloromethane	ND	µg/L	1.0							
Promodichloromethane	ND	µg/L	1.0							
Qualifiers:								·		
E Value above quantitatio	n range		н	Holding	times for prep	paratio	n or analysi	s exceeded		
Client: Giant R oject: Annual	efining Co GW Samples 20	06 Ciniza		·				Y	Work Ord	er: 0611016
----------------------------------	-----------------------------	-----------	-----	------	----------	----------	-----	------------	----------	-------------
Analyte	Result	Units	PQL	%Rec	LowLimit	HighLim	it	%RPD	RPDLim	it Qual
Method: SW8260B										
Sample ID: 5mL rb		MBLK			Batch	ID: R213	342	Analysis [	Date:	11/8/2006
Bromoform	ND	µg/L	1.0							
Bromomethane	ND	µg/L	2.0							
2-Butanone	ND	µg/L	10							
Carbon disulfide	ND	µg/L	10							
Carbon Tetrachloride	ND	µg/L	2.0		•					
Chlorobenzene	ND	µg/L	1.0							
Chloroethane	ND	µg/L	2.0							
Chloroform	ND	µg/L	1.0							
Chloromethane	ND	µg/L	1.0							
2-Chlorotoluene	ND	μg/L	1.0							
4-Chlorotoluene	ND	µg/L	1.0							
cis-1,2-DCE	NĎ	µg/L	1.0							
cis-1.3-Dichloropropene	ND	µa/L	1.0							
1 2-Dibromo-3-chloropropane	ND	ug/L	2.0							
Dibromochloromethane	ND	µg/L	1.0							
Dibromomethane	ND	µa/L	2.0							
1.2-Dichlorobenzene	ND	µg/L	1.0							
1.3-Dichlorobenzene	ND	ua/L	1.0							
1.4-Dichlorobenzene	ND	ug/L	1.0							
hlorodifluoromethane	ND	µg/L	1.0							
1-Dichloroethane	ND	µq/L	2.0							
1,1-Dichloroethene	ND	µg/L	1.0							
1.2-Dichloropropane	ND	µg/L	1.0							
1.3-Dichloropropane	ND	µg/L	1.0							
2.2-Dichloropropane	ND	ug/L	2.0							
1.1-Dichloropropene	ND	μα/L	1.0							
Hexachlorobutadiene	ND	µg/L	2.0							
2-Hexanone	ND	μg/L	10							
Isopropylbenzene	ND	µg/L	1.0							
4-Isopropyltoluene	ND	μg/L	1.0							
4-Methyl-2-pentanone	ND	µg/L	10							
Methylene Chloride	ND	µg/L	3.0							
n-Butylbenzene	ND	µg/L	1.0							
n-Propylbenzene	ND	µg/L	1.0							
sec-Butylbenzene	ND	µg/L	2.0							
Styrene	ND	µg/L	1.5							
tert-Butylbenzene	ND	µg/L	1.0							
1,1,1,2-Tetrachloroethane	ND	µg/L	1.0							
1,1,2,2-Tetrachloroethane	ND	µg/L	1.0							
Tetrachloroethene (PCE)	ND	µg/L	1.0							
trans-1,2-DCE	ND	µg/L	1.0							
trans-1,3-Dichloropropene	ND	µg/L	1.0							
1,2,3-Trichlorobenzene	ND	µg/L	1.0							
1,2,4-Trichlorobenzene	ND	µg/L	1.0							

#### ualifiers:

- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

<b>Client:</b> Giant Refin <b>roject:</b> Annual GW	ing Co 7 Samples 20	006 Ciniza					Work Ord	er: 0611016
Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD RPDLimi	t Qual
Method: SW8260B								
Sample ID: 5mL rb		MBLK			Batch	ID: <b>R21342</b>	Analysis Date:	11/8/2006
1,1,1-Trichloroethane	ND	µg/L	1.0					
1,1,2-Trichloroethane	ND	µg/L	1.0					
Trichloroethene (TCE)	ND	µg/L	1.0					
Trichlorofluoromethane	ND	µg/L	1.0					
1,2,3-Trichloropropane	ND	µg/L	2.0					
Vinyl chloride	ND	µg/L	1.0					
Xylenes, Total	ND	µg/L	3.0					
Sample ID: 100ng lcs-b		LCS			Batch	ID: R21321	Analysis Date:	11/7/2006
Benzene	18.27	µg/L	1.0	91.4	74.9	113		
Toluene	17.05	µg/L	1.0	85.3	80.4	111		
Chlorobenzene	20.26	µg/L	1.0	101	83.2	120		
1,1-Dichloroethene	18.32	µg/L	1.0	91.6	72	127		
Trichloroethene (TCE)	17.25	µg/L	1.0	86.2	58.2	131		
Sample ID: 100ng Ics		LCS			Batch	ID: R21342	Analysis Date:	11/8/2006
Benzene	18.16	µg/L	1.0	90.8	74.9	113		
Toluene	16.22	µg/L	1.0	81.1	80.4	111		
Chlorobenzene	18.37	µg/L	1.0	91.9	83.2	120		
1,1-Dichloroethene	19.73	µg/L	1.0	98.6	72	127		
richloroethene (TCE)	17.89	hð\r	1.0	89.5	58.2	131		
ample ID: 0611016-04a ms		MS			Batch	ID: <b>R21321</b>	Analysis Date:	11/7/2006
Benzene	17.96	μg/L	1.0	89.8	74.9	113		
Toluene	17.24	µg/L	1.0	86.2	80.4	111		
Chlorobenzene	18.94	µg/L	1.0	94.7	83.2	120		
1,1-Dichloroethene	18.44	hð\r	1.0	92.2	72	127		
Trichloroethene (TCE)	17.18	µg/L	1.0	85.9	58.2	131		

Qualifiers:

- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

Page 4

## Hall Environmental Analysis Laboratory, Inc.

	Sample	Receipt Che	ecklist			
Client Name GIANTREFIN	_		Date and Time	Received:	11/1	2006
Work Order Number 0611016	$\square$	·	Received by	AT		
Checklist completed by	h	Date	11/1/00			
Matrix	Carrier name	Client drop-of	ſ			
Shipping container/cooler in good condition?		Yes 🗹	No 🗌	Not Present		
Custody seals intact on shipping container/coole	er?	Yes 🗌	No 🗔	Not Present	Not Shipped	$\checkmark$
Custody seals intact on sample bottles?		Yes 🗋	No 🗹	N/A		
Chain of custody present?		Yes 🗹	No 🗌			
Chain of custody signed when relinquished and	received?	Yes 🗹	No 🗌			
Chain of custody agrees with sample labels?		Yes 🔽	No 🗔			
Samples in proper container/bottle?		Yes 🗹	No 🗌			
Sample containers intact?		Yes 🗹	No 🗌			
Sufficient sample volume for indicated test?		Yes 🗹	No 🗌			
All samples received within holding time?		Yes 🗹	No 🗌			
Water - VOA vials have zero headspace?	No VOA vials subr	nitted	Yes 🗹	No		
Water - pH acceptable upon receipt?		Yes 🗹	No 🗌	N/A		
Container/Temp Blank temperature?		3°	4° C ± 2 Accepta	able t time to cool.		
COMMENTS:						
	··· · · · · ·				····· ···· · ···	
Client contacted	Date contacted:		Pers	son contacted		
Contacted by:	Regarding					
Comments:						
			· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·		
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Corrective Action	······································	· · · · · · · · · · · · · · · · · · ·				
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	AALL ENVIRONMENTAL ANALYSIS LABORATORY	4901 Hawkins NE, Suite D	Albuquerque, New Mexico 87109	المعرفة br>المعرفة المعرفة ا			[Å]	L (J)	2083) z 2950/21 2950/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/21 201/20	sedsper ( , bC8, , vo ^s , , vo	1 1 1 1 1 1 1 1 1 1 1 1 1 1	hbhles hbhles hetho Meth Meth Meth Meth Meth Meth Meth	<ul> <li>Alice Bulk - Alice Bul</li></ul>		X X X	XXX							06 Remarks: Sen, Clayer, - Californe	anion2, pH, t conductivity	<b>`</b>
QA / QC Package:	Std 🗖 Level 4 🗖	Other:	Project Name: David as a literation	when denotes NO 0	Cinica	Project #:		Project Manager:	Marker Marker	Sampler: Starlo Morris	Sample Temperature:	Preservative	Number/Volume H9C1 ₂ HNO ₃ HSAL N										Received By/ (Signature) ////	Received By: (Signature)	
		CHAIN-OF-CUSTODY RECORD	Client:	(Signt Ketining Company	Ciniza C	Address: Route 3 Box 7	Gallup. NM 77301			Phone #: 205-722-2823	Fax#: 505- 722-0210		Date Time Matrix Sample I.D. No.	10.28.06 1015 Hz OBW-1C	10.28.06 1130 11 BW-2A	10.28.06 1330 1, BW-2B	10.23.06 1500 " BWL2 C	10.24. de 1000 12 BW-3B	10.29.04 1045 BW-3C	Tr. P. Henk			U-1-06 1100 Relinquished By: (Signature)	Date: Time: Relinquished By: (Signature)	



### COVER LETTER

Tuesday, July 25, 2006

Steve Morris Giant Refining Co Rt. 3 Box 7 Gallup, NM 87301

TEL: (505) 722-3833 FAX (505) 722-0210

RE: Boundary Well 2B for Selenium

Dear Steve Morris:

Order No.: 0607244

Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 7/21/2006 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com

Hall Envir	ronmental Analysis La	25-Jul-06					
CLIENT:	Giant Refining Co		C	lient Sample ID:	BW-2	2B	
Lab Order:	ab Order: 0607244			<b>Collection Date:</b>	2006 3:30:00 PM		
Project: Boundary Well 2B for Seleniu				Date Received:	7/21/2006		
Lab ID:	0607244-01			Matrix:	AQU	EOUS	
Analyses	Re	esult	PQL Qual	Units	DF	Date Analyzed	
EPA METHOD Seleníum	6010: DISSOLVED METALS	ND	0.050	mg/L	1	Analyst: NMO 7/25/2006 11:36:17 AM	
EPA 6010: TO	TAL RECOVERABLE METALS					Analyst: NMC	
Selenium		ND	0.050	mg/L	1	7/25/2006 9:13:00 AM	

#### Qualifiers:

* Value exceeds Maximum Contaminant Level

Ε Value above quantitation range

J Analyte detected below quantitation limits

- S Spike Recovery outside accepted recovery limits
- в Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit



Client:Giant Refiroject:Boundary	ning Co Well 2B for S	Selenium				<b>Work Order:</b> 0607244
Analyte	Result	Units	PQL	%Rec	LowLimit HighLimit	%RPD RPDLimit Qual
Method: SW6010A Sample ID: MB		MBLK			Batch ID: R2001	Analysis Date: 7/25/2006 11:27:24 AM
Selenium Sample ID: LCS	ND	mg/L LCS	0.050		Batch ID: R2001	Analysis Date: 7/25/2006 11:30:25 AM
Selenium	0.4790	mg/L	0.050	95.8	80 120	
Method: SW6010A Sample ID: 0607244-01AMSD		MSD			Batch ID: 1085	3 Analysis Date: 7/25/2006 9:19:23 AM
Selenium Sample ID: MB-10853	0.4837	mg/L <i>MBLK</i>	0.050	96.7	75 125 Batch ID: <b>1085</b> 3	0.983 20 3 Analysis Date: 7/25/2006 9:00:52 AM
Selenium Sample ID: LCS-10853	ND	mg/L LCS	0.050		Batch ID: 1085	3 Analysis Date: 7/25/2006 9:03:56 AM
Selenium Sample ID: 0607244-01AMS	0.4717	mg/L MS	0.050	94.3	80 120 Batch ID: <b>1085</b> 3	<b>3</b> Analysis Date: 7/25/2006 9:17:04 AM
Selenium	0.4790	mg/L	0.050	95.8	75 125	



#### Qualifiers:

E Value above quantitation range

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Sinke Recovery outside accepted recovery limits 2/3

# Hall Environmental Analysis Laboratory, Inc.

	Sample Rece	ipt Ch	ecklist		
Client Name GIANTREFIN	$\mathcal{I}$		Date and Time	Received:	7/21/2006
Checklist completed by		Date	7/2//	<u>1</u> 6	
Matrix Carrie	er name <u>FedE</u>	x			
Shipping container/cooler in good condition?	Yes		No 🗔	Not Present	
Custody seals intact on shipping container/cooler?	Yes	$\checkmark$	No 🗌	Not Present	Not Shipped
Custody seals intact on sample bottles?	Yes		No 🗹	N/A	
Chain of custody present?	Yes		No 🗔		
Chain of custody signed when relinquished and received?	Yes	$\checkmark$	No		
Chain of custody agrees with sample labels?	Yes		No 🗌		
Samples in proper container/bottle?	Yes		No 🗔		
Sample containers intact?	Yes	$\checkmark$	No 🗔		
Sufficient sample volume for indicated test?	Yes		No 🗌		
All samples received within holding time?	Yes		No 🗌		
Nater - VOA vials have zero headspace? No VOA	vials submitted		Yes 🗌	No 🗌	
Water - pH acceptable upon receipt?	Yes	$\checkmark$	No 🗔	N/A	
Container/Temp Blank temperature?	ł	5°	4° C ± 2 Acceptal	b <i>le</i> time to cool.	
COMMENTS:					
					=====
Client contacted Date conta	icted:		Perso	on contacted	
Contacted by: Regarding					
Comments:					
Corrective Action	<u> </u>			<u></u> ,	

HALL ENVIRONMENTAL HALL ENVIRONMENTAL ANALYSIS LABORATORY 4901 Hawkins NE, Suite D Albuquerque, New Mexico 87109 Tel. 505.345, 3975 Fax 505.345, 4107 www.hallenvironmental.com	HTPH (Gasoline Only) 18015B (Gasoline Only) 18015B (GasolDiesel) 18015B (GasolDiesel) 18021) 1902 1902, PO ₄ , SO ₄ ) 1902, PO ₂ , PO ₄ , SO ₄ ) 1902 1902 1903 1903 1904 1905 1905 1905 1905 1905 1905 1905 1905	TM + X3T8       TM + X4T8         TPH Methon       TPH Methon         TPH Methon       EDB (Methon         EDB (Methon       S310 (PUA         Model       S310 (PUA </th <th></th> <th>ICHIRCRA Metal. Total</th>		ICHIRCRA Metal. Total
DA/ GC Package: Std D Level 4 D Other: Project Name: Coundary Well Project #:	BE + TMB's (8021) Sampler: Sample Temperature:	Number/Volume HgCl ₂ HNO ₃ HEAL No.		Received By: (Signature)
CHAIN-OF-CUSTODY RECORD Client Frint Relining Address: Rent S Con 7	Flore #: 505 722 0210	Date Time Matrix Sample I.D. No. $7/(7/96)$ $1539$ $H_2O$ $SW-ZB$		Date:     Time:     Relinquished By: (Signature)       29/96/14/00     24/00     24/00       Date:     Time:     Relinquished By: (Signature)



#### COVER LETTER

Tuesday, August 22, 2006

Ed Riege Giant Refining Co Rt. 3 Box 7 Gallup, NM 87301

TEL: (505) 722-3833 FAX (505) 722-0210

RE: GWM-1 Annual 2006

Dear Ed Riege:

Order No.: 0608046

Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 8/4/2006 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE #Suite D #Albuquerque, NM 87109 505.345.3975 #Fax 505.345.4107 www.hallenvironmental.com

CI IENIT.	Gigat Bafining Ca			("lin=+ 0	-la 111-	CUP	<u> </u>
CLIEN I:	Giant Refining Co			Chent Sam	ple D:	GWM	1-1
Lab Order:	0608046			Collection	n Date:	8/2/2(	006 2:00:00 PM
Project:	GWM-1 Annual 2006			Date Re	ceived:	8/4/20	006
Lab ID:	0608046-01			Ν	Intrix:	AQU	EOUS
Analyses		Result	PQL	Qual Units		DF	Date Analyzed
EPA METHOD :	300.0: ANIONS						Analyst: TES
Fluoride		2.0	0.50	mg/L		5	8/4/2006 12:28:00 PM
Chlaride		3700	10	mg/L		100	8/7/2006 1:51:51 PM
Nitrate (As N)+N	litrite (As N)	ND	2.0	mg/L		20	8/14/2006 7:17:23 PM
Phosphorus, Orl	thophosphate (As P)	ND	2.5	ma/L		5	8/4/2006 12:28:00 PM
Sulfate	,	120	2.5	mg/L		5	8/4/2006 12:28:00 PM
Mercury	7470: MERCURT	ND	0.00020	mg/L		1	8/15/2006
EPA 6010: 101	AL RECOVERABLE MET	ALS	0.000				Analyst: CMC
Arsenic		0.077	0.020	mg/L		1	8/9/2006 2:35:20 PM
Banum		0.53	0.020	mg/L		1	8/10/2005 6:44:01 PM
Cadmium		DN DRS	0.0020	mg/L		1	8/9/2006 2:35:20 PM
Calcium		380	20	mg/L		20	8/10/2006 7:52:38 PM
Chromium		ND	0.0060	mg/L		1	8/9/2006 2:35:20 PM
Lead		ND	0.0050	mg/L		1	8/9/2006 2:35:20 PM
Magneslum		93	1.0	mg/L	-	1	8/9/2006 2:35:20 PM
Potassium		4.2	1.0	mg/L		1	8/9/2006 2:35:20 PM
Selenium		ND	0.050	mg/L		1	B/9/2006 2:35:20 PM
Silver		ND	0.0050	mg/L		1	B/10/2006 6:44:01 PM
Sodium		1400	20	mg/L		20	8/10/2006 7:52:38 PM
EPA METHOD 8	3270C: SEMIVOLATILES						Analyst: SCC
Acenaphthene		ND	10	µg/L		1	8/15/2006
Acenaphthylene		ND	10	μg/L		1	8/15/2006
Aniline		ND	20	μg/L		1	8/15/2006
Anthracene		ND	10	µg/L		1	8/15/2006
Azobenzene		ND	10	μg/L		1	8/15/2006
Benz(a)anthrace	ine	ND	15	μg/L		1	8/15/2006
Вепzo(а)pyrene		ND	15	µg/L		1	8/15/2006
Benzo(b)fluorant	lhene	ND	15	µg/L		1	8/15/2006
Benzo(g,h,i)pery	lene	ND	10	µg/L		1	8/15/2006
Benzo(k)fluorant	thene	ND	10	µg/L		1	8/15/2006
Benzoic acid		ND	50	µg/L		1	8/15/2006
Benzyl alcohol		ND	20	µg/L		1	8/15/2006
Bis(2-chloroetho	xy)methane	ND	10	µg/L		1	8/15/2006
Bis(2-chloroethvi	l)ether	ND	15	μg/L		1	8/15/2006
Bis(2-chloroisop	ropyl)elher	ND	15	µa/L		1	8/15/2006
	· · · · · · ·			-3			

Value exceeds Maximum Contaminant Level Qualifiers: *

Ε Value above quantitation range

Analyte detected below quantitation limits J S

Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank

Holding times for preparation or analysis exceeded H

ND Not Detected at the Reporting Limit

Hall Envir	onmental Analysis	ic.	Date:	22-Aug-06			
CLIENT:	Giant Refining Co			Client Sam	ple ID:	GW№	1-1
Lab Order:	0608046			Collection	n Date:	8/2/20	006 2:00:00 PM
Project:	GWM-1 Annual 2006			Date Re	ceived:	8/4/20	006
Lab ID:	0608046-01			Ν	Aatrix:	AQU	EOUS '
Analyses		Result	PQL	Qual Units		DF	Date Analyzed
EPA METHOD	8270C: SEMIVOLATILES						Analyst: SCC
4-Bromophenyl	phenyl ether	ND	10	µg/L		1	B/15/2006
Butyl benzyl phi	halate	ND	15	µg/L		1	8/15/2006
Carbazole		ND	10	µg/L		1	8/15/2006
4-Chloro-3-meth	nyiphenol	ND	20	µg/L		1	8/15/2006
4-Chloroaniline		ND	20	µg/L		1	8/15/2006
2-Chloronaphth	alene	ND	10	μg/L		1	B/15/2006
2-Chlarophenol		ND	10	µg/L		1	8/15/2006
4-Chlorophenyl	phenyl ether	ND	15	µg/L		1	8/15/2006
Chrysene		ND	15	µg/L		1	8/15/2006
Di-n-butyl phtha	late	ND	10	µg/L		1	8/15/2006
Di-n-octyl phlha	late	ND	15	µg/L		1	8/15/2006
Dibenz(a,h)anth	racene	ND	10	μq/L		1	8/15/2006
Dibenzofuran		ND	10	μ <b>α/</b> L		1	8/15/2006
1.2-Dichloroben	zene	ND	- 10	μα/L		1	B/15/2006
1.3-Dichloroben	zene	ND	10	μα/L		1	8/15/2006
1.4-Dichloroben	zene	ND	10	µa/L		1	8/15/2006
3,3'-Dichlorober	nzidine	ND	15	µg/L		1	8/15/2006
Diethyl phthalat	8	ND	10	µg/L		1	8/15/2006
Dimethyl phthali	ate	ND	10	µg/L		1	8/15/2006
2.4-Dichlorophe	nol	ND .	10	ua/L		1	8/15/2006
2.4-Dimethylphe	nol	85	10	µg/L		1	8/15/2006
4.6-Dinitro-2-me	thviohenol	ND	50	ua/L		1	8/15/2006
2.4-Dinitropheno		ND	50	ua/L		1	8/15/2006
2.4-Dinitrotoluar	19	ND	10	ua/L		4	8/15/2006
2.6-Dinitrotoluer	18	ND	10	uo/L		1	8/15/2006
Fluoranthene	· .	ND	10	ug/L		1	8/15/2006
Fluorene		ND	10	ua/L		1	8/15/2006
Hexachlorobenz	ene	ND	10	µa/L		1	8/15/2006
Hexachlorobuta	diene	ND	10	µg/Ľ		1	8/15/2006
Hexachlorocyclo	pentadiene	ND	10	μα/L		1	8/15/2006
Hexachloroetha	ne	ND	10	µg/L		1	8/15/2006
Indeno(1,2,3-cd)	)pyrene	ND	10	µg/L		1	8/15/2006
Isophorone		ND	10	ug/L		1	8/15/2006
2-Methylnaphtha	alene	ND	10	µg/L		1	8/15/2006
2-Methylohenol		ND	15	μαλ		1	8/15/2006
3+4-Methvlohen	ol	ND	20	ua/L		1	8/15/2006
N-Nitrosodi-n-on	opylamine	ND	10	ua/L		1	8/15/2006
N-Nitrosodimeth	vlamine	ND	10	ua/L		1	B/15/2006
N-Nitrosodinhen	vlamine	ND	10	 unl		• •	8/15/2006
Naphthalene	······	ND	10	μα/L		1	8/15/2006
•						1	

Qualifiers: * Value exceeds Maximum Contaminant Level

J

E Value above quantitation range

Analyte detected below quantitation limits

S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

CLIENT:	Giant Refining Co			Clie	nt Sample ID:	G₩M	1-1
Lab Order:	0608046			Co	ollection Date:	8/2/20	006 2:00:00 PM
Project:	GWM-1 Annual 2006			r	Date Received:	8/4/20	006
Lab ID:	0608046-01			_	Matrix:	AQU	EOUS
Analyses	<u></u>	Result	PQL	Qual U	nits	DF	Date Analyzed
	270C' SEMIVOLATILES				<u> </u>		Analyst: SC
2-Nitroaniline		ND	50	uc	1/L	1	8/15/2006
3-Nitroaniline	•	ND	50		5/L	1	8/15/2006
4-Nitroaniline		ND	20	гс ЦС	]	1	8/15/2006
Nitrohenzene		ND	10	11	,,∞ 1/I	. 1	8/15/2006
2-Nitronhanol		ND	15	PS UC	ı, <u>-</u> 1∕I	•	B/15/2006
		ND	50	PS	yr 🛏	, 1	8/15/2006
Pentachlocophor		ND	50	PS	•· ⊶ ا/د	1	8/15/2005
Phonanthrapo	(U)	ND	10	11 11	مربو 1/1	1	8/15/2006
Dhopol		ND	10	P2		1	8/15/2006
Purone			. 15	P5 	jr∟ √I	1	8/15/2000
Pyrelie			10	24 19	2/L. +/1	1 1	0/13/2000 RM5/2006
1 2 4 Trieblarah	207859		10	24	j/ <b>L</b> . •/1	। न	9/15/2000
7.4-Trichiotout			10	. µy	/L	। न	9/15/2000 9/15/2000
		ND	10	μg	j/ L. - /l	1	0/15/2000
2,4,0-110101010	161101	96.6	10 450	PS		1 4	B/15/2008
SUIT: 2,4,6-11	Diomobusian	00.0 62.7	10.0-100	74		1 4	8/15/2006
Surr: 2-Fluoro		50.4	19.0-134	7a) 174		1	8/15/2006
	preno	02.4	9.04-113	70	REG	1	B/15/2006
Surr: 4-1 erph	enyl-a 14	07.0	22.7-145	%d	REC	1	8/15/2006
Surt. Nitroben	zene-up	00.4	14.6-134	Val	REC	1	8/15/2006
Sun: Phenol-o	15	48.0	10.7-80.3	701	REC	ן	8/15/2006
EPA METHOD 8	260B: VOLATILES						Analyst: LM
Benzene		12	10	μq	/L	10	8/4/2006
Toluene		ND	10	ρη	/L	10	8/4/2006
Ethylbenzene		ND	10	μα	/L	10	8/4/2006
Melhyl tert-butvl	ether (MTBE)	160	15	μα	/L .	10	8/4/2006
1.2.4-Trimethvlh	enzene	ND	10	, .a.	/L	10	8/4/2005
1.3.5-Trimethylb	enzene	ND	10	Lo.	/L	10	8/4/2006
1.2-Dichloroetha	ne (EDC)	ND	10	10	/L	10	8/4/2006
1.2-Dibromoetha	ne (EDB)	ND	10	ມດ.	/L	10	8/4/2006
Naphthalene	. ,	ND	20	-3. UCI	/L	10	8/4/2006
1-Methvinaphiha	lene	ND	40	-3, 101	n,	10	8/4/2006
2-Methylnaphlha	lene	ND	40	-ອ- ນດ	/L	10	8/4/2006
Aceione		ND	100	-9-	/L	10	8/4/2006
Bromobenzene		ND	10	Hoi	 /L	10	8/4/2006
Bromochloromet	hane	ND	10	110/		10	8/4/2006
Bromodichlorom	alhane	ND	10	197 1171	~ /1	10 10	8/4/2006
Bromotorm		ND	10	194	ч- И	10 10	8/4/2006
Bromorralbaca			טי הכ	104	· <b>_</b>	10	8/4/2000
DIOLIOULEUISUS		110	20	hAi	L	10	44/2000

Qualifiers: * Value exceeds Maximum Contaminant Level

E Value above quantitation range

J Analyte detected below quantitation limits

S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

Page 3 of 5

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			- د ن 			
CLIENT:	Giant Refining Co			Client Sample II	): GWA	4-1
Lab Order:	0608046			Collection Dat	e: 8/2/2	006 2:00:00 PM
Project:	GWM-1 Annual 2006			Date Receiver	· 8/4/2	006
I ab TD.	0602046-01			Matri	AOU	EOUS
	0008040-01					
Analyses		Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD 8	260B: VOLATILES			•		Analyst: LMM
Carbon disulfide		ND	100	μg/L	10	8/4/2006
Carbon Tetrachlo	nide	ND	20	µg/L	10	8/4/2006
Chlorobenzene		ND	10	μg/L ·	10	8/4/2006
Chloroethane		ND	20	µg/L	10	8/4/2006
Chloroform		ND	10	µg/L	10	8/4/2006
Chloromethane		ND	10	µg/L	10	8/4/2006
2-Chlorotoluene		ND	10	µg/L	10	8/4/2006
4-Chlorololuene		NÐ	10	μg/L	10	8/4/2006
cis-1,2-DCE		ND	10	µg/L	10	8/4/2006
cis-1,3-Dichloropr	ropene	ND	10	µg/L	10	8/4/2006
1,2-Dibromo-3-ch	loropropane	ND	20	µg/L	10	8/4/2006
Dibromochlorome	ethane	ND	10	µg/L	10	8/4/2006
Dibromomethane		ND	20	µg/L	10	8/4/2006
1,2-Dichlorobenze	ene	ND	10	µg/L	10	8/4/2006
1.3-Dichlorobenze	ene	ND	10	µg/L	10	8/4/2006
1.4-Dichlorobenze	ene	ND	10	μg/L	10	8/4/2006
Dichloradifluorom	ethane	ND	10	μα/L	10	8/4/2006
1,1-Dichloroethan	ne	ND	20	μg/L	10	8/4/2006
1.1-Dichloroethen	10	ND	10	μα/L	10	8/4/2006
1.2-Dichloropropa	ine	ND	10	μg/L	10	8/4/2006
1.3-Dichloropropa	ine	ND	10	μg/L	10	8/4/2006
2.2-Dichloropropa	ine	ND	20	μα/μ	10	8/4/2006
1.1-Dichloroprope	ene	ND	10	μα/L	10	B/4/2006
Hexachlorobutadi	еле	ND	20	ug/L	10	8/4/2006
2-Hexanone		ND	100	μα/μ	10	8/4/2006
Isopropylbenzene	1	ND	10	. ua/L	10	8/4/2006
4-isopropyltoluen	8	ND	10	1-5	10	8/4/2006
4-Methyl-2-nentar	one	ND	100	19 ua/L	10	8/4/2006
Methylene Chloric	ie.	ND	30	ua/L	10	8/4/2006
n-Butylbenzene		ND	10	ug/L	10	8/4/2006
n-Propylhenzene		ND	10	<i>µ</i> g/− uo/L	10	8/4/2006
sec-Bulybenzene	2	ND	20	ua/L	10	8/4/2006
Styrene		ND	15	ua/L	10	8/4/2006
tert-Butvibenzene		ND	10	μα/L	10	8/4/2006
1.1.1.2-Tetrachlor	roeihane	ND	10	μο/L	10	8/4/2006
1.1.2.2-Tetrachlor	roethane	ND	10	μα/L	10	8/4/2006
Tetrachloroelberg	(PCE)	ND	10	uo/L	10	8/4/2006
irane_1 2-DCF		ND	10	P9/2	10	8/4/2006
trane_1 2 Dichloro	nranene		10	10/L	10	9/4/2000 8///2006
1 2 2 Trichlorobor	propene		10	99°5 110/1	10 10	
1,2,5-11(CI)(010DEF	120110	UN	10	have	IU.	0/4/2000

#### Hall Environmental Analysis Laboratory. Inc.

Date: 22-Aug-06

Qualifiers: * Value exceeds Maximum Contaminant Level В Analyte detected in the associated Method Blank

E Value above quantitation range

Analyte detected below quantitation limits

J Spike Recovery outside accepted recovery limits S

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit





Hall Envir	onmental Analysis	s Labora	atory, Ir	1C.	Date:	22-Ai	ид-06
CLIENT: Lab Order: Project: Lab ID:	Giant Refining Co 0608046 GWM-1 Annual 2006 0608046-01			C	Client Sample ID: Collection Date: Date Received: Matrix:	GWN 8/2/2 8/4/2 AQU	A-1 006 2:00:00 PM 006 EOUS
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD	8260B: VOLATILES						Analyst: LMM
1,2,4-Trichlarob	enzene	ND	10		µg/L	10	B/4/2006
1,1,1-Trichloroe	thane	ND	10		µg/L	10	8/4/2006
1,1,2-Trichloroe	lhane	ND	10		μg/L	10	8/4/2006
Trichloroethene	(TCE)	ND	10		hð\r	10	8/4/2006
Trichlorofluoron	nethane	ND	10		µg/L	10	8/4/2006
1,2,3-Trichlorop	oropane	ND	20		µg/L	10	8/4/2006
Vinyl chloride		ND	10		µg/L	10	8/4/2006
Xylenes, Total		ND	30		µg/L	10	8/4/2006
Sur: 1,2-Dici	hloroethane-d4	98.4	69.9-130		%REC	10	8/4/2006
Sun: 4-Brom	ofluorobenzene	104	75-139		%REC	10	8/4/2006
Surr: Dibrom	ofluoromethane	96.9	57.3-135		%REC	10	8/4/2006
Surr: Toluena	e-d8	107	81.9-122		%REC	10	8/4/2006
EPA 120.1: SPI Specific Conduc		8500	0.010		µmhos/cm	1	Analyst: CMC 8/15/2006
EPA METHOD pH	150.1: PH	6.87	0.010		pH units	1	Analyst: CMC 8/4/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- Ε Value above quantitation range
- 1 Analyte detected below quantitation limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

Page 5 of 5

Client: Giant Refinin Project: GWM-1 Ann	g Co ual 2006		-		÷		War	•k Order: 0608046
Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD R	PDLimit Qual
Method: E30D								
Sample ID: MBLK		MBLK			Batch I	D: R20174	Analysis Date:	8/3/20064:09:29 PN
Fluoride	ND	mg/L	0.10					
Chloride	ND	mg/L	0.10					
Nitrate (As N)+Nitrite (As N)	ND	mg/L	0.10					
Phosphorus, Orthophosphate (As P)	ND	mg/L	0.50					
Sulfate	ND	mg/L	0.50					
Sample ID: MBLK		MBLK			Batch li	D: R20183	Analysis Date:	8/6/2006 1:57:31 PM
Fluoride	ND	mg/L	0.10					
Chloride	ND	mg/L	0.10					
Nitrate (As N)+Nitrite (As N)	ND	mg/L	0.10					
Phosphorus, Orthophosphate (As P)	ND	mg/L	0.50					
Sulfate	ND	mg/L	0.50					
Sample ID: MBLK		MBLK			Batch II	D: R20196	Analysis Date:	8/7/2006 11:39:12 AM
Fluoride	ND	mn/L	0.10					
Chloride	ND	ma/l	0.10					
Nitrate (As N)+Nitrite (As N)	ND	ma/L	0.10					
Phosphorus, Orlhophosphate (As P)	ND	ma/L	0.50					
Sulfate	ND	ma/L	0.50					•
Sample ID: MBLK		MBLK			Batch II	): R20300	Analysis Date:	8/14/2006 12:25:45 PM
Elucrido		mo/l	0.10				141013010-00121	
Chlorida		mg/L	0.10					
		mg/L	0.10					
Phoenhoose Orthophosphate (As P)		mg/L	0.10					
Filospholids, Orthophosphale (AS F)		mg/L	0.00					
	ND	ingre I Ce	0.00		Potob If	N- D20474	Apply Dotes	
		L03	- 13		Daluin	J. RZU114	Allaysis Dale.	0/3/2006 4:20.33 FW
Fluoride	0.4796	mg/L	0.10	95.9	90	110		
Chloride	4.897	mg/L	0.10	97.9	90	110		
Nitrate (As N)+Nitrite (As N)	3.440	mg/L	0.10	98.3	90	110		
Phosphorus, Orthophosphate (As P)	. 4.934	mg/L	0.50	98.7	90	110		
Sulfate	10.09	mg/L	0.50	101	90	110		
Sample ID: LCS S1300-06008		LUS			Batch IL	): R20183	Analysis Date:	8/6/2006 2:14:55 PM
Fluoride	0.4843	mg/L	0.10	96.9	90	110		
Chloride	5.025	mg/L	0.10	101	90	110		
Nitrate (As N)+Nitrite (As N)	3,578	mg/L	0.10	102	90	110		
Phosphorus, Orthophosphate (As P)	5.041	mg/L	0.50	101	90	110		
Sulfate	10.18	mg/L	0.50	102	90	110		
Sample ID: LCS ST300-06008		LCS			Batch IC	): R20196	Analysis Date:	8/7/2006 11:56:36 AM
Fluoride	0.4523	mg/L	0.10	90.5	90	110		
Chloride	4.859	mg/L	0.10	97.2	90	110		
Nitrate (As N)+Nitrite (As N)	3.444	mg/L	0:10	98.4	90	110		
Phosphorus, Orthophosphate (As P)	4.812	mg/L	0.50	96.2	90	110		
Sulfate	9.830	mg/L	0.50	98.3	90	110		
Sample ID: LCS ST300-06008		LCS			Batch ID	: R20300	Analysis Date:	8/14/2006 12:43:09 PM

Qualifiers:

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

S Spike Recovery outside accepted recovery limits 6/14

Client: Giant Project: GWM	Refining Co I-1 Annual 2006						T	Work Order	.: 0608046
Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: E300									
Sample ID: LCS ST300-06	5008	LCS			Batch I	D: R20300	Analysis D	ale: 8/14/2	006 12:43:09 PM
Fluoride	0.4765	mg/L	0.10	95.3	90	110			
Chloride	4.953	mg/L	0.10	99.1	90	110			
Nitrate (As N)+Nitrite (As N)	3.470	mg/L	0.10	99.2	90	110			
Phosphorus, Orthophosphat	e (As P) 4.978	mg/L	0.50	99.6	90	110			
Sulfate	10.46	mg/L	0.50	101	90	110			

#### Qualifiers:

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

S Snike Recovery outside accepted recovery limits 7 / 14

14 × 1

		QA	VQC SU	MMA	RYR	EP	ORT		,	
Client: ( Project: (	Giant Refining Co GWM-1 Annual 2	006							Work Order	.: 1608046
Analyte	Re	sult Units	PQL	%Rec	LowLimit	Hig	hLimit	%RPD	RPDLimit	Qual
Method: SW82700	;		<u></u>						<u> </u>	
Sample ID: mb-1098	37	MBLK	C		Batch	ID:	10987	Analysis	Date:	8/15/2006
Acenaphthene	ND	L/ور	10							
Acenaphthylene	ND	μg/L	10							
Aniline	ND	µg/L	20							
Anthracene	ND	µg/L	10							
Azobenzene	ND	µg/L	10							
Benz(a)anthracene	ND	.µg/L	15							•
Benzo(a)pyrene	ND	μg/L	15							
Benzo(b)fluoranthene	ND	µg/L	15							
Benzo(g,h,i)perylene	ND	µg/L	10							
Benzo(k)fluoranthene	ND	µg/L	10							
Benzoic acid	ND	μg/L	50							
Benzyl alcohol	ND	μg/L	20							
Bis(2-chloroethoxy)me	thane ND	µg/L	10							
Bis(2-chloroethyl)ethe	r ND	µg/L	15							
Bis(2-chloroisopropyl)	ether ND	µg/L	15							
Bis(2-ethylhexyl)phtha	late ND	μg/L	15							
4-Bromophenyl pheny	l ether ND	µg/L	10							
Butyl benzyl phthalate	ND	μg/L	15							
Carbazole	ND	µg/L	10							
4-Chloro-3-methylphe	noť ND	µg/L	20							
4-Chloroaniline	ND	μg/L	20							
2-Chloronaphthalene	ND	μg/L	10							
2-Chlorophenol	. ND	µg/L	10							
4-Chlorophenyl pheny	lether ND	µg/L	15							
Chrysene	ND	µg/L	15							
Di-n-bulyl phihalate	ND	µg/L	10							
Di-n-octyl phthalate	ND	րց/Ր	15							
Dibenz(a,h)anthracen	e ND	μg/L	10							
Dibenzofuran	ND	µg/L	10							
1,2-Dichlorobenzene	ND	µg/L	10							
1,3-Dichlorobenzene	ND	µg/L	10							
1,4-Dichlorobenzene	ND	µg/L	10							
3,3'-Dichlorobenzidine	e ND	μg/L	15							
Diethyl phthalate	ND	μց/Լ	10							
Dimethyl phthalate	ND	µg/L	10							
2,4-Dichlorophenol	ND	µg/L	10							
2,4-Dimethylphenol	ND	µg/L	10							
4,6-Dinitro-2-methylph	ienol ND	µg/L	50							
2,4-Dinitrophenol	ND	µg/L	50							
2,4-Dinitrololuene	ND	µg/L	10		÷					
2,6-Dinitrotoluene	ND	µg/L	10							
Fluoranthene	ND	μg/L	10							
Fluorene	ND	µg/L	10							
Hexachlorobenzene	ND	µg/L	10							

#### Qualifiers:

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit S Out Thecovery outside accepted rec

8 / 14

Client: Giant Ref Project: GWM-1 A	ining Co Annual 2006						,	Work Order	: 0608046
Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8270C									
Sample ID: mb-10987		MBLK			Batch II	D: 10987	Analysis [	Date:	8/15/2006
Hovachlorobuladiana	ND	ua/l	10						
Hexachlorocycloneptadiene	ND	Ha/L	10						
Hexachlornelbane	ND	no/L	10						
Indepo(1.2.3-cd)pyrene	ND	ua/L	10						
Isophorope	ND	гэ uo/L	10						
2-Melbyinaphihalene	ND	ua/L	10						
2-Methylphenol	ND	ua/L	15						
3+4-Methylphenol	ND	ua/L	20						
N-Nitrosodi-n-propylamine	ND	na/r	10						
N-Nitrosodimethylamine	ND	µg/L	10						
N-Nitrosodiphenvlamine	ND	ug/L	10						
Naphihalene	ND	ua/L	10						
2-Nitroaniline	ND	μα/ς	50						
3-Nitroaniline	ND	µg/L	50						
4-Nitroaniline	ND	ua/L	20						
Nitrobenzene	ND	но/Ц	10						
2-Nitronhenni	ND	uo/L	15						
4-Nitrophenol	ND	va/L	50						
Pentachloronhenol	ND	uo/L	50						
Phenanihrene	ND	· uo/L	10						
Phenol	ND	uo/L	10						
Pyrene	ND	ug/L	15						
Pwidine	ND	uo/L	30						
1 2 4-Trichlorobenzene	ND	uo/L	10						
2 4 5-Trichlorophenol	ND	uo/L	10						
2 4 6-Trichlorophenol	ND	uo/L	15						
Sample ID: (cs-10987		LCS			Batch ID	): 10967	Analysis D	ate:	8/15/200E
	6E 70		10	65 7	11	103	-		
	140.0	µg/L	10	70.0	15 4 -	120			
	140.0	µg/⊾ ua/t	10	70.0 67.0	10.4	100	•		
	124.1	µg/∟	10	52.0	16.0	122			
	55.10	µg/⊂	10	60.0	12	130			
	05.00	pg/L	10	673	0.03	122			
N-Nitrosodi-n-propyramine	07.20 87.46	µg/⊏ vo/t	50	412	12 5	R7 4			
4-Nurophendi Destastistesharal	155 2	µy/L ua/l	50	77.6	3 55	114			
Peruacitorophenor	77.46	μg/L	10	38.7	7.53	73.1			
Burano	74.88	P9/~	15	74 9	12.6	140			
ryiene	58.80	pg/L pg/L	10	58.8	17.4	98.7			
1,2,4-11Chlobbenzene	50.00	LCSD	10	50,0	Batch ID	)· 10987	Analysis D	ater	8/15/200A
oampie m. icsu-tusor	64.00		10	64.0	41	402	1 00	20 F	
Acenaphihene	64.9U	µg/L	10	04.9 CD 0	11	140	1.20	30.3	
4-Chloro-3-methylphenol	136.0	µg/L	20	68.U	15.4	179	2.85	28.5	
2-Chlorophenol	125.8	µg/L	10	62.9	12.2	122	1.38	107	
1,4-Dichlorobenzene	55.42	μg/L	10	55.4	16.9	100	4.28	62.1	
2.4-Dinitrotoluene	65.64	µg/L	10	65.6	13	138	6.23	14.7	



Qualifiers: E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

S Secovery outside accepted recovery limits 9/14

Page 4

<u> </u>	1 hr
Dater	22-2112-00

Client: Project:	GWM-1 Annual 200	6						Work Orde	r: 0608046
Analyte	Resul	t Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8270	C							•	
Sample ID: icsd-10	987	LCSD			Batch	ID: 10987	Analysis I	Date:	8/15/2005
N-Nitrosodl-n-propyla	mine 60.74	µg/L	10	60.7	9.93	122	10.2	30.3	
4-Nitrophenol	79.10	µg/L	50	39.6	12.5	87.4	4.16	36.3	
Pentachlorophenol	154.0	µg/L	50	77.0	3.55	114	0.776	49	
Phenol	76.22	µg/L	10	38.1	7.53	73.1	1.61	52.4	
Pyrene	72.70	µg/L	15	72.7	12.6	140	2.95	16.3	
1,2,4-Trichlorobenzer	ne 59.64	μg/ <b>L</b>	10	59.6	17.4	98.7	1.42	36.4	
Method: SW7470									
Sample ID: MB-110	39	MBLK			Batch	ID: 11039	Analysis E	Date:	8/15/2006
Mercury	ND	mg/L	0.00020						
Sample ID: LCS-11	039	LCS			Batch	ID: 11039	Analysis [	Date:	8/15/2006
Mercury	0.0052	135 mg/L	0.00020	105	80	120			

#### Qualifiers:

- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S 10/14 scovery outside accepted recovery limits

53.12

•

mg/L

1.0

106

80

120

Client: Project:	Giant Refining Co GWM-1 Annual 2006						Worl	c Order: 1608046
Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD RP	'DLimit Qual
Method: SW6010	A						· ·	
Sample ID: MB-109	972	MBLK			Batch I	D: 1097:	2 Analysis Date:	8/9/20061:17:52 PM
Arsenic	ND	mg/L	0.020					
Cadmium	ND	mg/L	0.0020					
Calcium	ND	mg/L	1.0					
Chromlum	ND	mg/L	0.0060					
Lead	ND	mg/L	0.0050					
Magnesium	ND	mg/L	1.0					
Potassium	ND	mg/L	1.0					
Selenium	ND	mg/L	0.050					
Sodium	ND	mg/L	1.0					
Sample ID: MB-109	972	MBLK			Batch I	D: 10972	2 Analysis Date:	8/10/2006 6:15:43 PM
Barium	ND	mg/L	0.020					
Calcium	ND	mg/L	1.0					
Silver	ND	mg/L	0.0050					
Sodium	ND	mg/L	1.0					
Sample ID: LCS-10	972	LCS			Batch II	D: 10972	Analysis Date:	B/9/2006 1:20:55 PM
Arsenic	0.5138	mg/L	0.020	102	80	120		
Cadmium	0.4918	mg/L	0.0020	98.4	80	120		
Calcium	49.14	mg/L	1.0	98.3	80	120		
Chromium	0.4929	mg/L	0.0060	98.6	80	120		
Lead	0.4863	mg/L	0.0050	97.3	80	120		
Magnesium	49.39	mg/L	1.0	98.8	80	120		
Potassium	51.57	mg/L	1.0	103	80	120		
Selenium	0.4925	mg/L	0.050	98.5	08	120		
Sodium	52.08	mg/L	1.0	104	80	120		
Sample ID: LCS-10	972	LCS			Batch II	D: 10972	Analysis Date:	8/10/2006 6:18:45 PM
Barium	0.4765	mg/L	0.020	95.3	80	120		
Calcium	49.50	mg/L	1.D	99.0	80	120		
Silver	0.4855	mg/L	0.0050	97.1	80	120		

# QA/QC SUMMARY REPORT

#### Qualifiers:

Sodium

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

S Since Percovery outside accepted recovery limits 11/14

<b>Client:</b> G <b>Project:</b> G	Giant Refining GWM-1 Annu	; Co al 2006		-				,	Work Orde	er: 0608046
Analyte		Result	Units	PQL	%Rec	LowLimit H	lighLimit	%RPD	RPDLimit	Qual
Method: SW8250B	<u> </u>									2///2020
Sample ID: 5mL rb			MBLK			Batch ID	R20181	Analysis L	bale:	8/4/2000
Benzene		ND	µg/∟	1.0						
Toluene		ND	hð\r	1.0						
Ethylbenzene		ND	µg/L	1.0						
Methyl tert-butyl ether (	(MTBE)	ND	μg/L	1.5						
1,2,4-Trimethylbenzen	e	ND	µg/L	1.0						
1,3,5-Trimethylbenzene	a	ND	µg/L	1.0						
1,2-Dichloroelhane (EC	). (OC)	ND	µg/L	1.0						
1,2-Dibromoelhane (ED	<b>DB)</b>	ND	µg/L	1.0						
Naphthalene		ND	µg/L	2.0						
1-Methylnaphthalene		ND	µg/L	4.0						
2-Melhylnaphthalene		ND	μg/L	4.0						
Acetone		ND	µg/L	10						
Bromobenzene		ND	μg/L	1.0						
Bromochloromethane		ND	µg/L	1,0						
Bromodichloromethane		ND	µg/L	1.0						
Bromoform		ND	μg/L	1.0						
Bromomethane		ND	µg/L	2.0						
2-Butanone		ND	µg/L	10						-
Carbon disulfide		ND	µg/L	10						
Carbon Tetrachloride	۰.	ND	μg/L	2.0						
Chlorobenzene		ND	µg/L	1.0						
Chioroethane		ND	µg/L	2.0						
Chloroform		ND	μg/L	1.0						
Chloromethane		ND	µg/L	1.0						
2-Chlorotoluene		ND	ug/L	1.0						
4-Chlorotoluene		ND	ug/L	1.0						
cis-1 2-DCF		ND	uo/L	1.0						
cis-1.3-Dichloropropen	e	ND	uo/L	1.0						
1 2-Dibromo-3-chloropr	onane	ND	uo/L	2.0						
Dibromochloromelhane		ND	ua/L	1.0						
Dibromomethane		ND	µa/L	2.0						
1 2-Dichlorobenzene		ND	ио/L	1.0						
1.3-Dichlorobenzene		ND	ug/L	1.0						
1 4-Dichlorobenzene		ND	uo/L	1.0						
Dichlorodifluoromethan	e	ND	µg/L	1.0						
1 1-Dichloroelhane	-	ND	ua/L	2.0						
1.1-Dichloroelhene		ND	uq/L	1.0						
1 2-Dichloronropane		ND	µg/L	1.0						
1.3-Dichloropropana		ND	uo/l_	1.0						
2 2-Dichloroproparte		ND	uo/).	2.0						
1 1-Dichiomoropeo		ND	un/l	10						
		ND	1975 100/1	20						
		ND	pgr- ug/l	10						
			1991 C	10						
ISOpropyidenzene		NU	բու	1.0						

### OA/OC SUMMARY REPORT

Qualifiers:

Isopropylbenzene

- E Value above quantitation range
- J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- Snile Pecovery outside accepted recovery limits 12/14 S

Client: Project:	Giant Refining C GWM-1 Annual 1	o 2006					·	Work Order	-: 0608046
Analyte	Re	esult Unit	s PC	QL %Red	: LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8260E	3								
Sample ID: 5mL rb		MB	LK		Balch	ID: R20181	Analysis D	Date:	8/4/2006
4-Isopropylloluene	NE	), pd/	_ 1.0	ł					
4-Melhyl-2-pentanone	NE NE	) pg/l	- 10						
Methylene Chloride	NE	) pg/l	_ 3.0						
n-Butylbenzene	NE	) pg/L	- 1.0						
n-Propylbenzene	NE	) հնե	- 1.0	)					
sec-Butylbenzene	NE	) μg/l	- 2.0						
Styrene	NE	) հն	- 1.5						
tert-Bulylbenzene	NE	) հնե	- 1.0						
1,1,1,2-Tetrachloroeth	ane NE	) հնչ	- 1.0						
1,1,2,2-Tetrachioroeth	ane ND	) ից/Լ	. 1.0						
Tetrachloroelhene (PC	CE) NE	) µg/L	_ 1.0						
trans-1,2-DCE	NE	) µg/L	. 1.0		·				
trans-1,3-Dichloroprop	ene NE	) µg/L	. 1.0						
1,2,3-Trichlorobenzen	e NE	) µg/L	. 1.0						
1,2,4-Trichlorobenzen	e NE	) հնե	- 1.0						
1,1,1-Trichloroethane	NC	) ին (	. 1.0						
1,1,2-Trichloroethane	NE	) μg/L	. 1.0						
Trichloroethene (TCE)	NE	<b>)</b> μg/L	. 1.0						
Trichlorofluoromethan	e ND	) µg/L	. 1.0						
1,2,3-Trichloropropane	e NE	) µg/L	. 2.0						
Vinyl chloride	NE	) µg/L	. 1.0						
Xylenes, Total	NE	) µg/L	. 3.0						
Sample ID: 100ng lo	S	LCS	-		Batch I	D: R20181	Analysis Da	ate:	8/4/2006
Benzene	19.	.09 µg/L	. 1.0	95.5	71	124			
Toluene	18.	.01 µg/L	. 1.0	90.1	81.5	118			
Chlorobenzene	17.	.63 µg/L	. 1.0	88.2	81.2	132			
1,1-Dichloroethene	18.	.03 µg/L	1.0	90.2	65,5	134			
Trichloroethene (TCE)	17.	87 µg/L	1.0	89.4	69.5	119			

### Qualifiers:

- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S 13/14

### Hall Environmental Analysis Laboratory, Inc.

	Sampl	e Receipt C	hecklist					
Cilent Name GIANTREFIN			Date and Tin	ne Received;		1	B/4/2006	
Wark Order Number 0608046		$\overline{\mathcal{A}}$	Received t	y GLS				
Checklist completed by	MA	Date	- 3/4	104				
1	R							
Malrix:	Carrier name	: <u>Client drop-</u>	<u>off</u>					
Shipping container/cooler in good condition?		Yes 🗹	No 🗌	Not Present				
Custody seals intact on shipping container/cool	ler?	Yes 🗌		. Not Present		Not Shipped	$\checkmark$	
Cuslody seals Intact on sample bottles?		Yes 🗋	No 🗌	N/A	$\checkmark$			
Chain of custody present?		Yes 🗹	No 🗍					
Chain of custody signed when relinquished and	received?	Yes 🗹	No 🗌					
Chain of custody agrees with sample labels?		Yes 🗹	No 🗍					
Samples in proper container/bottle?		Yes 🗹	No 🗌					
Sample containers intact?		Yes 🗹	No 🗌					
Sufficient sample volume for indicated test?		Yes 🗹	No 🗆					
All samples received within holding time?		Yes 🗹	No 🗆					
Water - VOA vials have zero headspace?	No VOA vials sub	mitted 🗌	Yes 🗹	No 🗌				
Water - pH acceptable upon receipt?		Yes 🗹	No 🗌	N/A 🗌				
Container/Temp Blank temperature?		<b>3°</b>	4° C ± 2 Accept If given sufficier	able nt lime to cool.				
COMMENTS:								
Client contacted	Date contacted:	+	Pen	son contacted				-
Contacted by:	Regarding:							-
Comments:							-	
								•
								-
Corrective Action								

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	(In the Water of the State of t	Vr6f4();
ENTAL. RATORY D 187109 187109 5005.345.41 0m	(AOV-ima2) DY2B	Mr. Swi
<b>ININ</b> Suite Aexipe Fax tral.cc		1111
S LA S LA New N New N S975 Domer	(SOB) s'809' Pesticidea / R08	L S
VSIS Vkine aukine aukine enviro		ц Ц
ALL I J1 Ha J1 Ha J1 Ha J1 Ha M hall		The second secon
HAD AND Albu WWW	EDC (Wetpod 8031)	416
	EDB (Method 504.1)	
	(1.814 boddaM) H9T	2
	(leseiO\zeC) 82 f 08 hod Jet M H9T	UG:
	BTEX ÷ MTBE + TPH (Gasoline Only)	
QA/GC Package: Std ロ Level 4 ロ Other: Project Name: ビビM/-/ Project #:	Project Manager:       ED     RIEGE       Eampler:     EO       Sampler:     A       Sampler:     A       Sampler:     A       Sampler:     A       Sampler:     A       Sampler:     A       Sample:     A       Sample:     A       Number/Valume     Preservative       Number/Valume     HgGlug       Huld, K     K       I 50bm2     K       I 50bm3     K       I 50bm3     K	Received By, Kighed man ( 2-4-2 Received By, Kighed ( 2)
HAIN-OF-CUSTODY RECORD	Marker MM ST201 Marker MM ST201 #: 505-722-2928 #: 505-722-2928 #: 505-722-2928 Matrix Sample I.D. No. Bale Inne Matrix Sample I.D. No.	

### 6. Summary of Groundwater Testing

### <u>OW-11</u>

A grab sample from OW-11 was taken on October 26, 2006. The sample was analyzed for RCRA Metals, VOC, SVOC, BTEX, MTBE and general chemistry. Lab results showed results less than the New Mexico Water Quality Standards (NMWQS) for anions, VOCs, SVOCs, and metals. All the tested parameters were less than the applicable MCLs, NM ground water, and NM TPH screening levels. However, the general chemistry results showed that fluoride (2.5 mg/l) and sulfate (1,100 mg/l) were present at levels greater than the NMWQS for fluoride (1.6 mg/l) and sulfate (600 mg/l).

**RECOMMENDATION**: *Giant Gallup will continue to test OW-11 on an annual basis for VOC, SVOC, BTEX, MTBE, Metals, and General Chemistry* 

### <u>OW-12</u>

OW-12 was sampled on October 27, 2006 and analyzed for BTEX and MTBE. Lab analysis showed all parameters at concentrations less than (all non-detect) the NMWQS for BTEX and MTBE.

**RECOMMENDATION:** Giant Gallup will continue to monitor OW-12 on an annual basis for BTEX and MTBE

### <u>OW-13</u>

OW-13 was sampled on October 27, 2006 and analyzed for BTEX and MTBE. Lab analysis showed all parameters at concentrations less than (all non-detect) the NMWQS for BTEX compounds and MTBE.

**RECOMMENDATION**: *Giant Gallup will continue to monitor OW-13 on an annual basis for BTEX and MTBE* 

### <u>OW-14</u>

OW-14 was sampled on October 29, 2006 and on December 28, 2006 and analyzed for BTEX and MTBE. Lab analysis on the two sample events in 2006 showed all parameters at concentrations less than the NMWQS for BTEX compounds and MTBE. Benzene had shown up at levels exceeding the NMWQS in the 2004 and 2005 samplings.

**RECOMMENDATION:** Well OW-14 is to be sampled on a semi-annual basis. This well has been known to contain contaminants. Wells OW-12, OW-13, OW- 29, and OW-30 were installed to monitor if contaminants from OW-14 were migrating. MTBE was detected in the 2006 sampling in OW-30 and needs to be tracked on a continuing basis.

#### <u>OW-29</u>

OW-29 was sampled on October 27, 2006 and analyzed for BTEX and MTBE. Lab analysis showed concentrations less than (all non-detect) the NMWQS for Benzene, Toluene, Ethylbenzene, Xylene, and MTBE.

**RECOMMENDATION**: Giant Gallup will continue to monitor OW-29 on an annual basis for BTEX and MTBE

#### <u>OW-30</u>

OW-30 was sampled on October 27, 2006 and analyzed for BTEX and MTBE. Lab analysis showed concentrations less than the NMWQS for Benzene, Toluene, Ethylbenzene, Xylene, and MTBE.

**RECOMMENDATION:** *Giant Gallup will continue to monitor OW-30 on an annual basis for BTEX and MTBE* 

#### <u>BW-1-A</u>

BW-1-A is a dry well and therefore was not sampled in 2006.

**RECOMMENDATION:** Giant Gallup will continue to visually inspect BW-1-A annually for any liquids. If liquids are observed, then sampling will occur. All samples will be analyzed for VOC, SVOC, BTEX, MTBE, Metals, and General Chemistry.

#### <u>BW-1-B</u>

BW-1-B is a dry well and therefore was not sampled in 2006.

**RECOMMENDATION:** Giant Gallup will continue to visually inspect BW-1-B annually for any liquids. If liquids appear, samples will be analyzed for VOC, SVOC, BTEX, MTBE, Metals, and General Chemistry.

#### <u>BW-1-C</u>

BW-1-C was sampled on October 28, 2006 and analyzed for VOC, SVOC, BTEX, MTBE, metals, and General Chemistry. Lab analysis showed concentrations less than (all non-detect) the NMWQS for benzene, toluene, ethylbenzene, xylene, and MTBE. However, lab results showed fluoride (2.7 mg/l) was greater than the NMWQS (1.6 mg/l).

**RECOMMENDATION:** *Giant Gallup will continue to monitor BW-1-C on an annual basis for VOC, SVOC, BTEX, MTBE, Metals, and General Chemistry* 

#### <u>BW-2-A</u>

BW-2-A was sampled on October 28, 2006 and analyzed for VOC, SVOC, BTEX, MTBE, recoverable metals, and General Chemistry. Lab results showed all parameters less than NMWQS.

**RECOMMENDATION:** *Giant Gallup will continue to monitor BW-2-A on an annual basis for VOC, SVOC, BTEX, MTBE, Metals, and General Chemistry* 

#### <u>BW-2-B</u>

BW-2-B was sampled on October 28, 2006 and analyzed for VOC, SVOC, BTEX, MTBE, metals and General Chemistry. Lab results showed concentrations less than the NMWQS for all parameters except fluoride which was greater (1.9 mg/l) than the NMWQS (1.6 mg/l).

**RECOMMENDATION:** Giant Gallup will continue to monitor BW-2-B on an annual basis for VOC, SVOC, BTEX, MTBE, Metals, and General Chemistry. All future lab reports will be compared to past data to determine if levels of Selenium are increasing or remaining static. Selenium in 2006 was less than the detection level (<0.050 mg/l).

#### <u>BW-2-C</u>

BW-2-C was sampled on October 28, 2006 and analyzed for VOC, SVOC, BTEX, MTBE, Metals, and General Chemistry. Lab results showed concentrations less than the NMWQS for all parameters except fluoride which was greater (2.4 mg/l) than the NMWQS (1.6 mg/l).

**RECOMMENDATION**: Giant Gallup will continue to monitor BW-2-C on an annual basis for VOC, SVOC, BTEX, MTBE, Metals, and General Chemistry.

#### <u>BW-3-A</u>

BW-3-A was dry and therefore could not be sampled.

**RECOMMENDATION:** Giant Gallup will continue to visually inspect BW-3-A for any liquids. If liquids appear, samples will be analyzed for VOC, SVOC, BTEX, MTBE, Metals, and General Chemistry.

#### <u>BW-3-B</u>

BW-3-B was sampled on October 29, 2006 and analyzed for VOC, SVOC, BTEX, MTBE, Metals, and General Chemistry. Lab results showed concentrations less than the NMWQS for all parameters except fluoride which was greater (1.7 mg/l) than the NMWQS (1.6 mg/l).

**RECOMMENDATION**: *Giant Gallup will continue to monitor BW-3-B on an annual basis for VOC, SVOC, BTEX, MTBE, Metals, and General Chemistry* 

#### <u>BW-3-C</u>

BW-3-C was sampled on October 29, 2006 and analyzed for VOC, SVOC, BTEX, MTBE, Metals, and General Chemistry. Lab results showed concentrations less than the NMWQS for all parameters except fluoride (1.9 mg/l) which was present at greater than the NMWQS (1.6 mg/l).

**RECOMMENDATION**: Giant Gallup will continue to monitor BW-3-C on an annual basis for VOC, SVOC, BTEX, MTBE, Metals, and General Chemistry

#### <u>GWM-1</u>

GWM-1 was inspected for presence of water in 2006 on March 9, May 26, July 26, and October 13. Ground water was sampled on August 2, 2006; the sample was analyzed for VOC, SVOC, BTEX, MTBE, Metals, and General Chemistry. The sample showed benzene present at 0.012 mg/l which is greater than the 0.005 mg/l MCL standard for benzene. All other results from the August 2 sampling were less than the NMWQS except fluoride (2.0 mg/l), chloride (3,700 mg/l), and arsenic (0.077 mg/l) which were greater than the NMWQS for fluoride (1.6 mg/l), chloride (250 mg/l), and arsenic (0.05 mg/l).

**RECOMMENDATION:** Giant Gallup will monitor GWM-1 on an annual basis for VOC, SVOC, BTEX, MTBE, Metals, and General Chemistry. Gallup also checks GWM-1 on a quarterly basis for the presence of water. Based on 2006 lab data, discussions with NMED and NMOCD are ongoing and sampling maybe changed

#### <u>GWM-2</u>

GWM-2 was installed in the Fall of 2005 and was dry. It was inspected for presence of groundwater in 2006 on January 18, May 26, July 26, and October 13. It was dry at all the inspections.

**RECOMMENDATION**: *Giant Gallup will monitor GWM-2 on a quarterly basis for the presence of water. If water is found, Giant will contact OCD/HWB immediately.* 

#### <u>GWM-3</u>

GWM-3 was installed in the Fall of 2005 and was dry. It was inspected for presence of groundwater in 2006 on October 13. It was dry at the inspection.

**RECOMMENDATION**: *Giant Gallup will monitor GWM-3 on a quarterly basis for the presence of water. If water is found, Giant will contact OCD/HWB immediately.* 

#### Pond #1 Inlet

Pond #1 inlet was sampled on March 30, 2006 and October 30, 2006 for BTEX, VOCs, and RCRA 8 metals (VOCs were inadvertently tested rather than SVOCs). Benzene, 2-methylnaphthalene, and lead exceeded the NMWQS; all other parameters were less than the NMWQS.

**RECOMMENDATION**: Giant Gallup will continue to monitor Pond 1 inlet on a semi-annual basis for BTEX, SVOCs and RCRA 8 metals.

#### POND #2 Inlet

Pond #2 inlet was sampled on October 31, 2006 for BTEX, MTBE, and TDS. TDS exceeds the NMWQS; BTEX and MTBE were less than the NMWQS. It was sampled many times in 2006 for BOD and COD (a summary of the test results is included in Section 21. 3. b. in the OCD Addendum, Binder 2). This evaluation is not to be confused with the general chemistry evaluation, as for Pond 7, described in the next section.

**RECOMMENDATION:** Giant Gallup will continue to monitor Pond 2on an annual basis for BTEX, MTBE, BOD, COD, and TDS. Moreover, in 2006 Giant will monitor above this point (pond 1) for any contaminants.

#### <u>Pond 7</u>

Giant is required to sample on an annual basis one of the evaporation ponds for general chemistry parameters. Pond 7 was sampled on October 31, 2006 for general chemistry. As to be expected in water from evaporation ponds, the water sample was high in chloride, sodium and sulfate.

**RECOMMENDATION**: Giant Gallup will continue to perform a general chemistry evaluation of one of the evaporation ponds on an annual basis for general chemistry. The pond selection will be at Giant's discretion.

### <u>PW-2</u>

PW-2 was not required to be sampled in 2005.

**RECOMMENDATION:** Giant Gallup will continue to monitor PW-2 according to the discharge plan for VOC, SVOC, Metals, Cyanide, and Nitrates. The next scheduled sampling will take place in 2008

### <u>PW-3</u>

PW-3 was sampled in 2006. All parameters are less than the applicable NMWQS and MCLs.

**RECOMMENDATION:** *Giant Gallup will monitor PW-3 according to the discharge plan. Sampling will be conducted every 3 years beginning in 2006* 

PW-4 was not required to be sampled in 2006.

**RECOMMENDATION**: Giant Gallup will continue to monitor PW-4 according to the discharge plan for VOC, SVOC, Metals, Cyanide, and Nitrates and is scheduled for sampling in 2007

#### <u>OW-1 and OW-10</u>

These wells will be visually checked on a quarterly basis starting the 4th quarter of 2004. In 2006 the wells were visually inspected on March 9, June 27, July 26, and October 13.

**RECOMMENDATION**: *Giant Gallup will continue to visually inspect OW-1 and OW-10 for artesian flow quarterly* 

#### MW-1, MW-4, MW-5, SMW-2 AND SMW-4

MW-1 was sampled on October 26, 2006. MW-4, MW-5, SMW-2 and SMW-4 were not required to be sampled in 2006. Lab results for MW-1 showed concentrations less than the NMWQS on all parameters.

**RECOMMENDATION:** *Giant Gallup will sample MW-1 annually. MW-4, MW-5, SMW-2 and SMW-4 will be sampled in 2007 and 2009 and biennially thereafter.* 

7. List of Tables

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**Plots of Water Table Elevations** 



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### **GROUND WATER DEPTH TO WATER 2006**

WELL #	DTW:	BTM:	DATE:
		а	
BW-1A	Dry	37.8	10-24-06
BW-1B	67.55	1ft H20	
BW-1C	7.55	V	<i>v</i>
BW-2A	23.03		Ņ
BW-2B	27.78		33
BW-2C	20.25		1>
BW-3A	Dry	52.60	<u>، رر</u>
BW-3B	32.78		11
BW-3C	8.40		13
OW-11	21.95		
OW-12	49.17		۲ (
OW-13	2436		41
OW-14	27.38		12
OW-29	21.95		۰ ۲۲
OW-30	26.43		n
MW-1	7.58		27
			<u> </u>
			`

BW-1B not enough water to sample.

Cale Alternetting and a series of the series 250°¢ €1-1 10/26/06 DPus- 7.58 ft. Bold / Windy 197 Cloudy Attendees 1 Steve Morris, Charge Morris Start Purge 9:45 Sample 11:50 Am 3 WVols. = 427.18 gals funged 175 gal. Lost Suction, Waited 10 min. y Sampled, Water Clear / No sdor Calibrated fit & Cond. Meter 10.26.06 0945 10/2406 DPW - 21.10 Ft. - <u>010-11</u> Cold Windy Attendees steve morris + Charge Morris Start Purge 13:15 pm 105 gals, Purged-Portable fump Lowered to 55 ft. 3 W. Vols = 101.05 gals Water Clear / No isdor DW-12 10/26/06 Cold Windy 1 Pt. Cloudy Dtw 49.14 Attendees star morris, Cheryl Morris Start Purge time 14:30 3 WVOIS = 212.8 gals Con. Pg 2

funged gals, Lost Suction time funged 120 ft. Tried to lower pump to 130 feet but hit either bottom of well or of the tion at about 126 feet. Water Elear 1 No 040+ 0W-12 10/27/06 Dtw 61.34 Ft. 8:30 Am Clear steres, Cold, wind Still. 43 gals. Availables in Well 2.27.06 alibrated 14 a Con. Mater Purge 20 gal-Pourge time - 8:45 Loweved Pump to 120ft. 345 Sample time - 9:15 Water Clear / No odor OW-13 10.27.06 (Dtw) 24.38 Clear Skies, Cold, Wind Still Purge Gals 170 gals. Purge - time 0935 Purge Liguid Depth 24.38 Sinch time, 01030 Sample time - 01030 Pump depth = 90 ft 3 Well Depts = 167.88 gels. Water Clear / No odor 0W-29 10.27.06 Toten states, Cold, wind still primp Dept: 45 3 Well Vols. = 66-64 gals Weil Dept. 52 Dept. to Water 21.98 Purge time - 1100 Purged 44 gals + Lost Suction. Sample time - 12:30
ALGE E MAI @w-29. Water Slightly Cloudy / No odor OW-30 10.27.06 Clear, Cold, Slight Breeze Dtw - 26.45 Purge gals 48.51 gals punge time 1330 Wail Depth 48 Ft. Pump Depth 42ft 3 Well Vols = 47. 84 ft. water Clear / No odor Sample time 1400 PW-3 10.27.06 Grab 3260 X 3 Presentike Clear, Cold, Slight Breeze Sample time 01445 8270 ×1 None athered water in 2 gal, filtered water jug 3 Cyanide × Na OH filled Sam ple bottles @ Shed, Vapors in Nitrates X2 1.H2504 the Ail @ Pw-3 well. RCRA metals total x 1

1277 Se Callwood production of the (1)-1-C - 16:28.06 Cold, Sunny, slight Breeze Rold, Sunny, Slight Dreeze Purge time - 0930 purged 5 gals, Lost Suction & Sampled Nt... 755 ft. 01015 DED Pump Well Dpth. 157 3 Well Usl3. = 73.08. Sample time - 01015 D+W- 7.55 ff. -8260 Voa × 3 HCL RCRAMENS totals Gen Chem 157 Ben Unem 8270 -> glass amber × 1 None ×.163 Gen Chem NONE X1 Gen Chen. H2SO4 X1 + 3 (7 = Bottles) BW-2-A 10.28.04 Cold, Sunny, Slight Breeze Jurge time - 1115 Jurged 17 gal. S. D+W- 31,98 ft. Well Dept. 65ft 3 well Vols = 16.15 gals DED pump Sample time. 1130 Con. Pg. 5

9-2-8 10,28.06 Cold, Sunny, No Wind Purge time 1300 Purged 16 gals Lost Dtw 27.78 Suction Waited 15 min. Sampled. Dtw 27.78 Well Depth. 90.5 3 well Vols. = 30.67 Sample fime - 1336 Cloudy Sample Water BW-2-C 10.28.06 Moderate, Sunny, No Wind Purge time - 1468 Purged 28 gals, Lost Suct waited 30 minse D+W - 20.26 Weil Depth. 170 ft. 3 Well Vols = 73.22 Wei Diffi 110 24 Con. Page 6

d otale N-3-B-10.29-06 Cold, Particelly Cloudy, Slight Breeze furge time 0900 purged Amount 12 gals. D+W- 32.75 Cloudy Water Well Depth 72 ft 3 Well Vols. = 19.19 gals VORX3 HLC Sample time 1000 BW-3-0 10.29.06 Cold. Partically Cloudy, Slight Breeze, Lost suction furge time 1015 purged amount 19.4/gal (History) Loweved Pump to go (History) Loweved Pump to go (Notes) well ran over 10-12 gals lost Suction 5 Min Loweved again to 120' DFW 8.40 Well Depth 155 FA 3 Well Vols = 71.69 gals. Loweved fump to-Sample time 1045 Slightly Cloudy water Con. pg. 7 

D-14 10.29.06 Cold, Olbrecest, slight Brieze furge time - 1300 purged amount - 40 gals <u>D+w - 27.25</u> Well Depth 45 ft. 3 Well Vol5 = 39.40 Vol × 3 Sample time 1330 - -5 

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	WELL #	. OW-12	OW-13	OW-14	OW29	OW-30	OW-11	MILI			1		
	PURGE DATE	1. 25 4	112 27 66		1	40 27.1	l mlatiala	July 1				<del> </del>	
^	PURGE TIME	10.26.0	10.11.00	10.29.00	10.21.00	10-21.00	10120124	1926/04 09115					
ي. ار	QYA READING	14.30	073-	13.60	1100	1930	12.12	-2442				12-11	
3	LIOUID DEPTH	·	.       = =	متصنيت				7-0					
$(p)^*$	PUMPDEPTH	44.14	24.38	2/,25	21.9.8	26.43	21.10	1.58			[	<u></u>	
. !	TUNIE DELTI	120ft	90 ft,		/45H	4244	55ft.	Ded.					
	IMMISC. LAYER								· .	. 		· ·	
	FLOW RATE				· .								
	PUMPTIME						-	) \				- 	
	l V				_								- 1
	SAMPLE DAY	10.27.06	10.27.06	10.29.06	10.27.06	10-27.06	10/26/06	10/26/01					
4	SAMPLE TIME	0915	1030	1330	12:30	1405	14:00	11:60			· · · · · · · · · · · · · · · · · · ·		
	OVA READING	<u> </u>				1100							
	LIQUID DEPTH	61.34	24.38	27.25	21.98	26.45	24.10	7.58'					
	t) TEMP. F	56	56	57	55	56	56	56					
	рН	9.61	8.26	6.88	7.66	7.30	8.58	9.1					·
	SP. COND.	1170	12.95	2540	1702	1675	2980	12:42					: .
·. [	2) TEMP. F	56	56	57	55	56	56	56					1-1-1
	pH	9.65	8.31	6.83	7.53	7.25	8.52	9-22					
	SP. COND.	1177	12.95	2540	1696	1671	3000	1:192					
ļ	3) TEMP. F	56	56	51	55	56	56	5.6		·			
-	pH	9.64	8.28	6.81	7.48	7.24	8.55	9.16		· ·	9.4		· · · ·
.	SP. COND.	1165	1293	2.520	1762	1670	2960	1180			74. 7		
F	4) TEMP. F	56	56	57	55	56	56	56					······································
-	pH	9.64	5.28	6.80	7.42	7.23	9.51	9.14					·
	SP. COND.	1169	1287	2530	1699	1672	2990	1185					



						3		 	 	
VELL#	BW-1-C	BW-2-A	BW-2B	BW-2-C	BW-3-B	BW-BC				
PURGE DATE	10.28.06	10.28.06	10.28.04	10.28.06	10,29.64	10.29.06				
PURGE TIME	0930	1115.	1300	14:00	0900	1015	2 ⁻¹⁰ 05 a			
OVA READING										
LIQUID DEPTH	7:55	31.98	27.78	20.26	32.75	8.40				
PUMP DEPTH	DED	DED	DED	140	DED	155	22			
IMMISC. LAYER						<u>\</u>				
FLOW RATE			·			 				
PUMP TIME										<u> </u>

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L		· · · · ·	J	<b>1</b>	3		<u>_</u> ]		J	- <b>J</b>	- <b>L</b>	·	
SAMPLE DAY	10.28.06	10-28:06	10.28.06	10.28.06	10.29.06	10.29.06							
-SAMPLÉ TIME	01015	1120	1336	15:00	1000	1045							
OVA READING			n Talita					į,"					
LIQUID DEPTH	7.55	31.98	27.78	20.26	32.75	8.40		14 27					7
TEMP. F	57	56	56	56	56	56		đ,					
pH	8.39	7.44	7.58	8.52	7.38	8.39							-
SP. COND.	1352	1352	2290	13 75	1547	1442			_				
2) TEMP. F	57	56	56	56	56	56							]
pH	8.41	7.44	7.49	8.48	7.95	8.38	:						
SP. COND.	1352	1350	2290	1368	1558	1448							
3) TEMP. F	57	56	56	56	56	54		4 				•	
pН	8.35	7.45	7.52	8.47	7.83	8.38		· · · · ·					
SP. COND.	1359	1357	2310	13:60	1558	1439							
4) TEMP. F	57	56	56	56	56	56	•						
pH	8.36	7.44	7.51	8.50	7.82	8.38							
SP. COND.	1346	1356	2310	1378	1550	1432							

37.75

Volume of Product Recovered

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# RW-1 HYDROCARBON RECOVERY LOG 2/22/05 TO 6/14/07

	T.'	0	NX7-11-44	Depth to Product	Depth to Water	Product Level	Volume of Product	Water
Date of measurement	<u>1 ime</u>	Quarter	<u>weii #</u>	(feet)	(feet)	(feet)	(gallons)	<u>Gallons</u>
2/22/2005	0830	lst.	RW-1	32.46	36.5	4.04	14	
3/2/2005	0745	1 st.	RW-1	32.42	· 36.44	4.02	9	
3/8/2005	0830	1st.	RW-1	31.92	36.35	4.44	15	10. L 17. A. H. A. L.
3/9/2005	0830	lst.	RW-1	31.92	37.50	5.58	4	
3/11 to 3/18/05		lst.	RW-1	Started Pur	nping Well on	3/11/05	74	
3/18 to 3/23/05		lst.	RW-1	Cor	tinue Pumpin		48	
3/23 to 4/1/05		lst.	RW-1	Cor	ntinue Pumpin	g	62	1994 illing i san ing ing ing ing ing ing ing ing ing in
4/1 To 4/4/05	_	2nd	RW-1	Pump shut	down to meas	ure well	27	
4/5/2005	11:30Hrs	2nd	RW-1	34.75	38.92	4.17		
4/4 TO 4/15/05	11:00Hrs	2nd	RW-1	Cor	tinue Pumpin	g	50	
4-15 to 5-5-05	1230 Hrs	2nd	RW-1	Cor	tinue Pumpin	g	45	154
5-5 to 6-17-05	1130 Hrs	2nd	RW-1	Cor	tinue Pumpin	g	24	196
6/27/2005	1400 Hrs	2nd	RW-1	Pump shut	down to meas	ure well		
6/28/2005	1100 Hrs	2nd	RW-1	32.46	33.25	0.79		
6/28/2005		2nd	RW-1	Cor	tinue Pumpin	σ		
6/17 to 7/8/2005	1030 Hrs	2nd	RW-1	Cor	tinue Pumpin	o	18	146
7/8 to 8/9/2005	1330 Hrs	3rd	RW-1	Cor	ntinue Pumpin	σ	28	350
8/9 to 9/16/2005	1135 Hrs	3rd	RW-1	36.46	36.54	0.08	8	240
12/5/2005	1315 Hrs	4th	RW-1	31.92	34.71	2,79	<u> </u>	
12/8/2005	1400 Hrs	4th	RW-1	9	tart' Pumping			
12/22/2005	1530 Hrs	4th	RW-1	5	Pulled Pump		5	120
12/29/2005	1400 Hrs	4th	RW-1		Hand Bailed		0.5	4.5
3/16/2006	1300 Hrs	1st	RW-1	32.23	34 48	2.25		
3/16/2006	1430 Hrs	1st	RW-1	02.20	tort Dumping	2.20		
3/23/2006	1430 Hrs	100. 1st	DW-1	5	ut Off Dump			
3/27/2006	1530 Hrs	1st. 1et	DW 1		tort Dummina			
3/31/2006	1130 Hrs	1st	DW-1	S Cor	tinuo Dumnin	~	7	174
4/3/2006	1130 Hrs	2nd		COL	nnad Dumining	<u> </u>	1	38
4/4/2006	1100 Hrs	2nd	RW-1	32 75	pped Pumping	0.33	1	
6/6/2006	1300 Hrs.	2nd 2nd	RW-1	32.40	34.54	2.15		
6/8/2006	1500 Hrs.	2nd	RW-1	Start Pum	ping (Intermit	tingly)		
6/29/2006	1000 Hrs.	2nd	RW-1	Sto	pped Pumping		8	365
7/31/2006	1145 Hrs	3rd	RW-1	33.06	33.48	0.42		
7/31/2006	1145 Hrs	3rd	RW-1	S	tart Pumping			
8/3/2006	1420 Hrs	3rd	RW-1	Sto	pped Pumping	r	2	87
8/8/2006	0900 Hrs.	3rd	RW-1	Si	tart Pumping			
8/10/2006	1530 HRS	3rd	RW-1	Start pumping				
8/22/2006	0900 Hrs.	3rd	RW-1	Pulled pump	· ·	······································	4.9	373
8/22/2006	0945 HRS	3rd	RW-1	33.83	33.33	0.50		
12/21/2006	1555	4th	RW-1	35.17	36.00	1.25	1.5	70
2/21/2007	1015	1st.	RW-1	33.42	34.50	1.92	0.625	53.5
6/5/2007	1000	2nd	RW-1	32.42	32.71	0.21		
6/5/2007	1010			Hand Bailed			0.125	9
6/6/2007	840			Hand Bailed			0.25	11
6/13/2007	1400			Hand Bailed			0.25	12
6/14/2007	1040			Hand Bailed			0.125	8
			. <u> </u>					
				1	Total G	allons	457.275	2411

#### WELL VOLUME SHEET

WELL	TOTAL DEPTH	DEPTH TO WATER	CAPACITY GALLON PER FOOT	ONE WELL VOLUME	THREE WELL VOLUME
		······			-
MW-1	132.02	· ·	1.02		· · · ·
MW-2	140.24	· · · · · · · · · · · · · · · · · · ·	1.02		
MW-4	122.14		1.02		
MW-5	133.02		0.74		
					•
· SMW-1		1	0.163	<u></u>	
SMW-2			0.163		
SMW-3	45.86		0.163		
SMW-4	72.22		0.163		
SMW-5	76.22		0.163		
SMW-6	73.11		0.163		
					.1.
OW-1	94.04	<u>`</u>	0.74		
OW-2	61.0	· · · · · · · · · · · · · · · · · · ·	0.74	· · · · · · · · · · · · · · · · · · ·	
OW-3	66.73		0.74		
OW-11	66.62		0.74		
OW-29	52.00		0.74		
OW-30	48.00		0.74		
OW-24	65.0		0.74		

sm/c:/word/envforms/wellvolumesheet

.

#### GIANT CINIZA REFINERY

Permit Requirement:	GW-032
Condition Permit ID # :	OCD Sect. 9, Item 4
Monitoring Required:	Quarterly measurement of product layer thickness and bailing of product.
Equipment Identification:	RW-1, RW-2, RW-5, & RW-6

Date of measurement	Time	Quarter	<u>Well #</u>	Depth to Product (feet)	<u>Depth to</u> Water (feet)	<u>Product</u> <u>Level</u> <u>Thickness</u> (feet)	<u>Volume of</u> <u>Product Bailed</u> (gallons)
3/16/2006	1300 Hrs.	1 st	RW-1	32,23	34.48	2.25	* 7
3/16/2006	1430 Hrs.	1st	RW-2	'No Product	27.90	0.00	0
3/16/2006	1450 Hrs.	1st	RW-5	32.58	33.00	0.42	1
3/17/2006	1245Hrs	1st	RW-6	32.67	33.75	1.08	2 1/2

* Started pumping 3-16-06 at 1430 Hrs. Shut Off pump 3/23/06 at 1430 Hrs. Start Pumping 3/27/06 at 1530 Hrs. 3/31/06 at 1130 Hrs. Pumped 174 Gallons of water and  $7_{f}$  Gallons of Product.

Signature:

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RW1,2,5 & 6 1st Qtr 06

#### GIANT CINIZA REFINERY

Permit Requirement:

GW-032

Condition Permit ID # :

OCD Sect. 9, Item 4

Monitoring Required:

Quarterly measurement of product layer thickness and bailing of product.

Equipment Identification:

RW-1, RW-2, RW-5, & RW-6

Date of measurement	Time	<u>Ouarter</u>	<u>Well #</u>	Depth to Product (feet)	<u>Depth to</u> Water (feet)	Product Level Thickness (feet)	<u>Volume of</u> <u>Product Bailed</u> (gallons)
6/6/2006	1330 Hrs.	2nd.	RW-1	32.40	34.54	2.16	***
6/1/2006	1500 Hrs.	2nd.	RW-2	No Product	27.98	0.00	0
6/1/2006	1540 Hrs.	2nd.	RW-5	32.79	33.17	0,38	1
6/7/2006	1505 Hrs.	2nd.	RW-6	32,92	34.42	1.12	2 1/2
Name and Title of per	son who performed me	asurement:	Johnny Sar	ichez (Environmen	tal Specialist)		

*** Pumped RW-1 from 6-8-06 to 6-29-06 intermittingly, 365 gallons of water and 8 gallons of product.

Signature:

RW1,2,5 & 6 2nd Qtr 06

#### GIANT CÍNIZA REFINERY

Permit Requirement:	GW-032
Condition Permit ID # :	OCD Sect. 9, Item 4
Monitoring Required:	Quarterly measurement of product layer thickness and bailing of product.
Equipment Identification:	RW-1, RW-2, RW-5, & RW-6

Date of measurement	<u>Time</u>	Quarter	Well #	Depth to Product (feet)	<u>Depth to</u> <u>Water (feet)</u>	Product Level Thickness (feet)	<u>Volume of</u> <u>Product Bailed</u> (gallons)
7/31/2006	1050 hrs	3rd	RW-1	33.06	33.48	0.42	*4.9
7/26/2006	1145 hrs	3rd ·	RW-2	No Product	28,23	0,00	0
7/26/2006	1435 Hrs.	3rd	RW-5	32-90	33.31	0.58	3/8
7/26/2006	1500 Hrs.	3rd	RW-6	33.00	34012	1.12	1 1/2
Name and Title of per	son who performed me	asurement:	Johnny Sar	ichez & Cheryl Jo	hnson (Environr	nental Speciali	ist)

Measured to top of steel casings on all wells. * started pumping at 11:45AM 7/31/06. Completed pumping to all 8 drums on 8/22/06. Total gallons pumped 373 gallons; 4.9 gals of product.

Signature:

#### GIANT CINIZA REFINERY

Permit Requirement:

GW-032

Condition Permit ID # :

OCD Sect. 9, Item 4

Monitoring Required:

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Quarterly measurement of product layer thickness and bailing of product.

**Equipment Identification:** 

RW-1, RW-2, RW-5, RW-6

<u>Date of</u> measurement	<u>Time</u>	Quarter	<u>Well #</u>	Depth to Product (feet)	Depth to Water (feet)	Product Level Thickness (feet)	Volume of Product Bailed (gallons)
12/21/2006	1055 hrs	4th	RW-1	32.46	32.40	0.75	1.5
10/13/2006	1540 hrs	4TH	RW-2	No Product	28.23	0.00	0
10/16/2006	0915 hrs	4th	RW-5	32:73	33.412	0.52	1/4
10/16/2006	0955 hrs	4th	RW-6	33-71	34.64	1.12	3/4
measurement         Time         Quarter         Well #         (feet)         Thickness (feet)         Bailed (g. (feet)           12/21/2006         1055 hrs         4th         RW-1         32.46         32.40         0.75         1.5           10/13/2006         1540 hrs         4TH         RW-2         No Product         2%.23         0.00         0           10/16/2006         0915 hrs         4th         RW-5         32.73         33.42         0.52         1/4           10/16/2006         0955 hrs         4th         RW-6         33.71         34.64         1.12         3/4           Name and Title of person who performed measurement:         33.71         34.64         1.12         3/4							

Cheryl Johnson (Environmental Specialist)

Signature:

CC: Ed Riege

Well Data Summary Table

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	= 0.8B + D	Corrected Water Table Elevation	;.(u)	ла	na         na	na	na	na	na	na	na	na	na	. na	na	na	na	na	na	ца	6912.252	6912.176	6913.572	6915.564	6899.3	6899.22	6898.97	6898.97									
	D=A-C	Groundwater Elevation	(ft)	dry	6,809.36	6,869.20	6,851.69	6,846.80	6,855.15	dry	6,846.01	6,869.68	6,868.00	6,867.60	6,867.17	6,867.75	6,869.30	6,868.57	6,868.05	6,869.10	6,902.84	6,891.26	6,895.76	6,899.26	6891.55	6,895.17	6,870.94	not sampled	not sampled	6,909.02	6,908.96	6,910.02	6,911.10	6,899.30	6,899.22	6,898.97	6,898.97
	υ	Depth to Water	(¥)	dry	67.55	7.55	23.03	27.78	20.25	dry	32.78	8.40	00:0	0.40	0.83	0.25	2.70	3.43	3.95	2.90	21.05	49.17	24.36	27.38	21.95	26.43	7.58	not sampled	not sampled	34.48	34.54	33.48	32.40	27.90	27.98	28.23	28.23
	HdS 8	Thickness		na	na	eu	na	na	na	na	вп	na	na	na	na	na	na	eu	па	па	na	Па	na	4.04	4.02	4.44	5.58	0	0	0	0						
		Ueptin to SPH (ft)*		na	na	с	na	na	na	na	na	na	La	na	na	na	na	na	na	na	na	na	na	na	na	na	еu	na	na	32.23	32.40	31.92	32.46	na	na	na	na
		Total Well Depth	(11)	40.00	67.55	157.00	65.50	90.50	151.00	52.60	75.00	155.00	94.04	94.04	94.04	94.04	68.00	68.00	68.00	68.00	66.62	145.00	100.00	45.00	49.00	48.4	132.02	122.14	133.02								
E	Well Casing Bottom	Elevations	(II)	6,836.73	6,811.71	6,719.75	6,809.22	6,784.08	6,724.40	6.828.22	6,803.79	6,723.08	6,773.96	6,773.96	6,773.96	6,773.96	6,804.00	6,804.00	6,804.00	6,804.00	6,857.27	6,795.43	6,820.12	6,881.64	6,864.50	6,873.20	6,746.50	6,760.40	6,750.30						1	4	
VISED charge Repo	A Well Casing Rim	Elevations	(II)	6,8/6./3	6,876.91	6,876.75	6,874.72	6,874.58	6,875.40	6,878.22	6,878.79	6,878.08	6,868.00	6,868.00	6,868.00	6,868.00	6,872.00	6,872.00	6,872.00	6,872.00	6,923.89	6,940.43	6,920.12	6,926.64	6,913.50	6,921.60	6,878.52	6,882.54	6,883.32		6 943 50				6,927,20		-
ary Table - RE oundwater Dis _{liza} Refinery Lieb		Measurement	Date	24-Oct-06	9-Mar-06	27-Jun-06	26-Jul-06	13-Oct-06	9-Mar-06	27-Jun-06	26-Jul-06	13-Oct-06	24-Oct-06	not sampled	not sampled	16-Mar-06	6-Jun-06	31-Jul-06	21-Dec-06	16-Mar-06	June 1,2006	26-Jul-06	13-Oct-06														
Well Data Summ. 2006 Annual Grc Giant Refining - Cin August 2007 by Jim			Well ID Number	BW-1A	BW-1B	BW-1C	BW-2A	BW-2B	BW-2C	BW-3A	BW-3B	BW-3C	OW-1	OW-1	OW-1	OW-1	OW-10	OW-10	OW-10	OW-10	OW-11	OW-12	OW-13	OW-14	OW-29	OW-30	MW-1	MW-4	MW-5	RW-1	(OW-27)			RW-2	(OW-28)		

					)				)
		Mell Casing Dim	Well Casing			B SPH	υ	D=A-C	= 0.8B + D
	Measurement	Elevations	Elevations	Total Well Depth	Depth to SPH	Thickness	Depth to Water	Groundwater Elevation	Corrected Water Table Elevation
Well ID Number	Date	(tj)	( <b>L</b> )	(tt)		(¥)	(tj)	(U)	(ft)**
RW-5	16-Mar-06				32.58	1.17	33.00	6,909.50	6910.436
	June 1,2006				32.79	0.75	33.17	6,909.33	6909.93
	26-Jul-06	6.942.50	40.00		32.90	0.33	33.31	6,909.19	6909.454
	16-Oct-06				32.73	1.08	33.42	6,909.08	6909.944
RW-6	17-Mar-06				32.67	1.38	33.75	6,938.85	6939.954
	June 7,2006		•		32.92	1.19	34.04	6,938.56	6939.512
	26-Jut-06	6,972.60	38.80		33.00	0.85	34.12	6,938.48	6939.16
	16-Oct-06				33.71	1.19	34.64	6,937.96	6938.912
SMW-2	not sampled	6,884.44	6.827.10	57.34	na	eu	not sampled	not sampled	na
SMW-4	not sampled	6,882.54	6,760.40	122.14	na	Pa	not sampled	not sampled	na
SMW-6	not sampled	6,880.71	6,807.60	73.11	na	вu	not sampled	not sampled	па
GWM-1	9-Mar-06	6,912.65	6,888.95	23.7	na	eu	20.25	6892.4	na
	26-May-06	6,912.65	6,888.95	23.7	na	na	20.16	6892.49	na
	26-Jul-06	6.912.65	6,888.95	23.7	na	na	20.72	6891.93	na
	13-Oct-06	6,912.65	6,888.95	23.7	na	na	20.61	6892.04	na
GWM-2	9-Mar-06	6,913,17	6,896.97	18.97	na	na	DRY	DRY	DRY
	26-May-06	6.913.17	6,896.97	18.97	na	na	DRY	DRY	DRY
	26-Jul-06	6,913.17	6,896.97	18.97	na	вn	DRY	DRY	DRY
	13-Oct-06	6,913.17	6,896.97	18.97	вп	вп	DRY	DRY	DRY
GWM-3	9-Mar-06	6,912.65	6,896.15	17.94	na	ра	DRY	DRY	DRY
	26-May-06	6,912.65	6,896.15	17.94	na	вп	DRY	DRY	DRY
	26-Jul-06	6,912.65	6,896.15	17.94	na	вп	DRY	DRY	DRY
	13-Oct-06	6,912.65	6,896.15	17.94	na	na	DRY	DRY	DRY
*SPH = Separate Phase	Hydrocarbons								
**Corrected water table 6	evations are only r	provided if SPH was	tetected						

— Lorrected water table elevations are only provided if SPH was detected. na = If no SPH was detected then this is shown on the table as na (not applicable). Water was not observed in GWM-2, and GWM-3 in 2006.

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Well Inspection Logs

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Permit Requirement:

OCD, Section 9, Item 4

Monitoring Requirement:

Quarterly water level on GWM-1

Date	Time	Quarter	Depth to Water (feet)	Comments
3/9/2006	1:10PM	1st	20.25'	To top of plastic casing
				-
Name & Title of perso	n who performed mea	surement: Jo	ohnny Sanchez (Env	ironmental Specialist)

Signature:

CC: Ed Riege

Permit Requirement:

OCD, Section 9, Item 4

Monitoring Requirement:

Quarterly water level on GWM-1

Date	Time	Quarter	Depth to Water (feet)	Comments
5/26/2006	1350 Hrs.	2nd	20.16'	To top of plastic casing
			· ·	
Name & Title of perso	n who performed mea	asurement: Jo	ohnny Sanchez (Env	rironmental Specialist)

Chnny Signature:

Permit Requirement:

OCD, Section 9, Item 4

Monitoring Requirement:

Quarterly water level on GWM-1

Date	Time	Quarter	Depth to Water (feet)	Comments
7/26/2006	1110 hrs	3rd	20.72'	To top of plastic casing
				Collected annual water samples
			-	
Name & Title of perso	n who performed mea	surement: Jo	ohnny Sanchez & Cl	heryl Johnson
(Environmental Specia	alist)		-	

Thomas Junk Signature:

Permit Requirement:

OCD, Section 9, Item 4

Monitoring Requirement:

Quarterly water level on GWM-1

Date	Time	Quarter	Depth to Water (feet)	Comments
10/13/2006	1505 hrs	4th	20,61	To top of plastic Casing.
Name & Title of perso	n who performed mea	surement: (	Cheryl Johnson / En	vironmental Specialist

Signature:

CC: Ed Riege

Permit Requirement:

OCD, Section 9; Item 3

Monitoring Requirement:

Monthly Through 2005 STR. START 2006

Date	Time	Month	Depth to Bottom (feet)	Comments (Dry?)
1-18-06	09.58A	JAN	1897	DRV
		,		
Name & Title of perso	n who performed mea	surement:	CUNNY SA	NLAET (ENV. Specialist)
		F	1	
	Λ	Λ		/
Signature:	- A	linny	Mich	

Permit Requirement:

OCD, Section 9, Item 3

Monitoring Requirement:

Date	Time	Qtr.	Depth to Bottom (feet)	Comments (Dry?)
5/26/2006	1400Hrs.	2nd	18.97'	To top of plastic. Dry.
Name & Title of perso Johnny Sanchez (Envir	n who performed mea onmental Specialist)	surement:		

Signature: nn

Permit Requirement:

OCD, Section 9, Item 3

Monitoring Requirement:

Date	Time	Qtr.	Depth to Bottom (feet)	Comments (Dry?)
7/26/2006	1105Hrs.	3rd	18.97'	To top of plastic. Dry.
		-		
Name & Title of perso Johnny Sanchez & Che	n who performed mea eryl Johnson (Environ	surement: mental Spec	cialist)	

Signature:

Permit Requirement:

OCD, Section 9, Item 3

Monitoring Requirement:

Date	Time	Quarter	Depth to bottom (feet)	Comments (Dry?)
10/13/2006	1510 hrs	4th	18,97	DRY: (To top of plastic casing)
-	-			
Name & Title of perso	n who performed mea	surement: (	Cheryl Johnson / En	vironmental Specialist

Signature:

Permit Requirement:

OCD, Section 9, Item 3

Monitoring Requirement:

Date	Time	Quarter	Depth to bottom (feet)	Comments (Dry?)
10/13/2006	1500 hrs	4th	17 <b>,</b> 94	DRY: (To top of plastic casing)
	_			
Name & Title of perso	n who performed mea	surement: (	Cheryl Johnson / En	vironmental Specialist

Signature:

Permit Requirement:

OCD, Section 9, Item 4

Monitoring Requirement:

Check well OW-1 for artesian flow condition

Date	Time	Quarter	Depth to Water (feet)	Comments
3/9/2006	1:45PM	1 st	0	
Name & Title of perso	n who performed mea	surement: Jo	ohnny Sanchez (Env	vironmental Specialist)

Signature:

Permit Requirement:

OCD, Section 9, Item 4

Monitoring Requirement:

Check well OW-1 for artesian flow condition

Date	Time	Quarter	Depth_to Water (feet)	Comments
6/27/2006	1420 Hrs.	2nd	0.40	To top of plastic casing.
	· · · · · ·		· · · · · · · · · · · · · · · · · · ·	
Name & Title of perso	n who performed mea	surement: Jo	ohnny Sanchez (Env	ironmental Specialist)

Signature:

Permit Requirement:

OCD, Section 9, Item 4

Monitoring Requirement:

Check well OW-1 for artesian flow condition

Date	Time	Quarter	Depth to Water (feet)	Comments
7/26/2006	1125	3rd	0.83	To top of plastic casing.
			· · ·	
Name & Title of perso	n who performed mea	surement: Jo	ohnny Sanchez & C	heryl Johnson

chury Jundy Signature:



Permit Requirement:

OCD, Section 9, Item 4

Monitoring Requirement:

Check well OW-1 for artesian flow condition

Date	Time	Quarter	Depth to Water (feet)	Comments
10/13/2006	1455 hrs	4th	0.25	to top of plastic casing
		-		
Name & Title of person	n who performed me	asurement: (	Cheryl Johnson, En	vironmental Specialist

Signature:



Permit Requirement:

OCD, Section 9, Item 4

Monitoring Requirement:

Quarterly water level on OW-10

Time	Quarter	Depth to Water (feet)	Comments
1:40PM	1st	2. <b>70</b>	To Top of Plastic Casing
	Time 1:40PM	Time Quarter 1:40PM 1st	TimeQuarterDepth to Water (feet)1:40PM1st2.70

Name & Title of person who performed measurement: Johnny Sanchez (Environmental Specilist)

Signature:

CC: Ed Riege

Permit Requirement:

OCD, Section 9, Item 4

Monitoring Requirement:

Quarterly water level on OW-10

Date	Time	Quarter	Depth to Water (feet)	Comments
6/27/2006	1405 Hrs.	2nd	3.43'	To Top of Plastic Casing
				· · · · · · · · · · · · · · · · · · ·
Name & Title of perso	n who performed mea	surement: Jo	hnny Sanchez (Env	ironmental Specilist)

R Signature:





Permit Requirement:

OCD, Section 9, Item 4

Monitoring Requirement:

Quarterly water level on OW-10

Date	Time	Quarter	Depth to Water (feet)	Comments
7/26/2006	1120	3rd	3.95'	To Top of Plastic Casing
Name & Title of perso (Environmental Specia	n who performed mea list)	surement: Jo	ohnny Sanchez & C	heryl Johnson

Signature

CC: Ed Riege

Permit Requirement:

OCD, Section 9, Item 4

Monitoring Requirement:

Quarterly water level on OW-10

Date	Time	Quarter	Depth to Water (feet)	Comments
10/13/2006	1440 hrs	4th	2.75	To top of plastic casing

Signature:

#### 8. List of Figures

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Figure 1 Regional Map



Locality Map USGS Topographical Map - Gallup Quadrangle (Revised 1980)

Well and Boring Locations Map

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## Appendix A: Gallup Field Sampling Collection and Handling Procedures

### **Field Data Collection**

All facility monitoring wells and recovery wells were gauged in January, March, May, June, July, and October of 2006. Gallup does not have any recovery well pumps that need to be shut off and removed prior to water elevation measurements.

All water/product levels are measured to an accuracy of the nearest 0.01 foot using an electrical conductance based meter. After determining water levels, well volumes are calculated using the conversion factors listed (under the heading *Capacity gallons per foot*) in Table 1 in Section 7.

Generally, at least three well volumes are purged from each well prior to sampling. Wells that don't have sufficient recovery to obtain 3 well volumes are pumped until loss of suction then sampled.

Electrical conductance (E.C.), pH, and temperature are monitored during purging using a meter. The wells are considered satisfactorily purged when the pH, E.C., and temperatures values did not vary by more than 10 percent for at least three measurements.

Filed data and well elevations can be found in Section 8 – Well Data Summary Table.

Purged well water from wells that have shown prior contamination is collected in fifty five gallon drums. The water is treated in the refinery's waste water treatment system. Purged water from historically non-contaminated wells is drained onto the ground.

### Sampling Equipment at Gallup

The following sampling equipment is maintained at Gallup and used by the sampling personnel:

- Heron Instruments 100 ft. DipperT electric water depth tape complying with US GGG-T-106E, EEC Class II.
- Pall Corporation Acro 50A 0.45 micron disposable filter used with 60 ml. disposable syringe for filtering water in the field.
- Myron L Company Model DCH4 pH 4 & 10 for gain, and Hach NaCl 1990 Microsiemens for conductivity calibration.
- Grundfos 2-inch pumps with Grundfos 115-volt AC-to-Dc converter.

## **Groundwater Elevation**

All water/product levels are measured using DipperT electric water depth tape. The technician records separate phase hydrocarbon (SPH), depth to water (DTW), and total well depth using the tape. Wash probe on DipperT electric water depth tape first with non-phosphate soap water

then with deionized or distilled water before lowering into the well casing. Recovery wells with free product are checked using a reel gauge with water and hydrocarbon finding paste.

## Water Quality/Groundwater Sampling

Water quality parameters are measured using a meter. Electrical conductance, pH, and temperature are monitored during purging.

## Field Procedure for Purging Monitor Wells

In order to assure that the sample collected is representative of actual aquifer conditions, it is necessary to purge the well of stagnant water in the casing. This is accomplished by pumping three casing volumes of water from the well or until it is bailed dry, whichever occurs first. If a well can be pumped dry, it requires only that sufficient time elapse for an adequate volume of water to accumulate for the sampling event.

The casing volume is calculated according to the following formula:

One casing volume =  $L \times F$  where

L = Length of water column = total depth – depth to water

F = gallons water per foot of well, based on the well casing diameter

F is provided on the *Well Volume Sheet* for the monitoring wells at Gallup provided at the end of this appendix.

The volume to be purged from each well is determined as follows:

Purge volume = casing volume x = 3

Document the following information:

- a. The amount of water purged from each well.
- b. Weather conditions (dry or wet).
- c. Depth to Water (DTW).
- d. Purge date.
- e. Purge time.

## Well Evacuation

Before sample collection can begin, the water collected from each monitoring well must be fresh aquifer water. Well evacuation replaces stagnant well water with fresh aquifer water. The water level in the well, total depth of well and thickness of floating product (if any) will be measured using the DipperT electric water depth tape. A transparent bailer will be used to check for the presence and measure the thickness of floating product. If product is present, a ground water sample is typically not obtained.

Recovery wells are evacuated by use of an air driven pump. Wells MW-1, MW-2, MW-4, MW-5, BW-1C, BW-2A, BW-2B, BW-3B, and SMW-4 are each equipped with a dedicated electrical pump. The remaining wells were purged using a portable Grundfos pump in 2006.

In low yielding wells, the standing water will be removed until the well is essentially dry. The water level in the well will be allowed to recover until a sufficient volume is present to obtain a sample.

The first sample should be tested for pH, temperature, and specific conductance. Samples should then be collected and containerized in the order of the parameter's volatilization sensitivity (see *Order of Collection* below). The well should be retested for pH, temperature and specific conductance after sampling as a measure of purging efficiency and as a check on the stability of the water samples over time. All well evacuation information should be recorded in a log book.

# Hand Bailing

Hand bailing is only used to remove free product from recovery wells. Hand bailing is performed by lowering a TeflonTM bailer slowly into the well, allowing water to enter the bailer, and lifting the bailer out of the well. The bailer is positioned just below the top of the standing water in the well, so that the bailed product is removed from the top of the water column.

## Pumping

An electric pump is used to remove water from all wells other than recovery wells with free product in them. Wells MW-1, MW-2, MW-4, MW-5, BW-1C, BW-2A, BW-2B, BW-3B, and SMW-4 are each equipped with a dedicated electrical pump. The other wells, except for recovery wells, are pumped using a portable 2-inch Grundfos pump. During sample collection, a maximum flow rate of 100 milliliters/minute should be used. The actual flow rate should be measured using a graduated container and timed using a stop watch or a watch with a second hand. This rate can change as the water level in the well drops. The flow rate can be determined by:

Flow rate (gpm) =  $volume collected (gallons) \times 60$  seconds per minute Time to fill container (seconds)

## **Bottle Filling Procedure**

If the well was not bailed dry and the water level is recovering to provide sufficient water to fill all the sample bottles, then samples should be collected immediately. If the well was completely evacuated and/or recovery is slow, wait for a sufficient volume of water to recover in the well to fill all of the sample bottles before beginning to collect samples. Do not overfill the bottles as this will dilute the preservative. When filling VOA and TOX containers, slowly fill the container until the meniscus is just above the lip of the container. Place the cap on the container and tighten. Check for air bubbles by inverting the container and tapping gently. There should be no headspace (air) in the container. If headspace is present, the sample should be discarded and the container refilled (add sufficient preservative if required by sample test). Do not touch the inside of bottle caps or the inside of the containers. If a cap is accidentally dropped, it should be rinsed with de-ionized or distilled water followed by a rinse with the sample prior to being placed on the container. Record in the field notes whether this happens. Filled containers should be placed on ice in the coolers immediately upon collection. Replace well cap and lock the cap.

### **Order of Collection**

Samples should be collected in the order listed below:

Parameter	Bottle Type
Volatile Organics	VOA vials with septa cap of Teflon™
TOX	Pint amber glass with septa cap, H2SO4
TOC, Phenols, Nitrate, Ammonia	Quart glass jar, H2SO4
Extractable Organics	Quart glass jar with Teflon TM cap
Chloride and Sulfate	Quart plastic, no preservative
Cyanide	Quart glass, NaOH
Radionuclides	Quart plastic, HNO3
Metals*	Pint plastic

* Prefiltration bottle for dissolved metals which is subsequently filtered and transferred to a pint Plastic with HNO3.

### Filtration

Ground water samples are filtered prior to *dissolved metals* analysis. For dissolved metals, sample water is poured into a jar and then extracted with a syringe. The syringe is then used to force the sample water through a 0.45 micron pore filter paper filter into the proper sample bottle to collect dissolved metals samples. Filtration must be performed within two hours of sample collection. Pour the filtrate into a sample bottle containing HNO3 preservative.

For samples destined for *total metals* analysis, do not filter the sample, and preserve with HNO3 to pH < 2 in the field.

Gallup sampling personnel carry a cell phone when gathering groundwater and other water samples. While sampling procedures are generally well known and the appropriate sample bottles are ordered to match each sampling event, occasional questions do arise from unforeseen circumstances which may develop during sampling. At such times, sampling personnel contact Hall Environmental Analytical Laboratory to verify that sampling is correctly performed.

### General Well Sampling and Sample Handling Procedures

For safety protection and sampling purity, rubber gloves are worn and changed between each activity.

Prepare for sampling event by making out sample bottle labels and have bottles separated into plastic bags for each well to be sampled and place in ice chest ready to take into the field.

Bring along a note book and sample log.

Starting with well MW-1, document weather conditions, sample date and time.

Fill in label with location, date, time, analysis, preservative, and your name.

Start sampling by adjusting converter speed for each well.

Affix sample label and fill bottle according to lab instructions. For samples intended for VOC analysis, use bottles with septa lids, fill bottle to neck and add final amount of water with cap to form meniscus. Turn bottles upside down to examine for bubbles. If bubbles show repeat previous sentence. If no bubbles show, secure lids and pack in bubble wrap and place in cooler until sampling is completed.

Decontaminate equipment that is not dedicated for use in a particular well. Decontaminate by first washing with a non-phosphate soapy water mixture then triple rinse with distilled or deionized water.

Refrigerate completed samples until shipping to lab. Be sure to check holding times and arrange the appropriate shipping.

### **Equipment Calibration Procedures**

Myron L Digital PH and Conductivity Meter:

Conductivity Calibration:

- 1. Select 20 mS (micro Siemens) range. Remove bottom cover of instrument.
- 2. Rinse the cell cup three times with 442-15,000 standard solution and refill.
- 3. Press and hold the black button on instrument.
- 4. Adjust the calibration control the reading is correct. Discard the used solution.

pH Calibration:

- 1. Using pH 7 buffer, adjust "zero" control to read 7.00
- 2. Using pH 4 or 10 buffer, adjust "gain" control to read 4.00 or 10.00