

GW - 1

MONITORING REPORTS

DATE:

2004



March 29, 2004

Dave Cobrain, Staff Manager
New Mexico Environmental Department
Hazardous Waste Bureau
2905 Rodeo Park Road, Building E
Santa Fe, New Mexico 87505

William C. Olson, Hydrologist
Environmental Bureau
New Mexico Oil Conservation Division
1220 South Francis Drive
Santa Fe, New Mexico 87505

**RE: Corrective Measures Study and Corrective Measures Implementation
(Site Investigation and Abatement Plan)
Annual Soil and Ground Water Report
Giant Refining Company, Bloomfield Refinery
EPA ID# NMD089416416
GW - 001**

Dear Gentlemen:

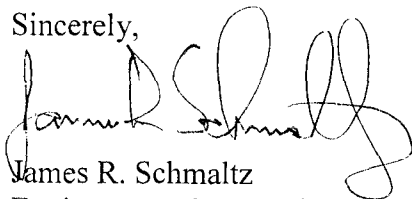
This letter responds to the December 30, 2002 letter issued by the Oil Conservation Division (OCD) of the New Mexico Energy, Minerals and Natural Resources Department and the January 6, 2003 letter issued by the Hazardous Waste Bureau (HWB) of the New Mexico Environmental Department (NMED). As per requests by each of those letters, Bloomfield Refinery has prepared and is submitting an annual soil and ground water monitoring report for activities that occurred in 2003.

If you have questions or would like to discuss any aspect of the report, please contact me at (505) 632-4171.

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505-632-8013
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50 ROAD 4990
P.O. BOX 159
BLOOMFIELD
NEW MEXICO
87413

Sincerely,

A handwritten signature in black ink, appearing to read "James R. Schmaltz". The signature is fluid and cursive, with the first name "James" and last name "Schmaltz" clearly distinguishable.

James R. Schmaltz
Environmental Supervisor
San Juan Refining Company
Bloomfield Refinery

cc: Robert Wilkinson, EPA Region VI
Denny Foust, NMOCD Aztec District Office
Ed Riege, Environmental Superintendent – Giant Refinery

**GROUNDWATER REMEDIATION
AND MONITORING REPORT
Annual Report for 2003**

APRIL 2004

**Submitted To: New Mexico Oil Conservation Division
Environmental Bureau
1220 South Francis Drive
Santa Fe, New Mexico 87505**

**New Mexico Environmental Department
Hazardous Waste Bureau
2905 Rodeo Park Rd., Building E
Santa Fe, New Mexico 87505**

**Prepared by: San Juan Refining Company – Bloomfield Refinery
EPA ID# NMD089416416
50 County Road 4990
Bloomfield, New Mexico 87413**

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EXECUTIVE SUMMARY

Owner: San Juan Refining Company (parent corporation)
23733 North Scottsdale Road
Scottsdale, Arizona 85255

Operator: Giant Refining Company (postal address)
P.O. Box 159
Bloomfield, New Mexico 87413

Giant Refining Company (physical address)
#50 Rd 4990
Bloomfield, New Mexico 87413

US EPA ID NMD089416416

San Juan Refining Company (SJRC), a wholly owned subsidiary of Giant Industries, Inc., is submitting this Groundwater Remediation Monitoring Report as per the request from NMED and NMOCD stated in their Conditions of Approval letters dated January 6, 2003 and December 30, 2002 respectively. This report will provide a summary of soil and groundwater remediation and monitoring activities that occurred in 2003.

Monitoring Well #45 was installed January 15, 2003 followed by MW #46 on January 16, 2003. Boring logs, installation diagrams, a summary of soil and water analysis, and well locations are presented in Attachment D, Table 1, and Plate 3 respectively. These wells were drilled to take the place of the questionable sample points of Seep #3 and Seep # 4. Unfortunately, MW #46 was a dry hole.

An attempt was made to drill a Background well in the area southeast of the refinery, directly east of the Regional Office. This was also a dry hole. The boring log is in Attachment D. Giant proposes to use MW #32 as a background well. Laboratory analysis and well location are included in Table 1 and Plate 3, correspondingly. This well is up gradient from all wells on the south side of Sullivan Road except for MW #5 (dry) and MW #6 (dry) and MW #13 (drilled and screened through the Nacimiento). It is cross gradient from the Terminals, but not in the flow path of any possible contaminants from that location.

Seep #5 was replaced when MW #47 was installed March 6, 2003. Boring logs, installation diagrams, soil and water analysis, and well location are included in Attachment D, Table 1, and Plate 3 in that order.

SJRC conducted semi-annual groundwater monitoring and sampling in March 2003. Fifteen separate sites were analyzed for BTEX and MTBE. Summary tables and laboratory results are in Table 1 and Attachment C.

The second half of semi-annual sampling took place at the end of August. Nineteen sites were sampled and analyzed for a wide range of parameters that are presented in Table 1 and Attachment C.

Water elevations were measured throughout the year. Summary tables and potentiometric maps are included in Table 3 and Plate 5.

Four strategically placed monitoring wells were converted to recovery wells throughout the year. Recovery Well #1 was reactivated. Volumes, locations, and dates of conversion are in Table 2, Table 3, and Plate 3.

Tanks #3, #4, and #13 were emptied and degassed in order to install new roof seals. At that time, the tanks were internally inspected and found to be in good condition with no leaks. Tank locations are in Plate 3.

On July 31, 2003 traces of hydrocarbon were found in the #1 East Outfall. Location of the Outfall is identified as Tank #38 in Plate 3. Absorption pads were immediately utilized to contain the hydrocarbon. On August 1, 2003 two earthen containment dikes were constructed as a continuous series. Each dike was equipped with a discharge pipe that was used for sampling and water release. BTEX samples from the first dike met water quality standards except for benzene. Samples from the second dike were "non-detect". Giant personnel noticed that the hydrocarbon make up in the first dike visually fluctuated from appearing to be very light to a heavy oil. It became apparent that the dikes were not the solution. Giant began to pump out the first dike with the vacuum truck and return all the discharge back into the refinery's waste water system and continued this procedure until a recovery system could be installed. The outfall discharges at approximately 20 gpm.

Giant installed a recovery system that employs a collection tank (Tank #38) and a pump at the #1 East outfall. The water/hydrocarbon is routed to a separator tank (Tank #33) that is set up for gravitational separation of the mixed hydrocarbon effluent. Recovered oil is routed to a 2500 gallon horizontal vessel (V-610). The underflow, clarified water, is routed to the refinery's raw water ponds. Diagrams of Tank #33 and the layout of the recovery system are in Attachment E.

Initial investigation into the emergence of hydrocarbon at the #1 East Outfall consisted of digging three test holes with a track hoe along the northern boundary of the Tank Farm. The eastern test hole was developed into a collection gallery as was the western test hole. The third test hole was covered back up as it showed no visual signs of contamination. Diagrams and locations of the test holes are included in Attachment E and Plate 3.

To continue the investigation, Precision Engineering drilled twelve borings along the north side of Hammond Ditch in November. Boring logs are in Attachment D. While conducting water elevation measurements in December, separate phase hydrocarbon was discovered in MW #47. Previously, MW #47 indicated dissolved phase only.

Ground water maps (Plate 4) indicate that there seems to be a subsurface ridge in the Nacimiento that helps separate the flow patterns on the site. This ridge could be applied as an imaginary line that runs from MW #30 to MW #28 (see Plates 3 & 4). South of that line, the water eventually drains to the west. To the north of that line, the water seems to be flowing north and northwest.

BTEX concentration VS time charts (see Attachment B) point to a trend that indicates reduction of dissolved-phase hydrocarbon concentrations in most of the wells and piezometers. Semi-annual product thickness maps (see Plate 5) verify that the plume seems to be shifting to the north and northwest.

The objectives of SJRC's abatement plan is to protect the San Juan River from contamination from the hydrocarbon plume under the refinery as well as to try to diminish the plume. Increasing the number of operating recovery wells located on the north side of the refinery should facilitate plume reduction and control. In-situ bioremediation processes are another option available to encourage plume reduction. All future remedial action will be based on evaluating the information compiled in the last couple of years.

INTRODUCTION

Owner: San Juan Refining Company (parent corporation)
23733 North Scottsdale Road
Scottsdale, Arizona 85255

Operator: Giant Refining Company (postal address)
P.O. Box 159
Bloomfield, New Mexico 87413

Giant Refining Company (physical address)
#50 Rd 4990
Bloomfield, New Mexico 87413

US EPA ID NMD089416416

SIC Code 2911

The Bloomfield Refinery is generally located in the Four Corners Region of northern New Mexico. It is more specifically located approximately one mile south of the City of Bloomfield, New Mexico, in San Juan County (see Plate 1).

The plant site is nominally located at latitude 36° 41' 30" and longitude 107° 58' 20". The legal description of the site is 286.93 acres, more or less, being that portion of the NW ¼ NE ¼ and the S ½ NE ¼ and the N ½ NW ¼ SW ¼ and the SE ¼ NW ¼ SW ¼ of Section 26, Township 29 North, Range 11 West, San Juan County, New Mexico (see Plate 2).

San Juan Refining Company – Bloomfield is a petroleum refinery with a nominal crude capacity of 18,000 barrels per calendar day. Petroleum processing units include the crude unit fluidized catalytic cracking unit, catalytic polymerization unit, reforming unit, diesel hydro-treating unit, and sulfur recovery unit. Several product storage tanks (tank farm) are located east of the processing area (see Plate 3).

Attachment A provides a brief history of the facility that is relevant to this report.

Monitoring and Analysis

Giant measured the water table and product elevations in all facility monitoring wells throughout the year. The water/product levels were measured to an accuracy of 0.01 foot. Adding 0.8 times the measured product thickness to the calculated water table elevation provided a corrected water table elevation in wells containing separate phase hydrocarbons. All recovery well pumps were shut off and removed 24 hours prior to elevation measurements. Water table elevation data is in Table 3.

Giant collected groundwater samples in March 2003 from wells MW #1, MW #12, MW #13, MW #20, MW #32, MW #33, MW #35, MW #37, MW #38, MW #45, MW #47, P-#4, P-#5, and East Outfalls #1, #2, and #3. The samples were analyzed for BTEX and MTBE. Results can be found on page 1 of Table 1. MW #32 and the Outfalls were non-detect on BTEX and MTBE. MTBE was non-detect in all wells except MW #13, MW #20, MW #35, and MW #38. MW #6, MW #24, and MW #46 were dry and not sampled.

In August 2003, Giant collected groundwater samples from the wells listed above as well as well MW #3, MW #4, MW #5, MW #8 MW #26, MW #27, MW #34, MW #36. MW #5, MW #6, MW #24, MW #46 were dry and not sampled. MW #4, MW #20, and MW #47 contained separate-phase hydrocarbon and were not sampled. The ground water samples collected were submitted to Hall Environmental Analysis Laboratory for chemical analysis of VOC's (Method 8260), BTEX, MTBE, TDS and major cations and anions, dissolved WQCC metals, total and dissolved chromium and lead, nitrate/ nitrite, sulfate, dissolved oxygen, and carbon dioxide. Field measurements included oxidation-reduction potential, pH, electrical conductivity, and temperature.

The wells were purged prior to sample collection at least three well casing volumes of water were removed from the well. Electrical conductance, pH, and temperature were monitored during purging. The wells were considered satisfactorily purged when the pH, E.C., and temperature values did not vary by more than 10 percent for at least three measurements. Field data is provided in Table1. Purge water was collected and disposed of through the refinery wastewater treatment system.

Plate 1

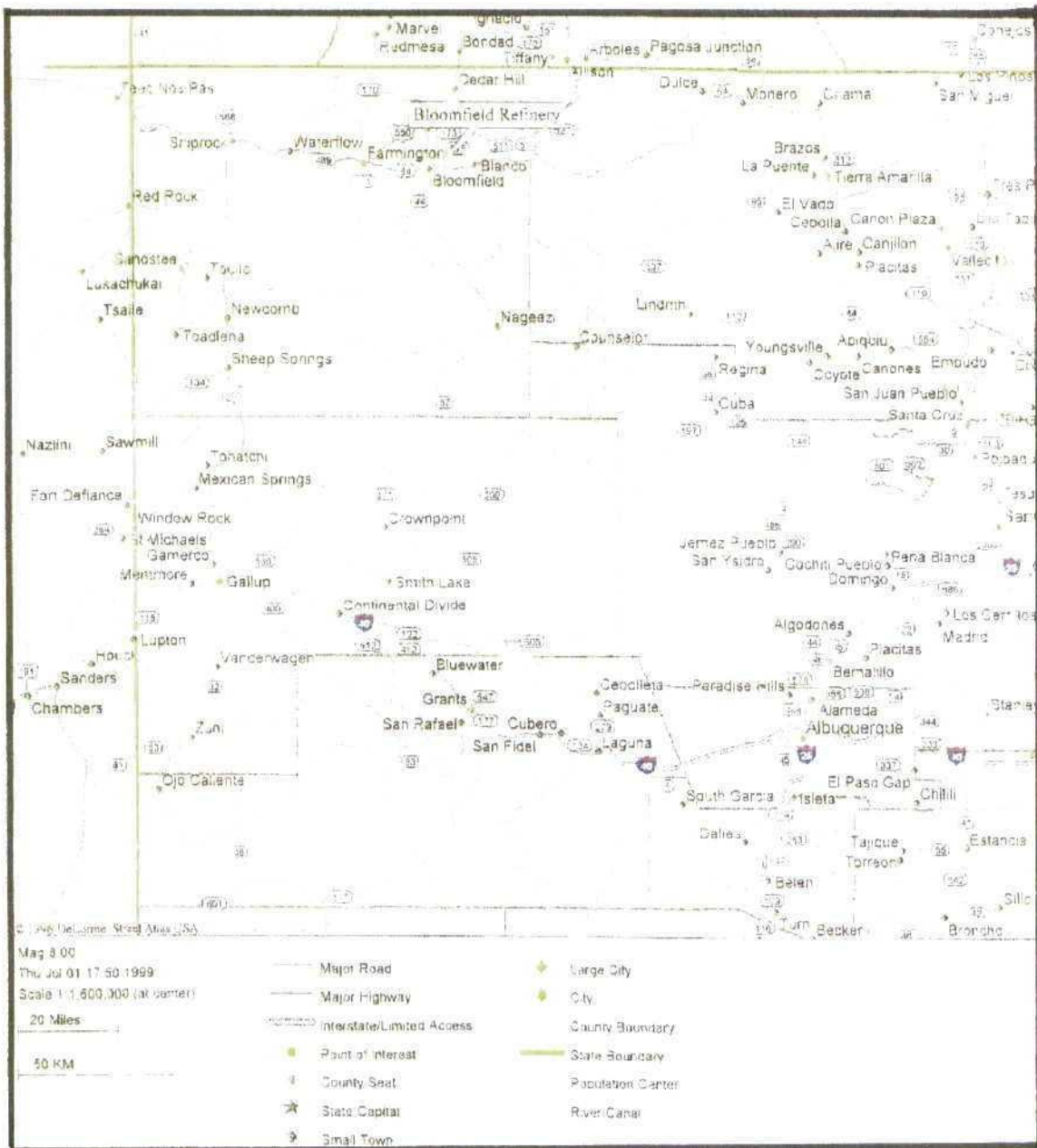
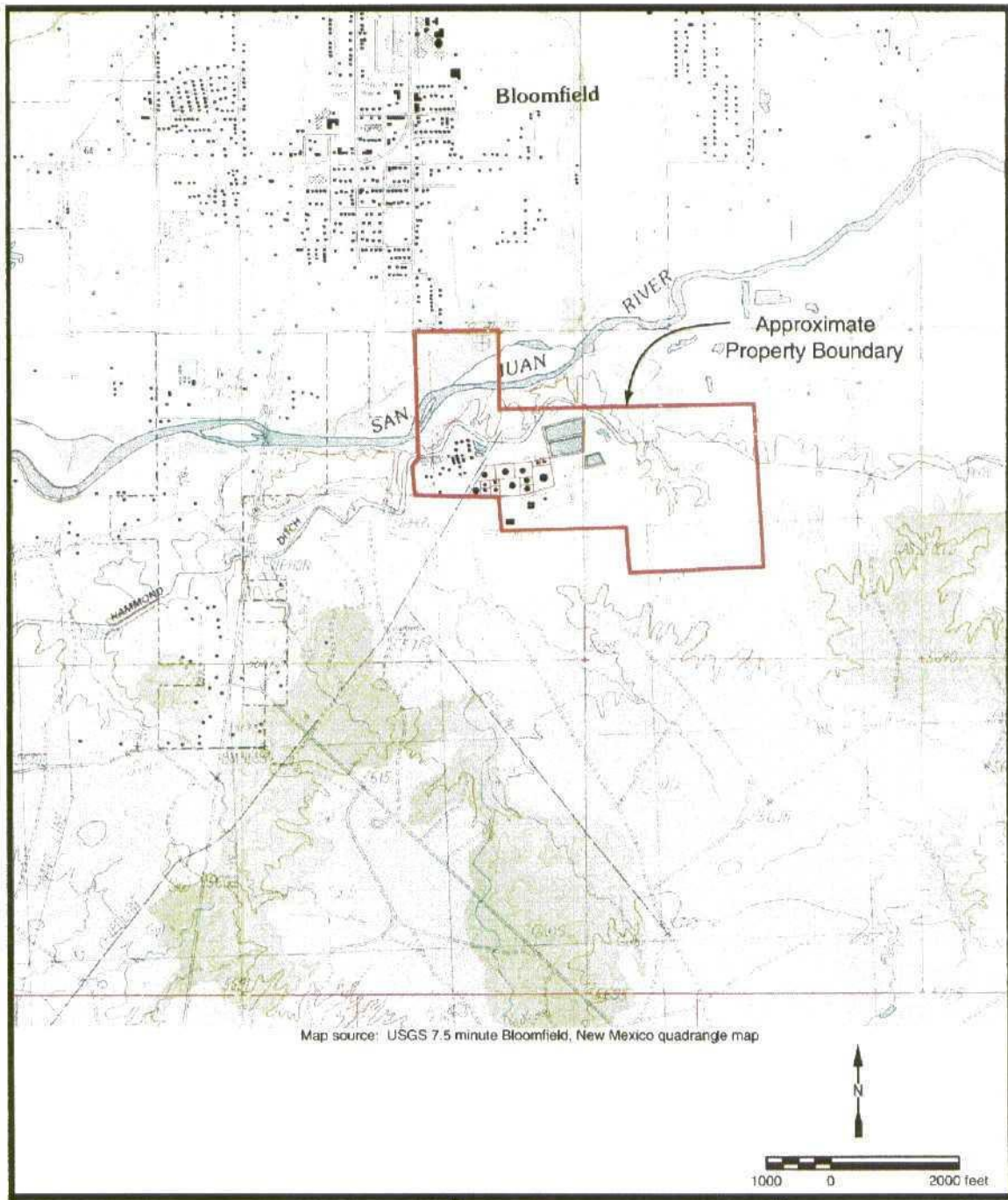


Plate 2



OCD FILES

35MM DRAWINGS

GW-1
FILE NUMBER

Monitoring Reports 2004
DOCUMENT TYPE

4 M
NO OF DWGS

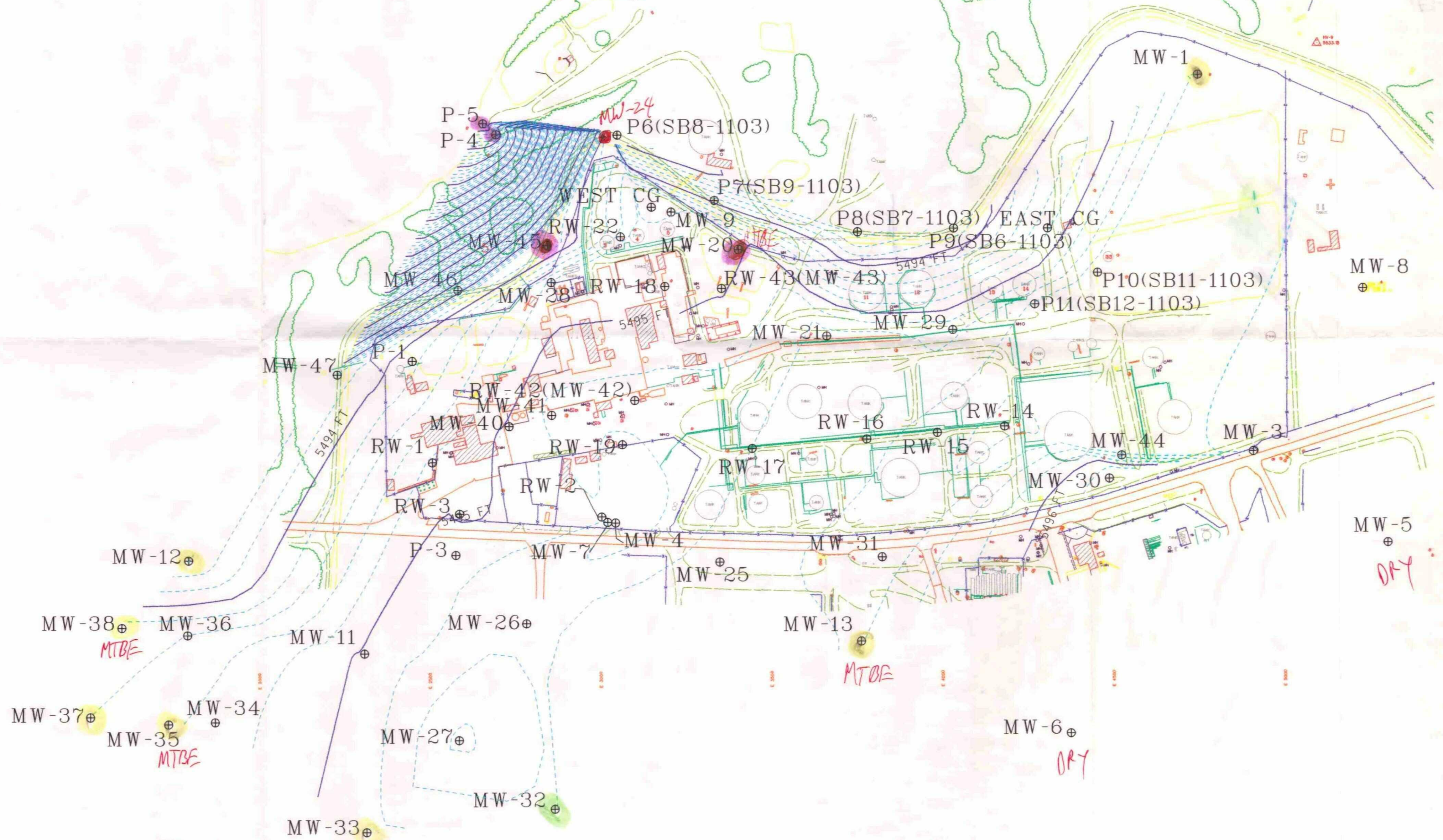
39
BOX

Giant Refining Company Bloomfield Refinery

January 15, 2004 Water Data

1"=200'

JANUARY 2004

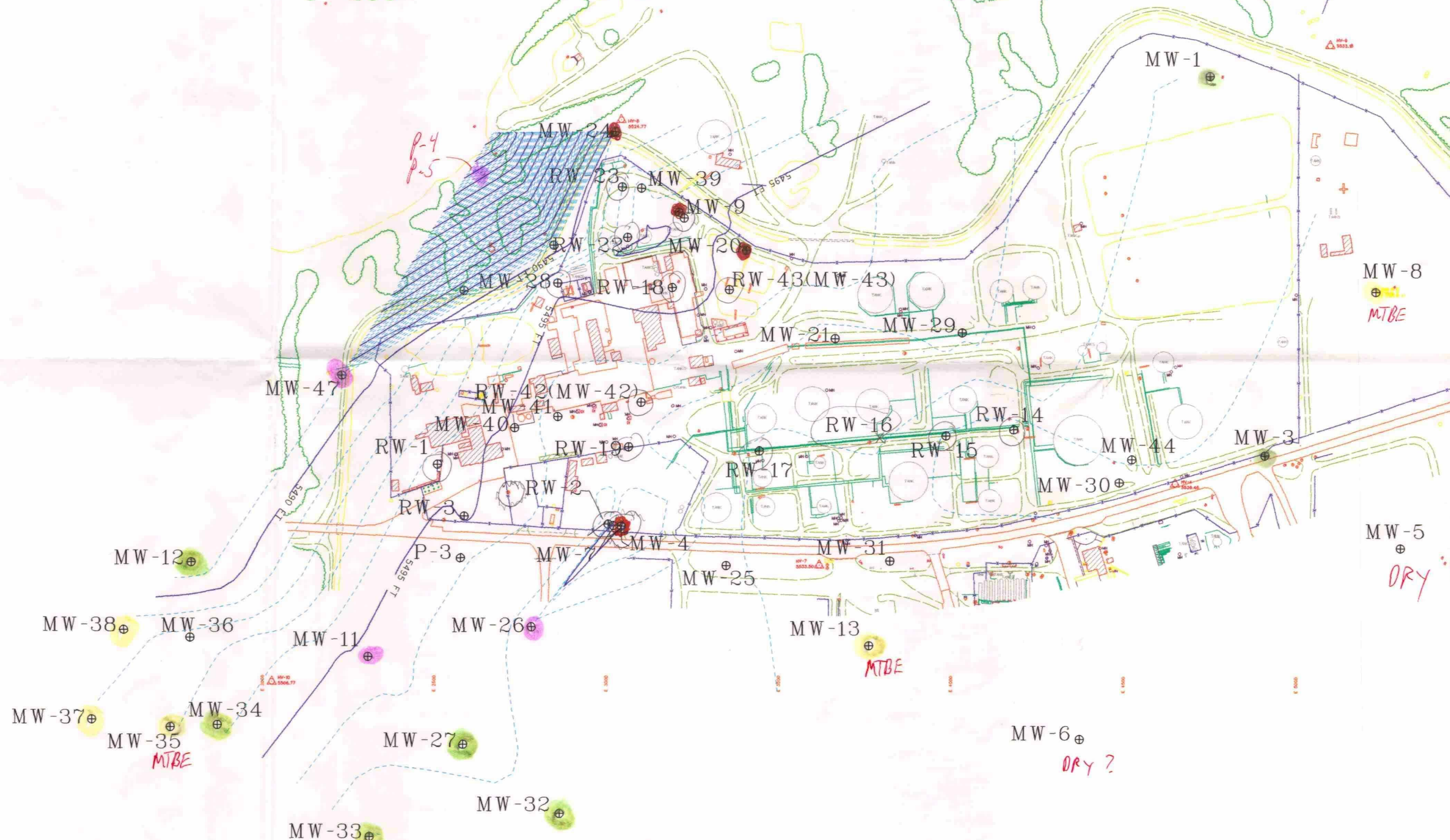


MAY 2003

Giant Refining Company Bloomfield Refinery

May 2003 Water Data

1"=200'



2003 August Sampling Data

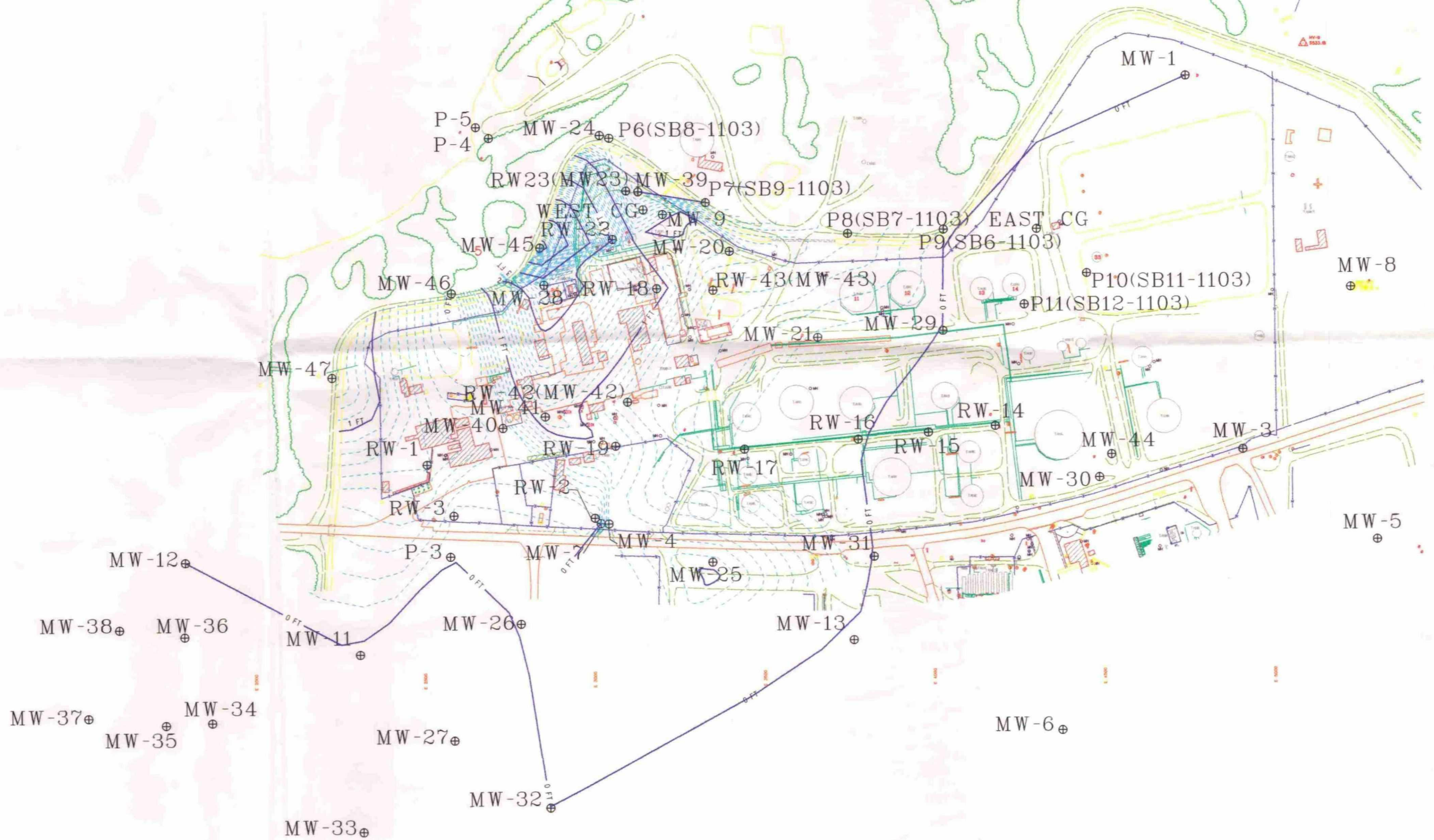
Giant Refining Company Bloomfield Refinery

Jan 15, 2004 SPH Isopach Map

1"=200'

Contour Interval 0.1 ft

January 2004



May 2003

Scale 1"=200'
Contour Interval 0.1"

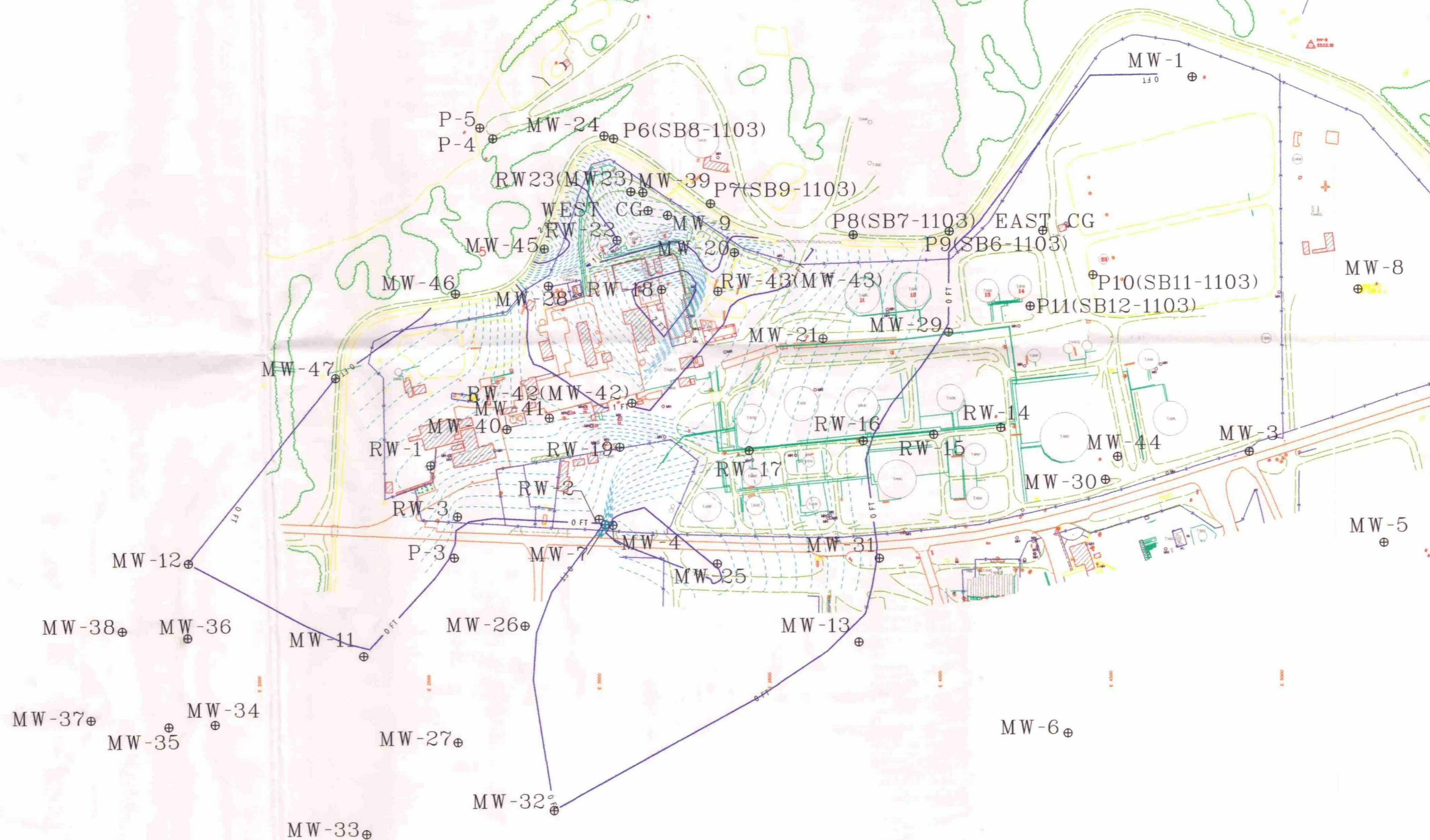


Table 1

Summary of Soil & Water Analysis

TABLE 1

pg 1 of 6

MARCH 2003 - BTEX & MTBE

mg/L	Date Sampled	MW #1	MW #12	MW #13	MW #20	MW #32	MW #33	MW #35	MW #37	MW #38	MW #45
Benzene	Mar-03	N/D	N/D	N/D	1.4	N/D	N/D	0.0038	N/D	N/D	4.4
Toluene	Mar-03	0.00063	0.00087	N/D	0.15	N/D	N/D	N/D	0.0033	N/D	3
EthylBen	Mar-03	0.0065	0.0013	N/D	0.092	N/D	N/D	0.0027	0.0038	N/D	5.5
Xylene	Mar-03	0.0043	0.015	0.0012	0.16	N/D	0.00086	0.021	0.031	0.0014	30
MTBE	Mar-03	N/D	N/D	0.049	0.59	N/D	N/D	0.014	N/D	0.016	N/D

MARCH 2003 - BTEX & MTBE

mg/L	Date Sampled	P #4	P #5	O/F #1	O/F #2	O/F #3					
Benzene	Mar-03	4.1	1.3	N/D	N/D	N/D					
Toluene	Mar-03	0.63	0.78	N/D	N/D	N/D					
EthylBen	Mar-03	3.1	3.5	N/D	N/D	N/D					
Xylene	Mar-03	10	19	N/D	N/D	N/D					
MTBE	Mar-03	N/D	N/D	N/D	N/D	N/D					

AUGUST 2003 - GENERAL CHEMISRTY & ORGANICS

mg/L	DATE SAMPLED	MW #1	MW #3	MW #8	MW #11	MW #12	MW #13	MW #26	MW #27	MW #32	MW #33	MW #34
Fluoride	Aug-03	0.58	0.17	0.66	0.44	0.32	0.19	0.39	0.22	0.18	0.24	0.57
Chloride	Aug-03	33	1400	260	150	130	510	160	360	940	750	120
Nitrite	Aug-03	N/D	N/A	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D
Bromide	Aug-03	0.32	22	5	5.3	3.7	13	2.9	4.7	13	19	5.1
Nitrogen	Aug-03	1.6	41	14	N/D	N/D	12	N/D	N/D	22	26	N/D
P	Aug-03	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D
Sulfate	Aug-03	200	1900	950	4.2	3100	840	1	6.8	1200	1200	150
TDS	Aug-03	610	5700	2100	1100	5500	3100	1400	1700	3800	3400	1700
E.C.	Aug-03	1000	7800	2655	2240	5910	4400	2268	2780	5350	2400	2219
D.O.	Aug-03	6.5	6.5	7.1	5.6	5.8	5.6	4.9	4.1	7.4	5	4.9
O.R.P.	Aug-03	105	105	176	-5.3	81	86	-63	-188	64	110	-76
CO2	Aug-03	240	N/A	220	1300	310	1000	1300	1200	250	190	1300
Alk	Aug-03	262	N/A	208	1120	319	917	1090	1040	242	198	1130
ORGANICS												
Benzene	Aug-03	N/D	N/D	N/D	2.7	N/D	N/D	1.4	N/D	N/D	N/D	N/D
Toluene	Aug-03	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D
EthylBen	Aug-03	N/D	N/D	N/D	0.17	N/D	N/D	0.63	N/D	N/D	N/D	N/D
Xylene	Aug-03	N/D	N/D	N/D	0.65	N/D	N/D	0.35	N/D	N/D	N/D	N/D
MTBE	Aug-03	N/D	N/D	0.001	0.079	N/D	0.061	N/D	N/D	N/D	N/D	N/D

AUGUST 2003 - GENERAL CHEMISRTY & ORGANICS

mg/L	DATE SAMPLED	MW #35	MW #37	MW #38	MW #47	P #4	P #5	O/F #1	O/F #3		
Fluoride	Aug-03	0.39	0.49	0.67	0.24	0.24	0.89	0.55	0.49		
Chloride	Aug-03	120	110	120	650	74	72	41	25		
Nitrite	Aug-03	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D		
Bromide	Aug-03	2.1	1.3	1.3	N/D	1.4	1.5	0.95	0.26		
Nitrogen	Aug-03	N/D	N/D	N/D	N/D	N/D	N/D	0.3	3.9		
P	Aug-03	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D		
Sulfate	Aug-03	6.6	19	310	N/D	56	N/D	140	170		
TDS	Aug-03	1300	1400	1600	2300	1700	1400	500	490		
E.C.	Aug-03	2000	850	1860	3850	2600	2000	969	905		
D.O.	Aug-03	5.4	6.4	4.7	7.9	0.2	4.5	6.7	7.8		
O.R.P.	Aug-03	-95	-129	-145	-75	-284	-104	-52	194		
CO2	Aug-03	1100	960	670	1300	1300	1100	330	270		
Alk	Aug-03	984	1010	600	1150	1390	1170	312	252		
ORGANICS											
Benzene	Aug-03	N/D	0.001	N/D	0.16	2.7	1.4	4.1	N/D		
Toluene	Aug-03	N/D	N/D	N/D	N/D	1.1	N/D	0.084	N/D		
EthylBen	Aug-03	N/D	0.0014	N/D	0.0033	3	3.3	0.012	N/D		
Xylene	Aug-03	N/D	0.0097	N/D	N/D	8.4	14	0.041	N/D		
MTBE	Aug-03	0.02	0.0059	0.017	0.014	N/D	N/D	0.57	N/D		

AUGUST 2003 - DISSOLVED METALS

mg/L	DATE SAMPLED	MW #1	MW #3	MW #8	MW #11	MW #12	MW #13	MW #26	MW #27	MW #32	MW #33	MW #34
Arsenic	Aug-03	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D
Barium	Aug-03	0.46	0.3	0.36	1.2	0.12	0.33	2.3	0.52	0.35	0.02	1.5
Cadmium	Aug-03	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D
Calcium	Aug-03	61	490	200	120	420	270	91	210	370	330	110
Cr	Aug-03	N/D	N/D	N/D	N/D	0.0066	N/D	0.0089	N/D	N/D	N/D	N/D
Copper	Aug-03	N/D	N/D	N/D	N/D	N/D	0.0096	N/D	N/D	N/D	N/D	N/D
Iron	Aug-03	N/D	0.27	0.044	7.6	0.024	0.04	5	0.44	0.031	N/D	5.5
Mercury	Aug-03	N/D	N/D	N/D	0.00026	N/D	N/D	N/D	N/D	N/D	N/D	N/D
Lead	Aug-03	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D
Mg	Aug-03	16	140	38	25	130	110	32	34	56	51	21
Mn	Aug-03	0.08	0.58	0.68	2	1.8	1.1	2.4	1.4	0.0037	0.01	4.6
K	Aug-03	2.6	10	4	2.3	4.3	5.3	4.2	4	5	6.2	2.1
Se	Aug-03	0.043	0.024	0.09	0.15	0.084	0.16	0.1	0.13	0.05	0.023	0.15
Silver	Aug-03	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D
Sodium	Aug-03	150	1100	350	420	960	680	430	420	800	660	470
Uranium	Aug-03	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D
Zinc	Aug-03	0.12	0.094	0.13	0.18	0.088	0.09	0.19	0.037	0.095	0.0072	0.15

TABLE 1

AUGUST 2003 - DISSOLVED METALS

pg 5 of 6

mg/L	DATE SAMPLED	MW #35	MW #37	MW #38	MW #47	P #4	P #5	O/F #1	O/F #3		
Arsenic	Aug-03	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D		
Barium	Aug-03	1	1.5	0.37	3.2	0.91	0.71	0.27	0.25		
Cadmium	Aug-03	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D		
Calcium	Aug-03	130	100	170	140	120	150	64	79		
Cr	Aug-03	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D		
Copper	Aug-03	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D		
Iron	Aug-03	6.3	0.6	7.5	5.1	N/D	0.91	0.56	N/D		
Mercury	Aug-03	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D		
Lead	Aug-03	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D		
Mg	Aug-03	22	20	28	54	24	35	16	18		
Mn	Aug-03	3.3	1.4	3	5.2	0.014	0.17	2.1	0.017		
K	Aug-03	3.7	6.6	6.6	7	5.9	5.3	2.8	2.1		
Se	Aug-03	0.15	0.13	0.11	0.1	0.11	0.13	N/D	0.032		
Silver	Aug-03	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D		
Sodium	Aug-03	330	370	240	740	530	340	130	88		
Uranium	Aug-03	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D		
Zinc	Aug-03	0.078	0.29	0.31	0.36	0.07	0.093	0.033	0.04		

TABLE 1

AUGUST 2003 - TOTAL METALS

mg/L	Date Sampled	MW #1	MW #3	MW #8	MW #11	MW #12	MW #13	MW #26	MW #27	MW #32	MW #33	MW #34
Cr	Aug-03	0.013	0.029	0.72	0.011	0.51	0.45	0.017	0.014	N/D	N/D	0.018
Lead	Aug-03	N/D	0.022	N/D	0.02	0.16	N/D	0.0084	N/D	N/D	N/D	N/D

AUGUST 2003 - TOTAL METALS

mg/L	Date Sampled	MW #35	MW #37	MW #38	MW #47	P #4	P #5	O/F #1	O/F #3		
Cr	Aug-03	0.011	0.18	0.31	0.037	N/D	N/D	N/D	N/D		
Lead	Aug-03	N/D	0.18	0.21	0.0095	0.007	0.0066	N/D	N/D		



Monitoring Well #45

Soil Analysis

Depth Sampled	DATE SAMPLED	mg/KG										mg/KG	
		benzene	toluene	ethylbenzene	naphthalene	total xylene	MTBE	DRO	GRO	ORO			
Surface	Jan-03	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D		N/D	N/D
5' - 6'.5"	Jan-03	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D		N/D	ND
7' - 8'.5"	Jan-03	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D		N/D	ND
10' - 11'	Jan-03	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D		N/D	ND
14' - 14'.7"	Jan-03	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D		N/D	ND
17' - 17'.8"	Jan-03	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D		N/D	N/D

All other analytes from Method 8260 are ND. Analysis in MW #45 file.

Installed 01/15/03

Monitoring Well #45

Water Analysis

Installed 01/15/03

DATE SAMPLED	ppm MTBE	ppm benzene	ppm toluene	ppm ethylbenzene	ppm naphthalene	ppm total xylene	mg/L sulfate	mg/L P	mg/L NO3	mg/L Cl	mg/L F
Jan-03	N/D	4.4	3	3.2	0.41	18	24	N/D	N/D	180	N/D

Total Metals mg/L	Date Sampled	MW # 45
Arsenic	Jan-03	0.3
Barium	Jan-03	2.5
Cd	Jan-03	N/D
Ca	Jan-03	120
Cr	Jan-03	0.016
Copper	Jan-03	N/D
Iron	Jan-03	18
Lead	Jan-03	0.011
Mg	Jan-03	33
Mn	Jan-03	0.92
K	Jan-03	3.7
Se	Jan-03	N/D
Silver	Jan-03	N/D
Sodium	Jan-03	170
U	Jan-03	N/D
Zinc	Jan-03	0.1

Dissolved Metals mg/L	Date Sampled	MW # 45
Arsenic	Jan-03	0.044
Barium	Jan-03	1.9
Cd	Jan-03	N/D
Ca	Jan-03	120
Cr	Jan-03	0.012
Copper	Jan-03	N/D
Iron	Jan-03	0.27
Lead	Jan-03	N/D
Mg	Jan-03	37
Mn	Jan-03	1.2
K	Jan-03	3.1
Se	Jan-03	0.023
Silver	Jan-03	N/D
Sodium	Jan-03	190
U	Jan-03	N/D
Zinc	Jan-03	0.016

General Chemistry ppm	Date Sampled	MW # 45
Benzene	Mar-03	4.4
Toluene	Mar-03	3
EthylBen	Mar-03	5.5
Xylene	Mar-03	30
MTBE	Mar-03	N/D

Mercury = N/D

Monitoring Well #46

Soil Analysis

Depth Sampled	DATE SAMPLED	mg/KG benzene	mg/KG toluene	mg/KG ethylbenzene	mg/KG naphthalene	mg/KG total xylene	mg/KG MTBE	mg/KG DRO	mg/KG GRO	mg/KG ORO
Surface	Jan-03	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D
5' - 6'.5"	Jan-03	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	ND
6.5' - 7.5'	Jan-03	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	ND

Installed 01/16/03

Dry Hole - No Water

Monitoring Well #47

Depth Sampled	DATE SAMPLED	monitoring constituents								
		mg/KG benzene	mg/KG toluene	mg/KG ethylbenzene	mg/KG naphthalene	mg/KG total xylene	mg/KG MTBE	mg/KG DRO	mg/KG GRO	mg/KG ORO
Surface	Mar-03	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D
5' - 6' 5"	Mar-03	N/D	N/D	N/D	N/D	N/D	N/D	69	20	ND
9' - 9.7'	Mar-03	N/D	N/D	N/D	N/D	N/D	N/D	16	21	ND
11.3' - 12.8'	Mar-03	N/D	N/D	N/D	N/D	N/D	N/D	11	9	ND



MW FIELD DATA

DATE	RW/MW	DEPTH TO LIQUID (ft)	SPH	WELL DEPTH	E.C.	pH	TEMP.
3/3/2003	MW #1	17.57	0	21.58	1285	8.01	54
3/3/2003	MW #6			48.03	dry	well	
3/0/03	MW #12	10.66	0	15	1330	7.04	48
3/3/2003	MW #13	39.97	0	52.89	4153	6.65	58
3/5/2003	MW #20	22.48	20.83	27.12	3560	6.40	57
3/5/2003	MW #24	0	15.1	15.12	not enough	liquid	to sample
3/4/2003	MW #32	24.58	0	27.49	5552	6.70	58
3/4/2003	MW #33	22.13	0	25.5	4737	6.89	59
3/3/2003	MW #35	22.79	0	26.47	1933	6.61	59
3/3/2003	MW #37	24	0	27.61	1907	7.07	58
3/3/2003	MW #38	24.19	0	26.84	1758	6.83	57
3/5/2003	MW #45	10.76	9.25	16.93	1767	6.66	54
3/5/2003	MW #46			10.4	dry	well	
3/5/2003	Seep #5 (MW #47)						
3/4/2003	P-#4	8.46	0	13.97	2380	7.17	46
3/4/2003	P-#5	10.76	0	14.3	1863	7.21	48
3/4/2003	#1 East O/F				1049	6.71	51
3/4/2003	#2 East O/F				973	7.03	45
3/4/2003	#3 East O/F				1083	7.04	50

MW FIELD DATA

DATE	RW/MW	DEPTH TO LIQUID (ft)	SPH	WELL DEPTH	E.C.	pH	TEMP.	D.O	ORP
08/21/03	MW #1	17.16	0	21.62	1001	7.41	63	6.5	105
08/25/03	MW #3	36.31	0	36.75	7818	6.96	66		57
08/22/03	MW #4	27.95	27.07	30.5	no sample	well	contains	hydrocarbon	
08/25/03	MW #5	0	0	36.92	dry	well			
08/25/03	MW #6	0	0	47.92	dry	well			
08/25/03	MW #8	32.93	0	36	2654	6.98	60	7.1	176
08/22/03	MW #9	25.32	24.82	33.95	no sample	well	contains	hydrocarbon	
08/19/03	MW #11	11.69	0	22.93	2338	6.82	66	5.6	-53
08/19/03	MW #12	11.39	0	13.93	5920	7.06	64	5.8	81
08/21/03	MW #13	40.23	0	52.9	4573	6.77	64	5.6	86
08/22/03	MW #20	21.87	20.99	27.15	no sample	well	contains	hydrocarbon	
08/22/03	MW #24	14.93	14.91	15.13	no sample	well	contains	hydrocarbon	
08/21/03	MW #26	17.18	0	25.11	2267	6.65	68	4.9	-69
08/21/03	MW #27	18.5	0	24.41	2776	6.73	65	4.1	-188
08/20/03	MW #32	24.8	0	27.52	5346	6.87	63	7.4	64
08/18/03	MW #33	22.11	0	25.49	2373	6.89	66	5.0	110
08/19/03	MW #34	14.57	0	20.97	2220	6.75	70	4.9	-76
08/19/03	MW #35	23.04	0	26.45	2005	6.72	66	5.4	-95

Table 2

Recovery System Volumes

TABLE 2

Bloomfield Refinery Recovery Wells

Well #	Date In Service	Flowrate Mar-03	Flowrate Jun-03	Flowrate Jul-03	Flowrate Aug-03	Flowrate Oct-03	Annual Total (gallons)
RW #1	Aug-03	N/A	N/A	N/A	200 gpw	200 gpw	24,400
RW #2	Aug-88	576 gpd	493 gpd	133 gpd	57 gpd	227 gpd	108,478
RW #9	Nov-03	N/A	N/A	N/A	N/A	N/A	
RW #14	Aug-90	213 gpd	455 gpd	417 gpd	87 gpd	no liq	79,989
RW #15	Aug-90	82 gpd	76 gpd	62 gpd	no liq	455 gpd	51,300
RW #16	Aug-90	220 gpd	W.O.W.	568 gpd	no liq	455 gpd	100,683
RW #17	Aug-90	221 gpd	170 gpd	189 gpd	155 gpd	265 gpd	73,000
RW #18	Aug-90	34 gpd	170 gpd	W.O.W.	N/A	W.O.W.	18,768
RW #19	Aug-90	W.O.W.	625 gpd	398 gpd	303 gpd	133 gpd	78,421
RW #22	Nov-03	N/A	N/A	N/A	N/A	N/A	
RW #23	Jun-03	N/A	N/A	151 gpd	250 gpd	455 gpd	51,931
RW #28	May-03	N/A	134 gpd	W.O.W.	12 gpd	227 gpd	22,753
RW #42	May-00	W.O.W.	W.O.W.	2.0 gpd	2.4 gpd	W.O.W.	134
RW #43	Mar-00	4.0 gpd	4.5 gpd	2.0 gpd	no liq	W.O.W.	175

TOTAL = 610,032 GPY

Recovery Well flows were measured using a 500 ml graduated cylinder. At the time of a pump cycle, the discharge line was disconnected and placed in the graduated cylinder. A measurement was taken over time and then calculated to a gallons per day rate.

TABLE 2

(FRENCH DRAIN)

TANK #37 METER READING 2003					
Date	Time	Hours	Reading	Gallons	Flow Rate(gal/min)
1/10/2003	10:00AM		3717.6		
1/13/2003	10:00AM	72.00	3777.1	2499	0.6
1/20/2003	11:00AM	169.00	3889.5	4720.8	0.5
1/27/2003	8:00AM	165.00	4075.4	7807.8	0.8
2/10/2003	2:30PM	342.50	4355.7	11772.6	0.6
2/18/2003	8:30AM	186.00	4505	6270.6	0.6
2/25/2003	8:30AM	168.00	4661.2	6560.4	0.7
3/3/2003	12:30PM	148.00	4844.8	7711.2	0.9
3/10/2003	8:30AM	164.00	5091.9	10378.2	1.1
3/17/2003	8:30 AM	168.00	5417.4	13671	1.4
3/31/2003	8:30AM	336.00	5855.9	18417	0.9
4/8/2003	9:30AM	361.00	6094.6	10025.4	0.5
4/14/2003	2:30 PM	149.00	6181.8	3662.4	0.4
4/28/2003	10:30AM	332.00	6489.4	12919.2	0.6
5/5/2003	2:00 PM	171.50	6626.8	5770.8	0.6
5/19/2003	1:00 PM	335.00	6873.2	10348.8	0.5
5/27/2003	11:00AM	190.00	6971	4107.6	0.4
6/10/2003	9:00AM	334.00	7246.2	11558.4	0.6
6/18/2003	10:00AM	193.00	7348.2	4284	0.4
7/2/2002	9:00 AM	335.00	7585.4	9962.4	0.5
7/9/2003	8:00 AM	144.00	7703	4939.2	0.6
7/21/2003	7:30 A M	263.50	7846	6006	0.4
8/12/2003	10:00AM	530.50	8086.9	10117.8	0.3
8/27/2003	9:00 AM	359.00	8233.4	6153	0.3
9/8/2003	8:00 AM	287.00	8330.4	4074	0.2
9/25/2003	11:00 AM	411.00	8518.6	7904.4	0.3
10/10/2003	10:30 AM	359.50	8666.3	6203.4	0.3

***NEW METER READING IS IN BARRELS - EXCEL CONVERTS TO GALLONS

*****PUMP BROKE DOWN - BACK IN SERVICE ON 1-10-03

TANK #37 METER READINGS					
Date	Time	Hours	Reading	Gallons	Flow Rate(gal/min)
10/20/2003	9:00 AM	238.50	8722.3	6153	0.3
11/6/2003	10:30 AM	409.50	8901.5	7526.4	0.3
12/10/2003	9:00 AM	814.50	9316.5	17430.0	0.4
12/31/2003	9:00 AM	504.00	9535.6	9202.2	0.3

Total Volume Pumped in 2003 = 88,217 gallons

TABLE 2

(EAST OUTFALL)

TANK #38 FLOW 2003

DATE	TIME	HOURS	READING	GALLONS	FLOW RATE (G/Hr)	FLOW RATE (G/min)
11/10/03	9:45AM		95447300			
11/11/03	8:00 AM	22.5	95470000	22,700	1009	17
11/12/03	8:00 AM	24	95484200	14,200	592	10
11/17/03	8:00 AM	120	95518800	34,600	288	5
11/19/03	8:00 AM	48	95535500	16,700	348	6
11/20/03	8:00 AM		95560200			
11/20/03	1:00 PM	5	95566200	6,000	1200	20
11/21/03	8:00 AM	19	95587600	21,400	1126	19
12/02/03	11:00PM	267	95908000	320,400	1200	20
12/10/03	9:00 AM	190	96111200	203,200	1069	18
12/16/03	3:00 PM	150	96283200	172,000	1147	19
12/31/03	9:00 AM	354	96636200	353,000	997	17

Total Volume Pumped in 2003 = 1,188,900 gallons

Table 3

Water Table Elevations

MONITOR/RECOVERY WELL WATER ELEVATIONS

Well #	DATE	DEPTH TO WATER	SPH	WELL DEPTH	WELL CASING HEIGHT	DESCRIP.
MW #1	5/20/03	17.32	0	21.56	1.64	
MW #3	5/20/03	36.38	0	36.75	0.65	
MW #4	5/20/03	27.73	26.86	30.48	1.5	
MW #5	5/20/03	Dry	N/A	37.2	0.4	
MW #6	5/20/03	Dry	N/A	48	1.19	
MW #7	5/20/03	27.13	0	62.61	1.62	
MW #8	5/20/03	32.99	0	35.93	1.84	
MW #9	5/20/03	24.98	24.76	34.04	1.63	
MW #11	5/20/03	11.33	0	22.94	3.41	
MW #12	5/20/03	10.79	0	14.98	3.08	
MW #13	5/20/03	40.13	0	52.89	2.83	
MW #20	5/20/03	22.28	20.8	27.13	1.36	
MW #21	5/20/03	22.61	22.23	30.38	1.27	
MW #22	5/20/03	26.15	25.52	35.6	2.49	
MW #23	5/20/03	23.36	23.34	35.53	1.98	
MW #24	5/20/03	15.01	14.99	15.14	1.12	
MW #25	5/20/03	33.31	32.28	41.2	3	
MW #26	5/20/03	16.99	0	25.11	2.11	
MW #27	5/20/03	18.35	0	24.42	2.76	
MW #29	5/20/03	23.33	0	28.62	2.88	
MW #30	5/20/03	34.02	0	40.13	1.96	

MONITOR/RECOVERY WELL WATER ELEVATIONS

Well #	DATE	DEPTH TO WATER	SPH	WELL DEPTH	WELL CASING HEIGHT	DESCRIP.
MW #31	5/20/03	33.92	0	39.16	1.52	
MW #32	5/20/03	24.72	0	27.51	0.75	
MW #33	5/20/03	20.04	0	25.51	1.93	
MW #34	5/20/03	14.22	0	20.96	2.35	
MW #35	5/20/03	22.89	0	26.45	3.11	
MW #36	5/20/03	20.98	0	23.26	2.94	
MW #37	5/20/03	23.92	0	27.58	2.88	
MW #38	5/20/03	24.13	0	26.82	2.82	
MW #39	5/20/03	24.3	0	38.34	2.1	
MW #40	5/20/03	29.44	28.67	30.07	0	
MW #41	5/20/03	27.87	27.02	31.62	0	
MW #44	5/20/03	33.38	0	50.91	3.19	
MW #45	5/20/03	11.72	9.13	16.92	2.1	
MW #46	5/20/03	Dry	N/A	10.39	1.79	
MW #47	5/20/03	10.18	0	14.28	2.64	
P-#3	5/20/03	11.15	0	22.73	0.3	
P-#4	5/20/03	8.68	0	13.94	3.25	
P-#5	5/20/03	11.01	0	14.27	2.94	
RW #1	5/20/03	31.8	31.08	40.8	0.88	
RW #2	5/20/03	26.27	0	35.86	0.78	
RW #3	5/20/03	22.52	0	34.57	1.92	Not in Service as RW

MONITOR/RECOVERY WELL WATER ELEVATIONS

[illegible]



MONITOR/RECOVERY WELL WATER ELEVATIONS

Well #	DATE	DEPTH TO WATER	SPH	WELL DEPTH	WELL CASING HEIGHT	DESCRIP.
MW #1	01/13/04	17.45	0	21.56	1.64	
MW #3	01/13/04	36.32	0	36.75	0.65	
MW #4	01/14/04	27.88	27.15	30.48	1.5	
MW #5	01/13/04	0	0	37.2	0.4	
MW #6	01/13/04	0	0	48	1.19	
MW #7	01/15/04	27.64	0	62.61	1.62	
MW #8	01/13/04	32.84	0	35.93	1.84	
MW #9	converted	see RW list		34.04	1.63	
MW #11	01/13/04	11.65	0	22.94	3.41	
MW #12	01/13/04	12	0	14.98	3.08	
MW #13	01/13/04	40.37	0	52.89	2.83	
MW #20	01/14/04	21.66	20.97	27.13	1.36	
MW #21	01/13/04	22.36	22.29	30.38	1.27	
MW #22	converted	see RW list		35.6	2.49	
MW #23	converted	see RW list		35.53	1.98	
MW #24	01/15/04	15.09	15.02	15.14	1.12	
MW #25	01/15/04	33.63	32.58	41.2	3	
MW #26	01/13/04	17.29	0	25.11	2.11	
MW #27	01/13/04	16.69	0	24.42	2.76	
MW #28	converted	see RW list		36.99	1.84	
MW #29	01/13/04	23.31	0	28.62	2.88	
MW #30	01/13/04	33.94	0	40.13	1.96	

MONITOR/RECOVERY WELL WATER ELEVATIONS

Well #	DATE	DEPTH TO WATER	SPH	WELL DEPTH	WELL CASING HEIGHT	DESCRIP.
MW #31	01/13/04	34.1	0	39.16	1.52	
MW #32	01/13/04	24.96	0	27.51	0.75	
MW #33	01/13/04	22.34	0	25.51	1.93	
MW #34	01/13/04	14.51	0	20.96	2.35	
MW #35	01/13/04	22.94	0	26.45	3.11	
MW #36	01/13/04	21.3	0	23.26	2.94	
MW #37	01/13/04	23.99	0	27.58	2.88	
MW #38	01/13/04	24.38	0	26.82	2.82	
MW #39	01/13/04	24.64	0	38.34	2.1	
MW #40	01/15/04	29.29	28.89	30.07	0	
MW #41	01/15/04	28.42	27.22	31.62	0	
MW #44	01/13/04	33.72	0	50.91	3.19	
MW #45	01/15/04	14.66	9.32	16.92	2.1	
MW #46	01/15/04	0	0	10.39	1.79	
MW #47	01/15/04	11.73	10.26	14.28	2.64	
P-#3	01/13/04	11.22	0	22.73	0.3	
P-#4	01/15/04	8.34	0	13.94	3.25	
P-#5	01/15/04	9.54	0	14.27	2.94	
RW #1	01/15/04	32	31.38	40.8	0.88	Back in RW service 8/03
RW #2	01/14/04	27.5	27.38	35.86	0.78	
RW #3	01/14/03	22.7	22.65	34.57	1.92	Not in RW Service

Table 4

Waste Disposition

Waste Disposition Summary Tables Year 2003

REGULATED WASTES				
WASTE STREAM	WASTE NUMBER	TREATMENT TYPE	TSDF	WEIGHT (lbs.)
API Separator Sludge	K-051, D-018	Incineration	21st Century Environmental Management, Inc. Femley, Nevada	400
Heat Exchanger Sludge	K-050	Incineration	21st Century Environmental Management, Inc. Femley, Nevada	800
Main Column Bottom Sludge	K-170	Incineration	21st Century Environmental Management, Inc. Femley, Nevada	800
Spent Unifiner Catalyst	K-171	Recycled	Gulf Chemical Freeport, Texas	15,250
Preflash Bottom Sludge	D-004, D-009	Incineration	21st Century Environmental Management, Inc. Femley, Nevada	2,200
Tank #33 Sludge (groundwater collection tank)	D 018	Incineration	21st Century Environmental Management, Inc. Femley, Nevada	3,800

Waste Disposition Summary Tables Year 2003

NON-REGULATED WASTES				
WASTE STREAM	WASTE NUMBER	TREATMENT TYPE	TSDF	WEIGHT
Soil with AZ Lite	D-002	Landfill	21st Century Environmental Management, Inc. Fernley, Nevada	2400 lbs.
Burner fuel with Soil	Oily Soil	Landfill	21st Century Environmental Management, Inc. Fernley, Nevada	1,600
Poly Catalyst	Acidic Solid	Landfill	Clean Harbors Grassy Mountain, Utah	46,540
Poly Catalyst	Acidic Solid	Landfill	Clean Harbors Grassy Mountain, Utah	65,280

Special Waste				
WASTE STREAM	WASTE NUMBER	TREATMENT TYPE	TSDF	WEIGHT
Process Filters	None	Landfill	San Juan County Regional Landfill Aztec, New Mexico	21 yds.
Evaporation Pond Sludge	None	Landfarm	Giant Mid Continent Landfarm San Juan County, N.M.	50 yds.

NOTES:

TSDF = Treatment, Storage, and Disposal Facility

HISTORY OF FACILITY MODIFICATIONS AND IMPROVEMENTS

Previous Owner's Activities

Local entrepreneur, Kimball Campbell, constructed the crude topping unit that eventually became the GRC facility in the late 1950s. O.L. Garretson bought the facility in the early 1960s, renamed it Plateau, Inc. and sold it in 1964 to Suburban Propane of New Jersey.

Operationally, the facility has steadily evolved through a series of improvements, modifications and expansions. Suburban upgraded the facility in 1966, increasing the Crude Unit throughput to 4,100 bpcd and adding 1,850 bpcd Reformer and Naphtha Hydrotreater. In 1975, the Crude Unit was expanded to 8,400 bpcd.

In 1979, the Crude Unit was expanded again to 16,800 bpcd (later demonstrated to have a hydraulic capacity in excess of 18,000 bpcd). A Fluidized Catalytic Cracker (FCC) with a nominal capacity of 6,000 bpcd, an Unsaturated Gas Plant and a Treater Unit were also added at that time. The capacity of the Reformer / Hydrotreater was increased to 2,250 bpcd. The FCC was upgraded in 1982 to conform to State and Federal air quality standards.

Bloomfield Refining Activities

Bloomfield Refining Company (BRC) acquired the facility from Suburban Propane (Plateau) on October 31, 1984. BRC made many improvements to facility operations and equipment. These improvements are summarized below.

1986

Relocated the spent caustic tank onto a concrete pad with retaining walls.

1987

Upgraded the Reformer and increased its capacity to 3,600 bpcd, modified the Laboratory and Treater Unit and increased tank storage capacity.

Cleaned up the North and South bone yards.

Decommissioned and dismantled old tanks 6 and 7.

Relocated the API recoverd oil tanks 8 & 9 to concrete pads with concrete retaining walls.

Established a systematic inspection, maintenance and repair program for tanks.

1988

Added a 2,000 bpcd Catalytic Polymerization Unit. Removed the facility's two underground storage tanks and replaced them with aboveground storage tanks.

Completed installation of cathodic protection system for the tank farm and underground piping.

Rebuilt the process area sewer system and added curbed, concrete paving to the unpaved process areas.

1989

Increased Reformer throughput to 4,000 bpcd.

Activated the groundwater hydrocarbon recovery system.

Installed a concrete pad with curbing between tanks 3 & 4.

Constructed the first double-lined Evaporation Pond as part of discharge plan improvements.

1990

Constructed the second double-lined Evaporation Pond as part of discharge plan improvements.

Constructed a drum storage shed and converted to bulk chemical usage where possible in order to minimize the use of drummed chemicals.

1991

Revamped the burner fuel sales rack with concrete paving and curbing.

Submitted the permit application for a Class 1 disposal well.

Upgraded the groundwater hydrocarbon recovery system.

1992

Submitted an air quality permit application proposing the installation of a Diesel Hydrodesulfurization (HDS) Unit and a Sulfur Recovery Unit (SRU) to comply with new EPA low-sulfur diesel regulations and to decrease air emissions.

1993

Began a program under a consent agreement with the US EPA to conduct interim measures (IM), a RCRA facility investigation (RFI) and a corrective measures study (CMS) addressing groundwater contamination.

Replaced portions of the underground cooling water piping.

Added concrete paving around the API Separator.

Added process units: HDS Unit (2,000 bpcd) and SRU.

Improved (eliminated) storm water runoff to the North.

1994

Completed the Class 1 injection well.

Retrofitted the Aeration Lagoons with two additional liners.

Installed a floating cover for the API Separator.

Closed the clay-lined evaporation ponds and spray evaporation area.

Giant Activities

In 1995, San Juan Refining Company, a wholly owned subsidiary of Giant Industries Arizona, Inc., purchased the Bloomfield Refinery from BRC.

1995

Improved the diking South of the Refinery to further reduce storm water runoff.

Began implementation of additional corrective measures for groundwater cleanup as determined from the CMS.

1998

Converted the former evaporation ponds on the East side of the Refinery to raw water storage ponds.

1999

Installed sheet piling and a bentonite slurry wall adjacent to the San Juan River, North of the process units, in order to intercept a small hydrocarbon seep that had been detected in the area.

2001

Began a program to inoculate the Aeration Lagoons with sludge-consuming micro-organisms.

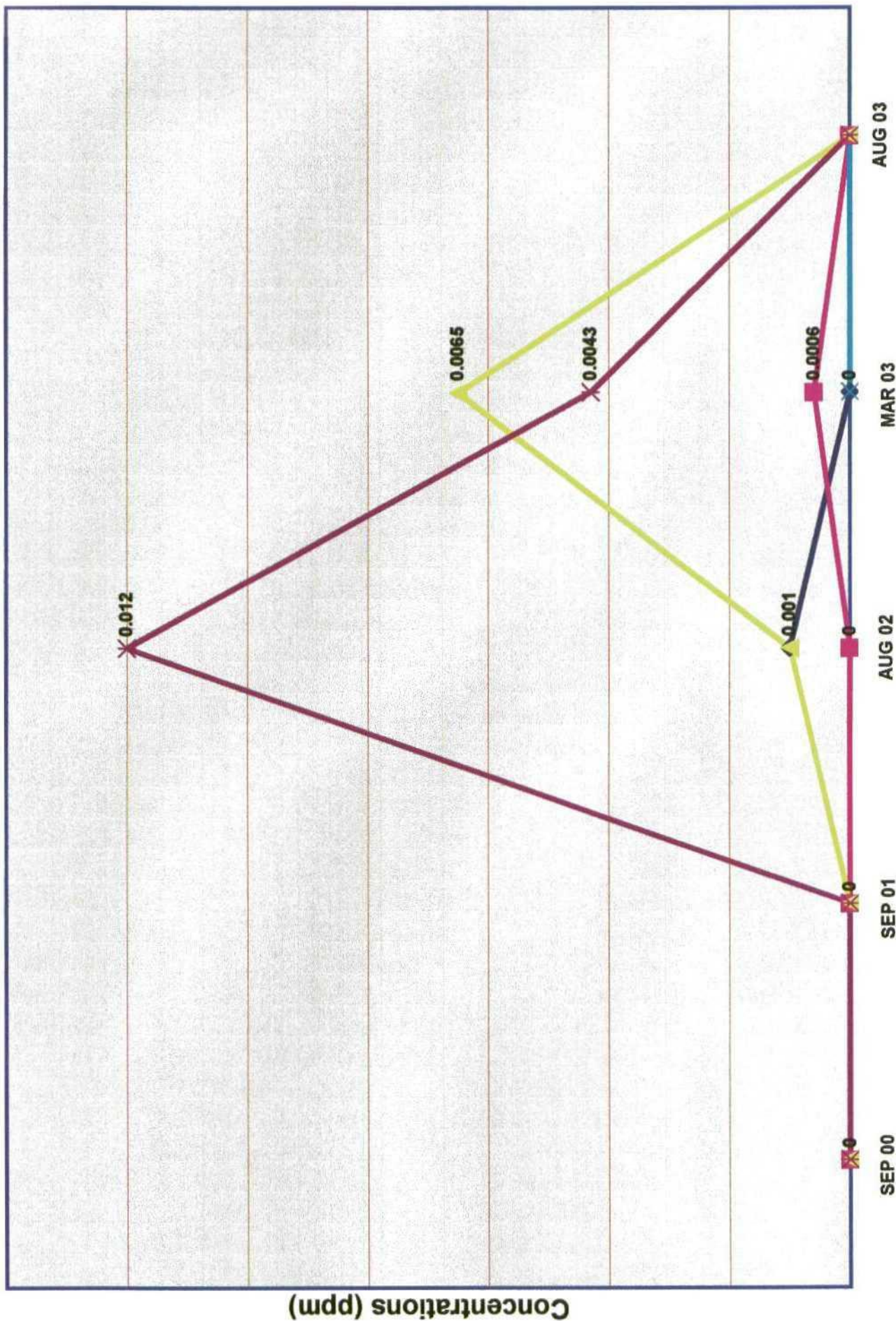
2002

A concrete liner was installed on the Hammond Ditch. At that time, Giant constructed the Hammond Ditch French Drain Recovery System to address contamination under the ditch.

2003

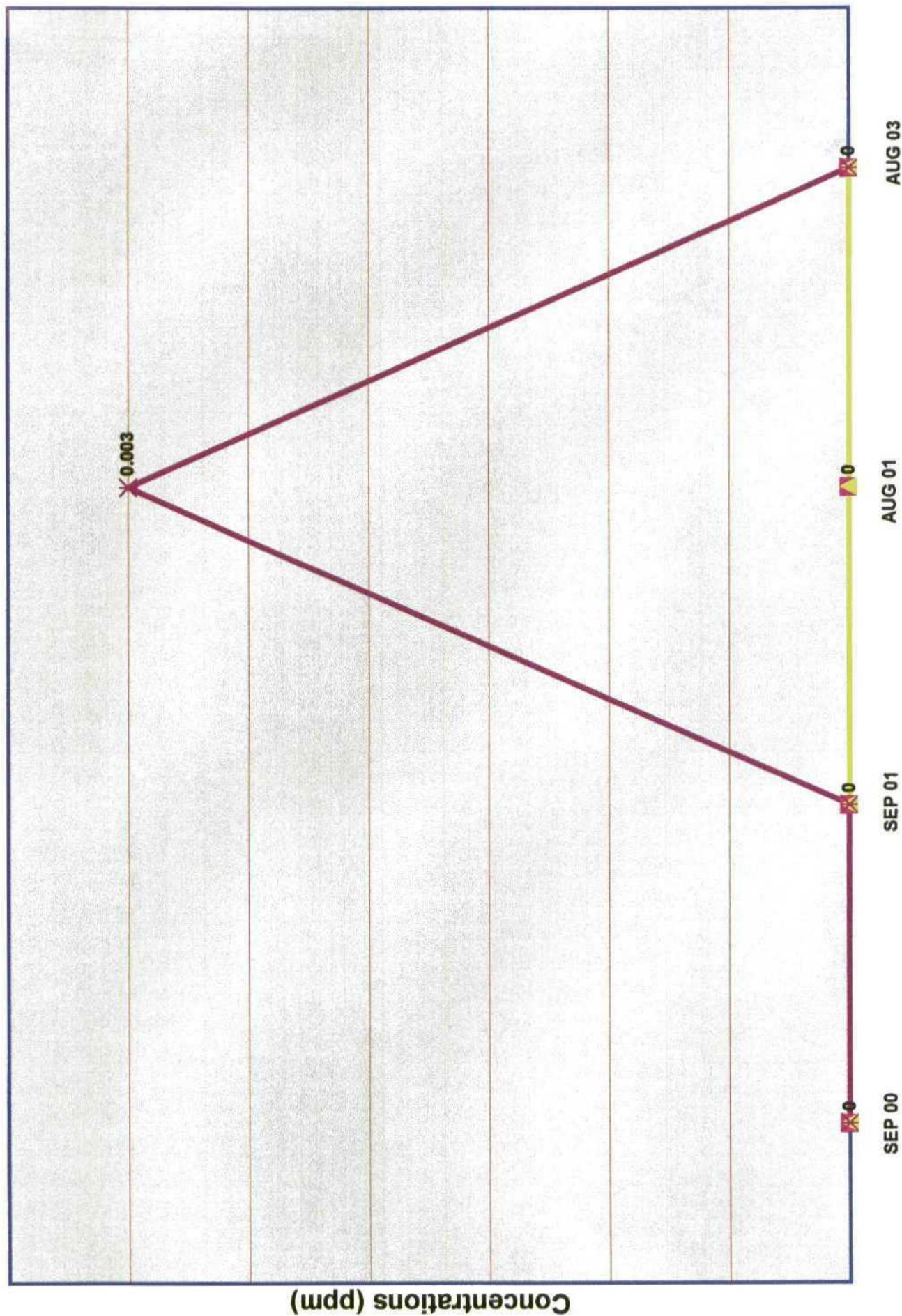
Converted several monitoring wells into recovery wells to further enhance the continuing ground water remediation efforts. Installed MW #45, #46 & #47 to replace unreliable seeps. Installed East Outfall #1 Recovery System to return impacted water back to the refinery.

Monitoring Well #1

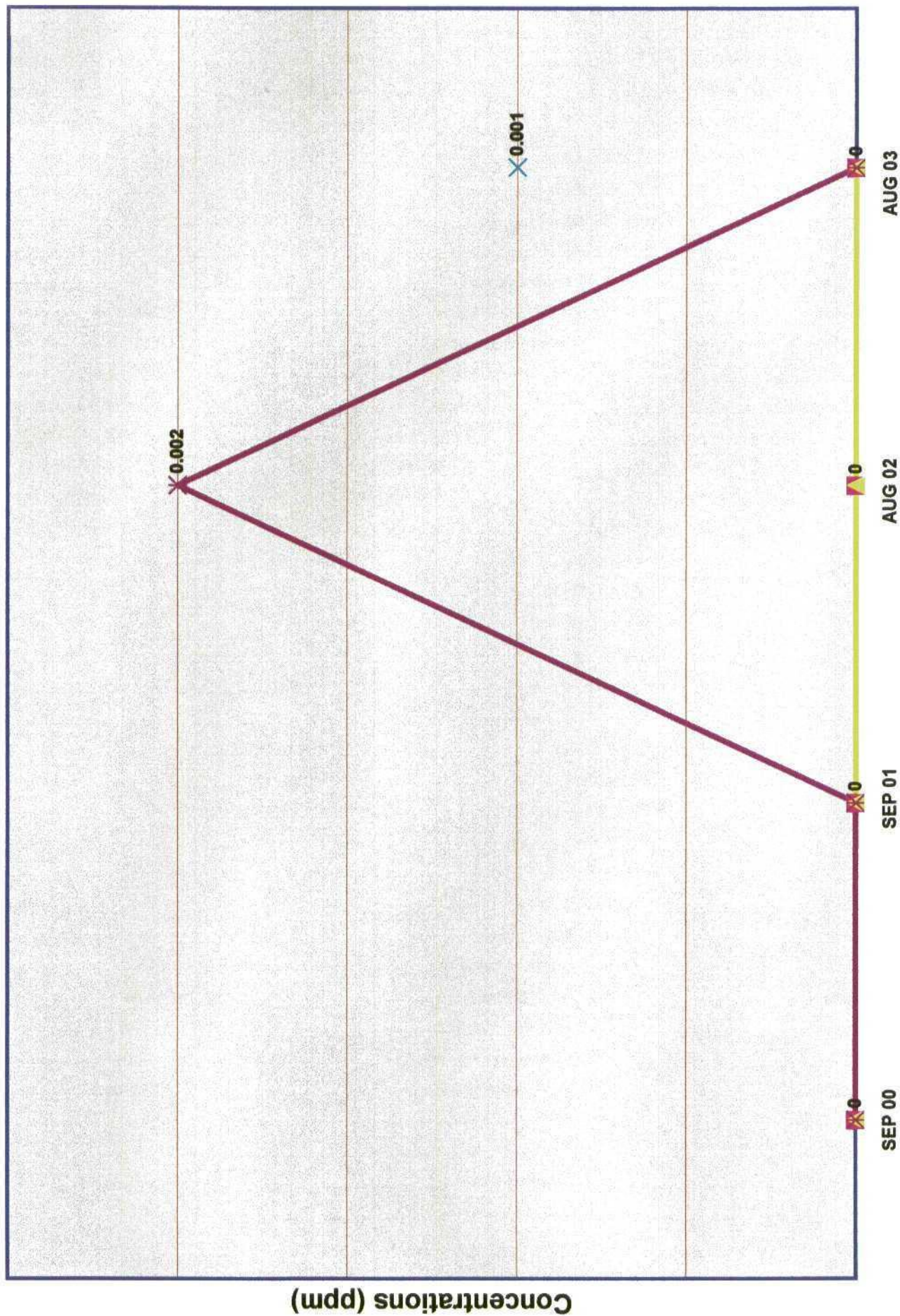


Monitoring Well #3

Legend: Benzene (blue line with diamond), Toluene (red line with square), Ethylbenzene (yellow line with triangle), MTBE (light blue line with cross), Total Xylene (dark red line with asterisk)

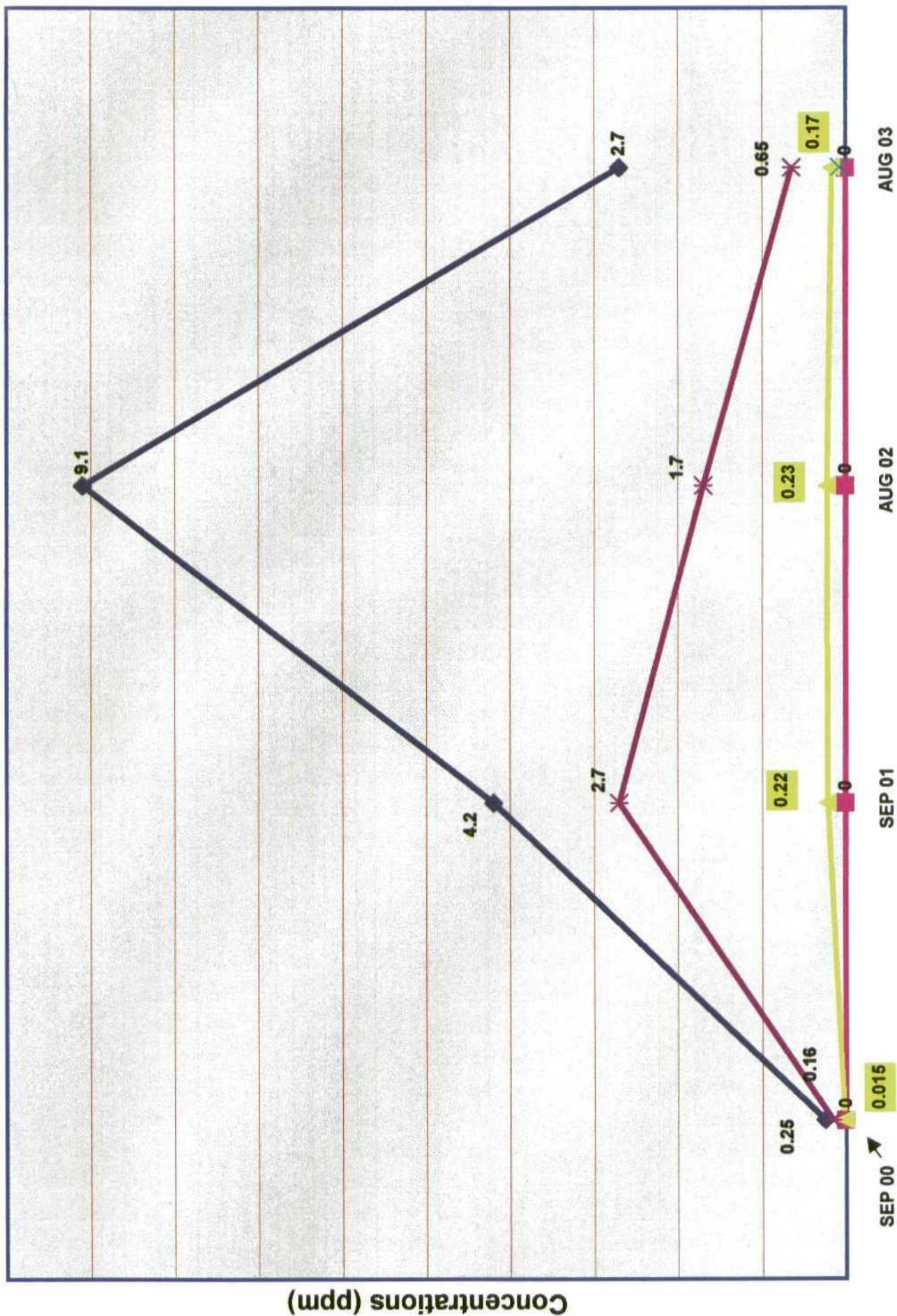


Monitoring Well #8



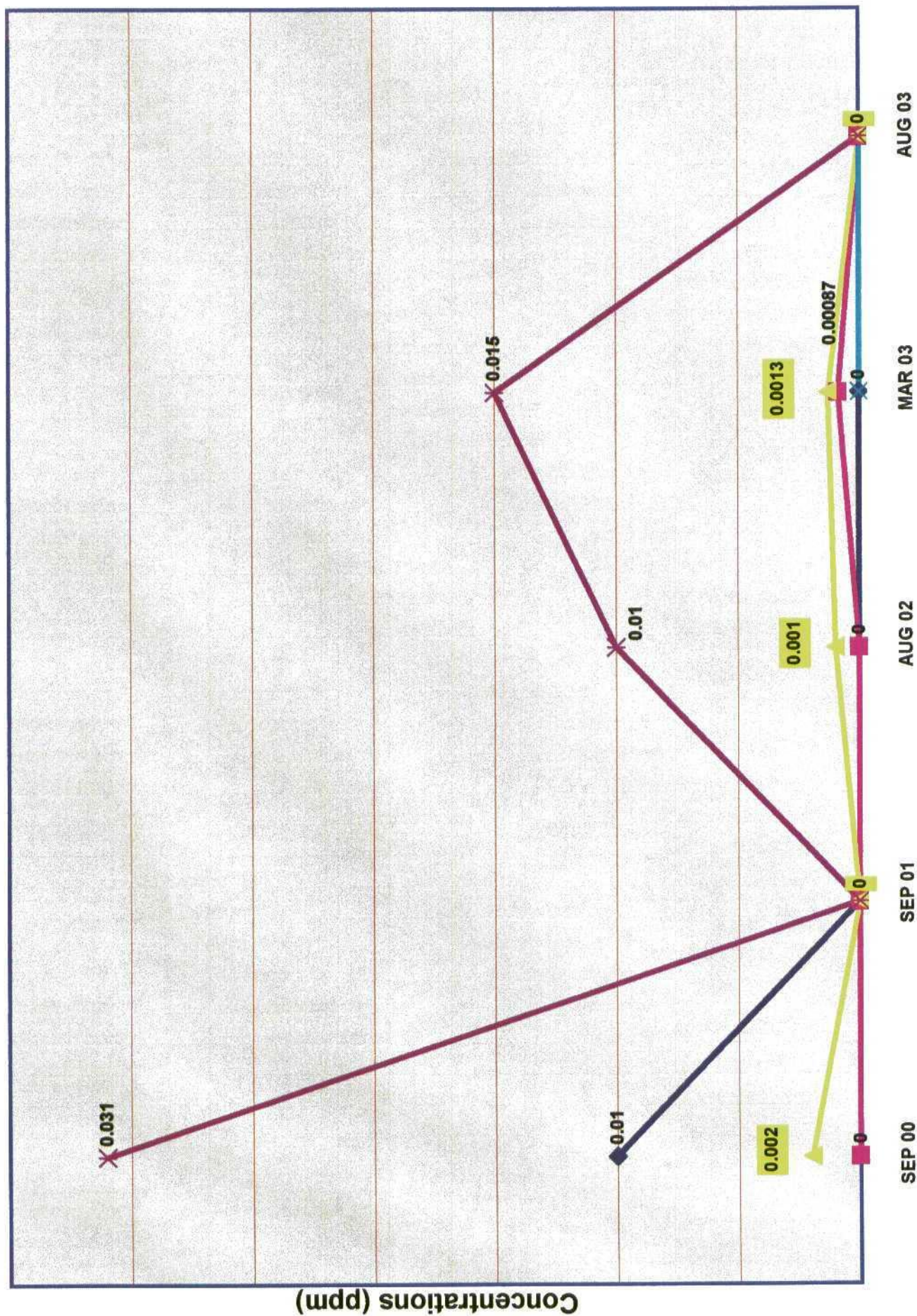
Monitoring Well #11

◆ Benzene
 ■ Toluene
 ▲ Ethylbenzene
 ✕ MTBE
 ✕ Total Xylene

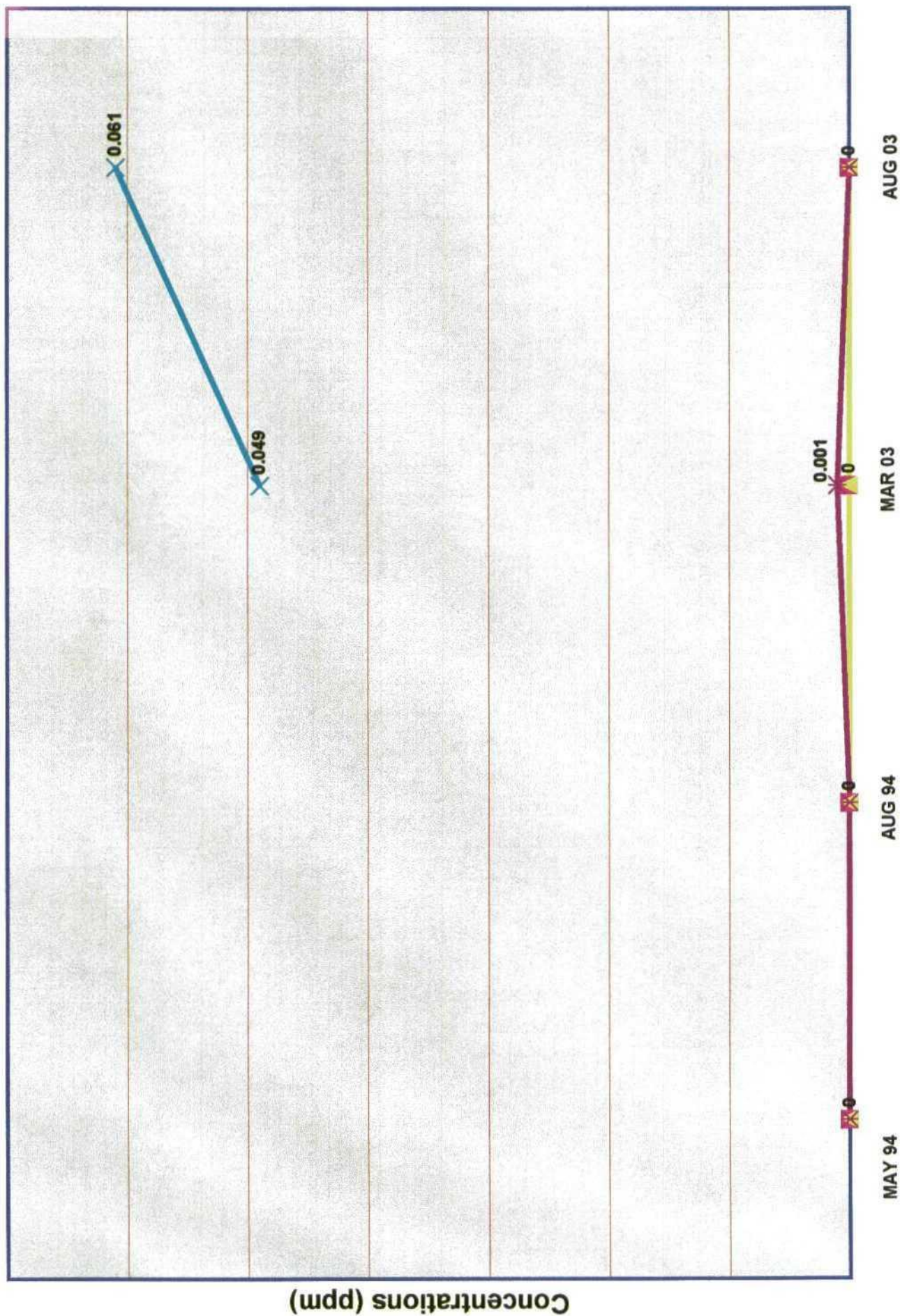


Monitoring Well #12

◆ Benzene
 ■ Toluene
 ▲ Ethylbenzene
 ✕ MTBE
 ✕ Total Xylene

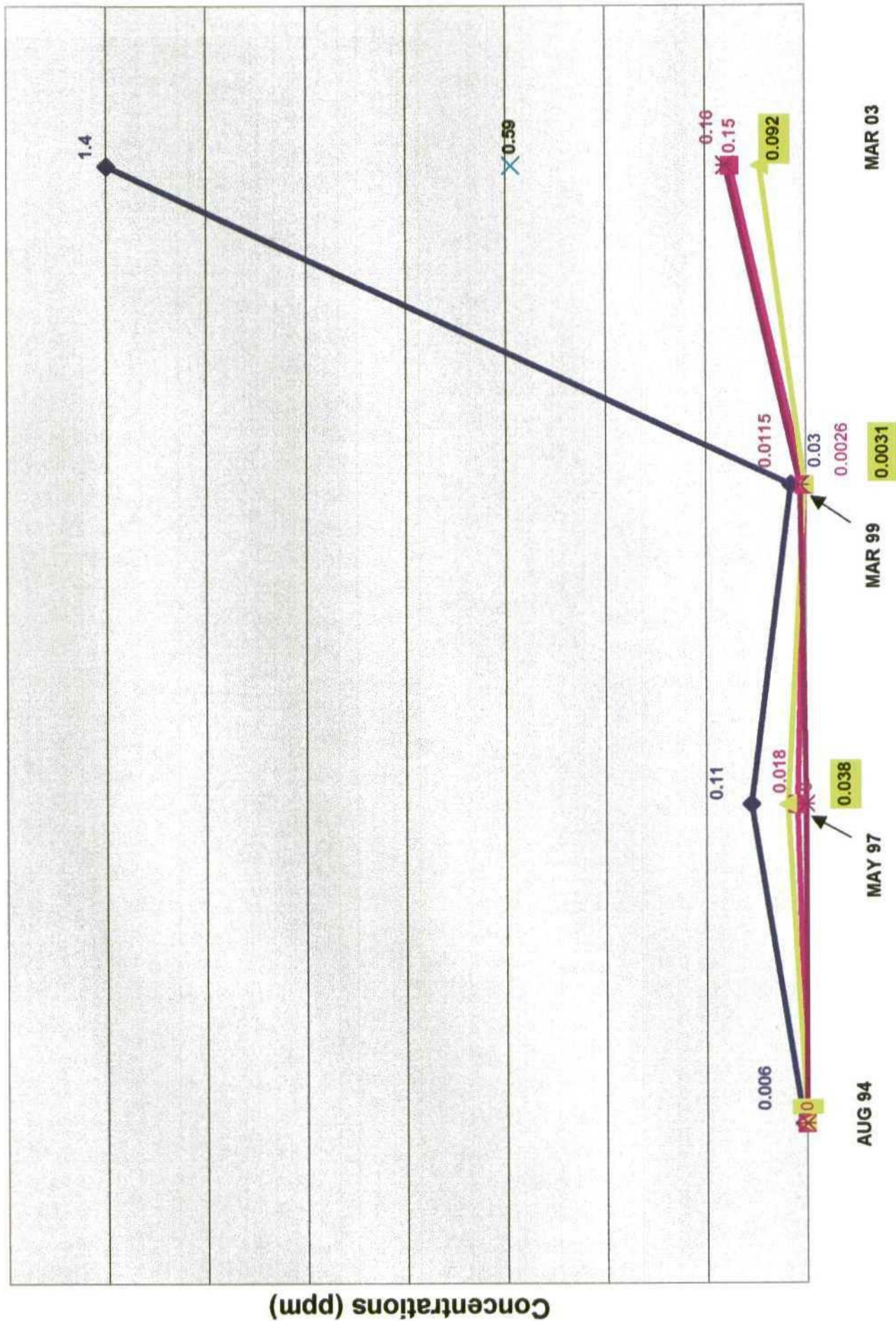


Monitoring Well #13

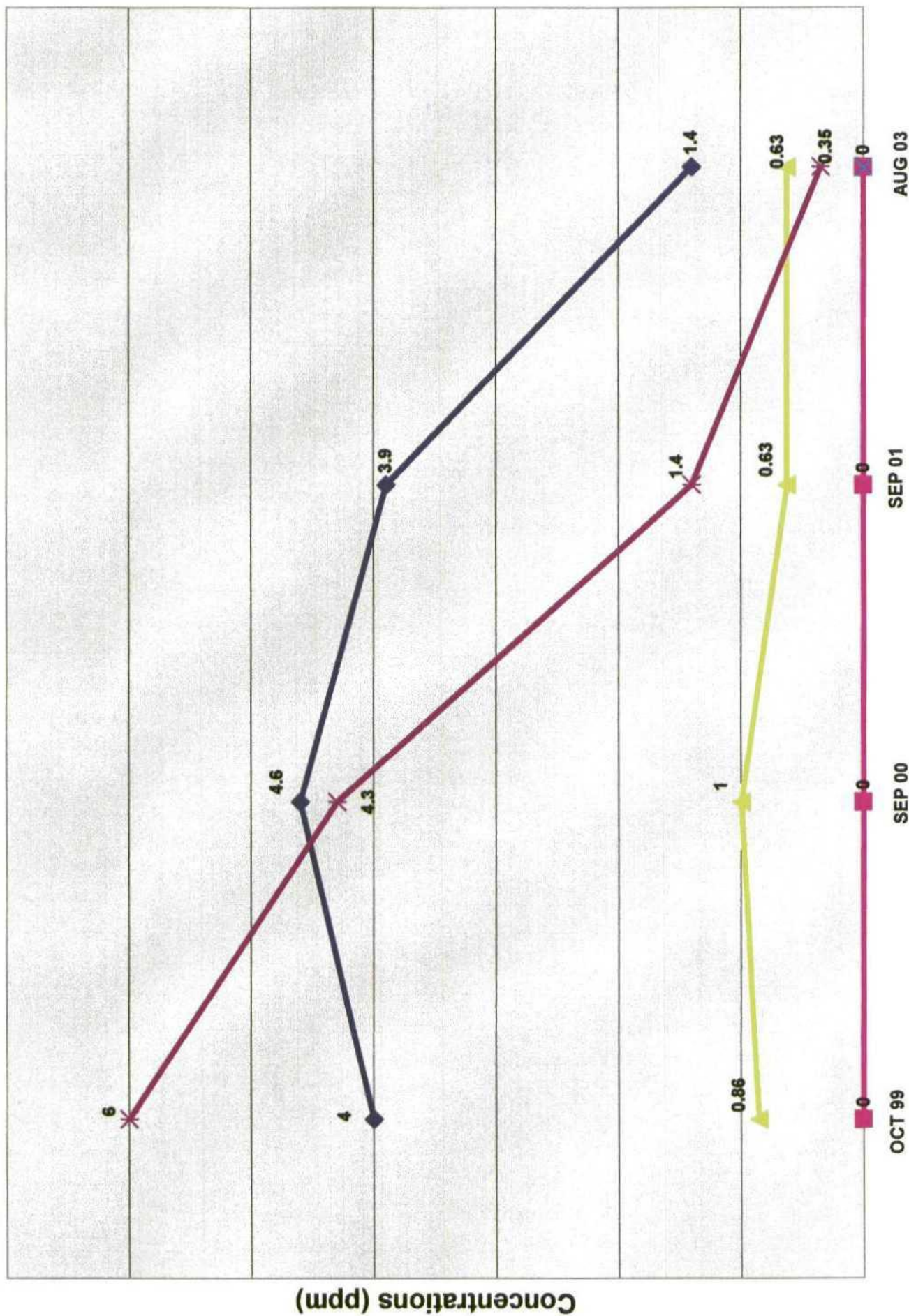


Monitoring Well #20

◆ Benzene
 ■ Toluene
 ▲ Ethylbenzene
 ✕ MTBE
 ✱ Total Xylene



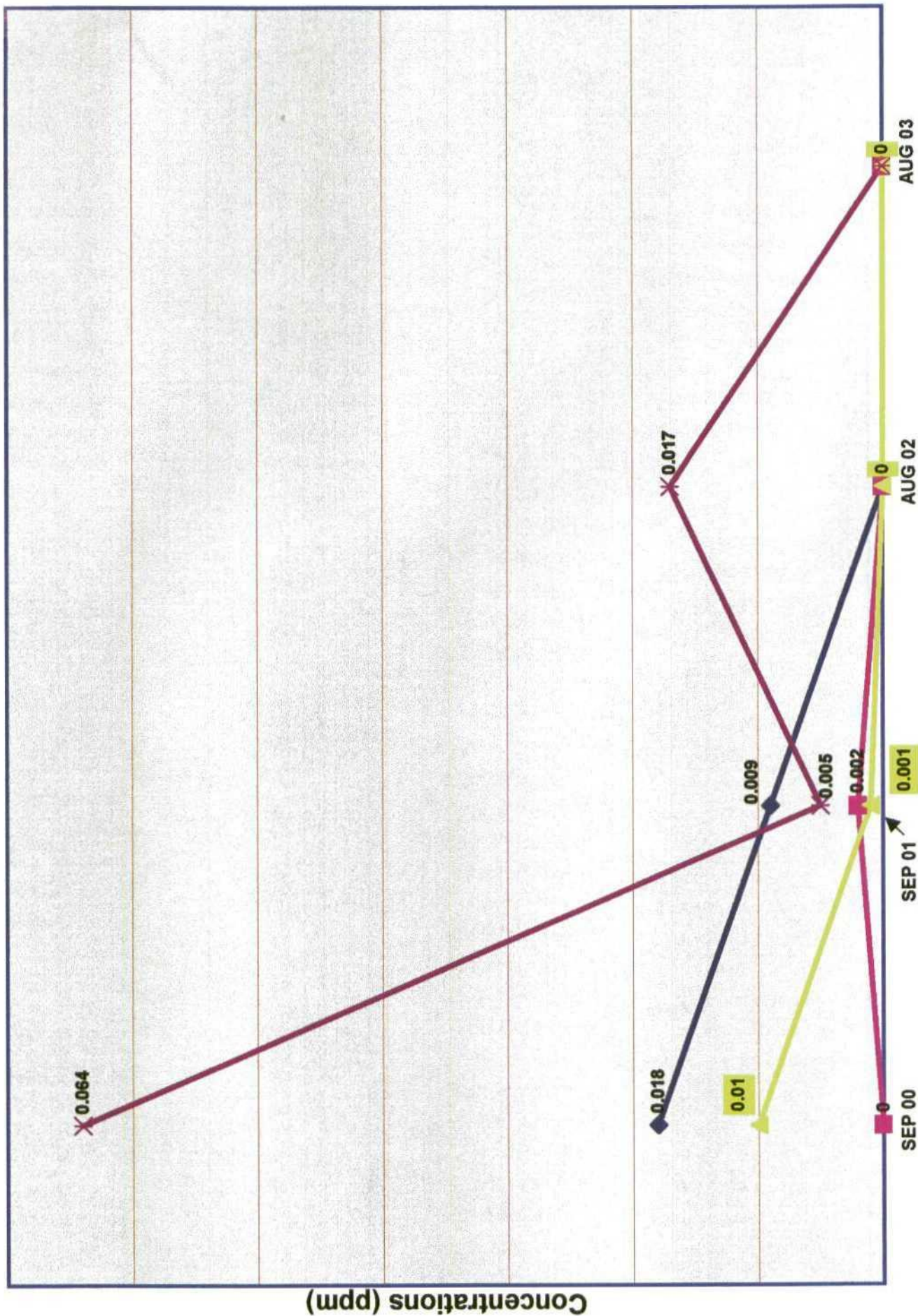
Monitoring Well #26



Monitoring Well #27

Legend:

- Benzene
- Toluene
- Ethylbenzene
- MTBE
- Total Xylene



Monitoring Well #32

—*— Total Xylene

—*— MTBE

—*— Ethylbenzene

—*— Toluene

—*— Benzene

Concentrations (ppm)

0

0

0

0

AUG 03

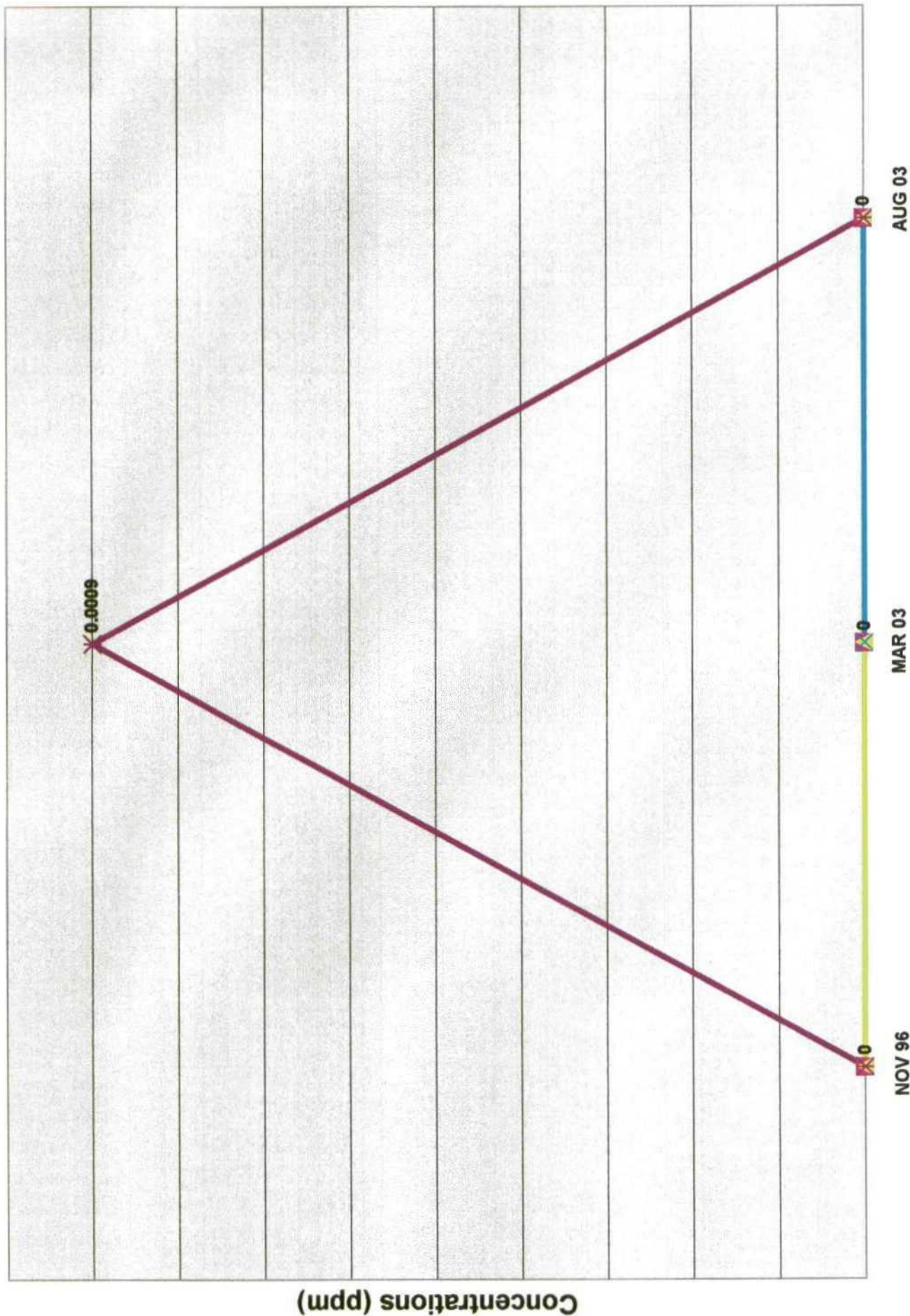
MAR 03

JAN 03

JAN 95

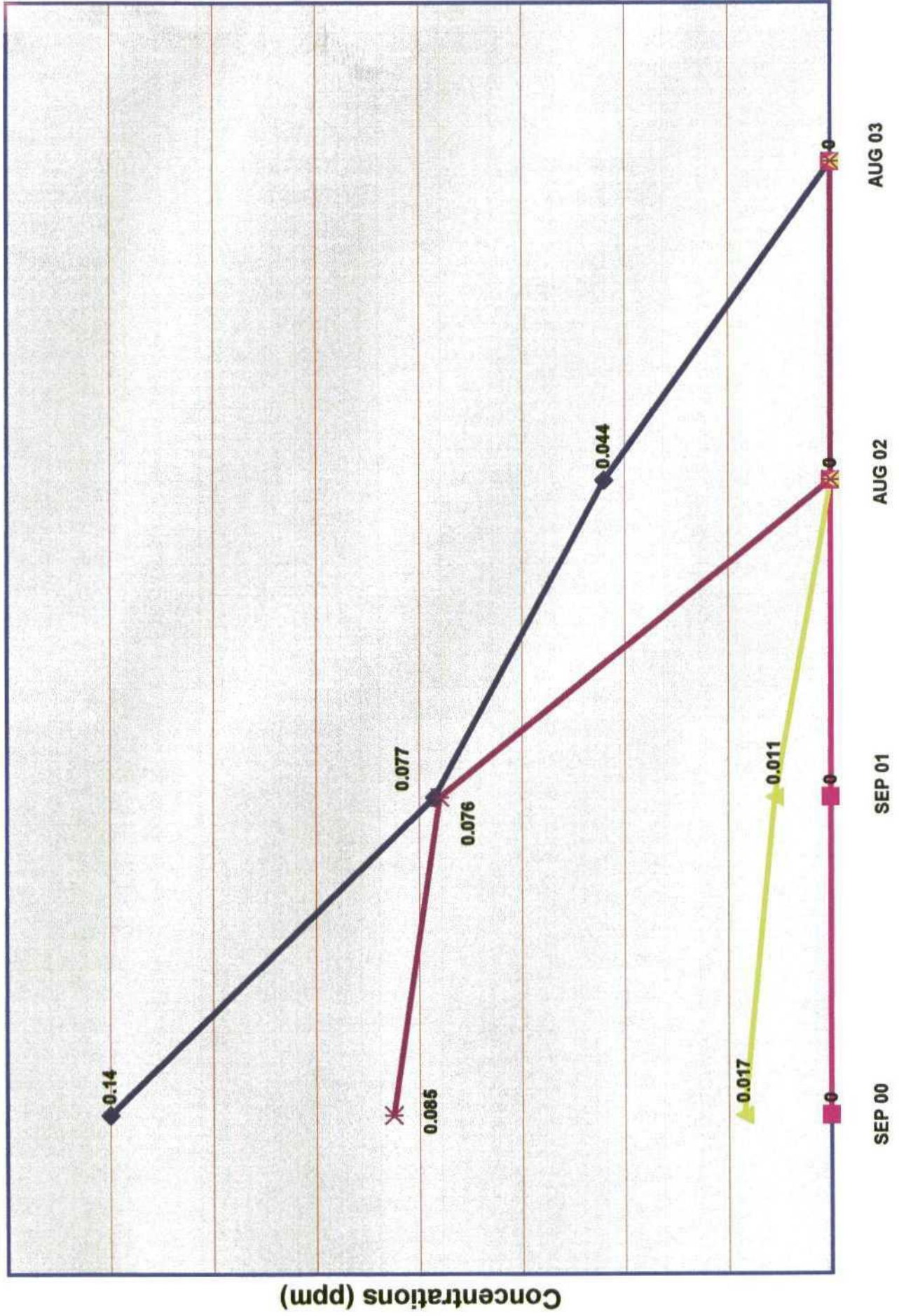
Monitoring Well #33

Legend: Benzene (blue line with diamond), Toluene (red line with square), Ethylbenzene (yellow line with triangle), MTBE (light blue line with cross), Total Xylene (dark red line with asterisk).



Monitoring Well #34

◆ Benzene
 ■ Toluene
 ▲ Ethylbenzene
 ✕ MTBE
 ✕ Total Xylene

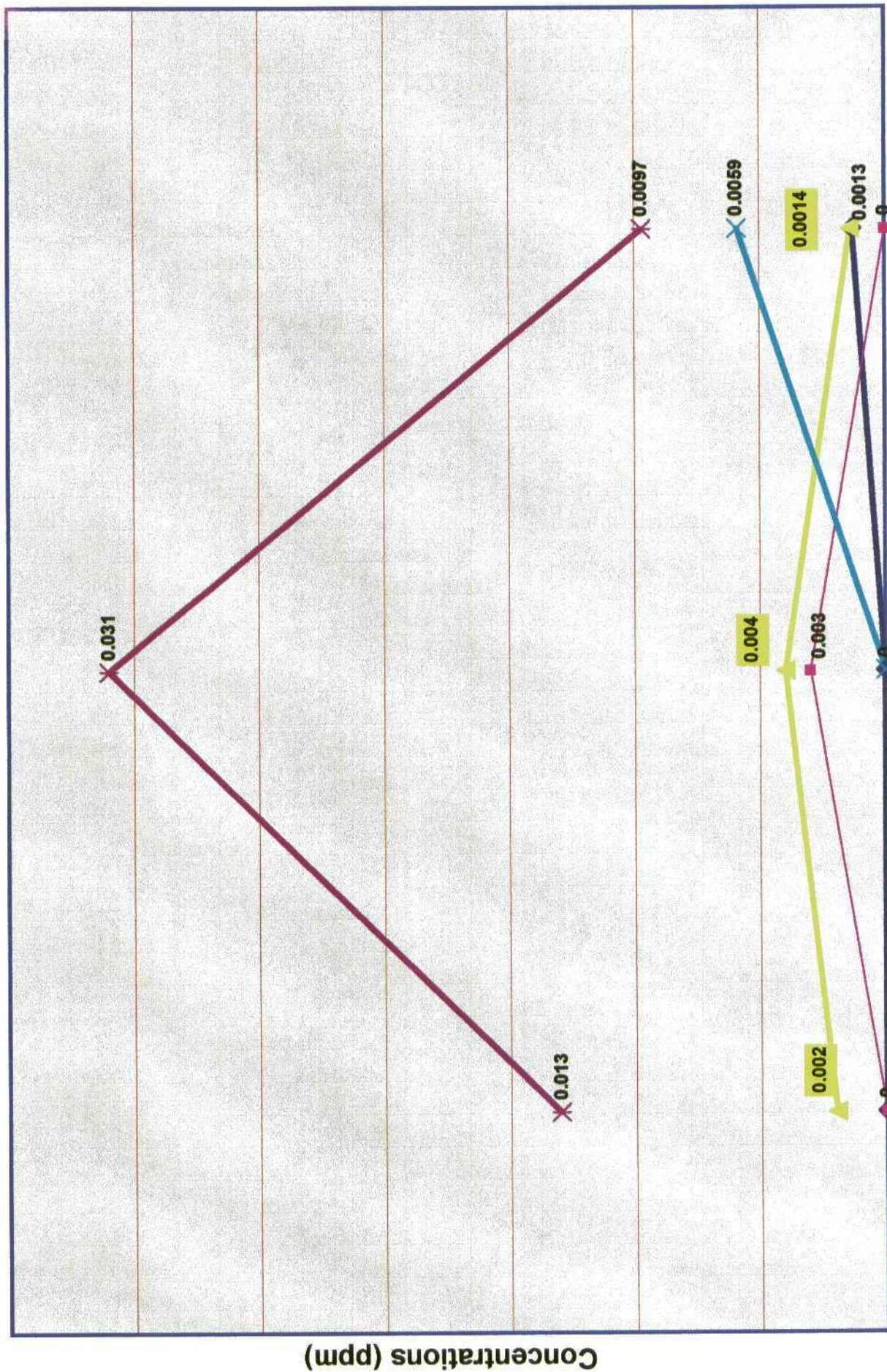


Monitoring Well #35

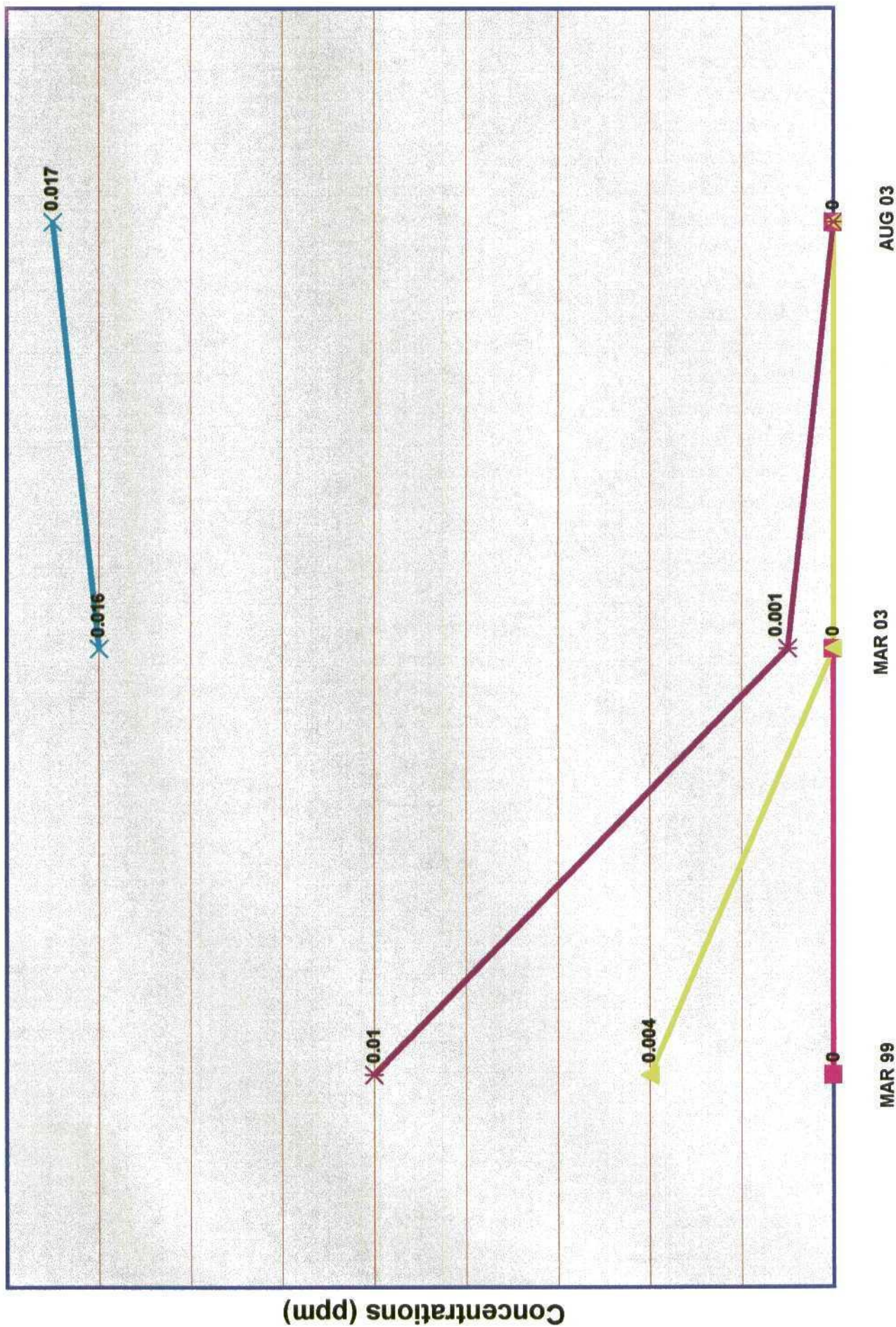
◆ Benzene
 ■ Toluene
 ▲ Ethylbenzene
 ✕ MTBE
 ✕ Total Xylene



Monitoring Well #37



Monitoring Well #38

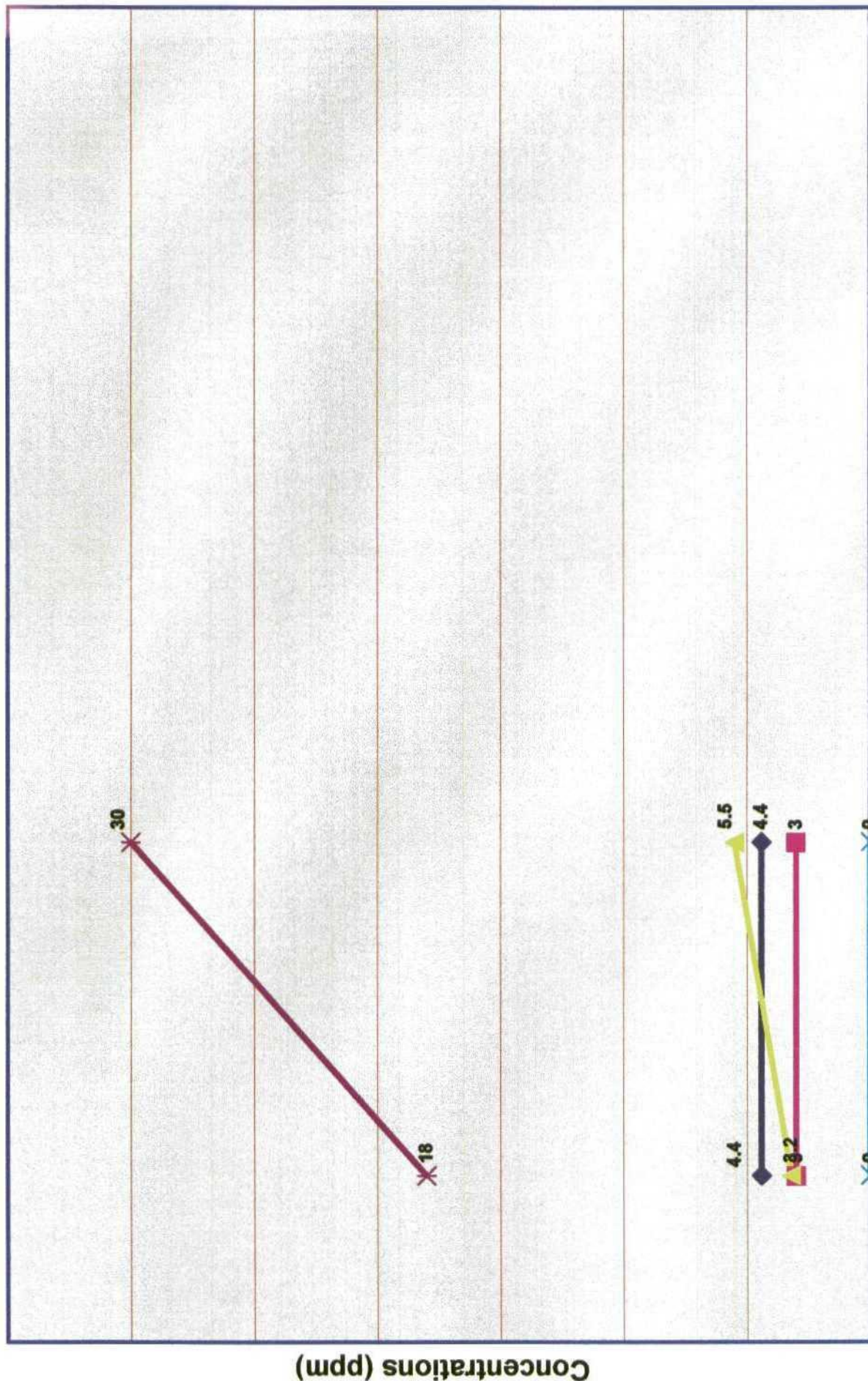


Monitoring Well #45

Legend:

- Benzene
- Toluene
- Ethylbenzene
- MTBE
- Total Xylene

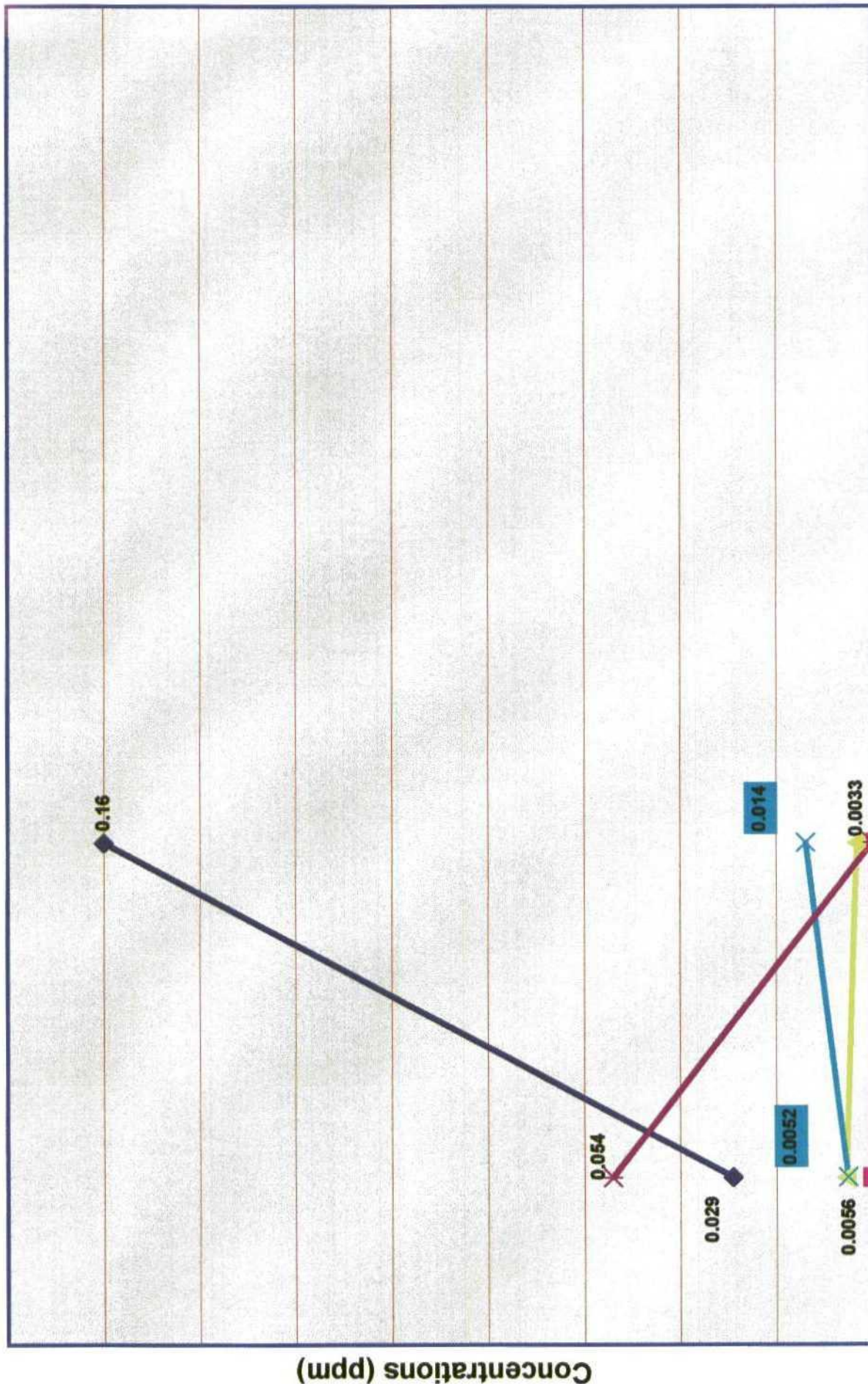
Concentrations (ppm)



Mar 03

Jan 03

Monitoring Well #47

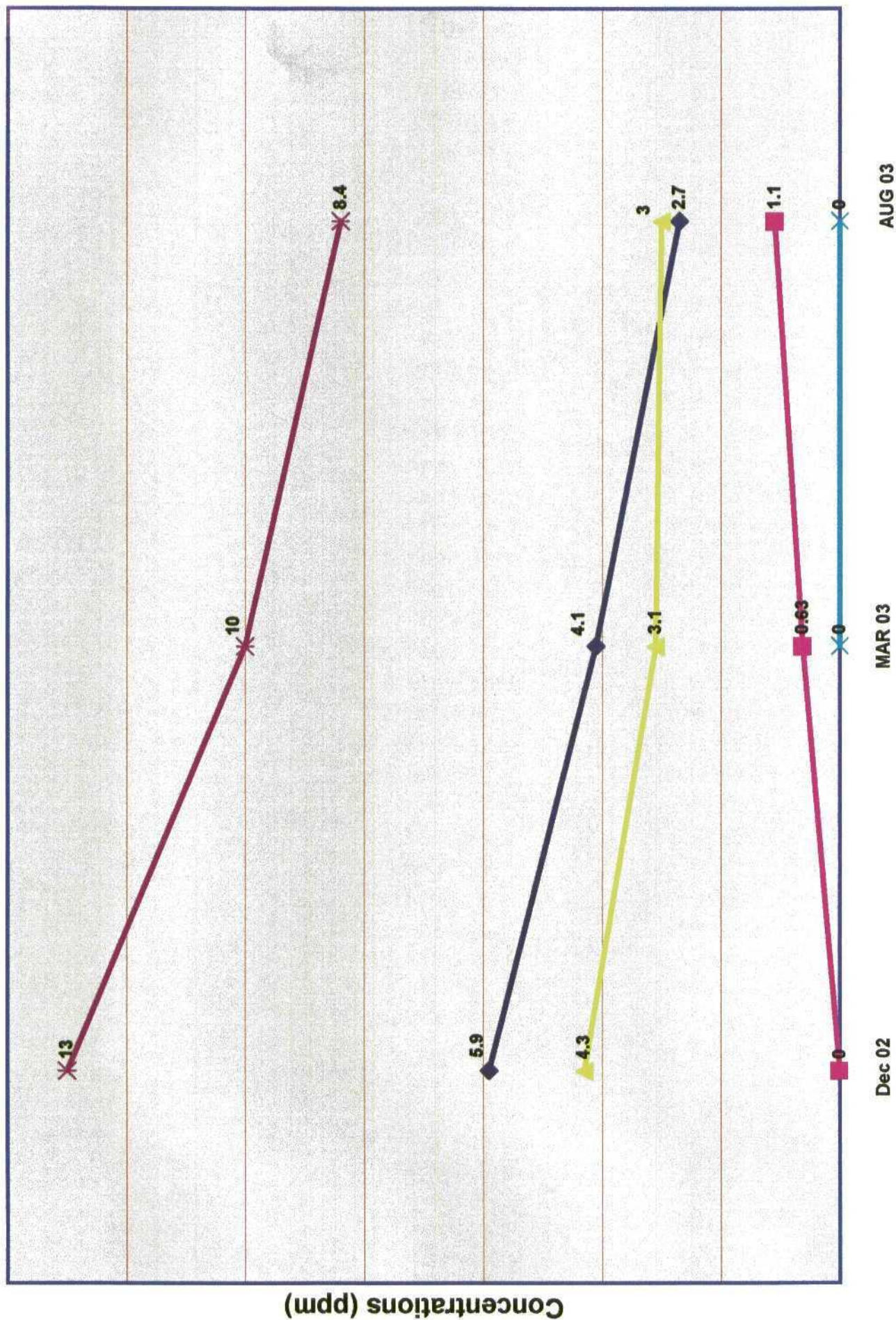


Apr 03

Aug 03

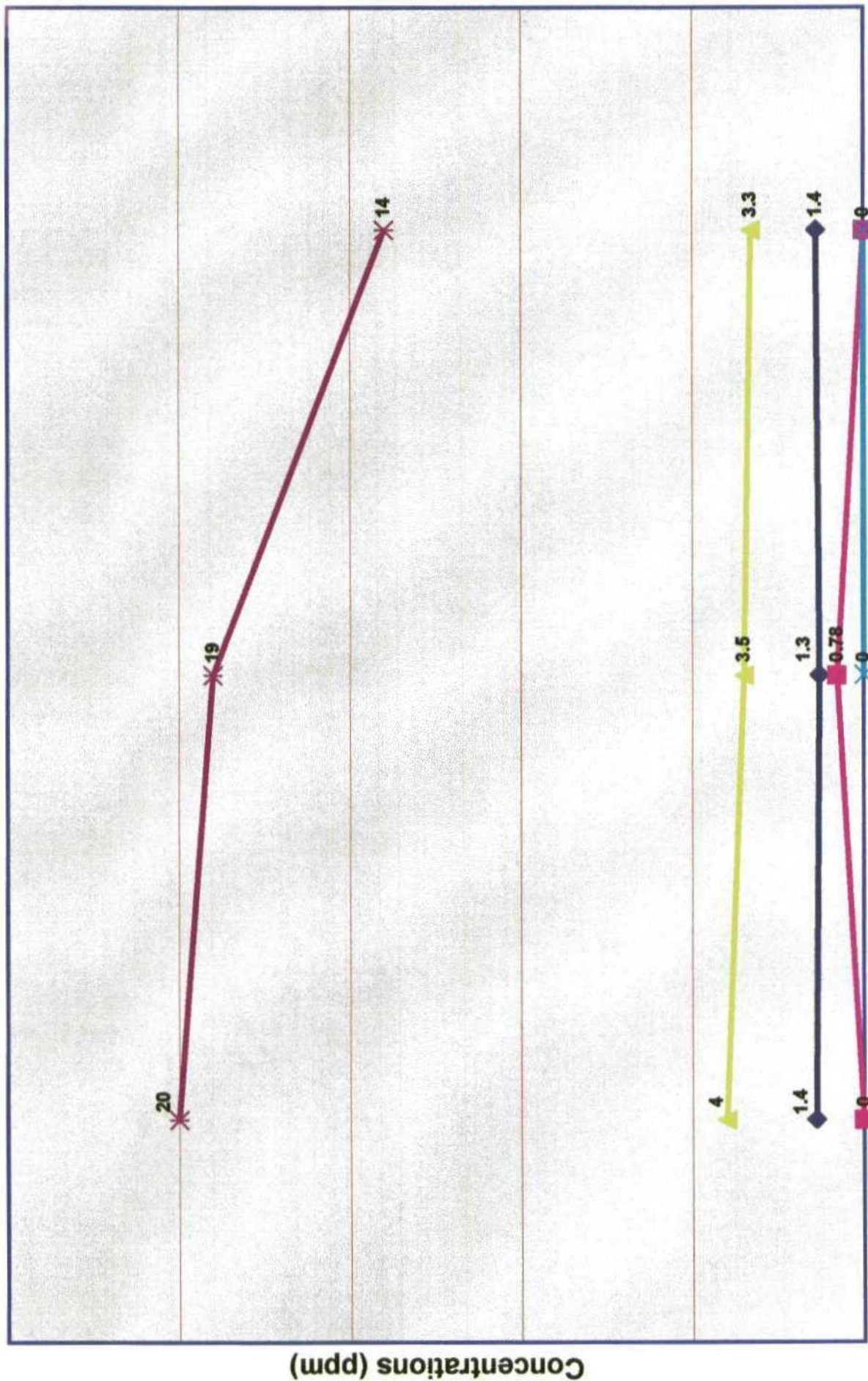
Piezometer #4

Benzene Toluene Ethylbenzene MTBE Total Xylene



Piezometer #5

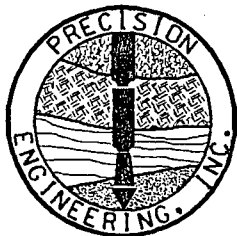
◆ Benzene
 ■ Toluene
 ▲ Ethylbenzene
 ✕ MTBE
 ✕ Total Xylene



Dec 02

MAR 03

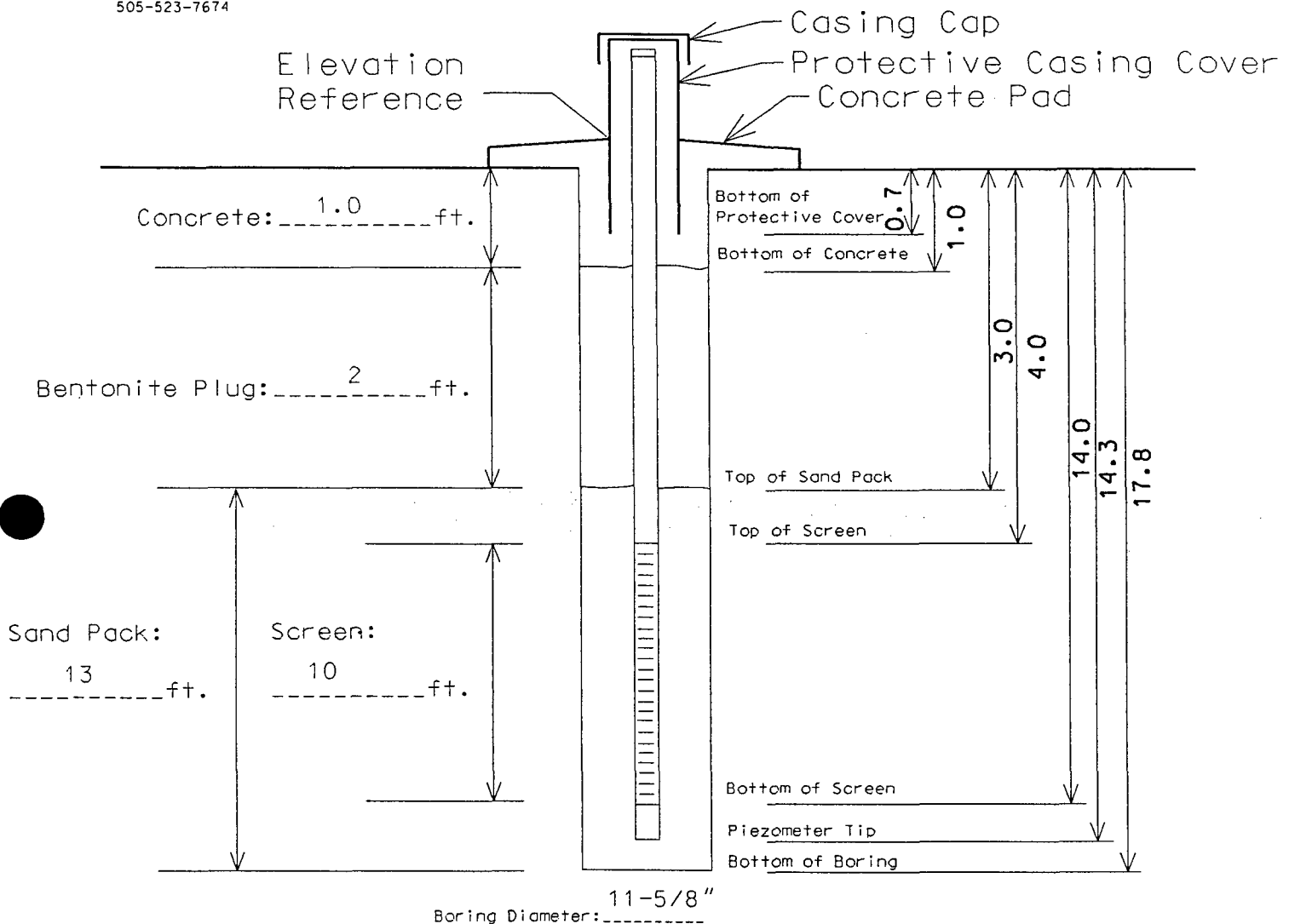
AUG 03



505-523-7674

Installation Diagram

Monitoring Well No. MW - 45



Sand Type: 10-20 Silica

Bollards, Type/Size: Steel, 3" min.

Bentonite: 3/8" Chip

Screen Type/Size: 4" PVC Sch. 40, 0.010" Slotted

Cement/Grout: _____

Riser Type/Size: 4" PVC Sch. 40

Water: Potable

Locking Expandable Casing Plug? Yes

Site Northing: 5790.85

Other: N/A

Bottom Cap Used? Yes

Site Easting: 2837.78

Project #: 03-015

Project Name: Bloomfield Wells

Elevation: 5496.33

Sheet: 1 of 1

PRECISION ENGINEERING, INC.

File #:03-015

Bore Point:N5790.85'

E2837.78

Water Elev: 9.54'

Boring No.: MW 45

LOG OF TEST BORINGS

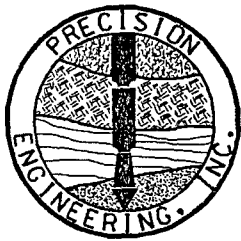
Site:Giant Refinery

Bloomfield, NM

Elevation: 5496.33

Date:1-15-03

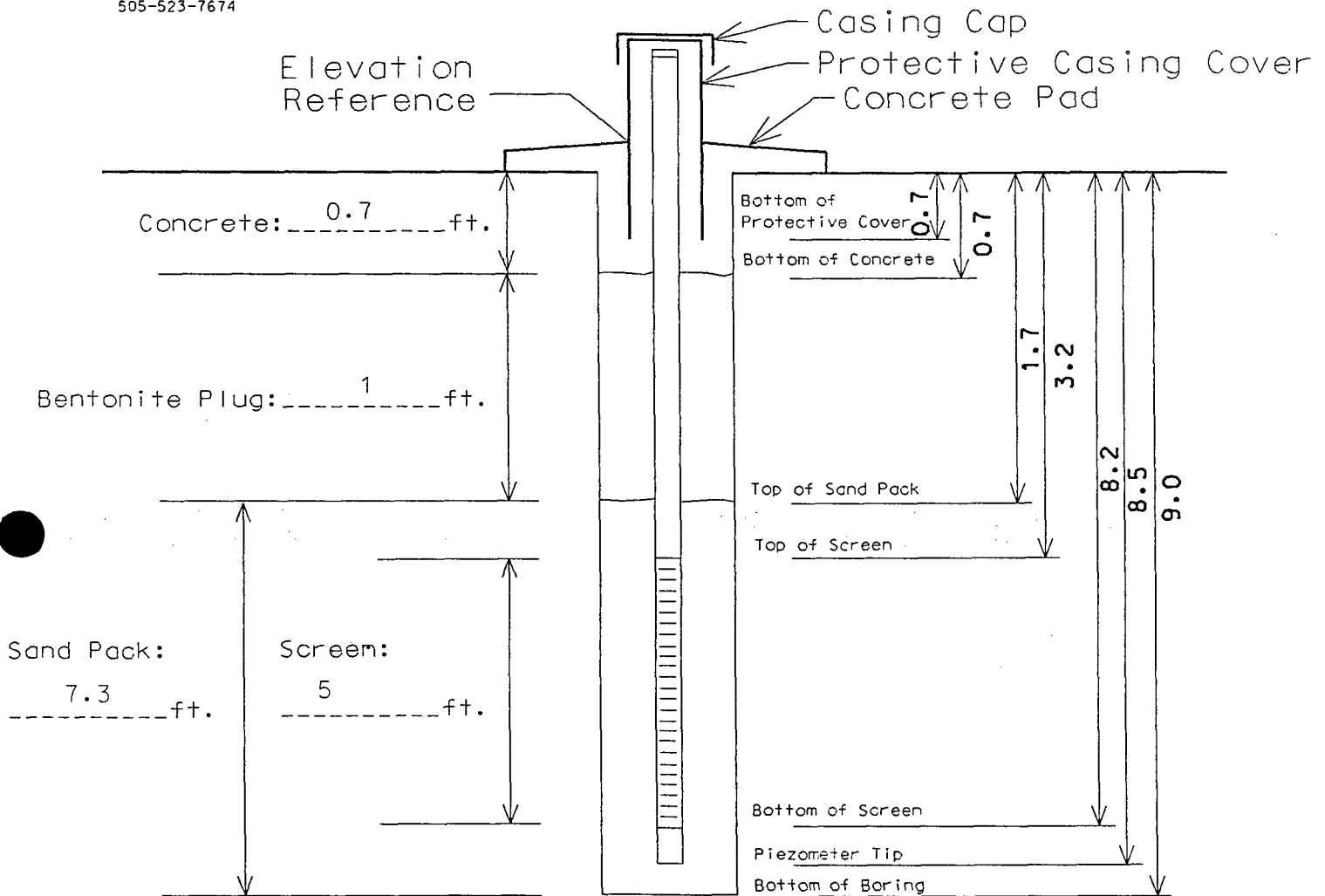
LAB #	DEPTH	BLOW COUNT	P L O T	S C A L E	S A M P L E	MATERIAL CHARACTERISTICS (MOISTURE,CONDITION,COLOR,GRAINSIZE,ETC.)	%M	L	PI	CLASS.
	0-1.0	Grab	00*00+		G	GRAVEL, TO 12", SANDY, DENSE, DAMP				
	1.0-5.0		00*00+		G					
			00*00+		G					
			00*00+		G					
			00*00+	2.5	G					
			00*00+		G					
			00*00+		G					
			00*00+		G					
			00*00+		G					
	5.0-6.5	6-14-32	00*00+	5.0	G					
			00*00+		S					
			00*00+		S					
	6.5-7.0	7-60	00*00+		S					
			00*00+		S					
						NACIMIENTO FORMATION				
	7.0-8.5	37-27-31	---+---	7.5	S	MUDSTONE, SANDY, DENSE, WET, DARK GREEN				
			---+---		S					
			---+---		S					
	9.0-10.0	14-65	---+---		S	SAME, HYDROCARBON ODOR (GASOLINE)				
			---+---		S					
			---+---	10.0	S					
	10.0-11.0	16-60-60(4)	---+---		S					
			---+---		S					
			---+---							
			---+---							
			---+---							
	14.0-14.7	54-50(1")	---+---		S	SOME LAMINATION, LIGHTER IN COLOR				
			---+---	15.0	S					
			---+---							
			---+---							
			---+---							
	17.0-17.8	36-50(3")	---+---		S	SANDSTONE, WEAK, SILTY, MUDDY, WHITE/LIGHT				
	17.8		---+---		S	BROWN, VERY DENSE, WET-MOIST				
	TOTAL DEPTH									
				20.0						
Size & Type of Boring:4 1/4" ID HOLLOW STEMMED AUGER						Logged By: WHK				



505-523-7674

Installation Diagram

Monitoring Well No. MW - 46



Sand Type: 10-20 Silica Bollards, Type/Size: Steel, 3" min.

Bentonite: 3/8" Chip Screen Type/Size: 4" PVC Sch. 40, 0.010" Slotted

Cement/Grout: Riser Type/Size: 4" PVC Sch. 40

Water: Potable Locking Expandable Casing Plug? Yes Site Northing: 5560.48

Other: N/A Bottom Cap Used? Yes Site Easting: 2576.06

Project #: 03-015 Project Name: Bloomfield Wells Elevation: 5496.43

Sheet: 1 of 1

PRECISION ENGINEERING, INC.

File #:03-015

Bore Point:N5560.48'
E2576.06

LOG OF TEST BORINGS

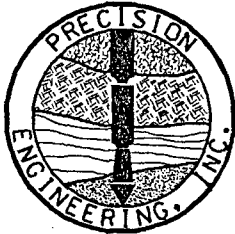
Site:Giant Refinery
Bloomfield, NM
Elevation: 5496.43

Water Elev:

Boring No.: MW 46

Date:1-16-03

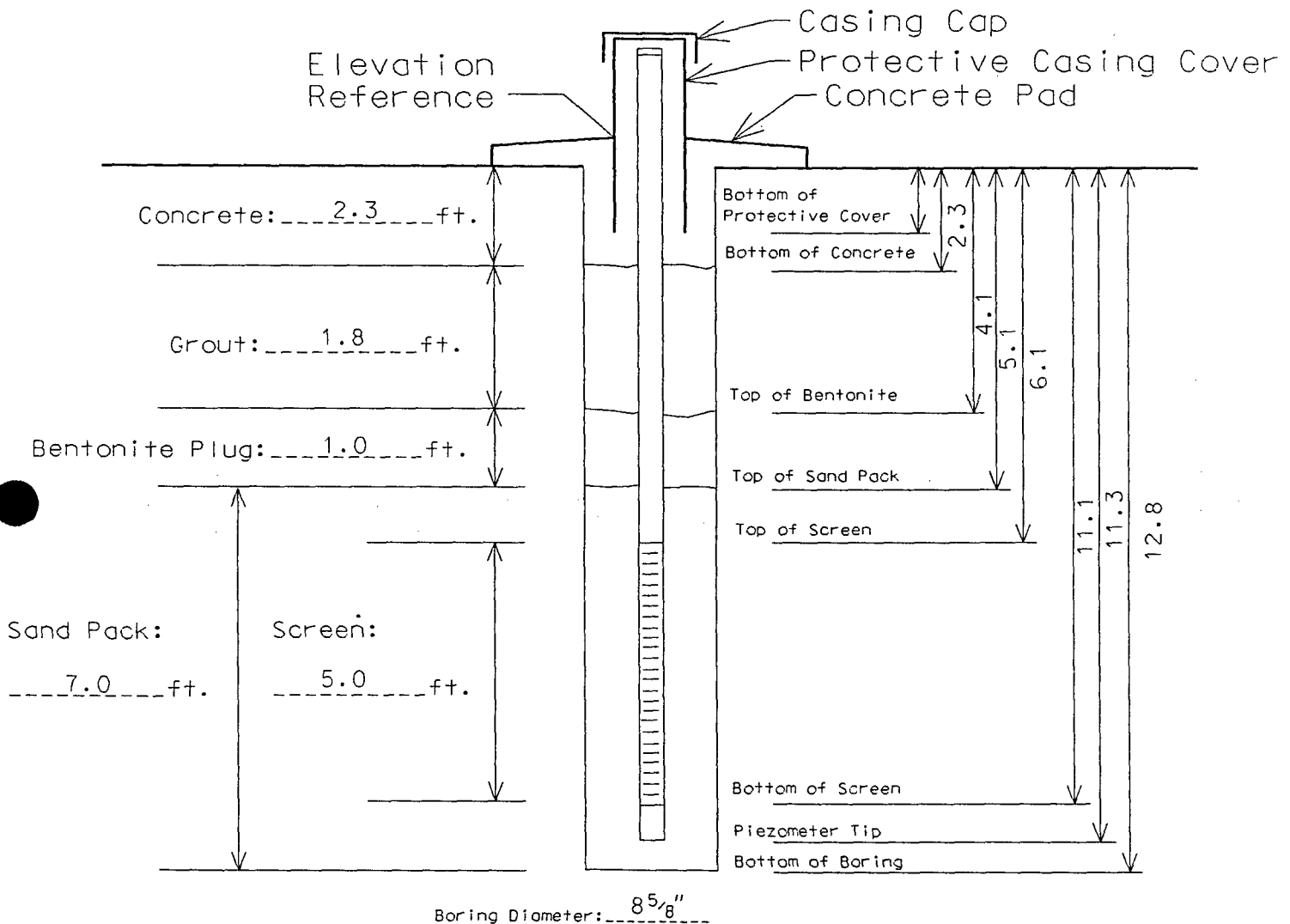
LAB #	DEPTH	BLOW COUNT	P L O T	S C A L E	S A M P L E	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR, GRAINSIZE, ETC.)	%M	L	PI	CLASS.
	0-1.0	Grab	**0**0		G	<u>SAND</u> , VERY GRAVELLY, COBBLY, LIGHT BROWN,				
			00		G	LOOSE				
			00							
			00							
			00	2.5						
			00							
			00							
			00							
			00							
			00							
	5.0-6.5	3-4-4	**0**0	5.0	S	SAME				
			00		S					
			00		S	NACIMIENTO FORMATION				
	6.5-8.0	13-18-18	--- --	7.5	S	<u>MUDSTONE</u> , SILTY, HARD, DRY, LIGHT GREEN				
			--- --		S					
			--- --		S					
	9.0		--- --							
	TOTAL DEPTH			10.0						
				15.0						
				20.0						
Size & Type of Boring:4 1/4" ID HOLLOW STEMMED AUGER							Logged By: WHK			



505-523-7674

Installation Diagram

Monitoring Well No. Seep 5
MW # 47



Sand Type: 10-20 Silica Bollards, Type/Size: Steel, 3"
Bentonite: 3/8" Chips Screen Type/Size: 2" PVC Sch. 40, 0.010" Slotted
Cement/Grout: 6% Bentonite Riser Type/Size: 2" PVC Sch. 40
Water: Potable Locking Expandable Casing Plug? Yes Site Northing: 5413.57
Other: N/A Bottom Cap Used? Yes Site Easting: 2220.90
Project #: 03-015 Project Name: Giant Refining Co. Bloomfield Wells Elevation: TBD

Bore Point: PLANT COORDINATES

N5413.7 E2220.90

Elev: 7.49'

Boring No.: Seep 5

LOG OF TEST BORINGS

Site: Bloomfield

Refinery

Elevation: TO BE DETERMINED

Date: 3-6-03

LAB #	DEPTH	BLOW COUNT	P L O T	S C A L E	S A M P L E	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR, GRAIN SIZE, ETC.)	%M	LL	PI	CLASS.
	0.0-5.0	GRAB	00**00		G	GRAVEL, MEDIUM SANDY, LIGHT BROWN, SOME COBBLES TO BOULDER SIZE, DENSE				
			00**00		G					
			00**00		G					
			00**00		G					
			00**00	2.5	G					
			00**00		G					
			00**00		G					
			00**00		G					
			00**00		G					
			00**00		G					
	5.0-6.5	8-18-18	00**00	5.0	G	GRAVEL, MEDIUM SANDY, LIGHT BROWN, SOME COBBLES TO BOULDER SIZE, DENSE				
			00**00		S					
			00**00		S					
			00**00		S					
			00**00							
			00**00	7.5						
			00**00							
			00**00							
			00**00							
			00**00							
	9.0-9.7	9-100(1)	00**00	10						
	10.2-11.3		-----		S	MACIMIENTO FORMATION MUDSTONE, SILTSTONE, FISSILE, BLACK, HARD, WET				
			-----		S					
	11.3-12.8	13-37-60	-----		S					

	12.8		-----							
	TOTAL DEPTH			15						
				20						

Size & Type of Boring: 4-1/4" ID Hollow Stemmed Auger

Logged By: WHK

Logged By: WHK

Bore Point: End of Hammond Ditch

P.O. Box 422

Site: Bloomfield

Road adjacent to fence bend in

Las Cruces, NM 88004

Refinery

cut section

505-523-7674

Water Elevation: Not Encountered

Elevation: Existing

Boring No.: SB1-1103

Log of Test Borings

Date: 11/4/03

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR, ETC.)	%M	LL	PI	CLASS.
	0-5.25				<u>Gravel</u> , very sandy, cobble and bouldersize rock very common. <u>Jackson Lake Terrace</u>				
	5.25-7.5	SPT		5.0	<u>Nacimient Formation</u> <u>Sandstone</u> , very weathered, light brown, moist, dense				
	T.D.			7.5					

SIZE & TYPE OF BORING: 4-1/4" ID Hollow Stemmed Auger

LOGGED BY: KM/NS

Sheet: 1 OF 1

Bore Point: Near N.E. corner of
evaporation lagoon on Hammond
Ditch Road

Precision Engineering, Inc.

P.O. Box 422

Las Cruces, NM 88004

505-523-7674

File #: 03-122

Site: Bloomfield

Refinery

Water Elevation: Not Encountered**Boring No.:** SB2-1103**Elevation:** Existing**Date:** 11/4/03

Log of Test Borings

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR, ETC.)	%M	LL	PI	CLASS.
	0-5.0				<u>Gravel</u> , very sandy, cobble and bouldersize rock, light brown, moist. <u>Jackson Lake Terrace</u>				
				5.0					
	5.0-7.5	SPT			<u>Nacimiento Formation</u> <u>Sandstone</u> , very weathered, green grey, clayey, (N/P), moist, medium dense (possible trace of water at top of the Nacimiento Formation)				
	T.D.			7.5					

SIZE & TYPE OF BORING: 4-1/4" ID Hollow Stemmed Auger

LOGGED BY: KM/NS

C:\AAFWFILE\projects\2003\03-122[Bloom2.xls]Sheet1

Sheet: 1 OF 1

Bore Point: 385' West of SB3-1103
along Hammond Ditch Road

Precision Engineering, Inc.

P.O. Box 422
Las Cruces, NM 88004
505-523-7674

File #: 03-122

Site: Bloomfield
Refinery

Water Elevation: Not Encountered

Boring No.: SB4-1103

Log of Test Borings

Elevation: Existing

Date: 11/4/03

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR, ETC.)	%M	LL	PI	CLASS.
	0-8.5			5.0 7.5	<u>Gravel</u> , sandy, cobble and bouldersize material common; moist, dense, very difficult to drill 7.5-8.5', dry from 7.5-8.5' <u>Jackson Lake Terrace</u>				
	8.5-9.0 9.0-10.5	SPT		10.0 10.5	<u>Nacimiento Formation</u> <u>Sandstone</u> , weathered, yellow-brown to light brown, moist-damp, hard				
	T.D.								

SIZE & TYPE OF BORING: 4-1/4" ID Hollow Stemmed Auger

LOGGED BY: KM/NS

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Bore Point: West side outfall, north
side of Hammond Ditch Road

Precision Engineering, Inc.

P.O. Box 422
Las Cruces, NM 88004
505-523-7674

File #: 03-122

Site: Bloomfield
Refinery

Water Elevation: Not Encountered

Boring No.: SB5-1103

Log of Test Borings

Elevation: Existing

Date: 11/4/03

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR, ETC.)	%M	LL	PI	CLASS.
	0-2.5			2.5	<u>Sand</u> , fine, silty (Qe), brown, moist, loose				
	2.5-8.75			5.0	<u>Gravel</u> , sandy, cobbles and boulders common, light brown, moist, very dense <u>Jackson Lake Terrace</u>				
				7.5					
	8.75-10.25	9-19-20		10.0	<u>Nacimiento Formation</u> <u>Sandstone</u> , weathered, yellow-brown to light brown, argillaceous, some black inclusions medium-grained				
	T.D.			10.25	(no water bearing zones)				

SIZE & TYPE OF BORING: 4-1/4" ID Hollow Stemmed Auger

LOGGED BY: KM/NS

Sheet: 1 OF 1

Precision Engineering, Inc.

File #: 03-122

Bore Point: 275' west of SB5 on
Hammond Ditch Road, west side of
road

P.O. Box 422
Las Cruces, NM 88004
505-523-7674

Site: Bloomfield
Refinery

Water Elevation: Not Encountered

Elevation: Existing

Boring No.: SB6-1103

Log of Test Borings

Date: 11/4/03

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR, ETC.)	%M	LL	PI	CLASS.
	0-3.5				<u>Sand</u> , fine, silty (Qe), brown, damp-moist, loose				
	3.5-8.0			5.0	<u>Gravel</u> , sandy, cobble and boulder size material common, light brown, difficult to drill, water bearing. <u>Jackson Lake Terrace</u>				
	8.0-10.5	17-26-49		10.0	<u>Nacimiento Formation</u> <u>Sandstone</u> , weathered, yellow-brown to light brown, argillaceous, laminar, damp-moist, very dense				
	T.D.			10.5	Installed 2" hand slotted PVC (slotted 48")				

SIZE & TYPE OF BORING: 4-1/4" ID Hollow Stemmed Auger

LOGGED BY: KM/NS

C:\AAFWFILE\projects\2003\03-122\Bloom6.xls]Sheet1

Bore Point: 230' west of SB6 on
Hammond Ditch Road, adjacent to
siphon on west side of road

P.O. Box 422
Las Cruces, NM 88004
505-523-7674

Site: Bloomfield
Refinery

Water Elevation: 9.0'

Elevation: Existing

Boring No.: SB7-1103

Log of Test Borings

Date: 11/4/03

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR, ETC.)	%M	LL	PI	CLASS.
	0-2.5				<u>Sand</u>				
	2.5-10.0			2.5	<u>Gravel</u> , sandy, cobbles and boulders, very dense, tan, moist, difficult to drill, water bearing at 9.0', (free product). <u>Jackson Lake Terrace</u>				
				5.0					
				7.5					
				10.0					
	10.5-12.0				<u>Nacimiento Formation</u> <u>Sandstone</u> , weathered, yellow-brown, laminar banded (yellow, brown, red), damp-moist, hard				
	T.D.			12.0	Installed 2" hand slotted PVC (slotted 48")				

SIZE & TYPE OF BORING: 4-1/4" ID Hollow Stemmed Auger

LOGGED BY: KM/NS

Bore Point: West side of Hammond

P.O. Box 422

Site: Bloomfield

Ditch Road, 100' east of overhead

Las Cruces, NM 88004

Refinery

pipe rack

505-523-7674

Water Elevation: Not Encountered

Elevation: Existing

Boring No.: SB8-1103

Log of Test Borings

Date: 11/5/03

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR, ETC.)	%M	LL	PI	CLASS.
	0-7.5			5.0	<u>Gravel</u> , sandy, cobbles and boulders, light brown, moist, very dense, difficult drilling, water bearing. <u>Jackson Lake Terrace</u>				
	7.5-10.0	85 (12")		10.0	<u>Nacimiento Formation</u> <u>Sandstone</u> , weathered, not water bearing. very argillaceous, some claystone fragments, hydrocarbon odor at 9.0'				
	10-11.0				<u>Sandstone</u> , weathered, medium grained, slightly argillaceous, yellow-brown, damp-moist, very dense, laminar banded, some red laminae				
	T.D.			11.0	Installed 2" hand slotted PVC (slotted 48")				

SIZE & TYPE OF BORING: 4-1/4" ID Hollow Stemmed Auger

LOGGED BY: KM/NS

Bore Point: 260' west of pipe rack
crossing on west side of Hammond
Ditch Road

P.O. Box 422
Las Cruces, NM 88004
505-523-7674

Site: Bloomfield Refinery

Water Elevation: Not Encountered

Boring No.: SB9-1103

Elevation: Existing

Date: 11/5/03

Log of Test Borings

[illegible]

SIZE & TYPE OF BORING: 4-1/4" ID Hollow Stemmed Auger

LOGGED BY: KM/NS

C:\AAFWFILE\projects\2003\03-122\Bloom9.xls]Sheet1

Sheet: 1 OF 1

Precision Engineering, Inc.

File #: 03-122

Bore Point: SW corner of fresh-
water pondP.O. Box 422
Las Cruces, NM 88004
505-523-7674Site: Bloomfield
Refinery

Water Elevation: Not Encountered

Elevation: Existing

Boring No.: SB11-1103

Log of Test Borings

Date: 11/6/03

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR, ETC.)	%M	LL	PI	CLASS.
	0-7.0			5.0	<u>Sand</u> , silty, slightly clayey, brown, moist, loose, (Qe), more clay with depth > 4'				
	7.0-10.0			7.0 10.0	<u>Clay</u> , sandy, light brown, moist-wet, firm				
	10.0-15.0			15.0	<u>Gravel</u> , medium to coarse, sandy, cobbles and boulders are abundant, brown, moist				
	15.0-20.0			20.0	<u>Same as above</u> , with occasional sand lens < 8-10" thick				

SIZE & TYPE OF BORING: 4-1/4" ID Hollow Stemmed Auger

LOGGED BY: KM/NS

C:\AAFWFILE\projects\2003\03-122\Bloom11.xls\Sheet1

Bore Point: SW corner of fresh-
water pond

P.O. Box 422
Las Cruces, NM 88004
505-523-7674

Site: Bloomfield
Refinery

Water Elevation: Not Encountered

Boring No.: SB11-1103

Log of Test Borings

Elevation: Existing

Date: 11/6/03

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR, ETC.)	%M	LL	PI	CLASS.
	22.5-24.0			22.0	<u>Nacimiento Formation</u> <u>Sandstone</u> , weathered, very light brown, moist- not water bearing, dense				
	T.D.			24.0	Installed 2" hand slotted PVC (slotted 60")				

SIZE & TYPE OF BORING: 4-1/4" ID Hollow Stemmed Auger

LOGGED BY: KM/NS

Bore Point: 26' from Tank 14, 25'

P.O. Box 422

Site: Bloomfield

from centerline of elbow on most

Las Cruces, NM 88004

Refinery

easterly pipe on S. side of Tank 14

505-523-7674

Water Elevation: Not Encountered

Elevation: Existing

Boring No.: SB12-1103

Log of Test Borings

Date: 11/6/03

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR, ETC.)	%M	LL	PI	CLASS.
	0-3.5				<u>Sand</u> , very fine, silty, light brown, damp, (Qe)				
	3.5-7.0			5.0	<u>Gravel</u> , sandy, brown, cobbles/boulders common, damp-moist, dense, difficult drilling				
	7.0-11.0			7.0 10.0	<u>Sand</u> , medium, clean, light brown, damp, loose, occasional fine gravel				
	11.0-17.5			15.0	<u>Gravel</u> , sandy, clean, cobbles and boulders boulders are abundant, brown, damp, very dense, difficult to drill				
	17.5-20.0				<u>Nacimiento Formation</u> <u>Sandstone</u> , weathered, yellow-brown, very dense, not water bearing				
	T.D.			20.0	Installed 2" hand slotted PVC (slotted 60")				

SIZE & TYPE OF BORING: 4-1/4" ID Hollow Stemmed Auger

LOGGED BY: KM/NS



EAST COLLECTION GALLERY

8" PVC VERTICAL PIPE

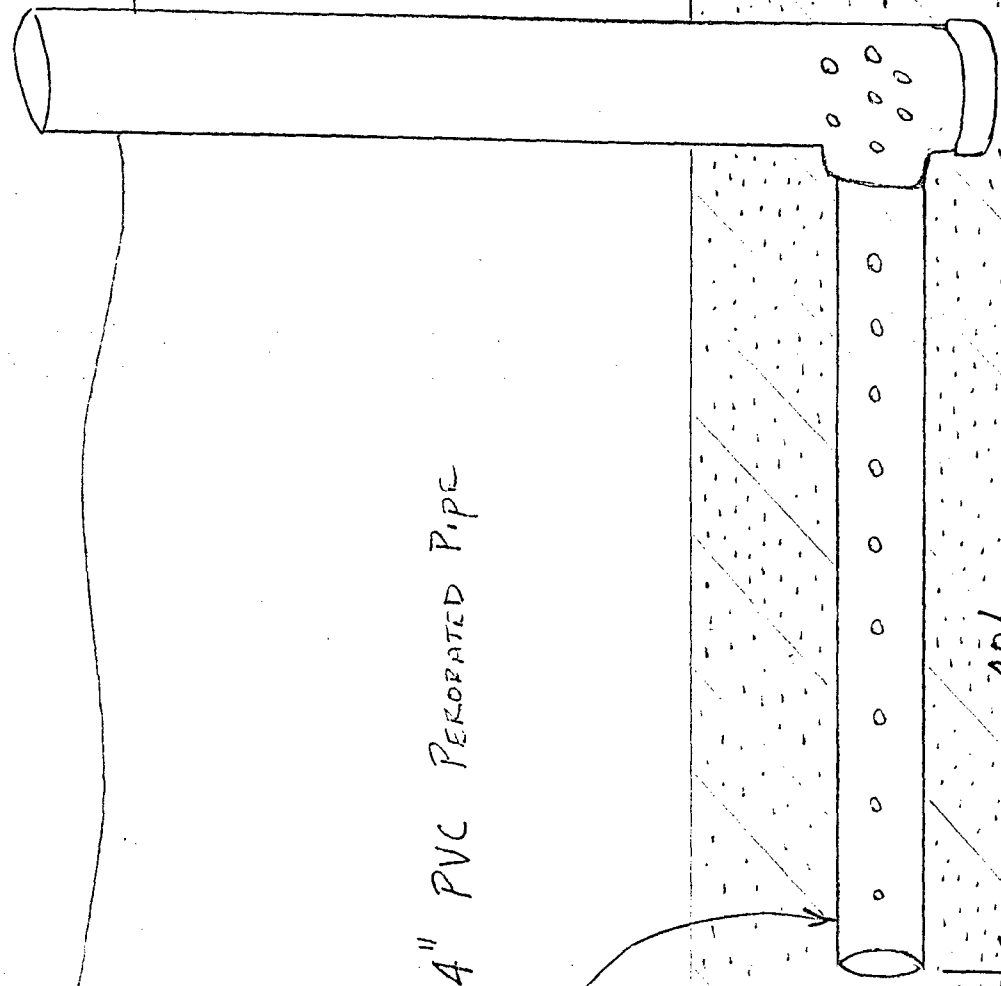
4" PVC PERFORATED PIPE

MIN 36" OF
2" GRAVEL

40'

NACIMIENTO

16'



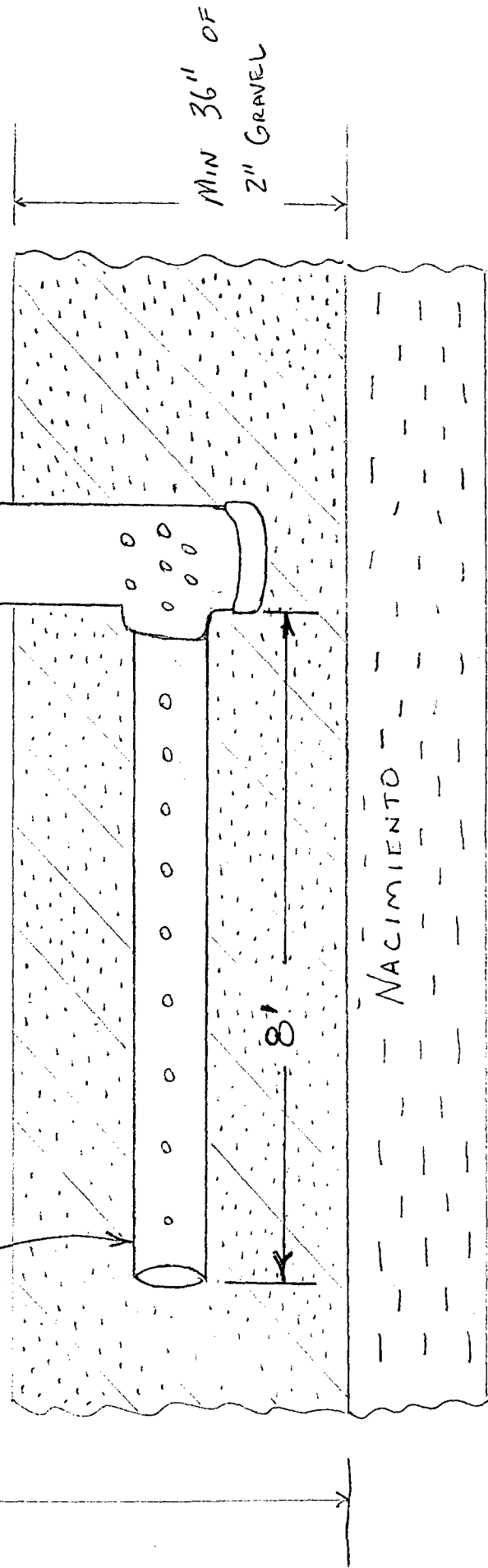
WEST COLLECTION GALLERY

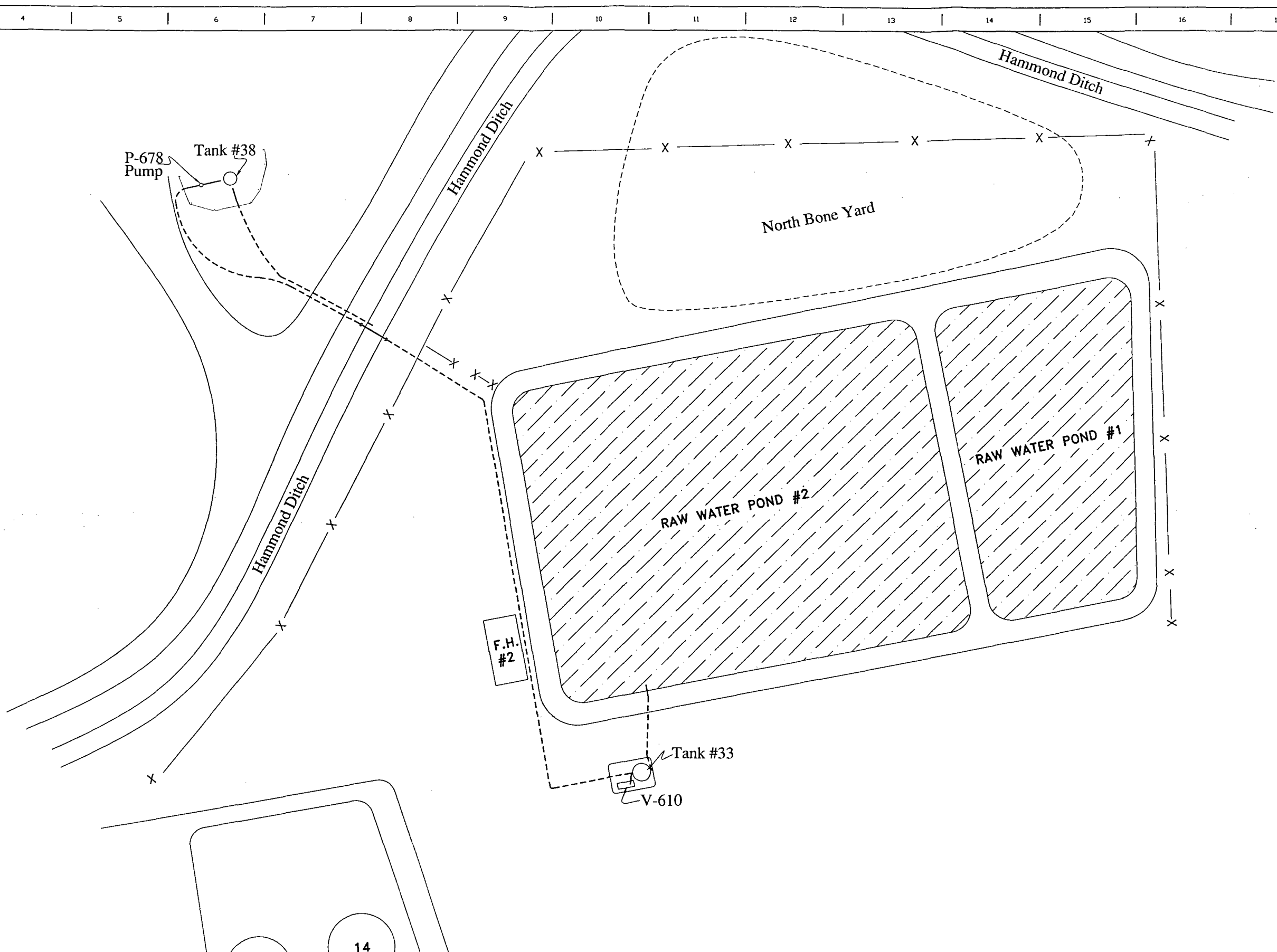


8" PVC VERTICAL PIPE

22'

4" PVC PERFORATED PIPE





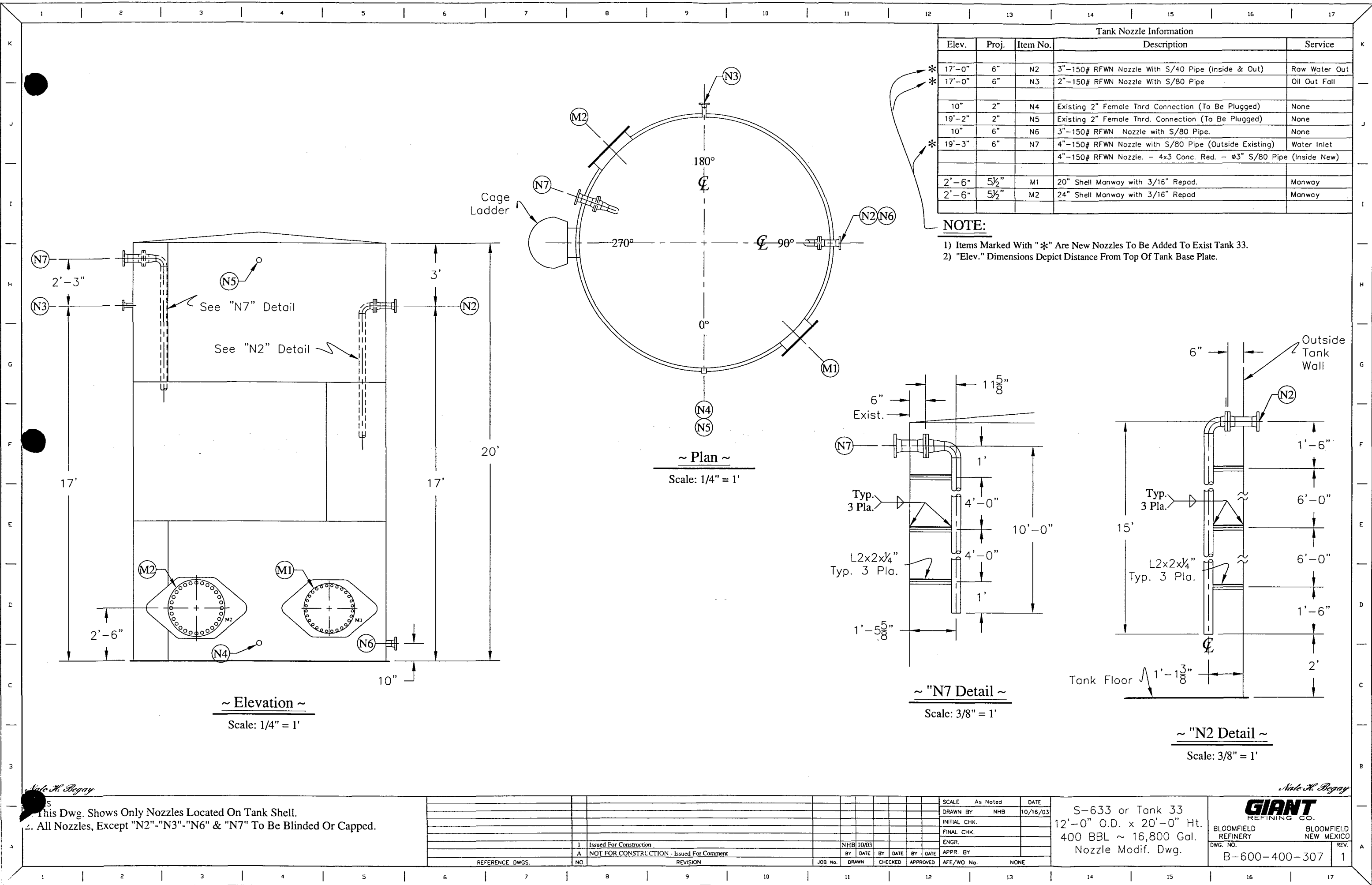
Above Grade Pipe _____
Below Grade Pipe - - - - -

5
S
Pipe Field Routed, Dwg Shows Approx. Location.

[illegible]

As Built Pipe-
Plot Plan For
East Out Fall Project

 GIANT REFINING CO.	
BLOOMFIELD REFINERY	BLOOMFIELD NEW MEXICO
DWG. NO. B-500-900-021	REV. A



Tank Nozzle Information					
Elev.	Proj.	Item No.	Description	Service	
17'-0"	6"	N2	3"-150# RFWN Nozzle With S/40 Pipe (Inside & Out)	Raw Water Out	
17'-0"	6"	N3	2"-150# RFWN Nozzle With S/80 Pipe	Oil Out Fall	
10"	2"	N4	Existing 2" Female Thrd Connection (To Be Plugged)	None	
19'-2"	2"	N5	Existing 2" Female Thrd. Connection (To Be Plugged)	None	
10"	6"	N6	3"-150# RFWN Nozzle with S/80 Pipe.	None	
19'-3"	6"	N7	4"-150# RFWN Nozzle with S/80 Pipe (Outside Existing)	Water Inlet	
			4"-150# RFWN Nozzle. - 4x3 Conc. Red. - ø3" S/80 Pipe (Inside New)		
2'-6"	5½"	M1	20" Shell Manway with 3/16" Repad.	Manway	
2'-6"	5½"	M2	24" Shell Manway with 3/16" Repad	Manway	

NOTE:

- 1) Items Marked With "*" Are New Nozzles To Be Added To Exist Tank 33.
- 2) "Elev." Dimensions Depict Distance From Top Of Tank Base Plate.

~ Elevation ~

Scale: 1/4" = 1'

~ Plan ~

Scale: 1/4" = 1'

~ "N7 Detail" ~

Scale: 3/8" = 1'

~ "N2 Detail" ~

Scale: 3/8" = 1'

This Dwg. Shows Only Nozzles Located On Tank Shell.
2. All Nozzles, Except "N2"- "N3"- "N6" & "N7" To Be Blinded Or Capped.

1	Issued For Construction	NHB	10/03	BY	DATE	BY	DATE	BY	DATE	SCALE	As Noted	DATE
A	NOT FOR CONSTRUCTION - Issued For Comment									DRAWN BY	NHB	10/16/03
										INITIAL CHK.		
										FINAL CHK.		
										ENGR.		
										APPR. BY		
										AFE/NO No.	NONE	

S-633 or Tank 33
12'-0" O.D. x 20'-0" Ht.
400 BBL ~ 16,800 Gal.
Nozzle Modif. Dwg.

GIANT
REFINING CO.
BLOOMFIELD
REFINERY
BLOOMFIELD
NEW MEXICO
DWG. NO. B-600-400-307
REV. 1

MW # 32

(Back ground Well)

Water Analysis



Hall Environmental Analysis Laboratory

COVER LETTER

February 07, 2003

Cindy Hurtado
San Juan Refinery
#50 Road 4990
Bloomfield, NM 87413
TEL: (505) 632-6151
FAX (505) 632-3911

RE: Background

Order No.: 0301188

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory received 1 sample on 1/30/2003 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

Hall Environmental Analysis Laboratory

Date: 06-Feb-03

CLIENT: San Juan Refinery
Lab Order: 0301188
Project: Background
Lab ID: 0301188-01

Client Sample ID: MW#32
Collection Date: 1/29/2003 11:25:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: JMP
Diesel Range Organics (DRO)	ND	0.50		mg/L	1	2/5/2003 10:03:47 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	2/5/2003 10:03:47 PM
Surr: DNOP	100	58-140		%REC	1	2/5/2003 10:03:47 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	1/30/2003 2:00:43 PM
Surr: BFB	91.8	74.5-115		%REC	1	1/30/2003 2:00:43 PM
EPA METHOD 8021B: VOLATILES						Analyst: NB
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	1/30/2003 2:00:43 PM
Benzene	ND	0.50		µg/L	1	1/30/2003 2:00:43 PM
Toluene	ND	0.50		µg/L	1	1/30/2003 2:00:43 PM
Ethylbenzene	ND	0.50		µg/L	1	1/30/2003 2:00:43 PM
1,2,4-Trimethylbenzene	ND	0.50		µg/L	1	1/30/2003 2:00:43 PM
1,3,5-Trimethylbenzene	ND	0.50		µg/L	1	1/30/2003 2:00:43 PM
Xylenes, Total	ND	0.50		µg/L	1	1/30/2003 2:00:43 PM
Surr: 4-Bromofluorobenzene	93.4	74-118		%REC	1	1/30/2003 2:00:43 PM

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 06-Feb-03

CLIENT: Giant Refinery Company

Work Order: 0301188

Project: Background

QC SUMMARY REPORT

Method Blank

Sample ID	MB-3077	Batch ID:	3077	Test Code:	SW8015	Units:	mg/L	Analysis Date	2/5/2003 8:37:01 PM	Prep Date	2/3/2003
Client ID:		Run ID:	FID(17A)_030205A					SeqNo:	165060		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.50									
Motor Oil Range Organics (MRO)	ND	5.0									
Surr: DNOP	0.9519	0	1	0	95.2	58	140	0			

Sample ID	Reagent Blank 5m	Batch ID:	R7173	Test Code:	SW8015	Units:	mg/L	Analysis Date	1/30/2003 8:41:16 AM	Prep Date
Client ID:		Run ID:	PIDFID_030130A					SeqNo:	163455	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.026	0.050									J
Surr: BFB	17.49	0	20	0	87.5	74.5	115	0			

Sample ID	Reagent Blank 5m	Batch ID:	R7173	Test Code:	SW8021	Units:	µg/L	Analysis Date	1/30/2003 8:41:16 AM	Prep Date
Client ID:		Run ID:	PIDFID_030130A					SeqNo:	163444	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	2.5									
Benzene	ND	0.50									
Toluene	ND	0.50									
Ethylbenzene	ND	0.50									
1,2,4-Trimethylbenzene	ND	0.50									
1,3,5-Trimethylbenzene	ND	0.50									
Xylenes, Total	ND	0.50									
Surr: 4-Bromofluorobenzene	17.82	0	20	0	89.1	74	118	0			

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

/

Hall Environmental Analysis Laboratory

Date: 06-Feb-03

CLIENT: Giant Refinery Company
Work Order: 0301188
Project: Background

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID	0301188-01aMS	Batch ID: R7173	Test Code: SW8015	Units: mg/L	Analysis Date	1/30/2003 3:34:28 PM	Prep Date					
Client ID:	MW#32		Run ID: PIDFID_030130A		SeqNo:	163533						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)		0.5084	0.050	0.5	0.0342	94.8	80.3	116	0			

Sample ID	0301188-01aMSD	Batch ID: R7173	Test Code: SW8015	Units: mg/L	Analysis Date	1/30/2003 4:05:44 PM	Prep Date					
Client ID:	MW#32		Run ID: PIDFID_030130A		SeqNo:	163534						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)		0.5116	0.050	0.5	0.0342	95.5	80.3	116	0.5084	0.627	8.39	

Sample ID	0301188-01aMS	Batch ID: R7173	Test Code: SW8021	Units: µg/L	Analysis Date	1/30/2003 2:31:57 PM	Prep Date					
Client ID:	MW#32		Run ID: PIDFID_030130A		SeqNo:	163513						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)		42.51	2.5	40	0	106	65	132	0			
Benzene		21.6	0.50	20	0	108	77	122	0			
Toluene		21	0.50	20	0	105	81	115	0			
Ethylbenzene		21.97	0.50	20	0	110	84	117	0			
1,2,4-Trimethylbenzene		19.96	0.50	20	0.1674	98.9	83	120	0			
1,3,5-Trimethylbenzene		21.79	0.50	20	0	109	85	115	0			
Xylenes, Total		64.14	0.50	60	0	107	84	116	0			

Qualifiers:

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

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Giant Refinery Company
 Work Order: 0301188
 Project: Background

QC SUMMARY REPORT
 Sample Matrix Spike Duplicate

Sample ID	0301188-01aMSD	Batch ID: R7173	Test Code: SW8021	Units: µg/L	Analysis Date	1/30/2003 3:03:10 PM	Prep Date				
Client ID:	MW#32		Run ID: PIDFID_030130A		SeqNo:	163519					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	43.38	2.5	40	0	108	65	132	42.51	2.01	28	
Benzene	21.59	0.50	20	0	108	77	122	21.6	0.0667	27	
Toluene	20.89	0.50	20	0	104	81	115	21	0.550	19	
Ethylbenzene	22.03	0.50	20	0	110	84	117	21.97	0.241	10	
1,2,4-Trimethylbenzene	20.04	0.50	20	0.1674	99.3	83	120	19.96	0.401	21	
1,3,5-Trimethylbenzene	21.72	0.50	20	0	109	85	115	21.79	0.297	10	
Xylenes, Total	64.42	0.50	60	0	107	84	116	64.14	0.426	13	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: 06-Feb-03

CLIENT: Giant Refinery Company

Work Order: 0301188

Project: Background

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID	LCS-3077	Batch ID: 3077	Test Code: SW8015	Units: mg/L	Analysis Date	2/5/2003 9:06:21 PM	Prep Date	2/3/2003				
Client ID:		Run ID:	FID(17A)_030205A		SeqNo:	165061						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)		4.23	0.50	5	0	84.6	127	0				
Sample ID	LCSD-3077	Batch ID: 3077	Test Code: SW8015	Units: mg/L	Analysis Date	2/5/2003 9:35:03 PM	Prep Date	2/3/2003				
Client ID:		Run ID:	FID(17A)_030205A		SeqNo:	165065						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)		4.843	0.50	5	0	96.9	71	161	4.23	13.5	23	
Sample ID	GRO Std 2.5ug	Batch ID: R7173	Test Code: SW8015	Units: mg/Kg	Analysis Date	1/30/2003 6:10:03 PM	Prep Date					
Client ID:		Run ID:	PIDFID_030130A		SeqNo:	163538						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)		24.66	5.0	25	0.026	98.5	85.8	111	0			
Sample ID	GRO Std 2.5ug	Batch ID: R7173	Test Code: SW8015	Units: mg/Kg	Analysis Date	1/30/2003 7:11:48 PM	Prep Date					
Client ID:		Run ID:	PIDFID_030130A		SeqNo:	163543						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)		24.87	5.0	25	0.026	99.4	85.8	111	24.66	0.848	11.6	
Sample ID	GRO Std 2.5ug	Batch ID: R7173	Test Code: SW8015	Units: mg/L	Analysis Date	1/30/2003 5:39:03 PM	Prep Date					
Client ID:		Run ID:	PIDFID_030130A		SeqNo:	163464						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)		0.481	0.050	0.5	0.026	91.0	80.3	116	0			

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

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Giant Refinery Company
Work Order: 0301188
Project: Background

QC SUMMARY REPORT
Laboratory Control Spike Duplicate

Sample ID	GRO Std 2.5ug	Batch ID: R7173	Test Code: SW8015	Units: mg/L	Analysis Date	1/30/2003 6:10:03 PM	Prep Date				
Client ID:		Run ID:	PIDFID_030130A		SeqNo:	163466					
Analyte		Result	PQL	SPK value	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)		0.4932	0.050	0.5	93.4	80.3	116	0.481	2.50	8.39	

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

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

2

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name **GIANT REFINERY BLOOM**

Date and Time Receive

Work Order Number **0301188**

Received by **AMG**

Checklist completed by

Signature

Date

Matrix:

Carrier name: UPS

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒
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?	1°	4° C ± 2 Acceptable	

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345-3975 Fax 505.345.4107
www.hallenvironmental.com

[illegible]

Remarks: 5-day turnaround
Please fax Results



$$\begin{aligned}
 5'' &= 1.02 \text{ gal/ft} \\
 4'' &= 0.74 \text{ gal/ft} \\
 3'' &= 0.3672 \text{ gal/ft} \\
 2'' &= 0.163 \text{ gal/ft}
 \end{aligned}$$

MW # 32 = 4" casing

Well volume

$$\begin{aligned}
 &\text{Total Depth} \\
 - &\text{Depth to Liquid} \\
 \hline
 &
 \end{aligned}$$

$$\begin{aligned}
 \text{Total Depth} &= 27.51 \\
 \text{Casing ht} &= 0.75 \\
 \hline
 &26.76 \\
 - &24.54 \\
 \hline
 &2.22 \text{ ft}
 \end{aligned}$$

Convert gallons using chart

$$x 3 = 3 \text{ well volumes}$$

MW # 32

$$4'' \text{ casing} = 0.74 \text{ gal/ft}$$

$$\begin{aligned}
 &27.51 \\
 - &24.54 \\
 \hline
 &2.97 \text{ ft}
 \end{aligned}$$

$$2.97 \text{ ft} \times 0.74 \text{ gal/ft} \times 3 = 6.59 \text{ gallons} = 3 \text{ well volumes}$$

$$2.22 \text{ ft} \times 0.74 \text{ gal/ft} \times 3 = 4.93 \text{ gallons} = 3 \text{ well volumes}$$

$$\begin{array}{r}
 2.22 \\
 0.74 \\
 \hline
 8.88 \\
 54 \\
 \hline
 6.428
 \end{array}$$

0.2 gallons per full bale

Get River Flow for day that take Piermont sample

MW # 45

Water & Soil Analysis



Hall Environmental Analysis Laboratory

COVER LETTER

February 10, 2003

Cindy Hurtado
Giant Refinery Company
#50 CR 4990
Bloomfield, NM 87413
TEL: (505) 632-6151
FAX (505) 632-3911

RE: New Monitor Well

Order No.: 0301127

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory received 2 samples on 1/21/2003 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

Hall Environmental Analysis Laboratory

Date: 11-Feb-03

CLIENT: Giant Refinery Company

Project: New Monitor Well

Lab Order: 0301127

CASE NARRATIVE

The dissolved metals were filtered at the laboratory with a 0.45 micron filter from the unpreserved container.

Hall Environmental Analysis Laboratory

Date: 10-Feb-03

CLIENT: Giant Refinery Company
Lab Order: 0301127
Project: New Monitor Well
Lab ID: 0301127-01

Client Sample ID: Developed H2O
Collection Date: 1/17/2003 1:30:00 PM

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: HVA
Fluoride	ND	1.0		mg/L	10	1/21/2003
Chloride	180	1.0		mg/L	10	1/21/2003
Nitrate (As N)+Nitrite (As N)	ND	1.0		mg/L	10	1/21/2003
Phosphorus, Orthophosphate (As P)	ND	5.0		mg/L	10	1/21/2003
Sulfate	24	5.0		mg/L	10	1/21/2003
EPA METHOD 8260B: VOLATILES						Analyst: JDC
Benzene	4400	100		µg/L	100	1/22/2003
Toluene	3000	100		µg/L	100	1/22/2003
Ethylbenzene	3200	100		µg/L	100	1/22/2003
Methyl tert-butyl ether (MTBE)	ND	100		µg/L	100	1/22/2003
1,2,4-Trimethylbenzene	2200	100		µg/L	100	1/22/2003
1,3,5-Trimethylbenzene	590	100		µg/L	100	1/22/2003
1,2-Dichloroethane (EDC)	ND	100		µg/L	100	1/22/2003
1,2-Dibromoethane (EDB)	ND	100		µg/L	100	1/22/2003
Naphthalene	410	200		µg/L	100	1/22/2003
1-Methylnaphthalene	ND	400		µg/L	100	1/22/2003
2-Methylnaphthalene	ND	400		µg/L	100	1/22/2003
Bromobenzene	ND	100		µg/L	100	1/22/2003
Bromochloromethane	ND	100		µg/L	100	1/22/2003
Bromodichloromethane	ND	100		µg/L	100	1/22/2003
Bromoform	ND	100		µg/L	100	1/22/2003
Bromomethane	ND	100		µg/L	100	1/22/2003
Carbon Tetrachloride	ND	100		µg/L	100	1/22/2003
Chlorobenzene	ND	100		µg/L	100	1/22/2003
Chloroethane	ND	200		µg/L	100	1/22/2003
Chloroform	ND	100		µg/L	100	1/22/2003
Chloromethane	ND	100		µg/L	100	1/22/2003
2-Chlorotoluene	ND	100		µg/L	100	1/22/2003
4-Chlorotoluene	ND	100		µg/L	100	1/22/2003
cis-1,2-DCE	ND	100		µg/L	100	1/22/2003
cis-1,3-Dichloropropene	ND	100		µg/L	100	1/22/2003
1,2-Dibromo-3-chloropropane	ND	200		µg/L	100	1/22/2003
Dibromochloromethane	ND	100		µg/L	100	1/22/2003
Dibromomethane	ND	200		µg/L	100	1/22/2003
1,2-Dichlorobenzene	ND	100		µg/L	100	1/22/2003
1,3-Dichlorobenzene	ND	100		µg/L	100	1/22/2003
1,4-Dichlorobenzene	ND	100		µg/L	100	1/22/2003
Dichlorodifluoromethane	ND	100		µg/L	100	1/22/2003
1,1-Dichloroethane	ND	100		µg/L	100	1/22/2003
1,1-Dichloroethene	ND	100		µg/L	100	1/22/2003

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 10-Feb-03

CLIENT: Giant Refinery Company

Client Sample ID: Developed H2O

Lab Order: 0301127

Collection Date: 1/17/2003 1:30:00 PM

Project: New Monitor Well

Lab ID: 0301127-01

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,2-Dichloropropane	ND	100		µg/L	100	1/22/2003
1,3-Dichloropropane	ND	100		µg/L	100	1/22/2003
2,2-Dichloropropane	ND	100		µg/L	100	1/22/2003
1,1-Dichloropropene	ND	100		µg/L	100	1/22/2003
Hexachlorobutadiene	ND	100		µg/L	100	1/22/2003
Isopropylbenzene	ND	100		µg/L	100	1/22/2003
4-Isopropyltoluene	ND	100		µg/L	100	1/22/2003
Methylene Chloride	ND	300		µg/L	100	1/22/2003
n-Butylbenzene	ND	100		µg/L	100	1/22/2003
n-Propylbenzene	360	100		µg/L	100	1/22/2003
sec-Butylbenzene	ND	100		µg/L	100	1/22/2003
Styrene	ND	100		µg/L	100	1/22/2003
tert-Butylbenzene	ND	100		µg/L	100	1/22/2003
Tetrachloroethene (PCE)	ND	100		µg/L	100	1/22/2003
1,1,1,2-Tetrachloroethane	ND	100		µg/L	100	1/22/2003
1,1,2,2-Tetrachloroethane	ND	100		µg/L	100	1/22/2003
trans-1,2-DCE	ND	100		µg/L	100	1/22/2003
trans-1,3-Dichloropropene	ND	100		µg/L	100	1/22/2003
Trichloroethene (TCE)	ND	100		µg/L	100	1/22/2003
Trichlorofluoromethane	ND	100		µg/L	100	1/22/2003
1,2,3-Trichlorobenzene	ND	100		µg/L	100	1/22/2003
1,2,4-Trichlorobenzene	ND	100		µg/L	100	1/22/2003
1,1,1-Trichloroethane	ND	100		µg/L	100	1/22/2003
1,1,2-Trichloroethane	ND	100		µg/L	100	1/22/2003
Vinyl chloride	ND	200		µg/L	100	1/22/2003
1,2,3-Trichloropropane	ND	200		µg/L	100	1/22/2003
Xylenes, Total	18000	100		µg/L	100	1/22/2003
Surr: 1,2-Dichloroethane-d4	92.0	74.6-123		%REC	100	1/22/2003
Surr: 4-Bromofluorobenzene	105	85.6-117		%REC	100	1/22/2003
Surr: Dibromofluoromethane	96.3	78.6-115		%REC	100	1/22/2003
Surr: Toluene-d8	93.2	84.2-115		%REC	100	1/22/2003

EPA METHOD 8310: PAHS

Analyst: GT

Naphthalene	260	13		µg/L	5	2/4/2003 9:22:39 PM
1-Methylnaphthalene	81	2.5		µg/L	1	1/30/2003 3:16:06 AM
2-Methylnaphthalene	130	2.5		µg/L	1	1/30/2003 3:16:06 AM
Acenaphthylene	ND	2.5		µg/L	1	1/30/2003 3:16:06 AM
Acenaphthene	ND	2.5		µg/L	1	1/30/2003 3:16:06 AM
Fluorene	2.7	0.80		µg/L	1	1/30/2003 3:16:06 AM
Phenanthrene	6.6	0.60		µg/L	1	1/30/2003 3:16:06 AM
Anthracene	ND	0.60		µg/L	1	1/30/2003 3:16:06 AM
Fluoranthene	ND	0.30		µg/L	1	1/30/2003 3:16:06 AM
Pyrene	ND	0.30		µg/L	1	1/30/2003 3:16:06 AM

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 10-Feb-03

CLIENT: Giant Refinery Company

Client Sample ID: Developed H2O

Lab Order: 0301127

Collection Date: 1/17/2003 1:30:00 PM

Project: New Monitor Well

Lab ID: 0301127-01

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Benz(a)anthracene	ND	0.020		µg/L	1	1/30/2003 3:16:06 AM
Chrysene	ND	0.20		µg/L	1	1/30/2003 3:16:06 AM
Benzo(b)fluoranthene	ND	0.050		µg/L	1	1/30/2003 3:16:06 AM
Benzo(k)fluoranthene	ND	0.020		µg/L	1	1/30/2003 3:16:06 AM
Benzo(a)pyrene	ND	0.020		µg/L	1	1/30/2003 3:16:06 AM
Dibenz(a,h)anthracene	ND	0.040		µg/L	1	1/30/2003 3:16:06 AM
Benzo(g,h,i)perylene	0.060	0.030		µg/L	1	1/30/2003 3:16:06 AM
Indeno(1,2,3-cd)pyrene	ND	0.080		µg/L	1	1/30/2003 3:16:06 AM
Surr: Benzo(e)pyrene	86.5	54-102		%REC	1	1/30/2003 3:16:06 AM
EPA METHOD 7470: MERCURY						Analyst: MAP
Mercury	ND	0.00020		mg/L	1	2/3/2003
EPA METHOD 6010C: DISSOLVED METALS						Analyst: NMO
Arsenic	0.044	0.020		mg/L	1	2/6/2003 10:44:26 AM
Barium	1.9	0.0020		mg/L	1	2/6/2003 10:44:26 AM
Cadmium	ND	0.0020		mg/L	1	2/6/2003 10:44:26 AM
Calcium	120	0.50		mg/L	1	2/6/2003 2:21:56 PM
Chromium	0.012	0.0060		mg/L	1	2/6/2003 11:45:54 AM
Copper	ND	0.0060		mg/L	1	2/6/2003 10:44:26 AM
Iron	0.27	0.020		mg/L	1	2/6/2003 11:45:54 AM
Lead	ND	0.0050		mg/L	1	2/6/2003 10:44:26 AM
Magnesium	37	0.50		mg/L	1	2/6/2003 2:21:56 PM
Manganese	1.2	0.0020		mg/L	1	2/6/2003 10:44:26 AM
Potassium	3.1	1.0		mg/L	1	2/6/2003 2:21:56 PM
Selenium	0.023	0.020		mg/L	1	2/6/2003 1:16:01 PM
Silver	ND	0.0050		mg/L	1	2/6/2003 1:49:57 PM
Sodium	190	5.0		mg/L	10	2/6/2003 2:25:18 PM
Uranium	ND	0.10		mg/L	1	2/6/2003 10:44:26 AM
Zinc	0.016	0.0050		mg/L	1	2/6/2003 10:44:26 AM
EPA METHOD 6010C: TOTAL METALS						Analyst: NMO
Arsenic	0.30	0.020		mg/L	1	2/5/2003 10:25:14 AM
Barium	2.5	0.020		mg/L	10	2/3/2003 2:07:45 PM
Cadmium	ND	0.0020		mg/L	1	2/3/2003 2:19:58 PM
Calcium	120	5.0		mg/L	10	2/5/2003 2:31:16 PM
Chromium	0.016	0.0060		mg/L	1	2/3/2003 2:19:58 PM
Copper	ND	0.0060		mg/L	1	2/3/2003 2:19:58 PM
Iron	18	0.20		mg/L	10	2/5/2003 11:47:17 AM
Lead	0.011	0.0050		mg/L	1	2/3/2003 2:19:58 PM
Magnesium	33	0.50		mg/L	1	2/5/2003 2:22:11 PM
Manganese	0.92	0.0020		mg/L	1	2/3/2003 2:19:58 PM
Potassium	3.7	1.0		mg/L	1	2/5/2003 2:22:11 PM
Selenium	ND	0.020		mg/L	1	2/7/2003 1:16:26 PM

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

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R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 10-Feb-03

CLIENT: Giant Refinery Company

Client Sample ID: Developed H2O

Lab Order: 0301127

Collection Date: 1/17/2003 1:30:00 PM

Project: New Monitor Well

Lab ID: 0301127-01

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Silver	ND	0.0050		mg/L	1	2/5/2003 4:28:21 PM
Sodium	170	5.0		mg/L	10	2/5/2003 2:31:16 PM
Uranium	ND	0.10		mg/L	1	2/3/2003 2:19:58 PM
Zinc	0.10	0.0050		mg/L	1	2/3/2003 2:19:58 PM
EPA METHOD 160.1: TDS						Analyst: MAP
Total Dissolved Solids	890	1.0		mg/L	1	1/23/2003

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 10-Feb-03

CLIENT: Giant Refinery Company

Client Sample ID: Trip Blank

Lab Order: 0301127

Collection Date:

Project: New Monitor Well

Lab ID: 0301127-02

Matrix: TRIP BLANK

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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EPA METHOD 8260B: VOLATILES

Analyst: JDC

Benzene	ND	1.0		µg/L	1	1/22/2003
Toluene	ND	1.0		µg/L	1	1/22/2003
Ethylbenzene	ND	1.0		µg/L	1	1/22/2003
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	1/22/2003
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	1/22/2003
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	1/22/2003
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	1/22/2003
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	1/22/2003
Naphthalene	ND	2.0		µg/L	1	1/22/2003
1-Methylnaphthalene	ND	4.0		µg/L	1	1/22/2003
2-Methylnaphthalene	ND	4.0		µg/L	1	1/22/2003
Bromobenzene	ND	1.0		µg/L	1	1/22/2003
Bromochloromethane	ND	1.0		µg/L	1	1/22/2003
Bromodichloromethane	ND	1.0		µg/L	1	1/22/2003
Bromoform	ND	1.0		µg/L	1	1/22/2003
Bromomethane	ND	1.0		µg/L	1	1/22/2003
Carbon Tetrachloride	ND	1.0		µg/L	1	1/22/2003
Chlorobenzene	ND	1.0		µg/L	1	1/22/2003
Chloroethane	ND	2.0		µg/L	1	1/22/2003
Chloroform	ND	1.0		µg/L	1	1/22/2003
Chloromethane	ND	1.0		µg/L	1	1/22/2003
2-Chlorotoluene	ND	1.0		µg/L	1	1/22/2003
4-Chlorotoluene	ND	1.0		µg/L	1	1/22/2003
cis-1,2-DCE	ND	1.0		µg/L	1	1/22/2003
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	1/22/2003
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	1/22/2003
Dibromochloromethane	ND	1.0		µg/L	1	1/22/2003
Dibromomethane	ND	2.0		µg/L	1	1/22/2003
1,2-Dichlorobenzene	ND	1.0		µg/L	1	1/22/2003
1,3-Dichlorobenzene	ND	1.0		µg/L	1	1/22/2003
1,4-Dichlorobenzene	ND	1.0		µg/L	1	1/22/2003
Dichlorodifluoromethane	ND	1.0		µg/L	1	1/22/2003
1,1-Dichloroethane	ND	1.0		µg/L	1	1/22/2003
1,1-Dichloroethene	ND	1.0		µg/L	1	1/22/2003
1,2-Dichloropropane	ND	1.0		µg/L	1	1/22/2003
1,3-Dichloropropane	ND	1.0		µg/L	1	1/22/2003
2,2-Dichloropropane	ND	1.0		µg/L	1	1/22/2003
1,1-Dichloropropene	ND	1.0		µg/L	1	1/22/2003
Hexachlorobutadiene	ND	1.0		µg/L	1	1/22/2003
Isopropylbenzene	ND	1.0		µg/L	1	1/22/2003
4-Isopropyltoluene	ND	1.0		µg/L	1	1/22/2003

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 10-Feb-03

CLIENT: Giant Refinery Company

Client Sample ID: Trip Blank

Lab Order: 0301127

Collection Date:

Project: New Monitor Well

Lab ID: 0301127-02

Matrix: TRIP BLANK

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Methylene Chloride	ND	3.0		µg/L	1	1/22/2003
n-Butylbenzene	ND	1.0		µg/L	1	1/22/2003
n-Propylbenzene	ND	1.0		µg/L	1	1/22/2003
sec-Butylbenzene	ND	1.0		µg/L	1	1/22/2003
Styrene	ND	1.0		µg/L	1	1/22/2003
tert-Butylbenzene	ND	1.0		µg/L	1	1/22/2003
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	1/22/2003
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	1/22/2003
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	1/22/2003
trans-1,2-DCE	ND	1.0		µg/L	1	1/22/2003
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	1/22/2003
Trichloroethene (TCE)	ND	1.0		µg/L	1	1/22/2003
Trichlorofluoromethane	ND	1.0		µg/L	1	1/22/2003
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	1/22/2003
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	1/22/2003
1,1,1-Trichloroethane	ND	1.0		µg/L	1	1/22/2003
1,1,2-Trichloroethane	ND	1.0		µg/L	1	1/22/2003
Vinyl chloride	ND	2.0		µg/L	1	1/22/2003
1,2,3-Trichloropropane	ND	2.0		µg/L	1	1/22/2003
Xylenes, Total	ND	1.0		µg/L	1	1/22/2003
Surr: 1,2-Dichloroethane-d4	78.7	74.6-123		%REC	1	1/22/2003
Surr: 4-Bromofluorobenzene	115	85.6-117		%REC	1	1/22/2003
Surr: Dibromofluoromethane	91.2	78.6-115		%REC	1	1/22/2003
Surr: Toluene-d8	96.9	84.2-115		%REC	1	1/22/2003

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 11-Feb-03

CLIENT: Giant Refinery Company

Work Order: 0301127

Project: New Monitor Well

QC SUMMARY REPORT

Method Blank

Sample ID	5ml rb	Batch ID: R7081	Test Code: SW8260B	Units: µg/L	Analysis Date	1/22/2003	Prep Date				
Client ID:	Run ID:	NEPTUNE_030122B	SeqNo:	161301							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1.0									
Toluene	ND	1.0									
Ethylbenzene	ND	1.0									
Methyl tert-butyl ether (MTBE)	ND	1.0									
1,2,4-Trimethylbenzene	ND	1.0									
1,3,5-Trimethylbenzene	ND	1.0									
1,2-Dichloroethane (EDC)	ND	1.0									
1,2-Dibromoethane (EDB)	ND	1.0									
Naphthalene	ND	2.0									
1-Methylnaphthalene	ND	4.0									
2-Methylnaphthalene	ND	4.0									
Bromobenzene	ND	1.0									
Bromochloromethane	ND	1.0									
Bromodichloromethane	ND	1.0									
Bromoform	ND	1.0									
Bromomethane	ND	1.0									
Carbon Tetrachloride	ND	1.0									
Chlorobenzene	ND	1.0									
Chloroethane	ND	2.0									
Chloroform	ND	1.0									
Chloromethane	ND	1.0									
2-Chlorotoluene	ND	1.0									
4-Chlorotoluene	ND	1.0									
cis-1,2-DCE	ND	1.0									
cis-1,3-Dichloropropene	ND	1.0									
1,2-Dibromo-3-chloropropane	ND	2.0									
Dibromochloromethane	ND	1.0									

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

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B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Method Blank

CLIENT: Giant Refinery Company
 Work Order: 0301127
 Project: New Monitor Well

Dibromomethane	ND	2.0
1,2-Dichlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
Dichlorodifluoromethane	ND	1.0
1,1-Dichloroethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,2-Dichloropropane	ND	1.0
1,3-Dichloropropane	ND	1.0
2,2-Dichloropropane	ND	1.0
1,1-Dichloropropene	ND	1.0
Hexachlorobutadiene	ND	1.0
Isopropylbenzene	ND	1.0
4-Isopropyltoluene	ND	1.0
Methylene Chloride	ND	3.0
n-Butylbenzene	ND	1.0
n-Propylbenzene	ND	1.0
sec-Butylbenzene	ND	1.0
Styrene	ND	1.0
tert-Butylbenzene	ND	1.0
Tetrachloroethene (PCE)	ND	1.0
1,1,1,2-Tetrachloroethane	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
trans-1,2-DCE	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Trichloroethene (TCE)	ND	1.0
Trichlorofluoromethane	ND	1.0
1,2,3-Trichlorobenzene	ND	1.0
1,2,4-Trichlorobenzene	ND	1.0
1,1,1-Trichloroethane	ND	1.0
1,1,2-Trichloroethane	ND	1.0
Vinyl chloride	ND	2.0
1,2,3-Trichloropropane	ND	2.0

Qualifiers: ND - Not Detected at the Reporting Limit
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CLIENT: Giant Refinery Company
Work Order: 0301127
Project: New Monitor Well

Xylenes, Total		ND	1.0				
Surr:	1,2-Dichloroethane-d4	8,422	0	10	0	84.2	74.6
Surr:	4-Bromofluorobenzene	10.84	0	10	0	108	85.6
Surr:	Dibromofluoromethane	8,968	0	10	0	89.7	78.6
Surr:	Toluene-d8	9.55	0	10	0	95.5	84.2

[illegible]

Compound	25	0	78.5	54	102	0
Naphthalene	ND	2.5				
1-Methylnaphthalene	ND	2.5				
2-Methylnaphthalene	ND	2.5				
Acenaphthylene	ND	2.5				
Acenaphthene	ND	2.5				
Fluorene	ND	0.80				
Phenanthrene	ND	0.60				
Anthracene	ND	0.60				
Fluoranthene	ND	0.30				
Pyrene	ND	0.30				
Benz(a)anthracene	ND	0.020				
Chrysene	ND	0.20				
Benzo(b)fluoranthene	ND	0.050				
Benzo(k)fluoranthene	ND	0.020				
Benzo(a)pyrene	ND	0.020				
Dibenz(a,h)anthracene	ND	0.040				
Benzo(g,h,i)perylene	0.02	0.030				
Indeno(1,2,3-cd)pyrene	ND	0.080				
Surr: Benzo(e)pyrene	19.62	0				

—

Qualifiers:

ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	?

CLIENT: Giant Refinery Company
Work Order: 0301127
Project: New Monitor Well

QC SUMMARY REPORT
 Method Blank

Sample ID	BLK	Batch ID: R7243	Test Code: SW6010A	Units: mg/L	Analysis Date	2/6/2003 10:32:08 AM	Prep Date				
Client ID:		Run ID: ICP_030206A			SeqNo:	165159					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.020									
Barium	ND	0.0020									
Cadmium	ND	0.0020									
Copper	ND	0.0060									
Lead	ND	0.0050									
Manganese	ND	0.0020									

Sample ID	BLK	Batch ID: R7243	Test Code: SW6010A	Units: mg/L	Analysis Date	2/6/2003 1:43:50 PM	Prep Date				
Client ID:		Run ID: ICP_030206A			SeqNo:	165186					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	ND	0.0050									

Sample ID	BLK	Batch ID: R7243	Test Code: SW6010A	Units: mg/L	Analysis Date	2/6/2003 1:12:24 PM	Prep Date				
Client ID:		Run ID: ICP_030206A			SeqNo:	165193					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.020									

Sample ID	BLK	Batch ID: R7245	Test Code: SW6010A	Units: mg/L	Analysis Date	2/6/2003 2:11:02 PM	Prep Date				
Client ID:		Run ID: ICP_030206B			SeqNo:	165420					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	0.50									
Magnesium	0.01918	0.50									J
Potassium	0.1439	1.0									J
Sodium	ND	0.50									

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

CLIENT: Giant Refinery Company
Work Order: 0301127
Project: New Monitor Well

QC SUMMARY REPORT
 Method Blank

Sample ID	BLK	Batch ID: R7259	Test Code: SW6010A	Units: mg/L	Analysis Date 2/6/2003 10:32:08 AM	Prep Date					
Client ID:		Run ID: ICP_030206C	SeqNo: 165459								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Uranium	ND		0.10								
Zinc	ND		0.0050								

Sample ID	BLK	Batch ID: R7259	Test Code: SW6010A	Units: mg/L	Analysis Date 2/6/2003 11:35:37 AM	Prep Date					
Client ID:		Run ID: ICP_030206C			SeqNo: 165466						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND		0.0060								
Iron	ND		0.020								

Sample ID	MB-3032	Batch ID: 3032	Test Code: SW6010A	Units: mg/L	Analysis Date 2/5/2003 2:35:49 PM	Prep Date 1/22/2003					
Client ID:			Run ID: ICP_030205C		SeqNo: 164742						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	0.14		1.0								J
Magnesium	0.01242		1.0								J
Potassium	ND		1.0								
Sodium	0.02452		1.0								J

Sample ID	MB-3032	Batch ID: 3032	Test Code: SW6010A	Units: mg/L	Analysis Date 2/7/2003 1:07:51 PM	Prep Date 1/22/2003					
Client ID:		Run ID: ICP_030207B	SeqNo: 165430								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.020									

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: 11-Feb-03

CLIENT: Giant Refinery Company

Work Order: 0301127

Project: New Monitor Well

QC SUMMARY REPORT

Method Blank

Sample ID	MBLK #1	Batch ID: R7087	Test Code: E300	Units: mg/L	Analysis Date	1/22/2003	Prep Date					
Client ID:		Run ID: LC_030122B			SeqNo:	161393						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		ND	0.10									
Chloride		ND	0.10									
Nitrate (As N)+Nitrite (As N)		ND	0.10									
Phosphorus, Orthophosphate (As P)		ND	0.50									
Sulfate		ND	0.50									

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: 10-Feb-03

CLIENT: Giant Refinery Company

Work Order: 0301127

Project: New Monitor Well

QC SUMMARY REPORT

Sample Duplicate

Sample ID	0301127-01D DUP	Batch ID: R7243	Test Code: SW6010A	Units: mg/L	Analysis Date	2/6/2003 10:48:30 AM	Prep Date				
Client ID:	Developed H2O		Run ID: ICP_030206A		SeqNo: 165163						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.04878	0.020	0	0	0	0	0	0.04445	9.29	20	
Barium	1.969	0.0020	0	0	0	0	0	1.938	1.55	20	
Cadmium	ND	0.0020	0	0	0	0	0	0	0	20	
Copper	0.004622	0.0060	0	0	0	0	0	0.004346	0	20	J
Lead	ND	0.0050	0	0	0	0	0	0	0	20	
Manganese	1.153	0.0020	0	0	0	0	0	1.157	0.339	20	

Sample ID	0301127-01D DUP	Batch ID: R7243	Test Code: SW6010A	Units: mg/L	Analysis Date	2/6/2003 1:51:31 PM	Prep Date				
Client ID:	Developed H2O		Run ID: ICP_030206A		SeqNo:	165191					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	ND	0.0050	0	0	0	0	0	0	0	20	

Sample ID	0301127-01D DUP	Batch ID: R7243	Test Code: SW6010A	Units: mg/L	Analysis Date	2/6/2003 1:17:35 PM	Prep Date				
Client ID:	Developed H2O		Run ID: ICP_030206A		SeqNo:	165197					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.02831	0.020	0	0	0	0	0	0.02348	18.6	20	

Sample ID	0301127-01D DUP	Batch ID: R7245	Test Code: SW6010A	Units: mg/L	Analysis Date	2/6/2003 2:23:41 PM	Prep Date				
Client ID:	Developed H2O		Run ID: ICP_030206B		SeqNo:	165425					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	124.2	0.50	0	0	0	0	0	124.4	0.210	20	
Magnesium	37.32	0.50	0	0	0	0	0	37.13	0.511	20	
Potassium	3.062	1.0	0	0	0	0	0	3.053	0.266	20	

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

I

CLIENT: Giant Refinery Company

Work Order: 0301127

Project: New Monitor Well

QC SUMMARY REPORT

Sample Duplicate

Sample ID	0301127-01D DUP	Batch ID: R7259	Test Code: SW6010A	Units: mg/L	Analysis Date	2/6/2003 10:48:30 AM	Prep Date				
Client ID:	Developed H2O		Run ID: ICP_030206C		SeqNo: 165463						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Uranium	0.02712	0.10	0	0	0	0	0	0	0	20	J
Zinc	0.01628	0.0050	0	0	0	0	0	0	0	20	

Sample ID	0301127-01D DUP	Batch ID: R7259	Test Code: SW6010A	Units: mg/L	Analysis Date	2/6/2003 11:47:58 AM	Prep Date				
Client ID:	Developed H2O		Run ID: ICP_030206C		SeqNo: 165471						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.01276	0.0060	0	0	0	0	0	0.01244	2.49	20	
Iron	0.2701	0.020	0	0	0	0	0	0.2712	0.385	20	

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: 10-Feb-03

CLIENT: Giant Refinery Company

Work Order: 0301127

Project: New Monitor Well

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID	LCS #1	Batch ID: R7078	Test Code: E300	Units: mg/L	Analysis Date	1/21/2003	Prep Date				
Client ID:		Run ID: LC_030121A			SeqNo:	161224					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.932	0.10	1.923	0	100	90	110	0			
Chloride	5.459	0.10	5.769	0	94.6	90	110	0			
Phosphorus, Orthophosphate (As P)	5.654	0.50	5.769	0	98.0	90	110	0			
Sulfate	11.29	0.50	11.54	0	97.9	90	110	0			

Sample ID	LCS #2	Batch ID: R7078	Test Code: E300	Units: mg/L	Analysis Date 1/21/2003	Prep Date					
Client ID:		Run ID: LC_030121A			SeqNo: 161238						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.86	0.10	1.923	0	96.7	90	110	0			
Chloride	5.441	0.10	5.769	0	94.3	90	110	0			
Phosphorus, Orthophosphate (As P)	5.62	0.50	5.769	0	97.4	90	110	0			
Sulfate	11.29	0.50	11.54	0	97.9	90	110	0			

Sample ID	LCS #3	Batch ID: R7078	Test Code: E300	Units: mg/L	Analysis Date	1/21/2003	Prep Date				
Client ID:		Run ID:	LC_030121A		SeqNo:	161247					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.826	0.10	1.923	0	95.0	90	110	0			
Chloride	5.355	0.10	5.769	0	92.8	90	110	0			
Phosphorus, Orthophosphate (As P)	5.468	0.50	5.769	0	94.8	90	110	0			
Sulfate	10.97	0.50	11.54	0	95.0	90	110	0			

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

CLIENT: Giant Refinery Company

Work Order: 0301127

Project: New Monitor Well

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID	LCS #4	Batch ID: R7078	Test Code: E300	Units: mg/L	Analysis Date	1/21/2003	Prep Date				
Client ID:		Run ID: LC_030121A			SeqNo:	161265					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.79	0.10	1.923	0	93.1	90	110	0			
Chloride	5.374	0.10	5.769	0	93.2	90	110	0			
Phosphorus, Orthophosphate (As P)	5.469	0.50	5.769	0	94.8	90	110	0			
Sulfate	10.91	0.50	11.54	0	94.6	90	110	0			

Sample ID	LCS #1	Batch ID: R7087	Test Code: E300	Units: mg/L	Analysis Date	1/22/2003	Prep Date				
Client ID:		Run ID: LC_030122B			SeqNo:	161394					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.843	0.10	1.923	0	95.8	90	110	0			
Chloride	5.391	0.10	5.769	0	93.4	90	110	0			
Phosphorus, Orthophosphate (As P)	5.491	0.50	5.769	0	95.2	90	110	0			
Sulfate	10.97	0.50	11.54	0	95.0	90	110	0			

Sample ID	100ng lcs	Batch ID: R7081	Test Code: SW8260B	Units: µg/L	Analysis Date	1/22/2003	Prep Date				
Client ID:		Run ID:	NEPTUNE_030122B		SeqNo:	161303					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.05	1.0	20	0	100	78.7	122	0			
Toluene	20.35	1.0	20	0	102	87.7	122	0			
Chlorobenzene	24.29	1.0	20	0	121	85.6	136	0			
1,1-Dichloroethene	14.94	1.0	20	0	74.7	70.7	117	0			
Trichloroethene (TCE)	20.62	1.0	20	0	103	76.9	130	0			

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Giant Refinery Company

Work Order: 0301127

Project: New Monitor Well

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID LCS-3030 Batch ID: 3030 Test Code: SW8310 Units: µg/L Analysis Date 1/29/2003 8:14:20 PM Prep Date 1/22/2003

Client ID: Run ID: HPLC_030129A SeqNo: 163254

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	19.21	2.5	40	0	48.0	26.6	84.1	0			
1-Methylnaphthalene	19.96	2.5	40.1	0	49.8	24.2	87.5	0			
2-Methylnaphthalene	20.11	2.5	40	0	50.3	23.4	86.3	0			
Acenaphthylene	20.04	2.5	40.1	0	50.0	33.3	90	0			
Acenaphthene	21.67	2.5	40	0	54.2	31.9	93.1	0			
Fluorene	2.26	0.80	4.01	0	56.4	34.9	96.8	0			
Phenanthrene	1.35	0.60	2.01	0	67.2	50.5	105	0			
Anthracene	1.43	0.60	2.01	0	71.1	55.5	99.1	0			
Fluoranthene	3.33	0.30	4.01	0	83.0	67.8	104	0			
Pyrene	3.49	0.30	4.01	0	87.0	69.3	108	0			
Benz(a)anthracene	0.35	0.020	0.401	0	87.3	73.1	109	0			
Chrysene	1.79	0.20	2.01	0	89.1	72.7	110	0			
Benzo(b)fluoranthene	0.47	0.050	0.501	0	93.8	42.1	139	0			
Benzo(k)fluoranthene	0.22	0.020	0.25	0	88.0	71.2	112	0			
Benzo(a)pyrene	0.23	0.020	0.251	0	91.6	73	110	0			
Dibenz(a,h)anthracene	0.46	0.040	0.501	0	91.8	72	113	0			
Benzo(g,h,i)perylene	0.46	0.030	0.5	0.02	88.0	71.6	118	0			
Indeno(1,2,3-cd)pyrene	0.906	0.080	1.002	0	90.4	75	114	0			

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

Hall Environmental Analysis Laboratory

Date: 10-Feb-03

CLIENT: Giant Refinery Company

Work Order: 0301127

Project: New Monitor Well

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID	0301127-01D MS	Batch ID: R7243	Test Code: SW6010A	Units: mg/L	Analysis Date	2/6/2003 10:52:15 AM	Prep Date				
Client ID:	Developed H2O		Run ID: ICP_030206A		SeqNo: 165164						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	1.139	0.020	1	0.04445	109	75	125	0			
Barium	2.899	0.0020	1	1.938	96.1	75	125	0			
Cadmium	1.025	0.0020	1	0	103	75	125	0			
Copper	1.032	0.0060	1	0.004346	103	75	125	0			
Lead	0.9951	0.0050	1	0	99.5	78.4	112	0			
Manganese	2.178	0.0020	1	1.157	102	70.2	121	0			

Sample ID	0301127-01D MS	Batch ID: R7243	Test Code: SW6010A	Units: mg/L	Analysis Date	2/6/2003 1:53:08 PM	Prep Date				
Client ID:	Developed H2O		Run ID: ICP_030206A		SeqNo: 165192						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	0.7159	0.0050	1	0	71.6	75	125	0			S

Sample ID	0301127-01D MS	Batch ID: R7243	Test Code: SW6010A	Units: mg/L	Analysis Date	2/6/2003 1:19:08 PM	Prep Date				
Client ID:	Developed H2O		Run ID: ICP_030206A		SeqNo:	165198					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	1.216	0.020	1	0.02348	119	75	125	0			

Sample ID	0301127-01D MS	Batch ID: R7259	Test Code: SW6010A	Units: mg/L	Analysis Date	2/6/2003 10:52:15 AM	Prep Date				
Client ID:	Developed H2O		Run ID: ICP_030206C		SeqNo:	165464					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Uranium	1.023	0.10	1	0.02609	99.7	75	125	0			
Zinc	1.06	0.0050	1	0.01646	104	75	125	0			

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Giant Refinery Company

Work Order: 0301127

Project: New Monitor Well

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID 0301127-01D MS Batch ID: R7259 Test Code: SW6010A Units: mg/L Analysis Date 2/6/2003 11:50:02 AM Prep Date

Client ID: Developed H2O Run ID: ICP_030206C SeqNo: 165472

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.117	0.0060	1	0.01244	110	75	125	0			
Iron	1.277	0.020	1	0.2712	101	76.3	122	0			

Sample ID 0301127-01D MSD Batch ID: R7259 Test Code: SW6010A Units: mg/L Analysis Date 2/6/2003 11:55:59 AM Prep Date

Client ID: Developed H2O Run ID: ICP_030206C SeqNo: 165473

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.051	0.0060	1	0.01244	104	75	125	1.117	6.08	20	
Iron	1.251	0.020	1	0.2712	98.0	76.3	122	1.277	2.04	20	

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name **GIANT REFINERY BLOOM**

Date and Time Receive

Work Order Number **0301127**

Received by **AMG**

Checklist completed by

Abonza
Signature

12/03
Date

Matrix:

Carrier name: UPS

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒
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?	4°	4° C ± 2 Acceptable	

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345-3975 Fax 505.345.4107
www.hallenvironmental.com

Project Name:

New Monitor Wells

Project #:

nw #45 - water

Bloomfield, NM

8743

Project Manager:

Phone #: 505-632-4161

Sampler: Cindy Hurtado

Fax #: 505-632-3911

Samples Cold?:

☒ Yes

ON

[illegible]

Date:	Time:	Relinquished By: (Signature)
-------	-------	------------------------------

Time:

Relinquished By: (Signature) *Cindy Hurtado*

Time:

Received By: (Signature)

Received By: (Signature) *[Signature]* 12/03

Date: _____ Time: _____ Relinquished By: (Signature) _____

Time:

Relinquished By: (Signature)

Time:

Received By: (Signature)

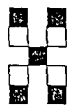
2001

ANALYSIS REQUEST

[illegible]

Remarks:

**Semi Annual
Sampling Event
Water Analysis**



Hall Environmental Analysis Laboratory

COVER LETTER

March 11, 2003

Cindy Hurtado
San Juan Refining
#50 CR 4990
Bloomfield, NM 87413
TEL: (505) 632-4161
FAX (505) 632-3911

RE: 1st Half 2003 Semi-Annual MW

Order No.: 0303030

Dear Cindy Hurtado:

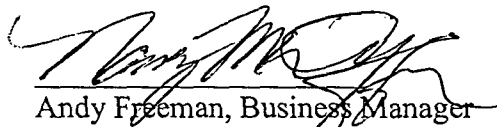
Hall Environmental Analysis Laboratory received 8 samples on 3/6/2003 for the analyses presented in the following report.

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

Hall Environmental Analysis Laboratory

Date: 11-Mar-03

CLIENT: San Juan Refining

Client Sample ID: #1 East Outfall

Lab Order: 0303030

Collection Date: 3/4/2003 10:00:00 AM

Project: 1st Half 2003 Semi-Annual MW

Lab ID: 0303030-01

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NB
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	3/6/2003 2:39:38 PM
Benzene	ND	0.50		µg/L	1	3/6/2003 2:39:38 PM
Toluene	ND	0.50		µg/L	1	3/6/2003 2:39:38 PM
Ethylbenzene	ND	0.50		µg/L	1	3/6/2003 2:39:38 PM
Xylenes, Total	ND	0.50		µg/L	1	3/6/2003 2:39:38 PM
Surr: 4-Bromofluorobenzene	98.5	74-118		%REC	1	3/6/2003 2:39:38 PM

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 11-Mar-03

CLIENT: San Juan Refining

Client Sample ID: #2 East Outfall

Lab Order: 0303030

Collection Date: 3/4/2003 10:20:00 AM

Project: 1st Half 2003 Semi-Annual MW

Lab ID: 0303030-02

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NB
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	3/6/2003 3:40:11 PM
Benzene	ND	0.50		µg/L	1	3/6/2003 3:40:11 PM
Toluene	ND	0.50		µg/L	1	3/6/2003 3:40:11 PM
Ethylbenzene	ND	0.50		µg/L	1	3/6/2003 3:40:11 PM
Xylenes, Total	ND	0.50		µg/L	1	3/6/2003 3:40:11 PM
Surr: 4-Bromofluorobenzene	99.7	74-118		%REC	1	3/6/2003 3:40:11 PM

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 11-Mar-03

CLIENT: San Juan Refining

Client Sample ID: #3 East Outfall

Lab Order: 0303030

Collection Date: 3/4/2003 10:45:00 AM

Project: 1st Half 2003 Semi-Annual MW

Lab ID: 0303030-03

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NB
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	3/6/2003 4:10:33 PM
Benzene	ND	0.50		µg/L	1	3/6/2003 4:10:33 PM
Toluene	ND	0.50		µg/L	1	3/6/2003 4:10:33 PM
Ethylbenzene	ND	0.50		µg/L	1	3/6/2003 4:10:33 PM
Xylenes, Total	ND	0.50		µg/L	1	3/6/2003 4:10:33 PM
Surr: 4-Bromofluorobenzene	96.4	74-118		%REC	1	3/6/2003 4:10:33 PM

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 11-Mar-03

CLIENT: San Juan Refining

Client Sample ID: MW #33

Lab Order: 0303030

Collection Date: 3/4/2003 11:00:00 AM

Project: 1st Half 2003 Semi-Annual MW

Lab ID: 0303030-04

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NB
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	3/6/2003 4:40:55 PM
Benzene	ND	0.50		µg/L	1	3/6/2003 4:40:55 PM
Toluene	ND	0.50		µg/L	1	3/6/2003 4:40:55 PM
Ethylbenzene	ND	0.50		µg/L	1	3/6/2003 4:40:55 PM
Xylenes, Total	0.86	0.50		µg/L	1	3/6/2003 4:40:55 PM
Surr: 4-Bromofluorobenzene	99.8	74-118		%REC	1	3/6/2003 4:40:55 PM

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 11-Mar-03

CLIENT: San Juan Refining

Client Sample ID: P-#4

Lab Order: 0303030

Collection Date: 3/4/2003 1:30:00 PM

Project: 1st Half 2003 Semi-Annual MW

Lab ID: 0303030-05

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NB
Methyl tert-butyl ether (MTBE)	ND	100		µg/L	40	3/6/2003 5:11:20 PM
Benzene	4100	20		µg/L	40	3/6/2003 5:11:20 PM
Toluene	630	20		µg/L	40	3/6/2003 5:11:20 PM
Ethylbenzene	3100	20		µg/L	40	3/6/2003 5:11:20 PM
Xylenes, Total	10000	20		µg/L	40	3/6/2003 5:11:20 PM
Surr: 4-Bromofluorobenzene	108	74-118		%REC	40	3/6/2003 5:11:20 PM

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 11-Mar-03

CLIENT: San Juan Refining

Client Sample ID: P-#5

Lab Order: 0303030

Collection Date: 3/4/2003 1:45:00 PM

Project: 1st Half 2003 Semi-Annual MW

Lab ID: 0303030-06

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NB
Methyl tert-butyl ether (MTBE)	ND	50		µg/L	20	3/6/2003 5:41:40 PM
Benzene	1300	10		µg/L	20	3/6/2003 5:41:40 PM
Toluene	78	10		µg/L	20	3/6/2003 5:41:40 PM
Ethylbenzene	3500	50		µg/L	100	3/7/2003 5:12:50 PM
Xylenes, Total	19000	50		µg/L	100	3/7/2003 5:12:50 PM
Surr: 4-Bromofluorobenzene	105	74-118		%REC	20	3/6/2003 5:41:40 PM

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 11-Mar-03

CLIENT: San Juan Refining

Client Sample ID: MW #45

Lab Order: 0303030

Collection Date: 3/4/2003 2:30:00 PM

Project: 1st Half 2003 Semi-Annual MW

Lab ID: 0303030-07

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NB
Methyl tert-butyl ether (MTBE)	ND	1300		µg/L	500	3/6/2003 6:11:59 PM
Benzene	4400	250		µg/L	500	3/6/2003 6:11:59 PM
Toluene	3000	250		µg/L	500	3/6/2003 6:11:59 PM
Ethylbenzene	5500	250		µg/L	500	3/6/2003 6:11:59 PM
Xylenes, Total	30000	250		µg/L	500	3/6/2003 6:11:59 PM
Surr: 4-Bromofluorobenzene	103	74-118		%REC	500	3/6/2003 6:11:59 PM

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 11-Mar-03

CLIENT: San Juan Refining

Client Sample ID: MW #20

Lab Order: 0303030

Collection Date: 3/5/2003 8:45:00 AM

Project: 1st Half 2003 Semi-Annual MW

Lab ID: 0303030-08

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NB
Methyl tert-butyl ether (MTBE)	590	100		µg/L	40	3/7/2003 5:43:14 PM
Benzene	1400	20		µg/L	40	3/7/2003 5:43:14 PM
Toluene	150	20		µg/L	40	3/7/2003 5:43:14 PM
Ethylbenzene	92	20		µg/L	40	3/7/2003 5:43:14 PM
Xylenes, Total	160	20		µg/L	40	3/7/2003 5:43:14 PM
Surr: 4-Bromofluorobenzene	139	74-118	S	%REC	40	3/7/2003 5:43:14 PM

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 11-Mar-03

CLIENT: San Juan Refining

Work Order: 0303030

Project: 1st Half 2003 Semi-Annual MW

QC SUMMARY REPORT

Method Blank

Sample ID	Reagent Blank 5m	Batch ID: R7575	Test Code: SW8021	Units: µg/L	Analysis Date	3/7/2003 10:09:19 AM	Prep Date
Client ID:		Run ID: PIDHALL_030307A			SeqNo:	172020	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	2.5									
Benzene	ND	0.50									
Toluene	ND	0.50									
Ethylbenzene	ND	0.50									
Xylenes, Total	ND	0.50									
Surr: 4-Bromofluorobenzene	20.86	0	20	0	104	74	118	0			

Sample ID	Reagent Blank 5m	Batch ID: R7579	Test Code: SW8021	Units: µg/L	Analysis Date	3/6/2003 8:45:44 AM	Prep Date
Client ID:		Run ID: PIDHALL_030306A			SeqNo:	172064	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	2.5									
Benzene	ND	0.50									
Toluene	ND	0.50									
Ethylbenzene	ND	0.50									
Xylenes, Total	ND	0.50									
Surr: 4-Bromofluorobenzene	19.33	0	20	0	96.7	74	118	0			

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

J

Hall Environmental Analysis Laboratory

Date: 11-Mar-03

CLIENT: San Juan Refining

Work Order: 0303030

Project: 1st Half 2003 Semi-Annual MW

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID	0303030-01aMS	Batch ID: R7579	Test Code: SW8021	Units: µg/L	Analysis Date	3/6/2003 7:12:29 PM	Prep Date					
Client ID:	#1 East Outfall	Run ID:	PIDHALL_030306A		SeqNo:	172073						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)		39.63	2.5	40	0	99.1	65	132	0			
Benzene		20.27	0.50	20	0	101	77	122	0			
Toluene		20.16	0.50	20	0	101	81	115	0			
Ethylbenzene		20.1	0.50	20	0	100	84	117	0			
Xylenes, Total		59.47	0.50	60	0	99.1	84	116	0			

Sample ID	0303030-01aMSD	Batch ID: R7579	Test Code: SW8021	Units: µg/L	Analysis Date 3/6/2003 7:42:40 PM		Prep Date					
Client ID: #1 East Outfall			Run ID: PIDHALL_030306A		SeqNo: 172074							
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)		39.24	2.5	40	0	98.1	65	132	39.63	0.999	28	
Benzene		19.97	0.50	20	0	99.8	77	122	20.27	1.50	27	
Toluene		19.93	0.50	20	0	99.6	81	115	20.16	1.14	19	
Ethylbenzene		19.79	0.50	20	0	99.0	84	117	20.1	1.54	10	
Xylenes, Total		59.98	0.50	60	0	100	84	116	59.47	0.850	13	

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

/

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name **SJR**

Date and Time Received

3/6/03

Work Order Number **0303030**

Received by **AT**

Checklist completed by

Cheryl Thomas 3/6/03
Signature Date

Matrix:

Carrier name: UPS

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒
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?	6°	4° C ± 2 Acceptable	

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

**HALL ENVIRONMENTAL
ANALYSIS LABORATORY**

4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.3976
www.hallenvironmental.com

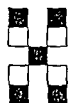
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

ANALYSIS REQUEST

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Or
TPH Method 8015B MOD (Gas/Die	TPH (Method 418.1)
ED8 (Method 504.1)	EDC (Method 8021)
8310 (PNA or PAH)	HCRA 8 Metals
Cations (Na, K, Ca, Mg)	Anions (F, Cl, NO ₂ , NO ₃ , PO ₄ , SO ₄)
8081 Pesticides / PCB's (8082)	8260 (VOA)
8270 (Semi-VOA)	
	Air Bubbles or Headspace (V or N)

Remarks:

CHAIN-OF-CUSTODY RECORD									
Client: <u>SAN JUAN Refining</u> Address: <u>50 CR 4990</u> <u>Bloomfield, NM</u> <u>87413</u> Phone #: <u>505-632-4161</u> Fax #: <u>505-632-3911</u>									
Project Name: <u>1st Half 2003</u> Project #: <u>Semi-Annual Monitor Well</u> Project Manager: <u>Cindy Hurtado</u> Sampler: <u>Cindy Hurtado / David Folk</u> Sample Temperature: <u>10°C</u>									
Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative			HEAL No.	
					H ₂ O ₂	HNO ₃			
3-01-03	10AM	H ₂ O	#1 EAST Outfall	2-VOA				HCL 0303030-1	
	1020AM		#2 EAST Outfall					-2	
	1045AM		#3 EAST Outfall					3	
	11AM		MW # 33					-4	
	130pm		P- #4					5	
	145pm		P- #5					-6	
	230pm		MW #45					-7	
05-03	845A	H ₂ O	MW # 20	2-VOA				HCL -8	
Date: 3/05/03	Time: 845A	Relinquished By: (Signature) <u>Cindy Hurtado</u>			Remarks: <u>3/5/03</u>				
Date:	Time:	Relinquished By: (Signature)			Remarks:				



Hall Environmental Analysis Laboratory

COVER LETTER

March 20, 2003

Cindy Hurtado
San Juan Refining
#50 CR 4990
Bloomfield, NM 87413
TEL: (505) 632-4161
FAX (505) 632-3911

RE: MW #32 Background

Order No.: 0303026

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory received 1 sample on 3/5/2003 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

Hall Environmental Analysis Laboratory

Date: 20-Mar-03

CLIENT: San Juan Refining
Lab Order: 0303026
Project: MW #32 Background
Lab ID: 0303026-01

Client Sample ID: MW #32
Collection Date: 3/4/2003 8:30:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: HVA
Fluoride	0.15	0.10		mg/L	1	3/5/2003
Chloride	870	10		mg/L	100	3/6/2003
Nitrogen, Nitrite (As N)	ND	0.50		mg/L	5	3/5/2003
Bromide	ND	0.10		mg/L	1	3/5/2003
Nitrogen, Nitrate (As N)	27	0.50		mg/L	5	3/5/2003
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	3/5/2003
Sulfate	1200	50		mg/L	100	3/6/2003
EPA METHOD 8260B: VOLATILES						Analyst: BL
Benzene	ND	1.0		µg/L	1	3/6/2003
Toluene	ND	1.0		µg/L	1	3/6/2003
Ethylbenzene	ND	1.0		µg/L	1	3/6/2003
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	3/6/2003
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	3/6/2003
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	3/6/2003
1,2-Dichloroethane (EDC)	5.1	1.0		µg/L	1	3/6/2003
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	3/6/2003
Naphthalene	ND	2.0		µg/L	1	3/6/2003
1-Methylnaphthalene	ND	4.0		µg/L	1	3/6/2003
2-Methylnaphthalene	ND	4.0		µg/L	1	3/6/2003
Bromobenzene	ND	1.0		µg/L	1	3/6/2003
Bromochloromethane	ND	1.0		µg/L	1	3/6/2003
Bromodichloromethane	ND	1.0		µg/L	1	3/6/2003
Bromoform	ND	1.0		µg/L	1	3/6/2003
Bromomethane	ND	2.0		µg/L	1	3/6/2003
Carbon Tetrachloride	ND	1.0		µg/L	1	3/6/2003
Chlorobenzene	ND	1.0		µg/L	1	3/6/2003
Chloroethane	ND	2.0		µg/L	1	3/6/2003
Chloroform	ND	1.0		µg/L	1	3/6/2003
Chloromethane	ND	1.0		µg/L	1	3/6/2003
2-Chlorotoluene	ND	1.0		µg/L	1	3/6/2003
4-Chlorotoluene	ND	1.0		µg/L	1	3/6/2003
cis-1,2-DCE	ND	1.0		µg/L	1	3/6/2003
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	3/6/2003
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	3/6/2003
Dibromochloromethane	ND	1.0		µg/L	1	3/6/2003
Dibromomethane	ND	2.0		µg/L	1	3/6/2003
1,2-Dichlorobenzene	ND	1.0		µg/L	1	3/6/2003
1,3-Dichlorobenzene	ND	1.0		µg/L	1	3/6/2003
1,4-Dichlorobenzene	ND	1.0		µg/L	1	3/6/2003
Dichlorodifluoromethane	ND	1.0		µg/L	1	3/6/2003

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 20-Mar-03

CLIENT: San Juan Refining
Lab Order: 0303026
Project: MW #32 Background
Lab ID: 0303026-01

Client Sample ID: MW #32
Collection Date: 3/4/2003 8:30:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,1-Dichloroethane	1.3	1.0		µg/L	1	3/6/2003
1,1-Dichloroethene	ND	1.0		µg/L	1	3/6/2003
1,2-Dichloropropane	ND	1.0		µg/L	1	3/6/2003
1,3-Dichloropropane	ND	1.0		µg/L	1	3/6/2003
2,2-Dichloropropane	ND	1.0		µg/L	1	3/6/2003
1,1-Dichloropropene	ND	1.0		µg/L	1	3/6/2003
Hexachlorobutadiene	ND	1.0		µg/L	1	3/6/2003
Isopropylbenzene	ND	1.0		µg/L	1	3/6/2003
4-Isopropyltoluene	ND	1.0		µg/L	1	3/6/2003
Methylene Chloride	ND	3.0		µg/L	1	3/6/2003
n-Butylbenzene	ND	1.0		µg/L	1	3/6/2003
n-Propylbenzene	ND	1.0		µg/L	1	3/6/2003
sec-Butylbenzene	ND	1.0		µg/L	1	3/6/2003
Styrene	ND	1.0		µg/L	1	3/6/2003
tert-Butylbenzene	ND	1.0		µg/L	1	3/6/2003
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	3/6/2003
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	3/6/2003
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	3/6/2003
trans-1,2-DCE	ND	1.0		µg/L	1	3/6/2003
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	3/6/2003
Trichloroethene (TCE)	ND	1.0		µg/L	1	3/6/2003
Trichlorofluoromethane	ND	1.0		µg/L	1	3/6/2003
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	3/6/2003
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	3/6/2003
1,1,1-Trichloroethane	ND	1.0		µg/L	1	3/6/2003
1,1,2-Trichloroethane	ND	1.0		µg/L	1	3/6/2003
Vinyl chloride	ND	2.0		µg/L	1	3/6/2003
1,2,3-Trichloropropane	ND	2.0		µg/L	1	3/6/2003
Xylenes, Total	ND	1.0		µg/L	1	3/6/2003
Surr: 1,2-Dichloroethane-d4	91.2	74.6-123		%REC	1	3/6/2003
Surr: 4-Bromofluorobenzene	99.7	85.6-117		%REC	1	3/6/2003
Surr: Dibromofluoromethane	91.3	78.6-115		%REC	1	3/6/2003
Surr: Toluene-d8	105	84.2-115		%REC	1	3/6/2003
EPA METHOD 8310: PAHS						
Naphthalene	ND	2.5		µg/L	1	3/14/2003 6:38:11 PM
1-Methylnaphthalene	ND	2.5		µg/L	1	3/14/2003 6:38:11 PM
2-Methylnaphthalene	ND	2.5		µg/L	1	3/14/2003 6:38:11 PM
Acenaphthylene	ND	2.5		µg/L	1	3/14/2003 6:38:11 PM
Acenaphthene	ND	2.5		µg/L	1	3/14/2003 6:38:11 PM
Fluorene	ND	0.80		µg/L	1	3/14/2003 6:38:11 PM
Phenanthrene	ND	0.60		µg/L	1	3/14/2003 6:38:11 PM
Anthracene	ND	0.60		µg/L	1	3/14/2003 6:38:11 PM

Analyst: GT

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 20-Mar-03

CLIENT: San Juan Refining
Lab Order: 0303026
Project: MW #32 Background
Lab ID: 0303026-01

Client Sample ID: MW #32
Collection Date: 3/4/2003 8:30:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Fluoranthene	ND	0.30		µg/L	1	3/14/2003 6:38:11 PM
Pyrene	ND	0.30		µg/L	1	3/14/2003 6:38:11 PM
Benz(a)anthracene	ND	0.020		µg/L	1	3/14/2003 6:38:11 PM
Chrysene	ND	0.20		µg/L	1	3/14/2003 6:38:11 PM
Benzo(b)fluoranthene	ND	0.050		µg/L	1	3/14/2003 6:38:11 PM
Benzo(k)fluoranthene	ND	0.020		µg/L	1	3/14/2003 6:38:11 PM
Benzo(a)pyrene	ND	0.020		µg/L	1	3/14/2003 6:38:11 PM
Dibenz(a,h)anthracene	ND	0.040		µg/L	1	3/14/2003 6:38:11 PM
Benzo(g,h,i)perylene	ND	0.030		µg/L	1	3/14/2003 6:38:11 PM
Indeno(1,2,3-cd)pyrene	ND	0.080		µg/L	1	3/14/2003 6:38:11 PM
Surr: Benzo(e)pyrene	95.0	54-102		%REC	1	3/14/2003 6:38:11 PM

EPA METHOD 7470: MERCURY

Analyst: MAP

Mercury	ND	0.00020		mg/L	1	3/7/2003
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EPA METHOD 6010C: DISSOLVED METALS

Analyst: NMO

Arsenic	ND	0.025		mg/L	1	3/19/2003 1:28:18 PM
Barium	0.043	0.0020		mg/L	1	3/19/2003 1:28:18 PM
Cadmium	ND	0.0020		mg/L	1	3/19/2003 1:28:18 PM
Calcium	440	5.0		mg/L	10	3/19/2003 3:38:23 PM
Chromium	ND	0.0060		mg/L	1	3/19/2003 1:28:18 PM
Copper	ND	0.0060		mg/L	1	3/19/2003 1:28:18 PM
Iron	ND	0.020		mg/L	1	3/11/2003 11:57:06 AM
Lead	ND	0.0050		mg/L	1	3/11/2003 11:57:06 AM
Magnesium	60	0.50		mg/L	1	3/19/2003 3:34:15 PM
Manganese	0.0059	0.0020		mg/L	1	3/11/2003 11:57:06 AM
Potassium	5.3	1.0		mg/L	1	3/19/2003 3:34:15 PM
Selenium	ND	0.025		mg/L	1	3/19/2003 2:54:33 PM
Silver	ND	0.0050		mg/L	1	3/19/2003 2:08:51 PM
Sodium	880	5.0		mg/L	10	3/19/2003 3:38:23 PM
Uranium	ND	0.10		mg/L	1	3/19/2003 1:28:18 PM
Zinc	0.0081	0.0050		mg/L	1	3/19/2003 1:28:18 PM

EPA METHOD 6010C: TOTAL METALS

Analyst: NMO

Arsenic	ND	0.020		mg/L	1	3/10/2003 10:21:47 AM
Barium	0.17	0.0020		mg/L	1	3/10/2003 10:21:47 AM
Cadmium	ND	0.0020		mg/L	1	3/10/2003 10:21:47 AM
Chromium	ND	0.0060		mg/L	1	3/10/2003 1:21:43 PM
Copper	0.0094	0.0060		mg/L	1	3/10/2003 1:21:43 PM
Iron	13	0.20		mg/L	10	3/10/2003 1:34:54 PM
Lead	ND	0.0050		mg/L	1	3/10/2003 10:21:47 AM
Manganese	0.40	0.0020		mg/L	1	3/10/2003 10:21:47 AM
Selenium	ND	0.020		mg/L	1	3/10/2003 1:21:43 PM
Silver	ND	0.0050		mg/L	1	3/10/2003 2:05:23 PM

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 20-Mar-03

CLIENT: San Juan Refining
Lab Order: 0303026
Project: MW #32 Background
Lab ID: 0303026-01

Client Sample ID: MW #32
Collection Date: 3/4/2003 8:30:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Uranium	ND	0.10		mg/L	1	3/10/2003 10:21:47 AM
Zinc	0.017	0.0050		mg/L	1	3/10/2003 10:21:47 AM
EPA METHOD 160.1: TDS						Analyst: MAP
Total Dissolved Solids	3800	1.0		mg/L	1	3/10/2003

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 21-Mar-03

CLIENT: San Juan Refining
Work Order: 0303026
Project: MW #32 Background

QC SUMMARY REPORT
Method Blank

Sample ID	MBLK #1	Batch ID: R7560	Test Code: E300	Units: mg/L	Analysis Date 3/5/2003	Prep Date
Client ID:		Run ID: LC_030305B			SeqNo: 171752	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit	RPD Ref Val %RPD RPDLimit Qual
Fluoride	ND	0.10				
Chloride	ND	0.10				
Nitrogen, Nitrite (As N)	ND	0.10				
Nitrogen, Nitrate (As N)	ND	0.10				
Phosphorus, Orthophosphate (As P)	ND	0.50				
Sulfate	ND	0.50				

Sample ID	MBLK	Batch ID: R7560	Test Code: E300	Units: mg/L	Analysis Date 3/5/2003	Prep Date
Client ID:		Run ID: LC_030305B			SeqNo: 171768	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit	RPD Ref Val %RPD RPDLimit Qual
Fluoride	ND	0.10				
Chloride	ND	0.10				
Nitrogen, Nitrite (As N)	ND	0.10				
Nitrogen, Nitrate (As N)	ND	0.10				
Phosphorus, Orthophosphate (As P)	ND	0.50				
Sulfate	ND	0.50				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: 21-Mar-03

CLIENT: San Juan Refining
Work Order: 0303026
Project: MW #32 Background

QC SUMMARY REPORT
Method Blank

Sample ID	rb	Batch ID: R7550	Test Code: SW8260B	Units: µg/L	Analysis Date 3/5/2003	Prep Date						
Client ID:			Run ID: VAL_030305A		SeqNo: 171559							
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene		ND	1.0									
Toluene		ND	1.0									
Ethylbenzene		ND	1.0									
Methyl tert-butyl ether (MTBE)		ND	1.0									
1,2,4-Trimethylbenzene		ND	1.0									
1,3,5-Trimethylbenzene		ND	1.0									
1,2-Dichloroethane (EDC)		0.516	1.0									J
1,2-Dibromoethane (EDB)		ND	1.0									
Naphthalene		ND	2.0									
1-Methylnaphthalene		ND	4.0									
2-Methylnaphthalene		ND	4.0									
Bromobenzene		ND	1.0									
Bromochloromethane		ND	1.0									
Bromodichloromethane		ND	1.0									
Bromoform		ND	1.0									
Bromomethane		ND	2.0									
Carbon Tetrachloride		ND	1.0									
Chlorobenzene		ND	1.0									
Chloroethane		ND	2.0									
Chloroform		ND	1.0									
Chloromethane		ND	1.0									
2-Chlorotoluene		ND	1.0									
4-Chlorotoluene		ND	1.0									
cis-1,2-DCE		ND	1.0									
cis-1,3-Dichloropropene		ND	1.0									
1,2-Dibromo-3-chloropropane		0.23	2.0									J
Dibromochloromethane		ND	1.0									

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

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Method Blank

CLIENT: San Juan Refining
 Work Order: 0303026
 Project: MW #32 Background

Dibromomethane	ND	2.0
1,2-Dichlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
Dichlorodifluoromethane	ND	1.0
1,1-Dichloroethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,2-Dichloropropane	ND	1.0
1,3-Dichloropropane	ND	1.0
2,2-Dichloropropane	ND	1.0
1,1-Dichloropropene	ND	1.0
Hexachlorobutadiene	ND	1.0
Isopropylbenzene	ND	1.0
4-Isopropyltoluene	ND	1.0
Methylene Chloride	ND	3.0
n-Butylbenzene	ND	1.0
n-Propylbenzene	ND	1.0
sec-Butylbenzene	ND	1.0
Styrene	ND	1.0
tert-Butylbenzene	ND	1.0
Tetrachloroethene (PCE)	ND	1.0
1,1,1,2-Tetrachloroethane	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
trans-1,2-DCE	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Trichloroethene (TCE)	ND	1.0
Trichlorofluoromethane	ND	1.0
1,2,3-Trichlorobenzene	ND	1.0
1,2,4-Trichlorobenzene	ND	1.0
1,1,1-Trichloroethane	ND	1.0
1,1,2-Trichloroethane	ND	1.0
Vinyl chloride	ND	2.0
1,2,3-Trichloropropane	ND	2.0

Qualifiers: ND - Not Detected at the Reporting Limit
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

Method Blank

Project: MW #32 Background

Xylenes, Total		ND	1.0					
Surr: 1,2-Dichloroethane-d4	9.052	0	10	0	90.5	74.6	123	0
Surr: 4-Bromofluorobenzene	10.32	0	10	0	103	85.6	117	0
Surr: Dibromofluoromethane	9.252	0	10	0	92.5	78.6	115	0
Surr: Toluene-d8	10.6	0	10	0	106	84.2	115	0

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Hall Environmental Analysis Laboratory

Date: 21-Mar-03

CLIENT: San Juan Refining

Work Order: 0303026

Project: MW #32 Background

QC SUMMARY REPORT

Method Blank

Sample ID	BLK	Batch ID: R7609	Test Code: SW6010A	Units: mg/L	Analysis Date	3/11/2003 11:24:51 AM	Prep Date				
Client ID:		Run ID: ICP_030311C			SeqNo:	172601					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.020									
Barium	ND	0.0020									
Cadmium	ND	0.0020									
Calcium	ND	0.50									
Chromium	ND	0.0060									
Copper	ND	0.0060									
Iron	ND	0.020									
Lead	ND	0.0050									
Magnesium	ND	0.50									
Manganese	ND	0.0020									
Potassium	ND	1.0									
Selenium	ND	0.020									
Silver	ND	0.0050									
Sodium	ND	0.50									
Uranium	ND	0.10									
Zinc	ND	0.0050									

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

1

Hall Environmental Analysis Laboratory

Date: 21-Mar-03

CLIENT: San Juan Refining

Work Order: 0303026

Project: MW #32 Background

QC SUMMARY REPORT

Method Blank

Sample ID	MB-3215	Batch ID: 3215	Test Code: SW8310	Units: µg/L	Analysis Date	3/14/2003 5:02:13 PM	Prep Date	3/6/2003			
Client ID:		Run ID:	HUGO_030314A		SeqNo:	173936					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	ND	2.5									
1-Methylnaphthalene	ND	2.5									
2-Methylnaphthalene	ND	2.5									
Acenaphthylene	ND	2.5									
Acenaphthene	ND	2.5									
Fluorene	ND	0.80									
Phenanthrene	ND	0.60									
Anthracene	ND	0.60									
Fluoranthene	ND	0.30									
Pyrene	ND	0.30									
Benz(a)anthracene	ND	0.020									
Chrysene	ND	0.20									
Benzo(b)fluoranthene	ND	0.050									
Benzo(k)fluoranthene	ND	0.020									
Benzo(a)pyrene	0.01	0.020									J
Dibenz(a,h)anthracene	ND	0.040									
Benzo(g,h,i)perylene	0.02	0.030									J
Indeno(1,2,3-cd)pyrene	ND	0.080									
Surr: Benzo(e)pyrene	16.24	0	20	0	81.2	54	102	0			

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

J

CLIENT: San Juan Refining
Work Order: 0303026
Project: MW #32 Background

QC SUMMARY REPORT
Method Blank

Sample ID MB-3215	Batch ID: 3215	Test Code: SW8310	Units: µg/L	Analysis Date 3/14/2003 5:02:13 PM	Prep Date 3/6/2003						
Client ID:		Run ID: HUGO_030314A		SeqNo: 173953							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	ND	10									
1-Methylnaphthalene	ND	10									
2-Methylnaphthalene	ND	10									
Benzo(a)pyrene	ND	0.10									
Surr: Benzo(e)pyrene	16.24	0	20	0	81.2	54	102	0			

Sample ID	MBLK	Batch ID: R7600	Test Code: E160.1	Units: mg/L	Analysis Date	3/10/2003	Prep Date	3/7/2003				
Client ID:		Run ID: WC_030310D			SeqNo:	172390						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids		ND	1.0									

Hall Environmental Analysis Laboratory

Date: 20-Mar-03

CLIENT: San Juan Refining

Work Order: 0303026

Project: MW #32 Background

QC SUMMARY REPORT

Sample Duplicate

Sample ID	0303026-01C	Batch ID: R7560	Test Code: E300	Units: mg/L	Analysis Date	3/5/2003	Prep Date
Client ID:	MW #32	Run ID: LC_030305B	SPK value	SPK Ref Val	SeqNo: 171764		
Analyte	Result	PQL	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Fluoride	0.138	0.10	0	0	0	0.138	0 20
Phosphorus, Orthophosphate (As P)	ND	0.50	0	0	0	0	0 20

Sample ID	0303026-01C	Batch ID: R7560	Test Code: E300	Units: mg/L	Analysis Date	3/5/2003	Prep Date
Client ID:	MW #32	Run ID: LC_030305B	SPK value	SPK Ref Val	SeqNo: 171766		
Analyte	Result	PQL	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Nitrogen, Nitrite (As N)	ND	0.50	0	0	0	0	0 20
Nitrogen, Nitrate (As N)	26.37	0.50	0	0	0	26.58	0.793 20

Sample ID	0303026-01C	Batch ID: R7569	Test Code: E300	Units: mg/L	Analysis Date	3/6/2003	Prep Date
Client ID:	MW #32	Run ID: LC_030306A	SPK value	SPK Ref Val	SeqNo: 171943		
Analyte	Result	PQL	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chloride	886	10	0	0	0	874	1.37 20
Sulfate	1219	50	0	0	0	1217	0.174 20

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

CLIENT: San Juan Refining
Work Order: 0303026
Project: MW #32 Background

QC SUMMARY REPORT
 Sample Duplicate

Sample ID	0303026-01C DUP	Batch ID: R7708	Test Code: SW6010A	Units: mg/L	Analysis Date	3/19/2003 1:31:35 PM	Prep Date				
Client ID:	MW #32		Run ID: ICP_030319D		SeqNo:	174917					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.020	0	0	0	0	0	0	0	20	
Barium	0.0458	0.0020	0	0	0	0	0	0.04283	6.70	20	
Cadmium	0.001732	0.0020	0	0	0	0	0	0.0007428	0	20	J
Chromium	0.003754	0.0060	0	0	0	0	0	0.00382	0	20	J
Copper	0.005972	0.0060	0	0	0	0	0	0.005198	0	20	J
Uranium	0.09505	0.10	0	0	0	0	0	0.09119	0	20	J
Zinc	0.008344	0.0050	0	0	0	0	0	0.008059	3.48	20	

Sample ID	0303026-01C DUP	Batch ID: R7710	Test Code: SW6010A	Units: mg/L	Analysis Date	3/19/2003 2:55:56 PM	Prep Date				
Client ID:	MW #32		Run ID: ICP_030319E		SeqNo:	174938					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.01213	0.020	0	0	0	0	0	0.01118	0	20	J

Sample ID	0303026-01C DUP	Batch ID: R7711	Test Code: SW6010A	Units: mg/L	Analysis Date	3/19/2003 2:09:59 PM	Prep Date				
Client ID:	MW #32		Run ID: ICP_030319F		SeqNo:	174945					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	ND	0.0050	0	0	0	0	0	0	0	20	

Sample ID	0303026-01C DUP	Batch ID: R7712	Test Code: SW6010A	Units: mg/L	Analysis Date	3/19/2003 3:36:22 PM	Prep Date				
Client ID: MW #32			Run ID: ICP_030319G		SeqNo: 174957						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	62.92	0.50	0	0	0	0	0	60.44	4.01	20	
Potassium	5.332	1.0	0	0	0	0	0	5.293	0.725	20	

Qualifiers: ND - Not Detected at the Reporting Limit
 S - Spike Recovery outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits
 R - RPD outside accepted recovery limits

CLIENT: San Juan Refining
Work Order: 0303026
Project: MW #32 Background

QC SUMMARY REPORT

Sample Duplicate

Sample ID 0303026-01C **Batch ID:** R7600 **Test Code:** E160.1 **Units:** mg/L **Analysis Date** 3/10/2003 **Prep Date** 3/7/2003
Client ID: MW #32 **Run ID:** WC_030310D **SeqNo:** 172393

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids	3942	1.0	0	0	0	0	0	3845	2.49	20	

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

Hall Environmental Analysis Laboratory

Date: 20-Mar-03

CLIENT: San Juan Refining
 Work Order: 0303026
 Project: MW #32 Background

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID	0303026-01BMS	Batch ID: 3215	Test Code: SW8310	Units: µg/L	Analysis Date	3/14/2003 8:14:07 PM	Prep Date	3/6/2003			
Client ID:	MW #32	Run ID:	HUGO_030314A	SeqNo:	173940						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	15.29	2.5	40	0	38.2	26.6	84.1	0			
1-Methylnaphthalene	15.41	2.5	40.1	0	38.4	24.2	87.5	0			
2-Methylnaphthalene	15.46	2.5	40	0	38.7	23.4	86.3	0			
Acenaphthylene	16.17	2.5	40.1	0	40.3	33.3	90	0			
Acenaphthene	16.39	2.5	40	0	41.0	31.9	93.1	0			
Fluorene	1.85	0.80	4.01	0	46.1	34.9	96.8	0			
Phenanthrene	1.23	0.60	2.01	0	61.2	50.5	105	0			
Anthracene	1.23	0.60	2.01	0	61.2	55.5	99.1	0			
Fluoranthene	2.99	0.30	4.01	0	74.6	67.8	104	0			
Pyrene	3.07	0.30	4.01	0	76.6	69.3	108	0			
Benz(a)anthracene	0.34	0.020	0.401	0	84.8	73.1	109	0			
Chrysene	1.7	0.20	2.01	0	84.6	72.7	110	0			
Benzo(b)fluoranthene	0.45	0.050	0.501	0	89.8	42.1	139	0			
Benzo(k)fluoranthene	0.22	0.020	0.25	0	88.0	71.2	112	0			
Benzo(a)pyrene	0.23	0.020	0.251	0.01	87.6	73	110	0			
Dibenz(a,h)anthracene	0.46	0.040	0.501	0	91.8	72	113	0			
Benzo(g,h,i)perylene	0.47	0.030	0.5	0.02	90.0	71.6	118	0			
Indeno(1,2,3-cd)pyrene	0.929	0.080	1.002	0	92.7	75	114	0			
Surr: Benzo(e)pyrene	18.27	0	20	0	91.4	54	102	0			

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
 Work Order: 0303026
 Project: MW #32 Background

QC SUMMARY REPORT

Sample Matrix Spike Duplicate

Sample ID 0303026-01BMSD Batch ID: 3215 Test Code: SW8310 Units: µg/L Analysis Date 3/14/2003 9:02:05 PM Prep Date 3/6/2003
 Client ID: MW #32 Run ID: HUGO_030314A SeqNo: 173941

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	18.16	2.5	40	0	45.4	26.6	84.1	15.29	17.2	27.4	
1-Methylnaphthalene	18.62	2.5	40.1	0	46.4	24.2	87.5	15.41	18.9	31.8	
2-Methylnaphthalene	18.53	2.5	40	0	46.3	23.4	86.3	15.46	18.1	33.9	
Acenaphthylene	19.65	2.5	40.1	0	49.0	33.3	90	16.17	19.4	29.6	
Acenaphthene	19.62	2.5	40	0	49.1	31.9	93.1	16.39	17.9	30.9	
Fluorene	2.05	0.80	4.01	0	51.1	34.9	96.8	1.85	10.3	32	
Phenanthrene	1.3	0.60	2.01	0	64.7	50.5	105	1.23	5.53	21.6	
Anthracene	1.31	0.60	2.01	0	65.2	55.5	99.1	1.23	6.30	18.7	
Fluoranthene	3.09	0.30	4.01	0	77.1	67.8	104	2.99	3.29	12.4	
Pyrene	3.17	0.30	4.01	0	79.1	69.3	108	3.07	3.21	12.5	
Benz(a)anthracene	0.34	0.020	0.401	0	84.8	73.1	109	0.34	0	13.6	
Chrysene	1.72	0.20	2.01	0	85.6	72.7	110	1.7	1.17	12.6	
Benzo(b)fluoranthene	0.45	0.050	0.501	0	89.8	42.1	139	0.45	0	13.3	
Benzo(k)fluoranthene	0.22	0.020	0.25	0	88.0	71.2	112	0.22	0	17	
Benzo(a)pyrene	0.23	0.020	0.251	0.01	87.6	73	110	0.23	0	12.1	
Dibenz(a,h)anthracene	0.46	0.040	0.501	0	91.8	72	113	0.46	0	13.6	
Benzo(g,h,i)perylene	0.47	0.030	0.5	0.02	90.0	71.6	118	0.47	0	15.5	
Indeno(1,2,3-cd)pyrene	0.944	0.080	1.002	0	94.2	75	114	0.929	1.60	15.4	
Surr: Benzo(e)pyrene	17.85	0	20	0	89.3	54	102	18.27	2.33	20	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
Work Order: 0303026
Project: MW #32 Background

QC SUMMARY REPORT
 Sample Matrix Spike

Sample ID	0303026-01C MS	Batch ID: R7708	Test Code: SW6010A		Units: mg/L		Analysis Date 3/19/2003 1:34:52 PM		Prep Date		
Client ID: MW #32			Run ID: ICP_030319D				SeqNo: 174918				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.9237	0.020	1	0	92.4	75	125	0			
Barium	0.9629	0.0020	1	0.04283	92.0	75	125	0			
Cadmium	0.9311	0.0020	1	0.0007428	93.0	75	125	0			
Chromium	0.8911	0.0060	1	0.00382	88.7	75	125	0			
Copper	1.039	0.0060	1	0.005198	103	75	125	0			
Uranium	0.1281	0.10	1	0.09119	3.69	75	125	0			S
Zinc	0.8378	0.0050	1	0.008059	83.0	75	125	0			

Sample ID	0303026-01C MS	Batch ID: R7710	Test Code: SW6010A	Units: mg/L	Analysis Date	3/19/2003 2:59:18 PM	Prep Date				
Client ID:	MW #32		Run ID: ICP_030319E		SeqNo:	174940					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	1.003	0.020	1	0	100	75	125	0			

Sample ID	0303026-01C MS	Batch ID: R7711	Test Code: SW6010A	Units: mg/L	Analysis Date	3/19/2003 2:11:03 PM	Prep Date				
Client ID: MW #32			Run ID: ICP_030319F		SeqNo: 174946						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	0.7093	0.0050	1	0	70.9	75	125	0			S

Sample ID	0303026-01C MS	Batch ID: R7712	Test Code: SW6010A	Units: mg/L	Analysis Date	3/19/2003 3:40:27 PM	Prep Date				
Client ID: MW #32			Run ID: ICP_030319G		SeqNo: 174959						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	73.25	0.50	10	60.44	128	75	129	0			S
Potassium	14.3	1.0	10	5.293	90.1	75	125	0			

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

Sample Matrix Spike

Project: MW #32 Background

Sample ID 0303026-01C

Client ID: MW #32

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
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Total Dissolved Solids	4945	1.0	1000	3845	110	80	120	0
------------------------	------	-----	------	------	-----	----	-----	---

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	
			4

Hall Environmental Analysis Laboratory

Date: 20-Mar-03

CLIENT: San Juan Refining

Work Order: 0303026

Project: MW #32 Background

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID	LCS #1	Batch ID: R7560	Test Code: E300	Units: mg/L	Analysis Date 3/5/2003	Prep Date					
Client ID:		Run ID: LC_030305B			SeqNo: 171753						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.78	0.10	1.923	0	92.6	90	110	0			
Chloride	5.4	0.10	5.769	0	93.6	90	110	0			
Nitrogen, Nitrite (As N)	1.847	0.10	1.923	0	96.0	90	110	0			
Nitrogen, Nitrate (As N)	5.636	0.10	5.769	0	97.7	90	110	0			
Phosphorus, Orthophosphate (As P)	5.659	0.50	5.769	0	98.1	90	110	0			
Sulfate	11.4	0.50	11.54	0	98.8	90	110	0			

Sample ID	LCS #1	Batch ID: R7569	Test Code: E300	Units: mg/L	Analysis Date 3/6/2003	Prep Date					
Client ID:		Run ID: LC_030306A			SeqNo: 171942						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.828	0.10	1.923	0	95.1	90	110	0			
Chloride	5.269	0.10	5.769	0	91.3	90	110	0			
Nitrogen, Nitrite (As N)	1.886	0.10	1.923	0	98.1	90	110	0			
Nitrogen, Nitrate (As N)	5.632	0.10	5.769	0	97.6	90	110	0			
Phosphorus, Orthophosphate (As P)	5.695	0.50	5.769	0	98.7	90	110	0			
Sulfate	11.6	0.50	11.54	0	101	90	110	0			

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

Hall Environmental Analysis Laboratory

Date: 21-Mar-03

CLIENT: San Juan Refining

Work Order: 0303026

Project: MW #32 Background

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID	50ccv	Batch ID: R7550	Test Code: SW8260B	Units: µg/L	Analysis Date 3/6/2003	Prep Date
Client ID:		Run ID: VAL_030305A	PQL	SPK value	SPK Ref Val	SeqNo: 171560
Analyte	Result	PQL	%REC	LowLimit	HighLimit	RPD Ref Val
Benzene	10.69	1.0	107	78.7	122	0
Toluene	10.79	1.0	108	87.7	122	0
Chlorobenzene	9.946	1.0	99.5	85.6	136	0
1,1-Dichloroethene	10.14	1.0	101	70.7	117	0
Trichloroethene (TCE)	10.74	1.0	107	76.9	130	0

Sample ID	50ccvb	Batch ID: R7550	Test Code: SW8260B	Units: µg/L	Analysis Date 3/6/2003	Prep Date
Client ID:		Run ID: VAL_030305A	PQL	SPK value	SPK Ref Val	SeqNo: 171561
Analyte	Result	PQL	%REC	LowLimit	HighLimit	RPD Ref Val
Benzene	10.75	1.0	108	78.7	122	10.69
Toluene	10.75	1.0	108	76	128	10.79
Chlorobenzene	10.08	1.0	101	85.6	136	9.946
1,1-Dichloroethene	10.27	1.0	103	70.7	117	10.14
Trichloroethene (TCE)	10.94	1.0	109	76.9	130	10.74

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

Hall Environmental Analysis Laboratory

Date: 21-Mar-03

CLIENT: San Juan Refining

Work Order: 0303026

Project: MW #32 Background

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

Sample ID	LCS-3219	Batch ID: 3219	Test Code: SW6010A	Units: mg/L	Analysis Date	3/7/2003 2:11:04 PM	Prep Date	3/6/2003			
Client ID:			Run ID: ICP_030307H		SeqNo: 172277						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	1.047	0.020	1	0	105	70	130	0			
Chromium	1.024	0.0060	1	0	102	70	130	0			

Sample ID	LCS-3219	Batch ID: 3219	Test Code: SW6010A	Units: mg/L	Analysis Date	3/10/2003 9:10:43 AM	Prep Date	3/6/2003			
Client ID:			Run ID: ICP_030310A		SeqNo:	172330					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	1.029	0.020	1	0	103	70	130	0			
Barium	1.059	0.0020	1	0	106	70	130	0			
Cadmium	0.9749	0.0020	1	0	97.5	70	130	0			
Copper	1.026	0.0060	1	0	103	70	130	0			
Iron	1.002	0.020	1	0	100	70	130	0			
Lead	1.038	0.0050	1	0	104	70	130	0			
Manganese	0.9764	0.0020	1	0	97.6	70	130	0			
Uranium	1.008	0.10	1	0	101	70	130	0			
Zinc	1.06	0.0050	1	0	106	70	130	0			

Sample ID	LCS-3219	Batch ID: 3219	Test Code: SW6010A	Units: mg/L	Analysis Date	3/10/2003 1:54:20 PM	Prep Date	3/6/2003			
Client ID:			Run ID: ICP_030310C		SeqNo:	172380					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	1.009	0.0050	1	0	101	70	130	0			

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

/

CLIENT: San Juan Refining

Work Order: 0303026

Project: MW #32 Background

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID LCS-3219 Batch ID: 3219 Test Code: SW6010A Units: mg/L Analysis Date 3/10/2003 12:50:55 PM Prep Date 3/6/2003

Client ID: Run ID: ICP_030310B SeqNo: 174636

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.8885	0.0060	1	0	88.9	70	130	0			
Copper	1.045	0.0060	1	0	104	70	130	0			
Iron	1.003	0.020	1	0	100	70	130	0			
Selenium	1.004	0.020	1	0	100	70	130	0			

Sample ID LCSD-3219 Batch ID: 3219 Test Code: SW6010A Units: mg/L Analysis Date 3/10/2003 12:53:07 PM Prep Date 3/6/2003

Client ID: Run ID: ICP_030310B SeqNo: 174637

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.9123	0.0060	1	0	91.2	70	130	0.8885	2.64	30	
Copper	1.09	0.0060	1	0	109	70	130	1.045	4.25	30	
Iron	1.039	0.020	1	0	104	70	130	1.003	3.56	30	
Selenium	1.058	0.020	1	0	106	70	130	1.004	5.30	30	

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name **SJR**

Date and Time Receive

3/5/03

Work Order Number **0303026**

Received by **AT**

Checklist completed by

Signature

Date

Matrix:

Carrier name: **UPS**

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒
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 ☐	
Samples received within holding time?	Yes ☒	No ☐	
ter - 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 Acceptable	

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

HALL ENVIRONMENTAL ANALYSIS LABORATORY

4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Accreditation Applie.

NELAC ☐ USACE ☐

Other:

Project Name: MW #32 - Background

Client: San Juan Refinery

Address: #50 CR 4990

Bloom field, NM

87413

Sample: Cindy Hurtado / David Folk

Sample Temperature:

505-632-4161

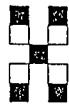
SDS-632-3911

[illegible]

ANALYSIS REQUEST

[illegible]

Remarks:



Hall Environmental Analysis Laboratory

COVER LETTER

March 06, 2003

Cindy Hurtado
San Juan Refining
#50 CR 4990
Bloomfield, NM 87413
TEL: (505) 632-4161
FAX (505) 632-3911

RE: 1st Half 2003 Semi-Annual MW

Order No.: 0303025

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory received 6 samples on 3/5/2003 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

Hall Environmental Analysis Laboratory

Date: 06-Mar-03

CLIENT: San Juan Refining
Project: 1st Half 2003 Semi-Annual MW
Lab Order: 0303025

CASE NARRATIVE

Analytical Comments for METHOD 8021BTEX_W, SAMPLE 0303025-04a: Necessary dilution due to the foamy nature of the sample. Analytical Comments for METHOD 8021BTEX_W, SAMPLE 0303025-05a: Necessary dilution due to the foamy nature of the sample.

Hall Environmental Analysis Laboratory

Date: 06-Mar-03

CLIENT: San Juan Refining

Client Sample ID: MW#13

Lab Order: 0303025

Collection Date: 3/3/2003 3:35:00 PM

Project: 1st Half 2003 Semi-Annual MW

Lab ID: 0303025-01

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NB
Methyl tert-butyl ether (MTBE)	49	2.5		µg/L	1	3/5/2003 2:45:14 PM
Benzene	ND	0.50		µg/L	1	3/5/2003 2:45:14 PM
Toluene	ND	0.50		µg/L	1	3/5/2003 2:45:14 PM
Ethylbenzene	ND	0.50		µg/L	1	3/5/2003 2:45:14 PM
Xylenes, Total	1.2	0.50		µg/L	1	3/5/2003 2:45:14 PM
Surr: 4-Bromofluorobenzene	99.4	74-118		%REC	1	3/5/2003 2:45:14 PM

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 06-Mar-03

CLIENT: San Juan Refining

Client Sample ID: MW#38

Lab Order: 0303025

Collection Date: 3/3/2003 11:00:00 AM

Project: 1st Half 2003 Semi-Annual MW

Lab ID: 0303025-02

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NB
Methyl tert-butyl ether (MTBE)	16	2.5		µg/L	1	3/5/2003 8:13:02 PM
Benzene	ND	0.50		µg/L	1	3/5/2003 8:13:02 PM
Toluene	ND	0.50		µg/L	1	3/5/2003 8:13:02 PM
Ethylbenzene	ND	0.50		µg/L	1	3/5/2003 8:13:02 PM
Xylenes, Total	1.4	0.50		µg/L	1	3/5/2003 8:13:02 PM
Surr: 4-Bromofluorobenzene	96.7	74-118		%REC	1	3/5/2003 8:13:02 PM

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 06-Mar-03

CLIENT: San Juan Refining

Client Sample ID: MW#1

Lab Order: 0303025

Collection Date: 3/3/2003 9:15:00 AM

Project: 1st Half 2003 Semi-Annual MW

Lab ID: 0303025-03

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NB
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	3/5/2003 4:16:09 PM
Benzene	ND	0.50		µg/L	1	3/5/2003 4:16:09 PM
Toluene	0.63	0.50		µg/L	1	3/5/2003 4:16:09 PM
Ethylbenzene	0.65	0.50		µg/L	1	3/5/2003 4:16:09 PM
Xylenes, Total	4.3	0.50		µg/L	1	3/5/2003 4:16:09 PM
Surr: 4-Bromofluorobenzene	101	74-118		%REC	1	3/5/2003 4:16:09 PM

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 06-Mar-03

CLIENT: San Juan Refining
Lab Order: 0303025
Project: 1st Half 2003 Semi-Annual MW
Lab ID: 0303025-04

Client Sample ID: MW#37
Collection Date: 3/3/2003 1:45:00 PM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NB
Methyl tert-butyl ether (MTBE)	ND	13		µg/L	5	3/5/2003 8:43:17 PM
Benzene	ND	2.5		µg/L	5	3/5/2003 8:43:17 PM
Toluene	3.3	2.5		µg/L	5	3/5/2003 8:43:17 PM
Ethylbenzene	3.8	2.5		µg/L	5	3/5/2003 8:43:17 PM
Xylenes, Total	31	2.5		µg/L	5	3/5/2003 8:43:17 PM
Surr: 4-Bromofluorobenzene	98.5	74-118		%REC	5	3/5/2003 8:43:17 PM

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 06-Mar-03

CLIENT: San Juan Refining

Client Sample ID: MW#35

Lab Order: 0303025

Collection Date: 3/3/2003 2:15:00 PM

Project: 1st Half 2003 Semi-Annual MW

Lab ID: 0303025-05

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NB
Methyl tert-butyl ether (MTBE)	14	13		µg/L	5	3/5/2003 9:13:30 PM
Benzene	3.8	2.5		µg/L	5	3/5/2003 9:13:30 PM
Toluene	ND	2.5		µg/L	5	3/5/2003 9:13:30 PM
Ethylbenzene	2.7	2.5		µg/L	5	3/5/2003 9:13:30 PM
Xylenes, Total	21	2.5		µg/L	5	3/5/2003 9:13:30 PM
Surr: 4-Bromofluorobenzene	105	74-118		%REC	5	3/5/2003 9:13:30 PM

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 06-Mar-03

CLIENT: San Juan Refining

Client Sample ID: MW#12

Lab Order: 0303025

Collection Date: 3/3/2003 10:30:00 AM

Project: 1st Half 2003 Semi-Annual MW

Lab ID: 0303025-06

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NB
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	3/5/2003 9:43:41 PM
Benzene	ND	0.50		µg/L	1	3/5/2003 9:43:41 PM
Toluene	0.87	0.50		µg/L	1	3/5/2003 9:43:41 PM
Ethylbenzene	1.3	0.50		µg/L	1	3/5/2003 9:43:41 PM
Xylenes, Total	15	0.50		µg/L	1	3/5/2003 9:43:41 PM
Surr: 4-Bromofluorobenzene	102	74-118		%REC	1	3/5/2003 9:43:41 PM

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 06-Mar-03

CLIENT: San Juan Refining
Work Order: 0303025
Project: 1st Half 2003 Semi-Annual MW

QC SUMMARY REPORT
Method Blank

Sample ID: Reagent Blank 5m Batch ID: R7544 Test Code: SW8021 Units: µg/L Analysis Date: 3/5/2003 10:06:58 AM Prep Date
Client ID: Run ID: PIDHALL_030305A SeqNo: 171493

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	2.5									
Benzene	ND	0.50									
Toluene	ND	0.50									
Ethylbenzene	ND	0.50									
Xylenes, Total	ND	0.50									
Surr: 4-Bromofluorobenzene	19.23	0	20	0	96.1	74	118	0			

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

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: 06-Mar-03

CLIENT: San Juan Refining

Work Order: 0303025

Project: 1st Half 2003 Semi-Annual MW

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID	0303025-01aMS	Batch ID: R7544	Test Code: SW8021	Units: µg/L	Analysis Date	3/5/2003 6:17:03 PM	Prep Date				
Client ID:	MW#13	Run ID:	PIDHALL_030305A	SeqNo:	171506						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	93.79	2.5	40	49.2	111	65	132	0			
Benzene	20.08	0.50	20	0	100	77	122	0			
Toluene	20.1	0.50	20	0	100	81	115	0			
Ethylbenzene	19.98	0.50	20	0.4726	97.5	84	117	0			
Xylenes, Total	62.58	0.50	60	1.239	102	84	116	0			

Sample ID	0303025-01aMSD	Batch ID: R7544	Test Code: SW8021		Units: µg/L		Analysis Date		3/5/2003 6:47:14 PM		Prep Date	
Client ID:	MW#13		Run ID:	PIDHALL_030305A			SeqNo:	171509				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)		91.31	2.5	40	49.2	105	65	132	93.79	2.68	28	
Benzene		20.82	0.50	20	0	104	77	122	20.08	3.59	27	
Toluene		20.22	0.50	20	0	101	81	115	20.1	0.613	19	
Ethylbenzene		20.86	0.50	20	0.4726	102	84	117	19.98	4.33	10	
Xylenes, Total		64.38	0.50	60	1.239	105	84	116	62.58	2.83	13	

Qualifiers:

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

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name **SJR**

Date and Time Received

3/5/03

Work Order Number **0303025**

Received by **AMF**

Checklist completed by

[Signature]

3/5/03

Signature

Date

Matrix:

Carrier name: UPS

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒
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 Acceptable	

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

**Annual
Sampling Event
Water Analysis**



Hall Environmental Analysis Laboratory

COVER LETTER

September 05, 2003

Cindy Hurtado
San Juan Refining
#50 CR 4990
Bloomfield, NM 87413
TEL: (505) 632-4161
FAX (505) 632-3911

RE: Annual Monitor Wells 2003

Order No.: 0308154

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory received 7 samples on 8/20/2003 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

Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT: San Juan Refining

Client Sample ID: P-#4

Lab Order: 0308154

Collection Date: 8/19/2003 1:45:00 PM

Project: Annual Monitor Wells 2003

Lab ID: 0308154-01

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: BDH
Fluoride	0.24	0.10		mg/L	1	8/20/2003 3:50:45 PM
Chloride	74	1.0		mg/L	10	8/21/2003 5:08:28 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/20/2003 3:50:45 PM
Bromide	1.4	0.10		mg/L	1	8/20/2003 3:50:45 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/20/2003 3:50:45 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/20/2003 3:50:45 PM
Sulfate	56	0.50		mg/L	1	8/20/2003 3:50:45 PM
EPA METHOD 8260B: VOLATILES						Analyst: BL
Benzene	2700	100		µg/L	100	8/21/2003
Toluene	1100	100		µg/L	100	8/21/2003
Ethylbenzene	3000	100		µg/L	100	8/21/2003
Methyl tert-butyl ether (MTBE)	ND	100		µg/L	100	8/21/2003
1,2,4-Trimethylbenzene	1500	100		µg/L	100	8/21/2003
1,3,5-Trimethylbenzene	200	100		µg/L	100	8/21/2003
1,2-Dichloroethane (EDC)	ND	100		µg/L	100	8/21/2003
1,2-Dibromoethane (EDB)	ND	100		µg/L	100	8/21/2003
Naphthalene	300	200		µg/L	100	8/21/2003
1-Methylnaphthalene	ND	400		µg/L	100	8/21/2003
2-Methylnaphthalene	ND	400		µg/L	100	8/21/2003
Acetone	ND	1000		µg/L	100	8/21/2003
Bromobenzene	ND	100		µg/L	100	8/21/2003
Bromochloromethane	ND	100		µg/L	100	8/21/2003
Bromodichloromethane	ND	100		µg/L	100	8/21/2003
Bromoform	ND	100		µg/L	100	8/21/2003
Bromomethane	ND	200		µg/L	100	8/21/2003
2-Butanone	ND	1000		µg/L	100	8/21/2003
Carbon disulfide	ND	1000		µg/L	100	8/21/2003
Carbon Tetrachloride	ND	100		µg/L	100	8/21/2003
Chlorobenzene	ND	100		µg/L	100	8/21/2003
Chloroethane	ND	200		µg/L	100	8/21/2003
Chloroform	ND	100		µg/L	100	8/21/2003
Chloromethane	ND	100		µg/L	100	8/21/2003
2-Chlorotoluene	ND	100		µg/L	100	8/21/2003
4-Chlorotoluene	ND	100		µg/L	100	8/21/2003
cis-1,2-DCE	ND	100		µg/L	100	8/21/2003
cis-1,3-Dichloropropene	ND	100		µg/L	100	8/21/2003
1,2-Dibromo-3-chloropropane	ND	200		µg/L	100	8/21/2003
Dibromochloromethane	ND	100		µg/L	100	8/21/2003
Dibromomethane	ND	200		µg/L	100	8/21/2003
1,2-Dichlorobenzene	ND	100		µg/L	100	8/21/2003

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT: San Juan Refining

Client Sample ID: P-#4

Lab Order: 0308154

Collection Date: 8/19/2003 1:45:00 PM

Project: Annual Monitor Wells 2003

Lab ID: 0308154-01

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,3-Dichlorobenzene	ND	100		µg/L	100	8/21/2003
1,4-Dichlorobenzene	ND	100		µg/L	100	8/21/2003
Dichlorodifluoromethane	ND	100		µg/L	100	8/21/2003
1,1-Dichloroethane	ND	100		µg/L	100	8/21/2003
1,1-Dichloroethene	ND	100		µg/L	100	8/21/2003
1,2-Dichloropropane	ND	100		µg/L	100	8/21/2003
1,3-Dichloropropane	ND	100		µg/L	100	8/21/2003
2,2-Dichloropropane	ND	100		µg/L	100	8/21/2003
1,1-Dichloropropene	ND	100		µg/L	100	8/21/2003
Hexachlorobutadiene	ND	100		µg/L	100	8/21/2003
2-Hexanone	ND	1000		µg/L	100	8/21/2003
Isopropylbenzene	130	100		µg/L	100	8/21/2003
4-Isopropyltoluene	ND	100		µg/L	100	8/21/2003
4-Methyl-2-pentanone	ND	1000		µg/L	100	8/21/2003
Methylene Chloride	ND	300		µg/L	100	8/21/2003
n-Butylbenzene	ND	100		µg/L	100	8/21/2003
n-Propylbenzene	370	100		µg/L	100	8/21/2003
sec-Butylbenzene	ND	100		µg/L	100	8/21/2003
Styrene	ND	100		µg/L	100	8/21/2003
tert-Butylbenzene	ND	100		µg/L	100	8/21/2003
1,1,1,2-Tetrachloroethane	ND	100		µg/L	100	8/21/2003
1,1,2,2-Tetrachloroethane	ND	100		µg/L	100	8/21/2003
Tetrachloroethene (PCE)	ND	100		µg/L	100	8/21/2003
trans-1,2-DCE	ND	100		µg/L	100	8/21/2003
trans-1,3-Dichloropropene	ND	100		µg/L	100	8/21/2003
1,2,3-Trichlorobenzene	ND	100		µg/L	100	8/21/2003
1,2,4-Trichlorobenzene	ND	100		µg/L	100	8/21/2003
1,1,1-Trichloroethane	ND	100		µg/L	100	8/21/2003
1,1,2-Trichloroethane	ND	100		µg/L	100	8/21/2003
Trichloroethene (TCE)	ND	100		µg/L	100	8/21/2003
Trichlorofluoromethane	ND	100		µg/L	100	8/21/2003
1,2,3-Trichloropropane	ND	200		µg/L	100	8/21/2003
Vinyl chloride	ND	200		µg/L	100	8/21/2003
Xylenes, Total	8400	100		µg/L	100	8/21/2003
Surr: 1,2-Dichloroethane-d4	95.5	70.6-124		%REC	100	8/21/2003
Surr: 4-Bromofluorobenzene	98.6	76.2-122		%REC	100	8/21/2003
Surr: Dibromofluoromethane	95.9	67.2-131		%REC	100	8/21/2003
Surr: Toluene-d8	101	82.1-123		%REC	100	8/21/2003

EPA 120.1: SPECIFIC CONDUCTANCE

Analyst: MAP

Specific Conductance	2800	0.010	µmhos/cm	1	8/29/2003
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MERCURY, DISSOLVED

Analyst: MAP

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT: San Juan Refining

Client Sample ID: P-#4

Lab Order: 0308154

Collection Date: 8/19/2003 1:45:00 PM

Project: Annual Monitor Wells 2003

Lab ID: 0308154-01

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Mercury	ND	0.00020		mg/L	1	9/4/2003
EPA METHOD 6010C: DISSOLVED METALS						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	9/3/2003 9:35:40 AM
Barium	0.91	0.0020		mg/L	1	9/2/2003 11:40:05 AM
Cadmium	ND	0.0020		mg/L	1	9/2/2003 11:40:05 AM
Calcium	120	0.50		mg/L	1	9/3/2003 3:24:37 PM
Chromium	ND	0.0060		mg/L	1	9/2/2003 11:40:05 AM
Copper	ND	0.0060		mg/L	1	9/2/2003 11:40:05 AM
Iron	ND	0.020		mg/L	1	9/2/2003 1:45:32 PM
Lead	ND	0.0050		mg/L	1	9/2/2003 11:40:05 AM
Magnesium	24	0.50		mg/L	1	9/3/2003 3:24:37 PM
Manganese	0.014	0.0020		mg/L	1	9/2/2003 1:45:32 PM
Potassium	5.9	1.0		mg/L	1	9/3/2003 3:24:37 PM
Selenium	0.11	0.020		mg/L	1	9/2/2003 1:45:32 PM
Silver	ND	0.0050		mg/L	1	9/3/2003 10:23:35 AM
Sodium	530	10		mg/L	10	9/4/2003 8:26:22 AM
Uranium	ND	0.10		mg/L	1	9/2/2003 11:40:05 AM
Zinc	0.070	0.0050		mg/L	1	9/2/2003 1:45:32 PM
EPA 6010C: TOTAL RECOVERABLE METALS						Analyst: NMO
Chromium	ND	0.0060		mg/L	1	8/28/2003 10:24:18 AM
Lead	0.0070	0.0050		mg/L	1	8/28/2003 10:24:18 AM
EPA METHOD 160.1: TDS						Analyst: MAP
Total Dissolved Solids	1700	1.0		mg/L	1	8/27/2003

Qualifiers:

ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT: San Juan Refining

Client Sample ID: P-#5

Lab Order: 0308154

Collection Date: 8/19/2003 2:20:00 PM

Project: Annual Monitor Wells 2003

Lab ID: 0308154-02

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: BDH
Fluoride	0.89	0.10		mg/L	1	8/20/2003 4:07:29 PM
Chloride	72	1.0		mg/L	10	8/21/2003 5:25:12 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/20/2003 4:07:29 PM
Bromide	1.5	0.10		mg/L	1	8/20/2003 4:07:29 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/20/2003 4:07:29 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/20/2003 4:07:29 PM
Sulfate	ND	0.50		mg/L	1	8/20/2003 4:07:29 PM
EPA METHOD 8260B: VOLATILES						Analyst: BL
Benzene	1400	250		µg/L	250	8/21/2003
Toluene	ND	250		µg/L	250	8/21/2003
Ethylbenzene	3300	250		µg/L	250	8/21/2003
Methyl tert-butyl ether (MTBE)	ND	250		µg/L	250	8/21/2003
1,2,4-Trimethylbenzene	3000	250		µg/L	250	8/21/2003
1,3,5-Trimethylbenzene	640	250		µg/L	250	8/21/2003
1,2-Dichloroethane (EDC)	ND	250		µg/L	250	8/21/2003
1,2-Dibromoethane (EDB)	ND	250		µg/L	250	8/21/2003
Naphthalene	960	500		µg/L	250	8/21/2003
1-Methylnaphthalene	ND	1000		µg/L	250	8/21/2003
2-Methylnaphthalene	ND	1000		µg/L	250	8/21/2003
Acetone	ND	2500		µg/L	250	8/21/2003
Bromobenzene	ND	250		µg/L	250	8/21/2003
Bromochloromethane	ND	250		µg/L	250	8/21/2003
Bromodichloromethane	ND	250		µg/L	250	8/21/2003
Bromoform	ND	250		µg/L	250	8/21/2003
Bromomethane	ND	500		µg/L	250	8/21/2003
2-Butanone	ND	2500		µg/L	250	8/21/2003
Carbon disulfide	ND	2500		µg/L	250	8/21/2003
Carbon Tetrachloride	ND	250		µg/L	250	8/21/2003
Chlorobenzene	ND	250		µg/L	250	8/21/2003
Chloroethane	ND	500		µg/L	250	8/21/2003
Chloroform	ND	250		µg/L	250	8/21/2003
Chloromethane	ND	250		µg/L	250	8/21/2003
2-Chlorotoluene	ND	250		µg/L	250	8/21/2003
4-Chlorotoluene	ND	250		µg/L	250	8/21/2003
cis-1,2-DCE	ND	250		µg/L	250	8/21/2003
cis-1,3-Dichloropropene	ND	250		µg/L	250	8/21/2003
1,2-Dibromo-3-chloropropane	ND	500		µg/L	250	8/21/2003
Dibromochloromethane	ND	250		µg/L	250	8/21/2003
Dibromomethane	ND	500		µg/L	250	8/21/2003
1,2-Dichlorobenzene	ND	250		µg/L	250	8/21/2003

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT: San Juan Refining

Client Sample ID: P-#5

Lab Order: 0308154

Collection Date: 8/19/2003 2:20:00 PM

Project: Annual Monitor Wells 2003

Lab ID: 0308154-02

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,3-Dichlorobenzene	ND	250		µg/L	250	8/21/2003
1,4-Dichlorobenzene	ND	250		µg/L	250	8/21/2003
Dichlorodifluoromethane	ND	250		µg/L	250	8/21/2003
1,1-Dichloroethane	ND	250		µg/L	250	8/21/2003
1,1-Dichloroethene	ND	250		µg/L	250	8/21/2003
1,2-Dichloropropane	ND	250		µg/L	250	8/21/2003
1,3-Dichloropropane	ND	250		µg/L	250	8/21/2003
2,2-Dichloropropane	ND	250		µg/L	250	8/21/2003
1,1-Dichloropropene	ND	250		µg/L	250	8/21/2003
Hexachlorobutadiene	ND	250		µg/L	250	8/21/2003
2-Hexanone	ND	2500		µg/L	250	8/21/2003
Isopropylbenzene	ND	250		µg/L	250	8/21/2003
4-Isopropyltoluene	ND	250		µg/L	250	8/21/2003
4-Methyl-2-pentanone	ND	2500		µg/L	250	8/21/2003
Methylene Chloride	ND	750		µg/L	250	8/21/2003
n-Butylbenzene	ND	250		µg/L	250	8/21/2003
n-Propylbenzene	530	250		µg/L	250	8/21/2003
sec-Butylbenzene	ND	250		µg/L	250	8/21/2003
Styrene	ND	250		µg/L	250	8/21/2003
tert-Butylbenzene	ND	250		µg/L	250	8/21/2003
1,1,1,2-Tetrachloroethane	ND	250		µg/L	250	8/21/2003
1,1,2,2-Tetrachloroethane	ND	250		µg/L	250	8/21/2003
Tetrachloroethene (PCE)	ND	250		µg/L	250	8/21/2003
trans-1,2-DCE	ND	250		µg/L	250	8/21/2003
trans-1,3-Dichloropropene	ND	250		µg/L	250	8/21/2003
1,2,3-Trichlorobenzene	ND	250		µg/L	250	8/21/2003
1,2,4-Trichlorobenzene	ND	250		µg/L	250	8/21/2003
1,1,1-Trichloroethane	ND	250		µg/L	250	8/21/2003
1,1,2-Trichloroethane	ND	250		µg/L	250	8/21/2003
Trichloroethene (TCE)	ND	250		µg/L	250	8/21/2003
Trichlorofluoromethane	ND	250		µg/L	250	8/21/2003
1,2,3-Trichloropropane	ND	500		µg/L	250	8/21/2003
Vinyl chloride	ND	500		µg/L	250	8/21/2003
Xylenes, Total	14000	250		µg/L	250	8/21/2003
Surr: 1,2-Dichloroethane-d4	112	70.6-124		%REC	250	8/21/2003
Surr: 4-Bromofluorobenzene	94.0	76.2-122		%REC	250	8/21/2003
Surr: Dibromofluoromethane	109	67.2-131		%REC	250	8/21/2003
Surr: Toluene-d8	101	82.1-123		%REC	250	8/21/2003

EPA 120.1: SPECIFIC CONDUCTANCE

Analyst: MAP

Specific Conductance 2400 0.010 µmhos/cm

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8/29/2003

MERCURY, DISSOLVED

Analyst: MAP

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT: San Juan Refining

Client Sample ID: P-#5

Lab Order: 0308154

Collection Date: 8/19/2003 2:20:00 PM

Project: Annual Monitor Wells 2003

Lab ID: 0308154-02

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Mercury	ND	0.00020		mg/L	1	9/4/2003
EPA METHOD 6010C: DISSOLVED METALS						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	9/3/2003 9:37:27 AM
Barium	0.71	0.0020		mg/L	1	9/2/2003 11:42:46 AM
Cadmium	ND	0.0020		mg/L	1	9/2/2003 11:42:46 AM
Calcium	150	0.50		mg/L	1	9/3/2003 3:28:52 PM
Chromium	ND	0.0060		mg/L	1	9/2/2003 11:42:46 AM
Copper	ND	0.0060		mg/L	1	9/2/2003 11:42:46 AM
Iron	0.91	0.020		mg/L	1	9/2/2003 1:48:31 PM
Lead	ND	0.0050		mg/L	1	9/2/2003 11:42:46 AM
Magnesium	35	0.50		mg/L	1	9/3/2003 3:28:52 PM
Manganese	0.17	0.0020		mg/L	1	9/2/2003 1:48:31 PM
Potassium	5.3	1.0		mg/L	1	9/3/2003 3:28:52 PM
Selenium	0.13	0.020		mg/L	1	9/2/2003 1:48:31 PM
Silver	ND	0.0050		mg/L	1	9/3/2003 10:25:04 AM
Sodium	340	10		mg/L	10	9/4/2003 8:29:04 AM
Uranium	ND	0.10		mg/L	1	9/2/2003 11:42:46 AM
Zinc	0.093	0.0050		mg/L	1	9/2/2003 1:48:31 PM
EPA 6010C: TOTAL RECOVERABLE METALS						Analyst: NMO
Chromium	ND	0.0060		mg/L	1	8/28/2003 10:25:54 AM
Lead	0.0066	0.0050		mg/L	1	8/28/2003 10:25:54 AM
EPA METHOD 160.1: TDS						Analyst: MAP
Total Dissolved Solids	1400	1.0		mg/L	1	8/27/2003

Qualifiers:
 ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT: San Juan Refining

Client Sample ID: MW#11

Lab Order: 0308154

Collection Date: 8/19/2003 8:05:00 AM

Project: Annual Monitor Wells 2003

Lab ID: 0308154-03

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: BDH
Fluoride	0.44	0.10		mg/L	1	8/20/2003 4:24:14 PM
Chloride	150	2.0		mg/L	20	8/21/2003 5:42:01 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/20/2003 4:24:14 PM
Bromide	5.3	0.10		mg/L	1	8/20/2003 4:24:14 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/20/2003 4:24:14 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/20/2003 4:24:14 PM
Sulfate	4.2	0.50		mg/L	1	8/20/2003 4:24:14 PM
EPA METHOD 8260B: VOLATILES						Analyst: BL
Benzene	2700	100		µg/L	100	8/22/2003
Toluene	ND	10		µg/L	10	8/21/2003
Ethylbenzene	170	10		µg/L	10	8/21/2003
Methyl tert-butyl ether (MTBE)	79	10		µg/L	10	8/21/2003
1,2,4-Trimethylbenzene	800	100		µg/L	100	8/22/2003
1,3,5-Trimethylbenzene	36	10		µg/L	10	8/21/2003
1,2-Dichloroethane (EDC)	ND	10		µg/L	10	8/21/2003
1,2-Dibromoethane (EDB)	ND	10		µg/L	10	8/21/2003
Naphthalene	120	20		µg/L	10	8/21/2003
1-Methylnaphthalene	ND	40		µg/L	10	8/21/2003
2-Methylnaphthalene	ND	40		µg/L	10	8/21/2003
Acetone	ND	100		µg/L	10	8/21/2003
Bromobenzene	ND	10		µg/L	10	8/21/2003
Bromochloromethane	ND	10		µg/L	10	8/21/2003
Bromodichloromethane	ND	10		µg/L	10	8/21/2003
Bromoform	ND	10		µg/L	10	8/21/2003
Bromomethane	ND	20		µg/L	10	8/21/2003
2-Butanone	ND	100		µg/L	10	8/21/2003
Carbon disulfide	ND	100		µg/L	10	8/21/2003
Carbon Tetrachloride	ND	10		µg/L	10	8/21/2003
Chlorobenzene	ND	10		µg/L	10	8/21/2003
Chloroethane	ND	20		µg/L	10	8/21/2003
Chloroform	ND	10		µg/L	10	8/21/2003
Chloromethane	ND	10		µg/L	10	8/21/2003
2-Chlorotoluene	ND	10		µg/L	10	8/21/2003
4-Chlorotoluene	ND	10		µg/L	10	8/21/2003
cis-1,2-DCE	ND	10		µg/L	10	8/21/2003
cis-1,3-Dichloropropene	ND	10		µg/L	10	8/21/2003
1,2-Dibromo-3-chloropropane	ND	20		µg/L	10	8/21/2003
Dibromochloromethane	ND	10		µg/L	10	8/21/2003
Dibromomethane	ND	20		µg/L	10	8/21/2003
1,2-Dichlorobenzene	ND	10		µg/L	10	8/21/2003

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT: San Juan Refining
Lab Order: 0308154
Project: Annual Monitor Wells 2003
Lab ID: 0308154-03

Client Sample ID: MW#11
Collection Date: 8/19/2003 8:05:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,3-Dichlorobenzene	ND	10		µg/L	10	8/21/2003
1,4-Dichlorobenzene	ND	10		µg/L	10	8/21/2003
Dichlorodifluoromethane	ND	10		µg/L	10	8/21/2003
1,1-Dichloroethane	ND	10		µg/L	10	8/21/2003
1,1-Dichloroethene	ND	10		µg/L	10	8/21/2003
1,2-Dichloropropane	ND	10		µg/L	10	8/21/2003
1,3-Dichloropropane	ND	10		µg/L	10	8/21/2003
2,2-Dichloropropane	ND	10		µg/L	10	8/21/2003
1,1-Dichloropropene	ND	10		µg/L	10	8/21/2003
Hexachlorobutadiene	ND	10		µg/L	10	8/21/2003
2-Hexanone	ND	100		µg/L	10	8/21/2003
Isopropylbenzene	62	10		µg/L	10	8/21/2003
4-Isopropyltoluene	11	10		µg/L	10	8/21/2003
4-Methyl-2-pentanone	ND	100		µg/L	10	8/21/2003
Methylene Chloride	ND	30		µg/L	10	8/21/2003
n-Butylbenzene	ND	10		µg/L	10	8/21/2003
n-Propylbenzene	74	10		µg/L	10	8/21/2003
sec-Butylbenzene	13	10		µg/L	10	8/21/2003
Styrene	ND	10		µg/L	10	8/21/2003
tert-Butylbenzene	ND	10		µg/L	10	8/21/2003
1,1,1,2-Tetrachloroethane	ND	10		µg/L	10	8/21/2003
1,1,2,2-Tetrachloroethane	ND	10		µg/L	10	8/21/2003
Tetrachloroethene (PCE)	ND	10		µg/L	10	8/21/2003
trans-1,2-DCE	ND	10		µg/L	10	8/21/2003
trans-1,3-Dichloropropene	ND	10		µg/L	10	8/21/2003
1,2,3-Trichlorobenzene	ND	10		µg/L	10	8/21/2003
1,2,4-Trichlorobenzene	ND	10		µg/L	10	8/21/2003
1,1,1-Trichloroethane	ND	10		µg/L	10	8/21/2003
1,1,2-Trichloroethane	ND	10		µg/L	10	8/21/2003
Trichloroethene (TCE)	ND	10		µg/L	10	8/21/2003
Trichlorofluoromethane	ND	10		µg/L	10	8/21/2003
1,2,3-Trichloropropane	ND	20		µg/L	10	8/21/2003
Vinyl chloride	ND	20		µg/L	10	8/21/2003
Xylenes, Total	650	10		µg/L	10	8/21/2003
Surr: 1,2-Dichloroethane-d4	93.9	70.6-124		%REC	10	8/21/2003
Surr: 4-Bromofluorobenzene	102	76.2-122		%REC	10	8/21/2003
Surr: Dibromofluoromethane	96.9	67.2-131		%REC	10	8/21/2003
Surr: Toluene-d8	98.0	82.1-123		%REC	10	8/21/2003

EPA 120.1: SPECIFIC CONDUCTANCE

Analyst: MAP

Specific Conductance	2500	0.010	µmhos/cm	1	8/29/2003
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MERCURY, DISSOLVED

Analyst: MAP

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

Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT: San Juan Refining
Lab Order: 0308154
Project: Annual Monitor Wells 2003
Lab ID: 0308154-03

Client Sample ID: MW#11
Collection Date: 8/19/2003 8:05:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Mercury	0.00026	0.00020		mg/L	1	9/4/2003
EPA METHOD 6010C: DISSOLVED METALS						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	9/3/2003 9:39:15 AM
Barium	1.2	0.020		mg/L	10	9/2/2003 12:10:10 PM
Cadmium	ND	0.0020		mg/L	1	9/2/2003 11:45:47 AM
Calcium	120	0.50		mg/L	1	9/3/2003 3:30:46 PM
Chromium	ND	0.0060		mg/L	1	9/2/2003 11:45:47 AM
Copper	ND	0.0060		mg/L	1	9/2/2003 11:45:47 AM
Iron	7.6	0.20		mg/L	10	9/2/2003 2:25:31 PM
Lead	ND	0.0050		mg/L	1	9/2/2003 11:45:47 AM
Magnesium	25	0.50		mg/L	1	9/3/2003 3:30:46 PM
Manganese	2.0	0.020		mg/L	10	9/2/2003 2:25:31 PM
Potassium	2.3	1.0		mg/L	1	9/3/2003 3:30:46 PM
Selenium	0.15	0.020		mg/L	1	9/2/2003 1:51:32 PM
Silver	ND	0.0050		mg/L	1	9/3/2003 10:26:34 AM
Sodium	420	10		mg/L	10	9/4/2003 8:12:57 AM
Uranium	ND	0.10		mg/L	1	9/2/2003 11:45:47 AM
Zinc	0.18	0.0050		mg/L	1	9/2/2003 1:51:32 PM
EPA 6010C: TOTAL RECOVERABLE METALS						Analyst: NMO
Chromium	0.011	0.0060		mg/L	1	8/28/2003 10:27:25 AM
Lead	0.020	0.0050		mg/L	1	8/28/2003 10:27:25 AM
EPA METHOD 160.1: TDS						Analyst: MAP
Total Dissolved Solids	1100	1.0		mg/L	1	8/27/2003

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT: San Juan Refining
Lab Order: 0308154
Project: Annual Monitor Wells 2003
Lab ID: 0308154-04

Client Sample ID: MW#12
Collection Date: 8/19/2003 9:00:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: BDH
Fluoride	0.32	0.10		mg/L	1	8/20/2003 4:41:00 PM
Chloride	130	5.0		mg/L	50	8/21/2003 5:58:46 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/20/2003 4:41:00 PM
Bromide	3.7	0.10		mg/L	1	8/20/2003 4:41:00 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/20/2003 4:41:00 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/20/2003 4:41:00 PM
Sulfate	3100	25		mg/L	50	8/21/2003 5:58:46 PM
EPA METHOD 8260B: VOLATILES						Analyst: BL
Benzene	ND	1.0		µg/L	1	8/22/2003
Toluene	ND	1.0		µg/L	1	8/22/2003
Ethylbenzene	ND	1.0		µg/L	1	8/22/2003
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/22/2003
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/22/2003
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/22/2003
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/22/2003
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/22/2003
Naphthalene	ND	2.0		µg/L	1	8/22/2003
1-Methylnaphthalene	ND	4.0		µg/L	1	8/22/2003
2-Methylnaphthalene	ND	4.0		µg/L	1	8/22/2003
Acetone	ND	10		µg/L	1	8/22/2003
Bromobenzene	ND	1.0		µg/L	1	8/22/2003
Bromochloromethane	ND	1.0		µg/L	1	8/22/2003
Bromodichloromethane	ND	1.0		µg/L	1	8/22/2003
Bromoform	ND	1.0		µg/L	1	8/22/2003
Bromomethane	ND	2.0		µg/L	1	8/22/2003
2-Butanone	ND	10		µg/L	1	8/22/2003
Carbon disulfide	ND	10		µg/L	1	8/22/2003
Carbon Tetrachloride	ND	1.0		µg/L	1	8/22/2003
Chlorobenzene	ND	1.0		µg/L	1	8/22/2003
Chloroethane	ND	2.0		µg/L	1	8/22/2003
Chloroform	ND	1.0		µg/L	1	8/22/2003
Chloromethane	ND	1.0		µg/L	1	8/22/2003
2-Chlorotoluene	ND	1.0		µg/L	1	8/22/2003
4-Chlorotoluene	ND	1.0		µg/L	1	8/22/2003
cis-1,2-DCE	ND	1.0		µg/L	1	8/22/2003
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/22/2003
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/22/2003
Dibromochloromethane	ND	1.0		µg/L	1	8/22/2003
Dibromomethane	ND	2.0		µg/L	1	8/22/2003
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/22/2003

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT: San Juan Refining

Client Sample ID: MW#12

Lab Order: 0308154

Collection Date: 8/19/2003 9:00:00 AM

Project: Annual Monitor Wells 2003

Lab ID: 0308154-04

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/22/2003
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/22/2003
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/22/2003
1,1-Dichloroethane	ND	1.0		µg/L	1	8/22/2003
1,1-Dichloroethene	ND	1.0		µg/L	1	8/22/2003
1,2-Dichloropropane	ND	1.0		µg/L	1	8/22/2003
1,3-Dichloropropane	ND	1.0		µg/L	1	8/22/2003
2,2-Dichloropropane	ND	1.0		µg/L	1	8/22/2003
1,1-Dichloropropene	ND	1.0		µg/L	1	8/22/2003
Hexachlorobutadiene	ND	1.0		µg/L	1	8/22/2003
2-Hexanone	ND	10		µg/L	1	8/22/2003
Isopropylbenzene	ND	1.0		µg/L	1	8/22/2003
4-Isopropyltoluene	ND	1.0		µg/L	1	8/22/2003
4-Methyl-2-pentanone	ND	10		µg/L	1	8/22/2003
Methylene Chloride	ND	3.0		µg/L	1	8/22/2003
n-Butylbenzene	ND	1.0		µg/L	1	8/22/2003
n-Propylbenzene	ND	1.0		µg/L	1	8/22/2003
sec-Butylbenzene	ND	1.0		µg/L	1	8/22/2003
Styrene	ND	1.0		µg/L	1	8/22/2003
tert-Butylbenzene	ND	1.0		µg/L	1	8/22/2003
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/22/2003
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	8/22/2003
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/22/2003
trans-1,2-DCE	ND	1.0		µg/L	1	8/22/2003
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/22/2003
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/22/2003
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/22/2003
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/22/2003
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/22/2003
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/22/2003
Trichlorofluoromethane	ND	1.0		µg/L	1	8/22/2003
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/22/2003
Vinyl chloride	ND	2.0		µg/L	1	8/22/2003
Xylenes, Total	ND	1.0		µg/L	1	8/22/2003
Surr: 1,2-Dichloroethane-d4	93.2	70.6-124		%REC	1	8/22/2003
Surr: 4-Bromofluorobenzene	95.1	76.2-122		%REC	1	8/22/2003
Surr: Dibromofluoromethane	103	67.2-131		%REC	1	8/22/2003
Surr: Toluene-d8	96.2	82.1-123		%REC	1	8/22/2003

EPA 120.1: SPECIFIC CONDUCTANCE

Analyst: MAP

Specific Conductance 6600 0.010 µmhos/cm

1 8/29/2003

MERCURY, DISSOLVED

Analyst: MAP

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT: San Juan Refining

Client Sample ID: MW#12

Lab Order: 0308154

Collection Date: 8/19/2003 9:00:00 AM

Project: Annual Monitor Wells 2003

Lab ID: 0308154-04

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Mercury	ND	0.00020		mg/L	1	9/4/2003
EPA METHOD 6010C: DISSOLVED METALS						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	9/3/2003 9:41:01 AM
Barium	0.12	0.0020		mg/L	1	9/2/2003 11:48:43 AM
Cadmium	ND	0.0020		mg/L	1	9/2/2003 11:48:43 AM
Calcium	420	10		mg/L	10	9/4/2003 8:17:44 AM
Chromium	0.0066	0.0060		mg/L	1	9/2/2003 11:48:43 AM
Copper	ND	0.0060		mg/L	1	9/2/2003 11:48:43 AM
Iron	0.024	0.020		mg/L	1	9/2/2003 1:54:29 PM
Lead	ND	0.0050		mg/L	1	9/2/2003 11:48:43 AM
Magnesium	130	0.50		mg/L	1	9/3/2003 3:32:51 PM
Manganese	1.8	0.020		mg/L	10	9/2/2003 2:28:20 PM
Potassium	4.3	1.0		mg/L	1	9/3/2003 3:32:51 PM
Selenium	0.084	0.020		mg/L	1	9/2/2003 1:54:29 PM
Silver	ND	0.0050		mg/L	1	9/3/2003 10:28:03 AM
Sodium	960	10		mg/L	10	9/4/2003 8:17:44 AM
Uranium	ND	0.10		mg/L	1	9/2/2003 11:48:43 AM
Zinc	0.088	0.0050		mg/L	1	9/2/2003 1:54:29 PM
EPA 6010C: TOTAL RECOVERABLE METALS						Analyst: NMO
Chromium	0.51	0.0060		mg/L	1	8/28/2003 10:29:48 AM
Lead	0.16	0.0050		mg/L	1	8/28/2003 10:29:48 AM
EPA METHOD 160.1: TDS						Analyst: MAP
Total Dissolved Solids	5500	1.0		mg/L	1	8/27/2003

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT: San Juan Refining

Client Sample ID: MW#34

Lab Order: 0308154

Collection Date: 8/19/2003 10:30:00 AM

Project: Annual Monitor Wells 2003

Lab ID: 0308154-05

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: BDH
Fluoride	0.57	0.10		mg/L	1	8/20/2003 4:57:44 PM
Chloride	120	2.0		mg/L	20	8/21/2003 6:15:31 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/20/2003 4:57:44 PM
Bromide	5.1	0.10		mg/L	1	8/20/2003 4:57:44 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/20/2003 4:57:44 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/20/2003 4:57:44 PM
Sulfate	150	10		mg/L	20	8/21/2003 6:15:31 PM
EPA METHOD 8260B: VOLATILES						Analyst: BL
Benzene	ND	10		µg/L	10	8/21/2003
Toluene	ND	10		µg/L	10	8/21/2003
Ethylbenzene	ND	10		µg/L	10	8/21/2003
Methyl tert-butyl ether (MTBE)	ND	10		µg/L	10	8/21/2003
1,2,4-Trimethylbenzene	580	20		µg/L	20	8/22/2003
1,3,5-Trimethylbenzene	ND	10		µg/L	10	8/21/2003
1,2-Dichloroethane (EDC)	ND	10		µg/L	10	8/21/2003
1,2-Dibromoethane (EDB)	ND	10		µg/L	10	8/21/2003
Naphthalene	52	20		µg/L	10	8/21/2003
1-Methylnaphthalene	ND	40		µg/L	10	8/21/2003
2-Methylnaphthalene	ND	40		µg/L	10	8/21/2003
Acetone	ND	100		µg/L	10	8/21/2003
Bromobenzene	ND	10		µg/L	10	8/21/2003
Bromochloromethane	ND	10		µg/L	10	8/21/2003
Bromodichloromethane	ND	10		µg/L	10	8/21/2003
Bromoform	ND	10		µg/L	10	8/21/2003
Bromomethane	ND	20		µg/L	10	8/21/2003
2-Butanone	ND	100		µg/L	10	8/21/2003
Carbon disulfide	ND	100		µg/L	10	8/21/2003
Carbon Tetrachloride	ND	10		µg/L	10	8/21/2003
Chlorobenzene	ND	10		µg/L	10	8/21/2003
Chloroethane	ND	20		µg/L	10	8/21/2003
Chloroform	ND	10		µg/L	10	8/21/2003
Chloromethane	ND	10		µg/L	10	8/21/2003
2-Chlorotoluene	ND	10		µg/L	10	8/21/2003
4-Chlorotoluene	ND	10		µg/L	10	8/21/2003
cis-1,2-DCE	ND	10		µg/L	10	8/21/2003
cis-1,3-Dichloropropene	ND	10		µg/L	10	8/21/2003
1,2-Dibromo-3-chloropropane	ND	20		µg/L	10	8/21/2003
Dibromochloromethane	ND	10		µg/L	10	8/21/2003
Dibromomethane	ND	20		µg/L	10	8/21/2003
1,2-Dichlorobenzene	ND	10		µg/L	10	8/21/2003

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT: San Juan Refining

Client Sample ID: MW#34

Lab Order: 0308154

Collection Date: 8/19/2003 10:30:00 AM

Project: Annual Monitor Wells 2003

Lab ID: 0308154-05

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,3-Dichlorobenzene	ND	10		µg/L	10	8/21/2003
1,4-Dichlorobenzene	ND	10		µg/L	10	8/21/2003
Dichlorodifluoromethane	ND	10		µg/L	10	8/21/2003
1,1-Dichloroethane	ND	10		µg/L	10	8/21/2003
1,1-Dichloroethene	ND	10		µg/L	10	8/21/2003
1,2-Dichloropropane	ND	10		µg/L	10	8/21/2003
1,3-Dichloropropane	ND	10		µg/L	10	8/21/2003
2,2-Dichloropropane	ND	10		µg/L	10	8/21/2003
1,1-Dichloropropene	ND	10		µg/L	10	8/21/2003
Hexachlorobutadiene	ND	10		µg/L	10	8/21/2003
2-Hexanone	ND	100		µg/L	10	8/21/2003
Isopropylbenzene	49	10		µg/L	10	8/21/2003
4-Isopropyltoluene	ND	10		µg/L	10	8/21/2003
4-Methyl-2-pentanone	ND	100		µg/L	10	8/21/2003
Methylene Chloride	ND	30		µg/L	10	8/21/2003
n-Butylbenzene	ND	10		µg/L	10	8/21/2003
n-Propylbenzene	42	10		µg/L	10	8/21/2003
sec-Butylbenzene	14	10		µg/L	10	8/21/2003
Styrene	ND	10		µg/L	10	8/21/2003
tert-Butylbenzene	ND	10		µg/L	10	8/21/2003
1,1,1,2-Tetrachloroethane	ND	10		µg/L	10	8/21/2003
1,1,2,2-Tetrachloroethane	ND	10		µg/L	10	8/21/2003
Tetrachloroethene (PCE)	ND	10		µg/L	10	8/21/2003
trans-1,2-DCE	ND	10		µg/L	10	8/21/2003
trans-1,3-Dichloropropene	ND	10		µg/L	10	8/21/2003
1,2,3-Trichlorobenzene	ND	10		µg/L	10	8/21/2003
1,2,4-Trichlorobenzene	ND	10		µg/L	10	8/21/2003
1,1,1-Trichloroethane	ND	10		µg/L	10	8/21/2003
1,1,2-Trichloroethane	ND	10		µg/L	10	8/21/2003
Trichloroethene (TCE)	ND	10		µg/L	10	8/21/2003
Trichlorofluoromethane	ND	10		µg/L	10	8/21/2003
1,2,3-Trichloropropane	ND	20		µg/L	10	8/21/2003
Vinyl chloride	ND	20		µg/L	10	8/21/2003
Xylenes, Total	ND	10		µg/L	10	8/21/2003
Surr: 1,2-Dichloroethane-d4	96.9	70.6-124		%REC	10	8/21/2003
Surr: 4-Bromofluorobenzene	113	76.2-122		%REC	10	8/21/2003
Surr: Dibromofluoromethane	110	67.2-131		%REC	10	8/21/2003
Surr: Toluene-d8	105	82.1-123		%REC	10	8/21/2003

EPA 120.1: SPECIFIC CONDUCTANCE

Specific Conductance 2800 0.010 µmhos/cm

Analyst: MAP
8/29/2003

MERCURY, DISSOLVED

Analyst: MAP

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT: San Juan Refining

Client Sample ID: MW#34

Lab Order: 0308154

Collection Date: 8/19/2003 10:30:00 AM

Project: Annual Monitor Wells 2003

Lab ID: 0308154-05

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Mercury	ND	0.00020		mg/L	1	9/4/2003
EPA METHOD 6010C: DISSOLVED METALS						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	9/3/2003 9:42:49 AM
Barium	1.5	0.020		mg/L	10	9/2/2003 12:13:09 PM
Cadmium	ND	0.0020		mg/L	1	9/2/2003 11:51:50 AM
Calcium	110	0.50		mg/L	1	9/3/2003 3:34:46 PM
Chromium	ND	0.0060		mg/L	1	9/2/2003 11:51:50 AM
Copper	ND	0.0060		mg/L	1	9/2/2003 11:51:50 AM
Iron	5.5	0.20		mg/L	10	9/2/2003 2:31:17 PM
Lead	ND	0.0050		mg/L	1	9/2/2003 11:51:50 AM
Magnesium	21	0.50		mg/L	1	9/3/2003 3:34:46 PM
Manganese	4.6	0.020		mg/L	10	9/2/2003 2:31:17 PM
Potassium	2.1	1.0		mg/L	1	9/3/2003 3:34:46 PM
Selenium	0.15	0.020		mg/L	1	9/2/2003 1:57:22 PM
Silver	ND	0.0050		mg/L	1	9/3/2003 10:29:35 AM
Sodium	470	10		mg/L	10	9/4/2003 8:35:29 AM
Uranium	ND	0.10		mg/L	1	9/2/2003 11:51:50 AM
Zinc	0.15	0.0050		mg/L	1	9/2/2003 1:57:22 PM
EPA 6010C: TOTAL RECOVERABLE METALS						Analyst: NMO
Chromium	0.018	0.0060		mg/L	1	8/28/2003 10:31:46 AM
Lead	ND	0.0050		mg/L	1	8/28/2003 10:31:46 AM
EPA METHOD 160.1: TDS						Analyst: MAP
Total Dissolved Solids	1700	1.0		mg/L	1	8/27/2003

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT: San Juan Refining
Lab Order: 0308154
Project: Annual Monitor Wells 2003
Lab ID: 0308154-06

Client Sample ID: MW#35
Collection Date: 8/19/2003 11:15:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						
Fluoride	0.39	0.10		mg/L	1	Analyst: BDH 8/20/2003 5:31:14 PM
Chloride	120	2.0		mg/L	20	8/21/2003 6:32:16 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/20/2003 5:31:14 PM
Bromide	2.1	0.10		mg/L	1	8/20/2003 5:31:14 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/20/2003 5:31:14 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/20/2003 5:31:14 PM
Sulfate	6.6	0.50		mg/L	1	8/20/2003 5:31:14 PM
EPA METHOD 8260B: VOLATILES						
Benzene	ND	10		µg/L	10	Analyst: BL 8/21/2003
Toluene	ND	10		µg/L	10	8/21/2003
Ethylbenzene	ND	10		µg/L	10	8/21/2003
Methyl tert-butyl ether (MTBE)	20	10		µg/L	10	8/21/2003
1,2,4-Trimethylbenzene	210	10		µg/L	10	8/21/2003
1,3,5-Trimethylbenzene	ND	10		µg/L	10	8/21/2003
1,2-Dichloroethane (EDC)	ND	10		µg/L	10	8/21/2003
1,2-Dibromoethane (EDB)	ND	10		µg/L	10	8/21/2003
Naphthalene	ND	20		µg/L	10	8/21/2003
1-Methylnaphthalene	ND	40		µg/L	10	8/21/2003
2-Methylnaphthalene	ND	40		µg/L	10	8/21/2003
Acetone	ND	100		µg/L	10	8/21/2003
Bromobenzene	ND	10		µg/L	10	8/21/2003
Bromochloromethane	ND	10		µg/L	10	8/21/2003
Bromodichloromethane	ND	10		µg/L	10	8/21/2003
Bromoform	ND	10		µg/L	10	8/21/2003
Bromomethane	ND	20		µg/L	10	8/21/2003
2-Butanone	ND	100		µg/L	10	8/21/2003
Carbon disulfide	ND	100		µg/L	10	8/21/2003
Carbon Tetrachloride	ND	10		µg/L	10	8/21/2003
Chlorobenzene	ND	10		µg/L	10	8/21/2003
Chloroethane	ND	20		µg/L	10	8/21/2003
Chloroform	ND	10		µg/L	10	8/21/2003
Chloromethane	ND	10		µg/L	10	8/21/2003
2-Chlorotoluene	ND	10		µg/L	10	8/21/2003
4-Chlorotoluene	ND	10		µg/L	10	8/21/2003
cis-1,2-DCE	ND	10		µg/L	10	8/21/2003
cis-1,3-Dichloropropene	ND	10		µg/L	10	8/21/2003
1,2-Dibromo-3-chloropropane	ND	20		µg/L	10	8/21/2003
Dibromochloromethane	ND	10		µg/L	10	8/21/2003
Dibromomethane	ND	20		µg/L	10	8/21/2003
1,2-Dichlorobenzene	ND	10		µg/L	10	8/21/2003

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT: San Juan Refining

Client Sample ID: MW#35

Lab Order: 0308154

Collection Date: 8/19/2003 11:15:00 AM

Project: Annual Monitor Wells 2003

Lab ID: 0308154-06

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,3-Dichlorobenzene	ND	10		µg/L	10	8/21/2003
1,4-Dichlorobenzene	ND	10		µg/L	10	8/21/2003
Dichlorodifluoromethane	ND	10		µg/L	10	8/21/2003
1,1-Dichloroethane	ND	10		µg/L	10	8/21/2003
1,1-Dichloroethene	ND	10		µg/L	10	8/21/2003
1,2-Dichloropropane	ND	10		µg/L	10	8/21/2003
1,3-Dichloropropane	ND	10		µg/L	10	8/21/2003
2,2-Dichloropropane	ND	10		µg/L	10	8/21/2003
1,1-Dichloropropene	ND	10		µg/L	10	8/21/2003
Hexachlorobutadiene	ND	10		µg/L	10	8/21/2003
2-Hexanone	ND	100		µg/L	10	8/21/2003
Isopropylbenzene	17	10		µg/L	10	8/21/2003
4-Isopropyltoluene	ND	10		µg/L	10	8/21/2003
4-Methyl-2-pentanone	ND	100		µg/L	10	8/21/2003
Methylene Chloride	ND	30		µg/L	10	8/21/2003
n-Butylbenzene	ND	10		µg/L	10	8/21/2003
n-Propylbenzene	10	10		µg/L	10	8/21/2003
sec-Butylbenzene	ND	10		µg/L	10	8/21/2003
Styrene	ND	10		µg/L	10	8/21/2003
tert-Butylbenzene	ND	10		µg/L	10	8/21/2003
1,1,1,2-Tetrachloroethane	ND	10		µg/L	10	8/21/2003
1,1,2,2-Tetrachloroethane	ND	10		µg/L	10	8/21/2003
Tetrachloroethene (PCE)	ND	10		µg/L	10	8/21/2003
trans-1,2-DCE	ND	10		µg/L	10	8/21/2003
trans-1,3-Dichloropropene	ND	10		µg/L	10	8/21/2003
1,2,3-Trichlorobenzene	ND	10		µg/L	10	8/21/2003
1,2,4-Trichlorobenzene	ND	10		µg/L	10	8/21/2003
1,1,1-Trichloroethane	ND	10		µg/L	10	8/21/2003
1,1,2-Trichloroethane	ND	10		µg/L	10	8/21/2003
Trichloroethene (TCE)	ND	10		µg/L	10	8/21/2003
Trichlorofluoromethane	ND	10		µg/L	10	8/21/2003
1,2,3-Trichloropropane	ND	20		µg/L	10	8/21/2003
Vinyl chloride	ND	20		µg/L	10	8/21/2003
Xylenes, Total	ND	10		µg/L	10	8/21/2003
Surr: 1,2-Dichloroethane-d4	95.1	70.6-124		%REC	10	8/21/2003
Surr: 4-Bromofluorobenzene	104	76.2-122		%REC	10	8/21/2003
Surr: Dibromofluoromethane	105	67.2-131		%REC	10	8/21/2003
Surr: Toluene-d8	95.2	82.1-123		%REC	10	8/21/2003

EPA 120.1: SPECIFIC CONDUCTANCE

Analyst: MAP

Specific Conductance 1900 0.010 µmhos/cm

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8/29/2003

MERCURY, DISSOLVED

Analyst: MAP

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT: San Juan Refining
Lab Order: 0308154
Project: Annual Monitor Wells 2003
Lab ID: 0308154-06

Client Sample ID: MW#35
Collection Date: 8/19/2003 11:15:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Mercury	ND	0.00020		mg/L	1	9/4/2003
EPA METHOD 6010C: DISSOLVED METALS						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	9/3/2003 9:44:35 AM
Barium	1.0	0.0020		mg/L	1	9/2/2003 11:54:46 AM
Cadmium	ND	0.0020		mg/L	1	9/2/2003 11:54:46 AM
Calcium	130	0.50		mg/L	1	9/3/2003 3:36:43 PM
Chromium	ND	0.0060		mg/L	1	9/2/2003 11:54:46 AM
Copper	ND	0.0060		mg/L	1	9/2/2003 11:54:46 AM
Iron	6.3	0.20		mg/L	10	9/2/2003 2:34:09 PM
Lead	ND	0.0050		mg/L	1	9/2/2003 11:54:46 AM
Magnesium	22	0.50		mg/L	1	9/3/2003 3:36:43 PM
Manganese	3.3	0.020		mg/L	10	9/2/2003 2:34:09 PM
Potassium	3.7	1.0		mg/L	1	9/3/2003 3:36:43 PM
Selenium	0.15	0.020		mg/L	1	9/2/2003 1:59:59 PM
Silver	ND	0.0050		mg/L	1	9/3/2003 10:31:03 AM
Sodium	330	10		mg/L	10	9/4/2003 8:19:49 AM
Uranium	ND	0.10		mg/L	1	9/2/2003 11:54:46 AM
Zinc	0.078	0.0050		mg/L	1	9/2/2003 1:59:59 PM
EPA 6010C: TOTAL RECOVERABLE METALS						Analyst: NMO
Chromium	0.011	0.0060		mg/L	1	8/28/2003 10:37:48 AM
Lead	ND	0.0050		mg/L	1	8/28/2003 10:37:48 AM
EPA METHOD 160.1: TDS						Analyst: MAP
Total Dissolved Solids	1300	1.0		mg/L	1	8/27/2003

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT: San Juan Refining

Client Sample ID: Trip Blank

Lab Order: 0308154

Collection Date:

Project: Annual Monitor Wells 2003

Lab ID: 0308154-07

Matrix: TRIP BLANK

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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EPA METHOD 8260B: VOLATILES

Analyst: BL

Benzene	ND	1.0		µg/L	1	8/21/2003
Toluene	ND	1.0		µg/L	1	8/21/2003
Ethylbenzene	ND	1.0		µg/L	1	8/21/2003
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/21/2003
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/21/2003
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/21/2003
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/21/2003
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/21/2003
Naphthalene	ND	2.0		µg/L	1	8/21/2003
1-Methylnaphthalene	ND	4.0		µg/L	1	8/21/2003
2-Methylnaphthalene	ND	4.0		µg/L	1	8/21/2003
Acetone	ND	10		µg/L	1	8/21/2003
Bromobenzene	ND	1.0		µg/L	1	8/21/2003
Bromochloromethane	ND	1.0		µg/L	1	8/21/2003
Bromodichloromethane	ND	1.0		µg/L	1	8/21/2003
Bromoform	ND	1.0		µg/L	1	8/21/2003
Bromomethane	ND	2.0		µg/L	1	8/21/2003
2-Butanone	ND	10		µg/L	1	8/21/2003
Carbon disulfide	ND	10		µg/L	1	8/21/2003
Carbon Tetrachloride	ND	1.0		µg/L	1	8/21/2003
Chlorobenzene	ND	1.0		µg/L	1	8/21/2003
Chloroethane	ND	2.0		µg/L	1	8/21/2003
Chloroform	ND	1.0		µg/L	1	8/21/2003
Chloromethane	ND	1.0		µg/L	1	8/21/2003
2-Chlorotoluene	ND	1.0		µg/L	1	8/21/2003
4-Chlorotoluene	ND	1.0		µg/L	1	8/21/2003
cis-1,2-DCE	ND	1.0		µg/L	1	8/21/2003
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/21/2003
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/21/2003
Dibromochloromethane	ND	1.0		µg/L	1	8/21/2003
Dibromomethane	ND	2.0		µg/L	1	8/21/2003
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2003
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2003
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2003
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/21/2003
1,1-Dichloroethane	ND	1.0		µg/L	1	8/21/2003
1,1-Dichloroethene	ND	1.0		µg/L	1	8/21/2003
1,2-Dichloropropane	ND	1.0		µg/L	1	8/21/2003
1,3-Dichloropropane	ND	1.0		µg/L	1	8/21/2003
2,2-Dichloropropane	ND	1.0		µg/L	1	8/21/2003
1,1-Dichloropropene	ND	1.0		µg/L	1	8/21/2003

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT: San Juan Refining

Client Sample ID: Trip Blank

Lab Order: 0308154

Collection Date:

Project: Annual Monitor Wells 2003

Lab ID: 0308154-07

Matrix: TRIP BLANK

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Hexachlorobutadiene	ND	1.0		µg/L	1	8/21/2003
2-Hexanone	ND	10		µg/L	1	8/21/2003
Isopropylbenzene	ND	1.0		µg/L	1	8/21/2003
4-Isopropyltoluene	ND	1.0		µg/L	1	8/21/2003
4-Methyl-2-pentanone	ND	10		µg/L	1	8/21/2003
Methylene Chloride	ND	3.0		µg/L	1	8/21/2003
n-Butylbenzene	ND	1.0		µg/L	1	8/21/2003
n-Propylbenzene	ND	1.0		µg/L	1	8/21/2003
sec-Butylbenzene	ND	1.0		µg/L	1	8/21/2003
Styrene	ND	1.0		µg/L	1	8/21/2003
tert-Butylbenzene	ND	1.0		µg/L	1	8/21/2003
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/21/2003
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	8/21/2003
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/21/2003
trans-1,2-DCE	ND	1.0		µg/L	1	8/21/2003
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/21/2003
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/21/2003
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/21/2003
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/21/2003
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/21/2003
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/21/2003
Trichlorofluoromethane	ND	1.0		µg/L	1	8/21/2003
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/21/2003
Vinyl chloride	ND	2.0		µg/L	1	8/21/2003
Xylenes, Total	ND	1.0		µg/L	1	8/21/2003
Surr: 1,2-Dichloroethane-d4	89.4	70.6-124		%REC	1	8/21/2003
Surr: 4-Bromofluorobenzene	98.6	76.2-122		%REC	1	8/21/2003
Surr: Dibromofluoromethane	104	67.2-131		%REC	1	8/21/2003
Surr: Toluene-d8	96.5	82.1-123		%REC	1	8/21/2003

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level



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LABORATORY ANALYTICAL REPORT

Client: Hall Environmental-Albuquerque

Project: Annual Monitor Wells, 2003

Lab ID: B03081070-001

Client Sample ID: P-#4, 0308154-01D

Report Date: 08/28/03

Collection Date: 08/19/03 13:45

Date Received: 08/21/03

Matrix: Aqueous

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
INORGANICS							
Alkalinity, Total as CaCO3	1390	mg/L		2		A2320 B	08/22/03 12:56 / jb
Bicarbonate as HCO3	1690	mg/L		2		A2320 B	08/22/03 12:56 / jb
Carbonate as CO3	ND	mg/L		1		A2320 B	08/22/03 12:56 / jb
Carbon Dioxide, Total	1300	mg/L		1		Calculation	08/26/03 00:00 / lab

Report

Definitions:

RL - Analyte reporting limit.

QCL - Quality control limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



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LABORATORY ANALYTICAL REPORT

Client: Hall Environmental-Albuquerque

Project: Annual Monitor Wells, 2003

Lab ID: B03081070-002

Client Sample ID: P-#5, 0308154-02D

Report Date: 08/28/03

Collection Date: 08/19/03 14:20

Date Received: 08/21/03

Matrix: Aqueous

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
INORGANICS							
Alkalinity, Total as CaCO3	1170	mg/L		2		A2320 B	08/22/03 13:03 / jb
Bicarbonate as HCO3	1430	mg/L		2		A2320 B	08/22/03 13:03 / jb
Carbonate as CO3	ND	mg/L		1		A2320 B	08/22/03 13:03 / jb
Carbon Dioxide, Total	1100	mg/L		1		Calculation	08/26/03 00:00 / lab

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

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



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LABORATORY ANALYTICAL REPORT

Client: Hall Environmental-Albuquerque

Project: Annual Monitor Wells, 2003

Lab ID: B03081070-003

Client Sample ID: MW#11, 0308154-03D

Report Date: 08/28/03

Collection Date: 08/19/03 08:05

Date Received: 08/21/03

Matrix: Aqueous

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
INORGANICS							
Alkalinity, Total as CaCO3	1120	mg/L		2		A2320 B	08/21/03 17:01 / jb
Bicarbonate as HCO3	1370	mg/L		2		A2320 B	08/21/03 17:01 / jb
Carbonate as CO3	ND	mg/L		1		A2320 B	08/21/03 17:01 / jb
Carbon Dioxide, Total	1300	mg/L		1		Calculation	08/26/03 00:00 / lab

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

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



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LABORATORY ANALYTICAL REPORT

Client: Hall Environmental-Albuquerque
Project: Annual Monitor Wells, 2003
Lab ID: B03081070-004
Client Sample ID: MW#12, 0308154-04D

Report Date: 08/28/03
Collection Date: 08/19/03 09:00
Date Received: 08/21/03
Matrix: Aqueous

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
INORGANICS							
Alkalinity, Total as CaCO3	319	mg/L		2		A2320 B	08/21/03 17:08 / jb
Bicarbonate as HCO3	390	mg/L		2		A2320 B	08/21/03 17:08 / jb
Carbonate as CO3	ND	mg/L		1		A2320 B	08/21/03 17:08 / jb
Carbon Dioxide, Total	310	mg/L		1		Calculation	08/26/03 00:00 / lab

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

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



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LABORATORY ANALYTICAL REPORT

Client: Hall Environmental-Albuquerque

Project: Annual Monitor Wells, 2003

Lab ID: B03081070-005

Client Sample ID: MW#34, 0308154-05D

Report Date: 08/28/03

Collection Date: 08/19/03 10:30

Date Received: 08/21/03

Matrix: Aqueous

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
INORGANICS							
Alkalinity, Total as CaCO3	1130	mg/L		2		A2320 B	08/21/03 17:18 / jb
Bicarbonate as HCO3	1370	mg/L		2		A2320 B	08/21/03 17:18 / jb
Carbonate as CO3	ND	mg/L		1		A2320 B	08/21/03 17:18 / jb
Carbon Dioxide, Total	1300	mg/L		1		Calculation	08/26/03 00:00 / lab

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

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



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LABORATORY ANALYTICAL REPORT

Client: Hall Environmental-Albuquerque
Project: Annual Monitor Wells, 2003
Lab ID: B03081070-006
Client Sample ID: MW#35, 0308154-06D

Report Date: 08/28/03
Collection Date: 08/19/03 11:15
Date Received: 08/21/03
Matrix: Aqueous

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
INORGANICS							
Alkalinity, Total as CaCO3	984	mg/L		2		A2320 B	08/21/03 17:28 / jb
Bicarbonate as HCO3	1200	mg/L		2		A2320 B	08/21/03 17:28 / jb
Carbonate as CO3	ND	mg/L		1		A2320 B	08/21/03 17:28 / jb
Carbon Dioxide, Total	1100	mg/L		1		Calculation	08/26/03 00:00 / lab

Report
Definitions: 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: Annual Monitor Wells, 2003

Report Date: 08/26/03

Work Order: B03081070

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2320 B							Batch: ALK030821A		
Sample ID: MBLK_030821A	Method Blank								08/21/03 10:28
Alkalinity, Total as CaCO ₃	ND	mg/L	2.00						
Bicarbonate as HCO ₃	ND	mg/L	2.00						
Carbonate as CO ₃	ND	mg/L	1.00						
Sample ID: LCS_030821A	Laboratory Control Spike								08/21/03 10:31
Alkalinity, Total as CaCO ₃	103	mg/L	2.00	103	90	110			
Sample ID: B03080826-021AMS	Sample Matrix Spike								08/21/03 10:43
Alkalinity, Total as CaCO ₃	961	mg/L	2.00	104	80	120			
Sample ID: B03080826-021AMSD	Sample Matrix Spike Duplicate								08/21/03 10:50
Alkalinity, Total as CaCO ₃	959	mg/L	2.00	103	80	120	0.2	20	
Sample ID: MBLK_030821A	Method Blank								08/21/03 13:57
Alkalinity, Total as CaCO ₃	ND	mg/L	2.00						
Bicarbonate as HCO ₃	2.11	mg/L	2.00						
Carbonate as CO ₃	ND	mg/L	1.00						
Sample ID: LCS_030821A	Laboratory Control Spike								08/21/03 14:00
Alkalinity, Total as CaCO ₃	104	mg/L	2.00	104	90	110			
Sample ID: B03080551-001AMS	Sample Matrix Spike								08/21/03 14:11
Alkalinity, Total as CaCO ₃	712	mg/L	2.00	102	80	120			
Sample ID: B03080551-001AMSD	Sample Matrix Spike Duplicate								08/21/03 14:19
Alkalinity, Total as CaCO ₃	718	mg/L	2.00	103	80	120	0.8	20	
Sample ID: MBLK_030821A	Method Blank								08/21/03 16:22
Alkalinity, Total as CaCO ₃	3.43	mg/L	2.00						
Bicarbonate as HCO ₃	4.19	mg/L	2.00						
Carbonate as CO ₃	ND	mg/L	1.00						
Sample ID: LCS_030821A	Laboratory Control Spike								08/21/03 16:24
Alkalinity, Total as CaCO ₃	105	mg/L	2.00	105	90	110			
Sample ID: B03081074-003AMS	Sample Matrix Spike								08/21/03 18:03
Alkalinity, Total as CaCO ₃	1490	mg/L	2.00	102	80	120			
Sample ID: B03081074-003AMSD	Sample Matrix Spike Duplicate								08/21/03 18:12
Alkalinity, Total as CaCO ₃	1490	mg/L	2.00	102	80	120	0.1	20	

Qualifiers: RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Client: Hall Environmental-Albuquerque
Project: Annual Monitor Wells, 2003

Report Date: 08/26/03
Work Order: B03081070

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2320 B							Batch: ALK030822A		
Sample ID: MBLK_030822A	Method Blank								08/22/03 12:01
Alkalinity, Total as CaCO ₃	ND	mg/L	2.00						
Bicarbonate as HCO ₃	ND	mg/L	2.00						
Carbonate as CO ₃	ND	mg/L	1.00						
Sample ID: LCS_030822A	Laboratory Control Spike								08/22/03 12:03
Alkalinity, Total as CaCO ₃	103	mg/L	2.00	103	90	110			
Sample ID: B03080551-001AMS	Sample Matrix Spike								08/22/03 12:14
Alkalinity, Total as CaCO ₃	708	mg/L	2.00	102	80	120			
Sample ID: B03080551-001AMSD	Sample Matrix Spike Duplicate								08/22/03 12:21
Alkalinity, Total as CaCO ₃	717	mg/L	2.00	104	80	120	1.2	20	
Sample ID: B03081109-001ADUP	Sample Duplicate								08/22/03 13:30
Alkalinity, Total as CaCO ₃	393	mg/L	2.00				0	20	
Bicarbonate as HCO ₃	479	mg/L	2.00				0	20	
Carbonate as CO ₃	ND	mg/L	1.00				0	20	
Sample ID: B03081109-001ADUP	Sample Duplicate								08/22/03 13:37
Alkalinity, Total as CaCO ₃	386	mg/L	2.00				1.8	20	
Bicarbonate as HCO ₃	470	mg/L	2.00				1.8	20	
Carbonate as CO ₃	ND	mg/L	1.00				0	20	

Qualifiers: RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT: San Juan Refining
Work Order: 0308154
Project: Annual Monitor Wells 2003

QC SUMMARY REPORT
Method Blank

Sample ID: mb 082003 Batch ID: R9290 Test Code: E300 Units: mg/L Analysis Date: 8/20/2003 10:44:48 AM Prep Date:
Client ID: Run ID: LC_030820A SeqNo: 209732

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									
Chloride	ND	0.10									
Nitrogen, Nitrite (As N)	ND	0.10									
Bromide	ND	0.10									
Nitrogen, Nitrate (As N)	ND	0.10									
Phosphorus, Orthophosphate (As P)	ND	0.50									
Sulfate	ND	0.50									

Sample ID: mb 082103 Batch ID: R9310 Test Code: E300 Units: mg/L Analysis Date: 8/21/2003 1:02:37 PM Prep Date:
Client ID: Run ID: LC_030821A SeqNo: 210100

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									J
Chloride	0.01191	0.10									
Nitrogen, Nitrite (As N)	ND	0.10									
Bromide	ND	0.10									
Nitrogen, Nitrate (As N)	ND	0.10									
Phosphorus, Orthophosphate (As P)	ND	0.50									
Sulfate	ND	0.50									

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

/

QC SUMMARY REPORT

Method Blank

CLIENT: San Juan Refining
 Work Order: 0308154
 Project: Annual Monitor Wells 2003

Sample ID: rb	Batch ID: R9311	Test Code: SW8260B	Units: µg/L	Analysis Date: 8/21/2003	Prep Date:						
Client ID:	Run ID: VAL_030821A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Analyte	Result										
Benzene	ND	1.0									
Toluene	ND	1.0									
Ethylbenzene	ND	1.0									
Methyl tert-butyl ether (MTBE)	ND	1.0									
1,2,4-Trimethylbenzene	ND	1.0									
1,3,5-Trimethylbenzene	ND	1.0									
1,2-Dichloroethane (EDC)	ND	1.0									
1,2-Dibromoethane (EDB)	ND	1.0									
Naphthalene	ND	2.0									
1-Methylnaphthalene	ND	4.0									
2-Methylnaphthalene	ND	4.0									
Acetone	ND	10									
Bromobenzene	ND	1.0									
Bromochloromethane	ND	1.0									
Bromodichloromethane	ND	1.0									
Bromoform	ND	1.0									
Bromomethane	ND	2.0									
2-Butanone	ND	10									
Carbon disulfide	ND	10									
Carbon Tetrachloride	ND	1.0									
Chlorobenzene	ND	1.0									
Chloroethane	ND	2.0									
Chloroform	ND	1.0									
Chloromethane	ND	1.0									
2-Chlorotoluene	ND	1.0									
4-Chlorotoluene	ND	1.0									
cis-1,2-DCE	ND	1.0									
cis-1,3-Dichloropropene	ND	1.0									

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Method Blank

CLIENT: San Juan Refining

Work Order: 0308154

Project: Annual Monitor Wells 2003

1,2-Dibromo-3-chloropropane	ND	2.0
Dibromochloromethane	ND	1.0
Dibromomethane	ND	2.0
1,2-Dichlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
Dichlorodifluoromethane	ND	1.0
1,1-Dichloroethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,2-Dichloropropane	ND	1.0
1,3-Dichloropropane	ND	1.0
2,2-Dichloropropane	ND	1.0
1,1-Dichloropropene	ND	1.0
Hexachlorobutadiene	ND	1.0
2-Hexanone	ND	10
Isopropylbenzene	ND	1.0
4-Isopropyltoluene	ND	1.0
4-Methyl-2-pentanone	ND	10
Methylene Chloride	ND	3.0
n-Butylbenzene	ND	1.0
n-Propylbenzene	ND	1.0
sec-Butylbenzene	ND	1.0
Styrene	ND	1.0
tert-Butylbenzene	ND	1.0
1,1,1,2-Tetrachloroethane	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Tetrachloroethene (PCE)	ND	1.0
trans-1,2-DCE	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
1,2,3-Trichlorobenzene	ND	1.0
1,2,4-Trichlorobenzene	ND	1.0
1,1,1-Trichloroethane	ND	1.0
1,1,2-Trichloroethane	ND	1.0

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

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Method Blank

Method Blank

CLIENT: San Juan Refining

Work Order: 0308154

Project: Annual Monitor Wells 2003

Chemical Name	Concentration (mg/L)	Recovery (%)	Standard Deviation (mg/L)	Standard Error (mg/L)	Limit of Detection (mg/L)	Limit of Quantitation (mg/L)
Trichloroethene (TCE)	1.0	ND				
Trichlorofluoromethane	1.0	ND				
1,2,3-Trichloropropane	2.0	ND				
Vinyl chloride	2.0	ND				
Xylenes, Total	1.0	ND				
Surr: 1,2-Dichloroethane-d4	0	9.438	10	0	94.4	68.4
Surr: 4-Bromofluorobenzene	0	10.33	10	0	103	70.4
Surr: Dibromofluoromethane	0	10.13	10	0	101	70.2
Surr: Toluene-d8	0	10.09	10	0	101	73.5
						127
						126
						126
						129

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	

CLIENT: San Juan Refining
Work Order: 0308154
Project: Annual Monitor Wells 2003

QC SUMMARY REPORT
 Method Blank

Sample ID: rb	Batch ID: R9326	Test Code: SW8260B	Units: µg/L	Analysis Date: 8/22/2003	Prep Date:						
Client ID:	Run ID: VAL_030822A	PQL	SPK value	SPK Ref Val	SeqNo: 210427						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1.0									
Toluene	ND	1.0									
Ethylbenzene	ND	1.0									
Methyl tert-butyl ether (MTBE)	ND	1.0									
1,2,4-Trimethylbenzene	ND	1.0									
1,3,5-Trimethylbenzene	ND	1.0									
1,2-Dichloroethane (EDC)	ND	1.0									
1,2-Dibromoethane (EDB)	ND	1.0									
Naphthalene	ND	2.0									
1-Methylnaphthalene	ND	4.0									
2-Methylnaphthalene	ND	4.0									
Acetone	ND	10									
Bromobenzene	ND	1.0									
Bromochloromethane	ND	1.0									
Bromodichloromethane	ND	1.0									
Bromoform	ND	1.0									
Bromomethane	ND	2.0									
2-Butanone	ND	10									
Carbon disulfide	ND	10									
Carbon Tetrachloride	ND	1.0									
Chlorobenzene	ND	1.0									
Chloroethane	ND	2.0									
Chloroform	ND	1.0									
Chloromethane	ND	1.0									
2-Chlorotoluene	ND	1.0									
4-Chlorotoluene	ND	1.0									
cis-1,2-DCE	ND	1.0									
cis-1,3-Dichloropropene	ND	1.0									

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Method Blank

CLIENT: San Juan Refining

Work Order: 0308154

Project: Annual Monitor Wells 2003

1,2-Dibromo-3-chloropropane	ND	2.0
Dibromochloromethane	ND	1.0
Dibromomethane	ND	2.0
1,2-Dichlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
Dichlorodifluoromethane	ND	1.0
1,1-Dichloroethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,2-Dichloropropane	ND	1.0
1,3-Dichloropropane	ND	1.0
2,2-Dichloropropane	ND	1.0
1,1-Dichloropropene	ND	1.0
Hexachlorobutadiene	ND	1.0
2-Hexanone	ND	10
Isopropylbenzene	ND	1.0
4-Isopropyltoluene	ND	1.0
4-Methyl-2-pentanone	ND	10
Methylene Chloride	ND	3.0
n-Butylbenzene	ND	1.0
n-Propylbenzene	ND	1.0
sec-Butylbenzene	ND	1.0
Styrene	ND	1.0
tert-Butylbenzene	ND	1.0
1,1,1,2-Tetrachloroethane	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Tetrachloroethene (PCE)	ND	1.0
trans-1,2-DCE	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
1,2,3-Trichlorobenzene	ND	1.0
1,2,4-Trichlorobenzene	ND	1.0
1,1,1-Trichloroethane	ND	1.0
1,1,2-Trichloroethane	ND	1.0

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

Method Blank

Project: Annual Monitor Wells 2003

Compound	Concentration (ppm)	Concentration (ppb)	Concentration (ppm)	Concentration (ppb)
Trichloroethene (TCE)	ND	1.0		
Trichlorofluoromethane	ND	1.0		
1,2,3-Trichloropropane	ND	2.0		
Vinyl chloride	ND	2.0		
Xylenes, Total	ND	1.0		
Surr: 1,2-Dichloroethane-d4	8.136	0	10	0
Surr: 4-Bromofluorobenzene	9.566	0	10	0
Surr: Dibromofluoromethane	10.41	0	10	0
Surr: Toluene-d8	8.572	0	10	0

Sample ID: MBLK

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
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Mercury	ND	0.00020
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Sample ID: MB

[illegible]

0.0020

R - RPD outside accepted recovery limits

Method Blank

San Juan Refining

0308154

Annual Monitor Wells 2003

Sample ID: MB	Batch ID: R9413	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/2/2003 1:01:52 PM	Prep Date:
Client ID:	Run ID: ICP_030902B	SeqNo: 212165			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Iron	ND	0.020			
Manganese	ND	0.0020			
Selenium	ND	0.020			
Zinc	ND	0.0050			

Sample ID: MB	Batch ID: R9424	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/3/2003 10:08:45 AM	Prep Date:						
Client ID:	Run ID: ICP_030903B	SeqNo: 212394									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	ND		0.0050								

Sample ID: MB	Batch ID: R9439	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/3/2003 3:04:40 PM	Prep Date:
Client ID:	Run ID: ICP_030903H	PQL	SPK value	SPK Ref Val	%REC
Analyte	Result	LowLimit	HighLimit	RPD Ref Val	%RPD
Calcium	0.00893				J
Magnesium	ND				
Potassium	ND				
Sodium	0.07257				J

Sample ID: MB-4209	Batch ID: 4209	Test Code: SW6010A	Units: mg/L	Analysis Date: 8/28/2003 10:16:42 AM	Prep Date: 8/27/2003
Client ID:	Run ID: ICP_030828A	SeqNo: 211555			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chromium	0.001963				
Lead	ND	0.0060			J
		0.0050			

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	8

QC SUMMARY REPORT

Method Blank

CLIENT: San Juan Refining
 Work Order: 0308154
 Project: Annual Monitor Wells 2003

Sample ID: MB-4186	Batch ID: 4186	Test Code: E160.1	Units: mg/L	Analysis Date: 8/27/2003	Prep Date: 8/25/2003
Client ID:	Run ID: WC_030827C	SeqNo: 211415			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
				LowLimit	HighLimit
				RPD Ref Val	%RPD
				RPDLimit	Qual
Total Dissolved Solids	ND		1.0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT: San Juan Refining
 Work Order: 0308154
 Project: Annual Monitor Wells 2003

QC SUMMARY REPORT

Sample Duplicate

Sample ID: 0308154-01B	Batch ID: R9448	Test Code: SW7470	Units: mg/L	Analysis Date: 9/4/2003	Prep Date:						
Client ID: P-#4		Run ID: MI-LA254_030904B		SeqNo: 212901							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.00020	0	0	0	0	0	0	0	0	20

Sample ID: 0308154-06C DUP	Batch ID: 4209	Test Code: SW6010A	Units: mg/L	Analysis Date: 8/28/2003 10:39:48 AM	Prep Date: 8/27/2003						
Client ID: MW#35		Run ID: ICP_030828A		SeqNo: 211566							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.01197	0.0060	0	0	0	0	0	0.011	8.51	30	
Lead	0.002128	0.0050	0	0	0	0	0	0.001836	0	30	J

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT:

San Juan Refining

Work Order:

0308154

Project:

Annual Monitor Wells 2003

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: Ics 082003	Batch ID: R9290	Test Code: E300	Units: mg/L	Analysis Date: 8/20/2003 11:01:33 AM		Prep Date:					
Client ID:	Run ID: LC_030820A	SeqNo: 209733									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.976	0.10	2	0	98.8	90	110	0			
Chloride	6.278	0.10	6	0	105	90	110	0			
Nitrogen, Nitrite (As N)	1.803	0.10	2	0	90.2	90	110	0			
Bromide	5.993	0.10	6	0	99.9	90	110	0			
Nitrogen, Nitrate (As N)	6.282	0.10	6	0	105	90	110	0			
Phosphorus, Orthophosphate (As P)	6.568	0.50	6	0	109	90	110	0			
Sulfate	12.49	0.50	12	0	104	90	110	0			

Sample ID: Ics 082103-b	Batch ID: R9310	Test Code: E300	Units: mg/L	Analysis Date: 8/22/2003 1:30:58 AM	Prep Date:						
Client ID:	Run ID: LC_030821A	SeqNo: 210125									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.085	0.10	2	0	104	90	110	0			
Chloride	6.447	0.10	6	0.01191	107	90	110	0			
Nitrogen, Nitrite (As N)	1.817	0.10	2	0	90.8	90	110	0			
Bromide	5.858	0.10	6	0	97.6	90	110	0			
Nitrogen, Nitrate (As N)	6.302	0.10	6	0	105	90	110	0			
Phosphorus, Orthophosphate (As P)	6.246	0.50	6	0	104	90	110	0			
Sulfate	12.34	0.50	12	0	103	90	110	0			

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

/

CLIENT: San Juan Refining
Work Order: 0308154
Project: Annual Monitor Wells 2003

QC SUMMARY REPORT
 Laboratory Control Spike - generic

Sample ID: Ics	Batch ID: R9311	Test Code: SW8260B	Units: µg/L	Analysis Date: 8/21/2003	Prep Date:						
Client ID:	Run ID: VAL_030821A	SeqNo: 210157									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.01	1.0	20	0	95.1	71.2	122	0			
Toluene	20.32	1.0	20	0	102	87.7	122	0			
Chlorobenzene	20.13	1.0	20	0	101	85.6	136	0			
1,1-Dichloroethene	18.82	1.0	20	0	94.1	70.7	117	0			
Trichloroethene (TCE)	21.46	1.0	20	0	107	76.9	130	0			

Sample ID: Ics	Batch ID: R9326	Test Code: SW8260B	Units: µg/L	Analysis Date: 8/22/2003	Prep Date:						
Client ID:	Run ID: VAL_030822A	SeqNo: 210428									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.77	1.0	20	0	104	71.2	122	0			
Toluene	20.63	1.0	20	0	103	87.7	122	0			
Chlorobenzene	20.04	1.0	20	0	100	85.6	136	0			
1,1-Dichloroethene	20.56	1.0	20	0	103	70.7	117	0			
Trichloroethene (TCE)	23.3	1.0	20	0	116	76.9	130	0			

Sample ID: LCS	Batch ID: R9448	Test Code: SW7470	Units: mg/L	Analysis Date: 9/4/2003	Prep Date:						
Client ID:	Run ID: MI-LA254_030904B	SeqNo: 212898									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0034	0.00020	0.0035	0	97.1	90	110	0			

Sample ID: LCSD	Batch ID: R9448	Test Code: SW7470	Units: mg/L	Analysis Date: 9/4/2003	Prep Date:						
Client ID:	Run ID: MI-LA254_030904B	SeqNo: 212899									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.00329	0.00020	0.0035	0	94.0	90	110	0.0034	3.29	0	

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

CLIENT: San Juan Refining
Work Order: 0308154
Project: Annual Monitor Wells 2003

QC SUMMARY REPORT
 Laboratory Control Spike - generic

Sample ID: LCS	Batch ID: R9413	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/2/2003 9:57:17 AM	Prep Date:						
Client ID:	Run ID: ICP_030902B	SeqNo: 212133									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.5279	0.0020	0.5	0	106	80	120	0			
Cadmium	0.5387	0.0020	0.5	0	108	80	120	0			
Chromium	0.5501	0.0060	0.5	0	110	80	120	0			
Copper	0.5046	0.0060	0.5	0	101	80	120	0			
Lead	0.526	0.0050	0.5	0	105	80	120	0			
Uranium	0.5057	0.10	0.5	0	101	80	120	0			

Sample ID: LCSD	Batch ID: R9413	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/2/2003 10:32:50 AM	Prep Date:						
Client ID:	Run ID: ICP_030902B	SeqNo: 212137									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.5015	0.0020	0.5	0	100	80	120	0.5279	5.13	20	
Cadmium	0.4816	0.0020	0.5	0	96.3	80	120	0.5387	11.2	20	
Chromium	0.524	0.0060	0.5	0	105	80	120	0.5501	4.86	20	
Copper	0.4717	0.0060	0.5	0	94.3	80	120	0.5046	6.73	20	
Lead	0.4765	0.0050	0.5	0	95.3	80	120	0.526	9.87	20	
Uranium	0.5035	0.10	0.5	0	101	80	120	0.5057	0.429	20	

Sample ID: LCS	Batch ID: R9413	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/2/2003 1:04:44 PM	Prep Date:						
Client ID:	Run ID: ICP_030902B	SeqNo: 212166									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.5101	0.020	0.5	0	102	80	120	0			
Manganese	0.5196	0.0020	0.5	0	104	80	120	0			
Selenium	0.5066	0.020	0.5	0	101	80	120	0			
Zinc	0.5107	0.0050	0.5	0	102	80	120	0			

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
Work Order: 0308154
Project: Annual Monitor Wells 2003

QC SUMMARY REPORT
 Laboratory Control Spike Duplicate

Sample ID: LCSD	Batch ID: R9413	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/2/2003 1:07:07 PM	Prep Date:
Client ID:		Run ID: ICP_030902B		SeqNo: 212167	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Iron	0.5021	0.020	0.5	0	100 80 120 0.5101 1.59 20
Manganese	0.4923	0.0020	0.5	0	98.5 80 120 0.5196 5.40 20
Selenium	0.5765	0.020	0.5	0	115 80 120 0.5066 12.9 20
Zinc	0.5019	0.0050	0.5	0	100 80 120 0.5107 1.73 20

Sample ID: LCS	Batch ID: R9422	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/3/2003 9:22:02 AM	Prep Date:
Client ID:		Run ID: ICP_030903A		SeqNo: 212373	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Arsenic	0.4301	0.020	0.5	0	86.0 80 120 0 0

Sample ID: LCSD	Batch ID: R9422	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/3/2003 9:23:28 AM	Prep Date:
Client ID:		Run ID: ICP_030903A		SeqNo: 212374	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Arsenic	0.4222	0.020	0.5	0	84.4 80 120 0.4301 1.86 20

Sample ID: LCS	Batch ID: R9424	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/3/2003 10:14:49 AM	Prep Date:
Client ID:		Run ID: ICP_030903B		SeqNo: 212397	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Silver	1.058	0.0050	1	0	106 80 120 0 0

Sample ID: LCSD	Batch ID: R9424	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/3/2003 10:16:16 AM	Prep Date:
Client ID:		Run ID: ICP_030903B		SeqNo: 212398	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Silver	1.008	0.0050	1	0	101 80 120 0 0 20

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

CLIENT: San Juan Refining
Work Order: 0308154
Project: Annual Monitor Wells 2003

QC SUMMARY REPORT
 Laboratory Control Spike - generic

Sample ID: LCS	Batch ID: R9439	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/3/2003 3:07:40 PM	Prep Date:
Client ID:		Run ID: ICP_030903H		SeqNo: 212600	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Calcium	10.47	1.0	10	0.00893	105 80 120 0
Magnesium	10.51	1.0	10	0	105 80 120 0
Potassium	9.887	1.0	10	0	98.9 80 120 0
Sodium	9.904	1.0	10	0.07257	98.3 80 120 0

Sample ID: LCSD	Batch ID: R9439	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/3/2003 3:10:16 PM	Prep Date:
Client ID:		Run ID: ICP_030903H		SeqNo: 212601	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Calcium	10.54	1.0	10	0.00893	105 80 120 10.47 20
Magnesium	10.51	1.0	10	0	105 80 120 10.51 20
Potassium	9.754	1.0	10	0	97.5 80 120 9.887 20
Sodium	9.918	1.0	10	0.07257	98.5 80 120 9.904 20

Sample ID: LCS-4209	Batch ID: 4209	Test Code: SW6010A	Units: mg/L	Analysis Date: 8/28/2003 10:18:41 AM	Prep Date: 8/27/2003
Client ID:		Run ID: ICP_030828A		SeqNo: 211556	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chromium	0.5096	0.0060	0.5	0.001963	102 80 120 0
Lead	0.4698	0.0050	0.5	0	94.0 80 120 0

Sample ID: LCSD-4209	Batch ID: 4209	Test Code: SW6010A	Units: mg/L	Analysis Date: 8/28/2003 10:20:39 AM	Prep Date: 8/27/2003
Client ID:		Run ID: ICP_030828A		SeqNo: 211557	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chromium	0.4991	0.0060	0.5	0.001963	99.4 80 120 0.5096 20
Lead	0.4682	0.0050	0.5	0	93.6 80 120 0.4698 20

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

**HALL ENVIRONMENTAL
ANALYSIS LABORATORY**

4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

USACE

Other:

Project Name: Annual Monitor Wells 2023

Project #:

Project Manager:

Sampler: Cindy Husted
Sample Temperature: 70°

Sample Temperature: 20°C

Number/Volume

HEAL No.

Preservative

$$\text{H}_2\text{Cl}_2 \quad \text{HNO}_3$$
$$\text{H}_2\text{Cl}_2 \quad \text{HNO}_3$$

Number/Volume

Sample I.D. No.

Matrix

Time

Date _____

8-2-1-8	C.S.A. 1	Q2H	7#-d	00005-1	0308054-1
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[illegible]

	X	1-1950
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1.5711	✓
1.5711	✓

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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1-50m	1/10
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7024	ms21-1	✓	✓	✓
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8-19-03	220pm	H ₂ O	P-#5	1500ml	-2-
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[illegible]

						X
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1-5200	X
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[illegible][illegible][illegible]

Date:	Time:	Relinquished By: (Signature)	Remarks:
8/20/63	2:20	[Signature]	8/20/63

19-03	Time	30m	Way: NW 250	Remarks: same as 1257
Date:	Time		Relinquished By: (Signature)	

Date: _____
 Name: _____
 Institution: _____
 Roll No.: _____

Remarks:

Remarks:

Relinquished By: (Signature)

Time:

tr.

Remarks:

Relinquished By: (Signature)

Time

10.

ANALYSIS REQUEST

[illegible]

Remarks:

CHAIN-OF-CUSTODY RECORD

Client: <u>San Juan Refinery</u>		Project Name: <u>Annual Monitor Wells 2003</u>					
Address: <u>#50 CR 4990</u>		Project #:					
<u>Bloomfield, NM</u>		Project Manager:					
<u>87413</u>		Sampler: <u>Lindy Hurtado</u>					
Phone #: <u>505-632-4161</u>		Samples Col'd?: ☒ Yes ☐ No					
Fax #: <u>505-632-3911</u>		HEAL No. <u>0308154-3</u>					
Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative	HEAL No.	
8-19-03	8:05 AM	H ₂ O	MW #11	1-500ml			
				3-VOA	X		
				1-125ml		HN03	
				1-500ml		HN03	
				1-250ml		HN04	
				1-125ml			
				1-500ml			
				3-VOA	X		
				1-125ml		HN03	
				1-500ml		HN03	
8-19-03	9 AM	H ₂ O	MW #12	1-500ml			
				1-125ml		HN04	
Date: <u>8-19-03</u>		Time: <u>3:30 PM</u>		Relinquished By: (Signature) <u>Lindy Hurtado</u>		Received By: (Signature) <u>Lindy Hurtado</u>	
Date: <u>8-19-03</u>		Time: <u>12:59</u>		Relinquished By: (Signature)		Received By: (Signature)	

ANALYSIS REQUEST

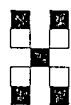
BTEX + MTBE + TMBs (8021)	
BTEX + MTBE + TPH (Gasoline Only)	
TPH Method 8015B MOD (Gas/Diesel)	
TPH (Method 418.1)	
Volatiles Full List (8021)	
EDB (Method 504.1)	
EDC (Method 8021)	
8310 (PMA-PAH) <u>Aspen District</u>	
RCRA 8 Metals	
Cations (Na, K, Ca, Mg)	X
Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	X
8081 Pesticides / PCBs (8082)	
8260 (VOA) MTBE + BTEX	X
8270 (Semi-VOA)	
WCC-diss Metals/7HMs	X
Air Bubbles or Headspace (Y or N)	Total # PB

Remarks:

HALL ENVIRONMENTAL ANALYSIS LAB
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345-3975 Fax 505.345.4107
www.hallenvironmental.com

Date: 03	Time: 3:30pm	Relinquished By: (Signature) <i>Andy Tuitale</i>	Received By: (Signature) <i>James M. ...</i>	8/20/03
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)	1259

Remarks: Trip Bank - 7



Hall Environmental Analysis Laboratory

COVER LETTER

September 05, 2003

Cindy Hurtado
San Juan Refining
#50 CR 4990
Bloomfield, NM 87413
TEL: (505) 632-4161
FAX (505) 632-3911

RE: Annual Monitor Wells 2003

Order No.: 0308162

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory received 3 samples on 8/21/2003 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

Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT: San Juan Refining

Client Sample ID: MW#37

Lab Order: 0308162

Collection Date: 8/20/2003 12:40:00 PM

Project: Annual Monitor Wells 2003

Lab ID: 0308162-01

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: JDC
Fluoride	0.49	0.10		mg/L	1	8/21/2003 6:49:01 PM
Chloride	110	2.0		mg/L	20	8/22/2003 2:42:09 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/21/2003 6:49:01 PM
Bromide	1.3	0.10		mg/L	1	8/21/2003 6:49:01 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/21/2003 6:49:01 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/21/2003 6:49:01 PM
Sulfate	19	0.50		mg/L	1	8/21/2003 6:49:01 PM
EPA METHOD 8260B: VOLATILES						Analyst: BL
Benzene	1.3	1.0		µg/L	1	8/22/2003
Toluene	ND	1.0		µg/L	1	8/22/2003
Ethylbenzene	1.4	1.0		µg/L	1	8/22/2003
Methyl tert-butyl ether (MTBE)	5.9	1.0		µg/L	1	8/22/2003
1,2,4-Trimethylbenzene	3.0	1.0		µg/L	1	8/22/2003
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/22/2003
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/22/2003
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/22/2003
Naphthalene	ND	2.0		µg/L	1	8/22/2003
1-Methylnaphthalene	ND	4.0		µg/L	1	8/22/2003
2-Methylnaphthalene	ND	4.0		µg/L	1	8/22/2003
Acetone	ND	10		µg/L	1	8/22/2003
Bromobenzene	ND	1.0		µg/L	1	8/22/2003
Bromochloromethane	ND	1.0		µg/L	1	8/22/2003
Bromodichloromethane	ND	1.0		µg/L	1	8/22/2003
Bromoform	ND	1.0		µg/L	1	8/22/2003
Bromomethane	ND	2.0		µg/L	1	8/22/2003
2-Butanone	ND	10		µg/L	1	8/22/2003
Carbon disulfide	ND	10		µg/L	1	8/22/2003
Carbon Tetrachloride	ND	1.0		µg/L	1	8/22/2003
Chlorobenzene	ND	1.0		µg/L	1	8/22/2003
Chloroethane	ND	2.0		µg/L	1	8/22/2003
Chloroform	ND	1.0		µg/L	1	8/22/2003
Chloromethane	ND	1.0		µg/L	1	8/22/2003
2-Chlorotoluene	ND	1.0		µg/L	1	8/22/2003
4-Chlorotoluene	ND	1.0		µg/L	1	8/22/2003
cis-1,2-DCE	ND	1.0		µg/L	1	8/22/2003
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/22/2003
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/22/2003
Dibromochloromethane	ND	1.0		µg/L	1	8/22/2003
Dibromomethane	ND	2.0		µg/L	1	8/22/2003
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/22/2003

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT: San Juan Refining

Client Sample ID: MW#37

Lab Order: 0308162

Collection Date: 8/20/2003 12:40:00 PM

Project: Annual Monitor Wells 2003

Lab ID: 0308162-01

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/22/2003
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/22/2003
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/22/2003
1,1-Dichloroethane	ND	1.0		µg/L	1	8/22/2003
1,1-Dichloroethene	ND	1.0		µg/L	1	8/22/2003
1,2-Dichloropropane	ND	1.0		µg/L	1	8/22/2003
1,3-Dichloropropane	ND	1.0		µg/L	1	8/22/2003
2,2-Dichloropropane	ND	1.0		µg/L	1	8/22/2003
1,1-Dichloropropene	ND	1.0		µg/L	1	8/22/2003
Hexachlorobutadiene	ND	1.0		µg/L	1	8/22/2003
2-Hexanone	ND	10		µg/L	1	8/22/2003
Isopropylbenzene	ND	1.0		µg/L	1	8/22/2003
4-Isopropyltoluene	ND	1.0		µg/L	1	8/22/2003
4-Methyl-2-pentanone	ND	10		µg/L	1	8/22/2003
Methylene Chloride	ND	3.0		µg/L	1	8/22/2003
n-Butylbenzene	ND	1.0		µg/L	1	8/22/2003
n-Propylbenzene	ND	1.0		µg/L	1	8/22/2003
sec-Butylbenzene	ND	1.0		µg/L	1	8/22/2003
Styrene	ND	1.0		µg/L	1	8/22/2003
tert-Butylbenzene	ND	1.0		µg/L	1	8/22/2003
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/22/2003
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	8/22/2003
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/22/2003
trans-1,2-DCE	ND	1.0		µg/L	1	8/22/2003
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/22/2003
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/22/2003
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/22/2003
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/22/2003
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/22/2003
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/22/2003
Trichlorofluoromethane	ND	1.0		µg/L	1	8/22/2003
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/22/2003
Vinyl chloride	ND	2.0		µg/L	1	8/22/2003
Xylenes, Total	9.7	1.0		µg/L	1	8/22/2003
Surr: 1,2-Dichloroethane-d4	93.5	70.6-124		%REC	1	8/22/2003
Surr: 4-Bromofluorobenzene	95.8	76.2-122		%REC	1	8/22/2003
Surr: Dibromofluoromethane	103	67.2-131		%REC	1	8/22/2003
Surr: Toluene-d8	93.9	82.1-123		%REC	1	8/22/2003

EPA 120.1: SPECIFIC CONDUCTANCE

Specific Conductance 1800 0.010 µmhos/cm

Analyst: MAP

9/3/2003

MERCURY, DISSOLVED

Analyst: MAP

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT: San Juan Refining

Client Sample ID: MW#37

Lab Order: 0308162

Collection Date: 8/20/2003 12:40:00 PM

Project: Annual Monitor Wells 2003

Lab ID: 0308162-01

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Mercury	ND	0.00020		mg/L	1	9/4/2003
EPA METHOD 6010C: DISSOLVED METALS						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	9/3/2003 9:46:22 AM
Barium	1.5	0.020		mg/L	10	9/2/2003 12:15:47 PM
Cadmium	ND	0.0020		mg/L	1	9/2/2003 11:57:41 AM
Calcium	100	0.50		mg/L	1	9/3/2003 3:39:02 PM
Chromium	ND	0.0060		mg/L	1	9/2/2003 11:57:41 AM
Copper	ND	0.0060		mg/L	1	9/2/2003 11:57:41 AM
Iron	0.60	0.020		mg/L	1	9/2/2003 2:02:31 PM
Lead	ND	0.0050		mg/L	1	9/2/2003 11:57:41 AM
Magnesium	20	0.50		mg/L	1	9/3/2003 3:39:02 PM
Manganese	1.4	0.020		mg/L	10	9/2/2003 2:37:03 PM
Potassium	6.6	1.0		mg/L	1	9/3/2003 3:39:02 PM
Selenium	0.13	0.020		mg/L	1	9/2/2003 2:02:31 PM
Silver	ND	0.0050		mg/L	1	9/3/2003 10:38:08 AM
Sodium	370	10		mg/L	10	9/4/2003 8:15:19 AM
Uranium	ND	0.10		mg/L	1	9/2/2003 11:57:41 AM
Zinc	0.29	0.0050		mg/L	1	9/2/2003 2:02:31 PM
EPA 6010C: TOTAL RECOVERABLE METALS						Analyst: NMO
Chromium	0.18	0.0060		mg/L	1	8/28/2003 10:51:52 AM
Lead	0.18	0.0050		mg/L	1	8/28/2003 10:51:52 AM
EPA METHOD 160.1: TDS						Analyst: MAP
Total Dissolved Solids	1400	2.0		mg/L	2	8/27/2003

17 Diss
2 - total
12 - Gen Chem

Qualifiers:

ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT: San Juan Refining
Lab Order: 0308162
Project: Annual Monitor Wells 2003
Lab ID: 0308162-02

Client Sample ID: MW#38
Collection Date: 8/20/2003 1:10:00 PM

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: JDC
Fluoride	0.67	0.10		mg/L	1	8/21/2003 7:05:46 PM
Chloride	120	2.0		mg/L	20	8/22/2003 2:58:52 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/21/2003 7:05:46 PM
Bromide	1.3	0.10		mg/L	1	8/21/2003 7:05:46 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/21/2003 7:05:46 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/21/2003 7:05:46 PM
Sulfate	310	10		mg/L	20	8/22/2003 2:58:52 PM
EPA METHOD 8260B: VOLATILES						Analyst: BL
Benzene	ND	1.0		µg/L	1	8/22/2003
Toluene	ND	1.0		µg/L	1	8/22/2003
Ethylbenzene	ND	1.0		µg/L	1	8/22/2003
Methyl tert-butyl ether (MTBE)	17	1.0		µg/L	1	8/22/2003
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/22/2003
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/22/2003
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/22/2003
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/22/2003
Naphthalene	ND	2.0		µg/L	1	8/22/2003
1-Methylnaphthalene	ND	4.0		µg/L	1	8/22/2003
2-Methylnaphthalene	ND	4.0		µg/L	1	8/22/2003
Acetone	ND	10		µg/L	1	8/22/2003
Bromobenzene	ND	1.0		µg/L	1	8/22/2003
Bromochloromethane	ND	1.0		µg/L	1	8/22/2003
Bromodichloromethane	ND	1.0		µg/L	1	8/22/2003
Bromoform	ND	1.0		µg/L	1	8/22/2003
Bromomethane	ND	2.0		µg/L	1	8/22/2003
2-Butanone	ND	10		µg/L	1	8/22/2003
Carbon disulfide	ND	10		µg/L	1	8/22/2003
Carbon Tetrachloride	ND	1.0		µg/L	1	8/22/2003
Chlorobenzene	ND	1.0		µg/L	1	8/22/2003
Chloroethane	ND	2.0		µg/L	1	8/22/2003
Chloroform	ND	1.0		µg/L	1	8/22/2003
Chloromethane	ND	1.0		µg/L	1	8/22/2003
2-Chlorotoluene	ND	1.0		µg/L	1	8/22/2003
4-Chlorotoluene	ND	1.0		µg/L	1	8/22/2003
cis-1,2-DCE	ND	1.0		µg/L	1	8/22/2003
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/22/2003
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/22/2003
Dibromochloromethane	ND	1.0		µg/L	1	8/22/2003
Dibromomethane	ND	2.0		µg/L	1	8/22/2003
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/22/2003

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT: San Juan Refining

Client Sample ID: MW#38

Lab Order: 0308162

Collection Date: 8/20/2003 1:10:00 PM

Project: Annual Monitor Wells 2003

Lab ID: 0308162-02

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/22/2003
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/22/2003
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/22/2003
1,1-Dichloroethane	ND	1.0		µg/L	1	8/22/2003
1,1-Dichloroethene	ND	1.0		µg/L	1	8/22/2003
1,2-Dichloropropane	ND	1.0		µg/L	1	8/22/2003
1,3-Dichloropropane	ND	1.0		µg/L	1	8/22/2003
2,2-Dichloropropane	ND	1.0		µg/L	1	8/22/2003
1,1-Dichloropropene	ND	1.0		µg/L	1	8/22/2003
Hexachlorobutadiene	ND	1.0		µg/L	1	8/22/2003
2-Hexanone	ND	10		µg/L	1	8/22/2003
Isopropylbenzene	ND	1.0		µg/L	1	8/22/2003
4-Isopropyltoluene	ND	1.0		µg/L	1	8/22/2003
4-Methyl-2-pentanone	ND	10		µg/L	1	8/22/2003
Methylene Chloride	ND	3.0		µg/L	1	8/22/2003
n-Butylbenzene	ND	1.0		µg/L	1	8/22/2003
n-Propylbenzene	ND	1.0		µg/L	1	8/22/2003
sec-Butylbenzene	ND	1.0		µg/L	1	8/22/2003
Styrene	ND	1.0		µg/L	1	8/22/2003
tert-Butylbenzene	ND	1.0		µg/L	1	8/22/2003
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/22/2003
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	8/22/2003
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/22/2003
trans-1,2-DCE	ND	1.0		µg/L	1	8/22/2003
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/22/2003
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/22/2003
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/22/2003
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/22/2003
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/22/2003
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/22/2003
Trichlorofluoromethane	ND	1.0		µg/L	1	8/22/2003
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/22/2003
Vinyl chloride	ND	2.0		µg/L	1	8/22/2003
Xylenes, Total	ND	1.0		µg/L	1	8/22/2003
Surr: 1,2-Dichloroethane-d4	91.6	70.6-124		%REC	1	8/22/2003
Surr: 4-Bromofluorobenzene	106	76.2-122		%REC	1	8/22/2003
Surr: Dibromofluoromethane	104	67.2-131		%REC	1	8/22/2003
Surr: Toluene-d8	88.5	82.1-123		%REC	1	8/22/2003

EPA 120.1: SPECIFIC CONDUCTANCE

Analyst: MAP

Specific Conductance 1900 0.010 µmhos/cm

1 9/3/2003

MERCURY, DISSOLVED

Analyst: MAP

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT: San Juan Refining

Client Sample ID: MW#38

Lab Order: 0308162

Collection Date: 8/20/2003 1:10:00 PM

Project: Annual Monitor Wells 2003

Lab ID: 0308162-02

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Mercury	ND	0.00020		mg/L	1	9/4/2003
EPA METHOD 6010C: DISSOLVED METALS						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	9/3/2003 9:48:08 AM
Barium	0.37	0.0020		mg/L	1	9/2/2003 12:04:26 PM
Cadmium	ND	0.0020		mg/L	1	9/2/2003 12:04:26 PM
Calcium	170	0.50		mg/L	1	9/3/2003 3:40:56 PM
Chromium	ND	0.0060		mg/L	1	9/2/2003 12:04:26 PM
Copper	ND	0.0060		mg/L	1	9/2/2003 12:04:26 PM
Iron	7.5	0.20		mg/L	10	9/2/2003 2:39:34 PM
Lead	ND	0.0050		mg/L	1	9/2/2003 12:04:26 PM
Magnesium	28	0.50		mg/L	1	9/3/2003 3:40:56 PM
Manganese	3.0	0.020		mg/L	10	9/2/2003 2:39:34 PM
Potassium	6.6	1.0		mg/L	1	9/3/2003 3:40:56 PM
Selenium	0.11	0.020		mg/L	1	9/2/2003 2:05:04 PM
Silver	ND	0.0050		mg/L	1	9/3/2003 10:39:37 AM
Sodium	240	10		mg/L	10	9/4/2003 8:22:01 AM
Uranium	ND	0.10		mg/L	1	9/2/2003 12:04:26 PM
Zinc	0.31	0.0050		mg/L	1	9/2/2003 2:05:04 PM
EPA 6010C: TOTAL RECOVERABLE METALS						Analyst: NMO
Chromium	0.31	0.0060		mg/L	1	8/28/2003 10:53:21 AM
Lead	0.21	0.0050		mg/L	1	8/28/2003 10:53:21 AM
EPA METHOD 160.1: TDS						Analyst: MAP
Total Dissolved Solids	1600	10		mg/L	10	8/27/2003

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT: San Juan Refining
Lab Order: 0308162
Project: Annual Monitor Wells 2003
Lab ID: 0308162-03

Client Sample ID: MW#32
Collection Date: 8/20/2003 2:45:00 PM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: JDC
Fluoride	0.18	0.10		mg/L	1	8/21/2003 7:22:31 PM
Chloride	940	5.0		mg/L	50	8/22/2003 3:15:37 PM
Nitrogen, Nitrite (As N)	ND	1.0		mg/L	10	8/22/2003 2:25:25 PM
Bromide	13	0.10		mg/L	1	8/21/2003 7:22:31 PM
Nitrogen, Nitrate (As N)	22	1.0		mg/L	10	8/22/2003 2:25:25 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/21/2003 7:22:31 PM
Sulfate	1200	25		mg/L	50	8/22/2003 3:15:37 PM
EPA METHOD 8260B: VOLATILES						Analyst: BL
Benzene	ND	1.0		µg/L	1	8/22/2003
Toluene	ND	1.0		µg/L	1	8/22/2003
Ethylbenzene	ND	1.0		µg/L	1	8/22/2003
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/22/2003
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/22/2003
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/22/2003
1,2-Dichloroethane (EDC)	3.5	1.0		µg/L	1	8/22/2003
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/22/2003
Naphthalene	ND	2.0		µg/L	1	8/22/2003
1-Methylnaphthalene	ND	4.0		µg/L	1	8/22/2003
2-Methylnaphthalene	ND	4.0		µg/L	1	8/22/2003
Acetone	ND	10		µg/L	1	8/22/2003
Bromobenzene	ND	1.0		µg/L	1	8/22/2003
Bromochloromethane	ND	1.0		µg/L	1	8/22/2003
Bromodichloromethane	ND	1.0		µg/L	1	8/22/2003
Bromoform	ND	1.0		µg/L	1	8/22/2003
Bromomethane	ND	2.0		µg/L	1	8/22/2003
2-Butanone	ND	10		µg/L	1	8/22/2003
Carbon disulfide	ND	10		µg/L	1	8/22/2003
Carbon Tetrachloride	ND	1.0		µg/L	1	8/22/2003
Chlorobenzene	ND	1.0		µg/L	1	8/22/2003
Chloroethane	ND	2.0		µg/L	1	8/22/2003
Chloroform	ND	1.0		µg/L	1	8/22/2003
Chloromethane	ND	1.0		µg/L	1	8/22/2003
2-Chlorotoluene	ND	1.0		µg/L	1	8/22/2003
4-Chlorotoluene	ND	1.0		µg/L	1	8/22/2003
cis-1,2-DCE	ND	1.0		µg/L	1	8/22/2003
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/22/2003
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/22/2003
Dibromochloromethane	ND	1.0		µg/L	1	8/22/2003
Dibromomethane	ND	2.0		µg/L	1	8/22/2003
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/22/2003

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT: San Juan Refining

Client Sample ID: MW#32

Lab Order: 0308162

Collection Date: 8/20/2003 2:45:00 PM

Project: Annual Monitor Wells 2003

Lab ID: 0308162-03

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/22/2003
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/22/2003
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/22/2003
1,1-Dichloroethane	1.1	1.0		µg/L	1	8/22/2003
1,1-Dichloroethene	ND	1.0		µg/L	1	8/22/2003
1,2-Dichloropropane	ND	1.0		µg/L	1	8/22/2003
1,3-Dichloropropane	ND	1.0		µg/L	1	8/22/2003
2,2-Dichloropropane	ND	1.0		µg/L	1	8/22/2003
1,1-Dichloropropene	ND	1.0		µg/L	1	8/22/2003
Hexachlorobutadiene	ND	1.0		µg/L	1	8/22/2003
2-Hexanone	ND	10		µg/L	1	8/22/2003
Isopropylbenzene	ND	1.0		µg/L	1	8/22/2003
4-Isopropyltoluene	ND	1.0		µg/L	1	8/22/2003
4-Methyl-2-pentanone	ND	10		µg/L	1	8/22/2003
Methylene Chloride	ND	3.0		µg/L	1	8/22/2003
n-Butylbenzene	ND	1.0		µg/L	1	8/22/2003
n-Propylbenzene	ND	1.0		µg/L	1	8/22/2003
sec-Butylbenzene	ND	1.0		µg/L	1	8/22/2003
Styrene	ND	1.0		µg/L	1	8/22/2003
tert-Butylbenzene	ND	1.0		µg/L	1	8/22/2003
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/22/2003
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	8/22/2003
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/22/2003
trans-1,2-DCE	ND	1.0		µg/L	1	8/22/2003
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/22/2003
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/22/2003
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/22/2003
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/22/2003
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/22/2003
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/22/2003
Trichlorofluoromethane	ND	1.0		µg/L	1	8/22/2003
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/22/2003
Vinyl chloride	ND	2.0		µg/L	1	8/22/2003
Xylenes, Total	ND	1.0		µg/L	1	8/22/2003
Surr: 1,2-Dichloroethane-d4	93.5	70.6-124		%REC	1	8/22/2003
Surr: 4-Bromofluorobenzene	104	76.2-122		%REC	1	8/22/2003
Surr: Dibromofluoromethane	100	67.2-131		%REC	1	8/22/2003
Surr: Toluene-d8	96.3	82.1-123		%REC	1	8/22/2003

EPA 120.1: SPECIFIC CONDUCTANCE

Specific Conductance 5800 0.010 µmhos/cm

Analyst: MAP

9/3/2003

MERCURY, DISSOLVED

Analyst: MAP

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT: San Juan Refining

Client Sample ID: MW#32

Lab Order: 0308162

Collection Date: 8/20/2003 2:45:00 PM

Project: Annual Monitor Wells 2003

Lab ID: 0308162-03

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Mercury	ND	0.00020		mg/L	1	9/4/2003
EPA METHOD 6010C: DISSOLVED METALS						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	9/3/2003 9:49:54 AM
Barium	0.35	0.0020		mg/L	1	9/2/2003 12:07:24 PM
Cadmium	ND	0.0020		mg/L	1	9/2/2003 12:07:24 PM
Calcium	370	10		mg/L	10	9/4/2003 8:31:10 AM
Chromium	ND	0.0060		mg/L	1	9/2/2003 12:07:24 PM
Copper	ND	0.0060		mg/L	1	9/2/2003 12:07:24 PM
Iron	0.031	0.020		mg/L	1	9/2/2003 2:07:31 PM
Lead	ND	0.0050		mg/L	1	9/2/2003 12:07:24 PM
Magnesium	56	0.50		mg/L	1	9/3/2003 3:42:44 PM
Manganese	0.0037	0.0020		mg/L	1	9/2/2003 2:07:31 PM
Potassium	5.0	1.0		mg/L	1	9/3/2003 3:42:44 PM
Selenium	0.050	0.020		mg/L	1	9/2/2003 2:07:31 PM
Silver	ND	0.0050		mg/L	1	9/3/2003 10:41:01 AM
Sodium	800	10		mg/L	10	9/4/2003 8:31:10 AM
Uranium	ND	0.10		mg/L	1	9/2/2003 12:07:24 PM
Zinc	0.095	0.0050		mg/L	1	9/2/2003 2:07:31 PM
EPA 6010C: TOTAL RECOVERABLE METALS						Analyst: NMO
Chromium	ND	0.0060		mg/L	1	8/28/2003 10:55:15 AM
Lead	ND	0.0050		mg/L	1	8/28/2003 10:55:15 AM
EPA METHOD 160.1: TDS						Analyst: MAP
Total Dissolved Solids	3800	1.0		mg/L	1	8/27/2003

Qualifiers:

ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level



LABORATORY ANALYTICAL REPORT

Client: Hall Environmental-Albuquerque
Project: Annual Monitoring Wells 2003
Lab ID: B03081125-001
Client Sample ID: MW#37, 0308162-01D

Report Date: 08/28/03
Collection Date: 08/20/03 12:40
Date Received: 08/22/03
Matrix: Aqueous

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
INORGANICS							
Alkalinity, Total as CaCO3	1010	mg/L		2		A2320 B	08/22/03 13:41 / jb
Bicarbonate as HCO3	1230	mg/L		2		A2320 B	08/22/03 13:41 / jb
Carbonate as CO3	ND	mg/L		1		A2320 B	08/22/03 13:41 / jb
Carbon Dioxide, Total	960	mg/L		1		Calculation	08/27/03 13:36 / lab

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

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



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LABORATORY ANALYTICAL REPORT

Client: Hall Environmental-Albuquerque
Project: Annual Monitoring Wells 2003
Lab ID: B03081125-002
Client Sample ID: MW#38, 0308162-02D

Report Date: 08/28/03
Collection Date: 08/20/03 13:10
Date Received: 08/22/03
Matrix: Aqueous

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
INORGANICS							
Alkalinity, Total as CaCO3	600	mg/L		2		A2320 B	08/25/03 09:24 / jb
Bicarbonate as HCO3	733	mg/L		2		A2320 B	08/25/03 09:24 / jb
Carbonate as CO3	ND	mg/L		1		A2320 B	08/25/03 09:24 / jb
Carbon Dioxide, Total	670	mg/L		1		Calculation	08/27/03 13:36 / lab

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
Project: Annual Monitoring Wells 2003
Lab ID: B03081125-003
Client Sample ID: MW#32, 0308162-03D

Report Date: 08/28/03
Collection Date: 08/20/03 14:45
Date Received: 08/22/03
Matrix: Aqueous

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
INORGANICS							
Alkalinity, Total as CaCO3	242	mg/L		2		A2320 B	08/25/03 09:31 / jb
Bicarbonate as HCO3	295	mg/L		2		A2320 B	08/25/03 09:31 / jb
Carbonate as CO3	ND	mg/L		1		A2320 B	08/25/03 09:31 / jb
Carbon Dioxide, Total	250	mg/L		1		Calculation	08/27/03 13:36 / lab

port
Definitions: 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: Annual Monitoring Wells 2003

Report Date: 08/27/03

Work Order: B03081125

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2320 B							Batch: ALK030822A		
Sample ID: MBLK_030822A	Method Blank								08/22/03 12:01
Alkalinity, Total as CaCO ₃	ND	mg/L	2.00						
Bicarbonate as HCO ₃	ND	mg/L	2.00						
Carbonate as CO ₃	ND	mg/L	1.00						
Sample ID: LCS_030822A	Laboratory Control Spike								08/22/03 12:03
Alkalinity, Total as CaCO ₃	103	mg/L	2.00	103	90	110			
Sample ID: B03080551-001AMS	Sample Matrix Spike								08/22/03 12:14
Alkalinity, Total as CaCO ₃	708	mg/L	2.00	102	80	120			
Sample ID: B03080551-001AMSD	Sample Matrix Spike Duplicate								08/22/03 12:21
Alkalinity, Total as CaCO ₃	717	mg/L	2.00	104	80	120	1.2	20	
Sample ID: B03081109-001ADUP	Sample Duplicate								08/22/03 13:30
Alkalinity, Total as CaCO ₃	393	mg/L	2.00				0	20	
Bicarbonate as HCO ₃	479	mg/L	2.00				0	20	
Carbonate as CO ₃	ND	mg/L	1.00				0	20	
Sample ID: B03081109-001ADUP	Sample Duplicate								08/22/03 13:37
Alkalinity, Total as CaCO ₃	386	mg/L	2.00				1.8	20	
Bicarbonate as HCO ₃	470	mg/L	2.00				1.8	20	
Carbonate as CO ₃	ND	mg/L	1.00				0	20	

Qualifiers: RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Client: Hall Environmental-Albuquerque

Project: Annual Monitoring Wells 2003

Report Date: 08/27/03

Work Order: B03081125

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2320 B								Batch: ALK030825A	
Sample ID: MBLK_030825A	Method Blank							08/25/03 08:13	
Alkalinity, Total as CaCO ₃	ND	mg/L	2.00						
Bicarbonate as HCO ₃	ND	mg/L	2.00						
Carbonate as CO ₃	ND	mg/L	1.00						
Sample ID: LCS_030825A	Laboratory Control Spike							08/25/03 08:15	
Alkalinity, Total as CaCO ₃	102	mg/L	2.00	102	90	110			
Sample ID: B03081125-003AMS	Sample Matrix Spike							08/25/03 09:37	
Alkalinity, Total as CaCO ₃	762	mg/L	2.00	88.8	80	120			
Sample ID: B03081125-003AMSD	Sample Matrix Spike Duplicate							08/25/03 09:44	
Alkalinity, Total as CaCO ₃	754	mg/L	2.00	87.1	80	120	1.2	20	
Sample ID: MBLK_030825B	Method Blank							08/25/03 10:15	
Alkalinity, Total as CaCO ₃	ND	mg/L	2.00						
Carbonate as HCO ₃	ND	mg/L	2.00						
Carbonate as CO ₃	ND	mg/L	1.00						
Sample ID: LCS_030825B	Laboratory Control Spike							08/25/03 10:17	
Alkalinity, Total as CaCO ₃	103	mg/L	2.00	103	90	110			
Sample ID: B03081149-002AMS	Sample Matrix Spike							08/25/03 11:27	
Alkalinity, Total as CaCO ₃	842	mg/L	2.00	101	80	120			
Sample ID: B03081149-002AMSD	Sample Matrix Spike Duplicate							08/25/03 11:34	
Alkalinity, Total as CaCO ₃	841	mg/L	2.00	101	80	120	0	20	

Qualifiers: RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT: San Juan Refining
Work Order: 0308162
Project: Annual Monitor Wells 2003

QC SUMMARY REPORT

Method Blank

Sample ID: mb 082103	Batch ID: R9310	Test Code: E300	Units: mg/L	Analysis Date: 8/21/2003 1:02:37 PM	Prep Date:						
Client ID:	Run ID: LC_030821A	SeqNo: 210100									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									J
Chloride	0.01191	0.10									
Nitrogen, Nitrite (As N)	ND	0.10									
Bromide	ND	0.10									
Nitrogen, Nitrate (As N)	ND	0.10									
Phosphorus, Orthophosphate (As P)	ND	0.50									
Sulfate	ND	0.50									

Sample ID: mb 082203	Batch ID: R9322	Test Code: E300	Units: mg/L	Analysis Date: 8/22/2003 11:37:12 AM	Prep Date:						
Client ID:	Run ID: LC_030822A	SeqNo: 210370									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									J
Chloride	0.0322	0.10									
Nitrogen, Nitrite (As N)	ND	0.10									
Bromide	ND	0.10									
Nitrogen, Nitrate (As N)	ND	0.10									
Phosphorus, Orthophosphate (As P)	ND	0.50									
Sulfate	ND	0.50									

Sample ID: MBLK	Batch ID: R9433	Test Code: E310.1	Units: mg/L CaCO3	Analysis Date: 9/3/2003	Prep Date:						
Client ID:	Run ID: WC_030903A	SeqNo: 212528									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	2.0									
Carbonate	ND	2.0									
Bicarbonate	ND	2.0									

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Method Blank

CLIENT: San Juan Refining
 Work Order: 0308162
 Project: Annual Monitor Wells 2003

Sample ID: rb	Batch ID: R9326	Test Code: SW8260B	Units: µg/L	Analysis Date: 8/22/2003	Prep Date:						
Client ID:	Run ID: VAL_030822A	SeqNo: 210427									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1.0									
Toluene	ND	1.0									
Ethylbenzene	ND	1.0									
Methyl tert-butyl ether (MTBE)	ND	1.0									
1,2,4-Trimethylbenzene	ND	1.0									
1,3,5-Trimethylbenzene	ND	1.0									
1,2-Dichloroethane (EDC)	ND	1.0									
1,2-Dibromoethane (EDB)	ND	1.0									
Naphthalene	ND	2.0									
1-Methylnaphthalene	ND	4.0									
2-Methylnaphthalene	ND	4.0									
Acetone	ND	10									
Bromobenzene	ND	1.0									
Bromochloromethane	ND	1.0									
Bromodichloromethane	ND	1.0									
Bromoform	ND	1.0									
Bromomethane	ND	2.0									
2-Butanone	ND	10									
Carbon disulfide	ND	10									
Carbon Tetrachloride	ND	1.0									
Chlorobenzene	ND	1.0									
Chloroethane	ND	2.0									
Chloroform	ND	1.0									
Chloromethane	ND	1.0									
2-Chlorotoluene	ND	1.0									
4-Chlorotoluene	ND	1.0									
cis-1,2-DCE	ND	1.0									
cis-1,3-Dichloropropene	ND	1.0									

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
Work Order: 0308162
Project: Annual Monitor Wells 2003

QC SUMMARY REPORT

Method Blank

1,2-Dibromo-3-chloropropane	ND	2.0
Dibromochloromethane	ND	1.0
Dibromomethane	ND	2.0
1,2-Dichlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
Dichlorodifluoromethane	ND	1.0
1,1-Dichloroethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,2-Dichloropropane	ND	1.0
1,3-Dichloropropane	ND	1.0
2,2-Dichloropropane	ND	1.0
1,1-Dichloropropene	ND	1.0
Hexachlorobutadiene	ND	1.0
2-Hexanone	ND	10
Isopropylbenzene	ND	1.0
4-Isopropyltoluene	ND	1.0
4-Methyl-2-pentanone	ND	10
Methylene Chloride	ND	3.0
n-Butylbenzene	ND	1.0
n-Propylbenzene	ND	1.0
sec-Butylbenzene	ND	1.0
Styrene	ND	1.0
tert-Butylbenzene	ND	1.0
1,1,1,2-Tetrachloroethane	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Tetrachloroethene (PCE)	ND	1.0
trans-1,2-DCE	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
1,2,3-Trichlorobenzene	ND	1.0
1,2,4-Trichlorobenzene	ND	1.0
1,1,1-Trichloroethane	ND	1.0
1,1,2-Trichloroethane	ND	1.0

Qualifiers: ND - Not Detected at the Reporting Limit
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits

CLIENT: San Juan Refining

Work Order: 0308162

Project: Annual Monitor Wells 2003

QC SUMMARY REPORT

Method Blank

Sample ID: MBLK	Batch ID: R9448	Test Code: SW7470	Units: mg/L	Analysis Date: 9/4/2003	Prep Date:
Trichloroethene (TCE)	ND	1.0			
Trichlorofluoromethane	ND	1.0			
1,2,3-Trichloropropane	ND	2.0			
Vinyl chloride	ND	2.0			
Xylenes, Total	ND	1.0			
Surr: 1,2-Dichloroethane-d4	8.136	0	10	81.4	68.4
Surr: 4-Bromofluorobenzene	9.566	0	10	95.7	70.4
Surr: Dibromofluoromethane	10.41	0	10	104	70.2
Surr: Toluene-d8	8.572	0	10	85.7	73.5
					127
					126
					126
					129
					0
					0
					0
					0

[illegible][illegible]

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Method Blank

CLIENT: San Juan Refining
 Work Order: 0308162
 Project: Annual Monitor Wells 2003

Sample ID: MB	Batch ID: R9413	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/2/2003 1:01:52 PM	Prep Date:
Client ID:		Run ID: ICP_030902B		SeqNo: 212165	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Iron	ND	0.020			
Manganese	ND	0.0020			
Selenium	ND	0.020			
Zinc	ND	0.0050			

Sample ID: MB	Batch ID: R9424	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/3/2003 10:08:45 AM	Prep Date:
Client ID:		Run ID: ICP_030903B		SeqNo: 212394	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Silver	ND	0.0050			

Sample ID: MB	Batch ID: R9439	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/3/2003 3:04:40 PM	Prep Date:
Client ID:		Run ID: ICP_030903H		SeqNo: 212599	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Calcium	0.00893	1.0			J
Magnesium	ND	1.0			
Potassium	ND	1.0			
Sodium	0.07257	1.0			J

Sample ID: MB-4209	Batch ID: 4209	Test Code: SW6010A	Units: mg/L	Analysis Date: 8/28/2003 10:16:42 AM	Prep Date: 8/27/2003
Client ID:		Run ID: ICP_030828A		SeqNo: 211555	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chromium	0.001963	0.0060			J
Lead	ND	0.0050			

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

Method Blank

San Juan Refining

0308162

Annual Monitor Wells 2003

Prep Date: 8/25/2003

Analysis Date: 8/27/2003

Units: mg/L

Test Code: E160.1

Batch ID: 4186

Sample ID: MB-4186

211415

SeqNo:

	%RPD	RPDLimit	Qual
--	------	----------	------

hLimit RPD

SPK Ref Val

PQL SPK

14

Analyte

1.0

Total Dissolved Solids

Total

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT: San Juan Refining
 Work Order: 0308162
 Project: Annual Monitor Wells 2003

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: Ics 082103-b	Batch ID: R9310	Test Code: E300	Units: mg/L	Analysis Date: 8/22/2003 1:30:58 AM	Prep Date:						
Client ID:	Run ID: LC_030821A	SeqNo: 210125									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.085	0.10	2	0	104	90	110	0			
Chloride	6.447	0.10	6	0.01191	107	90	110	0			
Nitrogen, Nitrite (As N)	1.817	0.10	2	0	90.8	90	110	0			
Bromide	5.858	0.10	6	0	97.6	90	110	0			
Nitrogen, Nitrate (As N)	6.302	0.10	6	0	105	90	110	0			
Phosphorus, Orthophosphate (As P)	6.246	0.50	6	0	104	90	110	0			
Sulfate	12.34	0.50	12	0	103	90	110	0			

Sample ID: new Ics	Batch ID: R9322	Test Code: E300	Units: mg/L	Analysis Date: 8/22/2003 6:36:37 PM	Prep Date:						
Client ID:	Run ID: LC_030822A	SeqNo: 210384									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.101	0.10	2	0	105	90	110	0			
Chloride	9.683	0.10	10	0.0966	95.9	90	110	0			
Nitrogen, Nitrite (As N)	2.109	0.10	2	0	105	90	110	0			
Bromide	5.16	0.10	5	0	103	90	110	0			
Nitrogen, Nitrate (As N)	4.8	0.10	5	0	96.0	90	110	0			
Phosphorus, Orthophosphate (As P)	5.187	0.50	5	0	104	90	110	0			
Sulfate	9.747	0.50	10	0	97.5	90	110	0			

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Laboratory Control Spike - generic

CLIENT: San Juan Refining
Work Order: 0308162
Project: Annual Monitor Wells 2003

Sample ID: LCS	Batch ID: R9326	Test Code: SW8260B	Units: µg/L	Analysis Date: 8/22/2003	Prep Date:						
Client ID:		Run ID: VAL_030822A		SeqNo: 210428							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.77	1.0	20	0	104	71.2	122	0			
Toluene	20.63	1.0	20	0	103	87.7	122	0			
Chlorobenzene	20.04	1.0	20	0	100	85.6	136	0			
1,1-Dichloroethene	20.56	1.0	20	0	103	70.7	117	0			
Trichloroethene (TCE)	23.3	1.0	20	0	116	76.9	130	0			

Sample ID: LCS	Batch ID: R9448	Test Code: SW7470	Units: mg/L	Analysis Date: 9/4/2003	Prep Date:						
Client ID:	Run ID: MI-LA254_030904B	SeqNo: 212898									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0034	0.00020	0.0035	0	97.1	90	110	0			

Sample ID: LCSD	Batch ID: R9448	Test Code: SW7470	Units: mg/L	Analysis Date: 9/4/2003	Prep Date:						
Client ID:	Run ID: MI-LA254_030904B	SeqNo: 212899									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.00329	0.00020	0.0035	0	94.0	90	110	0.0034	3.29	0	

Sample ID: LCS	Batch ID: R9413	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/2/2003 9:57:17 AM	Prep Date:						
Client ID:	Run ID: ICP_030902B	SeqNo: 212133									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.5279	0.0020	0.5	0	106	80	120	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
Work Order: 0308162
Project: Annual Monitor Wells 2003

QC SUMMARY REPORT
 Laboratory Control Spike Duplicate

Sample ID: LCSD	Batch ID: R9413	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/2/2003 10:32:50 AM	Prep Date:
Client ID:	Run ID: ICP_030902B	PQL	SPK value	SeqNo: 212137	
Analyte	Result	QOL	SPK Ref Val	LowLimit	HighLimit
Barium	0.5015	0.0020	0	80	120
Cadmium	0.4816	0.0020	0	96.3	120
Chromium	0.524	0.0060	0	105	120
Copper	0.4717	0.0060	0	94.3	120
Lead	0.4765	0.0050	0	95.3	120
Uranium	0.5035	0.10	0	101	120
				%REC	RPDLimit
				5.13	20
				11.2	20
				4.86	20
				6.73	20
				9.87	20
				0.429	20

Sample ID: LCS	Batch ID: R9413	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/2/2003 1:04:44 PM	Prep Date:
Client ID:	Run ID: ICP_030902B	PQL	SPK value	SeqNo: 212166	
Analyte	Result	QOL	SPK Ref Val	LowLimit	HighLimit
Iron	0.5101	0.020	0	80	120
Manganese	0.5196	0.0020	0	104	120
Selenium	0.5066	0.020	0	101	120
Zinc	0.5107	0.0050	0	102	120
				%REC	RPDLimit
				102	0
				104	0
				101	0
				102	0

Sample ID: LCSD	Batch ID: R9413	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/2/2003 1:07:07 PM	Prep Date:
Client ID:	Run ID: ICP_030902B	PQL	SPK value	SeqNo: 212167	
Analyte	Result	QOL	SPK Ref Val	LowLimit	HighLimit
Iron	0.5021	0.020	0	80	120
Manganese	0.4923	0.0020	0	98.5	120
Selenium	0.5765	0.020	0	115	120
Zinc	0.5019	0.0050	0	100	120
				%REC	RPDLimit
				100	1.59
				5.40	20
				12.9	20
				1.73	20

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Laboratory Control Spike - generic

CLIENT: San Juan Refining
 Work Order: 0308162
 Project: Annual Monitor Wells 2003

Sample ID: LCS	Batch ID: R9422	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/3/2003 9:22:02 AM	Prep Date:
Client ID:	Run ID: ICP_030903A	SeqNo: 212373			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Arsenic	0.4301	0.020	0.5	0	86.0 80 120 0

Sample ID: LCSD	Batch ID: R9422	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/3/2003 9:23:28 AM	Prep Date:
Client ID:	Run ID: ICP_030903A	SeqNo: 212374			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Arsenic	0.4222	0.020	0.5	0	84.4 80 120 0.4301 1.86 20

Sample ID: LCS	Batch ID: R9424	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/3/2003 10:14:49 AM	Prep Date:
Client ID:	Run ID: ICP_030903B	SeqNo: 212397			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Silver	1.058	0.0050	1	0	106 80 120 0

Sample ID: LCSD	Batch ID: R9424	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/3/2003 10:16:16 AM	Prep Date:
Client ID:	Run ID: ICP_030903B	SeqNo: 212398			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Silver	1.008	0.0050	1	0	101 80 120 0 20

Sample ID: LCS	Batch ID: R9439	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/3/2003 3:07:40 PM	Prep Date:
Client ID:	Run ID: ICP_030903H	SeqNo: 212600			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Calcium	10.47	1.0	10	0.00893	105 80 120 0
Magnesium	10.51	1.0	10	0	105 80 120 0
Potassium	9.887	1.0	10	0	98.9 80 120 0
Sodium	9.904	1.0	10	0.07257	98.3 80 120 0

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

CLIENT: San Juan Refining
 Work Order: 0308162
 Project: Annual Monitor Wells 2003

Sample ID: LCSD	Batch ID: R9439	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/3/2003 3:10:16 PM	Prep Date:						
Client ID:	Run ID: ICP_030903H	SeqNo: 212601									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10.54	1.0	10	0.00893	105	80	120	10.47	0.615	20	
Magnesium	10.51	1.0	10	0	105	80	120	10.51	0.0149	20	
Potassium	9.754	1.0	10	0	97.5	80	120	9.887	1.35	20	
Sodium	9.918	1.0	10	0.07257	98.5	80	120	9.904	0.140	20	

Sample ID: LCS-4209	Batch ID: 4209	Test Code: SW6010A	Units: mg/L	Analysis Date: 8/28/2003 10:18:41 AM	Prep Date: 8/27/2003						
Client ID:	Run ID: ICP_030828A	SeqNo: 211556									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.5096	0.0060	0.5	0.001963	102	80	120	0			
Lead	0.4698	0.0050	0.5	0	94.0	80	120	0			

Sample ID: LCSD-4209	Batch ID: 4209	Test Code: SW6010A	Units: mg/L	Analysis Date: 8/28/2003 10:20:39 AM	Prep Date: 8/27/2003						
Client ID:	Run ID: ICP_030828A	SeqNo: 211557									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.4991	0.0060	0.5	0.001963	99.4	80	120	0.5096	2.07	20	
Lead	0.4682	0.0050	0.5	0	93.6	80	120	0.4698	0.347	20	

Sample ID: LCS-4186	Batch ID: 4186	Test Code: E160.1	Units: mg/L	Analysis Date: 8/27/2003	Prep Date: 8/25/2003						
Client ID:	Run ID: WC_030827C	SeqNo: 211416									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids	1033	1.0	1000	0	103	80	120	0			

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name **SJR**

Date and Time Receive

8/21/03

Work Order Number **0308162**

Received by **AMG**

Checklist completed by

ABonzales
Signature

8/21/03
Date

Matrix:

Carrier name: UPS

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒
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 Acceptable	

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345-3975 Fax 505.345.4107
www.hallenvironmental.com

Project Name: Artificial Monitoring Wells 2003

Project #:

Project Manager:

Project Manager:

Sampler: C-12711

Samples Cold?:	☐ Yes	☐ No
		30

Number/Volume	Preservative		HEAL No.
	HgCl ₂	HCl	
1-500ml			0308162
3-VOA	X		1
1-125ml			
1-500ml			HNH ₃
1-250ml			HNH ₃
1-125ml			HNH ₃
1-500ml			2
3-VOA	X		
1-125ml			HNH ₃
1-500ml			HNH ₃
1-250ml			
1-125ml			HNH ₃

Received By: (Signature)	8/21/23
Received By: (Signature)	ran

[illegible]

Remarks:

HALL ENVIRONMENTAL ANALYSIS LAB
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345-3975 Fax 505.345.4107
www.hallenvironmental.com

Project Name: *Monitor Wells*
Annual 2003

Project #:

Project Manager:

Sampler. Cindy Hurtado

Samples Cold?:

Number/Volume

HCl	HgCl_2
--------------	-----------------

HEAL No.

04225-1

11/11/24

11/11/2013	11/11/2013
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7-11-3	
--------	--

5	
2	

0524

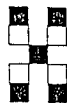
Received By: (Signature)

Dever

Received By: (Signature)

Remarks:

[illegible]



Hall Environmental Analysis Laboratory

COVER LETTER

September 15, 2003

Cindy Hurtado
San Juan Refining
#50 CR 4990
Bloomfield, NM 87413
TEL: (505) 632-4161
FAX (505) 632-3911

RE: Annual Monitoring Wells 2003

Order No.: 0308199

Dear Cindy Hurtado:

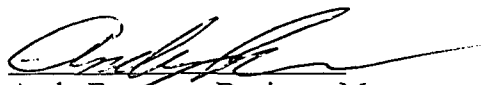
Hall Environmental Analysis Laboratory received 2 samples on 8/26/2003 for the analyses presented in the following report.

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

Hall Environmental Analysis Laboratory

Date: 16-Sep-03

CLIENT: San Juan Refining

Client Sample ID: MW #8

Lab Order: 0308199

Collection Date: 8/25/2003 8:50:00 AM

Project: Annual Monitoring Wells 2003

Lab ID: 0308199-01

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: JDC
Fluoride	0.66	0.10		mg/L	1	8/26/2003 4:53:52 PM
Chloride	260	1.0		mg/L	10	8/27/2003 1:23:39 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/26/2003 4:53:52 PM
Bromide	5.0	0.10		mg/L	1	8/26/2003 4:53:52 PM
Nitrogen, Nitrate (As N)	14	0.10		mg/L	1	8/26/2003 4:53:52 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/26/2003 4:53:52 PM
Sulfate	950	10		mg/L	20	8/27/2003 2:37:36 PM
EPA METHOD 8260B: VOLATILES						Analyst: BL
Benzene	ND	1.0		µg/L	1	8/27/2003
Toluene	ND	1.0		µg/L	1	8/27/2003
Ethylbenzene	ND	1.0		µg/L	1	8/27/2003
Methyl tert-butyl ether (MTBE)	1.0	1.0		µg/L	1	8/27/2003
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/27/2003
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/27/2003
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/27/2003
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/27/2003
Naphthalene	ND	2.0		µg/L	1	8/27/2003
1-Methylnaphthalene	ND	4.0		µg/L	1	8/27/2003
2-Methylnaphthalene	ND	4.0		µg/L	1	8/27/2003
Acetone	ND	10		µg/L	1	8/27/2003
Bromobenzene	ND	1.0		µg/L	1	8/27/2003
Bromochloromethane	ND	1.0		µg/L	1	8/27/2003
Bromodichloromethane	ND	1.0		µg/L	1	8/27/2003
Bromoform	ND	1.0		µg/L	1	8/27/2003
Bromomethane	ND	2.0		µg/L	1	8/27/2003
2-Butanone	ND	10		µg/L	1	8/27/2003
Carbon disulfide	ND	10		µg/L	1	8/27/2003
Carbon Tetrachloride	ND	1.0		µg/L	1	8/27/2003
Chlorobenzene	ND	1.0		µg/L	1	8/27/2003
Chloroethane	ND	2.0		µg/L	1	8/27/2003
Chloroform	ND	1.0		µg/L	1	8/27/2003
Chloromethane	ND	1.0		µg/L	1	8/27/2003
2-Chlorotoluene	ND	1.0		µg/L	1	8/27/2003
4-Chlorotoluene	ND	1.0		µg/L	1	8/27/2003
cis-1,2-DCE	ND	1.0		µg/L	1	8/27/2003
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/27/2003
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/27/2003
Dibromochloromethane	ND	1.0		µg/L	1	8/27/2003
Dibromomethane	ND	2.0		µg/L	1	8/27/2003
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/27/2003

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 16-Sep-03

CLIENT: San Juan Refining

Client Sample ID: MW #8

Lab Order: 0308199

Collection Date: 8/25/2003 8:50:00 AM

Project: Annual Monitoring Wells 2003

Lab ID: 0308199-01

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/27/2003
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/27/2003
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/27/2003
1,1-Dichloroethane	ND	1.0		µg/L	1	8/27/2003
1,1-Dichloroethene	ND	1.0		µg/L	1	8/27/2003
1,2-Dichloropropane	ND	1.0		µg/L	1	8/27/2003
1,3-Dichloropropane	ND	1.0		µg/L	1	8/27/2003
2,2-Dichloropropane	ND	1.0		µg/L	1	8/27/2003
1,1-Dichloropropene	ND	1.0		µg/L	1	8/27/2003
Hexachlorobutadiene	ND	1.0		µg/L	1	8/27/2003
2-Hexanone	ND	10		µg/L	1	8/27/2003
Isopropylbenzene	ND	1.0		µg/L	1	8/27/2003
4-Isopropyltoluene	ND	1.0		µg/L	1	8/27/2003
4-Methyl-2-pentanone	ND	10		µg/L	1	8/27/2003
Methylene Chloride	ND	3.0		µg/L	1	8/27/2003
n-Butylbenzene	ND	1.0		µg/L	1	8/27/2003
n-Propylbenzene	ND	1.0		µg/L	1	8/27/2003
sec-Butylbenzene	ND	1.0		µg/L	1	8/27/2003
Styrene	ND	1.0		µg/L	1	8/27/2003
tert-Butylbenzene	ND	1.0		µg/L	1	8/27/2003
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/27/2003
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	8/27/2003
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/27/2003
trans-1,2-DCE	ND	1.0		µg/L	1	8/27/2003
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/27/2003
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/27/2003
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/27/2003
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/27/2003
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/27/2003
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/27/2003
Trichlorofluoromethane	ND	1.0		µg/L	1	8/27/2003
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/27/2003
Vinyl chloride	ND	2.0		µg/L	1	8/27/2003
Xylenes, Total	ND	1.0		µg/L	1	8/27/2003
Surr: 1,2-Dichloroethane-d4	96.7	70.6-124		%REC	1	8/27/2003
Surr: 4-Bromofluorobenzene	103	76.2-122		%REC	1	8/27/2003
Surr: Dibromofluoromethane	105	67.2-131		%REC	1	8/27/2003
Surr: Toluene-d8	101	82.1-123		%REC	1	8/27/2003

EPA 120.1: SPECIFIC CONDUCTANCE

Analyst: MAP

Specific Conductance 2900 0.010 µmhos/cm

1 9/3/2003

MERCURY, DISSOLVED

Analyst: MAP

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 16-Sep-03

CLIENT: San Juan Refining

Client Sample ID: MW #8

Lab Order: 0308199

Collection Date: 8/25/2003 8:50:00 AM

Project: Annual Monitoring Wells 2003

Lab ID: 0308199-01

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Mercury	ND	0.00020		mg/L	1	9/9/2003
EPA METHOD 6010C: DISSOLVED METALS						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	9/5/2003 10:48:32 AM
Barium	0.36	0.0020		mg/L	1	9/5/2003 10:48:32 AM
Cadmium	ND	0.0020		mg/L	1	9/5/2003 10:48:32 AM
Calcium	200	10		mg/L	10	9/8/2003 1:26:26 PM
Chromium	ND	0.0060		mg/L	1	9/5/2003 10:48:32 AM
Copper	ND	0.0060		mg/L	1	9/5/2003 10:48:32 AM
Iron	0.044	0.020		mg/L	1	9/5/2003 10:48:32 AM
Lead	ND	0.0050		mg/L	1	9/5/2003 10:48:32 AM
Magnesium	38	0.50		mg/L	1	9/8/2003 12:28:11 PM
Manganese	0.68	0.0020		mg/L	1	9/5/2003 10:48:32 AM
Potassium	4.0	1.0		mg/L	1	9/8/2003 12:28:11 PM
Selenium	0.090	0.020		mg/L	1	9/5/2003 10:48:32 AM
Silver	ND	0.0050		mg/L	1	9/8/2003 11:23:18 AM
Sodium	350	10		mg/L	10	9/8/2003 1:26:26 PM
Uranium	ND	0.10		mg/L	1	9/5/2003 10:48:32 AM
Zinc	0.13	0.0050		mg/L	1	9/5/2003 10:48:32 AM
EPA 6010C: TOTAL RECOVERABLE METALS						Analyst: NMO
Chromium	0.72	0.0060		mg/L	1	8/28/2003 11:18:10 AM
Lead	ND	0.0050		mg/L	1	8/28/2003 11:18:10 AM
EPA METHOD 160.1: TDS						Analyst: MAP
Total Dissolved Solids	2100	1.0		mg/L	1	8/29/2003

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 16-Sep-03

CLIENT: San Juan Refining

Client Sample ID: MW #3

Lab Order: 0308199

Collection Date: 8/25/2003 9:20:00 AM

Project: Annual Monitoring Wells 2003

Lab ID: 0308199-02

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: JDC
Fluoride	0.17	0.10		mg/L	1	8/26/2003 5:10:37 PM
Chloride	1400	5.0		mg/L	50	8/27/2003 2:13:54 PM
Bromide	22	0.50		mg/L	5	8/27/2003 1:57:09 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/26/2003 5:10:37 PM
Sulfate	1900	25		mg/L	50	8/27/2003 2:13:54 PM
Nitrate (As N)+Nitrite (As N)	41	0.50		mg/L	5	8/27/2003 1:57:09 PM
EPA METHOD 8260B: VOLATILES						Analyst: BL
Benzene	ND	1.0		µg/L	1	8/27/2003
Toluene	ND	1.0		µg/L	1	8/27/2003
Ethylbenzene	ND	1.0		µg/L	1	8/27/2003
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/27/2003
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/27/2003
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/27/2003
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/27/2003
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/27/2003
Naphthalene	ND	2.0		µg/L	1	8/27/2003
1-Methylnaphthalene	ND	4.0		µg/L	1	8/27/2003
2-Methylnaphthalene	ND	4.0		µg/L	1	8/27/2003
Acetone	ND	10		µg/L	1	8/27/2003
Bromobenzene	ND	1.0		µg/L	1	8/27/2003
Bromochloromethane	ND	1.0		µg/L	1	8/27/2003
Bromodichloromethane	ND	1.0		µg/L	1	8/27/2003
Bromoform	ND	1.0		µg/L	1	8/27/2003
Bromomethane	ND	2.0		µg/L	1	8/27/2003
2-Butanone	ND	10		µg/L	1	8/27/2003
Carbon disulfide	ND	10		µg/L	1	8/27/2003
Carbon Tetrachloride	ND	1.0		µg/L	1	8/27/2003
Chlorobenzene	ND	1.0		µg/L	1	8/27/2003
Chloroethane	ND	2.0		µg/L	1	8/27/2003
Chloroform	ND	1.0		µg/L	1	8/27/2003
Chloromethane	ND	1.0		µg/L	1	8/27/2003
2-Chlorotoluene	ND	1.0		µg/L	1	8/27/2003
4-Chlorotoluene	ND	1.0		µg/L	1	8/27/2003
cis-1,2-DCE	ND	1.0		µg/L	1	8/27/2003
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/27/2003
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/27/2003
Dibromochloromethane	ND	1.0		µg/L	1	8/27/2003
Dibromomethane	ND	2.0		µg/L	1	8/27/2003
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/27/2003
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/27/2003

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 16-Sep-03

CLIENT: San Juan Refining

Client Sample ID: MW #3

Lab Order: 0308199

Collection Date: 8/25/2003 9:20:00 AM

Project: Annual Monitoring Wells 2003

Lab ID: 0308199-02

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/27/2003
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/27/2003
1,1-Dichloroethane	ND	1.0		µg/L	1	8/27/2003
1,1-Dichloroethene	ND	1.0		µg/L	1	8/27/2003
1,2-Dichloropropane	ND	1.0		µg/L	1	8/27/2003
1,3-Dichloropropane	ND	1.0		µg/L	1	8/27/2003
2,2-Dichloropropane	ND	1.0		µg/L	1	8/27/2003
1,1-Dichloropropene	ND	1.0		µg/L	1	8/27/2003
Hexachlorobutadiene	ND	1.0		µg/L	1	8/27/2003
2-Hexanone	ND	10		µg/L	1	8/27/2003
Isopropylbenzene	ND	1.0		µg/L	1	8/27/2003
4-Isopropyltoluene	ND	1.0		µg/L	1	8/27/2003
4-Methyl-2-pentanone	ND	10		µg/L	1	8/27/2003
Methylene Chloride	ND	3.0		µg/L	1	8/27/2003
n-Butylbenzene	ND	1.0		µg/L	1	8/27/2003
n-Propylbenzene	ND	1.0		µg/L	1	8/27/2003
sec-Butylbenzene	ND	1.0		µg/L	1	8/27/2003
Styrene	ND	1.0		µg/L	1	8/27/2003
tert-Butylbenzene	ND	1.0		µg/L	1	8/27/2003
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/27/2003
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	8/27/2003
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/27/2003
trans-1,2-DCE	ND	1.0		µg/L	1	8/27/2003
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/27/2003
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/27/2003
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/27/2003
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/27/2003
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/27/2003
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/27/2003
Trichlorofluoromethane	ND	1.0		µg/L	1	8/27/2003
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/27/2003
Vinyl chloride	ND	2.0		µg/L	1	8/27/2003
Xylenes, Total	ND	1.0		µg/L	1	8/27/2003
Surr: 1,2-Dichloroethane-d4	100	70.6-124		%REC	1	8/27/2003
Surr: 4-Bromofluorobenzene	105	76.2-122		%REC	1	8/27/2003
Surr: Dibromofluoromethane	108	67.2-131		%REC	1	8/27/2003
Surr: Toluene-d8	99.8	82.1-123		%REC	1	8/27/2003

EPA 120.1: SPECIFIC CONDUCTANCE

Analyst: MAP

Specific Conductance	8500	0.010	µmhos/cm	1	9/3/2003
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MERCURY, DISSOLVED

Analyst: MAP

Mercury	ND	0.00020	mg/L	1	9/9/2003
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Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 16-Sep-03

CLIENT: San Juan Refining **Client Sample ID:** MW #3
Lab Order: 0308199 **Collection Date:** 8/25/2003 9:20:00 AM
Project: Annual Monitoring Wells 2003
Lab ID: 0308199-02 **Matrix:** AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 6010C: DISSOLVED METALS						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	9/8/2003 8:57:27 AM
Barium	0.30	0.0020		mg/L	1	9/8/2003 8:57:27 AM
Cadmium	ND	0.0020		mg/L	1	9/8/2003 8:57:27 AM
Calcium	490	10		mg/L	10	9/8/2003 1:28:53 PM
Chromium	ND	0.0060		mg/L	1	9/8/2003 10:37:38 AM
Copper	ND	0.0060		mg/L	1	9/8/2003 8:57:27 AM
Iron	0.27	0.020		mg/L	1	9/8/2003 10:37:38 AM
Lead	ND	0.0050		mg/L	1	9/8/2003 8:57:27 AM
Magnesium	140	0.50		mg/L	1	9/8/2003 12:30:12 PM
Manganese	0.58	0.0020		mg/L	1	9/8/2003 8:57:27 AM
Potassium	10	1.0		mg/L	1	9/8/2003 12:30:12 PM
Selenium	0.024	0.020		mg/L	1	9/8/2003 8:57:27 AM
Silver	ND	0.0050		mg/L	1	9/8/2003 11:24:45 AM
Sodium	1100	10		mg/L	10	9/8/2003 1:28:53 PM
Uranium	ND	0.10		mg/L	1	9/8/2003 8:57:27 AM
Zinc	0.094	0.0050		mg/L	1	9/8/2003 8:57:27 AM
EPA 6010C: TOTAL RECOVERABLE METALS						Analyst: NMO
Chromium	0.029	0.0060		mg/L	1	8/28/2003 11:20:01 AM
Lead	0.022	0.0050		mg/L	1	8/28/2003 11:20:01 AM
EPA METHOD 160.1: TDS						Analyst: MAP
Total Dissolved Solids	5700	1.0		mg/L	1	8/29/2003

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



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LABORATORY ANALYTICAL REPORT

Client: Hall Environmental-Albuquerque
Project: Annual Monitoring Wells, 2003
Lab ID: B03081320-001
Client Sample ID: MW#8, 0308199-01D

Report Date: 09/02/03
Collection Date: 08/25/03 08:50
Date Received: 08/27/03
Matrix: Aqueous

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
INORGANICS							
Alkalinity, Total as CaCO3	208	mg/L		2		A2320 B	08/28/03 11:50 / jb
Carbon Dioxide, Total	220	mg/L		1		Calculation	08/28/03 09:47 / lab

Report
Definitions: 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: Annual Monitoring Wells, 2003

Report Date: 08/29/03

Work Order: B03081320

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2320 B								Batch: ALK030828A	
Sample ID: MBLK_030828A	Method Blank							08/28/03 11:12	
Alkalinity, Total as CaCO ₃	ND	mg/L	2.00						
Sample ID: LCS_030828A	Laboratory Control Spike							08/28/03 11:14	
Alkalinity, Total as CaCO ₃	103	mg/L	2.00	103	90	110			
Sample ID: B03081281-004AMS	Sample Matrix Spike							08/28/03 11:25	
Alkalinity, Total as CaCO ₃	765	mg/L	2.00	94.6	80	120			
Sample ID: B03081281-004AMSD	Sample Matrix Spike Duplicate							08/28/03 11:31	
Alkalinity, Total as CaCO ₃	768	mg/L	2.00	95.1	80	120	0.4	20	
Sample ID: B03081327-007AMS	Sample Matrix Spike							08/28/03 12:49	
Alkalinity, Total as CaCO ₃	1190	mg/L	2.00	103	80	120			
Sample ID: B03081327-007AMSD	Sample Matrix Spike Duplicate							08/28/03 12:57	
Alkalinity, Total as CaCO ₃	1180	mg/L	2.00	102	80	120	0.8	20	
Sample ID: MBLK_030828A	Method Blank							08/28/03 13:50	
Alkalinity, Total as CaCO ₃	3.37	mg/L	2.00						
Sample ID: LCS_030828A	Laboratory Control Spike							08/28/03 13:53	
Alkalinity, Total as CaCO ₃	105	mg/L	2.00	105	90	110			
Sample ID: B03081376-001AMS	Sample Matrix Spike							08/28/03 15:01	
Alkalinity, Total as CaCO ₃	1480	mg/L	2.00	102	80	120			
Sample ID: B03081376-001AMSD	Sample Matrix Spike Duplicate							08/28/03 15:10	
Alkalinity, Total as CaCO ₃	1480	mg/L	2.00	103	80	120	0.2	20	
Sample ID: MBLK_030828A	Method Blank							08/28/03 16:23	
Alkalinity, Total as CaCO ₃	ND	mg/L	2.00						

Hall Environmental Analysis Laboratory

Date: 15-Sep-03

CLIENT: San Juan Refining

Work Order: 0308199

Project: Annual Monitoring Wells 2003

QC SUMMARY REPORT

Method Blank

Sample ID	mb 082603	Batch ID: R9363	Test Code: E300	Units: mg/L	Analysis Date 8/26/2003 2:10:18 PM	Prep Date					
Client ID:			Run ID: LC_030826A		SeqNo: 211127						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									
Chloride	ND	0.10									
Nitrogen, Nitrite (As N)	ND	0.10									
Bromide	ND	0.10									
Nitrogen, Nitrate (As N)	ND	0.10									
Phosphorus, Orthophosphate (As P)	ND	0.50									
Sulfate	ND	0.50									
Nitrate (As N)+Nitrite (As N)	ND	0.10									

Sample ID	mb 082703	Batch ID: R9380	Test Code: E300	Units: mg/L	Analysis Date 8/27/2003 11:59:55 AM	Prep Date					
Client ID:			Run ID: LC_030827A		SeqNo: 211484						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									
Chloride	ND	0.10									
Nitrogen, Nitrite (As N)	ND	0.10									
Bromide	ND	0.10									
Nitrogen, Nitrate (As N)	ND	0.10									
Phosphorus, Orthophosphate (As P)	ND	0.50									
Sulfate	ND	0.50									
Nitrate (As N)+Nitrite (As N)	ND	0.10									

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

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT:

San Juan Refining

Work Order:

0308199

Project:

Annual Monitoring Wells 2003

QC SUMMARY REPORT

Method Blank

Sample ID	MBLK	Batch ID: R9433	Test Code: E310.1	Units: mg/L CaCO3	Analysis Date 9/3/2003	Prep Date					
Client ID:			Run ID: WC_030903A		SeqNo: 212528						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	2.0									
Carbonate	ND	2.0									
Bicarbonate	ND	2.0									

Sample ID	MBLK	Batch ID: R9494	Test Code: SW7470	Units: mg/L	Analysis Date 9/9/2003	Prep Date					
Client ID:			Run ID: MI-LA254_030909B		SeqNo: 213883						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.00020									

Sample ID	MB	Batch ID: R9473	Test Code: SW6010A	Units: mg/L	Analysis Date 9/5/2003 9:59:57 AM	Prep Date					
Client ID:			Run ID: ICP_030905B		SeqNo: 213372						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.01171	0.020									J
Barium	ND	0.0020									
Cadmium	ND	0.0020									
Chromium	ND	0.0060									
Copper	ND	0.0060									
Iron	ND	0.020									
Lead	ND	0.0050									
Manganese	ND	0.0020									
Selenium	ND	0.020									
Uranium	ND	0.10									
Zinc	ND	0.0050									

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

CLIENT:

San Juan Refining

Work Order:

0308199

Project:

Annual Monitoring Wells 2003

QC SUMMARY REPORT

Method Blank

Sample ID	MB	Batch ID: R9478	Test Code: SW6010A	Units: mg/L	Analysis Date 9/8/2003 11:58:15 AM	Prep Date					
Client ID:		Run ID: ICP_030908B			SeqNo: 213498						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND										
Magnesium	ND										
Potassium	ND										
Sodium	ND										

Sample ID	MB	Batch ID: R9479	Test Code: SW6010A	Units: mg/L	Analysis Date 9/8/2003 11:11:25 AM	Prep Date					
Client ID:		Run ID: ICP_030908C			SeqNo: 213523						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	ND										

Sample ID	MB-4209	Batch ID: 4209	Test Code: SW6010A	Units: mg/L	Analysis Date 8/28/2003 10:16:42 AM	Prep Date 8/27/2003					
Client ID:		Run ID: ICP_030828A			SeqNo: 211555						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.001963										J
Lead	ND										

Sample ID	MB-4206	Batch ID: 4206	Test Code: E160.1	Units: mg/L	Analysis Date 8/29/2003	Prep Date 8/27/2003					
Client ID:		Run ID: WC_030829A			SeqNo: 211657						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND										

Qualifiers:

ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

B - Analyte detected in the associated Method Blank

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

3

Hall Environmental Analysis Laboratory

Date: 15-Sep-03

CLIENT: San Juan Refining
Work Order: 0308199
Project: Annual Monitoring Wells 2003

QC SUMMARY REPORT

Method Blank

Sample ID	rb	Batch ID: R9361	Test Code: SW8260B	Units: µg/L	Analysis Date	8/26/2003	Prep Date				
Client ID:		Run ID:	VAL_030826A		SeqNo:	211079					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1.0									
Toluene	ND	1.0									
Ethylbenzene	ND	1.0									
Methyl tert-butyl ether (MTBE)	ND	1.0									
1,2,4-Trimethylbenzene	ND	1.0									
1,3,5-Trimethylbenzene	ND	1.0									
1,2-Dichloroethane (EDC)	ND	1.0									
1,2-Dibromoethane (EDB)	ND	1.0									
Naphthalene	ND	2.0									
1-Methylnaphthalene	ND	4.0									
2-Methylnaphthalene	ND	4.0									
Acetone	ND	10									
Bromobenzene	ND	1.0									
Bromochloromethane	ND	1.0									
Bromodichloromethane	ND	1.0									
Bromoform	ND	1.0									
Bromomethane	ND	2.0									
2-Butanone	ND	10									
Carbon disulfide	ND	10									
Carbon Tetrachloride	ND	1.0									
Chlorobenzene	ND	1.0									
Chloroethane	ND	2.0									
Chloroform	ND	1.0									
Chloromethane	ND	1.0									
2-Chlorotoluene	ND	1.0									
4-Chlorotoluene	ND	1.0									
dis-1,2-DCE	ND	1.0									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
Work Order: 0308199
Project: Annual Monitoring Wells 2003

QC SUMMARY REPORT

Method Blank

cis-1,3-Dichloropropene	ND	1.0
1,2-Dibromo-3-chloropropane	ND	2.0
Dibromochloromethane	ND	1.0
Dibromomethane	ND	2.0
1,2-Dichlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
Dichlorodifluoromethane	ND	1.0
1,1-Dichloroethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,2-Dichloropropane	ND	1.0
1,3-Dichloropropane	ND	1.0
2,2-Dichloropropane	ND	1.0
1,1-Dichloropropene	ND	1.0
Hexachlorobutadiene	ND	1.0
2-Hexanone	ND	10
Isopropylbenzene	ND	1.0
4-Isopropyltoluene	ND	1.0
4-Methyl-2-pentanone	ND	10
Methylene Chloride	ND	3.0
n-Butylbenzene	ND	1.0
n-Propylbenzene	ND	1.0
sec-Butylbenzene	ND	1.0
Styrene	ND	1.0
tert-Butylbenzene	ND	1.0
1,1,1,2-Tetrachloroethane	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Tetrachloroethene (PCE)	ND	1.0
trans-1,2-DCE	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
1,2,3-Trichlorobenzene	ND	1.0
1,2,4-Trichlorobenzene	ND	1.0
1,1,1-Trichloroethane	ND	1.0

Qualifiers: ND - Not Detected at the Reporting Limit
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: 15-Sep-03

CLIENT: San Juan Refining
 Work Order: 0308199
 Project: Annual Monitoring Wells 2003

QC SUMMARY REPORT

Sample Duplicate

Sample ID	0308199-01b	Batch ID: R9363	Test Code: E300	Units: mg/L	Analysis Date	8/26/2003 5:27:22 PM	Prep Date				
Client ID:	MW #8		Run ID: LC_030826A		SeqNo:	211131					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.6362	0.10	0	0	0	0	0	0.6564	3.13	20	
Nitrogen, Nitrite (As N)	ND	0.10	0	0	0	0	0	0	0	20	
Bromide	5.892	0.10	0	0	0	0	0	5.039	15.6	20	
Nitrogen, Nitrate (As N)	13.84	0.10	0	0	0	0	0	13.51	2.43	20	
Phosphorus, Orthophosphate (As P)	ND	0.50	0	0	0	0	0	0	0	20	

Sample ID	0308199-01b	Batch ID: R9380	Test Code: E300	Units: mg/L	Analysis Date	8/27/2003 1:40:24 PM	Prep Date				
Client ID:	MW #8	Run ID: LC_030827A	SeqNo: 211490								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	261.1	1.0	0	0	0	0	0	262	0.325	20	

Sample ID	0308199-01b	Batch ID: R9380	Test Code: E300	Units: mg/L	Analysis Date	8/27/2003 3:11:06 PM	Prep Date				
Client ID:	MW #8		Run ID: LC_030827A		SeqNo:	211495					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride	0.6695	2.0	0	0	0	0	0	0.635	0	20	J
Chloride	262.7	2.0	0	0	0	0	0	266.7	1.48	20	
Nitrogen, Nitrite (As N)	ND	2.0	0	0	0	0	0	0	0	20	
Bromide	ND	2.0	0	0	0	0	0	0	0	20	
Nitrogen, Nitrate (As N)	13.46	2.0	0	0	0	0	0	12.79	5.14	20	
Phosphorus, Orthophosphate (As P)	ND	10	0	0	0	0	0	0	0	20	
Sulfate	922	10	0	0	0	0	0	953.7	3.38	20	
Nitrate (As N)+Nitrite (As N)	13.46	2.0	0	0	0	0	0	12.79	5.14	20	

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

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Hall Environmental Analysis Laboratory

Date: 15-Sep-03

CLIENT: San Juan Refining
 Work Order: 0308199
 Project: Annual Monitoring Wells 2003

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID	0308199-01b	Batch ID: R9363	Test Code: E300	Units: mg/L	Analysis Date	8/26/2003 6:00:52 PM	Prep Date					
Client ID:	MW #8	Run ID:	LC_030826A		SeqNo:	211133						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		1.103	0.10	0.5	0.6564	89.4	80	120	0			
Phosphorus, Orthophosphate (As P)		5.004	0.50	5	0	100	80	120	0			

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: 15-Sep-03

CLIENT: San Juan Refining

Work Order: 0308199

Project: Annual Monitoring Wells 2003

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID	Ics-c 082603	Batch ID: R9363	Test Code: E300	Units: mg/L		Analysis Date	8/26/2003 3:35:18 PM	Prep Date			
Client ID:			Run ID: LC_030826A			SeqNo:	211128				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.4839	0.10	0.5	0	96.8	90	110	0			
Chloride	4.857	0.10	5	0	97.1	90	110	0			
Nitrogen, Nitrite (As N)	0.9344	0.10	1	0	93.4	90	110	0			
Bromide	2.399	0.10	2.5	0	96.0	90	110	0			
Nitrogen, Nitrate (As N)	2.433	0.10	2.5	0	97.3	90	110	0			
Phosphorus, Orthophosphate (As P)	4.815	0.50	5	0	96.3	90	110	0			
Sulfate	9.645	0.50	10	0	96.5	90	110	0			
Nitrate (As N)+Nitrite (As N)	3.367	0.10	3.5	0	96.2	90	110	0			

Sample ID	Ics 082703	Batch ID: R9380	Test Code: E300	Units: mg/L	Analysis Date 8/27/2003 12:16:40 PM	Prep Date					
Client ID:		Run ID: LC_030827A			SeqNo: 211485						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.4736	0.10	0.5	0	94.7	90	110	0			
Chloride	4.938	0.10	5	0	98.8	90	110	0			
Nitrogen, Nitrite (As N)	0.9148	0.10	1	0	91.5	90	110	0			
Bromide	2.302	0.10	2.5	0	92.1	90	110	0			
Nitrogen, Nitrate (As N)	2.372	0.10	2.5	0	94.9	90	110	0			
Phosphorus, Orthophosphate (As P)	4.846	0.50	5	0	96.9	90	110	0			
Sulfate	9.564	0.50	10	0	95.6	90	110	0			
Nitrate (As N)+Nitrite (As N)	3.287	0.10	3.5	0	93.9	90	110	0			

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

/

CLIENT: San Juan Refining
Work Order: 0308199
Project: Annual Monitoring Wells 2003

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID 75ccv	Batch ID: R9361	Test Code: SW8260B	Units: µg/L	Analysis Date 8/26/2003	Prep Date
Client ID:	Run ID: VAL_030826A	SeqNo: 211080			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	15.97	1.0	15	0	106 71.2 122 0
Toluene	16.06	1.0	15	0	107 87.7 122 0
Chlorobenzene	15.61	1.0	15	0	104 85.6 136 0
1,1-Dichloroethene	17.09	1.0	15	0	114 70.7 117 0
Trichloroethene (TCE)	17.07	1.0	15	0	114 76.9 130 0

Sample ID 75ccvb	Batch ID: R9361	Test Code: SW8260B	Units: µg/L	Analysis Date 8/26/2003	Prep Date
Client ID:	Run ID: VAL_030826A	SeqNo: 211081			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	15.22	1.0	15	0	101 78.7 122 15.97 4.82 11
Toluene	16.34	1.0	15	0	109 76 128 16.06 1.75 12.2
Chlorobenzene	16.26	1.0	15	0	108 85.6 136 15.61 4.08 12
1,1-Dichloroethene	16.44	1.0	15	0	110 70.7 117 17.09 3.84 19.3
Trichloroethene (TCE)	17.03	1.0	15	0	114 76.9 130 17.07 0.235 15.5

Sample ID LCS	Batch ID: R9494	Test Code: SW7470	Units: mg/L	Analysis Date 9/9/2003	Prep Date
Client ID:	Run ID: MI-LA254_030909B	SeqNo: 213884			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	0.00343	0.00020	0.0035	0	98.0 90 110 0

Sample ID LCSD	Batch ID: R9494	Test Code: SW7470	Units: mg/L	Analysis Date 9/9/2003	Prep Date
Client ID:	Run ID: MI-LA254_030909B	SeqNo: 213885			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	0.00349	0.00020	0.0035	0	99.7 90 110 0.00343 1.73 0

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Laboratory Control Spike - generic

CLIENT: San Juan Refining
 Work Order: 0308199
 Project: Annual Monitoring Wells 2003

Sample ID	LCS	Batch ID: R9473	Test Code: SW6010A	Units: mg/L	Analysis Date	9/5/2003 10:05:42 AM	Prep Date				
Client ID:		Run ID: ICP_030905B			SeqNo: 213373						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.4972	0.020	0.5	0.01171	97.1	80	120	0			
Barium	0.5029	0.0020	0.5	0	101	80	120	0			
Cadmium	0.5016	0.0020	0.5	0	100	80	120	0			
Chromium	0.4907	0.0060	0.5	0	98.1	80	120	0			
Copper	0.4911	0.0060	0.5	0	98.2	80	120	0			
Iron	0.4705	0.020	0.5	0	94.1	80	120	0			
Lead	0.5058	0.0050	0.5	0	101	80	120	0			
Manganese	0.4957	0.0020	0.5	0	99.1	80	120	0			
Selenium	0.4773	0.020	0.5	0	95.5	80	120	0			
Uranium	0.5029	0.10	0.5	0	101	80	120	0			
Zinc	0.4995	0.0050	0.5	0	99.9	80	120	0			

Sample ID	LCSD	Batch ID: R9473	Test Code: SW6010A	Units: mg/L	Analysis Date	9/5/2003 10:10:44 AM	Prep Date				
Client ID:		Run ID: ICP_030905B			SeqNo: 213374						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.4987	0.020	0.5	0.01171	97.4	80	120	0			
Barium	0.4924	0.0020	0.5	0	98.5	80	120	0			
Cadmium	0.4986	0.0020	0.5	0	99.7	80	120	0			
Chromium	0.4955	0.0060	0.5	0	99.1	80	120	0			
Copper	0.5099	0.0060	0.5	0	102	80	120	0			
Iron	0.5002	0.020	0.5	0	100	80	120	0			
Lead	0.4971	0.0050	0.5	0	99.4	80	120	0			
Manganese	0.4893	0.0020	0.5	0	97.9	80	120	0			
Selenium	0.4554	0.020	0.5	0	91.1	80	120	0			
Uranium	0.5108	0.10	0.5	0	102	80	120	0			
Zinc	0.4988	0.0050	0.5	0	99.8	80	120	0			

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
Work Order: 0308199
Project: Annual Monitoring Wells 2003

QC SUMMARY REPORT
 Laboratory Control Spike - generic

Sample ID	LCS	Batch ID: R9478	Test Code: SW6010A	Units: mg/L	Analysis Date	9/8/2003 12:01:01 PM	Prep Date					
Client ID:		Run ID: ICP_030908B			SeqNo:	213499						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium		10.69	1.0	10	0	107	80	120	0			
Magnesium		11.21	1.0	10	0	112	80	120	0			
Potassium		10	1.0	10	0	100	80	120	0			
Sodium		9.919	1.0	10	0	99.2	80	120	0			

Sample ID	LCSD	Batch ID: R9478	Test Code: SW6010A	Units: mg/L	Analysis Date	9/8/2003 12:03:36 PM	Prep Date					
Client ID:		Run ID: ICP_030908B			SeqNo:	213500						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium		10.96	1.0	10	0	110	80	120	0			
Magnesium		11.4	1.0	10	0	114	80	120	0			
Potassium		10.29	1.0	10	0	103	80	120	0			
Sodium		10.02	1.0	10	0	100	80	120	0			

Sample ID	LCS	Batch ID: R9479	Test Code: SW6010A	Units: mg/L	Analysis Date	9/8/2003 11:12:52 AM	Prep Date					
Client ID:		Run ID: ICP_030908C			SeqNo:	213524						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver		1.008	0.0050	1	0	101	80	120	0			

Sample ID	LCSD	Batch ID: R9479	Test Code: SW6010A	Units: mg/L	Analysis Date	9/8/2003 11:14:17 AM	Prep Date					
Client ID:		Run ID: ICP_030908C			SeqNo:	213525						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver		1.058	0.0050	1	0	106	80	120	1.008	4.75	20	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
Work Order: 0308199
Project: Annual Monitoring Wells 2003

QC SUMMARY REPORT
 Laboratory Control Spike - generic

Sample ID	LCS-4209	Batch ID:	4209	Test Code:	SW6010A	Units:	mg/L	Analysis Date	8/28/2003 10:18:41 AM	Prep Date	8/27/2003
Client ID:		Run ID:	ICP_030828A					SeqNo:	211556		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chromium		0.5096	0.0060	0.0060	0.5	0.001963	102	80	120	0	
Lead		0.4698	0.0050	0.0050	0.5	0	94.0	80	120	0	

Sample ID	LCSD-4209	Batch ID:	4209	Test Code:	SW6010A	Units:	mg/L	Analysis Date	8/28/2003 10:20:39 AM	Prep Date	8/27/2003
Client ID:		Run ID:	ICP_030828A					SeqNo:	211557		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chromium		0.4991	0.0060	0.0060	0.5	0.001963	99.4	80	120	0.5096	2.07 20
Lead		0.4682	0.0050	0.0050	0.5	0	93.6	80	120	0.4698	0.347 20

Sample ID	LCS-4206	Batch ID:	4206	Test Code:	E160.1	Units:	mg/L	Analysis Date	8/29/2003	Prep Date	8/27/2003
Client ID:		Run ID:	WC_030829A					SeqNo:	211658		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Total Dissolved Solids		1018	1.0	1.0	1000	0	102	80	120	0	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name SJR

Date and Time Receive

8/26/03

Work Order Number 0308199

Received by AT

Checklist completed by

Clare Thorne
Signature

8/26/03
Date

Matrix:

Carrier name: UPS

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒
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?	5°	4° C ± 2 Acceptable	

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

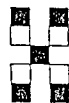
HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345-3975 Fax 505.345.4107
www.hallenvironmental.com

Fax #: 505-632-3911

Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)
5-03	2pm	(initials) w/ tado	8/25/03 Lance D. Moore 1444
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)

[illegible]

Remarks: MW #3 didn't have much H₂O
—unable to get Carbon Dioxide
—limited volume on other analysis



Hall Environmental Analysis Laboratory

COVER LETTER

September 04, 2003

Cindy Hurtado
San Juan Refining
#50 CR 4990
Bloomfield, NM 87413
TEL: (505) 632-4161
FAX (505) 632-3911

RE: Annual Monitor Wells 2003

Order No.: 0308143

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory received 2 samples on 8/19/2003 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

Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT: San Juan Refining
Project: Annual Monitor Wells 2003

Lab Order: 0308143

Lab ID: 0308143-01

Collection Date: 8/18/2003 12:43:00 PM

Client Sample ID: MW#47

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: BDH
Fluoride	0.24	0.10		mg/L	1	8/19/2003 5:52:45 PM
Chloride	650	5.0		mg/L	50	8/20/2003 3:00:29 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/19/2003 5:52:45 PM
Bromide	ND	0.10		mg/L	1	8/19/2003 5:52:45 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/19/2003 5:52:45 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/19/2003 5:52:45 PM
Sulfate	ND	0.50		mg/L	1	8/19/2003 5:52:45 PM
EPA METHOD 8260B: VOLATILES						Analyst: BL
Benzene	160	10		µg/L	10	8/20/2003
Toluene	ND	2.0		µg/L	2	8/21/2003
Ethylbenzene	3.3	2.0		µg/L	2	8/21/2003
Methyl tert-butyl ether (MTBE)	14	2.0		µg/L	2	8/21/2003
1,2,4-Trimethylbenzene	29	2.0		µg/L	2	8/21/2003
1,3,5-Trimethylbenzene	ND	2.0		µg/L	2	8/21/2003
1,2-Dichloroethane (EDC)	ND	2.0		µg/L	2	8/21/2003
1,2-Dibromoethane (EDB)	ND	2.0		µg/L	2	8/21/2003
Naphthalene	89	4.0		µg/L	2	8/21/2003
1-Methylnaphthalene	45	8.0		µg/L	2	8/21/2003
2-Methylnaphthalene	47	8.0		µg/L	2	8/21/2003
Acetone	ND	20		µg/L	2	8/21/2003
Bromobenzene	ND	2.0		µg/L	2	8/21/2003
Bromochloromethane	ND	2.0		µg/L	2	8/21/2003
Bromodichloromethane	ND	2.0		µg/L	2	8/21/2003
Bromoform	ND	2.0		µg/L	2	8/21/2003
Bromomethane	ND	4.0		µg/L	2	8/21/2003
2-Butanone	ND	20		µg/L	2	8/21/2003
Carbon disulfide	ND	20		µg/L	2	8/21/2003
Carbon Tetrachloride	ND	2.0		µg/L	2	8/21/2003
Chlorobenzene	3.8	2.0		µg/L	2	8/21/2003
Chloroethane	ND	4.0		µg/L	2	8/21/2003
Chloroform	ND	2.0		µg/L	2	8/21/2003
Chloromethane	ND	2.0		µg/L	2	8/21/2003
2-Chlorotoluene	ND	2.0		µg/L	2	8/21/2003
4-Chlorotoluene	ND	2.0		µg/L	2	8/21/2003
cis-1,2-DCE	ND	2.0		µg/L	2	8/21/2003
cis-1,3-Dichloropropene	ND	2.0		µg/L	2	8/21/2003
1,2-Dibromo-3-chloropropane	ND	4.0		µg/L	2	8/21/2003
Dibromochloromethane	ND	2.0		µg/L	2	8/21/2003
Dibromomethane	ND	4.0		µg/L	2	8/21/2003

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT: San Juan Refining
Project: Annual Monitor Wells 2003

Lab Order: 0308143

1,2-Dichlorobenzene	ND	2.0	µg/L	2	8/21/2003
1,3-Dichlorobenzene	ND	2.0	µg/L	2	8/21/2003
1,4-Dichlorobenzene	ND	2.0	µg/L	2	8/21/2003
Dichlorodifluoromethane	ND	2.0	µg/L	2	8/21/2003
1,1-Dichloroethane	ND	2.0	µg/L	2	8/21/2003
1,1-Dichloroethene	ND	2.0	µg/L	2	8/21/2003
1,2-Dichloropropane	ND	2.0	µg/L	2	8/21/2003
1,3-Dichloropropane	ND	2.0	µg/L	2	8/21/2003
2,2-Dichloropropane	ND	2.0	µg/L	2	8/21/2003
1,1-Dichloropropene	ND	2.0	µg/L	2	8/21/2003
Hexachlorobutadiene	ND	2.0	µg/L	2	8/21/2003
2-Hexanone	ND	20	µg/L	2	8/21/2003
Isopropylbenzene	65	2.0	µg/L	2	8/21/2003
4-Isopropyltoluene	ND	2.0	µg/L	2	8/21/2003
4-Methyl-2-pentanone	ND	20	µg/L	2	8/21/2003
Methylene Chloride	ND	6.0	µg/L	2	8/21/2003
n-Butylbenzene	3.5	2.0	µg/L	2	8/21/2003
n-Propylbenzene	73	2.0	µg/L	2	8/21/2003
sec-Butylbenzene	11	2.0	µg/L	2	8/21/2003
Styrene	ND	2.0	µg/L	2	8/21/2003
tert-Butylbenzene	3.0	2.0	µg/L	2	8/21/2003
1,1,1,2-Tetrachloroethane	ND	2.0	µg/L	2	8/21/2003
1,1,2,2-Tetrachloroethane	ND	2.0	µg/L	2	8/21/2003
Tetrachloroethene (PCE)	ND	2.0	µg/L	2	8/21/2003
trans-1,2-DCE	ND	2.0	µg/L	2	8/21/2003
trans-1,3-Dichloropropene	ND	2.0	µg/L	2	8/21/2003
1,2,3-Trichlorobenzene	ND	2.0	µg/L	2	8/21/2003
1,2,4-Trichlorobenzene	ND	2.0	µg/L	2	8/21/2003
1,1,1-Trichloroethane	ND	2.0	µg/L	2	8/21/2003
1,1,2-Trichloroethane	ND	2.0	µg/L	2	8/21/2003
Trichloroethene (TCE)	ND	2.0	µg/L	2	8/21/2003
Trichlorofluoromethane	ND	2.0	µg/L	2	8/21/2003
1,2,3-Trichloropropane	ND	4.0	µg/L	2	8/21/2003
Vinyl chloride	ND	4.0	µg/L	2	8/21/2003
Xylenes, Total	ND	2.0	µg/L	2	8/21/2003
Surr: 1,2-Dichloroethane-d4	93.6	70.6-124	%REC	2	8/21/2003
Surr: 4-Bromofluorobenzene	100	76.2-122	%REC	2	8/21/2003
Surr: Dibromofluoromethane	97.7	67.2-131	%REC	2	8/21/2003
Surr: Toluene-d8	97.0	82.1-123	%REC	2	8/21/2003

EPA 120.1: SPECIFIC CONDUCTANCE

Specific Conductance	4100	0.010	µmhos/cm	1	8/29/2003	Analyst: MAP
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MERCURY, DISSOLVED

Mercury	ND	0.00020	mg/L	1	8/22/2003	Analyst: MAP
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EPA METHOD 6010C: DISSOLVED METALS

Arsenic	ND	0.020	mg/L	1	9/3/2003 9:28:55 AM	Analyst: NMO
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Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT: San Juan Refining
Project: Annual Monitor Wells 2003
Lab Order: 0308143

Barium	3.2	0.020	mg/L	10	9/2/2003 11:18:04 AM
Cadmium	ND	0.0020	mg/L	1	9/2/2003 11:11:26 AM
Calcium	140	0.50	mg/L	1	9/3/2003 3:26:48 PM
Chromium	ND	0.0060	mg/L	1	9/2/2003 11:11:26 AM
Copper	ND	0.0060	mg/L	1	9/2/2003 11:11:26 AM
Iron	5.1	0.20	mg/L	10	9/2/2003 2:10:07 PM
Lead	ND	0.0050	mg/L	1	9/2/2003 11:11:26 AM
Magnesium	54	0.50	mg/L	1	9/3/2003 3:26:48 PM
Manganese	5.2	0.020	mg/L	10	9/2/2003 2:10:07 PM
Potassium	7.0	1.0	mg/L	1	9/3/2003 3:26:48 PM
Selenium	0.10	0.020	mg/L	1	9/2/2003 1:25:03 PM
Silver	ND	0.0050	mg/L	1	9/3/2003 10:22:06 AM
Sodium	740	10	mg/L	10	9/4/2003 8:33:16 AM
Uranium	ND	0.10	mg/L	1	9/2/2003 11:11:26 AM
Zinc	0.36	0.0050	mg/L	1	9/2/2003 1:25:03 PM

EPA 6010C: TOTAL RECOVERABLE METALS

Analyst: NMO

Chromium	0.037	0.0060	mg/L	1	8/28/2003 11:39:43 AM
Lead	0.0095	0.0050	mg/L	1	8/28/2003 11:39:43 AM

EPA METHOD 160.1: TDS

Analyst: MAP

Total Dissolved Solids	2300	1.0	mg/L	1	8/25/2003
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Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT: San Juan Refining
Project: Annual Monitor Wells 2003

Lab Order: 0308143

Lab ID: 0308143-02

Collection Date: 8/18/2003 1:35:00 PM

Client Sample ID: MW#33

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						
						Analyst: BDH
Fluoride	0.24	0.10		mg/L	1	8/19/2003 6:42:59 PM
Chloride	750	5.0		mg/L	50	8/20/2003 3:17:14 PM
Nitrogen, Nitrite (As N)	ND	1.0		mg/L	10	8/20/2003 12:13:01 PM
Bromide	19	1.0		mg/L	10	8/20/2003 12:13:01 PM
Nitrogen, Nitrate (As N)	26	1.0		mg/L	10	8/20/2003 12:13:01 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/19/2003 6:42:59 PM
Sulfate	1200	25		mg/L	50	8/20/2003 3:17:14 PM
EPA METHOD 8260B: VOLATILES						
						Analyst: BL
Benzene	ND	1.0		µg/L	1	8/20/2003
Toluene	ND	1.0		µg/L	1	8/20/2003
Ethylbenzene	ND	1.0		µg/L	1	8/20/2003
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/20/2003
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/20/2003
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/20/2003
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/20/2003
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/20/2003
Naphthalene	ND	2.0		µg/L	1	8/20/2003
1-Methylnaphthalene	ND	4.0		µg/L	1	8/20/2003
2-Methylnaphthalene	ND	4.0		µg/L	1	8/20/2003
Acetone	ND	10		µg/L	1	8/20/2003
Bromobenzene	ND	1.0		µg/L	1	8/20/2003
Bromochloromethane	ND	1.0		µg/L	1	8/20/2003
Bromodichloromethane	ND	1.0		µg/L	1	8/20/2003
Bromoform	ND	1.0		µg/L	1	8/20/2003
Bromomethane	ND	2.0		µg/L	1	8/20/2003
2-Butanone	ND	10		µg/L	1	8/20/2003
Carbon disulfide	ND	10		µg/L	1	8/20/2003
Carbon Tetrachloride	ND	1.0		µg/L	1	8/20/2003
Chlorobenzene	ND	1.0		µg/L	1	8/20/2003
Chloroethane	ND	2.0		µg/L	1	8/20/2003
Chloroform	ND	1.0		µg/L	1	8/20/2003
Chloromethane	ND	1.0		µg/L	1	8/20/2003
2-Chlorotoluene	ND	1.0		µg/L	1	8/20/2003
4-Chlorotoluene	ND	1.0		µg/L	1	8/20/2003
cis-1,2-DCE	ND	1.0		µg/L	1	8/20/2003
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/20/2003
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/20/2003
Dibromochloromethane	ND	1.0		µg/L	1	8/20/2003
Dibromomethane	ND	2.0		µg/L	1	8/20/2003

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT: San Juan Refining
Project: Annual Monitor Wells 2003

Lab Order: 0308143

1,2-Dichlorobenzene	ND	1.0	µg/L	1	8/20/2003
1,3-Dichlorobenzene	ND	1.0	µg/L	1	8/20/2003
1,4-Dichlorobenzene	ND	1.0	µg/L	1	8/20/2003
Dichlorodifluoromethane	ND	1.0	µg/L	1	8/20/2003
1,1-Dichloroethane	ND	1.0	µg/L	1	8/20/2003
1,1-Dichloroethene	ND	1.0	µg/L	1	8/20/2003
1,2-Dichloropropane	ND	1.0	µg/L	1	8/20/2003
1,3-Dichloropropane	ND	1.0	µg/L	1	8/20/2003
2,2-Dichloropropane	ND	1.0	µg/L	1	8/20/2003
1,1-Dichloropropene	ND	1.0	µg/L	1	8/20/2003
Hexachlorobutadiene	ND	1.0	µg/L	1	8/20/2003
2-Hexanone	ND	10	µg/L	1	8/20/2003
Isopropylbenzene	ND	1.0	µg/L	1	8/20/2003
4-Isopropyltoluene	ND	1.0	µg/L	1	8/20/2003
4-Methyl-2-pentanone	ND	10	µg/L	1	8/20/2003
Methylene Chloride	ND	3.0	µg/L	1	8/20/2003
n-Butylbenzene	ND	1.0	µg/L	1	8/20/2003
n-Propylbenzene	ND	1.0	µg/L	1	8/20/2003
sec-Butylbenzene	ND	1.0	µg/L	1	8/20/2003
Styrene	ND	1.0	µg/L	1	8/20/2003
tert-Butylbenzene	ND	1.0	µg/L	1	8/20/2003
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1	8/20/2003
1,1,2,2-Tetrachloroethane	ND	1.0	µg/L	1	8/20/2003
Tetrachloroethene (PCE)	ND	1.0	µg/L	1	8/20/2003
trans-1,2-DCE	ND	1.0	µg/L	1	8/20/2003
trans-1,3-Dichloropropene	ND	1.0	µg/L	1	8/20/2003
1,2,3-Trichlorobenzene	ND	1.0	µg/L	1	8/20/2003
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1	8/20/2003
1,1,1-Trichloroethane	ND	1.0	µg/L	1	8/20/2003
1,1,2-Trichloroethane	ND	1.0	µg/L	1	8/20/2003
Trichloroethene (TCE)	ND	1.0	µg/L	1	8/20/2003
Trichlorofluoromethane	ND	1.0	µg/L	1	8/20/2003
1,2,3-Trichloropropane	ND	2.0	µg/L	1	8/20/2003
Vinyl chloride	ND	2.0	µg/L	1	8/20/2003
Xylenes, Total	ND	1.0	µg/L	1	8/20/2003
Surr: 1,2-Dichloroethane-d4	91.6	70.6-124	%REC	1	8/20/2003
Surr: 4-Bromofluorobenzene	93.7	76.2-122	%REC	1	8/20/2003
Surr: Dibromofluoromethane	102	67.2-131	%REC	1	8/20/2003
Surr: Toluene-d8	95.8	82.1-123	%REC	1	8/20/2003

EPA 120.1: SPECIFIC CONDUCTANCE

Analyst: MAP

Specific Conductance	5000	0.010	µmhos/cm	1	8/29/2003
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MERCURY, DISSOLVED

Analyst: MAP

Mercury	ND	0.00020	mg/L	1	8/22/2003
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EPA METHOD 6010C: DISSOLVED METALS

Analyst: NMO

Arsenic	ND	0.020	mg/L	1	9/3/2003 9:26:10 AM
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Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT: San Juan Refining
Project: Annual Monitor Wells 2003

Lab Order: 0308143

Barium	0.020	0.0020	mg/L	1	9/2/2003 11:03:39 AM
Cadmium	ND	0.0020	mg/L	1	9/2/2003 11:03:39 AM
Calcium	330	10	mg/L	10	9/4/2003 8:24:12 AM
Chromium	ND	0.0060	mg/L	1	9/2/2003 11:03:39 AM
Copper	ND	0.0060	mg/L	1	9/2/2003 11:03:39 AM
Iron	ND	0.020	mg/L	1	9/2/2003 1:19:47 PM
Lead	ND	0.0050	mg/L	1	9/2/2003 11:03:39 AM
Magnesium	51	0.50	mg/L	1	9/3/2003 3:17:11 PM
Manganese	0.010	0.0020	mg/L	1	9/2/2003 1:19:47 PM
Potassium	6.2	1.0	mg/L	1	9/3/2003 3:17:11 PM
Selenium	0.023	0.020	mg/L	1	9/2/2003 1:19:47 PM
Silver	ND	0.0050	mg/L	1	9/3/2003 10:19:10 AM
Sodium	660	10	mg/L	10	9/4/2003 8:24:12 AM
Uranium	ND	0.10	mg/L	1	9/2/2003 11:03:39 AM
Zinc	0.0072	0.0050	mg/L	1	9/2/2003 1:19:47 PM

EPA 6010C: TOTAL RECOVERABLE METALS

Analyst: NMO

Chromium	ND	0.0060	mg/L	1	8/28/2003 11:41:51 AM
Lead	ND	0.0050	mg/L	1	8/28/2003 11:41:51 AM

EPA METHOD 160.1: TDS

Analyst: MAP

Total Dissolved Solids	3400	1.0	mg/L	1	8/25/2003
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Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range



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800-735-4489 • 406-252-6325 • 406-252-6069 fax • eli@energylab.com

LABORATORY ANALYTICAL REPORT

Client: Hall Environmental-Albuquerque
Project: Annual Monitoring Wells, 2003
Lab ID: B03081000-001
Client Sample ID: MW #47, 0308143-01D

Report Date: 08/28/03
Collection Date: 08/18/03 12:43
Date Received: 08/20/03
Matrix: Aqueous

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
INORGANICS							
Alkalinity, Total as CaCO3	1150	mg/L		2		A2320 B	08/21/03 15:22 / jb
Bicarbonate as HCO3	1400	mg/L		2		A2320 B	08/21/03 15:22 / jb
Carbonate as CO3	ND	mg/L		1		A2320 B	08/21/03 15:22 / jb
Carbon Dioxide, Total	1300	mg/L		1		Calculation	08/26/03 00:00 / lab

Report
Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

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



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LABORATORY ANALYTICAL REPORT

Client: Hall Environmental-Albuquerque
Project: Annual Monitoring Wells, 2003
Lab ID: B03081000-002
Client Sample ID: MW #33, 0308143-02D

Report Date: 08/28/03
Collection Date: 08/18/03 13:35
Date Received: 08/20/03
Matrix: Aqueous

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
INORGANICS							
Alkalinity, Total as CaCO3	198	mg/L		2		A2320 B	08/21/03 11:52 / jb
Bicarbonate as HCO3	242	mg/L		2		A2320 B	08/21/03 11:52 / jb
Carbonate as CO3	ND	mg/L		1		A2320 B	08/21/03 11:52 / jb
Carbon Dioxide, Total	190	mg/L		1		Calculation	08/26/03 00:00 / lab

Report Definitions: 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: Annual Monitoring Wells, 2003

Report Date: 08/26/03
Work Order: B03081000

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2320 B							Batch: ALK030821A		
Sample ID: MBLK_030821A	Method Blank								08/21/03 10:28
Alkalinity, Total as CaCO ₃	ND	mg/L	2.00						
Bicarbonate as HCO ₃	ND	mg/L	2.00						
Carbonate as CO ₃	ND	mg/L	1.00						
Sample ID: LCS_030821A	Laboratory Control Spike								08/21/03 10:31
Alkalinity, Total as CaCO ₃	103	mg/L	2.00	103	90	110			
Sample ID: B03080826-021AMS	Sample Matrix Spike								08/21/03 10:43
Alkalinity, Total as CaCO ₃	961	mg/L	2.00	104	80	120			
Sample ID: B03080826-021AMSD	Sample Matrix Spike Duplicate								08/21/03 10:50
Alkalinity, Total as CaCO ₃	959	mg/L	2.00	103	80	120	0.2	20	
Sample ID: MBLK_030821A	Method Blank								08/21/03 13:57
Alkalinity, Total as CaCO ₃	ND	mg/L	2.00						
Bicarbonate as HCO ₃	2.11	mg/L	2.00						
Carbonate as CO ₃	ND	mg/L	1.00						
Sample ID: LCS_030821A	Laboratory Control Spike								08/21/03 14:00
Alkalinity, Total as CaCO ₃	104	mg/L	2.00	104	90	110			
Sample ID: B03080551-001AMS	Sample Matrix Spike								08/21/03 14:11
Alkalinity, Total as CaCO ₃	712	mg/L	2.00	102	80	120			
Sample ID: B03080551-001AMSD	Sample Matrix Spike Duplicate								08/21/03 14:19
Alkalinity, Total as CaCO ₃	718	mg/L	2.00	103	80	120	0.8	20	
Sample ID: MBLK_030821A	Method Blank								08/21/03 16:22
Alkalinity, Total as CaCO ₃	3.43	mg/L	2.00						
Bicarbonate as HCO ₃	4.19	mg/L	2.00						
Carbonate as CO ₃	ND	mg/L	1.00						
Sample ID: LCS_030821A	Laboratory Control Spike								08/21/03 16:24
Alkalinity, Total as CaCO ₃	105	mg/L	2.00	105	90	110			
Sample ID: B03081074-003AMS	Sample Matrix Spike								08/21/03 18:03
Alkalinity, Total as CaCO ₃	1490	mg/L	2.00	102	80	120			
Sample ID: B03081074-003AMSD	Sample Matrix Spike Duplicate								08/21/03 18:12
Alkalinity, Total as CaCO ₃	1490	mg/L	2.00	102	80	120	0.1	20	

Qualifiers: RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Hall Environmental Analysis Laboratory

Date: 04-Sep-03

CLIENT: San Juan Refining
Work Order: 0308143
Project: Annual Monitor Wells 2003

QC SUMMARY REPORT

Method Blank

Sample ID: mb 081903	Batch ID: R9277	Test Code: E300	Units: mg/L	Analysis Date: 8/19/2003 3:42:18 PM	Prep Date:
Client ID:	Run ID: LC_030819A	SeqNo: 209479			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Fluoride	ND	0.10			
Chloride	ND	0.10			
Nitrogen, Nitrite (As N)	ND	0.10			
Bromide	ND	0.10			
Nitrogen, Nitrate (As N)	ND	0.10			
Phosphorus, Orthophosphate (As P)	ND	0.50			
Sulfate	ND	0.50			

Sample ID: mb 082003	Batch ID: R9290	Test Code: E300	Units: mg/L	Analysis Date: 8/20/2003 10:44:48 AM	Prep Date:
Client ID:	Run ID: LC_030820A	SeqNo: 209732			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Fluoride	ND	0.10			
Chloride	ND	0.10			
Nitrogen, Nitrite (As N)	ND	0.10			
Bromide	ND	0.10			
Nitrogen, Nitrate (As N)	ND	0.10			
Phosphorus, Orthophosphate (As P)	ND	0.50			
Sulfate	ND	0.50			

Sample ID: MBLK	Batch ID: R9407	Test Code: E310.1	Units: mg/L CaCO3	Analysis Date: 8/29/2003	Prep Date:
Client ID:	Run ID: WC_030829I	SeqNo: 212022			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Alkalinity, Total (As CaCO3)	ND	2.0			
Carbonate	ND	2.0			
Bicarbonate	ND	2.0			

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
Work Order: 0308143
Project: Annual Monitor Wells 2003

QC SUMMARY REPORT
 Method Blank

Sample ID: rb	Batch ID: R9294	Test Code: SW8260B	Units: µg/L	Analysis Date: 8/20/2003	Prep Date:						
Client ID:		Run ID: VAL_030820A		SeqNo: 209790							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1.0									
Toluene	ND	1.0									
Ethylbenzene	ND	1.0									
Methyl tert-butyl ether (MTBE)	ND	1.0									
1,2,4-Trimethylbenzene	ND	1.0									
1,3,5-Trimethylbenzene	ND	1.0									
1,2-Dichloroethane (EDC)	ND	1.0									
1,2-Dibromoethane (EDB)	ND	1.0									
Naphthalene	ND	2.0									
1-Methylnaphthalene	ND	4.0									
2-Methylnaphthalene	ND	4.0									
Acetone	ND	10									
Bromobenzene	ND	1.0									
Bromochloromethane	ND	1.0									
Bromodichloromethane	ND	1.0									
Bromoform	ND	1.0									
Bromomethane	ND	2.0									
t-Butanone	ND	10									
Carbon disulfide	ND	10									
Carbon Tetrachloride	ND	1.0									
Chlorobenzene	ND	1.0									
Chloroethane	ND	2.0									
Chloroform	ND	1.0									
Chloromethane	ND	1.0									
-Chlorotoluene	ND	1.0									
-Chlorotoluene	ND	1.0									
cis-1,2-DCE	ND	1.0									
cis-1,3-Dichloropropene	ND	1.0									

Qualifiers: ND - Not Detected at the Reporting Limit
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
Work Order: 0308143
Project: Annual Monitor Wells 2003

QC SUMMARY REPORT
 Method Blank

1,2-Dibromo-3-chloropropane	ND	2.0
Dibromochloromethane	ND	1.0
Dibromomethane	ND	2.0
1,2-Dichlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
Dichlorodifluoromethane	ND	1.0
1,1-Dichloroethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,2-Dichloropropane	ND	1.0
1,3-Dichloropropane	ND	1.0
2,2-Dichloropropane	ND	1.0
1,1-Dichloropropene	ND	1.0
Hexachlorobutadiene	ND	1.0
2-Hexanone	ND	10
Isopropylbenzene	ND	1.0
4-Isopropyltoluene	ND	1.0
4-Methyl-2-pentanone	ND	10
Methylene Chloride	ND	3.0
n-Butylbenzene	ND	1.0
n-Propylbenzene	ND	1.0
sec-Butylbenzene	ND	1.0
Styrene	ND	1.0
tert-Butylbenzene	ND	1.0
1,1,1,2-Tetrachloroethane	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Tetrachloroethene (PCE)	ND	1.0
trans-1,2-DCE	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
1,2,3-Trichlorobenzene	ND	1.0
1,2,4-Trichlorobenzene	ND	1.0
1,1,1-Trichloroethane	ND	1.0
1,1,2-Trichloroethane	ND	1.0

CLIENT: San Juan Refining
Work Order: 0308143
Project: Annual Monitor Wells 2003

[illegible]

Sample ID:	MBLK	Batch ID:	R9314	Test Code:	SW7470	Units:	mg/L	Analysis Date:	8/22/2003	Prep Date:	
Cilent ID:		Run ID:	MI-LA254_030822A					SeqNo:	210183		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.00020									

Sample ID: MB	Batch ID: R9413	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/2/2003 9:52:15 AM	Prep Date:
Client ID:		Run ID: ICP_030902B		SeqNo: 212132	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
				LowLimit	HighLimit
				RPD Ref Val	%RPD
					RPDLimit
					Qual

Barium	ND	0.0020
Cadmium	ND	0.0020
Chromium	ND	0.0060
Copper	ND	0.0060
Lead	ND	0.0050
Uranium	ND	0.10

CLIENT: San Juan Refining

Work Order: 0308143

Project: Annual Monitor Wells 2003

QC SUMMARY REPORT

Method Blank

Sample ID: MB	Batch ID: R9413	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/2/2003 1:01:52 PM	Prep Date:
Client ID:		Run ID: ICP_030902B		SeqNo: 212165	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Iron	ND	0.020			
Manganese	ND	0.0020			
Selenium	ND	0.020			
Zinc	ND	0.0050			

Sample ID: MB	Batch ID: R9424	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/3/2003 10:08:45 AM	Prep Date:
Client ID:		Run ID: ICP_030903B		SeqNo: 212394	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Silver	ND	0.0050			
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Sample ID: MB	Batch ID: R9439	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/3/2003 3:04:40 PM	Prep Date:
Client ID:		Run ID: ICP_030903H		SeqNo: 212599	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Calcium	0.00893	1.0			J
Magnesium	ND	1.0			
Potassium	ND	1.0			
Sodium	0.07257	1.0			J

Sample ID: MB-4183	Batch ID: 4183	Test Code: SW6010A	Units: mg/L	Analysis Date: 8/27/2003 2:22:26 PM	Prep Date: 8/22/2003
Client ID:		Run ID: ICP_030827G		SeqNo: 211399	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chromium	ND	0.0060			
Lead	ND	0.0050			

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

CLIENT:

San Juan Refining

Work Order:

0308143

Project:

Annual Monitor Wells 2003

QC SUMMARY REPORT

Method Blank

Sample ID: MB-4183		Batch ID: 4183	Test Code: SW6010A		Units: mg/L	Analysis Date: 8/28/2003 11:29:51 AM		Prep Date: 8/22/2003			
Client ID:		Run ID: ICP_030828A	SeqNo: 211585								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.001925		0	0	0	0	0	0			J
Lead	ND		0	0	0	0	0	0			

Sample ID: MB-4181		Batch ID: 4181	Test Code: E160.1		Units: mg/L	Analysis Date: 8/25/2003		Prep Date: 8/22/2003			
Client ID:		Run ID: WC_030824B	SeqNo: 210567								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	1.0									

Qualifiers:

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

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: 04-Sep-03

CLIENT: San Juan Refining

Work Order: 0308143

Project: Annual Monitor Wells 2003

QC SUMMARY REPORT

Sample Duplicate

Sample ID: 0308143-01b dup	Batch ID: R9277	Test Code: E300	Units: mg/L	Analysis Date: 8/19/2003 6:09:30 PM	Prep Date:						
Client ID: MW#47		Run ID: LC_030819A		SeqNo: 209482							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.2169	0.10	0	0	0	0	0	0.2419	10.9	20	
Nitrogen, Nitrite (As N)	ND	0.10	0	0	0	0	0	0	0	20	
Bromide	ND	0.10	0	0	0	0	0	0	0	20	
Nitrogen, Nitrate (As N)	ND	0.10	0	0	0	0	0	0	0	20	
Phosphorus, Orthophosphate (As P)	ND	0.50	0	0	0	0	0	0	0	20	
Sulfate	ND	0.50	0	0	0	0	0	0	0	20	

Sample ID: 0308143-01B	Batch ID: R9407	Test Code: E310.1	Units: mg/L CaCO3	Analysis Date: 8/29/2003	Prep Date:						
Client ID: MW#47		Run ID: WC_030829I		SeqNo: 212023							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	1147	2.0	0	0	0	0	0	1088	5.28	15	
Carbonate	ND	2.0	0	0	0	0	0	0	0	15	
Bicarbonate	1147	2.0	0	0	0	0	0	1088	5.28	15	

Sample ID: 0308143-01B	Batch ID: R9408	Test Code: E120.1	Units: µmhos/cm	Analysis Date: 8/29/2003	Prep Date:						
Client ID: MW#47		Run ID: WC_030829J		SeqNo: 212066							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	4090	0.010	0	0	0	0	0	4050	0.983	20	

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

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CLIENT: San Juan Refining

Work Order: 0308143

Project: Annual Monitor Wells 2003

QC SUMMARY REPORT

Sample Duplicate

Sample ID: 0308143-02B DUP		Batch ID: R9413		Test Code: SW6010A		Units: mg/L		Analysis Date: 9/2/2003 11:07:16 AM		Prep Date:	
Client ID: MW#33				Run ID: ICP_030902B				SeqNo: 212143			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.01978	0.0020	0	0	0	0	0	0.01976	0.0903	20	
Cadmium	ND	0.0020	0	0	0	0	0	0	0	20	
Chromium	ND	0.0060	0	0	0	0	0	0	0	20	
Copper	0.005354	0.0060	0	0	0	0	0	0.005117	0	20	J
Lead	ND	0.0050	0	0	0	0	0	0	0	20	
Uranium	0.05593	0.10	0	0	0	0	0	0.05721	0	20	J

Sample ID: 0308143-02B DUP	Batch ID: R9413	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/2/2003 1:22:21 PM	Prep Date:						
Client ID: MWH#33		Run ID: ICP_030902B		SeqNo: 212172							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	0.020	0	0	0	0	0	0	0	20	
Manganese	0.0105	0.0020	0	0	0	0	0	0.01044	0.573	20	
Selenium	0.02221	0.020	0	0	0	0	0	0.02334	4.96	20	
Zinc	0.007229	0.0050	0	0	0	0	0	0.007165	0.897	20	

Sample ID: 0308143-02B DUP	Batch ID: R9422	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/3/2003 9:27:29 AM	Prep Date:						
Client ID: MW#33		Run ID: ICP_030903A		SeqNo: 212377							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.020	0	0	0	0	0	0	0	20	

Sample ID: 0308143-02B DUP		Batch ID: R9424	Test Code: SW6010A		Units: mg/L		Analysis Date: 9/3/2003 10:20:37 AM				Prep Date:	
Client ID: MW#33			Run ID: ICP_030903B				SeqNo: 212401					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Silver	ND	0.0050	0	0	0	0	0	0.002117	0	20		

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
Work Order: 0308143
Project: Annual Monitor Wells 2003

QC SUMMARY REPORT Sample Duplicate

Sample ID: 0308143-02B DUP **Batch ID:** R9439 **Test Code:** SW6010A **Units:** mg/L **Analysis Date:** 9/3/2003 3:22:36 PM **Prep Date:**
Client ID: MW#33 **Run ID:** ICP_030903H **SeqNo:** 212605

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	51.44	1.0	0	0	0	0	0	51.3	0.271	20	
Potassium	6.179	1.0	0	0	0	0	0	6.183	0.0740	20	

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

Hall Environmental Analysis Laboratory

Date: 04-Sep-03

CLIENT: San Juan Refining
Work Order: 0308143
Project: Annual Monitor Wells 2003

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 0308143-01b ms	Batch ID: R9277	Test Code: E300	Units: mg/L	Analysis Date: 8/19/2003 6:26:15 PM	Prep Date:					
Client ID: MW#47	Run ID: LC_030819A	PQL	SPK value	SeqNo: 209483						
Analyte	Result			%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.249	0.10	2	0.2419	100	80	120	0		
Nitrogen, Nitrate (As N)	5.853	0.10	6	0	97.5	80	120	0		
Phosphorus, Orthophosphate (As P)	6.231	0.50	6	0	104	80	120	0		
Sulfate	12.65	0.50	12	0	105	80	120	0		

Sample ID: 0308143-02B MS	Batch ID: R9413	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/2/2003 11:21:41 AM	Prep Date:					
Client ID: MW#33	Run ID: ICP_030902B	PQL	SPK value	SeqNo: 212146						
Analyte	Result			%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.4637	0.0020	0.5	0.01976	88.8	75	125	0		
Cadmium	0.4307	0.0020	0.5	0	86.1	75	125	0		
Chromium	0.5017	0.0060	0.5	0	100	75	125	0		
Copper	0.5698	0.0060	0.5	0.005117	113	75	125	0		
Lead	0.4538	0.0050	0.5	0	90.8	78.4	112	0		
Uranium	0.5215	0.10	0.5	0.05721	92.9	75	125	0		

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

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Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT: San Juan Refining

Work Order: 0308143

Project: Annual Monitor Wells 2003

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 0308143-01b ms		Batch ID: R9277	Test Code: E300	Units: mg/L		Analysis Date: 8/19/2003 6:26:15 PM		Prep Date:	
Client ID: MW#47		Run ID: LC_030819A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	SeqNo: 209483
Analyte	Result								
Fluoride	2.249		0.10	2	0.2419	100	80	120	0
Nitrogen, Nitrate (As N)	5.853		0.10	6	0	97.5	80	120	0
Phosphorus, Orthophosphate (As P)	6.231		0.50	6	0	104	80	120	0
Sulfate	12.65		0.50	12	0	105	80	120	0

Sample ID: 0308143-02B MS		Batch ID: R9413	Test Code: SW6010A	Units: mg/L		Analysis Date: 9/2/2003 11:21:41 AM		Prep Date:	
Client ID: MW#33		Run ID: ICP_030902B	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	SeqNo: 212146
Analyte	Result								
Barium	0.4637		0.0020	0.5	0.01976	88.8	75	125	0
Cadmium	0.4307		0.0020	0.5	0	86.1	75	125	0
Chromium	0.5017		0.0060	0.5	0	100	75	125	0
Copper	0.5698		0.0060	0.5	0.005117	113	75	125	0
Lead	0.4538		0.0050	0.5	0	90.8	78.4	112	0
Uranium	0.5215		0.10	0.5	0.05721	92.9	75	125	0

Sample ID: 0308143-02B MS		Batch ID: R9413	Test Code: SW6010A	Units: mg/L		Analysis Date: 9/2/2003 1:27:38 PM		Prep Date:	
Client ID: MW#33		Run ID: ICP_030902B	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	SeqNo: 212174
Analyte	Result								
Iron	0.4773		0.020	0.5	0	95.5	76.3	122	0
Manganese	0.4648		0.0020	0.5	0.01044	90.9	70.2	121	0
Selenium	0.4799		0.020	0.5	0.02334	91.3	75	125	0
Zinc	0.4539		0.0050	0.5	0.007165	89.3	75	125	0

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

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CLIENT:

San Juan Refining

Work Order:

0308143

Project:

Annual Monitor Wells 2003

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 0308143-02B MS	Batch ID: R9422	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/3/2003 9:30:22 AM	Prep Date:						
Client ID: MW#33		Run ID: ICP_030903A		SeqNo: 212379							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.4289	0.020	0.5	0	85.8	75	125	0			

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: 05-Sep-03

CLIENT: San Juan Refining

Work Order: 0308143

Project: Annual Monitor Wells 2003

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: Ics 081903	Batch ID: R9277	Test Code: E300	Units: mg/L	Analysis Date: 8/19/2003 3:59:03 PM	Prep Date:				
Client ID:	Run ID: LC_030819A	PQL	SPK value	SeqNo: 209480					
Analyte	Result			LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.983	0.10	2	0	99.1	90	110	0	
Chloride	6.162	0.10	6	0	103	90	110	0	
Nitrogen, Nitrite (As N)	1.725	0.10	2	0	86.3	90	110	0	S
Bromide	5.813	0.10	6	0	96.9	90	110	0	
Nitrogen, Nitrate (As N)	6.172	0.10	6	0	103	90	110	0	
Phosphorus, Orthophosphate (As P)	6.289	0.50	6	0	105	90	110	0	
Sulfate	12.43	0.50	12	0	104	90	110	0	

Sample ID: Ics 082003	Batch ID: R9290	Test Code: E300	Units: mg/L	Analysis Date: 8/20/2003 11:01:33 AM	Prep Date:						
Client ID:	Run ID: LC_030820A	SeqNo: 209733									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.976	0.10	2	0	98.8	90	110	0			
Chloride	6.278	0.10	6	0	105	90	110	0			
Nitrogen, Nitrite (As N)	1.803	0.10	2	0	90.2	90	110	0			
Bromide	5.993	0.10	6	0	99.9	90	110	0			
Nitrogen, Nitrate (As N)	6.282	0.10	6	0	105	90	110	0			
Phosphorus, Orthophosphate (As P)	6.568	0.50	6	0	109	90	110	0			
Sulfate	12.49	0.50	12	0	104	90	110	0			

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

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CLIENT: San Juan Refining

Work Order: 0308143

Project: Annual Monitor Wells 2003

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: 75ccv	Batch ID: R9294	Test Code: SW8260B	Units: µg/L	Analysis Date: 8/20/2003	Prep Date:						
Client ID:	Run ID: VAL_030820A	SeqNo: 209791									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	15.85	1.0	15	0	106	71.2	122	0			
Toluene	15.95	1.0	15	0	106	87.7	122	0			
Chlorobenzene	16.01	1.0	15	0	107	85.6	136	0			
1,1-Dichloroethene	15.79	1.0	15	0	105	70.7	117	0			
Trichloroethene (TCE)	17.21	1.0	15	0	115	76.9	130	0			

Sample ID: 75ccvb	Batch ID: R9294	Test Code: SW8260B	Units: µg/L	Analysis Date: 8/20/2003		Prep Date:					
Client ID:	Run ID: VAL_030820A	SeqNo: 209792									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	16.65	1.0	15	0	111	78.7	122	15.85	4.94	11	
Toluene	15.85	1.0	15	0	106	76	128	15.95	0.591	12.2	
Chlorobenzene	16.79	1.0	15	0	112	85.6	136	16.01	4.73	12	
1,1-Dichloroethene	16.77	1.0	15	0	112	70.7	117	15.79	6.04	19.3	
Trichloroethene (TCE)	17.28	1.0	15	0	115	76.9	130	17.21	0.406	15.5	

Sample ID: LCS	Batch ID: R9314	Test Code: SW7470	Units: mg/L	Analysis Date: 8/22/2003	Prep Date:						
Client ID:	Run ID: MI-LA254_030822A	SeqNo: 210184									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.00323	0.00020	0.0033	0	97.9	90	110	0			

Sample ID: LCSD	Batch ID: R9314	Test Code: SW7470	Units: mg/L	Analysis Date: 8/22/2003	Prep Date:						
Client ID:	Run ID: MI-LA254_030822A	SeqNo: 210185									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.00307	0.00020	0.0033	0	93.0	90	110	0.00323	5.08	0	

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining

Work Order: 0308143

Project: Annual Monitor Wells 2003

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS	Batch ID: R9413	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/2/2003 9:57:17 AM	Prep Date:						
Client ID:	Run ID: ICP_030902B	SeqNo: 212133									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.5279	0.0020	0.5	0	106	80	120	0			
Cadmium	0.5387	0.0020	0.5	0	108	80	120	0			
Chromium	0.5501	0.0060	0.5	0	110	80	120	0			
Copper	0.5046	0.0060	0.5	0	101	80	120	0			
Lead	0.526	0.0050	0.5	0	105	80	120	0			
Uranium	0.5057	0.10	0.5	0	101	80	120	0			

Sample ID: LCSD	Batch ID: R9413	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/2/2003 10:32:50 AM	Prep Date:
Client ID:	Run ID: ICP_030902B	SeqNo: 212137			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Barium	0.5015	0.0020	0.5	0	100 80 120 0.5279 5.13 20
Cadmium	0.4816	0.0020	0.5	0	96.3 80 120 0.5387 11.2 20
Chromium	0.524	0.0060	0.5	0	105 80 120 0.5501 4.86 20
Copper	0.4717	0.0060	0.5	0	94.3 80 120 0.5046 6.73 20
Lead	0.4765	0.0050	0.5	0	95.3 80 120 0.526 9.87 20
Uranium	0.5035	0.10	0.5	0	101 80 120 0.5057 0.429 20

Sample ID: LCS	Batch ID: R9413	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/2/2003 1:04:44 PM	Prep Date:						
Client ID:	Run ID: ICP_030902B	SeqNo: 212166									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.5101	0.020	0.5	0	102	80	120	0			
Manganese	0.5196	0.0020	0.5	0	104	80	120	0			
Selenium	0.5066	0.020	0.5	0	101	80	120	0			
Zinc	0.5107	0.0050	0.5	0	102	80	120	0			

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

CLIENT: San Juan Refining

Work Order: 0308143

Project: Annual Monitor Wells 2003

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

Sample ID: LCSD	Batch ID: R9413	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/2/2003 1:07:07 PM	Prep Date:						
Client ID:	Run ID: ICP_030902B	SeqNo: 212167									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.5021	0.020	0.5	0	100	80	120	0.5101	1.59	20	
Manganese	0.4923	0.0020	0.5	0	98.5	80	120	0.5196	5.40	20	
Selenium	0.5765	0.020	0.5	0	115	80	120	0.5066	12.9	20	
Zinc	0.5019	0.0050	0.5	0	100	80	120	0.5107	1.73	20	

Sample ID: LCS	Batch ID: R9422	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/3/2003 9:22:02 AM	Prep Date:						
Client ID:	Run ID: ICP_030903A	SeqNo: 212373									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.4301	0.020	0.5	0	86.0	80	120	0			

Sample ID: LCSD	Batch ID: R9422	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/3/2003 9:23:28 AM	Prep Date:						
Client ID:	Run ID: ICP_030903A			SeqNo: 212374							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.4222	0.020	0.5	0	84.4	80	120	0.4301	1.86	20	

Sample ID: LCS	Batch ID: R9424	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/3/2003 10:14:49 AM	Prep Date:						
Client ID:	Run ID: ICP_030903B			SeqNo: 212397							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	1.058	0.0050	1	0	106	80	120	0			

Sample ID: LCSD	Batch ID: R9424	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/3/2003 10:16:16 AM	Prep Date:						
Client ID:	Run ID: ICP_030903B	SeqNo: 212398									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	1.008	0.0050	1	0	101	80	120	0	0	20	

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

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Full Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name SJR

Date and Time Receive

8/19/2003

Work Order Number 0308143

Received by AMG

Checklist completed by

Signature

Date

Matrix

Carrier name UPS

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒
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 ☐	
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?	6°	4° C ± 2 Acceptable	

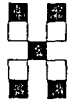
COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: _____

Corrective Action _____



Hall Environmental Analysis Laboratory

COVER LETTER

September 15, 2003

Cindy Hurtado
San Juan Refining
#50 CR 4990
Bloomfield, NM 87413
TEL: (505) 632-4161
FAX (505) 632-3911

RE: Annual Monitoring Wells 2003

Order No.: 0308206

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory received 2 samples on 8/27/2003 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

Hall Environmental Analysis Laboratory

Date: 16-Sep-03

CLIENT: San Juan Refining

Client Sample ID: East Outfall #1

Lab Order: 0308206

Collection Date: 8/26/2003 7:50:00 AM

Project: Annual Monitoring Wells 2003

Lab ID: 0308206-01

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: BDH
Fluoride	0.55	0.10		mg/L	1	8/27/2003 4:51:35 PM
Chloride	41	0.50		mg/L	5	8/28/2003 1:01:06 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/27/2003 4:51:35 PM
Bromide	0.95	0.10		mg/L	1	8/27/2003 4:51:35 PM
Nitrogen, Nitrate (As N)	0.30	0.10		mg/L	1	8/27/2003 4:51:35 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/27/2003 4:51:35 PM
Sulfate	140	2.5		mg/L	5	8/28/2003 1:01:06 PM
EPA METHOD 8260B: VOLATILES						Analyst: BDH
Benzene	4100	100		µg/L	100	8/28/2003
Toluene	84	50		µg/L	50	8/28/2003
Ethylbenzene	12	1.0		µg/L	1	8/27/2003
Methyl tert-butyl ether (MTBE)	570	50		µg/L	50	8/28/2003
1,2,4-Trimethylbenzene	6.7	1.0		µg/L	1	8/27/2003
1,3,5-Trimethylbenzene	1.5	1.0		µg/L	1	8/27/2003
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/27/2003
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/27/2003
Naphthalene	18	2.0		µg/L	1	8/27/2003
1-Methylnaphthalene	12	4.0		µg/L	1	8/27/2003
2-Methylnaphthalene	15	4.0		µg/L	1	8/27/2003
Acetone	ND	10		µg/L	1	8/27/2003
Bromobenzene	ND	1.0		µg/L	1	8/27/2003
Bromochloromethane	ND	1.0		µg/L	1	8/27/2003
Bromodichloromethane	ND	1.0		µg/L	1	8/27/2003
Bromoform	ND	1.0		µg/L	1	8/27/2003
Bromomethane	ND	2.0		µg/L	1	8/27/2003
2-Butanone	ND	10		µg/L	1	8/27/2003
Carbon disulfide	ND	10		µg/L	1	8/27/2003
Carbon Tetrachloride	ND	1.0		µg/L	1	8/27/2003
Chlorobenzene	ND	1.0		µg/L	1	8/27/2003
Chloroethane	ND	2.0		µg/L	1	8/27/2003
Chloroform	ND	1.0		µg/L	1	8/27/2003
Chloromethane	ND	1.0		µg/L	1	8/27/2003
2-Chlorotoluene	ND	1.0		µg/L	1	8/27/2003
4-Chlorotoluene	ND	1.0		µg/L	1	8/27/2003
cis-1,2-DCE	ND	1.0		µg/L	1	8/27/2003
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/27/2003
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/27/2003
Dibromochloromethane	ND	1.0		µg/L	1	8/27/2003
Dibromomethane	ND	2.0		µg/L	1	8/27/2003
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/27/2003

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 16-Sep-03

CLIENT: San Juan Refining

Client Sample ID: East Outfall #1

Lab Order: 0308206

Collection Date: 8/26/2003 7:50:00 AM

Project: Annual Monitoring Wells 2003

Lab ID: 0308206-01

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/27/2003
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/27/2003
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/27/2003
1,1-Dichloroethane	ND	1.0		µg/L	1	8/27/2003
1,1-Dichloroethene	ND	1.0		µg/L	1	8/27/2003
1,2-Dichloropropane	ND	1.0		µg/L	1	8/27/2003
1,3-Dichloropropane	ND	1.0		µg/L	1	8/27/2003
2,2-Dichloropropane	ND	1.0		µg/L	1	8/27/2003
1,1-Dichloropropene	ND	1.0		µg/L	1	8/27/2003
Hexachlorobutadiene	ND	1.0		µg/L	1	8/27/2003
2-Hexanone	ND	10		µg/L	1	8/27/2003
Isopropylbenzene	1.4	1.0		µg/L	1	8/27/2003
4-Isopropyltoluene	ND	1.0		µg/L	1	8/27/2003
4-Methyl-2-pentanone	ND	10		µg/L	1	8/27/2003
Methylene Chloride	ND	3.0		µg/L	1	8/27/2003
n-Butylbenzene	ND	1.0		µg/L	1	8/27/2003
n-Propylbenzene	1.7	1.0		µg/L	1	8/27/2003
sec-Butylbenzene	ND	1.0		µg/L	1	8/27/2003
Styrene	ND	1.0		µg/L	1	8/27/2003
tert-Butylbenzene	ND	1.0		µg/L	1	8/27/2003
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/27/2003
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	8/27/2003
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/27/2003
trans-1,2-DCE	ND	1.0		µg/L	1	8/27/2003
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/27/2003
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/27/2003
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/27/2003
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/27/2003
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/27/2003
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/27/2003
Trichlorofluoromethane	ND	1.0		µg/L	1	8/27/2003
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/27/2003
Vinyl chloride	ND	2.0		µg/L	1	8/27/2003
Xylenes, Total	41	1.0		µg/L	1	8/27/2003
Surr: 1,2-Dichloroethane-d4	104	70.6-124		%REC	50	8/28/2003
Surr: 4-Bromofluorobenzene	92.0	76.2-122		%REC	1	8/27/2003
Surr: Dibromofluoromethane	106	67.2-131		%REC	50	8/28/2003
Surr: Toluene-d8	107	82.1-123		%REC	1	8/27/2003

EPA 120.1: SPECIFIC CONDUCTANCE

Analyst: MAP

Specific Conductance 830 0.010 µmhos/cm

1 9/3/2003

MERCURY, DISSOLVED

Analyst: MAP

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 16-Sep-03

CLIENT: San Juan Refining
Lab Order: 0308206
Project: Annual Monitoring Wells 2003
Lab ID: 0308206-01

Client Sample ID: East Outfall #1
Collection Date: 8/26/2003 7:50:00 AM

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Mercury	ND	0.00020		mg/L	1	9/9/2003
EPA METHOD 6010C: DISSOLVED METALS						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	9/8/2003 9:02:50 AM
Barium	0.27	0.0020		mg/L	1	9/8/2003 9:02:50 AM
Cadmium	ND	0.0020		mg/L	1	9/8/2003 9:02:50 AM
Calcium	64	0.50		mg/L	1	9/8/2003 12:34:16 PM
Chromium	ND	0.0060		mg/L	1	9/8/2003 10:39:37 AM
Copper	ND	0.0060		mg/L	1	9/8/2003 9:02:50 AM
Iron	0.56	0.020		mg/L	1	9/8/2003 10:39:37 AM
Lead	ND	0.0050		mg/L	1	9/8/2003 9:02:50 AM
Magnesium	16	0.50		mg/L	1	9/8/2003 12:34:16 PM
Manganese	2.1	0.020		mg/L	10	9/8/2003 10:11:25 AM
Potassium	2.8	1.0		mg/L	1	9/8/2003 12:34:16 PM
Selenium	ND	0.020		mg/L	1	9/8/2003 9:02:50 AM
Silver	ND	0.0050		mg/L	1	9/8/2003 11:26:12 AM
Sodium	130	0.50		mg/L	1	9/8/2003 12:34:16 PM
Uranium	ND	0.10		mg/L	1	9/8/2003 9:02:50 AM
Zinc	0.033	0.0050		mg/L	1	9/8/2003 9:02:50 AM
EPA 6010C: TOTAL RECOVERABLE METALS						Analyst: NMO
Chromium	ND	0.0060		mg/L	1	8/28/2003 11:22:06 AM
Lead	ND	0.0050		mg/L	1	8/28/2003 11:22:06 AM
EPA METHOD 160.1: TDS						Analyst: MAP
Total Dissolved Solids	500	1.0		mg/L	1	9/2/2003

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 16-Sep-03

CLIENT: San Juan Refining

Client Sample ID: East Outfall #3

Lab Order: 0308206

Collection Date: 8/26/2003 8:45:00 AM

Project: Annual Monitoring Wells 2003

Lab ID: 0308206-02

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: BDH
Fluoride	0.49	0.10		mg/L	1	8/27/2003 5:08:20 PM
Chloride	25	0.10		mg/L	1	8/27/2003 5:08:20 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/27/2003 5:08:20 PM
Bromide	0.26	0.10		mg/L	1	8/27/2003 5:08:20 PM
Nitrogen, Nitrate (As N)	3.9	0.10		mg/L	1	8/27/2003 5:08:20 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/27/2003 5:08:20 PM
Sulfate	170	2.5		mg/L	5	8/28/2003 1:17:51 PM
EPA METHOD 8260B: VOLATILES						Analyst: BDH
Benzene	ND	1.0		µg/L	1	8/28/2003
Toluene	ND	1.0		µg/L	1	8/28/2003
Ethylbenzene	ND	1.0		µg/L	1	8/28/2003
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/28/2003
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2003
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2003
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/28/2003
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/28/2003
Naphthalene	ND	2.0		µg/L	1	8/28/2003
1-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2003
2-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2003
Acetone	ND	10		µg/L	1	8/28/2003
Bromobenzene	ND	1.0		µg/L	1	8/28/2003
Bromochloromethane	ND	1.0		µg/L	1	8/28/2003
Bromodichloromethane	ND	1.0		µg/L	1	8/28/2003
Bromoform	ND	1.0		µg/L	1	8/28/2003
Bromomethane	ND	2.0		µg/L	1	8/28/2003
2-Butanone	ND	10		µg/L	1	8/28/2003
Carbon disulfide	ND	10		µg/L	1	8/28/2003
Carbon Tetrachloride	ND	1.0		µg/L	1	8/28/2003
Chlorobenzene	ND	1.0		µg/L	1	8/28/2003
Chloroethane	ND	2.0		µg/L	1	8/28/2003
Chloroform	ND	1.0		µg/L	1	8/28/2003
Chloromethane	ND	1.0		µg/L	1	8/28/2003
2-Chlorotoluene	ND	1.0		µg/L	1	8/28/2003
4-Chlorotoluene	ND	1.0		µg/L	1	8/28/2003
cis-1,2-DCE	ND	1.0		µg/L	1	8/28/2003
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2003
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/28/2003
Dibromochloromethane	ND	1.0		µg/L	1	8/28/2003
Dibromomethane	ND	2.0		µg/L	1	8/28/2003
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2003

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 16-Sep-03

CLIENT: San Juan Refining

Client Sample ID: East Outfall #3

Lab Order: 0308206

Collection Date: 8/26/2003 8:45:00 AM

Project: Annual Monitoring Wells 2003

Lab ID: 0308206-02

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2003
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2003
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/28/2003
1,1-Dichloroethane	ND	1.0		µg/L	1	8/28/2003
1,1-Dichloroethene	ND	1.0		µg/L	1	8/28/2003
1,2-Dichloropropane	ND	1.0		µg/L	1	8/28/2003
1,3-Dichloropropane	ND	1.0		µg/L	1	8/28/2003
2,2-Dichloropropane	ND	1.0		µg/L	1	8/28/2003
1,1-Dichloropropene	ND	1.0		µg/L	1	8/28/2003
Hexachlorobutadiene	ND	1.0		µg/L	1	8/28/2003
2-Hexanone	ND	10		µg/L	1	8/28/2003
Isopropylbenzene	ND	1.0		µg/L	1	8/28/2003
4-Isopropyltoluene	ND	1.0		µg/L	1	8/28/2003
4-Methyl-2-pentanone	ND	10		µg/L	1	8/28/2003
Methylene Chloride	ND	3.0		µg/L	1	8/28/2003
n-Butylbenzene	ND	1.0		µg/L	1	8/28/2003
n-Propylbenzene	ND	1.0		µg/L	1	8/28/2003
sec-Butylbenzene	ND	1.0		µg/L	1	8/28/2003
Styrene	ND	1.0		µg/L	1	8/28/2003
tert-Butylbenzene	ND	1.0		µg/L	1	8/28/2003
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/28/2003
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	8/28/2003
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/28/2003
trans-1,2-DCE	ND	1.0		µg/L	1	8/28/2003
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2003
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2003
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2003
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/28/2003
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/28/2003
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/28/2003
Trichlorofluoromethane	ND	1.0		µg/L	1	8/28/2003
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/28/2003
Vinyl chloride	ND	2.0		µg/L	1	8/28/2003
Xylenes, Total	ND	1.0		µg/L	1	8/28/2003
Surr: 1,2-Dichloroethane-d4	97.4	70.6-124		%REC	1	8/28/2003
Surr: 4-Bromofluorobenzene	97.4	76.2-122		%REC	1	8/28/2003
Surr: Dibromofluoromethane	106	67.2-131		%REC	1	8/28/2003
Surr: Toluene-d8	110	82.1-123		%REC	1	8/28/2003

EPA 120.1: SPECIFIC CONDUCTANCE

Specific Conductance 780 0.010 µmhos/cm

Analyst: MAP

9/3/2003

MERCURY, DISSOLVED

Analyst: MAP

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 16-Sep-03

CLIENT: San Juan Refining

Client Sample ID: East Outfall #3

Lab Order: 0308206

Collection Date: 8/26/2003 8:45:00 AM

Project: Annual Monitoring Wells 2003

Lab ID: 0308206-02

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Mercury	ND	0.00020		mg/L	1	9/9/2003
EPA METHOD 6010C: DISSOLVED METALS						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	9/8/2003 9:08:17 AM
Barium	0.25	0.0020		mg/L	1	9/8/2003 9:08:17 AM
Cadmium	ND	0.0020		mg/L	1	9/8/2003 9:08:17 AM
Calcium	79	0.50		mg/L	1	9/8/2003 12:38:33 PM
Chromium	ND	0.0060		mg/L	1	9/8/2003 10:41:36 AM
Copper	ND	0.0060		mg/L	1	9/8/2003 9:08:17 AM
Iron	ND	0.020		mg/L	1	9/8/2003 10:41:36 AM
Lead	ND	0.0050		mg/L	1	9/8/2003 9:08:17 AM
Magnesium	18	0.50		mg/L	1	9/8/2003 12:38:33 PM
Manganese	0.017	0.0020		mg/L	1	9/8/2003 9:08:17 AM
Potassium	2.1	1.0		mg/L	1	9/8/2003 12:38:33 PM
Selenium	0.032	0.020		mg/L	1	9/8/2003 9:08:17 AM
Silver	ND	0.0050		mg/L	1	9/8/2003 11:27:39 AM
Sodium	88	0.50		mg/L	1	9/8/2003 12:38:33 PM
Uranium	ND	0.10		mg/L	1	9/8/2003 9:08:17 AM
Zinc	ND	0.0050		mg/L	1	9/8/2003 10:41:36 AM
Zinc	0.040	0.0050		mg/L	1	9/8/2003 9:08:17 AM
EPA 6010C: TOTAL RECOVERABLE METALS						Analyst: NMO
Chromium	ND	0.0060		mg/L	1	8/28/2003 11:24:09 AM
Lead	ND	0.0050		mg/L	1	8/28/2003 11:24:09 AM
EPA METHOD 160.1: TDS						Analyst: MAP
Total Dissolved Solids	490	1.0		mg/L	1	9/2/2003

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range



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800-735-4489 • 406-252-6325 • 406-252-6069 fax • eli@energylab.com

LABORATORY ANALYTICAL REPORT

Client: Hall Environmental-Albuquerque

Project: Annual Monitoring Wells 2003

Lab ID: B03081372-001

Client Sample ID: East Outfall #1, 0308206-01D

Report Date: 09/02/03

Collection Date: 08/26/03 07:50

Date Received: 08/28/03

Matrix: Aqueous

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
INORGANICS							
Alkalinity, Total as CaCO3	312	mg/L		2		A2320 B	08/28/03 14:40 / jb
Carbon Dioxide, Total	330	mg/L		1		Calculation	08/28/03 09:47 / lab

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

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



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LABORATORY ANALYTICAL REPORT

Client: Hall Environmental-Albuquerque
Project: Annual Monitoring Wells 2003
Lab ID: B03081372-002
Client Sample ID: East Outfall #3, 0308206-02D

Report Date: 09/02/03
Collection Date: 08/26/03 08:45
Date Received: 08/28/03
Matrix: Aqueous

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
INORGANICS							
Alkalinity, Total as CaCO3	252	mg/L		2		A2320 B	08/28/03 14:46 / jb
Carbon Dioxide, Total	270	mg/L		1		Calculation	08/28/03 09:47 / lab

Report Definitions: 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: Annual Monitoring Wells 2003

Report Date: 08/29/03

Work Order: B03081372

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2320 B							Batch: ALK030828A		
Sample ID: MBLK_030828A Alkalinity, Total as CaCO ₃	Method Blank ND	mg/L	2.00						08/28/03 11:12
Sample ID: LCS_030828A Alkalinity, Total as CaCO ₃	Laboratory Control Spike 103	mg/L	2.00	103	90	110			08/28/03 11:14
Sample ID: B03081281-004AMS Alkalinity, Total as CaCO ₃	Sample Matrix Spike 765	mg/L	2.00	94.6	80	120			08/28/03 11:25
Sample ID: B03081281-004AMSD Alkalinity, Total as CaCO ₃	Sample Matrix Spike Duplicate 768	mg/L	2.00	95.1	80	120	0.4		08/28/03 11:31 20
Sample ID: B03081327-007AMS Alkalinity, Total as CaCO ₃	Sample Matrix Spike 1190	mg/L	2.00	103	80	120			08/28/03 12:49
Sample ID: B03081327-007AMSD Alkalinity, Total as CaCO ₃	Sample Matrix Spike Duplicate 1180	mg/L	2.00	102	80	120	0.8		08/28/03 12:57 20
Sample ID: MBLK_030828A Alkalinity, Total as CaCO ₃	Method Blank 3.37	mg/L	2.00						08/28/03 13:50
Sample ID: LCS_030828A Alkalinity, Total as CaCO ₃	Laboratory Control Spike 105	mg/L	2.00	105	90	110			08/28/03 13:53
Sample ID: B03081376-001AMS Alkalinity, Total as CaCO ₃	Sample Matrix Spike 1480	mg/L	2.00	102	80	120			08/28/03 15:01
Sample ID: B03081376-001AMSD Alkalinity, Total as CaCO ₃	Sample Matrix Spike Duplicate 1480	mg/L	2.00	103	80	120	0.2		08/28/03 15:10 20
Sample ID: MBLK_030828A Alkalinity, Total as CaCO ₃	Method Blank ND	mg/L	2.00						08/28/03 16:23

Qualifiers: RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Hall Environmental Analysis Laboratory

Date: 15-Sep-03

QC SUMMARY REPORT
Method Blank

CLIENT: San Juan Refining
 Work Order: 0308206
 Project: Annual Monitoring Wells 2003

Sample ID	mb 082703	Batch ID: R9380	Test Code: E300	Units: mg/L	Analysis Date	8/27/2003 11:59:55 AM	Prep Date				
Client ID:			Run ID:	LC_030827A	SeqNo:	211484					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									
Chloride	ND	0.10									
Nitrogen, Nitrite (As N)	ND	0.10									
Bromide	ND	0.10									
Nitrogen, Nitrate (As N)	ND	0.10									
Phosphorus, Orthophosphate (As P)	ND	0.50									
Sulfate	ND	0.50									

Sample ID	mb 082803	Batch ID: R9393	Test Code: E300	Units: mg/L	Analysis Date	8/28/2003 12:19:36 PM	Prep Date				
Client ID:			Run ID: LC_030828A		SeqNo: 211737						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									
Chloride	ND	0.10									
Nitrogen, Nitrite (As N)	ND	0.10									
Bromide	ND	0.10									
Nitrogen, Nitrate (As N)	ND	0.10									
Phosphorus, Orthophosphate (As P)	ND	0.50									
Sulfate	ND	0.50									

Sample ID	MBLK	Batch ID: R9433	Test Code: E310.1	Units: mg/L CaCO3	Analysis Date	9/3/2003	Prep Date				
Client ID:			Run ID: WC_030903A		SeqNo:	212528					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	2.0									
Carbonate	ND	2.0									
Bicarbonate	ND	2.0									

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

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank
 /

CLIENT: San Juan Refining
Work Order: 0308206
Project: Annual Monitoring Wells 2003

QC SUMMARY REPORT
 Method Blank

Sample ID	MBLK	Batch ID: R9494	Test Code: SW7470	Units: mg/L	Analysis Date	9/9/2003	Prep Date					
Client ID:		Run ID:	MI-LA254_030909B		SeqNo:	213883						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		ND	0.00020									

Sample ID	MB	Batch ID: R9478	Test Code: SW6010A	Units: mg/L	Analysis Date	9/8/2003 11:58:15 AM	Prep Date					
Client ID:		Run ID: ICP_030908B			SeqNo:	213498						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium		ND		1.0								
Magnesium		ND		1.0								
Potassium		ND		1.0								
Sodium		ND		1.0								

Sample ID	MB	Batch ID: R9479	Test Code: SW6010A	Units: mg/L	Analysis Date	9/8/2003 11:11:25 AM	Prep Date					
Client ID:		Run ID: ICP_030908C			SeqNo:	213523						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver		ND	0.0050									

Sample ID	MB-4209	Batch ID: 4209	Test Code: SW6010A	Units: mg/L	Analysis Date	8/28/2003 10:16:42 AM	Prep Date	8/27/2003				
Client ID:			Run ID: ICP_030828A		SeqNo:	211555						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium		0.001963										J
Lead		ND										

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

Project: Annual Monitoring Wells 2003

QC SUMMARY REPORT

Method Blank

[illegible]

Qualifiers:

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

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: 15-Sep-03

CLIENT: San Juan Refining
Work Order: 0308206
Project: Annual Monitoring Wells 2003

QC SUMMARY REPORT

Method Blank

Sample ID	5ml rb	Batch ID: R9373	Test Code: SW8260B	Units: µg/L	Analysis Date	8/27/2003	Prep Date					
Client ID:		Run ID:	THOR_030827A		SeqNo:	211376						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene		ND	1.0									
Toluene		ND	1.0									
Ethylbenzene		ND	1.0									
Methyl tert-butyl ether (MTBE)		ND	1.0									
1,2,4-Trimethylbenzene		ND	1.0									
1,3,5-Trimethylbenzene		ND	1.0									
1,2-Dichloroethane (EDC)		ND	1.0									
1,2-Dibromoethane (EDB)		ND	1.0									
Naphthalene		ND	2.0									
1-Methylnaphthalene		ND	4.0									
2-Methylnaphthalene		ND	4.0									
Acetone		ND	10									
Bromobenzene		ND	1.0									
Bromochloromethane		ND	1.0									
Bromodichloromethane		ND	1.0									
Bromoform		ND	1.0									
Bromomethane		ND	2.0									
2-Butanone		ND	10									
Carbon disulfide		ND	10									
Carbon Tetrachloride		ND	1.0									
Chlorobenzene		ND	1.0									
Chloroethane		ND	2.0									
Chloroform		ND	1.0									
Chloromethane		ND	1.0									
2-Chlorotoluene		ND	1.0									
4-Chlorotoluene		ND	1.0									
cis-1,2-DCE		ND	1.0									

Qualifiers:

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

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Method Blank

CLIENT: San Juan Refining
Work Order: 0308206
Project: Annual Monitoring Wells 2003

cis-1,3-Dichloropropene	ND	1.0
1,2-Dibromo-3-chloropropane	ND	2.0
Dibromochloromethane	ND	1.0
Dibromomethane	ND	2.0
1,2-Dichlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
Dichlorodifluoromethane	ND	1.0
1,1-Dichloroethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,2-Dichloropropane	ND	1.0
1,3-Dichloropropane	ND	1.0
2,2-Dichloropropane	ND	1.0
1,1-Dichloropropene	ND	1.0
Hexachlorobutadiene	ND	1.0
2-Hexanone	ND	10
Isopropylbenzene	ND	1.0
4-Isopropyltoluene	ND	1.0
4-Methyl-2-pentanone	ND	10
Methylene Chloride	ND	3.0
n-Butylbenzene	ND	1.0
n-Propylbenzene	ND	1.0
sec-Butylbenzene	ND	1.0
Styrene	ND	1.0
tert-Butylbenzene	ND	1.0
1,1,1,2-Tetrachloroethane	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Tetrachloroethene (PCE)	ND	1.0
trans-1,2-DCE	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
1,2,3-Trichlorobenzene	ND	1.0
1,2,4-Trichlorobenzene	ND	1.0
1,1,1-Trichloroethane	ND	1.0

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

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Method Blank

San Juan Refining

0308206

Annual Monitoring Wells 2003

[illegible]

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: 15-Sep-03

CLIENT: San Juan Refining

Work Order: 0308206

Project: Annual Monitoring Wells 2003

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID	Ics 082703	Batch ID: R9380	Test Code: E300	Units: mg/L		Analysis Date	8/27/2003 12:16:40 PM	Prep Date			
Client ID:			Run ID: LC_030827A			SeqNo: 211485					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.4736	0.10	0.5	0	94.7	90	110	0			
Chloride	4.938	0.10	5	0	98.8	90	110	0			
Nitrogen, Nitrite (As N)	0.9148	0.10	1	0	91.5	90	110	0			
Bromide	2.302	0.10	2.5	0	92.1	90	110	0			
Nitrogen, Nitrate (As N)	2.372	0.10	2.5	0	94.9	90	110	0			
Phosphorus, Orthophosphate (As P)	4.846	0.50	5	0	96.9	90	110	0			
Sulfate	9.564	0.50	10	0	95.6	90	110	0			

Sample ID	Ics082803	Batch ID: R9393	Test Code: E300	Units: mg/L	Analysis Date	8/28/2003 4:22:05 PM	Prep Date				
Client ID:			Run ID: LC_030828A		SeqNo:	211751					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.462	0.10	0.5	0	92.4	90	110	0			
Chloride	4.863	0.10	5	0	97.3	90	110	0			
Nitrogen, Nitrite (As N)	0.9	0.10	1	0	90.0	90	110	0			
Bromide	2.327	0.10	2.5	0	93.1	90	110	0			
Nitrogen, Nitrate (As N)	2.368	0.10	2.5	0	94.7	90	110	0			
Phosphorus, Orthophosphate (As P)	4.763	0.50	5	0	95.3	90	110	0			
Sulfate	9.515	0.50	10	0	95.2	90	110	0			

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
Work Order: 0308206
Project: Annual Monitoring Wells 2003

QC SUMMARY REPORT
 Laboratory Control Spike - generic

Sample ID	100ng lcs	Batch ID: R9373	Test Code: SW8260B	Units: µg/L	Analysis Date	8/27/2003	Prep Date				
Client ID:			Run ID: THOR_030827A		SeqNo:	211387					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	18.85	1.0	20	0	94.3	71.2	122	0			
Toluene	19.16	1.0	20	0	95.8	87.7	122	0			
Chlorobenzene	22.34	1.0	20	0	112	85.6	136	0			
1,1-Dichloroethene	21.57	1.0	20	0	108	70.7	117	0			
Trichloroethene (TCE)	19.78	1.0	20	0	98.9	76.9	130	0			

Sample ID	100ng lcs	Batch ID: R9423	Test Code: SW8260B	Units: µg/L	Analysis Date	8/28/2003	Prep Date				
Client ID:			Run ID: THOR_030828A		SeqNo: 212392						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	18.99	1.0	20	0	94.9	71.2	122	0			
Toluene	20.15	1.0	20	0	101	87.7	122	0			
Chlorobenzene	23.44	1.0	20	0	117	85.6	136	0			
1,1-Dichloroethene	17.19	1.0	20	0	85.9	70.7	117	0			
Trichloroethene (TCE)	19.26	1.0	20	0	96.3	76.9	130	0			

Sample ID	100ng lcsd	Batch ID: R9423	Test Code: SW8260B	Units: µg/L	Analysis Date	8/28/2003	Prep Date				
Client ID:			Run ID: THOR_030828A		SeqNo: 212424						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.28	1.0	20	0	96.4	78.7	122	18.99	1.52	11	
Toluene	18.68	1.0	20	0	93.4	76	128	20.15	7.55	12.2	
Chlorobenzene	22.46	1.0	20	0	112	85.6	136	23.44	4.26	12	
1,1-Dichloroethene	17.67	1.0	20	0	88.4	70.7	117	17.19	2.80	19.3	
Trichloroethene (TCE)	18.69	1.0	20	0	93.4	76.9	130	19.26	3.01	15.5	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
 Work Order: 0308206
 Project: Annual Monitoring Wells 2003

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID	LCS	Batch ID: R9494	Test Code: SW7470	Units: mg/L	Analysis Date	9/9/2003	Prep Date				
Client ID:		Run ID: MI-LA254_030909B			SeqNo:	213884					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.00343	0.00020	0.0035	0	98.0	90	110	0			

Sample ID	LCSD	Batch ID: R9494	Test Code: SW7470	Units: mg/L	Analysis Date 9/9/2003		Prep Date				
Client ID:		Run ID: MI-LA254_030909B			SeqNo: 213885						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.00349	0.00020	0.0035	0	99.7	90	110	0.00343	1.73	0	

Sample ID	LCS	Batch ID: R9478	Test Code: SW6010A	Units: mg/L	Analysis Date	9/8/2003 12:01:01 PM	Prep Date				
Client ID:		Run ID: ICP_030908B			SeqNo: 213499						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10.69	1.0	10	0	107	80	120	0			
Magnesium	11.21	1.0	10	0	112	80	120	0			
Potassium	10	1.0	10	0	100	80	120	0			
Sodium	9.919	1.0	10	0	99.2	80	120	0			

Sample ID	LCSD	Batch ID: R9478	Test Code: SW6010A	Units: mg/L	Analysis Date	9/8/2003 12:03:36 PM	Prep Date				
Client ID:		Run ID: ICP_030908B			SeqNo: 213500						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10.96	1.0	10	0	110	80	120	0			
Magnesium	11.4	1.0	10	0	114	80	120	0			
Potassium	10.29	1.0	10	0	103	80	120	0			
Sodium	10.02	1.0	10	0	100	80	120	0			

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

CLIENT:

San Juan Refining

Work Order:

0308206

Project:

Annual Monitoring Wells 2003

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID	LCS	Batch ID: R9479	Test Code: SW6010A	Units: mg/L	Analysis Date 9/8/2003 11:12:52 AM	Prep Date					
Client ID:		Run ID: ICP_030908C			SeqNo: 213524						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	1.008	0.0050	1	0	101	80	120	0			

Sample ID	LCSD	Batch ID: R9479	Test Code: SW6010A	Units: mg/L	Analysis Date 9/8/2003 11:14:17 AM	Prep Date					
Client ID:		Run ID: ICP_030908C			SeqNo: 213525						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	1.058	0.0050	1	0	106	80	120	1.008	4.75	20	

Sample ID	LCS-4209	Batch ID: 4209	Test Code: SW6010A	Units: mg/L	Analysis Date 8/28/2003 10:18:41 AM	Prep Date 8/27/2003					
Client ID:		Run ID: ICP_030828A			SeqNo: 211556						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.5096	0.0060	0.5	0.001963	102	80	120	0			
Lead	0.4698	0.0050	0.5	0	94.0	80	120	0			

Sample ID	LCSD-4209	Batch ID: 4209	Test Code: SW6010A	Units: mg/L	Analysis Date 8/28/2003 10:20:39 AM	Prep Date 8/27/2003					
Client ID:		Run ID: ICP_030828A			SeqNo: 211557						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.4991	0.0060	0.5	0.001963	99.4	80	120	0.5096	2.07	20	
Lead	0.4682	0.0050	0.5	0	93.6	80	120	0.4698	0.347	20	

Sample ID	LCS-4218	Batch ID: 4218	Test Code: E160.1	Units: mg/L	Analysis Date	9/2/2003	Prep Date	8/29/2003			
Client ID:		Run ID: WC_030902A			SeqNo:	212224					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids	1025	1.0	1000	0	103	80	120	0			

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Full Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name SJR

Date and Time Receive

8/27/03

Work Order Number 0308206

Received by AT

Checklist completed by

Signature

Date

8/27/03

Matrix:

Carrier name: UPS

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒
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 ☐	
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?	0°	4° C ± 2 Acceptable	

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

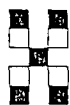
Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345-3975 Fax 505.345.4107
www.hallenvironmental.com

Client: <u>Son Juan Refining</u>		Project Name: <u>Annual Monitoring Wells 2003</u>						
Address: <u>#50 Rd 4990</u>		Project #:						
<u>Bloomfield, NM</u>		Project Manager:						
<u>87413</u>								
Phone #: <u>505-632-4161</u>		Sampler: <u>Cindy Hurtado</u>						
Fax #: <u>505-632-3911</u>		Samples Cold?: ☒ Yes ☐ No						
Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative			HEAL No.
					H ₂ O ₂	HCl		
8-26-03	750A	H ₂ O	EAST Outfall #1	1-500ml				5308226-1
				3-VOA	X			
				1-125ml			HNO ₃	
				1-500ml			HNO ₃	
				1-250ml				
				1-125ml			H ₂ SO ₄	
8-26-03	845A	H ₂ O	EAST Outfall #3	1-500ml				-2-
				3-VOA	X			
				1-125ml			HNO ₃	
				1-500ml			HNO ₃	
				1-250ml				
				1-125ml			H ₂ SO ₄	
Date: 8-26-03	Time: 930AM	Relinquished By: (Signature) <u>Cindy Hurtado</u>		Received By: (Signature) <u>Cindy Hurtado</u> 8/27/03				
Date:	Time:	Relinquished By: (Signature)		Received By: (Signature)				



Hall Environmental Analysis Laboratory

COVER LETTER

September 15, 2003

Cindy Hurtado
San Juan Refining
#50 CR 4990
Bloomfield, NM 87413
TEL: (505) 632-4161
FAX (505) 632-3911

RE: Annual Monitor Wells 2003

Order No.: 0308181

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory received 5 samples on 8/22/2003 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

Hall Environmental Analysis Laboratory

Date: 16-Sep-03

CLIENT: San Juan Refining

Client Sample ID: MW #1

Lab Order: 0308181

Collection Date: 8/21/2003 8:30:00 AM

Project: Annual Monitor Wells 2003

Lab ID: 0308181-01

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: JDC
Fluoride	0.58	0.10		mg/L	1	8/22/2003 7:10:06 PM
Chloride	33	0.10		mg/L	1	8/22/2003 7:10:06 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/22/2003 7:10:06 PM
Bromide	0.32	0.10		mg/L	1	8/22/2003 7:10:06 PM
Nitrogen, Nitrate (As N)	1.6	0.10		mg/L	1	8/22/2003 7:10:06 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/22/2003 7:10:06 PM
Sulfate	200	2.5		mg/L	5	8/25/2003 1:05:01 PM
EPA METHOD 8260B: VOLATILES						Analyst: BL
Benzene	ND	1.0		µg/L	1	8/25/2003
Toluene	ND	1.0		µg/L	1	8/25/2003
Ethylbenzene	ND	1.0		µg/L	1	8/25/2003
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/25/2003
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/25/2003
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/25/2003
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/25/2003
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/25/2003
Naphthalene	ND	2.0		µg/L	1	8/25/2003
1-Methylnaphthalene	ND	4.0		µg/L	1	8/25/2003
2-Methylnaphthalene	ND	4.0		µg/L	1	8/25/2003
Acetone	ND	10		µg/L	1	8/25/2003
Bromobenzene	ND	1.0		µg/L	1	8/25/2003
Bromochloromethane	ND	1.0		µg/L	1	8/25/2003
Bromodichloromethane	ND	1.0		µg/L	1	8/25/2003
Bromoform	ND	1.0		µg/L	1	8/25/2003
Bromomethane	ND	2.0		µg/L	1	8/25/2003
2-Butanone	ND	10		µg/L	1	8/25/2003
Carbon disulfide	ND	10		µg/L	1	8/25/2003
Carbon Tetrachloride	ND	1.0		µg/L	1	8/25/2003
Chlorobenzene	ND	1.0		µg/L	1	8/25/2003
Chloroethane	ND	2.0		µg/L	1	8/25/2003
Chloroform	ND	1.0		µg/L	1	8/25/2003
Chloromethane	ND	1.0		µg/L	1	8/25/2003
2-Chlorotoluene	ND	1.0		µg/L	1	8/25/2003
4-Chlorotoluene	ND	1.0		µg/L	1	8/25/2003
cis-1,2-DCE	ND	1.0		µg/L	1	8/25/2003
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/25/2003
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/25/2003
Dibromochloromethane	ND	1.0		µg/L	1	8/25/2003
Dibromomethane	ND	2.0		µg/L	1	8/25/2003
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/25/2003

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 16-Sep-03

CLIENT: San Juan Refining
Lab Order: 0308181
Project: Annual Monitor Wells 2003
Lab ID: 0308181-01

Client Sample ID: MW #1
Collection Date: 8/21/2003 8:30:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/25/2003
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/25/2003
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/25/2003
1,1-Dichloroethane	ND	1.0		µg/L	1	8/25/2003
1,1-Dichloroethene	ND	1.0		µg/L	1	8/25/2003
1,2-Dichloropropane	ND	1.0		µg/L	1	8/25/2003
1,3-Dichloropropane	ND	1.0		µg/L	1	8/25/2003
2,2-Dichloropropane	ND	1.0		µg/L	1	8/25/2003
1,1-Dichloropropene	ND	1.0		µg/L	1	8/25/2003
Hexachlorobutadiene	ND	1.0		µg/L	1	8/25/2003
2-Hexanone	ND	10		µg/L	1	8/25/2003
Isopropylbenzene	ND	1.0		µg/L	1	8/25/2003
4-Isopropyltoluene	ND	1.0		µg/L	1	8/25/2003
4-Methyl-2-pentanone	ND	10		µg/L	1	8/25/2003
Methylene Chloride	ND	3.0		µg/L	1	8/25/2003
n-Butylbenzene	ND	1.0		µg/L	1	8/25/2003
n-Propylbenzene	ND	1.0		µg/L	1	8/25/2003
sec-Butylbenzene	ND	1.0		µg/L	1	8/25/2003
Styrene	ND	1.0		µg/L	1	8/25/2003
tert-Butylbenzene	ND	1.0		µg/L	1	8/25/2003
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/25/2003
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	8/25/2003
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/25/2003
trans-1,2-DCE	ND	1.0		µg/L	1	8/25/2003
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/25/2003
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/25/2003
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/25/2003
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/25/2003
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/25/2003
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/25/2003
Trichlorofluoromethane	ND	1.0		µg/L	1	8/25/2003
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/25/2003
Vinyl chloride	ND	2.0		µg/L	1	8/25/2003
Xylenes, Total	ND	1.0		µg/L	1	8/25/2003
Surr: 1,2-Dichloroethane-d4	99.8	70.6-124		%REC	1	8/25/2003
Surr: 4-Bromofluorobenzene	105	76.2-122		%REC	1	8/25/2003
Surr: Dibromofluoromethane	110	67.2-131		%REC	1	8/25/2003
Surr: Toluene-d8	101	82.1-123		%REC	1	8/25/2003

EPA 120.1: SPECIFIC CONDUCTANCE

Analyst: MAP

Specific Conductance 820 0.010 µmhos/cm

1 9/3/2003

MERCURY, DISSOLVED

Analyst: MAP

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

Hall Environmental Analysis Laboratory

Date: 16-Sep-03

CLIENT: San Juan Refining
Lab Order: 0308181
Project: Annual Monitor Wells 2003
Lab ID: 0308181-01

Client Sample ID: MW #1
Collection Date: 8/21/2003 8:30:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Mercury	ND	0.00020		mg/L	1	9/9/2003
EPA METHOD 6010C: DISSOLVED METALS						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	9/5/2003 10:27:13 AM
Barium	0.46	0.0020		mg/L	1	9/5/2003 10:27:13 AM
Cadmium	ND	0.0020		mg/L	1	9/5/2003 10:27:13 AM
Calcium	61	0.50		mg/L	1	9/8/2003 12:12:06 PM
Chromium	ND	0.0060		mg/L	1	9/5/2003 10:27:13 AM
Copper	ND	0.0060		mg/L	1	9/5/2003 10:27:13 AM
Iron	ND	0.020		mg/L	1	9/5/2003 10:27:13 AM
Lead	ND	0.0050		mg/L	1	9/5/2003 10:27:13 AM
Magnesium	16	0.50		mg/L	1	9/8/2003 12:12:06 PM
Manganese	0.080	0.0020		mg/L	1	9/5/2003 10:27:13 AM
Potassium	2.6	1.0		mg/L	1	9/8/2003 12:12:06 PM
Selenium	0.043	0.020		mg/L	1	9/5/2003 10:27:13 AM
Silver	ND	0.0050		mg/L	1	9/8/2003 11:17:05 AM
Sodium	150	0.50		mg/L	1	9/8/2003 12:12:06 PM
Uranium	ND	0.10		mg/L	1	9/5/2003 10:27:13 AM
Zinc	0.12	0.0050		mg/L	1	9/5/2003 10:27:13 AM
EPA 6010C: TOTAL RECOVERABLE METALS						Analyst: NMO
Chromium	0.013	0.0060		mg/L	1	8/28/2003 10:57:08 AM
Lead	ND	0.0050		mg/L	1	8/28/2003 10:57:08 AM
EPA METHOD 160.1: TDS						Analyst: MAP
Total Dissolved Solids	610	1.0		mg/L	1	8/27/2003

Qualifiers: ND - Not Detected at the Reporting Limit
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S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 16-Sep-03

CLIENT: San Juan Refining
Lab Order: 0308181
Project: Annual Monitor Wells 2003
Lab ID: 0308181-02

Client Sample ID: MW #13
Collection Date: 8/21/2003 10:30:00 AM

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: JDC
Fluoride	0.19	0.10		mg/L	1	8/22/2003 7:26:51 PM
Chloride	510	2.0		mg/L	20	8/25/2003 1:38:31 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/22/2003 7:26:51 PM
Bromide	13	0.10		mg/L	1	8/22/2003 7:26:51 PM
Nitrogen, Nitrate (As N)	12	0.10		mg/L	1	8/22/2003 7:26:51 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/22/2003 7:26:51 PM
Sulfate	840	10		mg/L	20	8/25/2003 1:38:31 PM
EPA METHOD 8260B: VOLATILES						Analyst: BL
Benzene	ND	1.0		µg/L	1	8/25/2003
Toluene	ND	1.0		µg/L	1	8/25/2003
Ethylbenzene	ND	1.0		µg/L	1	8/25/2003
Methyl tert-butyl ether (MTBE)	61	1.0		µg/L	1	8/25/2003
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/25/2003
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/25/2003
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/25/2003
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/25/2003
Naphthalene	ND	2.0		µg/L	1	8/25/2003
1-Methylnaphthalene	ND	4.0		µg/L	1	8/25/2003
2-Methylnaphthalene	ND	4.0		µg/L	1	8/25/2003
Acetone	ND	10		µg/L	1	8/25/2003
Bromobenzene	ND	1.0		µg/L	1	8/25/2003
Bromochloromethane	ND	1.0		µg/L	1	8/25/2003
Bromodichloromethane	ND	1.0		µg/L	1	8/25/2003
Bromoform	ND	1.0		µg/L	1	8/25/2003
Bromomethane	ND	2.0		µg/L	1	8/25/2003
2-Butanone	ND	10		µg/L	1	8/25/2003
Carbon disulfide	ND	10		µg/L	1	8/25/2003
Carbon Tetrachloride	ND	1.0		µg/L	1	8/25/2003
Chlorobenzene	ND	1.0		µg/L	1	8/25/2003
Chloroethane	ND	2.0		µg/L	1	8/25/2003
Chloroform	ND	1.0		µg/L	1	8/25/2003
Chloromethane	ND	1.0		µg/L	1	8/25/2003
2-Chlorotoluene	ND	1.0		µg/L	1	8/25/2003
4-Chlorotoluene	ND	1.0		µg/L	1	8/25/2003
cis-1,2-DCE	ND	1.0		µg/L	1	8/25/2003
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/25/2003
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/25/2003
Dibromochloromethane	ND	1.0		µg/L	1	8/25/2003
Dibromomethane	ND	2.0		µg/L	1	8/25/2003
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/25/2003

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 16-Sep-03

CLIENT: San Juan Refining
Lab Order: 0308181
Project: Annual Monitor Wells 2003
Lab ID: 0308181-02

Client Sample ID: MW #13
Collection Date: 8/21/2003 10:30:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/25/2003
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/25/2003
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/25/2003
1,1-Dichloroethane	ND	1.0		µg/L	1	8/25/2003
1,1-Dichloroethene	ND	1.0		µg/L	1	8/25/2003
1,2-Dichloropropane	ND	1.0		µg/L	1	8/25/2003
1,3-Dichloropropane	ND	1.0		µg/L	1	8/25/2003
2,2-Dichloropropane	ND	1.0		µg/L	1	8/25/2003
1,1-Dichloropropene	ND	1.0		µg/L	1	8/25/2003
Hexachlorobutadiene	ND	1.0		µg/L	1	8/25/2003
2-Hexanone	ND	10		µg/L	1	8/25/2003
Isopropylbenzene	ND	1.0		µg/L	1	8/25/2003
4-Isopropyltoluene	ND	1.0		µg/L	1	8/25/2003
4-Methyl-2-pentanone	ND	10		µg/L	1	8/25/2003
Methylene Chloride	ND	3.0		µg/L	1	8/25/2003
n-Butylbenzene	ND	1.0		µg/L	1	8/25/2003
n-Propylbenzene	ND	1.0		µg/L	1	8/25/2003
sec-Butylbenzene	ND	1.0		µg/L	1	8/25/2003
Styrene	ND	1.0		µg/L	1	8/25/2003
tert-Butylbenzene	ND	1.0		µg/L	1	8/25/2003
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/25/2003
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	8/25/2003
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/25/2003
trans-1,2-DCE	ND	1.0		µg/L	1	8/25/2003
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/25/2003
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/25/2003
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/25/2003
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/25/2003
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/25/2003
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/25/2003
Trichlorofluoromethane	ND	1.0		µg/L	1	8/25/2003
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/25/2003
Vinyl chloride	ND	2.0		µg/L	1	8/25/2003
Xylenes, Total	ND	1.0		µg/L	1	8/25/2003
Surr: 1,2-Dichloroethane-d4	110	70.6-124		%REC	1	8/25/2003
Surr: 4-Bromofluorobenzene	107	76.2-122		%REC	1	8/25/2003
Surr: Dibromofluoromethane	112	67.2-131		%REC	1	8/25/2003
Surr: Toluene-d8	102	82.1-123		%REC	1	8/25/2003

EPA 120.1: SPECIFIC CONDUCTANCE

Analyst: MAP

Specific Conductance 5000 0.010 µmhos/cm

1 9/3/2003

MERCURY, DISSOLVED

Analyst: MAP

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 16-Sep-03

CLIENT: San Juan Refining
Lab Order: 0308181
Project: Annual Monitor Wells 2003
Lab ID: 0308181-02

Client Sample ID: MW #13
Collection Date: 8/21/2003 10:30:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Mercury	ND	0.00020		mg/L	1	9/9/2003
EPA METHOD 6010C: DISSOLVED METALS						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	9/5/2003 10:32:46 AM
Barium	0.33	0.0020		mg/L	1	9/5/2003 10:32:46 AM
Cadmium	ND	0.0020		mg/L	1	9/5/2003 10:32:46 AM
Calcium	270	10		mg/L	10	9/8/2003 1:19:33 PM
Chromium	ND	0.0060		mg/L	1	9/5/2003 10:32:46 AM
Copper	0.0096	0.0060		mg/L	1	9/5/2003 10:32:46 AM
Iron	0.040	0.020		mg/L	1	9/5/2003 10:32:46 AM
Lead	ND	0.0050		mg/L	1	9/5/2003 10:32:46 AM
Magnesium	110	0.50		mg/L	1	9/8/2003 12:21:18 PM
Manganese	1.1	0.020		mg/L	10	9/8/2003 10:05:20 AM
Potassium	5.3	1.0		mg/L	1	9/8/2003 12:21:18 PM
Selenium	0.16	0.020		mg/L	1	9/5/2003 10:32:46 AM
Silver	ND	0.0050		mg/L	1	9/8/2003 11:18:54 AM
Sodium	680	10		mg/L	10	9/8/2003 1:19:33 PM
Uranium	ND	0.10		mg/L	1	9/5/2003 10:32:46 AM
Zinc	0.090	0.0050		mg/L	1	9/5/2003 10:32:46 AM
EPA 6010C: TOTAL RECOVERABLE METALS						Analyst: NMO
Chromium	0.45	0.0060		mg/L	1	8/28/2003 11:11:58 AM
Lead	ND	0.0050		mg/L	1	8/28/2003 11:11:58 AM
EPA METHOD 160.1: TDS						Analyst: MAP
Total Dissolved Solids	3100	1.0		mg/L	1	8/27/2003

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 16-Sep-03

CLIENT: San Juan Refining

Client Sample ID: MW #27

Lab Order: 0308181

Collection Date: 8/21/2003 1:30:00 PM

Project: Annual Monitor Wells 2003

Lab ID: 0308181-03

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: JDC
Fluoride	0.22	0.10		mg/L	1	8/22/2003 7:43:37 PM
Chloride	360	1.0		mg/L	10	8/25/2003 1:55:16 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/22/2003 7:43:37 PM
Bromide	4.7	0.10		mg/L	1	8/22/2003 7:43:37 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/22/2003 7:43:37 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/22/2003 7:43:37 PM
Sulfate	6.8	0.50		mg/L	1	8/22/2003 7:43:37 PM
EPA METHOD 8260B: VOLATILES						Analyst: BL
Benzene	ND	1.0		µg/L	1	8/25/2003
Toluene	ND	1.0		µg/L	1	8/25/2003
Ethylbenzene	ND	1.0		µg/L	1	8/25/2003
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/25/2003
1,2,4-Trimethylbenzene	3.6	1.0		µg/L	1	8/25/2003
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/25/2003
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/25/2003
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/25/2003
Naphthalene	ND	2.0		µg/L	1	8/25/2003
1-Methylnaphthalene	9.0	4.0		µg/L	1	8/25/2003
2-Methylnaphthalene	ND	4.0		µg/L	1	8/25/2003
Acetone	ND	10		µg/L	1	8/25/2003
Bromobenzene	ND	1.0		µg/L	1	8/25/2003
Bromochloromethane	ND	1.0		µg/L	1	8/25/2003
Bromodichloromethane	ND	1.0		µg/L	1	8/25/2003
Bromoform	ND	1.0		µg/L	1	8/25/2003
Bromomethane	ND	2.0		µg/L	1	8/25/2003
2-Butanone	ND	10		µg/L	1	8/25/2003
Carbon disulfide	ND	10		µg/L	1	8/25/2003
Carbon Tetrachloride	ND	1.0		µg/L	1	8/25/2003
Chlorobenzene	ND	1.0		µg/L	1	8/25/2003
Chloroethane	ND	2.0		µg/L	1	8/25/2003
Chloroform	ND	1.0		µg/L	1	8/25/2003
Chloromethane	ND	1.0		µg/L	1	8/25/2003
2-Chlorotoluene	ND	1.0		µg/L	1	8/25/2003
4-Chlorotoluene	ND	1.0		µg/L	1	8/25/2003
cis-1,2-DCE	ND	1.0		µg/L	1	8/25/2003
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/25/2003
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/25/2003
Dibromochloromethane	ND	1.0		µg/L	1	8/25/2003
Dibromomethane	ND	2.0		µg/L	1	8/25/2003
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/25/2003

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 16-Sep-03

CLIENT: San Juan Refining
Lab Order: 0308181
Project: Annual Monitor Wells 2003
Lab ID: 0308181-03

Client Sample ID: MW #27
Collection Date: 8/21/2003 1:30:00 PM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/25/2003
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/25/2003
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/25/2003
1,1-Dichloroethane	ND	1.0		µg/L	1	8/25/2003
1,1-Dichloroethene	ND	1.0		µg/L	1	8/25/2003
1,2-Dichloropropane	ND	1.0		µg/L	1	8/25/2003
1,3-Dichloropropane	ND	1.0		µg/L	1	8/25/2003
2,2-Dichloropropane	ND	1.0		µg/L	1	8/25/2003
1,1-Dichloropropene	ND	1.0		µg/L	1	8/25/2003
Hexachlorobutadiene	ND	1.0		µg/L	1	8/25/2003
2-Hexanone	ND	10		µg/L	1	8/25/2003
Isopropylbenzene	ND	1.0		µg/L	1	8/25/2003
4-Isopropyltoluene	5.4	1.0		µg/L	1	8/25/2003
4-Methyl-2-pentanone	ND	10		µg/L	1	8/25/2003
Methylene Chloride	ND	3.0		µg/L	1	8/25/2003
n-Butylbenzene	ND	1.0		µg/L	1	8/25/2003
n-Propylbenzene	ND	1.0		µg/L	1	8/25/2003
sec-Butylbenzene	ND	1.0		µg/L	1	8/25/2003
Styrene	ND	1.0		µg/L	1	8/25/2003
tert-Butylbenzene	ND	1.0		µg/L	1	8/25/2003
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/25/2003
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	8/25/2003
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/25/2003
trans-1,2-DCE	ND	1.0		µg/L	1	8/25/2003
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/25/2003
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/25/2003
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/25/2003
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/25/2003
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/25/2003
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/25/2003
Trichlorofluoromethane	ND	1.0		µg/L	1	8/25/2003
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/25/2003
Vinyl chloride	ND	2.0		µg/L	1	8/25/2003
Xylenes, Total	ND	1.0		µg/L	1	8/25/2003
Surr: 1,2-Dichloroethane-d4	97.3	70.6-124		%REC	1	8/25/2003
Surr: 4-Bromofluorobenzene	103	76.2-122		%REC	1	8/25/2003
Surr: Dibromofluoromethane	108	67.2-131		%REC	1	8/25/2003
Surr: Toluene-d8	95.7	82.1-123		%REC	1	8/25/2003

EPA 120.1: SPECIFIC CONDUCTANCE

Analyst: MAP

Specific Conductance 3100 0.010 µmhos/cm 1 9/3/2003

MERCURY, DISSOLVED

Analyst: MAP

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

Hall Environmental Analysis Laboratory

Date: 16-Sep-03

CLIENT: San Juan Refining

Client Sample ID: MW #27

Lab Order: 0308181

Collection Date: 8/21/2003 1:30:00 PM

Project: Annual Monitor Wells 2003

Lab ID: 0308181-03

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Mercury	ND	0.00020		mg/L	1	9/9/2003
EPA METHOD 6010C: DISSOLVED METALS						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	9/5/2003 10:38:12 AM
Barium	0.52	0.0020		mg/L	1	9/5/2003 10:38:12 AM
Cadmium	ND	0.0020		mg/L	1	9/5/2003 10:38:12 AM
Calcium	210	10		mg/L	10	9/8/2003 1:21:57 PM
Chromium	ND	0.0060		mg/L	1	9/5/2003 10:38:12 AM
Copper	ND	0.0060		mg/L	1	9/5/2003 10:38:12 AM
Iron	0.44	0.020		mg/L	1	9/5/2003 10:38:12 AM
Lead	ND	0.0050		mg/L	1	9/5/2003 10:38:12 AM
Magnesium	34	0.50		mg/L	1	9/8/2003 12:23:35 PM
Manganese	1.4	0.020		mg/L	10	9/8/2003 10:07:07 AM
Potassium	4.0	1.0		mg/L	1	9/8/2003 12:23:35 PM
Selenium	0.13	0.020		mg/L	1	9/5/2003 10:38:12 AM
Silver	ND	0.0050		mg/L	1	9/8/2003 11:20:23 AM
Sodium	420	10		mg/L	10	9/8/2003 1:21:57 PM
Uranium	ND	0.10		mg/L	1	9/5/2003 10:38:12 AM
Zinc	0.037	0.0050		mg/L	1	9/5/2003 10:38:12 AM
EPA 6010C: TOTAL RECOVERABLE METALS						Analyst: NMO
Chromium	0.014	0.0060		mg/L	1	8/28/2003 11:13:56 AM
Lead	ND	0.0050		mg/L	1	8/28/2003 11:13:56 AM
EPA METHOD 160.1: TDS						Analyst: MAP
Total Dissolved Solids	1700	1.0		mg/L	1	8/27/2003

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 16-Sep-03

CLIENT: San Juan Refining

Client Sample ID: MW #26

Lab Order: 0308181

Collection Date: 8/21/2003 2:15:00 PM

Project: Annual Monitor Wells 2003

Lab ID: 0308181-04

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: JDC
Fluoride	0.39	0.10		mg/L	1	8/22/2003 8:00:21 PM
Chloride	160	1.0		mg/L	10	8/25/2003 2:12:01 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/22/2003 8:00:21 PM
Bromide	2.9	0.10		mg/L	1	8/22/2003 8:00:21 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/22/2003 8:00:21 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/22/2003 8:00:21 PM
Sulfate	1.0	0.50		mg/L	1	8/22/2003 8:00:21 PM
EPA METHOD 8260B: VOLATILES						Analyst: BL
Benzene	1400	50		µg/L	50	8/25/2003
Toluene	ND	50		µg/L	50	8/25/2003
Ethylbenzene	630	50		µg/L	50	8/25/2003
Methyl tert-butyl ether (MTBE)	ND	50		µg/L	50	8/25/2003
1,2,4-Trimethylbenzene	1400	50		µg/L	50	8/25/2003
1,3,5-Trimethylbenzene	110	50		µg/L	50	8/25/2003
1,2-Dichloroethane (EDC)	ND	50		µg/L	50	8/25/2003
1,2-Dibromoethane (EDB)	ND	50		µg/L	50	8/25/2003
Naphthalene	180	100		µg/L	50	8/25/2003
1-Methylnaphthalene	ND	200		µg/L	50	8/25/2003
2-Methylnaphthalene	ND	200		µg/L	50	8/25/2003
Acetone	ND	500		µg/L	50	8/25/2003
Bromobenzene	ND	50		µg/L	50	8/25/2003
Bromochloromethane	ND	50		µg/L	50	8/25/2003
Bromodichloromethane	ND	50		µg/L	50	8/25/2003
Bromoform	ND	50		µg/L	50	8/25/2003
Bromomethane	ND	100		µg/L	50	8/25/2003
2-Butanone	ND	500		µg/L	50	8/25/2003
Carbon disulfide	ND	500		µg/L	50	8/25/2003
Carbon Tetrachloride	ND	50		µg/L	50	8/25/2003
Chlorobenzene	ND	50		µg/L	50	8/25/2003
Chloroethane	ND	100		µg/L	50	8/25/2003
Chloroform	ND	50		µg/L	50	8/25/2003
Chloromethane	ND	50		µg/L	50	8/25/2003
2-Chlorotoluene	ND	50		µg/L	50	8/25/2003
4-Chlorotoluene	ND	50		µg/L	50	8/25/2003
cis-1,2-DCE	ND	50		µg/L	50	8/25/2003
cis-1,3-Dichloropropene	ND	50		µg/L	50	8/25/2003
1,2-Dibromo-3-chloropropane	ND	100		µg/L	50	8/25/2003
Dibromochloromethane	ND	50		µg/L	50	8/25/2003
Dibromomethane	ND	100		µg/L	50	8/25/2003
1,2-Dichlorobenzene	ND	50		µg/L	50	8/25/2003

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 16-Sep-03

CLIENT: San Juan Refining

Client Sample ID: MW #26

Lab Order: 0308181

Collection Date: 8/21/2003 2:15:00 PM

Project: Annual Monitor Wells 2003

Lab ID: 0308181-04

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,3-Dichlorobenzene	ND	50		µg/L	50	8/25/2003
1,4-Dichlorobenzene	ND	50		µg/L	50	8/25/2003
Dichlorodifluoromethane	ND	50		µg/L	50	8/25/2003
1,1-Dichloroethane	ND	50		µg/L	50	8/25/2003
1,1-Dichloroethene	ND	50		µg/L	50	8/25/2003
1,2-Dichloropropane	ND	50		µg/L	50	8/25/2003
1,3-Dichloropropane	ND	50		µg/L	50	8/25/2003
2,2-Dichloropropane	ND	50		µg/L	50	8/25/2003
1,1-Dichloropropene	ND	50		µg/L	50	8/25/2003
Hexachlorobutadiene	ND	50		µg/L	50	8/25/2003
2-Hexanone	ND	500		µg/L	50	8/25/2003
Isopropylbenzene	110	50		µg/L	50	8/25/2003
4-Isopropyltoluene	ND	50		µg/L	50	8/25/2003
4-Methyl-2-pentanone	ND	500		µg/L	50	8/25/2003
Methylene Chloride	ND	150		µg/L	50	8/25/2003
n-Butylbenzene	ND	50		µg/L	50	8/25/2003
n-Propylbenzene	140	50		µg/L	50	8/25/2003
sec-Butylbenzene	ND	50		µg/L	50	8/25/2003
Styrene	ND	50		µg/L	50	8/25/2003
tert-Butylbenzene	ND	50		µg/L	50	8/25/2003
1,1,1,2-Tetrachloroethane	ND	50		µg/L	50	8/25/2003
1,1,2,2-Tetrachloroethane	ND	50		µg/L	50	8/25/2003
Tetrachloroethene (PCE)	ND	50		µg/L	50	8/25/2003
trans-1,2-DCE	ND	50		µg/L	50	8/25/2003
trans-1,3-Dichloropropene	ND	50		µg/L	50	8/25/2003
1,2,3-Trichlorobenzene	ND	50		µg/L	50	8/25/2003
1,2,4-Trichlorobenzene	ND	50		µg/L	50	8/25/2003
1,1,1-Trichloroethane	ND	50		µg/L	50	8/25/2003
1,1,2-Trichloroethane	ND	50		µg/L	50	8/25/2003
Trichloroethene (TCE)	ND	50		µg/L	50	8/25/2003
Trichlorofluoromethane	ND	50		µg/L	50	8/25/2003
1,2,3-Trichloropropane	ND	100		µg/L	50	8/25/2003
Vinyl chloride	ND	100		µg/L	50	8/25/2003
Xylenes, Total	350	50		µg/L	50	8/25/2003
Surr: 1,2-Dichloroethane-d4	97.3	70.6-124		%REC	50	8/25/2003
Surr: 4-Bromofluorobenzene	101	76.2-122		%REC	50	8/25/2003
Surr: Dibromofluoromethane	108	67.2-131		%REC	50	8/25/2003
Surr: Toluene-d8	102	82.1-123		%REC	50	8/25/2003

EPA 120.1: SPECIFIC CONDUCTANCE

Analyst: MAP

Specific Conductance 1900 0.010 µmhos/cm

1 9/3/2003

MERCURY, DISSOLVED

Analyst: MAP

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 16-Sep-03

CLIENT: San Juan Refining
Lab Order: 0308181
Project: Annual Monitor Wells 2003
Lab ID: 0308181-04

Client Sample ID: MW #26
Collection Date: 8/21/2003 2:15:00 PM

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Mercury	ND	0.00020		mg/L	1	9/9/2003
EPA METHOD 6010C: DISSOLVED METALS						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	9/5/2003 10:43:32 AM
Barium	2.3	0.0020		mg/L	1	9/5/2003 10:43:32 AM
Cadmium	ND	0.0020		mg/L	1	9/5/2003 10:43:32 AM
Calcium	91	0.50		mg/L	1	9/8/2003 12:25:51 PM
Chromium	0.0089	0.0060		mg/L	1	9/5/2003 10:43:32 AM
Copper	ND	0.0060		mg/L	1	9/5/2003 10:43:32 AM
Iron	5.0	0.20		mg/L	10	9/8/2003 10:09:19 AM
Lead	ND	0.0050		mg/L	1	9/5/2003 10:43:32 AM
Magnesium	32	0.50		mg/L	1	9/8/2003 12:25:51 PM
Manganese	2.4	0.020		mg/L	10	9/8/2003 10:09:19 AM
Potassium	4.2	1.0		mg/L	1	9/8/2003 12:25:51 PM
Selenium	0.10	0.020		mg/L	1	9/5/2003 10:43:32 AM
Silver	ND	0.0050		mg/L	1	9/8/2003 11:21:51 AM
Sodium	430	10		mg/L	10	9/8/2003 1:24:11 PM
Uranium	ND	0.10		mg/L	1	9/5/2003 10:43:32 AM
Zinc	0.19	0.0050		mg/L	1	9/5/2003 10:43:32 AM
EPA 6010C: TOTAL RECOVERABLE METALS						Analyst: NMO
Chromium	0.017	0.0060		mg/L	1	8/28/2003 11:16:02 AM
Lead	0.0084	0.0050		mg/L	1	8/28/2003 11:16:02 AM
EPA METHOD 160.1: TDS						Analyst: MAP
Total Dissolved Solids	1400	1.0		mg/L	1	8/27/2003

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 16-Sep-03

CLIENT: San Juan Refining

Client Sample ID: Trip Blank

Lab Order: 0308181

Collection Date:

Project: Annual Monitor Wells 2003

Lab ID: 0308181-05

Matrix: TRIP BLANK

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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EPA METHOD 8260B: VOLATILES

Analyst: BL

Benzene	ND	1.0		µg/L	1	8/25/2003
Toluene	ND	1.0		µg/L	1	8/25/2003
Ethylbenzene	ND	1.0		µg/L	1	8/25/2003
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/25/2003
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/25/2003
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/25/2003
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/25/2003
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/25/2003
Naphthalene	ND	2.0		µg/L	1	8/25/2003
1-Methylnaphthalene	ND	4.0		µg/L	1	8/25/2003
2-Methylnaphthalene	ND	4.0		µg/L	1	8/25/2003
Acetone	ND	10		µg/L	1	8/25/2003
Bromobenzene	ND	1.0		µg/L	1	8/25/2003
Bromochloromethane	ND	1.0		µg/L	1	8/25/2003
Bromodichloromethane	ND	1.0		µg/L	1	8/25/2003
Bromoform	ND	1.0		µg/L	1	8/25/2003
Bromomethane	ND	2.0		µg/L	1	8/25/2003
2-Butanone	ND	10		µg/L	1	8/25/2003
Carbon disulfide	ND	10		µg/L	1	8/25/2003
Carbon Tetrachloride	ND	1.0		µg/L	1	8/25/2003
Chlorobenzene	ND	1.0		µg/L	1	8/25/2003
Chloroethane	ND	2.0		µg/L	1	8/25/2003
Chloroform	ND	1.0		µg/L	1	8/25/2003
Chloromethane	ND	1.0		µg/L	1	8/25/2003
2-Chlorotoluene	ND	1.0		µg/L	1	8/25/2003
4-Chlorotoluene	ND	1.0		µg/L	1	8/25/2003
cis-1,2-DCE	ND	1.0		µg/L	1	8/25/2003
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/25/2003
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/25/2003
Dibromochloromethane	ND	1.0		µg/L	1	8/25/2003
Dibromomethane	ND	2.0		µg/L	1	8/25/2003
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/25/2003
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/25/2003
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/25/2003
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/25/2003
1,1-Dichloroethane	ND	1.0		µg/L	1	8/25/2003
1,1-Dichloroethene	ND	1.0		µg/L	1	8/25/2003
1,2-Dichloropropane	ND	1.0		µg/L	1	8/25/2003
1,3-Dichloropropane	ND	1.0		µg/L	1	8/25/2003
2,2-Dichloropropane	ND	1.0		µg/L	1	8/25/2003
1,1-Dichloropropene	ND	1.0		µg/L	1	8/25/2003

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 16-Sep-03

CLIENT: San Juan Refining
Lab Order: 0308181
Project: Annual Monitor Wells 2003
Lab ID: 0308181-05

Client Sample ID: Trip Blank
Collection Date:
Matrix: TRIP BLANK

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Hexachlorobutadiene	ND	1.0		µg/L	1	8/25/2003
2-Hexanone	ND	10		µg/L	1	8/25/2003
Isopropylbenzene	ND	1.0		µg/L	1	8/25/2003
4-Isopropyltoluene	ND	1.0		µg/L	1	8/25/2003
4-Methyl-2-pentanone	ND	10		µg/L	1	8/25/2003
Methylene Chloride	ND	3.0		µg/L	1	8/25/2003
n-Butylbenzene	ND	1.0		µg/L	1	8/25/2003
n-Propylbenzene	ND	1.0		µg/L	1	8/25/2003
sec-Butylbenzene	ND	1.0		µg/L	1	8/25/2003
Styrene	ND	1.0		µg/L	1	8/25/2003
tert-Butylbenzene	ND	1.0		µg/L	1	8/25/2003
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/25/2003
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	8/25/2003
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/25/2003
trans-1,2-DCE	ND	1.0		µg/L	1	8/25/2003
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/25/2003
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/25/2003
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/25/2003
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/25/2003
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/25/2003
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/25/2003
Trichlorofluoromethane	ND	1.0		µg/L	1	8/25/2003
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/25/2003
Vinyl chloride	ND	2.0		µg/L	1	8/25/2003
Xylenes, Total	ND	1.0		µg/L	1	8/25/2003
Surr: 1,2-Dichloroethane-d4	103	70.6-124		%REC	1	8/25/2003
Surr: 4-Bromofluorobenzene	108	76.2-122		%REC	1	8/25/2003
Surr: Dibromofluoromethane	114	67.2-131		%REC	1	8/25/2003
Surr: Toluene-d8	104	82.1-123		%REC	1	8/25/2003

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range



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LABORATORY ANALYTICAL REPORT

Client: Hall Environmental-Albuquerque
Project: Annual Monitor Wells, 2003
Lab ID: B03081262-001
Client Sample ID: MW #1, 0308181-01D

Report Date: 09/02/03
Collection Date: 08/21/03 08:30
Date Received: 08/26/03
Matrix: Aqueous

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
INORGANICS							
Alkalinity, Total as CaCO3	262	mg/L		2		A2320 B	08/27/03 14:14 / jb
Carbon Dioxide, Total	240	mg/L		1		Calculation	08/28/03 09:47 / lab

Report
Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

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



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LABORATORY ANALYTICAL REPORT

Client: Hall Environmental-Albuquerque
Project: Annual Monitor Wells, 2003
Lab ID: B03081262-002
Client Sample ID: MW #13, 0308181-02D

Report Date: 09/02/03
Collection Date: 08/21/03 10:30
Date Received: 08/26/03
Matrix: Aqueous

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
INORGANICS							
Alkalinity, Total as CaCO3	917	mg/L		2		A2320 B	08/27/03 14:21 / jb
Carbon Dioxide, Total	1000	mg/L		1		Calculation	08/28/03 09:47 / lab

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

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



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LABORATORY ANALYTICAL REPORT

Client: Hall Environmental-Albuquerque
Project: Annual Monitor Wells, 2003
Lab ID: B03081262-003
Client Sample ID: MW #27, 0308181-03D

Report Date: 09/02/03
Collection Date: 08/21/03 13:30
Date Received: 08/26/03
Matrix: Aqueous

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
INORGANICS							
Alkalinity, Total as CaCO3	1040	mg/L		2		A2320 B	08/27/03 14:29 / jb
Carbon Dioxide, Total	1200	mg/L		1		Calculation	08/28/03 09:47 / lab

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

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



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LABORATORY ANALYTICAL REPORT

Client: Hall Environmental-Albuquerque
Project: Annual Monitor Wells, 2003
Lab ID: B03081262-004
Client Sample ID: MW #26, 0308181-04D

Report Date: 09/02/03
Collection Date: 08/21/03 14:15
Date Received: 08/26/03
Matrix: Aqueous

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
INORGANICS							
Alkalinity, Total as CaCO3	1090	mg/L		2		A2320 B	08/27/03 14:37 / jb
Carbon Dioxide, Total	1300	mg/L		1		Calculation	08/28/03 09:47 / lab

Report Definitions: 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

Report Date: 08/28/03

Project: Annual Monitor Wells, 2003

Work Order: B03081262

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2320 B							Batch: ALK030827A		
Sample ID: MBLK_030827A	Method Blank								08/27/03 13:30
Alkalinity, Total as CaCO ₃	ND	mg/L	2.00						
Sample ID: LCS_030827A	Laboratory Control Spike								08/27/03 13:32
Alkalinity, Total as CaCO ₃	103	mg/L	2.00	103	90	110			
Sample ID: B03080551-001AMS	Sample Matrix Spike								08/27/03 13:42
Alkalinity, Total as CaCO ₃	714	mg/L	2.00	103	80	120			
Sample ID: B03080551-001AMSD	Sample Matrix Spike Duplicate								08/27/03 13:50
Alkalinity, Total as CaCO ₃	717	mg/L	2.00	104	80	120	0.4	20	
Sample ID: B03081271-002AMS	Sample Matrix Spike								08/27/03 14:56
Alkalinity, Total as CaCO ₃	779	mg/L	2.00	96.8	80	120			
Sample ID: B03081271-002AMSD	Sample Matrix Spike Duplicate								08/27/03 15:03
Alkalinity, Total as CaCO ₃	797	mg/L	2.00	99.6	80	120	2.3	20	
Sample ID: MBLK_030827A	Method Blank								08/27/03 15:35
Alkalinity, Total as CaCO ₃	ND	mg/L	2.00						
Sample ID: LCS_030827A	Laboratory Control Spike								08/27/03 15:37
Alkalinity, Total as CaCO ₃	103	mg/L	2.00	103	90	110			
Sample ID: B03081281-001AMS	Sample Matrix Spike								08/27/03 17:23
Alkalinity, Total as CaCO ₃	792	mg/L	2.00	89.3	80	120			
Sample ID: B03081281-001AMSD	Sample Matrix Spike Duplicate								08/27/03 17:31
Alkalinity, Total as CaCO ₃	775	mg/L	2.00	86.4	80	120	2.2	20	
Sample ID: MBLK_030827A	Method Blank								08/28/03 08:38
Alkalinity, Total as CaCO ₃	ND	mg/L	2.00						

Qualifiers: RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Hall Environmental Analysis Laboratory

Date: 15-Sep-03

CLIENT: San Juan Refining
Work Order: 0308181
Project: Annual Monitor Wells 2003

QC SUMMARY REPORT
Method Blank

Sample ID: mb 082203 Batch ID: R9322 Test Code: E300 Units: mg/L Analysis Date: 8/22/2003 11:37:12 AM Prep Date:
Client ID: Run ID: LC_030822A SeqNo: 210370

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									J
Chloride	0.0322	0.10									
Nitrogen, Nitrite (As N)	ND	0.10									
Bromide	ND	0.10									
Nitrogen, Nitrate (As N)	ND	0.10									
Phosphorus, Orthophosphate (As P)	ND	0.50									
Sulfate	ND	0.50									

Sample ID: mb 082503 Batch ID: R9340 Test Code: E300 Units: mg/L Analysis Date: 8/25/2003 11:33:33 AM Prep Date:
Client ID: Run ID: LC_030825A SeqNo: 210678

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									J
Chloride	0.05906	0.10									
Nitrogen, Nitrite (As N)	ND	0.10									
Bromide	ND	0.10									
Nitrogen, Nitrate (As N)	ND	0.10									
Phosphorus, Orthophosphate (As P)	ND	0.50									
Sulfate	ND	0.50									

Sample ID: MBLK Batch ID: R9433 Test Code: E310.1 Units: mg/L CaCO3 Analysis Date: 9/3/2003 Prep Date:
Client ID: Run ID: WC_030903A SeqNo: 212528

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	2.0									
Carbonate	ND	2.0									
Bicarbonate	ND	2.0									

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

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Method Blank

CLIENT: San Juan Refining

Work Order: 0308181

Project: Annual Monitor Wells 2003

Sample ID: rb Batch ID: R9342 Test Code: SW8260B Units: µg/L Analysis Date: 8/25/2003 Prep Date:

Client ID: VAL_030825A Run ID: VAL_030825A SeqNo: 210706

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1.0									
Toluene	ND	1.0									
Ethylbenzene	ND	1.0									
Methyl tert-butyl ether (MTBE)	ND	1.0									
1,2,4-Trimethylbenzene	ND	1.0									
1,3,5-Trimethylbenzene	ND	1.0									
1,2-Dichloroethane (EDC)	ND	1.0									
1,2-Dibromoethane (EDB)	ND	1.0									
Naphthalene	ND	2.0									
1-Methylnaphthalene	ND	4.0									
2-Methylnaphthalene	ND	4.0									
Acetone	ND	10									
Bromobenzene	ND	1.0									
Bromochloromethane	ND	1.0									
Bromodichloromethane	ND	1.0									
Bromoform	ND	1.0									
Bromomethane	ND	2.0									
2-Butanone	ND	10									
Carbon disulfide	ND	10									
Carbon Tetrachloride	ND	1.0									
Chlorobenzene	ND	1.0									
Chloroethane	ND	2.0									
Chloroform	ND	1.0									
Chloromethane	ND	1.0									
2-Chlorotoluene	ND	1.0									
4-Chlorotoluene	ND	1.0									
cis-1,2-DCE	ND	1.0									
cis-1,3-Dichloropropene	ND	1.0									

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

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Method Blank

CLIENT: San Juan Refining

Work Order: 0308181

Project: Annual Monitor Wells 2003

1,2-Dibromo-3-chloropropane	ND	2.0
Dibromochloromethane	ND	1.0
Dibromomethane	ND	2.0
1,2-Dichlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
Dichlorodifluoromethane	ND	1.0
1,1-Dichloroethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,2-Dichloropropane	ND	1.0
1,3-Dichloropropane	ND	1.0
2,2-Dichloropropane	ND	1.0
1,1-Dichloropropene	ND	1.0
Hexachlorobutadiene	ND	1.0
2-Hexanone	ND	10
Isopropylbenzene	ND	1.0
4-Isopropyltoluene	ND	1.0
4-Methyl-2-pentanone	ND	10
Methylene Chloride	ND	3.0
n-Butylbenzene	ND	1.0
n-Propylbenzene	ND	1.0
sec-Butylbenzene	ND	1.0
Styrene	ND	1.0
tert-Butylbenzene	ND	1.0
1,1,1,2-Tetrachloroethane	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Tetrachloroethene (PCE)	ND	1.0
trans-1,2-DCE	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
1,2,3-Trichlorobenzene	ND	1.0
1,2,4-Trichlorobenzene	ND	1.0
1,1,1-Trichloroethane	ND	1.0
1,1,2-Trichloroethane	ND	1.0

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining

Work Order: 0308181

Project: Annual Monitor Wells 2003

QC SUMMARY REPORT

Method Blank

Trichloroethene (TCE) ND 1.0
Trichlorofluoromethane ND 1.0
1,2,3-Trichloropropane ND 2.0
Vinyl chloride ND 2.0
Xylenes, Total ND 1.0
Surr: 1,2-Dichloroethane-d4 10.1 0 10 0 101 68.4 127 0
Surr: 4-Bromofluorobenzene 10.81 0 10 0 108 70.4 126 0
Surr: Dibromofluoromethane 11.03 0 10 0 110 70.2 126 0
Surr: Toluene-d8 10.42 0 10 0 104 73.5 129 0

Sample ID: MBLK Batch ID: R9494 Test Code: SW7470 Units: mg/L Analysis Date: 9/9/2003 Prep Date:

Client ID: Run ID: MI-LA254_030909B SeqNo: 213883

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.00020									

Sample ID: MB Batch ID: R9473 Test Code: SW6010A Units: mg/L Analysis Date: 9/5/2003 9:59:57 AM Prep Date:

Client ID: Run ID: ICP_030905B SeqNo: 213372

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.01171	0.020									J

Barium ND 0.0020
Cadmium ND 0.0020
Chromium ND 0.0060
Copper ND 0.0060
Iron ND 0.020
Lead ND 0.0050
Manganese ND 0.0020
Selenium ND 0.020
Uranium ND 0.10
Zinc ND 0.0050

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Method Blank

CLIENT: San Juan Refining
 Work Order: 0308181
 Project: Annual Monitor Wells 2003

Sample ID: MB	Batch ID: R9478	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/8/2003 11:58:15 AM	Prep Date:
Client ID:	Run ID: ICP_030908B	SeqNo: 213498			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Calcium	ND	1.0			
Magnesium	ND	1.0			
Potassium	ND	1.0			
Sodium	ND	1.0			

Sample ID: MB	Batch ID: R9479	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/8/2003 11:11:25 AM	Prep Date:
Client ID:	Run ID: ICP_030908C	SeqNo: 213523			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Silver	ND	0.0050			

Sample ID: MB-4209	Batch ID: 4209	Test Code: SW6010A	Units: mg/L	Analysis Date: 8/28/2003 10:16:42 AM	Prep Date: 8/27/2003
Client ID:	Run ID: ICP_030828A	SeqNo: 211555			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chromium	0.001963	0.0060			
Lead	ND	0.0050			J

Sample ID: MB-4186	Batch ID: 4186	Test Code: E160.1	Units: mg/L	Analysis Date: 8/27/2003	Prep Date: 8/25/2003
Client ID:	Run ID: WC_030827C	SeqNo: 211415			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Total Dissolved Solids	ND	1.0			

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

Hall Environmental Analysis Laboratory

Date: 15-Sep-03

CLIENT: San Juan Refining

Work Order: 0308181

Project: Annual Monitor Wells 2003

QC SUMMARY REPORT

Sample Duplicate

Sample ID: 0308181-01B	Batch ID: R9322	Test Code: E300	Units: mg/L	Analysis Date: 8/22/2003 8:17:06 PM	Prep Date:						
Client ID: MW #1	Run ID: LC_030822A	SeqNo: 210390									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.5949	0.10	0	0	0	0	0	0.5815	2.28	20	
Chloride	33.6	0.10	0	0	0	0	0	33.28	0.945	20	
Nitrogen, Nitrite (As N)	ND	0.10	0	0	0	0	0	0	0	20	
Bromide	0.3316	0.10	0	0	0	0	0	0.32	3.56	20	
Nitrogen, Nitrate (As N)	1.621	0.10	0	0	0	0	0	1.616	0.302	20	
Phosphorus, Orthophosphate (As P)	0.461	0.50	0	0	0	0	0	0.4458	0	20	J

Sample ID: 0308181-01b	Batch ID: R9340	Test Code: E300	Units: mg/L	Analysis Date: 8/25/2003 1:21:46 PM	Prep Date:						
Client ID: MW #1	Run ID: LC_030825A	SeqNo: 210681									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	197	2.5	0	0	0	0	0	195.3	0.831	20	

Sample ID: 0308181-01B	Batch ID: R9494	Test Code: SW7470	Units: mg/L	Analysis Date: 9/9/2003	Prep Date:						
Client ID: MW #1	Run ID: MI-LA254_030909B	SeqNo: 213887									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.00020	0	0	0	0	0	0	0	20	

Sample ID: 0308181-04B	Batch ID: 4186	Test Code: E160.1	Units: mg/L	Analysis Date: 8/27/2003	Prep Date: 8/25/2003						
Client ID: MW #26	Run ID: WC_030827C	SeqNo: 211434									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids	1536	1.0	0	0	0	0	0	1377	10.9	20	

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

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: 15-Sep-03

CLIENT: San Juan Refining
Work Order: 0308181
Project: Annual Monitor Wells 2003

QC SUMMARY REPORT

Sample Duplicate

Sample ID: 0308181-01B	Batch ID: R9322	Test Code: E300	Units: mg/L	Analysis Date: 8/22/2003 8:17:06 PM		Prep Date:					
Client ID: MW #1		Run ID: LC_030822A		SeqNo: 210390							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.5949	0.10	0	0	0	0	0	0.5815	2.28	20	
Chloride	33.6	0.10	0	0	0	0	0	33.28	0.945	20	
Nitrogen, Nitrite (As N)	ND	0.10	0	0	0	0	0	0	0	20	
Bromide	0.3316	0.10	0	0	0	0	0	0.32	3.56	20	
Nitrogen, Nitrate (As N)	1.621	0.10	0	0	0	0	0	1.616	0.302	20	
Phosphorus, Orthophosphate (As P)	0.461	0.50	0	0	0	0	0	0.4458	0	20	J

Sample ID: 0308181-01b	Batch ID: R9340	Test Code: E300	Units: mg/L	Analysis Date: 8/25/2003 1:21:46 PM	Prep Date:						
Client ID: MW #1		Run ID: LC_030825A		SeqNo: 210681							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	197	2.5	0	0	0	0	0	195.3	0.831	20	

Sample ID: 0308181-01B	Batch ID: R9494	Test Code: SW7470	Units: mg/L	Analysis Date: 9/9/2003	Prep Date:						
Client ID: MW #1		Run ID: MI-LA254_030909B		SeqNo: 213887							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.00020	0	0	0	0	0	0	0	20	

Sample ID: 0308181-04B	Batch ID: 4186	Test Code: E160.1	Units: mg/L	Analysis Date: 8/27/2003	Prep Date: 8/25/2003						
Client ID: MW #26		Run ID: WC_030827C		SeqNo: 211434							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids	1536	1.0	0	0	0	0	0	1377	10.9	20	

Qualifiers:

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

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: 15-Sep-03

CLIENT: San Juan Refining

Work Order: 0308181

Project: Annual Monitor Wells 2003

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 0308181-01B	Batch ID: R9322	Test Code: E300	Units: mg/L	Analysis Date: 8/22/2003 8:33:51 PM	Prep Date:						
Client ID: MW #1		Run ID: LC_030822A		SeqNo: 210391							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.72	0.10	2	0.5815	107	80	120	0			
Bromide	5.706	0.10	5	0.32	108	80	120	0			
Nitrogen, Nitrate (As N)	6.622	0.10	5	1.616	100	80	120	0			
Phosphorus, Orthophosphate (As P)	5.21	0.50	5	0.4458	95.3	80	120	0			

Sample ID: 0308181-01a ms	Batch ID: R9342	Test Code: SW8260B	Units: µg/L	Analysis Date: 8/25/2003	Prep Date:						
Client ID: MW #1		Run ID: VAL_030825A		SeqNo: 210708							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	18.43	1.0	20	0	92.1	86.5	120	0			
Toluene	20.81	1.0	20	0	104	77.3	124	0			
Chlorobenzene	19.88	1.0	20	0	99.4	85.6	136	0			
1,1-Dichloroethene	19.09	1.0	20	0	95.4	70.9	117	0			
Trichloroethene (TCE)	20.73	1.0	20	0	104	76.9	130	0			
Surr: 1,2-Dichloroethane-d4	10.27	0	10	0	103	68.4	127	0			
Surr: 4-Bromofluorobenzene	10.69	0	10	0	107	70.4	126	0			
Surr: Dibromofluoromethane	10.28	0	10	0	103	70.2	126	0			
Surr: Toluene-d8	10.27	0	10	0	103	73.5	129	0			

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Sample Matrix Spike Duplicate

CLIENT: San Juan Refining
 Work Order: 0308181
 Project: Annual Monitor Wells 2003

Sample ID: 0308181-01a msd		Batch ID: R9342	Test Code: SW8260B		Units: µg/L	Analysis Date: 8/25/2003		Prep Date:	
Client ID: MW #1			Run ID: VAL_030825A			SeqNo: 210709			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	Qual
Benzene	19.55	1.0	20	0	97.8	86.5	120	18.43	15
Toluene	21.59	1.0	20	0	108	76	128	20.81	15
Chlorobenzene	20.78	1.0	20	0	104	85.6	136	19.88	15
1,1-Dichloroethene	21.26	1.0	20	0	106	70.9	117	19.09	17.8
Trichloroethene (TCE)	22.5	1.0	20	0	113	76.9	130	20.73	19.8
Surr: 1,2-Dichloroethane-d4	10.74	0	10	0	107	68.4	127	10.27	0
Surr: 4-Bromofluorobenzene	11.74	0	10	0	117	70.4	126	10.69	0
Surr: Dibromofluoromethane	12.17	0	10	0	122	70.2	126	10.28	0
Surr: Toluene-d8	11.12	0	10	0	111	73.5	129	10.27	0

Sample ID: 0308181-02B		Batch ID: R9494	Test Code: SW7470		Units: mg/L	Analysis Date: 9/9/2003		Prep Date:	
Client ID: MW #13			Run ID: MI-LA254_030909B			SeqNo: 213889			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	Qual
Mercury	0.00407	0.00020	0.0035	0	116	70	130	0	

Sample ID: 0308181-01B MS		Batch ID: R9489	Test Code: SW6010A		Units: mg/L	Analysis Date: 9/9/2003 10:06:39 AM		Prep Date:	
Client ID: MW #1			Run ID: ICP_030909C			SeqNo: 213765			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	Qual
Calcium	74.83	1.0	20	56.98	89.2	75	125	0	
Magnesium	33.13	1.0	20	14.46	93.3	75	125	0	
Potassium	20.65	1.0	20	2.222	92.2	75	125	0	
Sodium	162.7	1.0	20	145.4	86.4	75	125	0	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

CLIENT:

San Juan Refining

Work Order:

0308181

Project:

Annual Monitor Wells 2003

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 0308181-04B	Batch ID: 4186	Test Code: E160.1	Units: mg/L	Analysis Date: 8/27/2003	Prep Date: 8/25/2003						
Client ID: MW #26		Run ID: WC_030827C		SeqNo: 211435							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids	2487	1.0	1000	1377	111	80	120	0			

Hall Environmental Analysis Laboratory

Date: 15-Sep-03

CLIENT: San Juan Refining
 Work Order: 0308181
 Project: Annual Monitor Wells 2003

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: new lcs	Batch ID: R9322	Test Code: E300	Units: mg/L	Analysis Date: 8/22/2003 6:36:37 PM	Prep Date:						
Client ID:	Run ID: LC_030822A	SeqNo: 210384									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.101	0.10	2	0	105	90	110	0			
Chloride	9.683	0.10	10	0.0966	95.9	90	110	0			
Nitrogen, Nitrite (As N)	2.109	0.10	2	0	105	90	110	0			
Bromide	5.16	0.10	5	0	103	90	110	0			
Nitrogen, Nitrate (As N)	4.8	0.10	5	0	96.0	90	110	0			
Phosphorus, Orthophosphate (As P)	5.187	0.50	5	0	104	90	110	0			
Sulfate	9.747	0.50	10	0	97.5	90	110	0			

Sample ID: lcs 082503	Batch ID: R9340	Test Code: E300	Units: mg/L	Analysis Date: 8/25/2003 11:50:18 AM	Prep Date:						
Client ID:	Run ID: LC_030825A	SeqNo: 210679									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.082	0.10	2	0	104	90	110	0			
Chloride	9.792	0.10	10	0.05906	97.3	90	110	0			
Nitrogen, Nitrite (As N)	2.027	0.10	2	0	101	90	110	0			
Bromide	5.143	0.10	5	0	103	90	110	0			
Nitrogen, Nitrate (As N)	4.837	0.10	5	0	96.7	90	110	0			
Phosphorus, Orthophosphate (As P)	5.334	0.50	5	0	107	90	110	0			
Sulfate	10.01	0.50	10	0	100	90	110	0			

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

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank
 /

CLIENT: San Juan Refining
Work Order: 0308181
Project: Annual Monitor Wells 2003

QC SUMMARY REPORT
 Laboratory Control Spike - generic

Sample ID: lcs	Batch ID: R9342	Test Code: SW8260B	Units: µg/L	Analysis Date: 8/25/2003	Prep Date:						
Client ID:		Run ID: VAL_030825A		SeqNo: 210707							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.23	1.0	20	0	106	71.2	122	0			
Toluene	21.16	1.0	20	0	106	87.7	122	0			
Chlorobenzene	20.81	1.0	20	0	104	85.6	136	0			
1,1-Dichloroethene	22.73	1.0	20	0	114	70.7	117	0			
Trichloroethene (TCE)	23.41	1.0	20	0	117	76.9	130	0			

Sample ID: LCS	Batch ID: R9494	Test Code: SW7470	Units: mg/L	Analysis Date: 9/9/2003	Prep Date:						
Client ID:	Run ID: MI-LA254_030909B			SeqNo: 213884							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.00343	0.00020	0.0035	0	98.0	90	110	0			

Sample ID: LCSD	Batch ID: R9494	Test Code: SW7470	Units: mg/L	Analysis Date: 9/9/2003	Prep Date:						
Client ID:	Run ID: MI-LA254_030909B			SeqNo: 213885							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.00349	0.00020	0.0035	0	99.7	90	110	0.00343	1.73	0	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
Work Order: 0308181
Project: Annual Monitor Wells 2003

QC SUMMARY REPORT
 Laboratory Control Spike - generic

Sample ID: LCS	Batch ID: R9473	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/5/2003 10:05:42 AM	Prep Date:						
Client ID:	Run ID: ICP_030905B	SeqNo: 213373									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.4972	0.020	0.5	0.01171	97.1	80	120	0			
Barium	0.5029	0.0020	0.5	0	101	80	120	0			
Cadmium	0.5016	0.0020	0.5	0	100	80	120	0			
Chromium	0.4907	0.0060	0.5	0	98.1	80	120	0			
Copper	0.4911	0.0060	0.5	0	98.2	80	120	0			
Iron	0.4705	0.020	0.5	0	94.1	80	120	0			
Lead	0.5058	0.0050	0.5	0	101	80	120	0			
Manganese	0.4957	0.0020	0.5	0	99.1	80	120	0			
Selenium	0.4773	0.020	0.5	0	95.5	80	120	0			
Uranium	0.5029	0.10	0.5	0	101	80	120	0			
Zinc	0.4995	0.0050	0.5	0	99.9	80	120	0			

Sample ID: LCSD	Batch ID: R9473	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/5/2003 10:10:44 AM	Prep Date:						
Client ID:	Run ID:	ICP_030905B		SeqNo: 213374							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.4987	0.020	0.5	0.01171	97.4	80	120	0			
Barium	0.4924	0.0020	0.5	0	98.5	80	120	0			
Cadmium	0.4986	0.0020	0.5	0	99.7	80	120	0			
Chromium	0.4955	0.0060	0.5	0	99.1	80	120	0			
Copper	0.5099	0.0060	0.5	0	102	80	120	0			
Iron	0.5002	0.020	0.5	0	100	80	120	0			
Lead	0.4971	0.0050	0.5	0	99.4	80	120	0			
Manganese	0.4893	0.0020	0.5	0	97.9	80	120	0			
Selenium	0.4554	0.020	0.5	0	91.1	80	120	0			
Uranium	0.5108	0.10	0.5	0	102	80	120	0			
Zinc	0.4988	0.0050	0.5	0	99.8	80	120	0			

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Laboratory Control Spike - generic

CLIENT: San Juan Refining
 Work Order: 0308181
 Project: Annual Monitor Wells 2003

Sample ID: LCS	Batch ID: R9478	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/8/2003 12:01:01 PM	Prep Date:
Client ID:	Run ID: ICP_030908B	PQL	SPK value	SeqNo: 213499	
Analyte	Result	QOL	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Calcium	10.69	1.0	10	0	107 80 120 0
Magnesium	11.21	1.0	10	0	112 80 120 0
Potassium	10	1.0	10	0	100 80 120 0
Sodium	9.919	1.0	10	0	99.2 80 120 0

Sample ID: LCSD	Batch ID: R9478	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/8/2003 12:03:36 PM	Prep Date:
Client ID:	Run ID: ICP_030908B	PQL	SPK value	SeqNo: 213500	
Analyte	Result	QOL	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Calcium	10.96	1.0	10	0	110 80 120 0
Magnesium	11.4	1.0	10	0	114 80 120 0
Potassium	10.29	1.0	10	0	103 80 120 0
Sodium	10.02	1.0	10	0	100 80 120 0

Sample ID: LCS	Batch ID: R9479	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/8/2003 11:12:52 AM	Prep Date:
Client ID:	Run ID: ICP_030908C	PQL	SPK value	SeqNo: 213524	
Analyte	Result	QOL	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Silver	1.008	0.0050	1	0	101 80 120 0

Sample ID: LCSD	Batch ID: R9479	Test Code: SW6010A	Units: mg/L	Analysis Date: 9/8/2003 11:14:17 AM	Prep Date:
Client ID:	Run ID: ICP_030908C	PQL	SPK value	SeqNo: 213525	
Analyte	Result	QOL	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Silver	1.058	0.0050	1	0	106 80 120 1.008 4.75 20

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

Full Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name **SJR**

Date and Time Receive

8/22/03

Work Order Number **0308181**

Received by **AT**

Checklist completed by

Signature

Date

Matrix:

Carrier name: UPS

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒
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 ☐	
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?	5°	4° C ± 2 Acceptable	

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

HALL ENVIRONMENTAL ANALYSIS LABORATORY

**4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345-3975 Fax 505.345.4111
www.hallenvironmental.com**

Project #:

Address: #50 CR 4990

Blountfield Wm

Project Manager:

Sampler *J. J. Hurtado*

Samples Cold? ☒ Yes ☐ No

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Observations			HEAL No.
					HgCl ₂	HCl		
8-21-03	830Am	H ₂ O	MW #1	1-500ml				0308181-1
				3-V0A	X			
				1-125ml			4ND ₃	
				1-500ml			4ND ₃	
				1-250ml				
				1-125ml			4ND ₃	
8-21-03	1030A	H ₂ O	MW #13	1-500ml				-2
				3-V0A	X			
				1-125ml			4ND ₃	
				1-500ml			4ND ₃	
				1-250ml				
				1-125ml			4ND ₃	

Date: 8-21-03	Time: 3:50p	Relinquished By: (Signature) <i>Ernest T. Mustado</i>	Received By: (Signature) <i>Ernest T. Mustado</i>
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)

ANALYSIS REQUEST

[illegible]

Remarks:

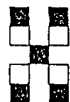
HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345-3975 Fax 505.345.4107
www.hallenvironmental.com

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative			HEAL No.
					HgCl ₂	HCl		
5-2-03	130pm	H ₂ O	MW #27	1-500ml				0308181-3
				3-VOA-	X			
				1-125ml			HNO ₃	
				1-500ml			HNO ₃	
				1-250ml				
				1-125ml			H ₂ SO ₄	
				1-500ml				-4
				3-VOA-	X			
				1-125ml			HNO ₃	
				1-500ml			HNO ₃	
				1-250ml				
				1-125ml			H ₂ SO ₄	

Date: 21-03	Time: 3:50	Relinquished By: (Signature) <i>C. Melendez</i>	Received By: (Signature) <i>Charles Melendez</i>
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)

[illegible]

Remarks: Trip Blank - 5



Hall Environmental Analysis Laboratory

COVER LETTER

January 29, 2003

Cindy Hurtado
Giant Refinery Company
#50 CR 4990
Bloomfield, NM 87413
TEL: (505) 632-6151
FAX (505) 632-3911

RE: New Monitor Well

Order No.: 0301128

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory received 6 samples on 1/21/2003 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

Hall Environmental Analysis Laboratory

Soil
MW #45
Date: 29-Jan-03

CLIENT: Giant Refinery Company
Lab Order: 0301128
Project: New Monitor Well
Lab ID: 0301128-01

Client Sample ID: Surface
Collection Date: 1/15/2003 9:45:00 AM

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: JMP
Diesel Range Organics (DRO)	ND	5.0		mg/Kg	1	1/24/2003 2:41:45 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/24/2003 2:41:45 PM
Surr: DNOP	117	60-124		%REC	1	1/24/2003 2:41:45 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/23/2003 8:19:07 PM
Surr: BFB	91.0	74-118		%REC	1	1/23/2003 8:19:07 PM
EPA METHOD 8260B: VOLATILES						Analyst: BL
Benzene	ND	0.050		mg/Kg	1	1/26/2003
Toluene	ND	0.050		mg/Kg	1	1/26/2003
Ethylbenzene	ND	0.050		mg/Kg	1	1/26/2003
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	1/26/2003
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	1/26/2003
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	1/26/2003
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	1/26/2003
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	1/26/2003
Naphthalene	ND	0.10		mg/Kg	1	1/26/2003
1-Methylnaphthalene	ND	0.20		mg/Kg	1	1/26/2003
2-Methylnaphthalene	ND	0.20		mg/Kg	1	1/26/2003
Bromobenzene	ND	0.050		mg/Kg	1	1/26/2003
Bromodichloromethane	ND	0.050		mg/Kg	1	1/26/2003
Bromoform	ND	0.050		mg/Kg	1	1/26/2003
Bromomethane	ND	0.050		mg/Kg	1	1/26/2003
Carbon tetrachloride	ND	0.050		mg/Kg	1	1/26/2003
Chlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
Chloroethane	ND	0.10		mg/Kg	1	1/26/2003
Chloroform	ND	0.050		mg/Kg	1	1/26/2003
Chloromethane	ND	0.050		mg/Kg	1	1/26/2003
2-Chlorotoluene	ND	0.050		mg/Kg	1	1/26/2003
4-Chlorotoluene	ND	0.050		mg/Kg	1	1/26/2003
cis-1,2-DCE	ND	0.050		mg/Kg	1	1/26/2003
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/26/2003
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	1/26/2003
Dibromochloromethane	ND	0.050		mg/Kg	1	1/26/2003
Dibromomethane	ND	0.10		mg/Kg	1	1/26/2003
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	1/26/2003
1,1-Dichloroethane	ND	0.050		mg/Kg	1	1/26/2003
1,1-Dichloroethene	ND	0.050		mg/Kg	1	1/26/2003

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 29-Jan-03

MW #45

CLIENT: Giant Refinery Company
Lab Order: 0301128
Project: New Monitor Well
Lab ID: 0301128-01

Client Sample ID: Surface
Collection Date: 1/15/2003 9:45:00 AM
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,2-Dichloropropane	ND	0.050		mg/Kg	1	1/26/2003
1,3-Dichloropropane	ND	0.050		mg/Kg	1	1/26/2003
2,2-Dichloropropane	ND	0.050		mg/Kg	1	1/26/2003
1,1-Dichloropropene	ND	0.050		mg/Kg	1	1/26/2003
Hexachlorobutadiene	ND	0.050		mg/Kg	1	1/26/2003
Isopropylbenzene	ND	0.050		mg/Kg	1	1/26/2003
4-Isopropyltoluene	ND	0.050		mg/Kg	1	1/26/2003
Methylene chloride	ND	0.15		mg/Kg	1	1/26/2003
n-Butylbenzene	ND	0.050		mg/Kg	1	1/26/2003
n-Propylbenzene	ND	0.050		mg/Kg	1	1/26/2003
sec-Butylbenzene	ND	0.050		mg/Kg	1	1/26/2003
Styrene	ND	0.050		mg/Kg	1	1/26/2003
tert-Butylbenzene	ND	0.050		mg/Kg	1	1/26/2003
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/26/2003
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/26/2003
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	1/26/2003
trans-1,2-DCE	ND	0.050		mg/Kg	1	1/26/2003
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/26/2003
1,2,3-Trichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	1/26/2003
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	1/26/2003
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	1/26/2003
Trichlorofluoromethane	ND	0.050		mg/Kg	1	1/26/2003
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	1/26/2003
Vinyl chloride	ND	0.10		mg/Kg	1	1/26/2003
Xylenes, Total	ND	0.050		mg/Kg	1	1/26/2003
Surr: 1,2-Dichloroethane-d4	92.7	65-114		%REC	1	1/26/2003
Surr: 4-Bromofluorobenzene	107	74-122		%REC	1	1/26/2003
Surr: Dibromofluoromethane	94.8	65-113		%REC	1	1/26/2003
Surr: Toluene-d8	103	60-123		%REC	1	1/26/2003

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

MW #45
Date: 29-Jan-03

CLIENT: Giant Refinery Company
Lab Order: 0301128
Project: New Monitor Well
Lab ID: 0301128-02

Client Sample ID: 5-6.5'
Collection Date: 1/15/2003 9:53:00 AM
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: JMP
Diesel Range Organics (DRO)	ND	5.0		mg/Kg	1	1/24/2003 3:10:20 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/24/2003 3:10:20 PM
Surr: DNOP	106	60-124		%REC	1	1/24/2003 3:10:20 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/23/2003 8:49:49 PM
Surr: BFB	88.5	74-118		%REC	1	1/23/2003 8:49:49 PM
EPA METHOD 8260B: VOLATILES						Analyst: BL
Benzene	ND	0.050		mg/Kg	1	1/26/2003
Toluene	ND	0.050		mg/Kg	1	1/26/2003
Ethylbenzene	ND	0.050		mg/Kg	1	1/26/2003
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	1/26/2003
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	1/26/2003
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	1/26/2003
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	1/26/2003
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	1/26/2003
Naphthalene	ND	0.10		mg/Kg	1	1/26/2003
1-Methylnaphthalene	ND	0.20		mg/Kg	1	1/26/2003
2-Methylnaphthalene	ND	0.20		mg/Kg	1	1/26/2003
Bromobenzene	ND	0.050		mg/Kg	1	1/26/2003
Bromodichloromethane	ND	0.050		mg/Kg	1	1/26/2003
Bromoform	ND	0.050		mg/Kg	1	1/26/2003
Bromomethane	ND	0.050		mg/Kg	1	1/26/2003
Carbon tetrachloride	ND	0.050		mg/Kg	1	1/26/2003
Chlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
Chloroethane	ND	0.10		mg/Kg	1	1/26/2003
Chloroform	ND	0.050		mg/Kg	1	1/26/2003
Chloromethane	ND	0.050		mg/Kg	1	1/26/2003
2-Chlorotoluene	ND	0.050		mg/Kg	1	1/26/2003
4-Chlorotoluene	ND	0.050		mg/Kg	1	1/26/2003
cis-1,2-DCE	ND	0.050		mg/Kg	1	1/26/2003
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/26/2003
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	1/26/2003
Dibromochloromethane	ND	0.050		mg/Kg	1	1/26/2003
Dibromomethane	ND	0.10		mg/Kg	1	1/26/2003
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	1/26/2003
1,1-Dichloroethane	ND	0.050		mg/Kg	1	1/26/2003
1,1-Dichloroethene	ND	0.050		mg/Kg	1	1/26/2003

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 29-Jan-03

CLIENT: Giant Refinery Company

Client Sample ID: 5-6.5'

Lab Order: 0301128

Collection Date: 1/15/2003 9:53:00 AM

Project: New Monitor Well

Lab ID: 0301128-02

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,2-Dichloropropane	ND	0.050		mg/Kg	1	1/26/2003
1,3-Dichloropropane	ND	0.050		mg/Kg	1	1/26/2003
2,2-Dichloropropane	ND	0.050		mg/Kg	1	1/26/2003
1,1-Dichloropropene	ND	0.050		mg/Kg	1	1/26/2003
Hexachlorobutadiene	ND	0.050		mg/Kg	1	1/26/2003
Isopropylbenzene	ND	0.050		mg/Kg	1	1/26/2003
4-Isopropyltoluene	ND	0.050		mg/Kg	1	1/26/2003
Methylene chloride	ND	0.15		mg/Kg	1	1/26/2003
n-Butylbenzene	ND	0.050		mg/Kg	1	1/26/2003
n-Propylbenzene	ND	0.050		mg/Kg	1	1/26/2003
sec-Butylbenzene	ND	0.050		mg/Kg	1	1/26/2003
Styrene	ND	0.050		mg/Kg	1	1/26/2003
tert-Butylbenzene	ND	0.050		mg/Kg	1	1/26/2003
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/26/2003
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/26/2003
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	1/26/2003
trans-1,2-DCE	ND	0.050		mg/Kg	1	1/26/2003
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/26/2003
1,2,3-Trichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	1/26/2003
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	1/26/2003
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	1/26/2003
Trichlorofluoromethane	ND	0.050		mg/Kg	1	1/26/2003
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	1/26/2003
Vinyl chloride	ND	0.10		mg/Kg	1	1/26/2003
Xylenes, Total	ND	0.050		mg/Kg	1	1/26/2003
Surr: 1,2-Dichloroethane-d4	90.5	65-114		%REC	1	1/26/2003
Surr: 4-Bromofluorobenzene	103	74-122		%REC	1	1/26/2003
Surr: Dibromofluoromethane	90.0	65-113		%REC	1	1/26/2003
Surr: Toluene-d8	104	60-123		%REC	1	1/26/2003

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 29-Jan-03

MW #45

CLIENT: Giant Refinery Company
Lab Order: 0301128
Project: New Monitor Well
Lab ID: 0301128-03

Client Sample ID: 7-8.5'
Collection Date: 1/15/2003 10:25:00 AM

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: JMP
Diesel Range Organics (DRO)	ND	5.0		mg/Kg	1	1/24/2003 3:39:01 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/24/2003 3:39:01 PM
Surr: DNOP	106	60-124		%REC	1	1/24/2003 3:39:01 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/23/2003 9:20:30 PM
Surr: BFB	93.7	74-118		%REC	1	1/23/2003 9:20:30 PM
EPA METHOD 8260B: VOLATILES						Analyst: BL
Benzene	ND	0.050		mg/Kg	1	1/26/2003
Toluene	ND	0.050		mg/Kg	1	1/26/2003
Ethylbenzene	ND	0.050		mg/Kg	1	1/26/2003
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	1/26/2003
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	1/26/2003
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	1/26/2003
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	1/26/2003
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	1/26/2003
Naphthalene	ND	0.10		mg/Kg	1	1/26/2003
1-Methylnaphthalene	ND	0.20		mg/Kg	1	1/26/2003
2-Methylnaphthalene	ND	0.20		mg/Kg	1	1/26/2003
Bromobenzene	ND	0.050		mg/Kg	1	1/26/2003
Bromodichloromethane	ND	0.050		mg/Kg	1	1/26/2003
Bromoform	ND	0.050		mg/Kg	1	1/26/2003
Bromomethane	ND	0.050		mg/Kg	1	1/26/2003
Carbon tetrachloride	ND	0.050		mg/Kg	1	1/26/2003
Chlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
Chloroethane	ND	0.10		mg/Kg	1	1/26/2003
Chloroform	ND	0.050		mg/Kg	1	1/26/2003
Chloromethane	ND	0.050		mg/Kg	1	1/26/2003
2-Chlorotoluene	ND	0.050		mg/Kg	1	1/26/2003
4-Chlorotoluene	ND	0.050		mg/Kg	1	1/26/2003
cis-1,2-DCE	ND	0.050		mg/Kg	1	1/26/2003
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/26/2003
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	1/26/2003
Dibromochloromethane	ND	0.050		mg/Kg	1	1/26/2003
Dibromomethane	ND	0.10		mg/Kg	1	1/26/2003
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	1/26/2003
1,1-Dichloroethane	ND	0.050		mg/Kg	1	1/26/2003
1,1-Dichloroethene	ND	0.050		mg/Kg	1	1/26/2003

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 29-Jan-03

MW #45

CLIENT: Giant Refinery Company
Lab Order: 0301128
Project: New Monitor Well
Lab ID: 0301128-03

Client Sample ID: 7-8.5'
Collection Date: 1/15/2003 10:25:00 AM
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,2-Dichloropropane	ND	0.050		mg/Kg	1	1/26/2003
1,3-Dichloropropane	ND	0.050		mg/Kg	1	1/26/2003
2,2-Dichloropropane	ND	0.050		mg/Kg	1	1/26/2003
1,1-Dichloropropene	ND	0.050		mg/Kg	1	1/26/2003
Hexachlorobutadiene	ND	0.050		mg/Kg	1	1/26/2003
Isopropylbenzene	ND	0.050		mg/Kg	1	1/26/2003
4-Isopropyltoluene	ND	0.050		mg/Kg	1	1/26/2003
Methylene chloride	ND	0.15		mg/Kg	1	1/26/2003
n-Butylbenzene	ND	0.050		mg/Kg	1	1/26/2003
n-Propylbenzene	ND	0.050		mg/Kg	1	1/26/2003
sec-Butylbenzene	ND	0.050		mg/Kg	1	1/26/2003
Styrene	ND	0.050		mg/Kg	1	1/26/2003
tert-Butylbenzene	ND	0.050		mg/Kg	1	1/26/2003
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/26/2003
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/26/2003
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	1/26/2003
trans-1,2-DCE	ND	0.050		mg/Kg	1	1/26/2003
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/26/2003
1,2,3-Trichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	1/26/2003
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	1/26/2003
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	1/26/2003
Trichlorofluoromethane	ND	0.050		mg/Kg	1	1/26/2003
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	1/26/2003
Vinyl chloride	ND	0.10		mg/Kg	1	1/26/2003
Xylenes, Total	ND	0.050		mg/Kg	1	1/26/2003
Surr: 1,2-Dichloroethane-d4	88.6	65-114		%REC	1	1/26/2003
Surr: 4-Bromofluorobenzene	102	74-122		%REC	1	1/26/2003
Surr: Dibromofluoromethane	91.1	65-113		%REC	1	1/26/2003
Surr: Toluene-d8	101	60-123		%REC	1	1/26/2003

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 29-Jan-03

MW #45

CLIENT: Giant Refinery Company

Client Sample ID: 10-11'

Lab Order: 0301128

Collection Date: 1/15/2003 11:20:00 AM

Project: New Monitor Well

Lab ID: 0301128-04

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						
Diesel Range Organics (DRO)	ND	5.0		mg/Kg	1	1/24/2003 4:07:35 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/24/2003 4:07:35 PM
Surr: DNOP	106	60-124		%REC	1	1/24/2003 4:07:35 PM
EPA METHOD 8015B: GASOLINE RANGE						
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/23/2003 10:21:50 PM
Surr: BFB	94.8	74-118		%REC	1	1/23/2003 10:21:50 PM
EPA METHOD 8260B: VOLATILES						
Benzene	ND	0.050		mg/Kg	1	1/26/2003
Toluene	ND	0.050		mg/Kg	1	1/26/2003
Ethylbenzene	ND	0.050		mg/Kg	1	1/26/2003
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	1/26/2003
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	1/26/2003
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	1/26/2003
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	1/26/2003
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	1/26/2003
Naphthalene	ND	0.10		mg/Kg	1	1/26/2003
1-Methylnaphthalene	ND	0.20		mg/Kg	1	1/26/2003
2-Methylnaphthalene	ND	0.20		mg/Kg	1	1/26/2003
Bromobenzene	ND	0.050		mg/Kg	1	1/26/2003
Bromodichloromethane	ND	0.050		mg/Kg	1	1/26/2003
Bromoform	ND	0.050		mg/Kg	1	1/26/2003
Bromomethane	ND	0.050		mg/Kg	1	1/26/2003
Carbon tetrachloride	ND	0.050		mg/Kg	1	1/26/2003
Chlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
Chloroethane	ND	0.10		mg/Kg	1	1/26/2003
Chloroform	ND	0.050		mg/Kg	1	1/26/2003
Chloromethane	ND	0.050		mg/Kg	1	1/26/2003
2-Chlorotoluene	ND	0.050		mg/Kg	1	1/26/2003
4-Chlorotoluene	ND	0.050		mg/Kg	1	1/26/2003
cis-1,2-DCE	ND	0.050		mg/Kg	1	1/26/2003
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/26/2003
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	1/26/2003
Dibromochloromethane	ND	0.050		mg/Kg	1	1/26/2003
Dibromomethane	ND	0.10		mg/Kg	1	1/26/2003
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	1/26/2003
1,1-Dichloroethane	ND	0.050		mg/Kg	1	1/26/2003
1,1-Dichloroethene	ND	0.050		mg/Kg	1	1/26/2003

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 29-Jan-03

MW #45

CLIENT: Giant Refinery Company

Client Sample ID: 10-11'

Lab Order: 0301128

Collection Date: 1/15/2003 11:20:00 AM

Project: New Monitor Well

Lab ID: 0301128-04

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,2-Dichloropropane	ND	0.050		mg/Kg	1	1/26/2003
1,3-Dichloropropane	ND	0.050		mg/Kg	1	1/26/2003
2,2-Dichloropropane	ND	0.050		mg/Kg	1	1/26/2003
1,1-Dichloropropene	ND	0.050		mg/Kg	1	1/26/2003
Hexachlorobutadiene	ND	0.050		mg/Kg	1	1/26/2003
Isopropylbenzene	ND	0.050		mg/Kg	1	1/26/2003
4-Isopropyltoluene	ND	0.050		mg/Kg	1	1/26/2003
Methylene chloride	ND	0.15		mg/Kg	1	1/26/2003
n-Butylbenzene	ND	0.050		mg/Kg	1	1/26/2003
n-Propylbenzene	ND	0.050		mg/Kg	1	1/26/2003
sec-Butylbenzene	ND	0.050		mg/Kg	1	1/26/2003
Styrene	ND	0.050		mg/Kg	1	1/26/2003
tert-Butylbenzene	ND	0.050		mg/Kg	1	1/26/2003
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/26/2003
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/26/2003
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	1/26/2003
trans-1,2-DCE	ND	0.050		mg/Kg	1	1/26/2003
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/26/2003
1,2,3-Trichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	1/26/2003
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	1/26/2003
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	1/26/2003
Trichlorofluoromethane	ND	0.050		mg/Kg	1	1/26/2003
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	1/26/2003
Vinyl chloride	ND	0.10		mg/Kg	1	1/26/2003
Xylenes, Total	ND	0.050		mg/Kg	1	1/26/2003
Surr: 1,2-Dichloroethane-d4	93.7	65-114		%REC	1	1/26/2003
Surr: 4-Bromofluorobenzene	104	74-122		%REC	1	1/26/2003
Surr: Dibromofluoromethane	94.5	65-113		%REC	1	1/26/2003
Surr: Toluene-d8	105	60-123		%REC	1	1/26/2003

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 29-Jan-03

MW #45

CLIENT: Giant Refinery Company
Lab Order: 0301128
Project: New Monitor Well
Lab ID: 0301128-05

Client Sample ID: 14-14-7
Collection Date: 1/15/2003 1:00:00 PM

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: JMP
Diesel Range Organics (DRO)	ND	5.0		mg/Kg	1	1/24/2003 4:36:09 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/24/2003 4:36:09 PM
Surr: DNOP	107	60-124		%REC	1	1/24/2003 4:36:09 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/23/2003 10:52:23 PM
Surr: BFB	92.0	74-118		%REC	1	1/23/2003 10:52:23 PM
EPA METHOD 8260B: VOLATILES						Analyst: BL
Benzene	ND	0.050		mg/Kg	1	1/26/2003
Toluene	ND	0.050		mg/Kg	1	1/26/2003
Ethylbenzene	ND	0.050		mg/Kg	1	1/26/2003
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	1/26/2003
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	1/26/2003
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	1/26/2003
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	1/26/2003
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	1/26/2003
Naphthalene	ND	0.10		mg/Kg	1	1/26/2003
1-Methylnaphthalene	ND	0.20		mg/Kg	1	1/26/2003
2-Methylnaphthalene	ND	0.20		mg/Kg	1	1/26/2003
Bromobenzene	ND	0.050		mg/Kg	1	1/26/2003
Bromodichloromethane	ND	0.050		mg/Kg	1	1/26/2003
Bromoform	ND	0.050		mg/Kg	1	1/26/2003
Bromomethane	ND	0.050		mg/Kg	1	1/26/2003
Carbon tetrachloride	ND	0.050		mg/Kg	1	1/26/2003
Chlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
Chloroethane	ND	0.10		mg/Kg	1	1/26/2003
Chloroform	ND	0.050		mg/Kg	1	1/26/2003
Chloromethane	ND	0.050		mg/Kg	1	1/26/2003
2-Chlorotoluene	ND	0.050		mg/Kg	1	1/26/2003
4-Chlorotoluene	ND	0.050		mg/Kg	1	1/26/2003
cis-1,2-DCE	ND	0.050		mg/Kg	1	1/26/2003
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/26/2003
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	1/26/2003
Dibromochloromethane	ND	0.050		mg/Kg	1	1/26/2003
Dibromomethane	ND	0.10		mg/Kg	1	1/26/2003
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	1/26/2003
1,1-Dichloroethane	ND	0.050		mg/Kg	1	1/26/2003
1,1-Dichloroethene	ND	0.050		mg/Kg	1	1/26/2003

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 29-Jan-03

MW #45

CLIENT: Giant Refinery Company

Client Sample ID: 14-14-7'

Lab Order: 0301128

Collection Date: 1/15/2003 1:00:00 PM

Project: New Monitor Well

Lab ID: 0301128-05

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,2-Dichloropropane	ND	0.050		mg/Kg	1	1/26/2003
1,3-Dichloropropane	ND	0.050		mg/Kg	1	1/26/2003
2,2-Dichloropropane	ND	0.050		mg/Kg	1	1/26/2003
1,1-Dichloropropene	ND	0.050		mg/Kg	1	1/26/2003
Hexachlorobutadiene	ND	0.050		mg/Kg	1	1/26/2003
Isopropylbenzene	ND	0.050		mg/Kg	1	1/26/2003
4-Isopropyltoluene	ND	0.050		mg/Kg	1	1/26/2003
Methylene chloride	ND	0.15		mg/Kg	1	1/26/2003
n-Butylbenzene	ND	0.050		mg/Kg	1	1/26/2003
n-Propylbenzene	ND	0.050		mg/Kg	1	1/26/2003
sec-Butylbenzene	ND	0.050		mg/Kg	1	1/26/2003
Styrene	ND	0.050		mg/Kg	1	1/26/2003
tert-Butylbenzene	ND	0.050		mg/Kg	1	1/26/2003
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/26/2003
1,1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/26/2003
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	1/26/2003
trans-1,2-DCE	ND	0.050		mg/Kg	1	1/26/2003
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/26/2003
1,2,3-Trichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	1/26/2003
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	1/26/2003
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	1/26/2003
Trichlorofluoromethane	ND	0.050		mg/Kg	1	1/26/2003
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	1/26/2003
Vinyl chloride	ND	0.10		mg/Kg	1	1/26/2003
Xylenes, Total	ND	0.050		mg/Kg	1	1/26/2003
Surr: 1,2-Dichloroethane-d4	94.5	65-114		%REC	1	1/26/2003
Surr: 4-Bromofluorobenzene	105	74-122		%REC	1	1/26/2003
Surr: Dibromofluoromethane	99.2	65-113		%REC	1	1/26/2003
Surr: Toluene-d8	106	60-123		%REC	1	1/26/2003

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 29-Jan-03

MW #45

CLIENT: Giant Refinery Company

Client Sample ID: 17-17-8'

Lab Order: 0301128

Collection Date: 1/15/2003 1:25:00 PM

Project: New Monitor Well

Lab ID: 0301128-06

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						
Diesel Range Organics (DRO)	ND	5.0		mg/Kg	1	Analyst: JMP 1/27/2003 3:03:46 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/27/2003 3:03:46 PM
Surr: DNOP	117	60-124		%REC	1	1/27/2003 3:03:46 PM
EPA METHOD 8015B: GASOLINE RANGE						
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	Analyst: NB 1/23/2003 11:22:55 PM
Surr: BFB	90.4	74-118		%REC	1	1/23/2003 11:22:55 PM
EPA METHOD 8260B: VOLATILES						
Benzene	ND	0.050		mg/Kg	1	Analyst: BL 1/26/2003
Toluene	ND	0.050		mg/Kg	1	1/26/2003
Ethylbenzene	ND	0.050		mg/Kg	1	1/26/2003
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	1/26/2003
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	1/26/2003
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	1/26/2003
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	1/26/2003
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	1/26/2003
Naphthalene	ND	0.10		mg/Kg	1	1/26/2003
1-Methylnaphthalene	ND	0.20		mg/Kg	1	1/26/2003
2-Methylnaphthalene	ND	0.20		mg/Kg	1	1/26/2003
Bromobenzene	ND	0.050		mg/Kg	1	1/26/2003
Bromodichloromethane	ND	0.050		mg/Kg	1	1/26/2003
Bromoform	ND	0.050		mg/Kg	1	1/26/2003
Bromomethane	ND	0.050		mg/Kg	1	1/26/2003
Carbon tetrachloride	ND	0.050		mg/Kg	1	1/26/2003
Chlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
Chloroethane	ND	0.10		mg/Kg	1	1/26/2003
Chloroform	ND	0.050		mg/Kg	1	1/26/2003
Chloromethane	ND	0.050		mg/Kg	1	1/26/2003
2-Chlorotoluene	ND	0.050		mg/Kg	1	1/26/2003
4-Chlorotoluene	ND	0.050		mg/Kg	1	1/26/2003
cis-1,2-DCE	ND	0.050		mg/Kg	1	1/26/2003
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/26/2003
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	1/26/2003
Dibromochloromethane	ND	0.050		mg/Kg	1	1/26/2003
Dibromomethane	ND	0.10		mg/Kg	1	1/26/2003
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	1/26/2003
1,1-Dichloroethane	ND	0.050		mg/Kg	1	1/26/2003
1,1-Dichloroethene	ND	0.050		mg/Kg	1	1/26/2003

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 29-Jan-03

MW #45

CLIENT: Giant Refinery Company

Client Sample ID: 17-17-8'

Lab Order: 0301128

Collection Date: 1/15/2003 1:25:00 PM

Project: New Monitor Well

Lab ID: 0301128-06

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,2-Dichloropropane	ND	0.050		mg/Kg	1	1/26/2003
1,3-Dichloropropane	ND	0.050		mg/Kg	1	1/26/2003
2,2-Dichloropropane	ND	0.050		mg/Kg	1	1/26/2003
1,1-Dichloropropene	ND	0.050		mg/Kg	1	1/26/2003
Hexachlorobutadiene	ND	0.050		mg/Kg	1	1/26/2003
Isopropylbenzene	ND	0.050		mg/Kg	1	1/26/2003
4-Isopropyltoluene	ND	0.050		mg/Kg	1	1/26/2003
Methylene chloride	ND	0.15		mg/Kg	1	1/26/2003
n-Butylbenzene	ND	0.050		mg/Kg	1	1/26/2003
n-Propylbenzene	ND	0.050		mg/Kg	1	1/26/2003
sec-Butylbenzene	ND	0.050		mg/Kg	1	1/26/2003
Styrene	ND	0.050		mg/Kg	1	1/26/2003
tert-Butylbenzene	ND	0.050		mg/Kg	1	1/26/2003
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/26/2003
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/26/2003
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	1/26/2003
trans-1,2-DCE	ND	0.050		mg/Kg	1	1/26/2003
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/26/2003
1,2,3-Trichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	1/26/2003
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	1/26/2003
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	1/26/2003
Trichlorofluoromethane	ND	0.050		mg/Kg	1	1/26/2003
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	1/26/2003
Vinyl chloride	ND	0.10		mg/Kg	1	1/26/2003
Xylenes, Total	ND	0.050		mg/Kg	1	1/26/2003
Surr: 1,2-Dichloroethane-d4	91.0	65-114		%REC	1	1/26/2003
Surr: 4-Bromofluorobenzene	105	74-122		%REC	1	1/26/2003
Surr: Dibromofluoromethane	93.8	65-113		%REC	1	1/26/2003
Surr: Toluene-d8	99.3	60-123		%REC	1	1/26/2003

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 29-Jan-03

MW #45

CLIENT: Giant Refinery Company
Work Order: 0301125
Project: New Monitor Well

QC SUMMARY REPORT
Method Blank

Sample ID	MB-3038	Batch ID:	3038	Test Code:	SW8015	Units:	mg/Kg	Analysis Date	1/24/2003 12:18:15 PM	Prep Date	1/23/2003	
Client ID:		Run ID:	FID(17A)_030124A					SeqNo:	162738			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)		ND	5.0									
Motor Oil Range Organics (MRO)		ND	50									
Surr: DNOP		11.76	0	10	0	118	60	124	0			

Sample ID	MB-3023	Batch ID:	3023	Test Code:	SW8015	Units:	mg/Kg	Analysis Date	1/23/2003 11:53:26 PM	Prep Date	1/21/2003	
Client ID:		Run ID:	PIDFID_030123A					SeqNo:	161772			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)		1.33	5.0									J
Surr: BFB		897.1	0	1000	0	89.7	74	118	0			

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

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

1

CLIENT: Giant Refinery Company
 Work Order: 0301125
 Project: New Monitor Well

QC SUMMARY REPORT
 Method Blank

#45
 MW

Sample ID	rb8	Batch ID: R7117	Test Code: SW8260B	Units: µg/L	Analysis Date	1/26/2003	Prep Date				
Client ID:			Run ID: VAL_030124B		SeqNo: 162251						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1.0									
Toluene	ND	1.0									
Ethylbenzene	ND	1.0									
Methyl tert-butyl ether (MTBE)	ND	1.0									
1,2,4-Trimethylbenzene	ND	1.0									
1,3,5-Trimethylbenzene	ND	1.0									
1,2-Dichloroethane (EDC)	0.526	1.0									
1,2-Dibromoethane (EDB)	ND	1.0									
Naphthalene	ND	2.0									
1-Methylnaphthalene	ND	4.0									
2-Methylnaphthalene	ND	4.0									
Bromobenzene	ND	1.0									
Bromochloromethane	ND	1.0									
Bromodichloromethane	ND	1.0									
Bromoform	ND	1.0									
Bromomethane	ND	1.0									
Carbon Tetrachloride	ND	1.0									
Chlorobenzene	ND	1.0									
Chloroethane	ND	2.0									
Chloroform	ND	1.0									
Chloromethane	ND	1.0									
2-Chlorotoluene	ND	1.0									
4-Chlorotoluene	ND	1.0									
cis-1,2-DCE	ND	1.0									
cis-1,3-Dichloropropene	ND	1.0									
1,2-Dibromo-3-chloropropane	ND	2.0									
Dibromochloromethane	ND	1.0									
Dibromomethane	ND	2.0									

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Method Blank

CLIENT: Giant Refinery Company

Work Order: 0301125

Project: New Monitor Well

MW # 45

1,2-Dichlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
Dichlorodifluoromethane	ND	1.0
1,1-Dichloroethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,2-Dichloropropane	ND	1.0
1,3-Dichloropropane	ND	1.0
2,2-Dichloropropane	ND	1.0
1,1-Dichloropropene	ND	1.0
Hexachlorobutadiene	0.242	1.0
Isopropylbenzene	ND	1.0
4-Isopropyltoluene	ND	1.0
Methylene Chloride	ND	3.0
n-Butylbenzene	ND	1.0
n-Propylbenzene	ND	1.0
sec-Butylbenzene	ND	1.0
Styrene	ND	1.0
tert-Butylbenzene	ND	1.0
Tetrachloroethene (PCE)	ND	1.0
1,1,1,2-Tetrachloroethane	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
trans-1,2-DCE	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Trichloroethene (TCE)	ND	1.0
Trichlorofluoromethane	ND	1.0
1,2,3-Trichlorobenzene	ND	1.0
1,2,4-Trichlorobenzene	ND	1.0
1,1,1-Trichloroethane	ND	1.0
1,1,2-Trichloroethane	ND	1.0
Vinyl chloride	ND	2.0
1,2,3-Trichloropropane	ND	2.0
Xylenes, Total	ND	1.0

J

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

CLIENT: Giant Refinery Company
Work Order: 0301125
Project: New Monitor Well

MW # 45

QC SUMMARY REPORT
 Method Blank

Surr: 1,2-Dichloroethane-d4	9.688	0	10	0	96.9	74.6	123	0
Surr: 4-Bromofluorobenzene	10.39	0	10	0	104	85.6	117	0
Surr: Dibromofluoromethane	9.296	0	10	0	93.0	78.6	115	0
Surr: Toluene-d8	9.968	0	10	0	99.7	84.2	115	0

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

MW #45

Date: 29-Jan-03

CLIENT: Giant Refinery Company

Work Order: 0301125

Project: New Monitor Well

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID	LCS-3038	Batch ID	3038	Test Code	SW8015	Units	mg/Kg	Analysis Date	1/24/2003 12:46:50 PM	Prep Date	1/23/2003
Client ID:		Run ID:	FID(17A)_030124A					SeqNo:	162739		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit
Diesel Range Organics (DRO)		54.54	5.0	50	0	109	67.4	117	0		
Surr: DNOP		12.46	0	10	0	125	74	125	0		

Sample ID	GRO Std 2.5ug	Batch ID	3023	Test Code	SW8015	Units	mg/Kg	Analysis Date	1/23/2003 9:51:10 PM	Prep Date	
Client ID:		Run ID:	PIDFID_030123A					SeqNo:	161785		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit
Gasoline Range Organics (GRO)		25.03	5.0	25	0.027	100	85.8	111	0		

Sample ID	GRO Std 2.5ug	Batch ID	3023	Test Code	SW8015	Units	mg/Kg	Analysis Date	1/24/2003 1:25:12 AM	Prep Date	
Client ID:		Run ID:	PIDFID_030123A					SeqNo:	161786		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit
Gasoline Range Organics (GRO)		25.57	5.0	25	0.027	102	85.8	111	25.03	2.13	11.6

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

/

MW # 45

CLIENT: Giant Refinery Company
Work Order: 0301125
Project: New Monitor Well

QC SUMMARY REPORT
 Laboratory Control Spike - generic

Sample ID	Ics	Batch ID: R7117	Test Code: SW8260B	Units: µg/L	Analysis Date 1/26/2003	Prep Date					
Client ID:			Run ID: VAL_030124B		SeqNo: 162252						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.5	1.0	20	0	103	78.7	122	0			
Toluene	22	1.0	20	0	110	87.7	122	0			
Chlorobenzene	20.44	1.0	20	0	102	85.6	136	0			
1,1-Dichloroethene	17.39	1.0	20	0	87.0	70.7	117	0			
Trichloroethene (TCE)	22.04	1.0	20	0	110	76.9	130	0			
Surr: 1,2-Dichloroethane-d4	9.756	0	10	0	97.6	68.4	127	0			
Surr: 4-Bromofluorobenzene	10.52	0	10	0	105	70.4	126	0			
Surr: Dibromofluoromethane	9.686	0	10	0	96.9	70.2	126	0			
Surr: Toluene-d8	10.74	0	10	0	107	73.5	129	0			

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

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

2

MW # 45

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name **GIANT REFINERY BLOOM**

Date and Time Receive

Work Order Number **0301128**

Received by **AMG**

Checklist completed by *[Signature]* 12103
Signature Date

Matrix:

Carrier name: UPS

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒
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? **4°** **4° C ± 2 Acceptable**

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

HALL ENVIRONMENTAL ANAL **LABORATORY**
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Project Name: New Monitor Wells

Project #: MW # 45-5011

Project Manager:

Phone #: 505-632-4161

Fax #: 505-632-3911

Date _____ Time _____

Matrny

Sample I.D. No.

Number/Volume

Preservative

 H_2C_2

HCl

HEAL No.

030128

40e Jar

"

11

11

11

Received By: (Signature)

Received By: (Signature)

Remarks:

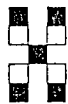
ANALYSIS REQUEST

 (λ)

(1a)

MW # 46

Soil Analysis



Hall Environmental Analysis Laboratory

COVER LETTER

January 29, 2003

Cindy Hurtado
Giant Refinery Company
#50 CR 4990
Bloomfield, NM 87413
TEL: (505) 632-6151
FAX (505) 632-3911

RE: New Monitor Well

Order No.: 0301125

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory received 3 samples on 1/21/2003 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

Hall Environmental Analysis Laboratory

MW # 46

Date: 29-Jan-03

CLIENT: Giant Refinery Company
Lab Order: 0301125
Project: New Monitor Well
Lab ID: 0301125-01

Client Sample ID: Surface
Collection Date: 1/16/2003 8:40:00 AM
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						
Diesel Range Organics (DRO)	ND	5.0		mg/Kg	1	1/24/2003 1:15:25 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/24/2003 1:15:25 PM
Surr: DNOP	110	60-124		%REC	1	1/24/2003 1:15:25 PM
EPA METHOD 8015B: GASOLINE RANGE						
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/23/2003 6:46:41 PM
Surr: BFB	91.4	74-118		%REC	1	1/23/2003 6:46:41 PM
EPA METHOD 8260B: VOLATILES						
Benzene	ND	0.050		mg/Kg	1	1/26/2003
Toluene	ND	0.050		mg/Kg	1	1/26/2003
Ethylbenzene	ND	0.050		mg/Kg	1	1/26/2003
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	1/26/2003
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	1/26/2003
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	1/26/2003
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	1/26/2003
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	1/26/2003
Naphthalene	ND	0.10		mg/Kg	1	1/26/2003
1-Methylnaphthalene	ND	0.20		mg/Kg	1	1/26/2003
2-Methylnaphthalene	ND	0.20		mg/Kg	1	1/26/2003
Bromobenzene	ND	0.050		mg/Kg	1	1/26/2003
Bromodichloromethane	ND	0.050		mg/Kg	1	1/26/2003
Bromoform	ND	0.050		mg/Kg	1	1/26/2003
Bromomethane	ND	0.050		mg/Kg	1	1/26/2003
Carbon tetrachloride	ND	0.050		mg/Kg	1	1/26/2003
Chlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
Chloroethane	ND	0.10		mg/Kg	1	1/26/2003
Chloroform	ND	0.050		mg/Kg	1	1/26/2003
Chloromethane	ND	0.050		mg/Kg	1	1/26/2003
2-Chlorotoluene	ND	0.050		mg/Kg	1	1/26/2003
4-Chlorotoluene	ND	0.050		mg/Kg	1	1/26/2003
cis-1,2-DCE	ND	0.050		mg/Kg	1	1/26/2003
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/26/2003
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	1/26/2003
Dibromochloromethane	ND	0.050		mg/Kg	1	1/26/2003
Dibromomethane	ND	0.10		mg/Kg	1	1/26/2003
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	1/26/2003
1,1-Dichloroethane	ND	0.050		mg/Kg	1	1/26/2003
1,1-Dichloroethene	ND	0.050		mg/Kg	1	1/26/2003

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Hall Environmental Analysis Laboratory

MW #46
Date: 29-Jan-03

CLIENT: Giant Refinery Company
Lab Order: 0301125
Project: New Monitor Well
Lab ID: 0301125-01

Client Sample ID: Surface
Collection Date: 1/16/2003 8:40:00 AM
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,2-Dichloropropane	ND	0.050		mg/Kg	1	1/26/2003
1,3-Dichloropropane	ND	0.050		mg/Kg	1	1/26/2003
2,2-Dichloropropane	ND	0.050		mg/Kg	1	1/26/2003
1,1-Dichloropropene	ND	0.050		mg/Kg	1	1/26/2003
Hexachlorobutadiene	ND	0.050		mg/Kg	1	1/26/2003
Isopropylbenzene	ND	0.050		mg/Kg	1	1/26/2003
4-Isopropyltoluene	ND	0.050		mg/Kg	1	1/26/2003
Methylene chloride	ND	0.15		mg/Kg	1	1/26/2003
n-Butylbenzene	ND	0.050		mg/Kg	1	1/26/2003
n-Propylbenzene	ND	0.050		mg/Kg	1	1/26/2003
sec-Butylbenzene	ND	0.050		mg/Kg	1	1/26/2003
Styrene	ND	0.050		mg/Kg	1	1/26/2003
tert-Butylbenzene	ND	0.050		mg/Kg	1	1/26/2003
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/26/2003
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/26/2003
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	1/26/2003
trans-1,2-DCE	ND	0.050		mg/Kg	1	1/26/2003
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/26/2003
1,2,3-Trichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	1/26/2003
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	1/26/2003
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	1/26/2003
Trichlorofluoromethane	ND	0.050		mg/Kg	1	1/26/2003
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	1/26/2003
Vinyl chloride	ND	0.10		mg/Kg	1	1/26/2003
Xylenes, Total	ND	0.050		mg/Kg	1	1/26/2003
Surr: 1,2-Dichloroethane-d4	89.9	65-114		%REC	1	1/26/2003
Surr: 4-Bromofluorobenzene	102	74-122		%REC	1	1/26/2003
Surr: Dibromofluoromethane	89.2	65-113		%REC	1	1/26/2003
Surr: Toluene-d8	100	60-123		%REC	1	1/26/2003

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

MW #46

Hall Environmental Analysis Laboratory

Date: 29-Jan-03

CLIENT: Giant Refinery Company
Lab Order: 0301125
Project: New Monitor Well
Lab ID: 0301125-02

Client Sample ID: 5 to 6.5
Collection Date: 1/16/2003 9:00:00 AM
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: JMP
Diesel Range Organics (DRO)	ND	5.0		mg/Kg	1	1/24/2003 1:44:00 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/24/2003 1:44:00 PM
Surr: DNOP	109	60-124		%REC	1	1/24/2003 1:44:00 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/23/2003 7:17:33 PM
Surr: BFB	91.8	74-118		%REC	1	1/23/2003 7:17:33 PM
EPA METHOD 8260B: VOLATILES						Analyst: BL
Benzene	ND	0.050		mg/Kg	1	1/26/2003
Toluene	ND	0.050		mg/Kg	1	1/26/2003
Ethylbenzene	ND	0.050		mg/Kg	1	1/26/2003
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	1/26/2003
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	1/26/2003
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	1/26/2003
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	1/26/2003
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	1/26/2003
Naphthalene	ND	0.10		mg/Kg	1	1/26/2003
1-Methylnaphthalene	ND	0.20		mg/Kg	1	1/26/2003
2-Methylnaphthalene	ND	0.20		mg/Kg	1	1/26/2003
Bromobenzene	ND	0.050		mg/Kg	1	1/26/2003
Bromodichloromethane	ND	0.050		mg/Kg	1	1/26/2003
Bromoform	ND	0.050		mg/Kg	1	1/26/2003
Bromomethane	ND	0.050		mg/Kg	1	1/26/2003
Carbon tetrachloride	ND	0.050		mg/Kg	1	1/26/2003
Chlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
Chloroethane	ND	0.10		mg/Kg	1	1/26/2003
Chloroform	ND	0.050		mg/Kg	1	1/26/2003
Chloromethane	ND	0.050		mg/Kg	1	1/26/2003
2-Chlorotoluene	ND	0.050		mg/Kg	1	1/26/2003
4-Chlorotoluene	ND	0.050		mg/Kg	1	1/26/2003
cis-1,2-DCE	ND	0.050		mg/Kg	1	1/26/2003
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/26/2003
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	1/26/2003
Dibromochloromethane	ND	0.050		mg/Kg	1	1/26/2003
Dibromomethane	ND	0.10		mg/Kg	1	1/26/2003
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	1/26/2003
1,1-Dichloroethane	ND	0.050		mg/Kg	1	1/26/2003
1,1-Dichloroethene	ND	0.050		mg/Kg	1	1/26/2003

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

MW #46

Hall Environmental Analysis Laboratory

Date: 29-Jan-03

CLIENT: Giant Refinery Company
 Lab Order: 0301125
 Project: New Monitor Well
 Lab ID: 0301125-02

Client Sample ID: 5 to 6.5
 Collection Date: 1/16/2003 9:00:00 AM
 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,2-Dichloropropane	ND	0.050		mg/Kg	1	1/26/2003
1,3-Dichloropropane	ND	0.050		mg/Kg	1	1/26/2003
2,2-Dichloropropane	ND	0.050		mg/Kg	1	1/26/2003
1,1-Dichloropropene	ND	0.050		mg/Kg	1	1/26/2003
Hexachlorobutadiene	ND	0.050		mg/Kg	1	1/26/2003
Isopropylbenzene	ND	0.050		mg/Kg	1	1/26/2003
4-Isopropyltoluene	ND	0.050		mg/Kg	1	1/26/2003
Methylene chloride	ND	0.15		mg/Kg	1	1/26/2003
n-Butylbenzene	ND	0.050		mg/Kg	1	1/26/2003
n-Propylbenzene	ND	0.050		mg/Kg	1	1/26/2003
sec-Butylbenzene	ND	0.050		mg/Kg	1	1/26/2003
Styrene	ND	0.050		mg/Kg	1	1/26/2003
tert-Butylbenzene	ND	0.050		mg/Kg	1	1/26/2003
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/26/2003
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/26/2003
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	1/26/2003
trans-1,2-DCE	ND	0.050		mg/Kg	1	1/26/2003
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/26/2003
1,2,3-Trichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	1/26/2003
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	1/26/2003
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	1/26/2003
Trichlorofluoromethane	ND	0.050		mg/Kg	1	1/26/2003
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	1/26/2003
Vinyl chloride	ND	0.10		mg/Kg	1	1/26/2003
Xylenes, Total	ND	0.050		mg/Kg	1	1/26/2003
Surr: 1,2-Dichloroethane-d4	89.7	65-114		%REC	1	1/26/2003
Surr: 4-Bromofluorobenzene	102	74-122		%REC	1	1/26/2003
Surr: Dibromofluoromethane	93.8	65-113		%REC	1	1/26/2003
Surr: Toluene-d8	103	60-123		%REC	1	1/26/2003

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 29-Jan-03

MW #46

CLIENT: Giant Refinery Company
Lab Order: 0301125
Project: New Monitor Well
Lab ID: 0301125-03

Client Sample ID: 6.5 to 7.5
Collection Date: 1/16/2003 9:15:00 AM

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: JMP
Diesel Range Organics (DRO)	ND	5.0		mg/Kg	1	1/24/2003 2:12:33 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/24/2003 2:12:33 PM
Surr: DNOP	118	60-124		%REC	1	1/24/2003 2:12:33 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/23/2003 7:48:20 PM
Surr: BFB	93.5	74-118		%REC	1	1/23/2003 7:48:20 PM
EPA METHOD 8260B: VOLATILES						Analyst: BL
Benzene	ND	0.050		mg/Kg	1	1/26/2003
Toluene	ND	0.050		mg/Kg	1	1/26/2003
Ethylbenzene	ND	0.050		mg/Kg	1	1/26/2003
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	1/26/2003
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	1/26/2003
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	1/26/2003
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	1/26/2003
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	1/26/2003
Naphthalene	ND	0.10		mg/Kg	1	1/26/2003
1-Methylnaphthalene	ND	0.20		mg/Kg	1	1/26/2003
2-Methylnaphthalene	ND	0.20		mg/Kg	1	1/26/2003
Bromobenzene	ND	0.050		mg/Kg	1	1/26/2003
Bromodichloromethane	ND	0.050		mg/Kg	1	1/26/2003
Bromoform	ND	0.050		mg/Kg	1	1/26/2003
Bromomethane	ND	0.050		mg/Kg	1	1/26/2003
Carbon tetrachloride	ND	0.050		mg/Kg	1	1/26/2003
Chlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
Chloroethane	ND	0.10		mg/Kg	1	1/26/2003
Chloroform	ND	0.050		mg/Kg	1	1/26/2003
Chloromethane	ND	0.050		mg/Kg	1	1/26/2003
2-Chlorotoluene	ND	0.050		mg/Kg	1	1/26/2003
4-Chlorotoluene	ND	0.050		mg/Kg	1	1/26/2003
cis-1,2-DCE	ND	0.050		mg/Kg	1	1/26/2003
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/26/2003
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	1/26/2003
Dibromochloromethane	ND	0.050		mg/Kg	1	1/26/2003
Dibromomethane	ND	0.10		mg/Kg	1	1/26/2003
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	1/26/2003
1,1-Dichloroethane	ND	0.050		mg/Kg	1	1/26/2003
1,1-Dichloroethene	ND	0.050		mg/Kg	1	1/26/2003

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

MW #46
Date: 29-Jan-03

CLIENT: Giant Refinery Company
Lab Order: 0301125
Project: New Monitor Well
Lab ID: 0301125-03

Client Sample ID: 6.5 to 7.5
Collection Date: 1/16/2003 9:15:00 AM
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,2-Dichloropropane	ND	0.050		mg/Kg	1	1/26/2003
1,3-Dichloropropane	ND	0.050		mg/Kg	1	1/26/2003
2,2-Dichloropropane	ND	0.050		mg/Kg	1	1/26/2003
1,1-Dichloropropene	ND	0.050		mg/Kg	1	1/26/2003
Hexachlorobutadiene	ND	0.050		mg/Kg	1	1/26/2003
Isopropylbenzene	ND	0.050		mg/Kg	1	1/26/2003
4-Isopropyltoluene	ND	0.050		mg/Kg	1	1/26/2003
Methylene chloride	ND	0.15		mg/Kg	1	1/26/2003
n-Butylbenzene	ND	0.050		mg/Kg	1	1/26/2003
n-Propylbenzene	ND	0.050		mg/Kg	1	1/26/2003
sec-Butylbenzene	ND	0.050		mg/Kg	1	1/26/2003
Styrene	ND	0.050		mg/Kg	1	1/26/2003
tert-Butylbenzene	ND	0.050		mg/Kg	1	1/26/2003
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/26/2003
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/26/2003
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	1/26/2003
trans-1,2-DCE	ND	0.050		mg/Kg	1	1/26/2003
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/26/2003
1,2,3-Trichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	1/26/2003
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	1/26/2003
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	1/26/2003
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	1/26/2003
Trichlorofluoromethane	ND	0.050		mg/Kg	1	1/26/2003
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	1/26/2003
Vinyl chloride	ND	0.10		mg/Kg	1	1/26/2003
Xylenes, Total	ND	0.050		mg/Kg	1	1/26/2003
Surr: 1,2-Dichloroethane-d4	91.1	65-114		%REC	1	1/26/2003
Surr: 4-Bromofluorobenzene	103	74-122		%REC	1	1/26/2003
Surr: Dibromofluoromethane	94.1	65-113		%REC	1	1/26/2003
Surr: Toluene-d8	102	60-123		%REC	1	1/26/2003

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

MW #46

Date: 29-Jan-03

CLIENT: Giant Refinery Company

Work Order: 0301125

Project: New Monitor Well

QC SUMMARY REPORT

Method Blank

Sample ID	MB-3038	Batch ID: 3038	Test Code: SW8015	Units: mg/Kg	Analysis Date	1/24/2003 12:18:15 PM	Prep Date	1/23/2003				
Client ID:		Run ID:	FID(17A)_030124A		SeqNo:	162738						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)		ND	5.0									
Motor Oil Range Organics (MRO)		ND	50									
Surr: DNOP		11.76	0	10	0	118	60	124	0			

Sample ID	MB-3023	Batch ID: 3023	Test Code: SW8015	Units: mg/Kg	Analysis Date	1/23/2003 11:53:26 PM	Prep Date	1/21/2003				
Client ID:		Run ID:	PIDFID_030123A		SeqNo:	161772						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)		1.33	5.0									J
Surr: BFB		897.1	0	1000	0	89.7	74	118	0			

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

I

MW # 46

QC SUMMARY REPORT

Method Blank

CLIENT: Giant Refinery Company
 Work Order: 0301125
 Project: New Monitor Well

Sample ID	rb8	Batch ID: R7117	Test Code: SW8260B	Units: µg/L	Analysis Date	1/26/2003	Prep Date				
Client ID:		Run ID:	VAL_030124B		SeqNo:	162251					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1.0									
Toluene	ND	1.0									
Ethylbenzene	ND	1.0									
Methyl tert-butyl ether (MTBE)	ND	1.0									
1,2,4-Trimethylbenzene	ND	1.0									
1,3,5-Trimethylbenzene	ND	1.0									
1,2-Dichloroethane (EDC)	0.526	1.0									
1,2-Dibromoethane (EDB)	ND	1.0									
Naphthalene	ND	2.0									
1-Methylnaphthalene	ND	4.0									
2-Methylnaphthalene	ND	4.0									
Bromobenzene	ND	1.0									
Bromochloromethane	ND	1.0									
Bromodichloromethane	ND	1.0									
Bromoform	ND	1.0									
Bromomethane	ND	1.0									
Carbon Tetrachloride	ND	1.0									
Chlorobenzene	ND	1.0									
Chloroethane	ND	2.0									
Chloroform	ND	1.0									
Chloromethane	ND	1.0									
2-Chlorotoluene	ND	1.0									
4-Chlorotoluene	ND	1.0									
cis-1,2-DCE	ND	1.0									
cis-1,3-Dichloropropene	ND	1.0									
1,2-Dibromo-3-chloropropane	ND	2.0									
Dibromochloromethane	ND	1.0									
Dibromomethane	ND	2.0									

J

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

MW #46

QC SUMMARY REPORT

Method Blank

CLIENT: Giant Refinery Company

Work Order: 0301125

Project: New Monitor Well

1,2-Dichlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
Dichlorodifluoromethane	ND	1.0
1,1-Dichloroethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,2-Dichloropropane	ND	1.0
1,3-Dichloropropane	ND	1.0
2,2-Dichloropropane	ND	1.0
1,1-Dichloropropene	ND	1.0
Hexachlorobutadiene	0.242	1.0
Isopropylbenzene	ND	1.0
4-Isopropyltoluene	ND	1.0
Methylene Chloride	ND	3.0
n-Butylbenzene	ND	1.0
n-Propylbenzene	ND	1.0
sec-Butylbenzene	ND	1.0
Styrene	ND	1.0
tert-Butylbenzene	ND	1.0
Tetrachloroethene (PCE)	ND	1.0
1,1,1,2-Tetrachloroethane	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
trans-1,2-DCE	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Trichloroethene (TCE)	ND	1.0
Trichlorofluoromethane	ND	1.0
1,2,3-Trichlorobenzene	ND	1.0
1,2,4-Trichlorobenzene	ND	1.0
1,1,1-Trichloroethane	ND	1.0
1,1,2-Trichloroethane	ND	1.0
Vinyl chloride	ND	2.0
1,2,3-Trichloropropane	ND	2.0
Xylenes, Total	ND	1.0

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

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

NW #46

CLIENT: Giant Refinery Company
 Work Order: 0301125
 Project: New Monitor Well

QC SUMMARY REPORT
 Method Blank

Surr: 1,2-Dichloroethane-d4	9.688	0	10	0	96.9	74.6	123	0
Surr: 4-Bromofluorobenzene	10.39	0	10	0	104	85.6	117	0
Surr: Dibromofluoromethane	9.296	0	10	0	93.0	78.6	115	0
Surr: Toluene-d8	9.968	0	10	0	99.7	84.2	115	0

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

MW #46

Date: 29-Jan-03

CLIENT: Giant Refinery Company

Work Order: 0301125

Project: New Monitor Well

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID	LCS-3038	Batch ID:	3038	Test Code:	SW8015	Units:	mg/Kg	Analysis Date	1/24/2003 12:46:50 PM	Prep Date	1/23/2003	
Client ID:		Run ID:	FID(17A)_030124A					SeqNo:	162739			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)		54.54	5.0	50	0	109	67.4	117	0			
Surr: DNOP		12.46	0	10	0	125	74	125	0			

Sample ID	GRO Std 2.5ug	Batch ID: 3023	Test Code: SW8015	Units: mg/Kg	Analysis Date	1/23/2003 9:51:10 PM	Prep Date					
Client ID:		Run ID: PIDFID_030123A			SeqNo: 161785							
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)		25.03	5.0	25	0.027	100	85.8	111	0			

Sample ID	GRO Std 2.5ug	Batch ID: 3023	Test Code: SW8015	Units: mg/Kg	Analysis Date	1/24/2003 1:25:12 AM	Prep Date					
Client ID:		Run ID: PIDFID_030123A			SeqNo: 161786							
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)		25.57	5.0	25	0.027	102	85.8	111	25.03	2.13	11.6	

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limitsS - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

MW #46

QC SUMMARY REPORT

Laboratory Control Spike - generic

CLIENT: Giant Refinery Company
 Work Order: 0301125
 Project: New Monitor Well

Sample ID	Ics	Batch ID: R7117	Test Code: SW8260B	Units: µg/L	Analysis Date	1/26/2003	Prep Date				
Client ID:		Run ID: VAL_030124B			SeqNo: 162252						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.5	1.0	20	0	103	78.7	122	0			
Toluene	22	1.0	20	0	110	87.7	122	0			
Chlorobenzene	20.44	1.0	20	0	102	85.6	136	0			
1,1-Dichloroethene	17.39	1.0	20	0	87.0	70.7	117	0			
Trichloroethene (TCE)	22.04	1.0	20	0	110	76.9	130	0			
Surr: 1,2-Dichloroethane-d4	9.756	0	10	0	97.6	68.4	127	0			
Surr: 4-Bromofluorobenzene	10.52	0	10	0	105	70.4	126	0			
Surr: Dibromofluoromethane	9.686	0	10	0	96.9	70.2	126	0			
Surr: Toluene-d8	10.74	0	10	0	107	73.5	129	0			

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

MW#46

~~AA~~
#5

Client Name **GIANT REFINERY BLOOM**

Date and Time Receive

Work Order Number **0301125**

Received by **AMG**

Checklist completed by

[Signature] **12/03**

Signature

Date

Matrix:

Carrier name: UPS

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒
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?	4°	4° C ± 2 Acceptable	

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Project Name:

New Monitor Wells

Address: #50 CR 4990

Bloomfield, NM

8743

Phone #: 505-632-4161

Fax #: 505-632-3911

Sampler:

Samples Cold?:

☒ Yes ☐ No☐ No

Date _____

Time

Matrix

Sample I.D. No.

Number/Volume

HEAL No.

1-16-03

1

From

11

5 to 6.5

11

2

1

415A

11

375

11

2.

Date: _____

Time:

Retinauished By: (Signature)

Received By: (Signature)

Date: 10/20/2011

ime:

Relinquished By: (Signature)

Received By: (Signature)

Date:

Time:

Relinquished By: (Signature)

Received By: (Signature)

HALL ENVIRONMENTAL ANALY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345-3975 Fax 505.345.4107
www.hallenvironmental.com

ANALYSIS REQUEST

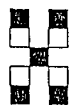
[illegible]

Remarks:

MW # 47

(Seep #5 Replacement)

Soil & Water Analysis



Hall Environmental Analysis Laboratory

COVER LETTER

March 14, 2003

Soil from drilling

Cindy Hurtado
San Juan Refining
#50 CR 4990
Bloomfield, NM 87413
TEL: (505) 632-4161
FAX (505) 632-3911

RE: SEEP #5

Order No.: 0303043

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory received 4 samples on 3/7/2003 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

Hall Environmental Analysis Laboratory

Date: 14-Mar-03

CLIENT: San Juan Refining
Project: SEEP #5
Lab Order: 0303043

CASE NARRATIVE

Analytical Comments for METHOD 8015GRO_S, SAMPLE 0303043-02a: Analyzed at dilution and high surrogate recovery due to DRO in sample.

Analytical Comments for METHOD 8015GRO_S, SAMPLE 0303043-03a: Analyzed at dilution and high surrogate recovery due to DRO in sample.

Analytical Comments for METHOD 8015GRO_S, SAMPLE 0303043-04a: Analyzed at dilution and due to DRO in sample.

Hall Environmental Analysis Laboratory

Date: 14-Mar-03

CLIENT: San Juan Refining
Lab Order: 0303043
Project: SEEP #5
Lab ID: 0303043-01

Client Sample ID: Surface
Collection Date: 3/6/2003 10:00:00 AM
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: JMP
Diesel Range Organics (DRO)	ND	5.0		mg/Kg	1	3/12/2003 11:01:59 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/12/2003 11:01:59 AM
Surr: DNOP	113	60-124		%REC	1	3/12/2003 11:01:59 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/10/2003 7:23:57 PM
Surr: BFB	92.9	74-118		%REC	1	3/10/2003 7:23:57 PM
EPA METHOD 8260B: VOLATILES						Analyst: BL
Benzene	ND	0.050		mg/Kg	1	3/11/2003
Toluene	ND	0.050		mg/Kg	1	3/11/2003
Ethylbenzene	ND	0.050		mg/Kg	1	3/11/2003
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	3/11/2003
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	3/11/2003
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	3/11/2003
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	3/11/2003
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	3/11/2003
Naphthalene	ND	0.10		mg/Kg	1	3/11/2003
1-Methylnaphthalene	ND	0.20		mg/Kg	1	3/11/2003
2-Methylnaphthalene	ND	0.20		mg/Kg	1	3/11/2003
Bromobenzene	ND	0.050		mg/Kg	1	3/11/2003
Bromodichloromethane	ND	0.050		mg/Kg	1	3/11/2003
Bromoform	ND	0.050		mg/Kg	1	3/11/2003
Bromomethane	ND	0.10		mg/Kg	1	3/11/2003
Carbon tetrachloride	ND	0.050		mg/Kg	1	3/11/2003
Chlorobenzene	ND	0.050		mg/Kg	1	3/11/2003
Chloroethane	ND	0.10		mg/Kg	1	3/11/2003
Chloroform	ND	0.050		mg/Kg	1	3/11/2003
Chloromethane	ND	0.050		mg/Kg	1	3/11/2003
2-Chlorotoluene	ND	0.050		mg/Kg	1	3/11/2003
4-Chlorotoluene	ND	0.050		mg/Kg	1	3/11/2003
cis-1,2-DCE	ND	0.050		mg/Kg	1	3/11/2003
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	3/11/2003
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	3/11/2003
Dibromochloromethane	ND	0.050		mg/Kg	1	3/11/2003
Dibromomethane	ND	0.10		mg/Kg	1	3/11/2003
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	3/11/2003
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	3/11/2003
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	3/11/2003
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	3/11/2003
1,1-Dichloroethane	ND	0.050		mg/Kg	1	3/11/2003
1,1-Dichloroethene	ND	0.050		mg/Kg	1	3/11/2003

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 14-Mar-03

CLIENT: San Juan Refining

Client Sample ID: Surface

Lab Order: 0303043

Collection Date: 3/6/2003 10:00:00 AM

Project: SEEP #5

Lab ID: 0303043-01

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,2-Dichloropropane	ND	0.050		mg/Kg	1	3/11/2003
1,3-Dichloropropane	ND	0.050		mg/Kg	1	3/11/2003
2,2-Dichloropropane	ND	0.050		mg/Kg	1	3/11/2003
1,1-Dichloropropene	ND	0.050		mg/Kg	1	3/11/2003
Hexachlorobutadiene	ND	0.050		mg/Kg	1	3/11/2003
Isopropylbenzene	ND	0.050		mg/Kg	1	3/11/2003
4-Isopropyltoluene	ND	0.050		mg/Kg	1	3/11/2003
Methylene chloride	ND	0.15		mg/Kg	1	3/11/2003
n-Butylbenzene	ND	0.050		mg/Kg	1	3/11/2003
n-Propylbenzene	ND	0.050		mg/Kg	1	3/11/2003
sec-Butylbenzene	ND	0.050		mg/Kg	1	3/11/2003
Styrene	ND	0.050		mg/Kg	1	3/11/2003
tert-Butylbenzene	ND	0.050		mg/Kg	1	3/11/2003
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	3/11/2003
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	3/11/2003
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	3/11/2003
trans-1,2-DCE	ND	0.050		mg/Kg	1	3/11/2003
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	3/11/2003
1,2,3-Trichlorobenzene	ND	0.050		mg/Kg	1	3/11/2003
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	3/11/2003
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	3/11/2003
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	3/11/2003
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	3/11/2003
Trichlorofluoromethane	ND	0.050		mg/Kg	1	3/11/2003
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	3/11/2003
Vinyl chloride	ND	0.10		mg/Kg	1	3/11/2003
Xylenes, Total	ND	0.050		mg/Kg	1	3/11/2003
Surr: 1,2-Dichloroethane-d4	86.5	65-114		%REC	1	3/11/2003
Surr: 4-Bromofluorobenzene	102	74-122		%REC	1	3/11/2003
Surr: Dibromofluoromethane	86.1	65-113		%REC	1	3/11/2003
Surr: Toluene-d8	104	60-123		%REC	1	3/11/2003

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 14-Mar-03

CLIENT: San Juan Refining
Lab Order: 0303043
Project: SEEP #5
Lab ID: 0303043-02

Client Sample ID: 5'-6.5'
Collection Date: 3/6/2003 10:10:00 AM
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: JMP
Diesel Range Organics (DRO)	69	5.0		mg/Kg	1	3/11/2003 7:18:26 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/11/2003 7:18:26 PM
Surr: DNOP	116	60-124		%REC	1	3/11/2003 7:18:26 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NB
Gasoline Range Organics (GRO)	20	5.0		mg/Kg	1	3/10/2003 7:54:42 PM
Surr: BFB	136	74-118	S	%REC	1	3/10/2003 7:54:42 PM
EPA METHOD 8260B: VOLATILES						Analyst: BL
Benzene	ND	0.050		mg/Kg	1	3/11/2003
Toluene	ND	0.050		mg/Kg	1	3/11/2003
Ethylbenzene	ND	0.050		mg/Kg	1	3/11/2003
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	3/11/2003
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	3/11/2003
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	3/11/2003
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	3/11/2003
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	3/11/2003
Naphthalene	ND	0.10		mg/Kg	1	3/11/2003
1-Methylnaphthalene	ND	0.20		mg/Kg	1	3/11/2003
2-Methylnaphthalene	ND	0.20		mg/Kg	1	3/11/2003
Bromobenzene	ND	0.050		mg/Kg	1	3/11/2003
Bromodichloromethane	ND	0.050		mg/Kg	1	3/11/2003
Bromoform	ND	0.050		mg/Kg	1	3/11/2003
Bromomethane	ND	0.10		mg/Kg	1	3/11/2003
Carbon tetrachloride	ND	0.050		mg/Kg	1	3/11/2003
Chlorobenzene	ND	0.050		mg/Kg	1	3/11/2003
Chloroethane	ND	0.10		mg/Kg	1	3/11/2003
Chloroform	ND	0.050		mg/Kg	1	3/11/2003
Chloromethane	ND	0.050		mg/Kg	1	3/11/2003
2-Chlorotoluene	ND	0.050		mg/Kg	1	3/11/2003
4-Chlorotoluene	ND	0.050		mg/Kg	1	3/11/2003
cis-1,2-DCE	ND	0.050		mg/Kg	1	3/11/2003
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	3/11/2003
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	3/11/2003
Dibromochloromethane	ND	0.050		mg/Kg	1	3/11/2003
Dibromomethane	ND	0.10		mg/Kg	1	3/11/2003
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	3/11/2003
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	3/11/2003
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	3/11/2003
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	3/11/2003
1,1-Dichloroethane	ND	0.050		mg/Kg	1	3/11/2003
1,1-Dichloroethene	ND	0.050		mg/Kg	1	3/11/2003

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 14-Mar-03

CLIENT: San Juan Refining

Client Sample ID: 5'-6.5'

Lab Order: 0303043

Collection Date: 3/6/2003 10:10:00 AM

Project: SEEP #5

Lab ID: 0303043-02

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,2-Dichloropropane	ND	0.050		mg/Kg	1	3/11/2003
1,3-Dichloropropane	ND	0.050		mg/Kg	1	3/11/2003
2,2-Dichloropropane	ND	0.050		mg/Kg	1	3/11/2003
1,1-Dichloropropene	ND	0.050		mg/Kg	1	3/11/2003
Hexachlorobutadiene	ND	0.050		mg/Kg	1	3/11/2003
Isopropylbenzene	ND	0.050		mg/Kg	1	3/11/2003
4-Isopropyltoluene	ND	0.050		mg/Kg	1	3/11/2003
Methylene chloride	ND	0.15		mg/Kg	1	3/11/2003
n-Butylbenzene	ND	0.050		mg/Kg	1	3/11/2003
n-Propylbenzene	ND	0.050		mg/Kg	1	3/11/2003
sec-Butylbenzene	ND	0.050		mg/Kg	1	3/11/2003
Styrene	ND	0.050		mg/Kg	1	3/11/2003
tert-Butylbenzene	ND	0.050		mg/Kg	1	3/11/2003
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	3/11/2003
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	3/11/2003
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	3/11/2003
trans-1,2-DCE	ND	0.050		mg/Kg	1	3/11/2003
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	3/11/2003
1,2,3-Trichlorobenzene	ND	0.050		mg/Kg	1	3/11/2003
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	3/11/2003
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	3/11/2003
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	3/11/2003
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	3/11/2003
Trichlorofluoromethane	ND	0.050		mg/Kg	1	3/11/2003
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	3/11/2003
Vinyl chloride	ND	0.10		mg/Kg	1	3/11/2003
Xylenes, Total	ND	0.050		mg/Kg	1	3/11/2003
Surr: 1,2-Dichloroethane-d4	85.6	65-114		%REC	1	3/11/2003
Surr: 4-Bromofluorobenzene	90.4	74-122		%REC	1	3/11/2003
Surr: Dibromofluoromethane	86.7	65-113		%REC	1	3/11/2003
Surr: Toluene-d8	104	60-123		%REC	1	3/11/2003

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 14-Mar-03

CLIENT: San Juan Refining
Lab Order: 0303043
Project: SEEP #5
Lab ID: 0303043-03

Client Sample ID: 9'-9.7'
Collection Date: 3/6/2003 10:30:00 AM
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						
Diesel Range Organics (DRO)	16	5.0		mg/Kg	1	3/12/2003 9:34:56 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/12/2003 9:34:56 AM
Surr: DNOP	112	60-124		%REC	1	3/12/2003 9:34:56 AM
EPA METHOD 8015B: GASOLINE RANGE						
Gasoline Range Organics (GRO)	21	5.0		mg/Kg	1	3/10/2003 8:25:25 PM
Surr: BFB	124	74-118	S	%REC	1	3/10/2003 8:25:25 PM
EPA METHOD 8260B: VOLATILES						
Benzene	ND	0.050		mg/Kg	1	3/11/2003
Toluene	ND	0.050		mg/Kg	1	3/11/2003
Ethylbenzene	ND	0.050		mg/Kg	1	3/11/2003
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	3/11/2003
1,2,4-Trimethylbenzene	0.064	0.050		mg/Kg	1	3/11/2003
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	3/11/2003
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	3/11/2003
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	3/11/2003
Naphthalene	ND	0.10		mg/Kg	1	3/11/2003
1-Methylnaphthalene	ND	0.20		mg/Kg	1	3/11/2003
2-Methylnaphthalene	ND	0.20		mg/Kg	1	3/11/2003
Bromobenzene	ND	0.050		mg/Kg	1	3/11/2003
Bromodichloromethane	ND	0.050		mg/Kg	1	3/11/2003
Bromoform	ND	0.050		mg/Kg	1	3/11/2003
Bromomethane	ND	0.10		mg/Kg	1	3/11/2003
Carbon tetrachloride	ND	0.050		mg/Kg	1	3/11/2003
Chlorobenzene	ND	0.050		mg/Kg	1	3/11/2003
Chloroethane	ND	0.10		mg/Kg	1	3/11/2003
Chloroform	ND	0.050		mg/Kg	1	3/11/2003
Chloromethane	ND	0.050		mg/Kg	1	3/11/2003
2-Chlorotoluene	ND	0.050		mg/Kg	1	3/11/2003
4-Chlorotoluene	ND	0.050		mg/Kg	1	3/11/2003
cis-1,2-DCE	ND	0.050		mg/Kg	1	3/11/2003
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	3/11/2003
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	3/11/2003
Dibromochloromethane	ND	0.050		mg/Kg	1	3/11/2003
Dibromomethane	ND	0.10		mg/Kg	1	3/11/2003
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	3/11/2003
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	3/11/2003
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	3/11/2003
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	3/11/2003
1,1-Dichloroethane	ND	0.050		mg/Kg	1	3/11/2003
1,1-Dichloroethene	ND	0.050		mg/Kg	1	3/11/2003

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 14-Mar-03

CLIENT: San Juan Refining

Client Sample ID: 9'-9.7'

Lab Order: 0303043

Collection Date: 3/6/2003 10:30:00 AM

Project: SEEP #5

Lab ID: 0303043-03

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,2-Dichloropropane	ND	0.050		mg/Kg	1	3/11/2003
1,3-Dichloropropane	ND	0.050		mg/Kg	1	3/11/2003
2,2-Dichloropropane	ND	0.050		mg/Kg	1	3/11/2003
1,1-Dichloropropene	ND	0.050		mg/Kg	1	3/11/2003
Hexachlorobutadiene	ND	0.050		mg/Kg	1	3/11/2003
Isopropylbenzene	ND	0.050		mg/Kg	1	3/11/2003
4-Isopropyltoluene	ND	0.050		mg/Kg	1	3/11/2003
Methylene chloride	ND	0.15		mg/Kg	1	3/11/2003
n-Butylbenzene	ND	0.050		mg/Kg	1	3/11/2003
n-Propylbenzene	ND	0.050		mg/Kg	1	3/11/2003
sec-Butylbenzene	ND	0.050		mg/Kg	1	3/11/2003
Styrene	ND	0.050		mg/Kg	1	3/11/2003
tert-Butylbenzene	ND	0.050		mg/Kg	1	3/11/2003
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	3/11/2003
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	3/11/2003
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	3/11/2003
trans-1,2-DCE	ND	0.050		mg/Kg	1	3/11/2003
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	3/11/2003
1,2,3-Trichlorobenzene	ND	0.050		mg/Kg	1	3/11/2003
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	3/11/2003
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	3/11/2003
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	3/11/2003
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	3/11/2003
Trichlorofluoromethane	ND	0.050		mg/Kg	1	3/11/2003
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	3/11/2003
Vinyl chloride	ND	0.10		mg/Kg	1	3/11/2003
Xylenes, Total	ND	0.050		mg/Kg	1	3/11/2003
Surr: 1,2-Dichloroethane-d4	83.8	65-114		%REC	1	3/11/2003
Surr: 4-Bromofluorobenzene	105	74-122		%REC	1	3/11/2003
Surr: Dibromofluoromethane	83.0	65-113		%REC	1	3/11/2003
Surr: Toluene-d8	99.2	60-123		%REC	1	3/11/2003

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 14-Mar-03

CLIENT: San Juan Refining
Lab Order: 0303043
Project: SEEP #5
Lab ID: 0303043-04

Client Sample ID: 11.3'-12.8'
Collection Date: 3/6/2003 10:55:00 AM
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: JMP
Diesel Range Organics (DRO)	11	5.0		mg/Kg	1	3/12/2003 10:03:42 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/12/2003 10:03:42 AM
Surr: DNOP	118	60-124		%REC	1	3/12/2003 10:03:42 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NB
Gasoline Range Organics (GRO)	9.0	5.0		mg/Kg	1	3/10/2003 8:56:06 PM
Surr: BFB	107	74-118		%REC	1	3/10/2003 8:56:06 PM
EPA METHOD 8260B: VOLATILES						Analyst: BL
Benzene	ND	0.050		mg/Kg	1	3/11/2003
Toluene	ND	0.050		mg/Kg	1	3/11/2003
Ethylbenzene	ND	0.050		mg/Kg	1	3/11/2003
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	3/11/2003
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	3/11/2003
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	3/11/2003
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	3/11/2003
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	3/11/2003
Naphthalene	ND	0.10		mg/Kg	1	3/11/2003
1-Methylnaphthalene	ND	0.20		mg/Kg	1	3/11/2003
2-Methylnaphthalene	ND	0.20		mg/Kg	1	3/11/2003
Bromobenzene	ND	0.050		mg/Kg	1	3/11/2003
Bromodichloromethane	ND	0.050		mg/Kg	1	3/11/2003
Bromoform	ND	0.050		mg/Kg	1	3/11/2003
Bromomethane	ND	0.10		mg/Kg	1	3/11/2003
Carbon tetrachloride	ND	0.050		mg/Kg	1	3/11/2003
Chlorobenzene	ND	0.050		mg/Kg	1	3/11/2003
Chloroethane	ND	0.10		mg/Kg	1	3/11/2003
Chloroform	ND	0.050		mg/Kg	1	3/11/2003
Chloromethane	ND	0.050		mg/Kg	1	3/11/2003
2-Chlorotoluene	ND	0.050		mg/Kg	1	3/11/2003
4-Chlorotoluene	ND	0.050		mg/Kg	1	3/11/2003
cis-1,2-DCE	ND	0.050		mg/Kg	1	3/11/2003
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	3/11/2003
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	3/11/2003
Dibromochloromethane	ND	0.050		mg/Kg	1	3/11/2003
Dibromomethane	ND	0.10		mg/Kg	1	3/11/2003
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	3/11/2003
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	3/11/2003
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	3/11/2003
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	3/11/2003
1,1-Dichloroethane	ND	0.050		mg/Kg	1	3/11/2003
1,1-Dichloroethene	ND	0.050		mg/Kg	1	3/11/2003

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 14-Mar-03

CLIENT: San Juan Refining

Client Sample ID: 11.3'-12.8'

Lab Order: 0303043

Collection Date: 3/6/2003 10:55:00 AM

Project: SEEP #5

Lab ID: 0303043-04

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,2-Dichloropropane	ND	0.050		mg/Kg	1	3/11/2003
1,3-Dichloropropane	ND	0.050		mg/Kg	1	3/11/2003
2,2-Dichloropropane	ND	0.050		mg/Kg	1	3/11/2003
1,1-Dichloropropene	ND	0.050		mg/Kg	1	3/11/2003
Hexachlorobutadiene	ND	0.050		mg/Kg	1	3/11/2003
Isopropylbenzene	ND	0.050		mg/Kg	1	3/11/2003
4-Isopropyltoluene	ND	0.050		mg/Kg	1	3/11/2003
Methylene chloride	ND	0.15		mg/Kg	1	3/11/2003
n-Butylbenzene	ND	0.050		mg/Kg	1	3/11/2003
n-Propylbenzene	ND	0.050		mg/Kg	1	3/11/2003
sec-Butylbenzene	ND	0.050		mg/Kg	1	3/11/2003
Styrene	ND	0.050		mg/Kg	1	3/11/2003
tert-Butylbenzene	ND	0.050		mg/Kg	1	3/11/2003
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	3/11/2003
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	3/11/2003
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	3/11/2003
trans-1,2-DCE	ND	0.050		mg/Kg	1	3/11/2003
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	3/11/2003
1,2,3-Trichlorobenzene	ND	0.050		mg/Kg	1	3/11/2003
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	3/11/2003
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	3/11/2003
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	3/11/2003
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	3/11/2003
Trichlorofluoromethane	ND	0.050		mg/Kg	1	3/11/2003
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	3/11/2003
Vinyl chloride	ND	0.10		mg/Kg	1	3/11/2003
Xylenes, Total	ND	0.050		mg/Kg	1	3/11/2003
Surr: 1,2-Dichloroethane-d4	84.2	65-114		%REC	1	3/11/2003
Surr: 4-Bromofluorobenzene	110	74-122		%REC	1	3/11/2003
Surr: Dibromofluoromethane	84.8	65-113		%REC	1	3/11/2003
Surr: Toluene-d8	101	60-123		%REC	1	3/11/2003

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 14-Mar-03

CLIENT: San Juan Refining
Work Order: 0303043
Project: SEEP #5

QC SUMMARY REPORT
Method Blank

Sample ID	MB-3229	Batch ID: 3229	Test Code: SW8015	Units: mg/Kg	Analysis Date	3/11/2003 4:22:36 PM	Prep Date	3/10/2003				
Client ID:			Run ID: FID(17A)_030311A		SeqNo: 172850							
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)		ND	5.0									
Motor Oil Range Organics (MRO)		ND	50									
Surr: DNOP		11.64	0	10	0	116	60	124	0			

Sample ID	MB-3223	Batch ID: 3223	Test Code: SW8015	Units: mg/Kg	Analysis Date	3/10/2003 9:26:45 PM	Prep Date	3/7/2003				
Client ID:			Run ID: PIDFID_030310A		SeqNo: 172422							
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)		1.75	5.0									J
Surr: BFB		910.9	0	1000	0	91.1	74	118	0			

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

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
Work Order: 0303043
Project: SEEP #5

QC SUMMARY REPORT
 Method Blank

Sample ID	mb 3223	Batch ID: R7606	Test Code: SW8260B	Units: mg/Kg	Analysis Date	3/11/2003	Prep Date				
Client ID:		Run ID:	VAL_030310A		SeqNo:	172502					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.050									
Toluene	ND	0.050									
Ethylbenzene	ND	0.050									
Methyl tert-butyl ether (MTBE)	ND	0.050									
1,2,4-Trimethylbenzene	ND	0.050									
1,3,5-Trimethylbenzene	ND	0.050									
1,2-Dichloroethane (EDC)	0.0261	0.050									
1,2-Dibromoethane (EDB)	ND	0.050									
Naphthalene	ND	0.10									
1-Methylnaphthalene	ND	0.20									
2-Methylnaphthalene	ND	0.20									
Bromobenzene	ND	0.050									
Bromodichloromethane	ND	0.050									
Bromoform	ND	0.050									
Bromomethane	ND	0.10									
Carbon tetrachloride	ND	0.050									
Chlorobenzene	ND	0.050									
Chloroethane	ND	0.10									
Chloroform	ND	0.050									
Chloromethane	ND	0.050									
2-Chlorotoluene	ND	0.050									
4-Chlorotoluene	ND	0.050									
cis-1,2-DCE	ND	0.050									
cis-1,3-Dichloropropene	ND	0.050									
1,2-Dibromo-3-chloropropane	ND	0.10									
Dibromochloromethane	ND	0.050									
Dibromomethane	ND	0.10									
1,2-Dichlorobenzene	ND	0.050									

J

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Method Blank

CLIENT: San Juan Refining

Work Order: 0303043

Project: SEEP #5

[illegible]

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	
			3

CLIENT:

San Juan Refining

Work Order:

0303043

Project:

SEEP #5

QC SUMMARY REPORT

Method Blank

Surr: 4-Bromofluorobenzene	0.5037	0	0.5	0	101	74	122	0
Surr: Dibromofluoromethane	0.4304	0	0.5	0	86.1	65	113	0
Surr: Toluene-d8	0.5084	0	0.5	0	102	60	123	0

Hall Environmental Analysis Laboratory

Date: 14-Mar-03

CLIENT: San Juan Refining

Work Order: 0303043

Project: SEEP #5

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID	LCS-3229	Batch ID: 3229	Test Code: SW8015	Units: mg/Kg	Analysis Date	3/11/2003 4:51:56 PM	Prep Date	3/10/2003			
Client ID:			Run ID: FID(17A)_030311A		SeqNo: 172851						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	52.83	5.0	50	0	106	67.4	117	0			
Surr: DNOP	11.23	0	10	0	112	74	125	0			
Sample ID	LCSD-3229	Batch ID: 3229	Test Code: SW8015	Units: mg/Kg	Analysis Date	3/12/2003 10:32:59 AM	Prep Date	3/10/2003			
Client ID:			Run ID: FID(17A)_030311A		SeqNo: 172900						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	54.85	5.0	50	0	110	67.4	117	52.83	3.75	17.4	
Surr: DNOP	12.27	0	10	0	123	74	125	11.23	8.86	0	
Sample ID	Ics	Batch ID: R7606	Test Code: SW8260B	Units: µg/L	Analysis Date	3/10/2003	Prep Date				
Client ID:			Run ID: VAL_030310A		SeqNo: 172486						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.33	1.0	20	0	96.6	78.7	122	0			
Toluene	20.51	1.0	20	0	103	87.7	122	0			
Chlorobenzene	19.34	1.0	20	0	96.7	85.6	136	0			
1,1,1-Dichloroethene	18.38	1.0	20	0	91.9	70.7	117	0			
Trichloroethene (TCE)	20.58	1.0	20	0	103	76.9	130	0			
Surr: 1,2-Dichloroethane-d4	9.086	0	10	0	90.9	68.4	127	0			
Surr: 4-Bromofluorobenzene	10.32	0	10	0	103	70.4	126	0			
Surr: Dibromofluoromethane	9.032	0	10	0	90.3	70.2	126	0			
Surr: Toluene-d8	10.52	0	10	0	105	73.5	129	0			

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

Hall Environmental Analysis Laboratory

Date: 14-Mar-03

CLIENT: San Juan Refining
Work Order: 0303043
Project: SEEP #5

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID	0303043-04aMS	Batch ID: 3223	Test Code: SW8015	Units: mg/Kg	Analysis Date	3/10/2003 9:57:22 PM	Prep Date				
Client ID:	11.3'-12.8'		PIDFID_030310A		SeqNo:	172430					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	37.35	5.0	25	8.98	113	85.8	111	0			
Surr: BFB	1242	0	1250	0	99.4	74	118	0			

Sample ID	0303043-04aMSD	Batch ID: 3223	Test Code: SW8015	Units: mg/Kg	Analysis Date	3/10/2003 10:27:55 PM	Prep Date				
Client ID:	11.3'-12.8'		PIDFID_030310A		SeqNo:	172434					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	39.03	5.0	25	8.98	120	85.8	111	37.35	4.40	11.6	
Surr: BFB	1260	0	1250	0	101	74	118	1242	1.44	0	

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

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name **SJR**

Date and Time Received

3/7/03

Work Order Number **0303043**

Received by **AT**

Checklist completed by

Signature

Date

Matrix:

Carrier name: UPS

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒
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?

7°

4° C ± 2 Acceptable

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

HALL ENVIRONMENTAL ANALYSIS LABORATORY

4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

CHAIN-OF-CUSTODY RECORD									
Client: <u>SAN Juan Refining</u>									
Address: <u>4161</u>									
<u>#-50 CR 4990</u>									
<u>Bloomfield, NM</u>									
<u>87413</u>									
Phone #: <u>505-632-4161</u>									
Fax #: <u>505-632-3911</u>									
Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative		HEAL No.		
					H ₂ Cl ₂	HNO ₃			
10/03	10AM	Soil	Surface	409 jar			0303043-1		
↓	1010AM	↓	5'-6.5'	↓			-2		
↓	1030AM	↓	9'-9.7'	↓			-3		
↓	1055AM	↓	11.3'-12.8'	↓			-4		
10/03									
Date:	Time:	Relinquished By: (Signature)		Relinquished By: (Signature)		Remarks:			
10/03	1300	<u>Cindy Hurtado</u>		<u>Cindy Hurtado</u>		<u>3/7/03</u>			
Date:	Time:	Relinquished By: (Signature)		Relinquished By: (Signature)		Remarks:			
		<u>Cindy Hurtado</u>		<u>Cindy Hurtado</u>		<u>09/10</u>			

Developed H₂O

Hall Environmental Analysis Laboratory

Date: 22-Apr-03

CLIENT: San Juan Refining
Lab Order: 0304016
Project: Seep #5 work over
Lab ID: 0304016-01

Client Sample ID: Seep #5
Collection Date: 4/3/2003 8:30:00 AM

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: HVA
Fluoride	ND	1.0		mg/L	10	4/7/2003
Chloride	640	5.0		mg/L	50	4/8/2003
Nitrate (As N)+Nitrite (As N)	ND	0.50		mg/L	5	4/7/2003
Phosphorus, Orthophosphate (As P)	ND	5.0		mg/L	10	4/7/2003
Sulfate	8.5	5.0		mg/L	10	4/7/2003
EPA METHOD 8260B: VOLATILES						Analyst: BDH
Benzene	29	1.0		µg/L	1	4/4/2003
Toluene	ND	1.0		µg/L	1	4/4/2003
Ethylbenzene	5.6	1.0		µg/L	1	4/4/2003
Methyl tert-butyl ether (MTBE)	5.2	1.0		µg/L	1	4/4/2003
1,2,4-Trimethylbenzene	97	1.0		µg/L	1	4/4/2003
1,3,5-Trimethylbenzene	17	1.0		µg/L	1	4/4/2003
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	4/4/2003
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	4/4/2003
Naphthalene	85	2.0		µg/L	1	4/4/2003
1-Methylnaphthalene	37	4.0		µg/L	1	4/4/2003
2-Methylnaphthalene	36	4.0		µg/L	1	4/4/2003
Bromobenzene	ND	1.0		µg/L	1	4/4/2003
Bromochloromethane	ND	1.0		µg/L	1	4/4/2003
Bromodichloromethane	ND	1.0		µg/L	1	4/4/2003
Bromoform	ND	1.0		µg/L	1	4/4/2003
Bromomethane	ND	2.0		µg/L	1	4/4/2003
Carbon Tetrachloride	ND	1.0		µg/L	1	4/4/2003
Chlorobenzene	2.6	1.0		µg/L	1	4/4/2003
Chloroethane	ND	2.0		µg/L	1	4/4/2003
Chloroform	ND	1.0		µg/L	1	4/4/2003
Chloromethane	ND	1.0		µg/L	1	4/4/2003
2-Chlorotoluene	ND	1.0		µg/L	1	4/4/2003
4-Chlorotoluene	ND	1.0		µg/L	1	4/4/2003
cis-1,2-DCE	ND	1.0		µg/L	1	4/4/2003
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	4/4/2003
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	4/4/2003
Dibromochloromethane	ND	1.0		µg/L	1	4/4/2003
Dibromomethane	ND	2.0		µg/L	1	4/4/2003
1,2-Dichlorobenzene	ND	1.0		µg/L	1	4/4/2003
1,3-Dichlorobenzene	ND	1.0		µg/L	1	4/4/2003
1,4-Dichlorobenzene	ND	1.0		µg/L	1	4/4/2003
Dichlorodifluoromethane	ND	1.0		µg/L	1	4/4/2003
1,1-Dichloroethane	ND	1.0		µg/L	1	4/4/2003
1,1-Dichloroethene	ND	1.0		µg/L	1	4/4/2003

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 22-Apr-03

CLIENT: San Juan Refining
Lab Order: 0304016
Project: Seep #5 work over
Lab ID: 0304016-01

Client Sample ID: Seep #5
Collection Date: 4/3/2003 8:30:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,2-Dichloropropane	ND	1.0		µg/L	1	4/4/2003
1,3-Dichloropropane	ND	1.0		µg/L	1	4/4/2003
2,2-Dichloropropane	ND	1.0		µg/L	1	4/4/2003
1,1-Dichloropropene	ND	1.0		µg/L	1	4/4/2003
Hexachlorobutadiene	ND	1.0		µg/L	1	4/4/2003
Isopropylbenzene	33	1.0		µg/L	1	4/4/2003
4-Isopropyltoluene	2.9	1.0		µg/L	1	4/4/2003
Methylene Chloride	ND	3.0		µg/L	1	4/4/2003
n-Butylbenzene	ND	1.0		µg/L	1	4/4/2003
n-Propylbenzene	44	1.0		µg/L	1	4/4/2003
sec-Butylbenzene	5.8	1.0		µg/L	1	4/4/2003
Styrene	ND	1.0		µg/L	1	4/4/2003
tert-Butylbenzene	1.8	1.0		µg/L	1	4/4/2003
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	4/4/2003
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	4/4/2003
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	4/4/2003
trans-1,2-DCE	ND	1.0		µg/L	1	4/4/2003
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	4/4/2003
Trichloroethene (TCE)	ND	1.0		µg/L	1	4/4/2003
Trichlorofluoromethane	ND	1.0		µg/L	1	4/4/2003
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	4/4/2003
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	4/4/2003
1,1,1-Trichloroethane	ND	1.0		µg/L	1	4/4/2003
1,1,2-Trichloroethane	ND	1.0		µg/L	1	4/4/2003
Vinyl chloride	ND	2.0		µg/L	1	4/4/2003
1,2,3-Trichloropropane	ND	2.0		µg/L	1	4/4/2003
Xylenes, Total	54	1.0		µg/L	1	4/4/2003
Surr: 1,2-Dichloroethane-d4	87.1	74.6-123		%REC	1	4/4/2003
Surr: 4-Bromofluorobenzene	108	85.6-117		%REC	1	4/4/2003
Surr: Dibromofluoromethane	87.8	78.6-117		%REC	1	4/4/2003
Surr: Toluene-d8	110	84.2-119		%REC	1	4/4/2003

EPA METHOD 8310: PAHS

Analyst: GT

Naphthalene	40	2.5		µg/L	1	4/11/2003 3:52:36 AM
1-Methylnaphthalene	19	2.5		µg/L	1	4/11/2003 3:52:36 AM
2-Methylnaphthalene	17	2.5		µg/L	1	4/11/2003 3:52:36 AM
Acenaphthylene	ND	2.5		µg/L	1	4/11/2003 3:52:36 AM
Acenaphthene	ND	2.5		µg/L	1	4/11/2003 3:52:36 AM
Fluorene	1.6	0.80		µg/L	1	4/11/2003 3:52:36 AM
Phenanthrene	0.63	0.60		µg/L	1	4/11/2003 3:52:36 AM
Anthracene	ND	0.60		µg/L	1	4/11/2003 3:52:36 AM
Fluoranthene	ND	0.30		µg/L	1	4/11/2003 3:52:36 AM
Pyrene	ND	0.30		µg/L	1	4/11/2003 3:52:36 AM

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 22-Apr-03

CLIENT: San Juan Refining
Lab Order: 0304016
Project: Seep #5 work over
Lab ID: 0304016-01

Client Sample ID: Seep #5
Collection Date: 4/3/2003 8:30:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Benz(a)anthracene	ND	0.020		µg/L	1	4/11/2003 3:52:36 AM
Chrysene	ND	0.20		µg/L	1	4/11/2003 3:52:36 AM
Benzo(b)fluoranthene	ND	0.050		µg/L	1	4/11/2003 3:52:36 AM
Benzo(k)fluoranthene	ND	0.020		µg/L	1	4/11/2003 3:52:36 AM
Benzo(a)pyrene	ND	0.020		µg/L	1	4/11/2003 3:52:36 AM
Dibenz(a,h)anthracene	ND	0.040		µg/L	1	4/11/2003 3:52:36 AM
Benzo(g,h,i)perylene	ND	0.030		µg/L	1	4/11/2003 3:52:36 AM
Indeno(1,2,3-cd)pyrene	ND	0.080		µg/L	1	4/11/2003 3:52:36 AM
Surr: Benzo(e)pyrene	91.0	54-102		%REC	1	4/11/2003 3:52:36 AM
EPA METHOD 7470: MERCURY						Analyst: MAP
Mercury	0.00032	0.00020		mg/L	1	4/14/2003
MERCURY, DISSOLVED						Analyst: MAP
Mercury	0.00022	0.00020		mg/L	1	4/11/2003
EPA METHOD 6010C: DISSOLVED METALS						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	4/16/2003 10:35:50 AM
Barium	1.7	0.020		mg/L	10	4/16/2003 10:59:56 AM
Cadmium	ND	0.0020		mg/L	1	4/16/2003 10:35:50 AM
Calcium	170	2.5		mg/L	5	4/16/2003 1:34:13 PM
Chromium	ND	0.0060		mg/L	1	4/21/2003 9:04:50 AM
Copper	ND	0.0060		mg/L	1	4/16/2003 10:35:50 AM
Iron	2.9	0.20		mg/L	10	4/16/2003 10:59:56 AM
Lead	ND	0.0050		mg/L	1	4/16/2003 10:35:50 AM
Magnesium	69	0.50		mg/L	1	4/16/2003 1:16:30 PM
Manganese	7.1	0.020		mg/L	10	4/16/2003 10:59:56 AM
Potassium	5.9	0.50		mg/L	1	4/16/2003 1:16:30 PM
Selenium	ND	0.020		mg/L	1	4/16/2003 10:35:50 AM
Silver	ND	0.0050		mg/L	1	4/16/2003 2:14:01 PM
Sodium	610	2.5		mg/L	5	4/16/2003 1:34:13 PM
Uranium	ND	0.10		mg/L	1	4/16/2003 10:35:50 AM
Zinc	0.025	0.0050		mg/L	1	4/16/2003 10:35:50 AM
EPA METHOD 6010C: TOTAL METALS						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	4/14/2003 1:16:57 PM
Barium	2.5	2.0		mg/L	100	4/14/2003 12:48:15 PM
Cadmium	ND	0.0020		mg/L	1	4/14/2003 1:16:57 PM
Chromium	ND	0.0060		mg/L	1	4/21/2003 8:59:10 AM
Copper	ND	0.0060		mg/L	1	4/14/2003 1:16:57 PM
Iron	63	2.0		mg/L	100	4/14/2003 12:48:15 PM
Lead	ND	0.0050		mg/L	1	4/14/2003 1:16:57 PM
Manganese	8.2	0.20		mg/L	100	4/14/2003 12:48:15 PM
Selenium	ND	0.020		mg/L	1	4/14/2003 1:16:57 PM

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 22-Apr-03

CLIENT: San Juan Refining

Client Sample ID: Seep #5

Lab Order: 0304016

Collection Date: 4/3/2003 8:30:00 AM

Project: Seep #5 work over

Lab ID: 0304016-01

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Silver	ND	0.0050		mg/L	1	4/14/2003 2:30:29 PM
Uranium	ND	0.10		mg/L	1	4/14/2003 1:16:57 PM
Zinc	0.10	0.050		mg/L	1	4/14/2003 1:16:57 PM

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 22-Apr-03

CLIENT: San Juan Refining
Lab Order: 0304016
Project: Seep #5 work over
Lab ID: 0304016-02

Client Sample ID: Trip blank
Collection Date:

Matrix: TRIP BLANK

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: BDH
Benzene	ND	1.0		µg/L	1	4/4/2003
Toluene	ND	1.0		µg/L	1	4/4/2003
Ethylbenzene	ND	1.0		µg/L	1	4/4/2003
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/4/2003
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	4/4/2003
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	4/4/2003
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	4/4/2003
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	4/4/2003
Naphthalene	ND	2.0		µg/L	1	4/4/2003
1-Methylnaphthalene	ND	4.0		µg/L	1	4/4/2003
2-Methylnaphthalene	ND	4.0		µg/L	1	4/4/2003
Bromobenzene	ND	1.0		µg/L	1	4/4/2003
Bromochloromethane	ND	1.0		µg/L	1	4/4/2003
Bromodichloromethane	ND	1.0		µg/L	1	4/4/2003
Bromoform	ND	1.0		µg/L	1	4/4/2003
Bromomethane	ND	2.0		µg/L	1	4/4/2003
Carbon Tetrachloride	ND	1.0		µg/L	1	4/4/2003
Chlorobenzene	ND	1.0		µg/L	1	4/4/2003
Chloroethane	ND	2.0		µg/L	1	4/4/2003
Chloroform	ND	1.0		µg/L	1	4/4/2003
Chloromethane	ND	1.0		µg/L	1	4/4/2003
2-Chlorotoluene	ND	1.0		µg/L	1	4/4/2003
4-Chlorotoluene	ND	1.0		µg/L	1	4/4/2003
cis-1,2-DCE	ND	1.0		µg/L	1	4/4/2003
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	4/4/2003
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	4/4/2003
Dibromochloromethane	ND	1.0		µg/L	1	4/4/2003
Dibromomethane	ND	2.0		µg/L	1	4/4/2003
1,2-Dichlorobenzene	ND	1.0		µg/L	1	4/4/2003
1,3-Dichlorobenzene	ND	1.0		µg/L	1	4/4/2003
1,4-Dichlorobenzene	ND	1.0		µg/L	1	4/4/2003
Dichlorodifluoromethane	ND	1.0		µg/L	1	4/4/2003
1,1-Dichloroethane	ND	1.0		µg/L	1	4/4/2003
1,1-Dichloroethene	ND	1.0		µg/L	1	4/4/2003
1,2-Dichloropropane	ND	1.0		µg/L	1	4/4/2003
1,3-Dichloropropane	ND	1.0		µg/L	1	4/4/2003
2,2-Dichloropropane	ND	1.0		µg/L	1	4/4/2003
1,1-Dichloropropene	ND	1.0		µg/L	1	4/4/2003
Hexachlorobutadiene	ND	1.0		µg/L	1	4/4/2003
Isopropylbenzene	ND	1.0		µg/L	1	4/4/2003
4-Isopropyltoluene	ND	1.0		µg/L	1	4/4/2003

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 22-Apr-03

CLIENT: San Juan Refining
Lab Order: 0304016
Project: Seep #5 work over
Lab ID: 0304016-02

Client Sample ID: Trip blank
Collection Date:

Matrix: TRIP BLANK

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Methylene Chloride	ND	3.0		µg/L	1	4/4/2003
n-Butylbenzene	ND	1.0		µg/L	1	4/4/2003
n-Propylbenzene	ND	1.0		µg/L	1	4/4/2003
sec-Butylbenzene	ND	1.0		µg/L	1	4/4/2003
Styrene	ND	1.0		µg/L	1	4/4/2003
tert-Butylbenzene	ND	1.0		µg/L	1	4/4/2003
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	4/4/2003
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	4/4/2003
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	4/4/2003
trans-1,2-DCE	ND	1.0		µg/L	1	4/4/2003
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	4/4/2003
Trichloroethene (TCE)	ND	1.0		µg/L	1	4/4/2003
Trichlorofluoromethane	ND	1.0		µg/L	1	4/4/2003
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	4/4/2003
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	4/4/2003
1,1,1-Trichloroethane	ND	1.0		µg/L	1	4/4/2003
1,1,2-Trichloroethane	ND	1.0		µg/L	1	4/4/2003
Vinyl chloride	ND	2.0		µg/L	1	4/4/2003
1,2,3-Trichloropropane	ND	2.0		µg/L	1	4/4/2003
Xylenes, Total	ND	1.0		µg/L	1	4/4/2003
Surr: 1,2-Dichloroethane-d4	108	74.6-123		%REC	1	4/4/2003
Surr: 4-Bromofluorobenzene	108	85.6-117		%REC	1	4/4/2003
Surr: Dibromofluoromethane	101	78.6-117		%REC	1	4/4/2003
Surr: Toluene-d8	95.8	84.2-119		%REC	1	4/4/2003

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 22-Apr-03

CLIENT: San Juan Refining
Work Order: 0304016
Project: Seep #5 work over

QC SUMMARY REPORT

Method Blank

Sample ID: MBLK #1 **Batch ID:** R7876 **Test Code:** E300 **Units:** mg/L **Analysis Date:** 4/7/2003 **Prep Date:**
Client ID: **Run ID:** LC_030407A **SeqNo:** 178324

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									
Chloride	ND	0.10									
Nitrate (As N)+Nitrite (As N)	ND	0.10									
Phosphorus, Orthophosphate (As P)	ND	0.50									
Sulfate	ND	0.50									

Sample ID: MBLK **Batch ID:** R7876 **Test Code:** E300 **Units:** mg/L **Analysis Date:** 4/7/2003 **Prep Date:**
Client ID: **Run ID:** LC_030407A **SeqNo:** 178344

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									
Chloride	ND	0.10									
Nitrate (As N)+Nitrite (As N)	ND	0.10									
Phosphorus, Orthophosphate (As P)	ND	0.50									
Sulfate	ND	0.50									

Sample ID: MBLK #3 **Batch ID:** R7876 **Test Code:** E300 **Units:** mg/L **Analysis Date:** 4/7/2003 **Prep Date:**
Client ID: **Run ID:** LC_030407A **SeqNo:** 178369

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									
Chloride	ND	0.10									
Nitrate (As N)+Nitrite (As N)	ND	0.10									
Phosphorus, Orthophosphate (As P)	ND	0.50									
Sulfate	ND	0.50									

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

QC SUMMARY REPORT

Method Blank

CLIENT: San Juan Refining
 Work Order: 0304016
 Project: Seep #5 work over

Sample ID: MBLK	Batch ID: R7876	Test Code: E300	Units: mg/L	Analysis Date: 4/7/2003	Prep Date:					
Client ID:		Run ID: LC_030407A		SeqNo: 178377						
Analyte	Result	PQL	SPK value	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND		0.10							
Chloride	ND		0.10							
Nitrate (As N)+Nitrite (As N)	ND		0.10							
Phosphorus, Orthophosphate (As P)	ND		0.50							
Sulfate	ND		0.50							

Sample ID: MBLK #1	Batch ID: R7879	Test Code: E300	Units: mg/L	Analysis Date: 4/8/2003	Prep Date:						
Client ID:		Run ID: LC_030408A		SeqNo: 178472							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									
Chloride	ND	0.10									
Nitrate (As N)+Nitrite (As N)	ND	0.10									
Phosphorus, Orthophosphate (As P)	ND	0.50									
Sulfate	ND	0.50									

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Method Blank

CLIENT: San Juan Refining

Work Order: 0304016

Project: Seep #5 work over

Prep Date:

Analysis Date: 4/4/2003

SeqNo: 177747

Units: µg/L

Test Code: SW8260B

Run ID: NEPTUNE_030404A

Batch ID: R7856

Sample ID: 5ml rb

Client ID:

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1.0									
Toluene	ND	1.0									
Ethylbenzene	ND	1.0									
Methyl tert-butyl ether (MTBE)	ND	1.0									
1,2,4-Trimethylbenzene	ND	1.0									
1,3,5-Trimethylbenzene	ND	1.0									
1,2-Dichloroethane (EDC)	0.44	1.0									
1,2-Dibromoethane (EDB)	ND	1.0									
Naphthalene	ND	2.0									
1-Methylnaphthalene	ND	4.0									
2-Methylnaphthalene	ND	4.0									
Bromobenzene	ND	1.0									
Bromochloromethane	ND	1.0									
Bromodichloromethane	ND	1.0									
Bromoform	ND	1.0									
Bromomethane	ND	2.0									
Carbon Tetrachloride	ND	1.0									
Chlorobenzene	ND	1.0									
Chloroethane	ND	2.0									
Chloroform	ND	1.0									
Chloromethane	ND	1.0									
2-Chlorotoluene	ND	1.0									
4-Chlorotoluene	ND	1.0									
cis-1,2-DCE	ND	1.0									
cis-1,3-Dichloropropene	ND	1.0									
1,2-Dibromo-3-chloropropane	ND	2.0									
Dibromochloromethane	ND	1.0									
Dibromomethane	ND	2.0									

J

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

CLIENT: San Juan Refining
Work Order: 0304016
Project: Seep #5 work over

QC SUMMARY REPORT
 Method Blank

1,2-Dichlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
Dichlorodifluoromethane	ND	1.0
1,1-Dichloroethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,2-Dichloropropane	ND	1.0
1,3-Dichloropropane	ND	1.0
2,2-Dichloropropane	ND	1.0
1,1-Dichloropropene	ND	1.0
Hexachlorobutadiene	ND	1.0
Isopropylbenzene	ND	1.0
4-Isopropyltoluene	ND	1.0
Methylene Chloride	0.194	3.0
n-Butylbenzene	ND	1.0
n-Propylbenzene	ND	1.0
sec-Butylbenzene	ND	1.0
Styrene	ND	1.0
tert-Butylbenzene	ND	1.0
Tetrachloroethene (PCE)	ND	1.0
1,1,1,2-Tetrachloroethane	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
trans-1,2-DCE	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Trichloroethene (TCE)	ND	1.0
Trichlorofluoromethane	ND	1.0
1,2,3-Trichlorobenzene	ND	1.0
1,2,4-Trichlorobenzene	ND	1.0
1,1,1-Trichloroethane	ND	1.0
1,1,2-Trichloroethane	ND	1.0
Vinyl chloride	ND	2.0
1,2,3-Trichloropropane	ND	2.0
Xylenes, Total	ND	1.0

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

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
Work Order: 0304016
Project: Seep #5 work over

QC SUMMARY REPORT
 Method Blank

Surr: 1,2-Dichloroethane-d4	10.3	0	10	0	103	74.6	123	0
Surr: 4-Bromofluorobenzene	10.22	0	10	0	102	85.6	117	0
Surr: Dibromofluoromethane	9.746	0	10	0	97.5	78.6	117	0
Surr: Toluene-d8	9.308	0	10	0	93.1	84.2	119	0

Sample ID: MB-3373 **Batch ID:** 3373 **Test Code:** SW8310 **Units:** µg/L **Analysis Date:** 4/14/2003 6:19:32 PM **Prep Date:** 4/7/2003
Client ID: **Run ID:** HUGO_030414A **SeqNo:** 179521

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	ND	2.5									
1-Methylnaphthalene	ND	2.5									
2-Methylnaphthalene	ND	2.5									
Acenaphthylene	ND	2.5									
Acenaphthene	ND	2.5									
Fluorene	ND	0.80									
Phenanthrene	ND	0.60									
Anthracene	ND	0.60									
Fluoranthene	ND	0.30									
Pyrene	ND	0.30									
Benz(a)anthracene	ND	0.020									
Chrysene	ND	0.20									
Benzo(b)fluoranthene	ND	0.050									
Benzo(k)fluoranthene	0.01	0.020									J
Benzo(a)pyrene	ND	0.020									
Dibenz(a,h)anthracene	ND	0.040									
Benzo(g,h,i)perylene	0.02	0.030									J
Indeno(1,2,3-cd)pyrene	ND	0.080									
Surr: Benzo(e)pyrene	17.33	0	20	0	86.7	54	102	0			

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

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank
 5

CLIENT: San Juan Refining
Work Order: 0304016
Project: Seep #5 work over

QC SUMMARY REPORT
 Method Blank

Sample ID: MB-3394	Batch ID: 3394	Test Code: SW7470	Units: mg/L	Analysis Date: 4/14/2003	Prep Date: 4/14/2003
Client ID:		Run ID: MI-LA254_030414A		SeqNo: 179411	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	ND	0.00020			
Sample ID: MBLK	Batch ID: R7924	Test Code: SW7470	Units: mg/L	Analysis Date: 4/11/2003	Prep Date:
Client ID:		Run ID: MI-LA254_030411A		SeqNo: 179281	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	0.00004	0.00020			J
Sample ID: BLK	Batch ID: R7958	Test Code: SW6010A	Units: mg/L	Analysis Date: 4/16/2003 10:01:41 AM	Prep Date:
Client ID:		Run ID: ICP_030416B		SeqNo: 180089	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Arsenic	ND	0.020			
Barium	ND	0.0020			
Cadmium	ND	0.0020			
Chromium	0.001627	0.0060			J
Copper	ND	0.0060			
Lead	ND	0.0050			
Selenium	ND	0.020			
Uranium	ND	0.10			
Zinc	ND	0.0050			

CLIENT: San Juan Refining
Work Order: 0304016
Project: Seep #5 work over

QC SUMMARY REPORT
Method Blank

Sample ID: BLK	Batch ID: R7967	Test Code: SW6010A	Units: mg/L	Analysis Date: 4/16/2003 1:06:12 PM	Prep Date:
Client ID:	Run ID: ICP_030416C	SeqNo: 180234			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Calcium	ND	0.50			
Magnesium	ND	0.50			
Potassium	0.0737	1.0			J
Sodium	0.1866	0.50			J

Sample ID: BLK	Batch ID: R7969	Test Code: SW6010A	Units: mg/L	Analysis Date: 4/16/2003 2:05:46 PM	Prep Date:
Client ID:	Run ID: ICP_030416D	SeqNo: 180277			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Silver	ND	0.0050			

Sample ID: MB-3404	Batch ID: 3404	Test Code: SW6010A	Units: mg/L	Analysis Date: 4/14/2003 10:32:51 AM	Prep Date: 4/11/2003
Client ID:	Run ID: ICP_030414B	SeqNo: 179365			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Arsenic	ND	0.020			
Barium	ND	0.020			
Cadmium	ND	0.0020			
Chromium	ND	0.0060			
Copper	ND	0.0060			
Iron	0.01855	0.020			J
Lead	ND	0.0050			
Manganese	ND	0.0020			
Selenium	ND	0.020			
Zinc	0.02352	0.050			J

CLIENT: San Juan Refining
Work Order: 0304016
Project: Seep #5 work over

QC SUMMARY REPORT
Method Blank

Sample ID: MB-3404	Batch ID: 3404	Test Code: SW6010A	Units: mg/L	Analysis Date: 4/14/2003 2:17:57 PM	Prep Date: 4/11/2003
Client ID:		Run ID: ICP_030414C		SeqNo: 179394	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Silver	0.003629	0.0050			J

Sample ID: MB-3404	Batch ID: 3404	Test Code: SW6010A	Units: mg/L	Analysis Date: 4/21/2003 8:54:02 AM	Prep Date: 4/11/2003
Client ID:		Run ID: ICP_030421C		SeqNo: 181072	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chromium	ND	0.0060	0	0	0 0 0

Hall Environmental Analysis Laboratory

Date: 22-Apr-03

CLIENT: San Juan Refining

Work Order: 0304016

Project: Seep #5 work over

QC SUMMARY REPORT

Sample Duplicate

Sample ID: 0304016-01C	Batch ID: R7876	Test Code: E300	Units: mg/L	Analysis Date: 4/7/2003	Prep Date:
Client ID: Seep #5		Run ID: LC_030407A		SeqNo: 178331	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Fluoride	ND	1.0	0	0	0 0 0 0 20
Phosphorus, Orthophosphate (As P)	ND	5.0	0	0	0 0 0 0 20
Sample ID: 0304016-01C	Batch ID: R7876	Test Code: E300	Units: mg/L	Analysis Date: 4/7/2003	Prep Date:
Client ID: Seep #5		Run ID: LC_030407A		SeqNo: 178333	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Nitrate (As N)+Nitrite (As N)	ND	0.50	0	0	0 0 0 0 20
Sample ID: 0304016-01C	Batch ID: R7879	Test Code: E300	Units: mg/L	Analysis Date: 4/8/2003	Prep Date:
Client ID: Seep #5		Run ID: LC_030408A		SeqNo: 178503	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	622.7	5.0	0	0	0 0 639.8 2.71 20
Sample ID: 0304016-01E	Batch ID: R7924	Test Code: SW7470	Units: mg/L	Analysis Date: 4/11/2003	Prep Date:
Client ID: Seep #5		Run ID: MI-LA254_030411A		SeqNo: 179285	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	0.00021	0.00020	0	0	0 0 0.00022 4.65 20

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
Work Order: 0304016
Project: Seep #5 work over

QC SUMMARY REPORT
 Sample Duplicate

Sample ID: 0304016-01E DUP		Batch ID: R7958	Test Code: SW6010A		Units: mg/L		Analysis Date: 4/16/2003 10:40:35 AM			Prep Date:	
Client ID: Seep #5			Run ID: ICP_030416B				SeqNo: 180096				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.020	0	0	0	0	0	0	0	20	
Cadmium	ND	0.0020	0	0	0	0	0	0	0	20	
Copper	ND	0.0060	0	0	0	0	0	0	0	20	
Lead	ND	0.0050	0	0	0	0	0	0	0	20	
Selenium	0.01592	0.020	0	0	0	0	0	0.008858	0	20	J
Uranium	0.04984	0.10	0	0	0	0	0	0.04857	0	20	J
Zinc	0.02454	0.0050	0	0	0	0	0	0.02478	0.946	20	

Sample ID: 0304016-01E DUP		Batch ID: R7967	Test Code: SW6010A		Units: mg/L	Analysis Date: 4/16/2003 1:18:42 PM		Prep Date:			
Client ID: Seep #5			Run ID: ICP_030416C			SeqNo: 180239					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	68.82	0.50	0	0	0	0	0	69.01	0.272	20	
Potassium	5.94	1.0	0	0	0	0	0	5.914	0.440	20	

Sample ID: 0304016-01E DUP		Batch ID: R7969	Test Code: SW6010A		Units: mg/L		Analysis Date: 4/16/2003 2:15:18 PM				Prep Date:	
Client ID: Seep #5			Run ID: ICP_030416D				SeqNo: 180284					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Silver	ND	0.0050	0	0	0	0	0	0	0	20		

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

Hall Environmental Analysis Laboratory

Date: 22-Apr-03

CLIENT: San Juan Refining

Work Order: 0304016

Project: Seep #5 work over

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 0304016-01E	Batch ID: R7924	Test Code: SW7470	Units: mg/L	Analysis Date: 4/11/2003	Prep Date:
Client ID: Seep #5		Run ID: MI-LA254_030411A		SeqNo: 179284	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	0.00337	0.00020	0.0034	0.00022	95.5 80 120 0

Sample ID: 0304016-01E MS	Batch ID: R7958	Test Code: SW6010A	Units: mg/L	Analysis Date: 4/16/2003 10:45:19 AM	Prep Date:
Client ID: Seep #5		Run ID: ICP_030416B		SeqNo: 180097	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Arsenic	0.8079	0.020	1	0	80.8 70 130 0
Cadmium	0.744	0.0020	1	0	74.4 70 130 0
Copper	0.887	0.0060	1	0	88.7 70 130 0
Lead	0.7362	0.0050	1	0	73.6 78.4 112 0
Selenium	0.9452	0.020	1	0.008858	93.6 70 130 0
Uranium	0.823	0.10	1	0.04857	77.4 70 130 0
Zinc	0.7719	0.0050	1	0.02478	74.7 70 130 0

Sample ID: 0304016-01E MS	Batch ID: R7969	Test Code: SW6010A	Units: mg/L	Analysis Date: 4/16/2003 2:18:47 PM	Prep Date:
Client ID: Seep #5		Run ID: ICP_030416D		SeqNo: 180286	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Silver	0.9695	0.0050	1	0	97.0 75 125 0

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

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Hall Environmental Analysis Laboratory

Date: 22-Apr-03

CLIENT: San Juan Refining
Work Order: 0304016
Project: Seep #5 work over

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS #1	Batch ID: R7876	Test Code: E300	Units: mg/L	Analysis Date: 4/7/2003	Prep Date:						
Client ID:	Run ID: LC_030407A	SeqNo: 178325									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.027	0.10	1.923	0	105	90	110	0			
Chloride	5.649	0.10	5.769	0	97.9	90	110	0			
Phosphorus, Orthophosphate (As P)	5.648	0.50	5.769	0	97.9	90	110	0			
Sulfate	11.22	0.50	11.54	0	97.2	90	110	0			

Sample ID: LCS#2	Batch ID: R7876	Test Code: E300	Units: mg/L	Analysis Date: 4/7/2003	Prep Date:						
Client ID:	Run ID: LC_030407A	SeqNo: 178345									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.921	0.10	1.923	0	99.9	90	110	0			
Chloride	5.579	0.10	5.769	0	96.7	90	110	0			
Phosphorus, Orthophosphate (As P)	5.445	0.50	5.769	0	94.4	90	110	0			
Sulfate	10.84	0.50	11.54	0	93.9	90	110	0			

Sample ID: LCS #3	Batch ID: R7876	Test Code: E300	Units: mg/L	Analysis Date: 4/7/2003	Prep Date:						
Client ID:	Run ID: LC_030407A	SeqNo: 178370									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.904	0.10	1.923	0	99.0	90	110	0			
Chloride	5.546	0.10	5.769	0	96.1	90	110	0			
Phosphorus, Orthophosphate (As P)	5.599	0.50	5.769	0	97.1	90	110	0			
Sulfate	11.12	0.50	11.54	0	96.4	90	110	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
Work Order: 0304016
Project: Seep #5 work over

QC SUMMARY REPORT
 Laboratory Control Spike - generic

Sample ID: LCS #1	Batch ID: R7879	Test Code: E300	Units: mg/L	Analysis Date: 4/8/2003	Prep Date:
Client ID:	Run ID: LC_030408A	SeqNo: 178473			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Fluoride	2.005	0.10	1.923	0	104 90 110 0
Chloride	5.853	0.10	5.769	0	101 90 110 0
Phosphorus, Orthophosphate (As P)	5.689	0.50	5.769	0	98.6 90 110 0
Sulfate	11.4	0.50	11.54	0	98.8 90 110 0

Sample ID: LCS #2	Batch ID: R7879	Test Code: E300	Units: mg/L	Analysis Date: 4/8/2003	Prep Date:
Client ID:	Run ID: LC_030408A	SeqNo: 178492			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Fluoride	1.902	0.10	1.923	0	98.9 90 110 0
Chloride	5.6	0.10	5.769	0	97.1 90 110 0
Phosphorus, Orthophosphate (As P)	5.454	0.50	5.769	0	94.5 90 110 0
Sulfate	10.71	0.50	11.54	0	92.8 90 110 0

Sample ID: 100ng lcs	Batch ID: R7856	Test Code: SW8260B	Units: µg/L	Analysis Date: 4/4/2003	Prep Date:
Client ID:	Run ID: NEPTUNE_030404A	SeqNo: 177748			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	20.84	1.0	20	0	104 78.7 122 0
Toluene	19.82	1.0	20	0	99.1 87.7 122 0
Chlorobenzene	22.88	1.0	20	0	114 85.6 136 0
1,1-Dichloroethene	18.4	1.0	20	0	92.0 70.7 117 0
Trichloroethene (TCE)	20.72	1.0	20	0	104 76.9 130 0

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Laboratory Control Spike - generic

CLIENT: San Juan Refining
 Work Order: 0304016
 Project: Seep #5 work over

Sample ID: LCS-3373 Batch ID: 3373 Test Code: SW8310 Units: µg/L Analysis Date: 4/11/2003 12:40:35 AM Prep Date: 4/7/2003
 Client ID: Run ID: HUGO_030410A SeqNo: 178823

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	27.2	2.5	40	0	68.0	25.8	72.5	0			
1-Methylnaphthalene	26.67	2.5	40.1	0	66.5	26	74.4	0			
2-Methylnaphthalene	26.47	2.5	40	0	66.2	25	75.2	0			
Acenaphthylene	25.99	2.5	40.1	0	64.8	29.3	76.2	0			
Acenaphthene	27.99	2.5	40	0	70.0	31.1	79.1	0			
Fluorene	2.84	0.80	4.01	0	70.8	35.3	81.9	0			
Phenanthrene	1.66	0.60	2.01	0	82.6	48.1	89.8	0			
Anthracene	1.62	0.60	2.01	0	80.6	53.3	88.7	0			
Fluoranthene	3.51	0.30	4.01	0	87.5	62.8	94.5	0			
Pyrene	3.8	0.30	4.01	0	94.8	61.7	100	0			
Benz(a)anthracene	0.39	0.020	0.401	0	97.3	65.4	102	0			
Chrysene	1.96	0.20	2.01	0	97.5	67.4	100	0			
Benzo(b)fluoranthene	0.49	0.050	0.501	0	97.8	66.3	109	0			
Benzo(k)fluoranthene	0.25	0.020	0.25	0.01	96.0	69	105	0			
Benzo(a)pyrene	0.26	0.020	0.251	0	104	68.3	104	0			
Dibenz(a,h)anthracene	0.53	0.040	0.501	0	106	70.5	108	0			
Benzo(g,h,i)perylene	0.51	0.030	0.5	0.02	98.0	68.6	109	0			
Indeno(1,2,3-cd)pyrene	1.068	0.080	1.002	0	107	72.8	107	0			

Sample ID: LCS-3394 Batch ID: 3394 Test Code: SW7470 Units: mg/L Analysis Date: 4/14/2003 Prep Date: 4/14/2003											
Client ID: Run ID: MI-LA254_030414A SeqNo: 179412											
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.00492	0.00020	0.005	0	98.4	75.2	134	0			

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits 3

CLIENT: San Juan Refining
Work Order: 0304016
Project: Seep #5 work over

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID: LCSD-3394	Batch ID: 3394	Test Code: SW7470	Units: mg/L	Analysis Date: 4/14/2003	Prep Date: 4/14/2003
Client ID:		Run ID: MI-LA254_030414A		SeqNo: 179413	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	0.00501	0.00020	0.005	0	100 75.2 134 0

Sample ID: LCS	Batch ID: R7924	Test Code: SW7470	Units: mg/L	Analysis Date: 4/11/2003	Prep Date:
Client ID:		Run ID: MI-LA254_030411A		SeqNo: 179282	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	0.00373	0.00020	0.0033	0.00004	112 80 120 0

Sample ID: LCSD	Batch ID: R7924	Test Code: SW7470	Units: mg/L	Analysis Date: 4/11/2003	Prep Date:
Client ID:		Run ID: MI-LA254_030411A		SeqNo: 179283	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	0.00359	0.00020	0.0033	0.00004	108 80 120 0.00373 3.83 0

Sample ID: LCS	Batch ID: R7958	Test Code: SW6010A	Units: mg/L	Analysis Date: 4/16/2003 10:06:43 AM	Prep Date:
Client ID:		Run ID: ICP_030416B		SeqNo: 180090	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Arsenic	0.7818	0.020	1	0	78.2	70	130	0
Barium	0.7966	0.0020	1	0	79.7	70	130	0
Cadmium	0.7859	0.0020	1	0	78.6	70	130	0
Chromium	0.7937	0.0060	1	0.001627	79.2	70	130	0
Copper	0.8021	0.0060	1	0	80.2	70	130	0
Lead	0.7902	0.0050	1	0	79.0	78.4	112	0
Selenium	0.8502	0.020	1	0	85.0	70	130	0
Uranium	0.7729	0.10	1	0	77.3	70	130	0
Zinc	0.8083	0.0050	1	0	80.8	70	130	0

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name SJR

Date and Time Receive

4/4/03

Work Order Number 0304016

Received by AMF

Checklist completed by

Abonzo
Signature

4/4/03
Date

Matrix:

Carrier name: UPS

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒
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 ☐	
er - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☒	No ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☒
Container/Temp Blank temperature?	5°	4° C ± 2 Acceptable	

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

