

**Hall Environmental
Analysis Laboratory**



ENTERED

COVER LETTER

January 13, 2004

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

LIBRARY

RE: Inj Well 4th Qtr 2003

Order No.: 0312213

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory received 2 samples on 12/23/2003 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: 13-Jan-04

CLIENT: San Juan Refining
 Lab Order: 0312213
 Project: Inj Well 4th Qtr 2003
 Lab ID: 0312213-01

Client Sample ID: Qtr Inj Well 4th
 Collection Date: 12/22/2003 7:45:00 AM
 Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: JDC
Chloride	1400	5.0		mg/L	50	12/29/2003 5:30:35 PM
Sulfate	490	25		mg/L	50	12/29/2003 5:30:35 PM
EPA METHOD 310.1: ALKALINITY						Analyst: MAP
Alkalinity, Total (As CaCO3)	340	4.0		mg/L CaCO3	2	1/5/2004
Carbonate	ND	4.0		mg/L CaCO3	2	1/5/2004
Bicarbonate	340	4.0		mg/L CaCO3	2	1/5/2004
EPA METHOD 8260B: VOLATILES						Analyst: BDH
Benzene	ND	1.0		µg/L	1	12/24/2003
Toluene	ND	1.0		µg/L	1	12/24/2003
Ethylbenzene	1.7	1.0		µg/L	1	12/24/2003
Methyl tert-butyl ether (MTBE)	1000	10		µg/L	10	12/26/2003
1,2,4-Trimethylbenzene	33	1.0		µg/L	1	12/24/2003
1,3,5-Trimethylbenzene	17	1.0		µg/L	1	12/24/2003
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	12/24/2003
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	12/24/2003
Naphthalene	10	2.0		µg/L	1	12/24/2003
1-Methylnaphthalene	59	4.0		µg/L	1	12/24/2003
2-Methylnaphthalene	56	4.0		µg/L	1	12/24/2003
Acetone	3700	100		µg/L	10	12/26/2003
Bromobenzene	ND	1.0		µg/L	1	12/24/2003
Bromochloromethane	ND	1.0		µg/L	1	12/24/2003
Bromodichloromethane	ND	1.0		µg/L	1	12/24/2003
Bromoform	ND	1.0		µg/L	1	12/24/2003
Bromomethane	ND	2.0		µg/L	1	12/24/2003
2-Butanone	130	10		µg/L	1	12/24/2003
Carbon disulfide	ND	10		µg/L	1	12/24/2003
Carbon Tetrachloride	ND	1.0		µg/L	1	12/24/2003
Chlorobenzene	ND	1.0		µg/L	1	12/24/2003
Chloroethane	ND	2.0		µg/L	1	12/24/2003
Chloroform	ND	1.0		µg/L	1	12/24/2003
Chloromethane	ND	1.0		µg/L	1	12/24/2003
2-Chlorotoluene	ND	1.0		µg/L	1	12/24/2003
4-Chlorotoluene	ND	1.0		µg/L	1	12/24/2003
cis-1,2-DCE	ND	1.0		µg/L	1	12/24/2003
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	12/24/2003
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	12/24/2003
Dibromochloromethane	ND	1.0		µg/L	1	12/24/2003
Dibromomethane	ND	2.0		µg/L	1	12/24/2003
1,2-Dichlorobenzene	ND	1.0		µg/L	1	12/24/2003
1,3-Dichlorobenzene	ND	1.0		µg/L	1	12/24/2003

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: 13-Jan-04

CLIENT: San Juan Refining
Lab Order: 0312213
Project: Inj Well 4th Qtr 2003
Lab ID: 0312213-01

Client Sample ID: Qtr Inj Well 4th
Collection Date: 12/22/2003 7:45:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,4-Dichlorobenzene	ND	1.0		µg/L	1	12/24/2003
Dichlorodifluoromethane	ND	1.0		µg/L	1	12/24/2003
1,1-Dichloroethane	ND	1.0		µg/L	1	12/24/2003
1,1-Dichloroethene	ND	1.0		µg/L	1	12/24/2003
1,2-Dichloropropane	ND	1.0		µg/L	1	12/24/2003
1,3-Dichloropropane	ND	1.0		µg/L	1	12/24/2003
2,2-Dichloropropane	ND	1.0		µg/L	1	12/24/2003
1,1-Dichloropropene	ND	1.0		µg/L	1	12/24/2003
Hexachlorobutadiene	ND	1.0		µg/L	1	12/24/2003
2-Hexanone	19	10		µg/L	1	12/24/2003
Isopropylbenzene	ND	1.0		µg/L	1	12/24/2003
4-Isopropyltoluene	1.7	1.0		µg/L	1	12/24/2003
4-Methyl-2-pentanone	20	10		µg/L	1	12/24/2003
Methylene Chloride	ND	3.0		µg/L	1	12/24/2003
n-Butylbenzene	4.8	1.0		µg/L	1	12/24/2003
n-Propylbenzene	ND	1.0		µg/L	1	12/24/2003
sec-Butylbenzene	ND	1.0		µg/L	1	12/24/2003
Styrene	ND	1.0		µg/L	1	12/24/2003
tert-Butylbenzene	ND	1.0		µg/L	1	12/24/2003
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	12/24/2003
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	12/24/2003
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	12/24/2003
trans-1,2-DCE	ND	1.0		µg/L	1	12/24/2003
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	12/24/2003
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	12/24/2003
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	12/24/2003
1,1,1-Trichloroethane	ND	1.0		µg/L	1	12/24/2003
1,1,2-Trichloroethane	ND	1.0		µg/L	1	12/24/2003
Trichloroethene (TCE)	ND	1.0		µg/L	1	12/24/2003
Trichlorofluoromethane	ND	1.0		µg/L	1	12/24/2003
1,2,3-Trichloropropane	ND	2.0		µg/L	1	12/24/2003
Vinyl chloride	ND	2.0		µg/L	1	12/24/2003
Xylenes, Total	120	1.0		µg/L	1	12/24/2003
Surr: 1,2-Dichloroethane-d4	92.1	70.6-124		%REC	1	12/24/2003
Surr: 4-Bromofluorobenzene	88.4	76.2-122		%REC	1	12/24/2003
Surr: Dibromofluoromethane	94.2	67.2-131		%REC	1	12/24/2003
Surr: Toluene-d8	97.4	82.1-123		%REC	1	12/24/2003

EPA METHOD 8270D: SEMIVOLATILES

Analyst: CS

Acenaphthene	ND	50		µg/L	1	1/5/2004
Acenaphthylene	ND	50		µg/L	1	1/5/2004
Aniline	ND	50		µg/L	1	1/5/2004
Anthracene	ND	50		µg/L	1	1/5/2004

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
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 B - Analyte detected in the associated Method Blank E - Value above quantitation range
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Date: 13-Jan-04

CLIENT: San Juan Refining
 Lab Order: 0312213
 Project: Inj Well 4th Qtr 2003
 Lab ID: 0312213-01

Client Sample ID: Qtr Inj Well 4th
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Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Azobenzene	ND	50		µg/L	1	1/5/2004
Benz(a)anthracene	ND	50		µg/L	1	1/5/2004
Benzidine	ND	100		µg/L	1	1/5/2004
Benzo(a)pyrene	ND	50		µg/L	1	1/5/2004
Benzo(b)fluoranthene	ND	50		µg/L	1	1/5/2004
Benzo(g,h,i)perylene	ND	50		µg/L	1	1/5/2004
Benzo(k)fluoranthene	ND	50		µg/L	1	1/5/2004
Benzoic acid	ND	250		µg/L	1	1/5/2004
Benzyl alcohol	ND	100		µg/L	1	1/5/2004
Bis(2-chloroethoxy)methane	ND	50		µg/L	1	1/5/2004
Bis(2-chloroethyl)ether	ND	50		µg/L	1	1/5/2004
Bis(2-chloroisopropyl)ether	ND	50		µg/L	1	1/5/2004
Bis(2-ethylhexyl)phthalate	ND	50		µg/L	1	1/5/2004
4-Bromophenyl phenyl ether	ND	50		µg/L	1	1/5/2004
Butyl benzyl phthalate	ND	50		µg/L	1	1/5/2004
Carbazole	ND	50		µg/L	1	1/5/2004
4-Chloro-3-methylphenol	ND	100		µg/L	1	1/5/2004
4-Chloroaniline	ND	100		µg/L	1	1/5/2004
2-Chloronaphthalene	ND	50		µg/L	1	1/5/2004
2-Chlorophenol	ND	50		µg/L	1	1/5/2004
4-Chlorophenyl phenyl ether	ND	50		µg/L	1	1/5/2004
Chrysene	ND	50		µg/L	1	1/5/2004
Di-n-butyl phthalate	ND	50		µg/L	1	1/5/2004
Di-n-octyl phthalate	ND	50		µg/L	1	1/5/2004
Dibenz(a,h)anthracene	ND	50		µg/L	1	1/5/2004
Dibenzofuran	ND	50		µg/L	1	1/5/2004
1,2-Dichlorobenzene	ND	50		µg/L	1	1/5/2004
1,3-Dichlorobenzene	ND	50		µg/L	1	1/5/2004
1,4-Dichlorobenzene	ND	50		µg/L	1	1/5/2004
3,3'-Dichlorobenzidine	ND	50		µg/L	1	1/5/2004
Diethyl phthalate	ND	50		µg/L	1	1/5/2004
Dimethyl phthalate	ND	50		µg/L	1	1/5/2004
2,4-Dichlorophenol	ND	50		µg/L	1	1/5/2004
2,4-Dimethylphenol	96	50		µg/L	1	1/5/2004
4,6-Dinitro-2-methylphenol	ND	250		µg/L	1	1/5/2004
2,4-Dinitrophenol	ND	250		µg/L	1	1/5/2004
2,4-Dinitrotoluene	ND	50		µg/L	1	1/5/2004
2,6-Dinitrotoluene	ND	50		µg/L	1	1/5/2004
Fluoranthene	ND	50		µg/L	1	1/5/2004
Fluorene	ND	50		µg/L	1	1/5/2004
Hexachlorobenzene	ND	50		µg/L	1	1/5/2004
Hexachlorobutadiene	ND	50		µg/L	1	1/5/2004

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Date: 13-Jan-04

CLIENT: San Juan Refining
Lab Order: 0312213
Project: Inj Well 4th Qtr 2003
Lab ID: 0312213-01

Client Sample ID: Qtr Inj Well 4th
Collection Date: 12/22/2003 7:45:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Hexachlorocyclopentadiene	ND	50		µg/L	1	1/5/2004
Hexachloroethane	ND	50		µg/L	1	1/5/2004
Indeno(1,2,3-cd)pyrene	ND	50		µg/L	1	1/5/2004
Isophorone	ND	50		µg/L	1	1/5/2004
2-Methylnaphthalene	ND	50		µg/L	1	1/5/2004
2-Methylphenol	ND	50		µg/L	1	1/5/2004
3+4-Methylphenol	ND	50		µg/L	1	1/5/2004
N-Nitrosodi-n-propylamine	ND	50		µg/L	1	1/5/2004
N-Nitrosodiphenylamine	ND	50		µg/L	1	1/5/2004
Naphthalene	ND	50		µg/L	1	1/5/2004
2-Nitroaniline	ND	250		µg/L	1	1/5/2004
3-Nitroaniline	ND	250		µg/L	1	1/5/2004
4-Nitroaniline	ND	100		µg/L	1	1/5/2004
Nitrobenzene	ND	50		µg/L	1	1/5/2004
2-Nitrophenol	ND	50		µg/L	1	1/5/2004
4-Nitrophenol	ND	250		µg/L	1	1/5/2004
Pentachlorophenol	ND	250		µg/L	1	1/5/2004
Phenanthrene	ND	50		µg/L	1	1/5/2004
Phenol	ND	50		µg/L	1	1/5/2004
Pyrene	ND	50		µg/L	1	1/5/2004
Pyridine	ND	50		µg/L	1	1/5/2004
1,2,4-Trichlorobenzene	ND	50		µg/L	1	1/5/2004
2,4,5-Trichlorophenol	ND	50		µg/L	1	1/5/2004
2,4,6-Trichlorophenol	ND	50		µg/L	1	1/5/2004
Surr: 2,4,6-Tribromophenol	88.0	16.6-115		%REC	1	1/5/2004
Surr: 2-Fluorobiphenyl	83.9	37-95.7		%REC	1	1/5/2004
Surr: 2-Fluorophenol	57.0	9.54-89.8		%REC	1	1/5/2004
Surr: 4-Terphenyl-d14	63.2	47.9-115		%REC	1	1/5/2004
Surr: Nitrobenzene-d5	75.9	38-106		%REC	1	1/5/2004
Surr: Phenol-d6	42.3	10.7-63.4		%REC	1	1/5/2004
EPA 120.1: SPECIFIC CONDUCTANCE						Analyst: MAP
Specific Conductance	7200	0.010		µmhos/cm	1	1/5/2004
EPA METHOD 7470: MERCURY						Analyst: MAP
Mercury	0.0027	0.00020		mg/L	1	1/9/2004
EPA 6010C: TOTAL RECOVERABLE METALS						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	12/31/2003 10:50:58 AM
Barium	0.28	0.0020		mg/L	1	12/31/2003 10:50:58 AM
Cadmium	ND	0.0020		mg/L	1	12/31/2003 10:50:58 AM
Calcium	59	0.50		mg/L	1	12/31/2003 10:50:58 AM
Chromium	0.0093	0.0060		mg/L	1	12/31/2003 10:50:58 AM
Lead	ND	0.0050		mg/L	1	12/31/2003 10:50:58 AM

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 R - RPD outside accepted recovery limits
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Hall Environmental Analysis Laboratory

Date: 13-Jan-04

CLIENT: San Juan Refining
Lab Order: 0312213
Project: Inj Well 4th Qtr 2003
Lab ID: 0312213-01

Client Sample ID: Qtr Inj Well 4th
Collection Date: 12/22/2003 7:45:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Magnesium	21	0.50		mg/L	1	12/31/2003 10:50:58 AM
Potassium	21	0.50		mg/L	1	12/31/2003 10:50:58 AM
Selenium	ND	0.050		mg/L	1	12/31/2003 10:50:58 AM
Silver	ND	0.0050		mg/L	1	12/31/2003 10:50:58 AM
Sodium	1100	50		mg/L	100	1/7/2004 9:39:31 AM
EPA METHOD 150.1: PH						Analyst: MAP
pH	8.25	0.010		pH units	1	1/5/2004
EPA METHOD 160.1: TDS						Analyst: MAP
Total Dissolved Solids	3900	1.0		mg/L	1	12/29/2003

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R - RPD outside accepted recovery limits
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Hall Environmental Analysis Laboratory

Date: 13-Jan-04

CLIENT: San Juan Refining
 Lab Order: 0312213
 Project: Inj Well 4th Qtr 2003
 Lab ID: 0312213-02

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	12/24/2003
Toluene	ND	1.0		µg/L	1	12/24/2003
Ethylbenzene	ND	1.0		µg/L	1	12/24/2003
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	12/24/2003
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	12/24/2003
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	12/24/2003
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	12/24/2003
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	12/24/2003
Naphthalene	ND	2.0		µg/L	1	12/24/2003
1-Methylnaphthalene	ND	4.0		µg/L	1	12/24/2003
2-Methylnaphthalene	ND	4.0		µg/L	1	12/24/2003
Acetone	ND	10		µg/L	1	12/24/2003
Bromobenzene	ND	1.0		µg/L	1	12/24/2003
Bromochloromethane	ND	1.0		µg/L	1	12/24/2003
Bromodichloromethane	ND	1.0		µg/L	1	12/24/2003
Bromoform	ND	1.0		µg/L	1	12/24/2003
Bromomethane	ND	2.0		µg/L	1	12/24/2003
2-Butanone	ND	10		µg/L	1	12/24/2003
Carbon disulfide	ND	10		µg/L	1	12/24/2003
Carbon Tetrachloride	ND	1.0		µg/L	1	12/24/2003
Chlorobenzene	ND	1.0		µg/L	1	12/24/2003
Chloroethane	ND	2.0		µg/L	1	12/24/2003
Chloroform	ND	1.0		µg/L	1	12/24/2003
Chloromethane	ND	1.0		µg/L	1	12/24/2003
2-Chlorotoluene	ND	1.0		µg/L	1	12/24/2003
4-Chlorotoluene	ND	1.0		µg/L	1	12/24/2003
cis-1,2-DCE	ND	1.0		µg/L	1	12/24/2003
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	12/24/2003
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	12/24/2003
Dibromochloromethane	ND	1.0		µg/L	1	12/24/2003
Dibromomethane	ND	2.0		µg/L	1	12/24/2003
1,2-Dichlorobenzene	ND	1.0		µg/L	1	12/24/2003
1,3-Dichlorobenzene	ND	1.0		µg/L	1	12/24/2003
1,4-Dichlorobenzene	ND	1.0		µg/L	1	12/24/2003
Dichlorodifluoromethane	ND	1.0		µg/L	1	12/24/2003
1,1-Dichloroethane	ND	1.0		µg/L	1	12/24/2003
1,1-Dichloroethene	ND	1.0		µg/L	1	12/24/2003
1,2-Dichloropropane	ND	1.0		µg/L	1	12/24/2003
1,3-Dichloropropane	ND	1.0		µg/L	1	12/24/2003
2,2-Dichloropropane	ND	1.0		µg/L	1	12/24/2003
1,1-Dichloropropene	ND	1.0		µg/L	1	12/24/2003

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Hall Environmental Analysis Laboratory

Date: 13-Jan-04

CLIENT: San Juan Refining
 Lab Order: 0312213
 Project: Inj Well 4th Qtr 2003
 Lab ID: 0312213-02

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	12/24/2003
2-Hexanone	ND	10		µg/L	1	12/24/2003
Isopropylbenzene	ND	1.0		µg/L	1	12/24/2003
4-Isopropyltoluene	ND	1.0		µg/L	1	12/24/2003
4-Methyl-2-pentanone	ND	10		µg/L	1	12/24/2003
Methylene Chloride	ND	3.0		µg/L	1	12/24/2003
n-Butylbenzene	ND	1.0		µg/L	1	12/24/2003
n-Propylbenzene	ND	1.0		µg/L	1	12/24/2003
sec-Butylbenzene	ND	1.0		µg/L	1	12/24/2003
Styrene	ND	1.0		µg/L	1	12/24/2003
tert-Butylbenzene	ND	1.0		µg/L	1	12/24/2003
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	12/24/2003
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	12/24/2003
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	12/24/2003
trans-1,2-DCE	ND	1.0		µg/L	1	12/24/2003
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	12/24/2003
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	12/24/2003
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	12/24/2003
1,1,1-Trichloroethane	ND	1.0		µg/L	1	12/24/2003
1,1,2-Trichloroethane	ND	1.0		µg/L	1	12/24/2003
Trichloroethene (TCE)	ND	1.0		µg/L	1	12/24/2003
Trichlorofluoromethane	ND	1.0		µg/L	1	12/24/2003
1,2,3-Trichloropropane	ND	2.0		µg/L	1	12/24/2003
Vinyl chloride	ND	2.0		µg/L	1	12/24/2003
Xylenes, Total	ND	1.0		µg/L	1	12/24/2003
Surr: 1,2-Dichloroethane-d4	101	70.6-124		%REC	1	12/24/2003
Surr: 4-Bromofluorobenzene	96.5	76.2-122		%REC	1	12/24/2003
Surr: Dibromofluoromethane	101	67.2-131		%REC	1	12/24/2003
Surr: Toluene-d8	99.0	82.1-123		%REC	1	12/24/2003

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



LABORATORY ANALYTICAL REPORT

Client: Hall Environmental
 Project: Inj. Well 4th Qtr. 2003
 Lab ID: C03120955-001
 Client Sample ID: Qtr Inj Well 4th (0312213-01E)

Report Date: 01/08/04
 Collection Date: 12/22/03 07:45
 Date Received: 12/24/03
 Matrix: Aqueous

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
PHYSICAL PROPERTIES							
Flash Point (Ignitability)	>140	°F		60	140	SW1010	12/31/03 12:11 / bah
pH, Corrosivity	8.28	s.u.		0.10		E9040 B	12/31/33 14:45 / lmh
- Flashpoint has been corrected for barometric pressure.							
REACTIVITY							
Sulfide, Reactive	ND	mg/kg		20.0	500	SW846 Ch 7	12/26/03 12:02 / dd
Cyanide, Reactive	ND	mg/kg		1.0	250	SW846 Ch 7	01/02/04 14:40 / eli-b

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

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

TRACKING NO. PAGE NO.
 120955R0001



QA/QC Summary Report

Client: Hall Environmental
Project: Inj. Well 4th Qtr. 2003

Report Date: 01/08/04
Work Order: C03120955

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW1010							Batch: 031231A-FLSHPNT-LIQ		
Sample ID: MBLK1_031231A	Method Blank								12/31/03 13:27
Flash Point (Ignitability)	ND	°F	60.0						
- Flashpoint has been corrected for barometric pressure.									
Sample ID: LCS1_031231A	Laboratory Control Spike								12/31/03 08:20
Flash Point (Ignitability)	82.0	°F	60.0	100	96	104			
- Flashpoint has not been corrected for barometric pressure.									
Method: SW846 Ch 7							Batch: 4809		
Sample ID: MB-4809	Method Blank								12/26/03 12:00
Sulfide, Reactive	ND	mg/kg	20.0						
Sample ID: C03120955-001CDUP	Sample Duplicate								12/26/03 12:09
Sulfide, Reactive	ND	mg/kg	20.0				0	10	
Method: SW846 Ch 7							Batch: B_8685		
Sample ID: MB-8685	Method Blank								01/02/04 14:42
Cyanide, Reactive	ND	mg/kg	0.050						

Qualifiers: RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

TRACKING NO. PAGE NO.

120955R0002

Hall Environmental Analysis Laboratory

Date: 13-Jan-04

CLIENT: San Juan Refining
 Work Order: 0312213
 Project: Inj Well 4th Qtr 2003

QC SUMMARY REPORT
 Method Blank

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
MBLK 122903	R10496	E300	mg/L	12/29/2003 4:02:38 PM							
Client ID:		Run ID: LC_031229A		SeqNo: 239972							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.10									
Sulfate	ND	0.50									

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
MBLK	R10545	E310.1	mg/L CaCO3	1/5/2004							
Client ID:		Run ID: WC_040105C		SeqNo: 241298							
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 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: 0312213
Project: Inj Well 4th Qtr 2003

QC SUMMARY REPORT

Method Blank

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
mb-4924	4924	SW8270A	µg/L	1/5/2004	12/26/2003						
Client ID:		Run ID:	ELMO_040105A	SeqNo:	241218						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	ND	10									
Acenaphthylene	ND	10									
Aniline	ND	10									
Anthracene	ND	10									
Azobenzene	ND	10									
Benz(a)anthracene	ND	10									
Benzidine	5.34	20									J
Benzo(a)pyrene	ND	10									
Benzo(b)fluoranthene	ND	10									
Benzo(g,h,i)perylene	ND	10									
Benzo(k)fluoranthene	ND	10									
Benzoic acid	ND	50									
Benzyl alcohol	ND	20									
Bis(2-chloroethoxy)methane	ND	10									
Bis(2-chloroethyl)ether	ND	10									
Bis(2-chloroisopropyl)ether	ND	10									
Bis(2-ethylhexyl)phthalate	ND	10									
4-Bromophenyl phenyl ether	ND	10									
Butyl benzyl phthalate	ND	10									
Carbazole	ND	10									
4-Chloro-3-methylphenol	ND	20									
4-Chloroaniline	ND	20									
2-Chloronaphthalene	ND	10									
2-Chlorophenol	ND	10									
4-Chlorophenyl phenyl ether	ND	10									
Chrysene	ND	10									
Di-n-butyl phthalate	4.12	10									J
Di-n-octyl phthalate	ND	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: 0312213
Project: Inj Well 4th Qtr 2003

QC SUMMARY REPORT

Method Blank

Dibenz(a,h)anthracene	ND	10
Dibenzofuran	ND	10
1,2-Dichlorobenzene	ND	10
1,3-Dichlorobenzene	ND	10
1,4-Dichlorobenzene	ND	10
3,3'-Dichlorobenzidine	ND	10
Diethyl phthalate	ND	10
Dimethyl phthalate	ND	10
2,4-Dichlorophenol	ND	10
2,4-Dimethylphenol	ND	10
4,6-Dinitro-2-methylphenol	ND	50
2,4-Dinitrophenol	ND	50
2,4-Dinitrotoluene	ND	10
2,6-Dinitrotoluene	ND	10
Fluoranthene	ND	10
Fluorene	ND	10
Hexachlorobenzene	ND	10
Hexachlorobutadiene	ND	10
Hexachlorocyclopentadiene	ND	10
Hexachloroethane	ND	10
Indeno(1,2,3-cd)pyrene	ND	10
Isophorone	ND	10
2-Methylnaphthalene	ND	10
2-Methylphenol	ND	10
3+4-Methylphenol	ND	10
N-Nitrosodi-n-propylamine	ND	10
N-Nitrosodiphenylamine	ND	10
Naphthalene	ND	10
2-Nitroaniline	ND	50
3-Nitroaniline	ND	50
4-Nitroaniline	ND	20
Nitrobenzene	ND	10
2-Nitrophenol	ND	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: 0312213
Project: Inj Well 4th Qtr 2003

QC SUMMARY REPORT
 Method Blank

4-Nitrophenol	ND	50									
Pentachlorophenol	6.4	50									J
Phenanthrene	ND	10									
Phenol	ND	10									
Pyrene	ND	10									
Pyridine	ND	10									
1,2,4-Trichlorobenzene	ND	10									
2,4,5-Trichlorophenol	ND	10									
2,4,6-Trichlorophenol	ND	10									
Surr: 2,4,6-Tribromophenol	119.1	0	200	0	59.5	16.6	115	0			
Surr: 2-Fluorobiphenyl	59.6	0	100	0	59.6	37	95.7	0			
Surr: 2-Fluorophenol	115.3	0	200	0	57.7	9.54	89.8	0			
Surr: 4-Terphenyl-d14	83.8	0	100	0	83.8	70	130	0			
Surr: Nitrobenzene-d5	61.42	0	100	0	61.4	38	106	0			
Surr: Phenol-d6	83.1	0	200	0	41.6	10.7	63.4	0			

Sample ID MB-4979	Batch ID: 4979	Test Code: SW7470	Units: mg/L	Analysis Date 1/9/2004	Prep Date 1/8/2004						
Client ID:	Run ID: MI-LA254_040109A	SeqNo: 242269									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.00020									

Sample ID MB-4935	Batch ID: 4935	Test Code: SW6010A	Units: mg/L	Analysis Date 12/31/2003 10:06:35 A	Prep Date 12/30/2003						
Client ID:	Run ID: ICP_031231B	SeqNo: 240589									
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									
Lead	ND	0.0050									
Selenium	ND	0.050									
Silver	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: 0312213
Project: Inj Well 4th Qtr 2003

QC SUMMARY REPORT

Method Blank

Sample ID	MB-4921	Batch ID:	4921	Test Code:	E160.1	Units:	mg/L	Analysis Date	12/29/2003	Prep Date	12/24/2003	
Client ID:		Run ID:	WC_031229B	SeqNo:	239993							
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: 13-Jan-04

CLIENT: San Juan Refining
Work Order: 0312213
Project: Inj Well 4th Qtr 2003

QC SUMMARY REPORT

Method Blank

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
5ml rb-c	R10474	SW8260B	µg/L	12/23/2003							
Client ID:	Run ID:	SeqNo:									
	THOR_031222C	237342									
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	1.192	2.0									J
1-Methylnaphthalene	1.51	4.0									J
2-Methylnaphthalene	1.656	4.0									J
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 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: 0312213
Project: Inj Well 4th Qtr 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
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: 0312213
Project: Inj Well 4th Qtr 2003

QC SUMMARY REPORT

Method Blank

1,1,2-Trichloroethane	ND	1.0						
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	9.918	0	10	0	99.2	68.4	127	0
Surr: 4-Bromofluorobenzene	9.902	0	10	0	99.0	70.4	126	0
Surr: Dibromofluoromethane	10.16	0	10	0	102	70.2	126	0
Surr: Toluene-d8	10.21	0	10	0	102	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

Date: 13-Jan-04

CLIENT: San Juan Refining
Work Order: 0312213
Project: Inj Well 4th Qtr 2003

QC SUMMARY REPORT

Sample Duplicate

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
0312213-01C	R10496	E300	mg/L	12/29/2003 5:47:20 PM							
Client ID: Qtr Inj Well 4th		Run ID: LC_031229A		SeqNo: 239978							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1391	5.0	0	0	0	0	0	1426	2.46	20	
Sulfate	447.9	25	0	0	0	0	0	492.8	9.54	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: 13-Jan-04

CLIENT: San Juan Refining
 Work Order: 0312213
 Project: Inj Well 4th Qtr 2003

QC SUMMARY REPORT
 Laboratory Control Spike - generic

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
LCS 122903	R10496	E300	mg/L	12/29/2003 4:19:23 PM							
Client ID:		Run ID: LC_031229A		SeqNo: 239973							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	4.849	0.10	5	0	97.0	90	110	0			
Sulfate	9.859	0.50	10	0	98.6	90	110	0			

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
100ng ccv	R10474	SW8260B	µg/L	12/24/2003							
Client ID:		Run ID: THOR_031222C		SeqNo: 237346							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.75	1.0	20	0	104	71.2	122	0			
Toluene	20.36	1.0	20	0.19	101	87.7	122	0			
Chlorobenzene	20.08	1.0	20	0	100	85.6	136	0			
1,1-Dichloroethene	18.45	1.0	20	0	92.2	70.7	117	0			
Trichloroethene (TCE)	20.94	1.0	20	0	105	76.9	130	0			

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
100ng ccv	R10474	SW8260B	µg/L	12/23/2003							
Client ID:		Run ID: THOR_031222C		SeqNo: 237347							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.79	1.0	20	0	99.0	78.7	122	20.75	4.75	11	
Toluene	19.05	1.0	20	0.19	94.3	76	128	20.36	6.65	12.2	
Chlorobenzene	19.74	1.0	20	0	98.7	85.6	136	20.08	1.71	12	
1,1-Dichloroethene	18.85	1.0	20	0	94.3	70.7	117	18.45	2.16	19.3	
Trichloroethene (TCE)	24.34	1.0	20	0	122	76.9	130	20.94	15.0	15.5	

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: 0312213
Project: Inj Well 4th Qtr 2003

QC SUMMARY REPORT
 Laboratory Control Spike - generic

Sample ID	100ng Ics	Batch ID:	R10491	Test Code:	SW8260B	Units:	µg/L	Analysis Date	12/26/2003	Prep Date	
Client ID:		Run ID:	NEPTUNE_031226A	SeqNo:	239845						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.77	1.0	20	0	109	71.2	122	0			
Toluene	20.2	1.0	20	0	101	87.7	122	0			
Chlorobenzene	19.32	1.0	20	0	96.6	85.6	136	0			
1,1-Dichloroethene	22.81	1.0	20	0	114	70.7	117	0			
Trichloroethene (TCE)	21.92	1.0	20	0	110	76.9	130	0			

Sample ID	Ics-4924	Batch ID:	4924	Test Code:	SW8270A	Units:	µg/L	Analysis Date	1/5/2004	Prep Date	12/26/2003
Client ID:		Run ID:	ELMO_040105A	SeqNo:	241220						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	69.86	10	100	0	69.9	43.1	89.9	0			
4-Chloro-3-methylphenol	155.8	20	200	0	77.9	44.1	93.2	0			
2-Chlorophenol	153.5	10	200	0	76.8	20.7	98	0			
1,4-Dichlorobenzene	63.94	10	100	0	63.9	24.1	90.7	0			
2,4-Dinitrotoluene	74.38	10	100	0	74.4	43.2	101	0			
N-Nitrosodi-n-propylamine	71.26	10	100	0	71.3	44.6	99.9	0			
4-Nitrophenol	85.56	50	200	0	42.8	11	57.5	0			
Pentachlorophenol	155.5	50	200	6.4	74.5	8.65	105	0			
Phenol	87.14	10	200	0	43.6	21.1	55.3	0			
Pyrene	78.32	10	100	0	78.3	35.7	111	0			
1,2,4-Trichlorobenzene	66.28	10	100	0	66.3	30.2	89.6	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: 0312213
Project: Inj Well 4th Qtr 2003

QC SUMMARY REPORT
 Laboratory Control Spike Duplicate

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
Icsd-4924	4924	SW8270A	µg/L	1/5/2004	12/26/2003						
Client ID:		Run ID:	ELMO_040105A	SeqNo:	241251						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	73.64	10	100	0	73.6	43.1	89.9	69.86	5.27	30.5	
4-Chloro-3-methylphenol	146.5	20	200	0	73.3	44.1	93.2	155.8	6.14	28.6	
2-Chlorophenol	145.6	10	200	0	72.8	20.7	98	153.5	5.28	107	
1,4-Dichlorobenzene	63.1	10	100	0	63.1	24.1	90.7	63.94	1.32	62.1	
2,4-Dinitrotoluene	73.66	10	100	0	73.7	43.2	101	74.38	0.973	14.7	
N-Nitrosodi-n-propylamine	74.2	10	100	0	74.2	44.6	99.9	71.26	4.04	30.3	
4-Nitrophenol	85.64	50	200	0	42.8	11	57.5	85.56	0.0935	36.3	
Pentachlorophenol	148.8	50	200	6.4	71.2	8.65	105	155.5	4.36	49	
Phenol	82.84	10	200	0	41.4	21.1	55.3	87.14	5.06	52.4	
Pyrene	79.46	10	100	0	79.5	35.7	111	78.32	1.45	16.3	
1,2,4-Trichlorobenzene	64.16	10	100	0	64.2	30.2	89.6	66.28	3.25	36.4	

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
LCS-4979	4979	SW7470	mg/L	1/9/2004	1/8/2004						
Client ID:		Run ID:	MI-LA254_040109A	SeqNo:	242270						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.004499	0.00020	0.005	0	90.0	75.2	134	0			

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
LCSD-4979	4979	SW7470	mg/L	1/9/2004	1/8/2004						
Client ID:		Run ID:	MI-LA254_040109A	SeqNo:	242271						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.005024	0.00020	0.005	0	100	75.2	134	0.004499	11.0	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: 0312213
Project: Inj Well 4th Qtr 2003

QC SUMMARY REPORT
 Laboratory Control Spike - generic

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
LCS-4935	4935	SW6010A	mg/L	12/31/2003 10:10:24 A	12/30/2003						
Client ID:	Run ID:	ICP_031231B	SeqNo:	240590							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.4772	0.0020	0.5	0	95.4	80	120	0			
Cadmium	0.489	0.0020	0.5	0	97.8	80	120	0			
Chromium	0.4854	0.0060	0.5	0	97.1	80	120	0			
Lead	0.4688	0.0050	0.5	0	93.8	80	120	0			
Selenium	0.5293	0.050	0.5	0	106	80	120	0			
Silver	0.4937	0.0050	0.5	0	98.7	80	120	0			

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
LCSD-4935	4935	SW6010A	mg/L	12/31/2003 10:13:10 A	12/30/2003						
Client ID:	Run ID:	ICP_031231B	SeqNo:	240591							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.4756	0.0020	0.5	0	95.1	80	120	0.4772	0.353	20	
Cadmium	0.4881	0.0020	0.5	0	97.6	80	120	0.489	0.168	20	
Chromium	0.4875	0.0060	0.5	0	97.5	80	120	0.4854	0.441	20	
Lead	0.4689	0.0050	0.5	0	93.8	80	120	0.4688	0.0267	20	
Selenium	0.5321	0.050	0.5	0	106	80	120	0.5293	0.525	20	
Silver	0.4968	0.0050	0.5	0	99.4	80	120	0.4937	0.627	20	

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
LCS-4921	4921	E160.1	mg/L	12/29/2003	12/24/2003						
Client ID:	Run ID:	WC_031229B	SeqNo:	239994							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids	963	1.0	1000	0	96.3	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

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name SJR

Date and Time Received:

12/23/2003

Work Order Number 0312213

Received by AT

Checklist completed by

Anne Shreve
Signature

12/23/03
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 Not Shipped
- Custody seals intact on sample bottles? Yes No N/A
- Chain of custody present? Yes No
- Chain of custody signed when relinquished and received? Yes No
- Chain of custody agrees with sample labels? Yes No
- Samples in proper container/bottle? Yes No
- Sample containers intact? Yes No
- Sufficient sample volume for indicated test? Yes No
- All samples received within holding time? Yes No
- Water - VOA vials have zero headspace? No VOA vials submitted Yes No
- Water - pH acceptable upon receipt? Yes No N/A

Container/Temp Blank temperature?

2°

4° C ± 2 Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

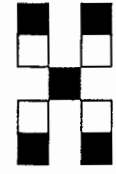
Contacted by: _____ Regarding _____

Comments: _____

Corrective Action _____

CHAIN-OF-CUSTODY RECORD

Accreditation Applied:
 NELAC USACE



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: SAN Juan Refining

Address: #50 CR 4990
Bloomfield, NM
87413

Phone #: 505-632-4161

Fax #: 505-632-3911

Project Name: Inj. Well 4th Qtr 2003

Project #: _____

Project Manager: _____

Sampler: Pinky Hurtado

Sample Temperature: 2^o

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative		HEAL No.
					HgCl ₂	HNO ₃	
12-22-03	745A	H ₂ O	Qtr Inj Well 4 th	3-VOA	X		QB223-1
				1-litor		Amlex	-1
				1-500ml			-1
				1-500ml			-1
				1-500ml	X		-1
				1-250ml		NaOH	-1
				1-250ml		Zn acetate	-1
			Trip Blank				-2

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals + Na, K, Mg, Ca	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	8081 Pesticides / PCB's (8082)	8260 X (VOA)	8270 (Semi-VOA)	Eq. U TDS, SO ₄ , ALK, Cl	Ignitibility	Corrosivity	Reactivity	Sulfide	Air Bubbles on Headspace (Y or N)
										X							
											X						
												X					
							X										
														X			
																X	

Date: 12-22-03 Time: 845A Relinquished By: (Signature) Pinky Hurtado

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

Received By: (Signature) [Signature] 12/23/03

Received By: (Signature) _____

Remarks: _____

COVER LETTER

March 25, 2004

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

RE: Inj Well 1st Qtr. 2004

Order No.: 0403091

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory received 2 samples on 3/10/2004 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: 25-Mar-04

CLIENT: San Juan Refining
 Lab Order: 0403091
 Project: Inj Well 1st Qtr. 2004
 Lab ID: 0403091-01

Client Sample ID: Qtr Inj Well 1st
 Collection Date: 3/9/2004 8:00:00 AM
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: BL
Chloride	1300	5.0		mg/L	50	3/11/2004 9:11:50 PM
Sulfate	790	25		mg/L	50	3/11/2004 9:11:50 PM
EPA METHOD 310.1: ALKALINITY						Analyst: MAP
Alkalinity, Total (As CaCO3)	440	2.0		mg/L CaCO3	1	3/11/2004
Carbonate	320	2.0		mg/L CaCO3	1	3/11/2004
Bicarbonate	120	2.0		mg/L CaCO3	1	3/11/2004
EPA METHOD 8260B: VOLATILES						Analyst: BDH
Benzene	20	10		µg/L	10	3/16/2004
Toluene	ND	10		µg/L	10	3/16/2004
Ethylbenzene	ND	10		µg/L	10	3/16/2004
Methyl tert-butyl ether (MTBE)	330	10		µg/L	10	3/16/2004
1,2,4-Trimethylbenzene	23	10		µg/L	10	3/16/2004
1,3,5-Trimethylbenzene	ND	10		µg/L	10	3/16/2004
1,2-Dichloroethane (EDC)	ND	10		µg/L	10	3/16/2004
1,2-Dibromoethane (EDB)	ND	10		µg/L	10	3/16/2004
Naphthalene	ND	20		µg/L	10	3/16/2004
1-Methylnaphthalene	ND	40		µg/L	10	3/16/2004
2-Methylnaphthalene	ND	40		µg/L	10	3/16/2004
Acetone	1500	100		µg/L	10	3/17/2004
Bromobenzene	ND	10		µg/L	10	3/16/2004
Bromochloromethane	ND	10		µg/L	10	3/16/2004
Bromodichloromethane	ND	10		µg/L	10	3/16/2004
Bromoform	ND	10		µg/L	10	3/16/2004
Bromomethane	ND	20		µg/L	10	3/16/2004
2-Butanone	ND	100		µg/L	10	3/16/2004
Carbon disulfide	ND	100		µg/L	10	3/16/2004
Carbon Tetrachloride	ND	10		µg/L	10	3/16/2004
Chlorobenzene	ND	10		µg/L	10	3/16/2004
Chloroethane	ND	20		µg/L	10	3/16/2004
Chloroform	ND	10		µg/L	10	3/16/2004
Chloromethane	ND	10		µg/L	10	3/16/2004
2-Chlorotoluene	ND	10		µg/L	10	3/16/2004
4-Chlorotoluene	ND	10		µg/L	10	3/16/2004
cis-1,2-DCE	ND	10		µg/L	10	3/16/2004
cis-1,3-Dichloropropene	ND	10		µg/L	10	3/16/2004
1,2-Dibromo-3-chloropropane	ND	20		µg/L	10	3/16/2004
Dibromochloromethane	ND	10		µg/L	10	3/16/2004
Dibromomethane	ND	20		µg/L	10	3/16/2004
1,2-Dichlorobenzene	ND	10		µg/L	10	3/16/2004
1,3-Dichlorobenzene	ND	10		µg/L	10	3/16/2004

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: 25-Mar-04

CLIENT: San Juan Refining
 Lab Order: 0403091
 Project: Inj Well 1st Qtr. 2004
 Lab ID: 0403091-01

Client Sample ID: Qtr Inj Well 1st
 Collection Date: 3/9/2004 8:00:00 AM
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
1,4-Dichlorobenzene	ND	10		µg/L	10	3/16/2004
Dichlorodifluoromethane	ND	10		µg/L	10	3/16/2004
1,1-Dichloroethane	ND	10		µg/L	10	3/16/2004
1,1-Dichloroethene	ND	10		µg/L	10	3/16/2004
1,2-Dichloropropane	ND	10		µg/L	10	3/16/2004
1,3-Dichloropropane	ND	10		µg/L	10	3/16/2004
2,2-Dichloropropane	ND	10		µg/L	10	3/16/2004
1,1-Dichloropropene	ND	10		µg/L	10	3/16/2004
Hexachlorobutadiene	ND	10		µg/L	10	3/16/2004
2-Hexanone	ND	100		µg/L	10	3/16/2004
Isopropylbenzene	ND	10		µg/L	10	3/16/2004
4-Isopropyltoluene	ND	10		µg/L	10	3/16/2004
4-Methyl-2-pentanone	ND	100		µg/L	10	3/16/2004
Methylene Chloride	ND	30		µg/L	10	3/16/2004
n-Butylbenzene	ND	10		µg/L	10	3/16/2004
n-Propylbenzene	ND	10		µg/L	10	3/16/2004
sec-Butylbenzene	ND	10		µg/L	10	3/16/2004
Styrene	ND	10		µg/L	10	3/16/2004
tert-Butylbenzene	ND	10		µg/L	10	3/16/2004
1,1,1,2-Tetrachloroethane	ND	10		µg/L	10	3/16/2004
1,1,2,2-Tetrachloroethane	ND	10		µg/L	10	3/16/2004
Tetrachloroethene (PCE)	ND	10		µg/L	10	3/16/2004
trans-1,2-DCE	ND	10		µg/L	10	3/16/2004
trans-1,3-Dichloropropene	ND	10		µg/L	10	3/16/2004
1,2,3-Trichlorobenzene	ND	10		µg/L	10	3/16/2004
1,2,4-Trichlorobenzene	ND	10		µg/L	10	3/16/2004
1,1,1-Trichloroethane	ND	10		µg/L	10	3/16/2004
1,1,2-Trichloroethane	ND	10		µg/L	10	3/16/2004
Trichloroethene (TCE)	ND	10		µg/L	10	3/16/2004
Trichlorofluoromethane	ND	10		µg/L	10	3/16/2004
1,2,3-Trichloropropane	ND	20		µg/L	10	3/16/2004
Vinyl chloride	ND	20		µg/L	10	3/16/2004
Xylenes, Total	150	10		µg/L	10	3/16/2004
Surr: 1,2-Dichloroethane-d4	102	70.6-124		%REC	10	3/16/2004
Surr: 4-Bromofluorobenzene	115	76.4-130		%REC	10	3/16/2004
Surr: Dibromofluoromethane	101	67.2-131		%REC	10	3/16/2004
Surr: Toluene-d8	109	82.1-123		%REC	10	3/16/2004

EPA METHOD 8270D: SEMIVOLATILES

Analyst: CS

Acenaphthene	ND	10		µg/L	1	3/19/2004
Acenaphthylene	ND	10		µg/L	1	3/19/2004
Aniline	ND	10		µg/L	1	3/19/2004
Anthracene	ND	10		µg/L	1	3/19/2004

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: 25-Mar-04

CLIENT: San Juan Refining
 Lab Order: 0403091
 Project: Inj Well 1st Qtr. 2004
 Lab ID: 0403091-01

Client Sample ID: Qtr Inj Well 1st
 Collection Date: 3/9/2004 8:00:00 AM
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Azobenzene	ND	10		µg/L	1	3/19/2004
Benz(a)anthracene	ND	10		µg/L	1	3/19/2004
Benzidine	ND	20		µg/L	1	3/19/2004
Benzo(a)pyrene	ND	10		µg/L	1	3/19/2004
Benzo(b)fluoranthene	ND	10		µg/L	1	3/19/2004
Benzo(g,h,i)perylene	ND	10		µg/L	1	3/19/2004
Benzo(k)fluoranthene	ND	10		µg/L	1	3/19/2004
Benzoic acid	ND	50		µg/L	1	3/19/2004
Benzyl alcohol	ND	20		µg/L	1	3/19/2004
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	3/19/2004
Bis(2-chloroethyl)ether	ND	10		µg/L	1	3/19/2004
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	3/19/2004
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	3/19/2004
4-Bromophenyl phenyl ether	ND	10		µg/L	1	3/19/2004
Butyl benzyl phthalate	ND	10		µg/L	1	3/19/2004
Carbazole	ND	10		µg/L	1	3/19/2004
4-Chloro-3-methylphenol	ND	20		µg/L	1	3/19/2004
4-Chloroaniline	ND	20		µg/L	1	3/19/2004
2-Chloronaphthalene	ND	10		µg/L	1	3/19/2004
2-Chlorophenol	ND	10		µg/L	1	3/19/2004
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	3/19/2004
Chrysene	ND	10		µg/L	1	3/19/2004
Di-n-butyl phthalate	ND	10		µg/L	1	3/19/2004
Di-n-octyl phthalate	ND	10		µg/L	1	3/19/2004
Dibenz(a,h)anthracene	ND	10		µg/L	1	3/19/2004
Dibenzofuran	ND	10		µg/L	1	3/19/2004
1,2-Dichlorobenzene	ND	10		µg/L	1	3/19/2004
1,3-Dichlorobenzene	ND	10		µg/L	1	3/19/2004
1,4-Dichlorobenzene	ND	10		µg/L	1	3/19/2004
3,3'-Dichlorobenzidine	ND	10		µg/L	1	3/19/2004
Diethyl phthalate	ND	10		µg/L	1	3/19/2004
Dimethyl phthalate	ND	10		µg/L	1	3/19/2004
2,4-Dichlorophenol	ND	10		µg/L	1	3/19/2004
2,4-Dimethylphenol	ND	10		µg/L	1	3/19/2004
4,6-Dinitro-2-methylphenol	ND	50		µg/L	1	3/19/2004
2,4-Dinitrophenol	ND	50		µg/L	1	3/19/2004
2,4-Dinitrotoluene	ND	10		µg/L	1	3/19/2004
2,6-Dinitrotoluene	ND	10		µg/L	1	3/19/2004
Fluoranthene	ND	10		µg/L	1	3/19/2004
Fluorene	ND	10		µg/L	1	3/19/2004
Hexachlorobenzene	ND	10		µg/L	1	3/19/2004
Hexachlorobutadiene	ND	10		µg/L	1	3/19/2004

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: 25-Mar-04

CLIENT: San Juan Refining
Lab Order: 0403091
Project: Inj Well 1st Qtr. 2004
Lab ID: 0403091-01

Client Sample ID: Qtr Inj Well 1st
Collection Date: 3/9/2004 8:00:00 AM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Hexachlorocyclopentadiene	ND	10		µg/L	1	3/19/2004
Hexachloroethane	ND	10		µg/L	1	3/19/2004
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	3/19/2004
Isophorone	ND	10		µg/L	1	3/19/2004
2-Methylnaphthalene	ND	10		µg/L	1	3/19/2004
2-Methylphenol	120	10		µg/L	1	3/19/2004
3+4-Methylphenol	70	10		µg/L	1	3/19/2004
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	3/19/2004
N-Nitrosodiphenylamine	ND	10		µg/L	1	3/19/2004
Naphthalene	ND	10		µg/L	1	3/19/2004
2-Nitroaniline	ND	50		µg/L	1	3/19/2004
3-Nitroaniline	ND	50		µg/L	1	3/19/2004
4-Nitroaniline	ND	20		µg/L	1	3/19/2004
Nitrobenzene	ND	10		µg/L	1	3/19/2004
2-Nitrophenol	ND	10		µg/L	1	3/19/2004
4-Nitrophenol	ND	50		µg/L	1	3/19/2004
Pentachlorophenol	ND	50		µg/L	1	3/19/2004
Phenanthrene	ND	10		µg/L	1	3/19/2004
Phenol	400	10		µg/L	1	3/19/2004
Pyrene	ND	10		µg/L	1	3/19/2004
Pyridine	ND	10		µg/L	1	3/19/2004
1,2,4-Trichlorobenzene	ND	10		µg/L	1	3/19/2004
2,4,5-Trichlorophenol	ND	10		µg/L	1	3/19/2004
2,4,6-Trichlorophenol	ND	10		µg/L	1	3/19/2004
Surr: 2,4,6-Tribromophenol	80.9	16.6-115		%REC	1	3/19/2004
Surr: 2-Fluorobiphenyl	60.2	37-95.7		%REC	1	3/19/2004
Surr: 2-Fluorophenol	47.3	9.54-89.8		%REC	1	3/19/2004
Surr: 4-Terphenyl-d14	64.3	47.9-115		%REC	1	3/19/2004
Surr: Nitrobenzene-d5	62.1	38-106		%REC	1	3/19/2004
Surr: Phenol-d6	38.0	10.7-63.4		%REC	1	3/19/2004

EPA 120.1: SPECIFIC CONDUCTANCE

Analyst: MAP

Specific Conductance	7500	0.010		µmhos/cm	1	3/11/2004
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EPA METHOD 7470: MERCURY

Analyst: IC

Mercury	ND	0.00040		mg/L	2	3/12/2004
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EPA 6010C: TOTAL RECOVERABLE METALS

Analyst: NMO

Arsenic	ND	0.020		mg/L	1	3/18/2004 8:59:03 AM
Barium	0.20	0.0020		mg/L	1	3/18/2004 8:59:03 AM
Cadmium	ND	0.0020		mg/L	1	3/18/2004 8:59:03 AM
Calcium	86	1.0		mg/L	1	3/18/2004 8:59:03 AM
Chromium	ND	0.0060		mg/L	1	3/18/2004 8:59:03 AM
Lead	ND	0.0050		mg/L	1	3/18/2004 8:59:03 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

Hall Environmental Analysis Laboratory

Date: 25-Mar-04

CLIENT: San Juan Refining
Lab Order: 0403091
Project: Inj Well 1st Qtr. 2004
Lab ID: 0403091-01

Client Sample ID: Qtr Inj Well 1st
Collection Date: 3/9/2004 8:00:00 AM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Magnesium	24	1.0		mg/L	1	3/18/2004 8:59:03 AM
Potassium	23	1.0		mg/L	1	3/18/2004 8:59:03 AM
Selenium	0.056	0.020		mg/L	1	3/18/2004 8:59:03 AM
Silver	ND	0.0050		mg/L	1	3/18/2004 8:59:03 AM
Sodium	1300	50		mg/L	100	3/18/2004 9:44:54 AM
EPA METHOD 150.1: PH						Analyst: MAP
pH	9.50	0.010		pH units	1	3/11/2004
EPA METHOD 160.1: TDS						Analyst: MAP
Total Dissolved Solids	4300	1.0		mg/L	1	3/15/2004

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
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 * - Value exceeds Maximum Contaminant Level