



**Hall Environmental
Analysis Laboratory**



ENTERED

COVER LETTER

September 30, 2003

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

RE: Inj Well 3rd Qtr 2003

Order No.: 0309038

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory received 2 samples on 9/5/2003 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: 01-Oct-03

CLIENT: San Juan Refining
Project: Inj Well 3rd Qtr 2003
Lab Order: 0309038

CASE NARRATIVE

The extraction and analysis for EPA method 8270 was initially performed within holding time. However, the surrogate recoveries were poor. The sample was re-extracted and analyzed, past holding time, with all surrogates within range. The sample was nondetect for all analytes on both extractions.

Hall Environmental Analysis Laboratory

Date: 30-Sep-03

CLIENT: San Juan Refining
 Lab Order: 0309038
 Project: Inj Well 3rd Qtr 2003
 Lab ID: 0309038-01

Client Sample ID: Qtr. Inj. Well (3rd)
 Collection Date: 9/4/2003 8:00:00 AM
 Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: BDH
Chloride	1300	5.0		mg/L	50	9/8/2003 2:44:42 PM
Sulfate	1100	10		mg/L	20	9/5/2003 5:03:53 PM
EPA METHOD 310.1: ALKALINITY						Analyst: MAP
Alkalinity, Total (As CaCO ₃)	160	2.0		mg/L CaCO ₃	1	9/15/2003
Carbonate	ND	2.0		mg/L CaCO ₃	1	9/15/2003
Bicarbonate	160	2.0		mg/L CaCO ₃	1	9/15/2003
EPA METHOD 8260B: VOLATILES						Analyst: BDH
Benzene	ND	1.0		µg/L	1	9/9/2003
Toluene	ND	1.0		µg/L	1	9/9/2003
Ethylbenzene	ND	1.0		µg/L	1	9/9/2003
Methyl tert-butyl ether (MTBE)	120	5.0		µg/L	5	9/9/2003
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	9/9/2003
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	9/9/2003
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	9/9/2003
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	9/9/2003
Naphthalene	ND	2.0		µg/L	1	9/9/2003
1-Methylnaphthalene	ND	4.0		µg/L	1	9/9/2003
2-Methylnaphthalene	ND	4.0		µg/L	1	9/9/2003
Acetone	ND	10		µg/L	1	9/9/2003
Bromobenzene	ND	1.0		µg/L	1	9/9/2003
Bromochloromethane	ND	1.0		µg/L	1	9/9/2003
Bromodichloromethane	ND	1.0		µg/L	1	9/9/2003
Bromoform	ND	1.0		µg/L	1	9/9/2003
Bromomethane	ND	2.0		µg/L	1	9/9/2003
2-Butanone	ND	10		µg/L	1	9/9/2003
Carbon disulfide	ND	10		µg/L	1	9/9/2003
Carbon Tetrachloride	ND	1.0		µg/L	1	9/9/2003
Chlorobenzene	ND	1.0		µg/L	1	9/9/2003
Chloroethane	ND	2.0		µg/L	1	9/9/2003
Chloroform	ND	1.0		µg/L	1	9/9/2003
Chloromethane	ND	1.0		µg/L	1	9/9/2003
2-Chlorotoluene	ND	1.0		µg/L	1	9/9/2003
4-Chlorotoluene	ND	1.0		µg/L	1	9/9/2003
cis-1,2-DCE	ND	1.0		µg/L	1	9/9/2003
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	9/9/2003
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	9/9/2003
Dibromochloromethane	ND	1.0		µg/L	1	9/9/2003
Dibromomethane	ND	2.0		µg/L	1	9/9/2003
1,2-Dichlorobenzene	ND	1.0		µg/L	1	9/9/2003
1,3-Dichlorobenzene	ND	1.0		µg/L	1	9/9/2003

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: 30-Sep-03

CLIENT: San Juan Refining
 Lab Order: 0309038
 Project: Inj Well 3rd Qtr 2003
 Lab ID: 0309038-01

Client Sample ID: Qtr. Inj. Well (3rd)
 Collection Date: 9/4/2003 8:00:00 AM
 Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,4-Dichlorobenzene	ND	1.0		µg/L	1	9/9/2003
Dichlorodifluoromethane	ND	1.0		µg/L	1	9/9/2003
1,1-Dichloroethane	ND	1.0		µg/L	1	9/9/2003
1,1-Dichloroethene	ND	1.0		µg/L	1	9/9/2003
1,2-Dichloropropane	ND	1.0		µg/L	1	9/9/2003
1,3-Dichloropropane	ND	1.0		µg/L	1	9/9/2003
2,2-Dichloropropane	ND	1.0		µg/L	1	9/9/2003
1,1-Dichloropropene	ND	1.0		µg/L	1	9/9/2003
Hexachlorobutadiene	ND	1.0		µg/L	1	9/9/2003
2-Hexanone	ND	10		µg/L	1	9/9/2003
Isopropylbenzene	ND	1.0		µg/L	1	9/9/2003
4-Isopropyltoluene	ND	1.0		µg/L	1	9/9/2003
4-Methyl-2-pentanone	ND	10		µg/L	1	9/9/2003
Methylene Chloride	ND	3.0		µg/L	1	9/9/2003
n-Butylbenzene	ND	1.0		µg/L	1	9/9/2003
n-Propylbenzene	ND	1.0		µg/L	1	9/9/2003
sec-Butylbenzene	ND	1.0		µg/L	1	9/9/2003
Styrene	ND	1.0		µg/L	1	9/9/2003
tert-Butylbenzene	ND	1.0		µg/L	1	9/9/2003
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	9/9/2003
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	9/9/2003
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	9/9/2003
trans-1,2-DCE	ND	1.0		µg/L	1	9/9/2003
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	9/9/2003
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	9/9/2003
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	9/9/2003
1,1,1-Trichloroethane	ND	1.0		µg/L	1	9/9/2003
1,1,2-Trichloroethane	ND	1.0		µg/L	1	9/9/2003
Trichloroethene (TCE)	ND	1.0		µg/L	1	9/9/2003
Trichlorofluoromethane	ND	1.0		µg/L	1	9/9/2003
1,2,3-Trichloropropane	ND	2.0		µg/L	1	9/9/2003
Vinyl chloride	ND	2.0		µg/L	1	9/9/2003
Xylenes, Total	ND	1.0		µg/L	1	9/9/2003
Surr: 1,2-Dichloroethane-d4	97.5	70.6-124		%REC	1	9/9/2003
Surr: 4-Bromofluorobenzene	92.1	76.2-122		%REC	1	9/9/2003
Surr: Dibromofluoromethane	105	67.2-131		%REC	1	9/9/2003
Surr: Toluene-d8	112	82.1-123		%REC	1	9/9/2003

EPA METHOD 8270D: SEMIVOLATILES

Analyst: CS

Acenaphthene	ND	20		µg/L	1	9/25/2003
Acenaphthylene	ND	20		µg/L	1	9/25/2003
Aniline	ND	20		µg/L	1	9/25/2003
Anthracene	ND	20		µg/L	1	9/25/2003

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Hall Environmental Analysis Laboratory

Date: 30-Sep-03

CLIENT: San Juan Refining
 Lab Order: 0309038
 Project: Inj Well 3rd Qtr 2003
 Lab ID: 0309038-01

Client Sample ID: Qtr. Inj. Well (3rd)
 Collection Date: 9/4/2003 8:00:00 AM
 Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Azobenzene	ND	20		µg/L	1	9/25/2003
Benz(a)anthracene	ND	20		µg/L	1	9/25/2003
Benzidine	ND	40		µg/L	1	9/25/2003
Benzo(a)pyrene	ND	20		µg/L	1	9/25/2003
Benzo(b)fluoranthene	ND	20		µg/L	1	9/25/2003
Benzo(g,h,i)perylene	ND	20		µg/L	1	9/25/2003
Benzo(k)fluoranthene	ND	20		µg/L	1	9/25/2003
Benzoic acid	ND	100		µg/L	1	9/25/2003
Benzyl alcohol	ND	40		µg/L	1	9/25/2003
Bis(2-chloroethoxy)methane	ND	20		µg/L	1	9/25/2003
Bis(2-chloroethyl)ether	ND	20		µg/L	1	9/25/2003
Bis(2-chloroisopropyl)ether	ND	20		µg/L	1	9/25/2003
Bis(2-ethylhexyl)phthalate	ND	20		µg/L	1	9/25/2003
4-Bromophenyl phenyl ether	ND	20		µg/L	1	9/25/2003
Butyl benzyl phthalate	ND	20		µg/L	1	9/25/2003
Carbazole	ND	20		µg/L	1	9/25/2003
4-Chloro-3-methylphenol	ND	40		µg/L	1	9/25/2003
4-Chloroaniline	ND	40		µg/L	1	9/25/2003
2-Chloronaphthalene	ND	20		µg/L	1	9/25/2003
2-Chlorophenol	ND	20		µg/L	1	9/25/2003
4-Chlorophenyl phenyl ether	ND	20		µg/L	1	9/25/2003
Chrysene	ND	20		µg/L	1	9/25/2003
Di-n-butyl phthalate	ND	20		µg/L	1	9/25/2003
Di-n-octyl phthalate	ND	20		µg/L	1	9/25/2003
Dibenz(a,h)anthracene	ND	20		µg/L	1	9/25/2003
Dibenzofuran	ND	20		µg/L	1	9/25/2003
1,2-Dichlorobenzene	ND	20		µg/L	1	9/25/2003
1,3-Dichlorobenzene	ND	20		µg/L	1	9/25/2003
1,4-Dichlorobenzene	ND	20		µg/L	1	9/25/2003
3,3'-Dichlorobenzidine	ND	20		µg/L	1	9/25/2003
Diethyl phthalate	ND	20		µg/L	1	9/25/2003
Dimethyl phthalate	ND	20		µg/L	1	9/25/2003
2,4-Dichlorophenol	ND	20		µg/L	1	9/25/2003
2,4-Dimethylphenol	ND	20		µg/L	1	9/25/2003
4,6-Dinitro-2-methylphenol	ND	100		µg/L	1	9/25/2003
2,4-Dinitrophenol	ND	100		µg/L	1	9/25/2003
2,4-Dinitrotoluene	ND	20		µg/L	1	9/25/2003
2,6-Dinitrotoluene	ND	20		µg/L	1	9/25/2003
Fluoranthene	ND	20		µg/L	1	9/25/2003
Fluorene	ND	20		µg/L	1	9/25/2003
Hexachlorobenzene	ND	20		µg/L	1	9/25/2003
Hexachlorobutadiene	ND	20		µg/L	1	9/25/2003

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Hall Environmental Analysis Laboratory

Date: 30-Sep-03

CLIENT: San Juan Refining
 Lab Order: 0309038
 Project: Inj Well 3rd Qtr 2003
 Lab ID: 0309038-01

Client Sample ID: Qtr. Inj. Well (3rd)
 Collection Date: 9/4/2003 8:00:00 AM
 Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Hexachlorocyclopentadiene	ND	20		µg/L	1	9/25/2003
Hexachloroethane	ND	20		µg/L	1	9/25/2003
Indeno(1,2,3-cd)pyrene	ND	20		µg/L	1	9/25/2003
Isophorone	ND	20		µg/L	1	9/25/2003
2-Methylnaphthalene	ND	20		µg/L	1	9/25/2003
2-Methylphenol	ND	20		µg/L	1	9/25/2003
3+4-Methylphenol	ND	20		µg/L	1	9/25/2003
N-Nitrosodi-n-propylamine	ND	20		µg/L	1	9/25/2003
N-Nitrosodiphenylamine	ND	20		µg/L	1	9/25/2003
Naphthalene	ND	20		µg/L	1	9/25/2003
2-Nitroaniline	ND	100		µg/L	1	9/25/2003
3-Nitroaniline	ND	100		µg/L	1	9/25/2003
4-Nitroaniline	ND	40		µg/L	1	9/25/2003
Nitrobenzene	ND	20		µg/L	1	9/25/2003
2-Nitrophenol	ND	20		µg/L	1	9/25/2003
4-Nitrophenol	ND	100		µg/L	1	9/25/2003
Pentachlorophenol	ND	100		µg/L	1	9/25/2003
Phenanthrene	ND	20		µg/L	1	9/25/2003
Phenol	ND	20		µg/L	1	9/25/2003
Pyrene	ND	20		µg/L	1	9/25/2003
Pyridine	ND	20		µg/L	1	9/25/2003
1,2,4-Trichlorobenzene	ND	20		µg/L	1	9/25/2003
2,4,5-Trichlorophenol	ND	20		µg/L	1	9/25/2003
2,4,6-Trichlorophenol	ND	20		µg/L	1	9/25/2003
Surr: 2,4,6-Tribromophenol	45.7	16.6-115		%REC	1	9/25/2003
Surr: 2-Fluorobiphenyl	83.2	37-95.7		%REC	1	9/25/2003
Surr: 2-Fluorophenol	46.3	9.54-89.8		%REC	1	9/25/2003
Surr: 4-Terphenyl-d14	83.5	47.9-115		%REC	1	9/25/2003
Surr: Nitrobenzene-d5	90.2	38-106		%REC	1	9/25/2003
Surr: Phenol-d6	47.5	10.7-63.4		%REC	1	9/25/2003
EPA 120.1: SPECIFIC CONDUCTANCE						
Specific Conductance	7100	0.010		µmhos/cm	1	9/15/2003
EPA METHOD 7470: MERCURY						
Mercury	0.0053	0.00020		mg/L	1	9/17/2003
EPA 6010C: TOTAL RECOVERABLE METALS						
Arsenic	ND	0.020		mg/L	1	9/16/2003 12:11:44 PM
Barium	0.20	0.020		mg/L	1	9/16/2003 12:11:44 PM
Cadmium	ND	0.0020		mg/L	1	9/16/2003 12:11:44 PM
Calcium	96	0.50		mg/L	1	9/17/2003 3:20:08 PM
Chromium	ND	0.0060		mg/L	1	9/16/2003 12:11:44 PM
Lead	ND	0.0050		mg/L	1	9/16/2003 12:11:44 PM

Analyst: MAP

Analyst: MAP

Analyst: NMO

Qualifiers: ND - Not Detected at the Reporting Limit
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 R - RPD outside accepted recovery limits
 E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 30-Sep-03

CLIENT: San Juan Refining
 Lab Order: 0309038
 Project: Inj Well 3rd Qtr 2003
 Lab ID: 0309038-01

Client Sample ID: Qtr. Inj. Well (3rd)
 Collection Date: 9/4/2003 8:00:00 AM
 Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Magnesium	23	0.50		mg/L	1	9/17/2003 3:20:08 PM
Potassium	21	0.50		mg/L	1	9/17/2003 3:20:08 PM
Silver	ND	0.0050		mg/L	1	9/17/2003 12:24:37 PM
Sodium	1600	50		mg/L	100	9/17/2003 3:25:20 PM
EPA METHOD 150.1: PH						Analyst: MAP
pH	7.87	0.010		pH units	1	9/15/2003
EPA METHOD 160.1: TDS						Analyst: MAP
Total Dissolved Solids	3900	1.0		mg/L	1	9/10/2003

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

Hall Environmental Analysis Laboratory

Date: 30-Sep-03

CLIENT: San Juan Refining
 Lab Order: 0309038
 Project: Inj Well 3rd Qtr 2003
 Lab ID: 0309038-02

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	9/9/2003
Toluene	ND	1.0		µg/L	1	9/9/2003
Ethylbenzene	ND	1.0		µg/L	1	9/9/2003
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	9/9/2003
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	9/9/2003
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	9/9/2003
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	9/9/2003
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	9/9/2003
Naphthalene	ND	2.0		µg/L	1	9/9/2003
1-Methylnaphthalene	ND	4.0		µg/L	1	9/9/2003
2-Methylnaphthalene	ND	4.0		µg/L	1	9/9/2003
Acetone	ND	10		µg/L	1	9/9/2003
Bromobenzene	ND	1.0		µg/L	1	9/9/2003
Bromochloromethane	ND	1.0		µg/L	1	9/9/2003
Bromodichloromethane	ND	1.0		µg/L	1	9/9/2003
Bromoform	ND	1.0		µg/L	1	9/9/2003
Bromomethane	ND	2.0		µg/L	1	9/9/2003
2-Butanone	ND	10		µg/L	1	9/9/2003
Carbon disulfide	ND	10		µg/L	1	9/9/2003
Carbon Tetrachloride	ND	1.0		µg/L	1	9/9/2003
Chlorobenzene	ND	1.0		µg/L	1	9/9/2003
Chloroethane	ND	2.0		µg/L	1	9/9/2003
Chloroform	ND	1.0		µg/L	1	9/9/2003
Chloromethane	ND	1.0		µg/L	1	9/9/2003
2-Chlorotoluene	ND	1.0		µg/L	1	9/9/2003
4-Chlorotoluene	ND	1.0		µg/L	1	9/9/2003
cis-1,2-DCE	ND	1.0		µg/L	1	9/9/2003
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	9/9/2003
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	9/9/2003
Dibromochloromethane	ND	1.0		µg/L	1	9/9/2003
Dibromomethane	ND	2.0		µg/L	1	9/9/2003
1,2-Dichlorobenzene	ND	1.0		µg/L	1	9/9/2003
1,3-Dichlorobenzene	ND	1.0		µg/L	1	9/9/2003
1,4-Dichlorobenzene	ND	1.0		µg/L	1	9/9/2003
Dichlorodifluoromethane	ND	1.0		µg/L	1	9/9/2003
1,1-Dichloroethane	ND	1.0		µg/L	1	9/9/2003
1,1-Dichloroethene	ND	1.0		µg/L	1	9/9/2003
1,2-Dichloropropane	ND	1.0		µg/L	1	9/9/2003
1,3-Dichloropropane	ND	1.0		µg/L	1	9/9/2003
2,2-Dichloropropane	ND	1.0		µg/L	1	9/9/2003
1,1-Dichloropropene	ND	1.0		µg/L	1	9/9/2003

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Hall Environmental Analysis Laboratory

Date: 30-Sep-03

CLIENT: San Juan Refining
 Lab Order: 0309038
 Project: Inj Well 3rd Qtr 2003
 Lab ID: 0309038-02

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	9/9/2003
2-Hexanone	ND	10		µg/L	1	9/9/2003
Isopropylbenzene	ND	1.0		µg/L	1	9/9/2003
4-Isopropyltoluene	ND	1.0		µg/L	1	9/9/2003
4-Methyl-2-pentanone	ND	10		µg/L	1	9/9/2003
Methylene Chloride	ND	3.0		µg/L	1	9/9/2003
n-Butylbenzene	ND	1.0		µg/L	1	9/9/2003
n-Propylbenzene	ND	1.0		µg/L	1	9/9/2003
sec-Butylbenzene	ND	1.0		µg/L	1	9/9/2003
Styrene	ND	1.0		µg/L	1	9/9/2003
tert-Butylbenzene	ND	1.0		µg/L	1	9/9/2003
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	9/9/2003
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	9/9/2003
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	9/9/2003
trans-1,2-DCE	ND	1.0		µg/L	1	9/9/2003
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	9/9/2003
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	9/9/2003
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	9/9/2003
1,1,1-Trichloroethane	ND	1.0		µg/L	1	9/9/2003
1,1,2-Trichloroethane	ND	1.0		µg/L	1	9/9/2003
Trichloroethene (TCE)	ND	1.0		µg/L	1	9/9/2003
Trichlorofluoromethane	ND	1.0		µg/L	1	9/9/2003
1,2,3-Trichloropropane	ND	2.0		µg/L	1	9/9/2003
Vinyl chloride	ND	2.0		µg/L	1	9/9/2003
Xylenes, Total	ND	1.0		µg/L	1	9/9/2003
Surr: 1,2-Dichloroethane-d4	97.2	70.6-124		%REC	1	9/9/2003
Surr: 4-Bromofluorobenzene	97.5	76.2-122		%REC	1	9/9/2003
Surr: Dibromofluoromethane	108	67.2-131		%REC	1	9/9/2003
Surr: Toluene-d8	111	82.1-123		%REC	1	9/9/2003

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

SVL ANALYTICAL, INC.

Certificate: ID ID00019

One Government Gulch ■ P.O. Box 929 ■ Kellogg, Idaho 83837-0929 ■ Phone: (208)784-1258 ■ Fax: (208)783-0891

CLIENT : Hall Environmental	SVL JOB: 107530
PROJECT: INJ. WELL 3QTR	SAMPLE: 352968
CLIENT SAMPLE ID: QTR.INJ.WELL(3RD)	
Sample Collected: 9/04/03 8:00	
Sample Receipt : 9/09/03	Matrix: WATER
Date of Report : 9/11/03	

Determination	Result	Units	Dilution	Method	Analyzed
Corrosivity	6.9			9045	9/10/03
Ignitibility	>140	°F		1010	9/10/03
Reactivity	NO	YES/NO		SW846	9/10/03

Reviewed By: *Alie Drew* Date 9/11/03
9/11/03 12:21

Client :Hall Environmental							SVL JOB No: 107530	
Analyte	Method	Matrix	Units	Prep Blank	True—LCS—Found	LCS %R	Analysis Date	
Corrosivity	9045	WATER		5.8	6.1	6.1	9/10/03	
Ignitibility	1010	WATER	°F	N/A	81.0	81.2	9/10/03	

LEGEND:

LCS = Laboratory Control Sample

LCS %R = LCS Percent Recovery

N/A = Not Applicable

Client :Hall Environmental							SVL JOB No: 107530			
Test Method Matrix	QC SAMPLE ID		Duplicate or MSD			Matrix Spike			Analysis Date	
	Units	Result	Found	RPD%	Result	SPK ADD	%R			
CORR 9045 WATER	1	6.9	6.9	0.0	N/A	N/A	N/A	9/10/03		
React SW846 WATER	1 YES/NO	NO	NO	N/A	N/A	N/A	N/A	9/10/03		
IGNIT 1010 WATER	1 °F	>140	>140	N/A	N/A	N/A	N/A	9/10/03		

LEGEND:
 RPD% = (|SAM - DUP|/((SAM + DUP)/2) * 100) UDL = Both SAM & DUP not detected. *Result or *Found: Interference required dilution.
 RPD% = (|SPK - MSD|/((SPK + MSD)/2) * 100) M in Duplicate/MSD column indicates MSD.
 SPIKE ADD column, A = Post Digest Spike; %R = Percent Recovery N/A = Not Analyzed; R > 4S = Result more than 4X the Spike Added
 Control limits for MS recoveries apply only if the spike add is at least 0.25 times the concentration of the analyte in the sample.
 Control limits for the RPD apply only if the concentration of the analyte in the sample is at least five times the reporting limit.
 QC Sample 1: SVL SAM No.: 352968 Client Sample ID: QTR.INJ.WELL(3RD)

Hall Environmental Analysis Laboratory

Date: 30-Sep-03

CLIENT: San Juan Refining
 Work Order: 0309038
 Project: Inj Well 3rd Qtr 2003

QC SUMMARY REPORT
 Method Blank

Sample ID	mb 090503	Batch ID:	R9472	Test Code:	E300	Units:	mg/L	Analysis Date	9/5/2003 12:22:37 PM	Prep Date		
Client ID:		Run ID:	LC_030905A	SeqNo:	213356							
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	mb 090803	Batch ID:	R9486	Test Code:	E300	Units:	mg/L	Analysis Date	9/8/2003 1:13:34 PM	Prep Date		
Client ID:		Run ID:	LC_030908A	SeqNo:	213664							
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	MBLK	Batch ID:	R9556	Test Code:	E310.1	Units:	mg/L CaCO3	Analysis Date	9/15/2003	Prep Date		
Client ID:		Run ID:	WC_030915D	SeqNo:	215302							
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: 0309038
Project: Inj Well 3rd Qtr 2003

QC SUMMARY REPORT

Method Blank

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
mb-4277	4277	SW8270A	µg/L	9/18/2003	9/10/2003						
Client ID:	Run ID:	SeqNo:									
	ELMO_030918A	216268									
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	ND	20									
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	ND	10									
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: 0309038
Project: Inj Well 3rd 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: 0309038
Project: Inj Well 3rd Qtr 2003

QC SUMMARY REPORT

Method Blank

4-Nitrophenol	ND	50							
Pentachlorophenol	ND	50							
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	74.16	0	200	0	37.1	16.6	115	0	
Surr: 2-Fluorobiphenyl	57.58	0	100	0	57.6	37	95.7	0	
Surr: 2-Fluorophenol	69.88	0	200	0	34.9	9.54	89.8	0	
Surr: 4-Terphenyl-d14	74.36	0	100	0	74.4	70	130	0	
Surr: Nitrobenzene-d5	73.44	0	100	0	73.4	38	106	0	
Surr: Phenol-d6	77.64	0	200	0	38.8	10.7	63.4	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: 0309038
Project: Inj Well 3rd Qtr 2003

QC SUMMARY REPORT

Method Blank

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
MB-4352	4352	SW8270A	µg/L	9/29/2003	9/22/2003						
Client ID:	Run ID:	ELMO_030929A	SeqNo:	217737							
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	ND	20									
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	ND	10									
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: 0309038
Project: Inj Well 3rd 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: 0309038
Project: Inj Well 3rd Qtr 2003

QC SUMMARY REPORT
 Method Blank

4-Nitrophenol	ND	50								
Pentachlorophenol	ND	50								
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	141	0	200	0	70.5	16.6	115	0		
Surr: 2-Fluorobiphenyl	61.96	0	100	0	62.0	37	95.7	0		
Surr: 2-Fluorophenol	110.2	0	200	0	55.1	9.54	89.8	0		
Surr: 4-Terphenyl-d14	85.68	0	100	0	85.7	70	130	0		
Surr: Nitrobenzene-d5	72.22	0	100	0	72.2	38	106	0		
Surr: Phenol-d6	78.46	0	200	0	39.2	10.7	63.4	0		

Sample ID MB-4329	Batch ID: 4329	Test Code: SW7470	Units: mg/L	Analysis Date 9/17/2003	Prep Date 9/17/2003
Client ID:	Run ID: MI-LA254_030917A	SeqNo: 216042			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	ND	0.00020			

Sample ID MB-4298	Batch ID: 4298	Test Code: SW6010A	Units: mg/L	Analysis Date 9/16/2003 11:51:39 AM	Prep Date 9/11/2003
Client ID:	Run ID: ICP_030917D	SeqNo: 215866			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Arsenic	ND	0.020			
Barium	0.003561	0.020			J
Cadmium	ND	0.0020			
Chromium	ND	0.0060			
Lead	0.006241	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: 0309038
Project: Inj Well 3rd Qtr 2003

QC SUMMARY REPORT

Method Blank

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
MB-4298	4298	SW6010A	mg/L	9/17/2003 12:16:25 PM	9/11/2003						
Client ID:		Run ID: ICP_030917E		SeqNo: 215880							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	ND	0.0050									

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
MB-4298	4298	SW6010A	mg/L	9/17/2003 3:11:12 PM	9/11/2003						
Client ID:		Run ID: ICP_030917I		SeqNo: 215975							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	0.3317	0.50									J
Magnesium	ND	0.50									
Potassium	ND	0.50									
Sodium	ND	0.50									

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
MB-4259	4259	E160.1	mg/L	9/10/2003	9/8/2003						
Client ID:		Run ID: WC_030910B		SeqNo: 214180							
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: 30-Sep-03

CLIENT: San Juan Refining
 Work Order: 0309038
 Project: Inj Well 3rd Qtr 2003

QC SUMMARY REPORT
 Method Blank

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date												
5ml rb	R9495	SW8260B	µg/L	9/9/2003		Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Client ID:		Run ID:	THOR_030909A	SeqNo:	213899												
						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									
						Xylenes, Total	ND	1.0									
						Surr: 1,2-Dichloroethane-d4	9.506	0	10	0	95.1	82.1	124	0			
						Surr: 4-Bromofluorobenzene	9.562	0	10	0	95.6	76.2	122	0			
						Surr: Dibromofluoromethane	9.552	0	10	0	95.5	67.2	131	0			
						Surr: Toluene-d8	10.91	0	10	0	109	82.1	123	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: 0309038
Project: Inj Well 3rd Qtr 2003

QC SUMMARY REPORT

Method Blank

Sample ID	5ml rb	Batch ID: R9480	Test Code: SW8260B	Units: µg/L	Analysis Date 9/8/2003	Prep Date					
Client ID:	Run ID: THOR_030908A	SeqNo: 213539									
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 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: 0309038
Project: Inj Well 3rd Qtr 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
1,1,1,2,2-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: 0309038
Project: Inj Well 3rd Qtr 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	9.678	0	10	0	96.8	68.4	127	0	
Surr: 4-Bromofluorobenzene	9.284	0	10	0	92.8	70.4	126	0	
Surr: Dibromofluoromethane	9.954	0	10	0	99.5	70.2	126	0	
Surr: Toluene-d8	11.04	0	10	0	110	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: 30-Sep-03

CLIENT: San Juan Refining
 Work Order: 0309038
 Project: Inj Well 3rd Qtr 2003

QC SUMMARY REPORT
 Laboratory Control Spike - generic

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
Ics 090503	R9472	E300	mg/L	9/5/2003 12:39:22 PM							
Client ID:		Run ID:	LC_030905A	SeqNo:	213357						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	4.771	0.10	5	0	95.4	90	110	0			
Sulfate	9.505	0.50	10	0	95.0	90	110	0			

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
Ics 090803	R9486	E300	mg/L	9/8/2003 2:19:37 PM							
Client ID:		Run ID:	LC_030908A	SeqNo:	213665						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	4.665	0.10	5	0	93.3	90	110	0			
Sulfate	9.116	0.50	10	0	91.2	90	110	0			

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
100ng Ics	R9495	SW8260B	µg/L	9/9/2003							
Client ID:		Run ID:	THOR_030909A	SeqNo:	213900						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	18.56	1.0	20	0	92.8	85.3	120	0			
Toluene	19.58	1.0	20	0	97.9	82.5	120	0			

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
100ng ccv-b	R9495	SW8260B	µg/L	9/9/2003							
Client ID:		Run ID:	THOR_030909A	SeqNo:	214042						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	18.96	1.0	20	0	94.8	85.3	120	18.56	2.12	11	
Toluene	17.78	1.0	20	0	88.9	82.5	120	19.58	9.64	12	

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: 0309038
Project: Inj Well 3rd Qtr 2003

QC SUMMARY REPORT
 Laboratory Control Spike - generic

Sample ID	100ng lcs	Batch ID:	R9480	Test Code:	SW8260B	Units:	µg/L	Analysis Date	9/8/2003	Prep Date	
Client ID:		Run ID:	THOR_030908A	SeqNo:	213540						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	18.97	1.0	20	0	94.9	71.2	122	0			
Toluene	19.65	1.0	20	0	98.2	87.7	122	0			
Chlorobenzene	23.06	1.0	20	0	115	85.6	136	0			
1,1-Dichloroethene	18.56	1.0	20	0	92.8	70.7	117	0			
Trichloroethene (TCE)	20.02	1.0	20	0	100	76.9	130	0			

Sample ID	lcs-4277	Batch ID:	4277	Test Code:	SW8270A	Units:	µg/L	Analysis Date	9/18/2003	Prep Date	9/10/2003
Client ID:		Run ID:	ELMO_030918A	SeqNo:	216269						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	56.38	10	100	0	56.4	43.1	89.9	0			
4-Chloro-3-methylphenol	120.6	20	200	0	60.3	44.1	93.2	0			
2-Chlorophenol	107.6	10	200	0	53.8	20.7	98	0			
1,4-Dichlorobenzene	43.18	10	100	0	43.2	24.1	90.7	0			
2,4-Dinitrotoluene	66.24	10	100	0	66.2	43.2	101	0			
N-Nitrosodi-n-propylamine	55.36	10	100	0	55.4	44.6	99.9	0			
4-Nitrophenol	27.3	50	200	0	13.7	11	57.5	0			J
Pentachlorophenol	107.6	50	200	0	53.8	8.65	105	0			
Phenol	59.78	10	200	0	29.9	21.1	55.3	0			
Pyrene	72.86	10	100	0	72.9	35.7	111	0			
1,2,4-Trichlorobenzene	42.94	10	100	0	42.9	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: 0309038
Project: Inj Well 3rd Qtr 2003

QC SUMMARY REPORT
 Laboratory Control Spike Duplicate

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
Icsd-4277	4277	SW8270A	µg/L	9/18/2003	9/10/2003						
Client ID:	Run ID:	ELMO_030918A	SeqNo:	216270							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	62.2	10	100	0	62.2	43.1	89.9	56.38	9.82	30.5	
4-Chloro-3-methylphenol	133.6	20	200	0	66.8	44.1	93.2	120.6	10.2	28.6	
2-Chlorophenol	139.1	10	200	0	69.6	20.7	98	107.6	25.6	107	
1,4-Dichlorobenzene	56.4	10	100	0	56.4	24.1	90.7	43.18	26.6	62.1	
2,4-Dinitrotoluene	63.33	10	100	0	63.3	43.2	101	66.24	4.49	14.7	
N-Nitrosodi-n-propylamine	63.06	10	100	0	63.1	44.6	99.9	55.36	13.0	30.3	
4-Nitrophenol	23.03	50	200	0	11.5	11	57.5	27.3	0	36.3	J
Pentachlorophenol	95.86	50	200	0	47.9	8.65	105	107.6	11.5	49	
Phenol	76.24	10	200	0	38.1	21.1	55.3	59.78	24.2	52.4	
Pyrene	72.94	10	100	0	72.9	35.7	111	72.86	0.110	16.3	
1,2,4-Trichlorobenzene	55.54	10	100	0	55.5	30.2	89.6	42.94	25.6	36.4	

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
Ics-4352	4352	SW8270A	µg/L	9/25/2003	9/22/2003						
Client ID:	Run ID:	ELMO_030925A	SeqNo:	217593							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	69.5	10	100	0	69.5	43.1	89.9	0			
4-Chloro-3-methylphenol	139.8	20	200	0	69.9	44.1	93.2	0			
2-Chlorophenol	154.5	10	200	0	77.2	20.7	98	0			
1,4-Dichlorobenzene	59.94	10	100	0	59.9	24.1	90.7	0			
2,4-Dinitrotoluene	70.16	10	100	0	70.2	43.2	101	0			
N-Nitrosodi-n-propylamine	63.44	10	100	0	63.4	44.6	99.9	0			
4-Nitrophenol	55.02	50	200	0	27.5	11	57.5	0			
Pentachlorophenol	125	50	200	0	62.5	8.65	105	0			
Phenol	85.5	10	200	0	42.8	21.1	55.3	0			
Pyrene	80.08	10	100	0	80.1	35.7	111	0			
1,2,4-Trichlorobenzene	61.4	10	100	0	61.4	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: 0309038
Project: Inj Well 3rd Qtr 2003

QC SUMMARY REPORT
 Laboratory Control Spike Duplicate

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
Icsd-4352	4352	SW8270A	µg/L	9/25/2003	9/22/2003						
Client ID:		Run ID:	ELMO_030925A	SeqNo:	217594						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	67.86	10	100	0	67.9	43.1	89.9	69.5	2.39	30.5	
4-Chloro-3-methylphenol	138.9	20	200	0	69.5	44.1	93.2	139.8	0.640	28.6	
2-Chlorophenol	134.6	10	200	0	67.3	20.7	98	154.5	13.8	107	
1,4-Dichlorobenzene	59.44	10	100	0	59.4	24.1	90.7	59.94	0.838	62.1	
2,4-Dinitrotoluene	67.08	10	100	0	67.1	43.2	101	70.16	4.49	14.7	
N-Nitrosodi-n-propylamine	67.64	10	100	0	67.6	44.6	99.9	63.44	6.41	30.3	
4-Nitrophenol	6.06	50	200	0	3.03	11	57.5	55.02	0	36.3	JS
Pentachlorophenol	35.6	50	200	0	17.8	8.65	105	125	0	49	J
Phenol	81.1	10	200	0	40.6	21.1	55.3	85.5	5.28	52.4	
Pyrene	83.68	10	100	0	83.7	35.7	111	80.08	4.40	16.3	
1,2,4-Trichlorobenzene	56.82	10	100	0	56.8	30.2	89.6	61.4	7.75	36.4	

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
LCS-4329	4329	SW7470	mg/L	9/17/2003	9/17/2003						
Client ID:		Run ID:	MI-LA254_030917A	SeqNo:	216043						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.004993	0.00020	0.005	0	99.9	75.2	134	0			

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
LCS-4298	4298	SW6010A	mg/L	9/16/2003 11:54:48 AM	9/11/2003						
Client ID:		Run ID:	ICP_030917D	SeqNo:	215867						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.4903	0.020	0.5	0	98.1	80	120	0			
Barium	0.5127	0.020	0.5	0.003561	102	80	120	0			
Cadmium	0.5027	0.0020	0.5	0	101	80	120	0			
Chromium	0.5396	0.0060	0.5	0	108	80	120	0			
Lead	0.5044	0.0050	0.5	0.006241	99.6	80	120	0			B

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: 0309038
Project: Inj Well 3rd Qtr 2003

QC SUMMARY REPORT
 Laboratory Control Spike Duplicate

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
LCSD-4298	4298	SW6010A	mg/L	9/16/2003 11:58:09 AM	9/11/2003						
Client ID:		Run ID: ICP_030917D		SeqNo: 215868							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.4955	0.020	0.5	0	99.1	80	120	0.4903	1.07	20	
Barium	0.5044	0.020	0.5	0.003561	100	80	120	0.5127	1.62	20	
Cadmium	0.5036	0.0020	0.5	0	101	80	120	0.5027	0.166	20	
Chromium	0.545	0.0060	0.5	0	109	80	120	0.5396	0.984	20	
Lead	0.5036	0.0050	0.5	0.006241	99.5	80	120	0.5044	0.142	20	B

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
LCS-4298	4298	SW6010A	mg/L	9/17/2003 12:17:52 PM	9/11/2003						
Client ID:		Run ID: ICP_030917E		SeqNo: 215881							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	0.4894	0.0050	0.5	0	97.9	80	120	0			

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
LCSD-4298	4298	SW6010A	mg/L	9/17/2003 12:19:12 PM	9/11/2003						
Client ID:		Run ID: ICP_030917E		SeqNo: 215882							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	0.4959	0.0050	0.5	0	99.2	80	120	0.4894	1.32	20	

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
LCS-4298	4298	SW6010A	mg/L	9/17/2003 3:13:36 PM	9/11/2003						
Client ID:		Run ID: ICP_030917I		SeqNo: 215976							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	0.795	0.50	0.5	0.3317	92.7	80	120	0			
Magnesium	0.607	0.50	0.5	0	121	80	120	0			S
Potassium	5.209	0.50	5	0	104	80	120	0			
Sodium	0.4666	0.40	0.5	0	93.3	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

CLIENT: San Juan Refining
Work Order: 0309038
Project: Inj Well 3rd Qtr 2003

QC SUMMARY REPORT
 Laboratory Control Spike Duplicate

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
LCSD-4298	4298	SW6010A	mg/L	9/17/2003 3:15:42 PM	9/11/2003						
Client ID:		Run ID:	ICP_030917I	SeqNo:	215977						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	0.7565	0.50	0.5	0.3317	85.0	80	120	0.795	4.97	20	
Magnesium	0.6058	0.50	0.5	0	121	80	120	0.607	0.201	20	S
Potassium	5.061	0.50	5	0	101	80	120	5.209	2.89	20	
Sodium	0.4484	0.40	0.5	0	89.7	80	120	0.4666	3.98	20	

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
LCS-4259	4259	E160.1	mg/L	9/10/2003	9/8/2003						
Client ID:		Run ID:	WC_030910B	SeqNo:	214181						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids	1006	1.0	1000	0	101	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

9/5/2003

Work Order Number 0309038

Received by AT

Checklist completed by

Signature

[Handwritten Signature]

Date

9/5/03

Matrix

Carrier name UPS

- | | | | |
|---|---|---|---|
| Shipping container/cooler in good condition? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> |
| Custody seals intact on shipping container/cooler? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| Custody seals intact on sample bottles? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| Chain of custody present? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Chain of custody agrees with sample labels? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Samples in proper container/bottle? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Sample containers intact? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Sufficient sample volume for indicated test? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| All samples received within holding time? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Water - VOA vials have zero headspace? | No VOA vials submitted <input type="checkbox"/> | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |
| Water - pH acceptable upon receipt? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | N/A <input checked="" type="checkbox"/> |
| Container/Temp Blank temperature? | 6° | 4° C ± 2 Acceptable | |

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: _____

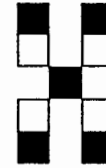
Corrective Action _____

CHAIN-OF-CUSTODY RECORD

Accreditation Applied:

NELAC USACE

Other: _____



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

Project Name:
Inj. Well, 3rd Qtr 2003

Address: #50 CR 4990
Bloomfield, NM
87413

Project #:

Project Manager:
Cindy Hurtado

Phone #: 505-632-4161

Sampler: ↓

Fax #: 505-632-3911

Sample Temperature: 6.0

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative		HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B MOD (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals + Na, K, Mg, Ca	Cations (Na, K, Ca, Mg)	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	8081 Pesticides / PCB's (8082)	8260 (VOA)	8270 (Semi-VOA)	ES, PH, TDS, AIC, SO ₄ , Cl	pH, TDS, AIC, SO ₄ , Cl	Iquibability, Corrosivity	Reactivity	Air Bubbles or Headspace (Y or N)		
					H ₂ Cl ₂	HNO ₃																					
7-04-03	8AM	H ₂ O	Qtr Inj Well (3 rd)	3-VOA	X		0309038-1												X								
				1-liter		As ₂ S ₃	-1													X							
				1-500ml			-1														X	X					
				1-500ml			-1																				
				1-500ml		X	-1							X													
				1-250ml		NaOH	-1																	X			
			Trip Blank				-2																				

Date: 04-03 Time: 9AM Relinquished By: (Signature) Cindy Hurtado

Remarks: 9/15/03
Done Johnson 1501

Remarks: