

GRCCOS

RO water analytical



COVER LETTER

August 24, 2005

Steve Morris
Giant Refining Co
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0258
FAX (505) 722-0210

RE: RO Reject & Softener Water

Order No.: 0508111

Dear Steve Morris:

Hall Environmental Analysis Laboratory received 1 sample on 8/10/2005 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,

A handwritten signature in black ink, appearing to read "Andy Freeman", with a long, sweeping underline.

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager



Hall Environmental Analysis Laboratory

Date: 24-Aug-05

CLIENT: Giant Refining Co
 Lab Order: 0508111
 Project: RO Reject & Softener Water
 Lab ID: 0508111-01

Client Sample ID: Res. Water
 Collection Date: 8/9/2005 8:00:00 AM
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: CMC
Fluoride	1.5	0.10		mg/L	1	8/10/2005
Chloride	46	0.50		mg/L	5	8/11/2005
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/10/2005
Nitrogen, Nitrate (As N)	0.56	0.10		mg/L	1	8/10/2005
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/10/2005
Sulfate	2500	25		mg/L	50	8/11/2005
EPA METHOD 8260: VOLATILES						Analyst: HLM
Benzene	ND	1.0		µg/L	1	8/15/2005
Toluene	ND	1.0		µg/L	1	8/15/2005
Ethylbenzene	ND	1.0		µg/L	1	8/15/2005
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/15/2005
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/15/2005
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/15/2005
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/15/2005
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/15/2005
Naphthalene	ND	2.0		µg/L	1	8/15/2005
1-Methylnaphthalene	ND	4.0		µg/L	1	8/15/2005
2-Methylnaphthalene	ND	4.0		µg/L	1	8/15/2005
Acetone	ND	10		µg/L	1	8/15/2005
Bromobenzene	ND	1.0		µg/L	1	8/15/2005
Bromochloromethane	ND	1.0		µg/L	1	8/15/2005
Bromodichloromethane	ND	1.0		µg/L	1	8/15/2005
Bromoform	ND	1.0		µg/L	1	8/15/2005
Bromomethane	ND	2.0		µg/L	1	8/15/2005
2-Butanone	ND	10		µg/L	1	8/15/2005
Carbon disulfide	ND	10		µg/L	1	8/15/2005
Carbon Tetrachloride	ND	1.0		µg/L	1	8/15/2005
Chlorobenzene	ND	1.0		µg/L	1	8/15/2005
Chloroethane	ND	2.0		µg/L	1	8/15/2005
Chloroform	ND	1.0		µg/L	1	8/15/2005
Chloromethane	ND	1.0		µg/L	1	8/15/2005
2-Chlorotoluene	ND	1.0		µg/L	1	8/15/2005
4-Chlorotoluene	ND	1.0		µg/L	1	8/15/2005
cis-1,2-DCE	ND	1.0		µg/L	1	8/15/2005
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/15/2005
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/15/2005
Dibromochloromethane	ND	1.0		µg/L	1	8/15/2005
Dibromomethane	ND	2.0		µg/L	1	8/15/2005
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/15/2005
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/15/2005

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: 24-Aug-05

CLIENT: Giant Refining Co

Client Sample ID: Res. Water

Lab Order: 0508111

Collection Date: 8/9/2005 8:00:00 AM

Project: RO Reject & Softener Water

Lab ID: 0508111-01

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/15/2005
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/15/2005
1,1-Dichloroethane	ND	1.0		µg/L	1	8/15/2005
1,1-Dichloroethene	ND	1.0		µg/L	1	8/15/2005
1,2-Dichloropropane	ND	1.0		µg/L	1	8/15/2005
1,3-Dichloropropane	ND	1.0		µg/L	1	8/15/2005
2,2-Dichloropropane	ND	1.0		µg/L	1	8/15/2005
1,1-Dichloropropene	ND	1.0		µg/L	1	8/15/2005
Hexachlorobutadiene	ND	1.0		µg/L	1	8/15/2005
2-Hexanone	ND	10		µg/L	1	8/15/2005
Isopropylbenzene	ND	1.0		µg/L	1	8/15/2005
4-Isopropyltoluene	ND	1.0		µg/L	1	8/15/2005
4-Methyl-2-pentanone	ND	10		µg/L	1	8/15/2005
Methylene Chloride	ND	3.0		µg/L	1	8/15/2005
n-Butylbenzene	ND	1.0		µg/L	1	8/15/2005
n-Propylbenzene	ND	1.0		µg/L	1	8/15/2005
sec-Butylbenzene	ND	1.0		µg/L	1	8/15/2005
Styrene	ND	1.0		µg/L	1	8/15/2005
tert-Butylbenzene	ND	1.0		µg/L	1	8/15/2005
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/15/2005
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	8/15/2005
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/15/2005
trans-1,2-DCE	ND	1.0		µg/L	1	8/15/2005
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/15/2005
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/15/2005
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/15/2005
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/15/2005
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/15/2005
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/15/2005
Trichlorofluoromethane	ND	1.0		µg/L	1	8/15/2005
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/15/2005
Vinyl chloride	ND	1.0		µg/L	1	8/15/2005
Xylenes, Total	ND	1.0		µg/L	1	8/15/2005
Surr: 1,2-Dichloroethane-d4	98.1	87.7-108		%REC	1	8/15/2005
Surr: 4-Bromofluorobenzene	107	88.8-113		%REC	1	8/15/2005
Surr: Dibromofluoromethane	105	84.1-111		%REC	1	8/15/2005
Surr: Toluene-d8	95.4	85.9-109		%REC	1	8/15/2005

EPA 120.1: SPECIFIC CONDUCTANCE

Specific Conductance 6900 0.010 µmhos/cm 1 8/13/2005 Analyst: CMC

EPA METHOD 7470: MERCURY

Mercury ND 0.00020 mg/L 1 8/15/2005 Analyst: CMC

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Hall Environmental Analysis Laboratory

Date: 24-Aug-05

CLIENT: Giant Refining Co

Client Sample ID: Res. Water

Lab Order: 0508111

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Project: RO Reject & Softener Water

Lab ID: 0508111-01

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA 6010: TOTAL RECOVERABLE METALS						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	8/16/2005 9:31:46 AM
Barium	ND	0.020		mg/L	1	8/15/2005 1:17:58 PM
Cadmium	ND	0.0020		mg/L	1	8/15/2005 1:17:58 PM
Calcium	2.1	1.0		mg/L	1	8/15/2005 1:17:58 PM
Chromium	ND	0.0060		mg/L	1	8/15/2005 1:17:58 PM
Lead	ND	0.0050		mg/L	1	8/15/2005 1:17:58 PM
Magnesium	ND	1.0		mg/L	1	8/15/2005 1:17:58 PM
Potassium	6.5	1.0		mg/L	1	8/15/2005 1:17:58 PM
Selenium	ND	0.050		mg/L	1	8/16/2005 9:31:46 AM
Silver	ND	0.0050		mg/L	1	8/15/2005 1:17:58 PM
Sodium	1600	20		mg/L	20	8/15/2005 3:53:14 PM
EPA METHOD 150.1: PH						Analyst: DK
pH	8.12	0.010		pH units	1	8/17/2005

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CLIENT: Giant Refining Co
 Work Order: 0508111
 Project: RO Reject & Softener Water

QC SUMMARY REPORT
 Method Blank

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
MBLK	R16266	E300	mg/L	8/10/2005							
Client ID:		Run ID:	LC_050810A	SeqNo:	387042						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.1									
Chloride	ND	0.1									
Nitrogen, Nitrite (As N)	ND	0.1									
Nitrogen, Nitrate (As N)	ND	0.1									
Phosphorus, Orthophosphate (As P)	ND	0.5									
Sulfate	ND	0.5									

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
MBLK	R16266	E300	mg/L	8/10/2005							
Client ID:		Run ID:	LC_050810A	SeqNo:	387086						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.1									
Chloride	ND	0.1									
Nitrogen, Nitrite (As N)	ND	0.1									
Nitrogen, Nitrate (As N)	ND	0.1									
Phosphorus, Orthophosphate (As P)	ND	0.5									
Sulfate	ND	0.5									

4 / 16

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CLIENT: Giant Refining Co
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QC SUMMARY REPORT
 Method Blank

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
MBLK	R16281	E300	mg/L	8/11/2005							
Client ID:		Run ID:	LC_050811A	SeqNo:	387530						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.1									
Chloride	ND	0.1									
Nitrogen, Nitrite (As N)	ND	0.1									
Nitrogen, Nitrate (As N)	ND	0.1									
Phosphorus, Orthophosphate (As P)	ND	0.5									
Sulfate	ND	0.5									

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
MB-8532	8532	SW7470	mg/L	8/15/2005	8/15/2005						
Client ID:		Run ID:	MI-LA254_050815A	SeqNo:	388235						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.0002									

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
MB-8517	8517	SW6010A	mg/L	8/15/2005 12:28:52 PM	8/11/2005						
Client ID:		Run ID:	ICP_050815A	SeqNo:	388298						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	0.02	0	0	0	0	0	0			
Cadmium	ND	0.002	0	0	0	0	0	0			
Calcium	ND	1	0	0	0	0	0	0			
Chromium	ND	0.006	0	0	0	0	0	0			
Lead	ND	0.005	0	0	0	0	0	0			
Magnesium	ND	1	0	0	0	0	0	0			
Potassium	ND	1	0	0	0	0	0	0			
Silver	0.0008244	0.005	0	0	0	0	0	0			
Sodium	ND	1	0	0	0	0	0	0			J

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5/16

CLIENT: Giant Refining Co
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QC SUMMARY REPORT
 Method Blank

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
MB-8517	8517	SW6010A	mg/L	8/16/2005 8:59:09 AM	8/11/2005						
Client ID:		Run ID:	ICP_050815A	SeqNo:	388639						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.02	0	0	0	0	0	0	0		
Selenium	ND	0.05	0	0	0	0	0	0	0		
Sodium	ND	1	0	0	0	0	0	0	0		

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
MB-8517	8517	SW6010A	mg/L	8/16/2005 10:11:42 AM	8/11/2005						
Client ID:		Run ID:	ICP_050815A	SeqNo:	388658						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	1	0	0	0	0	0	0	0		

6/16

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

Date: 24-Aug-05

CLIENT: Giant Refining Co
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QC SUMMARY REPORT
 Method Blank

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
5ml rb	R16310	SW8260B	µg/L	8/15/2005							
Client ID:		Run ID: VAL_050815A		SeqNo: 388486							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1									
Toluene	ND	1									
Ethylbenzene	ND	1									
Methyl tert-butyl ether (MTBE)	ND	1									
1,2,4-Trimethylbenzene	ND	1									
1,3,5-Trimethylbenzene	ND	1									
1,2-Dichloroethane (EDC)	ND	1									
1,2-Dibromoethane (EDB)	ND	1									
Naphthalene	ND	2									
1-Methylnaphthalene	ND	4									
2-Methylnaphthalene	ND	4									
Acetone	ND	10									
Bromobenzene	ND	1									
Bromochloromethane	ND	1									
Bromodichloromethane	ND	1									
Bromoform	ND	1									
Bromomethane	ND	2									
2-Butanone	ND	10									
Carbon disulfide	ND	10									
Carbon Tetrachloride	ND	1									
Chlorobenzene	ND	1									
Chloroethane	ND	2									
Chloroform	ND	1									
Chloromethane	ND	1									
2-Chlorotoluene	ND	1									
4-Chlorotoluene	ND	1									
cis-1,2-DCE	ND	1									

7 / 16

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
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CLIENT: Giant Refining Co
 Work Order: 0508111
 Project: RO Reject & Softener Water

QC SUMMARY REPORT

Method Blank

8 / 16

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

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CLIENT: Giant Refining Co
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QC SUMMARY REPORT
 Method Blank

1,1,2-Trichloroethane	ND	1							
Trichloroethene (TCE)	ND	1							
Trichlorofluoromethane	ND	1							
1,2,3-Trichloropropane	ND	2							
Vinyl chloride	ND	1							
Xylenes, Total	ND	1							
Surr: 1,2-Dichloroethane-d4	9.538	0	10	0	95.4	87.7	108	0	
Surr: 4-Bromofluorobenzene	10.41	0	10	0	104	88.8	113	0	
Surr: Dibromofluoromethane	9.822	0	10	0	98.2	84.1	111	0	
Surr: Toluene-d8	9.47	0	10	0	94.7	85.9	109	0	

9/16

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Hall Environmental Analysis Laboratory

Date: 24-Aug-05

CLIENT: Giant Refining Co
 Work Order: 0508111
 Project: RO Reject & Softener Water

QC SUMMARY REPORT
 Sample Duplicate

Sample ID	0508111-01C DUP	Batch ID:	8532	Test Code:	SW7470	Units:	mg/L	Analysis Date	8/15/2005	Prep Date	8/15/2005
Client ID:	Res. Water	Run ID:	MI-LA254_050815A	SeqNo:	388241						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.0002	0	0	0	0	0	0	0	20	

10/16

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

Date: 24-Aug-05

CLIENT: Giant Refining Co
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QC SUMMARY REPORT
 Sample Matrix Spike

Sample ID	0508111-01C MS	Batch ID:	8532	Test Code:	SW7470	Units:	mg/L	Analysis Date	8/15/2005	Prep Date	8/15/2005
Client ID:	Res. Water	Run ID:	MI-LA254_050815A	SeqNo:	388242						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.00498	0.0002	0.005	0	99.6	75.2	134	0			

Sample ID	0508111-01C MSD	Batch ID:	8532	Test Code:	SW7470	Units:	mg/L	Analysis Date	8/15/2005	Prep Date	8/15/2005
Client ID:	Res. Water	Run ID:	MI-LA254_050815A	SeqNo:	388243						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.004985	0.0002	0.005	0	99.7	75.2	134	0.00498	0.0993	20	

11/16

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Date: 24-Aug-05

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QC SUMMARY REPORT
 Laboratory Control Spike - generic

Sample ID	LCS	Batch ID: R16266	Test Code: E300	Units: mg/L	Analysis Date 8/10/2005	Prep Date						
Client ID:	Run ID: LC_050810A			SeqNo: 387043								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Fluoride	0.4754	0.1	0.5	0	95.1	90	110	0				
Chloride	4.805	0.1	5	0	96.1	90	110	0				
Nitrogen, Nitrite (As N)	0.9043	0.1	1	0	90.4	90	110	0				
Nitrogen, Nitrate (As N)	2.424	0.1	2.5	0	97.0	90	110	0				
Phosphorus, Orthophosphate (As P)	5.01	0.5	5	0	100	90	110	0				
Sulfate	9.757	0.5	10	0	97.6	90	110	0				

Sample ID	LCS	Batch ID: R16266	Test Code: E300	Units: mg/L	Analysis Date 8/10/2005	Prep Date						
Client ID:	Run ID: LC_050810A			SeqNo: 387087								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Fluoride	0.495	0.1	0.5	0	99.0	90	110	0				
Chloride	4.883	0.1	5	0	97.7	90	110	0				
Nitrogen, Nitrite (As N)	0.9222	0.1	1	0	92.2	90	110	0				
Nitrogen, Nitrate (As N)	2.47	0.1	2.5	0	98.8	90	110	0				
Phosphorus, Orthophosphate (As P)	5.075	0.5	5	0	101	90	110	0				
Sulfate	9.928	0.5	10	0	99.3	90	110	0				

12/16

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QC SUMMARY REPORT
 Laboratory Control Spike - generic

13/16

Sample ID	LCS	Batch ID: R16281	Test Code: E300	Units: mg/L	Analysis Date	8/11/2005	Prep Date					
Client ID:			Run ID: LC_050811A			SeqNo: 387531						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Fluoride	0.5179	0.1	0.5	0	104	90	110	0				
Chloride	4.933	0.1	5	0	98.7	90	110	0				
Nitrogen, Nitrite (As N)	0.9318	0.1	1	0	93.2	90	110	0				
Nitrogen, Nitrate (As N)	2.468	0.1	2.5	0	98.7	90	110	0				
Phosphorus, Orthophosphate (As P)	5.083	0.5	5	0	102	90	110	0				
Sulfate	10.07	0.5	10	0	101	90	110	0				

Sample ID	100ng lcs	Batch ID: R16310	Test Code: SW8260B	Units: µg/L	Analysis Date	8/15/2005	Prep Date					
Client ID:			Run ID: VAL_050815A			SeqNo: 388487						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Benzene	21.1	1	20	0	106	81.4	130	0				
Toluene	23.26	1	20	0	116	90.8	128	0				
Chlorobenzene	23.85	1	20	0	119	89.6	134	0				
1,1-Dichloroethene	21.55	1	20	0	108	75.1	120	0				
Trichloroethene (TCE)	19.86	1	20	0	99.3	75.8	110	0				

Sample ID	LCS-8532	Batch ID: 8532	Test Code: SW7470	Units: mg/L	Analysis Date	8/15/2005	Prep Date	8/15/2005				
Client ID:			Run ID: MI-LA254_050815A			SeqNo: 388236						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Mercury	0.004743	0.0002	0.005	0	94.9	75.2	134	0				

Sample ID	LCSD-8532	Batch ID: 8532	Test Code: SW7470	Units: mg/L	Analysis Date	8/15/2005	Prep Date	8/15/2005				
Client ID:			Run ID: MI-LA254_050815A			SeqNo: 388246						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Mercury	0.005041	0.0002	0.005	0	101	75.2	134	0.004743	6.08	0		

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

CLIENT: Giant Refining Co
 Work Order: 0508111
 Project: RO Reject & Softener Water

QC SUMMARY REPORT
 Laboratory Control Spike - generic

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
LCS-8517	8517	SW6010A	mg/L	8/15/2005 12:32:07 PM	8/11/2005						
Client ID:	Run ID:	ICP_050815A	SeqNo:	388299							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.4899	0.02	0.5	0	98.0	80	120	0			
Cadmium	0.5008	0.002	0.5	0	100	80	120	0			
Calcium	49.96	1	50	0	99.9	80	120	0			
Chromium	0.4884	0.006	0.5	0	97.7	80	120	0			
Lead	0.4996	0.005	0.5	0	99.9	80	120	0			
Magnesium	48.32	1	50	0	96.6	80	120	0			
Potassium	50.07	1	50	0	100	80	120	0			
Silver	0.4936	0.005	0.5	0.0008244	98.6	80	120	0			
Sodium	50.32	1	50	0	101	80	120	0			

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
LCSD-8517	8517	SW6010A	mg/L	8/15/2005 12:35:41 PM	8/11/2005						
Client ID:	Run ID:	ICP_050815A	SeqNo:	388300							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.4965	0.02	0.5	0	99.3	80	120	0.4899	1.35	20	
Cadmium	0.5099	0.002	0.5	0	102	80	120	0.5008	1.80	20	
Calcium	50.74	1	50	0	101	80	120	49.96	1.55	20	
Chromium	0.4983	0.006	0.5	0	99.7	80	120	0.4884	2.00	20	
Lead	0.5095	0.005	0.5	0	102	80	120	0.4996	1.98	20	
Magnesium	48.87	1	50	0	97.7	80	120	48.32	1.14	20	
Potassium	50.68	1	50	0	101	80	120	50.07	1.21	20	
Silver	0.4988	0.005	0.5	0.0008244	99.6	80	120	0.4936	1.04	20	
Sodium	50.68	1	50	0	101	80	120	50.32	0.718	20	

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

14/16

CLIENT: Giant Refining Co
 Work Order: 0508111
 Project: RO Reject & Softener Water

QC SUMMARY REPORT
 Laboratory Control Spike - generic

Sample ID	LCS-8517	Batch ID:	8517	Test Code:	SW6010A	Units:	mg/L	Analysis Date	8/16/2005 9:00:58 AM	Prep Date	8/11/2005
Client ID:				Run ID:	ICP_050815A	SeqNo:	388640				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.5089	0.02	0.5	0	102	80	120	0			
Selenium	0.4795	0.05	0.5	0	95.9	80	120	0			
Sodium	51.04	1	50	0	102	80	120	0			

Sample ID	LCSD-8517	Batch ID:	8517	Test Code:	SW6010A	Units:	mg/L	Analysis Date	8/16/2005 9:03:45 AM	Prep Date	8/11/2005
Client ID:				Run ID:	ICP_050815A	SeqNo:	388641				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.5204	0.02	0.5	0	104	80	120	0.5089	2.24	20	
Selenium	0.4824	0.05	0.5	0	96.5	80	120	0.4795	0.612	20	
Sodium	51.5	1	50	0	103	80	120	51.04	0.901	20	

Sample ID	LCS-8517	Batch ID:	8517	Test Code:	SW6010A	Units:	mg/L	Analysis Date	8/16/2005 10:13:58 AM	Prep Date	8/11/2005
Client ID:				Run ID:	ICP_050815A	SeqNo:	388659				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	50.52	1	50	0	101	80	120	0			

Sample ID	LCSD-8517	Batch ID:	8517	Test Code:	SW6010A	Units:	mg/L	Analysis Date	8/16/2005 10:16:19 AM	Prep Date	8/11/2005
Client ID:				Run ID:	ICP_050815A	SeqNo:	388660				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	50.78	1	50	0	102	80	120	50.52	0.509	20	

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

15/16

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name GIANTREFIN

Date and Time Received:

8/10/2005

Work Order Number 0508111

Received by AT

Checklist completed by

[Handwritten Signature]
Signature

8/10/05
Date

Matrix

Carrier name Client drop-off

- Shipping container/cooler in good condition? Yes No Not Present
- Custody seals intact on shipping container/cooler? Yes No Not Present Not Shipped
- Custody seals intact on sample bottles? Yes No N/A
- Chain of custody present? Yes No
- Chain of custody signed when relinquished and received? Yes No
- Chain of custody agrees with sample labels? Yes No
- Samples in proper container/bottle? Yes No
- Sample containers intact? Yes No
- Sufficient sample volume for indicated test? Yes No
- All samples received within holding time? Yes No
- Water - VOA vials have zero headspace? Yes No
- No VOA vials submitted Yes No
- Water - pH acceptable upon receipt? Yes No N/A
- Container/Temp Blank temperature? 3° 4° C ± 2 Acceptable
If given sufficient time to cool.

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: _____

Corrective Action _____
