GIANT REFINING CO.

Route 3, Box 7
Gallup, New Mexico
87301

505
722-3833

February 14, 1997

FEB 1997
RECEIVED

Mr. Benito J Garcia
Bureau Chief
New Mexico Environmental Department
Hazardous and Radioactive Materials Bureau
2044 Galisteo
P. O. Box 26110
Santa Fe, New Mexico 87502

RE: ANNUAL GROUNDWATER REPORT - 1996
GIANT REFINING COMPANY - CINIZA
PERMIT NO. NMD000333211-2

Dear Mr. Garcia:

Pursuant to the requirements of the captioned permit, the Annual Groundwater Report for sampling performed in 1996 is enclosed.

If you require additional information or have any questions regarding this report, please contact me at (505) 722-0227.

Sincerely,

Dorinda Mancini
Environmental Manager
Giant Refining Company
Ciniza Refinery

cc: David Pavlich - Health, Safety and Environmental Manager, Ciniza Refinery
Kim Bullerdick, Esq., - Corporate Counsel, Giant Industries, Inc.

ANNUAL GROUNDWATER REPORT

1996

GIANT REFINING CO. - CINIZA

LIBRARY COPY

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS WASTE SECTION
P.O. BOX 26110
SANTA FE, NEW MEXICO 87502

FACILITY NAME		Giant Refining Co. - Ciniza
EPA I.D. NUMBER		NMD000333211-2
COUNTY		McKinley
WELL NUMBER		MW-1
WELL LOCATION (LONGITUDE)		108 25' 36"
WELL LOCATION (LATITUDE)		35 29' 08"
NEW MEXICO STATE PLANE	(X)	320,903.76
	(Y)	1,636,112.13
AQUIFER NAME		Sonsela
AQUIFER CONFINED? xx		UNCONFINED?
WELL INSTALLATION DATE		10-14-81
DRILLING METHOD		Cable
INNER CASING DIAMETER		5.0"
BOREHOLE DIAMETER		10.0"
CASING MATERIAL		PVC
METHOD OF DEVELOPMENT		Compr
ELEV. BOTTOM OF BOREHOLE		6745.80
ELEV. BOTTOM OF WELL CASING		6745.80
ELEV. BOTTOM OF SCREENED INT.		6750.80
ELEVATION OF SCREENED INTERVAL		6760.80
SURVEYED ELEVATION OF CASING TOP		6878.52

DATE OF REPORT 2-26-96

SIGNATURE Dorinda Mancini
NAME (TYPED) Dorinda Mancini

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS WASTE SECTION
P.O. BOX 26110
SANTA FE, NEW MEXICO 87502

FACILITY NAME	Giant Refining Co. - Ciniza
EPA I.D. NUMBER	NMD000333211-2
COUNTY	McKinley
WELL NUMBER	MW-2
WELL LOCATION (LONGITUDE)	108 26' 00"
WELL LOCATION (LATITUDE)	35 29" 43"
NEW MEXICO STATE PLANE	(X) 321,035.35 (Y) 1,636,184.06
AQUIFER NAME	Sonsela
AQUIFER CONFINED? xx	UNCONFINED?
WELL INSTALLATION DATE	10-15-81
DRILLING METHOD	Cable
INNER CASING DIAMETER	5.0"
BOREHOLE DIAMETER	10.0"
CASING MATERIAL	PVC
METHOD OF DEVELOPMENT	Compr
ELEV. BOTTOM OF BOREHOLE	6741.90
ELEV. BOTTOM OF WELL CASING	6741.90
ELEV. BOTTOM OF SCREENED INT.	6747.90
ELEVATION OF SCREENED INTERVAL	6847.90
SURVEYED ELEVATION OF CASING TOP	6880.84

DATE OF REPORT 2-26-96

SIGNATURE Dorinda Mancini
NAME (TYPED) Dorinda Mancini

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS WASTE SECTION
P.O. BOX 26110
SANTA FE, NEW MEXICO 87502

FACILITY NAME	Giant Refining Co. - Ciniza
EPA I.D. NUMBER	NMD000333211-2
COUNTY	McKinley
WELL NUMBER	MW-4
WELL LOCATION (LONGITUDE)	108 26' 54"
WELL LOCATION (LATITUDE)	35 29' 30"
NEW MEXICO STATE PLANE	(X) 321,602.07 (Y) 1,635,066.25
AQUIFER NAME xx	Sonsela
AQUIFER CONFINED?	UNCONFINED?
WELL INSTALLATION DATE	10-16-81
DRILLING METHOD	Cable
INNER CASING DIAMETER	5.0"
BOREHOLE DIAMETER	10.0"
CASING MATERIAL	PVC
METHOD OF DEVELOPMENT	Compr
ELEV. BOTTOM OF BOREHOLE	6761.60
ELEV. BOTTOM OF WELL CASING	6761.60
ELEV. BOTTOM OF SCREENED INT.	6761.60
ELEVATION OF SCREENED INTERVAL	6781.60
SURVEYED ELEVATION OF CASING TOP	6882.54

DATE OF REPORT 2-26-96

SIGNATURE Dorinda Mancini
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MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS WASTE SECTION
P.O. BOX 26110
SANTA FE, NEW MEXICO 87502

FACILITY NAME	Giant Refining Co. - Ciniza
EPA I.D. NUMBER	NMD000333211-2
COUNTY	McKinley
WELL NUMBER	MW-5
WELL LOCATION (LONGITUDE)	108 25' 57"
WELL LOCATION (LATITUDE)	35 29' 43"
NEW MEXICO STATE PLANE	(X) 321,233.03 (Y) 1,636,212.58
AQUIFER NAME	Sonsela
AQUIFER CONFINED?	UNCONFINED?
WELL INSTALLATION DATE	7-21-86
DRILLING METHOD	HLWAG & AIRRT
INNER CASING DIAMETER	5.0"
BOREHOLE DIAMETER	10.0"
CASING MATERIAL	PVC
METHOD OF DEVELOPMENT	Compr
ELEV. BOTTOM OF BOREHOLE	6746.80
ELEV. BOTTOM OF WELL CASING	6753.30
ELEV. BOTTOM OF SCREENED INT.	6758.30
ELEVATION OF SCREENED INTERVAL	6768.80
SURVEYED ELEVATION OF CASING TOP	6883.32

DATE OF REPORT 2-26-96

SIGNATURE Dorinda Mancini
NAME (TYPED) Dorinda Mancini

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS WASTE SECTION
P.O. BOX 26110
SANTA FE, NEW MEXICO 87502

FACILITY NAME		Giant Refining Co. - Ciniza
EPA I.D. NUMBER		NMD000333211-2
COUNTY		McKinley
WELL NUMBER		SMW-5
WELL LOCATION (LONGITUDE)		108 26' 03"
WELL LOCATION (LATITUDE)		35 29' 41"
NEW MEXICO STATE PLANE	(X)	320,778.61
	(Y)	1,636,054.28
AQUIFER NAME		Ciniza Sand
AQUIFER CONFINED? xx		UNCONFINED?
WELL INSTALLATION DATE		9-25-85
DRILLING METHOD		HLWAG
INNER CASING DIAMETER		2.0"
BOREHOLE DIAMETER		6.5"
CASING MATERIAL		SS304
METHOD OF DEVELOPMENT		Compr
ELEV. BOTTOM OF BOREHOLE		6800.68
ELEV. BOTTOM OF WELL CASING		6801.78
ELEV. BOTTOM OF SCREENED INT.		6804.78
ELEVATION OF SCREENED INTERVAL		6824.78
SURVEYED ELEVATION OF CASING TOP		6878.02

DATE OF REPORT 2-26-96

SIGNATURE Dorinda Mancini
NAME (TYPED) Dorinda Mancini

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS WASTE SECTION
P.O. BOX 26110
SANTA FE, NEW MEXICO 87502

FACILITY NAME	Giant Refining Co. - Ciniza
EPA I.D. NUMBER	NMD000333211-2
COUNTY	McKinley
WELL NUMBER	SMW-3
WELL LOCATION (LONGITUDE)	108 25' 56"
WELL LOCATION (LATITUDE)	35 29' 40"
NEW MEXICO STATE PLANE	(X) 321,397.90 (Y) 1,635,948.75
AQUIFER NAME	Ciniza Sand
AQUIFER CONFINED? xx	UNCONFINED?
WELL INSTALLATION DATE	10-1-85
DRILLING METHOD	HLWAG
INNER CASING DIAMETER	2.0"
BOREHOLE DIAMETER	6.5"
CASING MATERIAL	SS304
METHOD OF DEVELOPMENT	Compr
ELEV. BOTTOM OF BOREHOLE	6836.15
ELEV. BOTTOM OF WELL CASING	6838.65
ELEV. BOTTOM OF SCREENED INT.	6841.65
ELEVATION OF SCREENED INTERVAL	6861.65
SURVEYED ELEVATION OF CASING TOP	6884.56

DATE OF REPORT 2-26-96

SIGNATURE Dorinda Mancini
NAME (TYPED) Dorinda Mancini

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS WASTE SECTION
P.O. BOX 26110
SANTA FE, NEW MEXICO 87502

FACILITY NAME	Giant Refining Co. - Ciniza
EPA I.D. NUMBER	NMD000333211-2
COUNTY	McKinley
WELL NUMBER	SMW-4
WELL LOCATION (LONGITUDE)	108 26' 01"
WELL LOCATION (LATITUDE)	35 29' 44"
NEW MEXICO STATE PLANE	(X) 321,397.90 (Y) 1,635,948.75
AQUIFER NAME	Ciniza Sand
AQUIFER CONFINED? xx	UNCONFINED?
WELL INSTALLATION DATE	9-25-85
DRILLING METHOD	HLWAG
INNER CASING DIAMETER	2.0"
BOREHOLE DIAMETER	6.5"
CASING MATERIAL	SS304
METHOD OF DEVELOPMENT	Compr
ELEV. BOTTOM OF BOREHOLE	6806.74
ELEV. BOTTOM OF WELL CASING	6807.84
ELEV. BOTTOM OF SCREENED INT.	6810.84
ELEVATION OF SCREENED INTERVAL	6830.84
SURVEYED ELEVATION OF CASING TOP	6880.08

DATE OF REPORT 2-22-96

SIGNATURE Dorinda Mancini
NAME (TYPED) Dorinda Mancini

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS WASTE SECTION
P.O. BOX 26110
SANTA FE, NEW MEXICO 87502

FACILITY NAME	Giant Refining Co. - Ciniza
EPA I.D. NUMBER	NMD000333211-2
COUNTY	McKinley
WELL NUMBER	SMW-5
WELL LOCATION (LONGITUDE)	108 26' 03"
WELL LOCATION (LATITUDE)	35 29' 41"
NEW MEXICO STATE PLANE	(X) 320,778.61 (Y) 1,636,054.28
AQUIFER NAME	Ciniza Sand
AQUIFER CONFINED? xx	UNCONFINED?
WELL INSTALLATION DATE	9-25-85
DRILLING METHOD	HLWAG
INNER CASING DIAMETER	2.0"
BOREHOLE DIAMETER	6.5"
CASING MATERIAL	SS304
METHOD OF DEVELOPMENT	Compr
ELEV. BOTTOM OF BOREHOLE	6800.68
ELEV. BOTTOM OF WELL CASING	6801.78
ELEV. BOTTOM OF SCREENED INT.	6804.78
ELEVATION OF SCREENED INTERVAL	6824.78
SURVEYED ELEVATION OF CASING TOP	6878.02

DATE OF REPORT 2-26-96

SIGNATURE Dorinda Mancini
NAME (TYPED) Dorinda Mancini

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS WASTE SECTION
P.O. BOX 26110
SANTA FE, NEW MEXICO 87502

FACILITY NAME	Giant Refining Co. - Ciniza
EPA I.D. NUMBER	NMD000333211-2
COUNTY	McKinley
WELL NUMBER	SMW-6
WELL LOCATION (LONGITUDE)	108 26' 02"
WELL LOCATION (LATITUDE)	35 29' 38"
NEW MEXICO STATE PLANE	(X) 320,839.52 (Y) 1,635,867.66
AQUIFER NAME	Ciniza Sand
AQUIFER CONFINED? xx	UNCONFINED?
WELL INSTALLATION DATE	10-3-85
DRILLING METHOD	HLWAG
INNER CASING DIAMETER	2.0"
BOREHOLE DIAMETER	6.5"
CASING MATERIAL	SS304
METHOD OF DEVELOPMENT	Compr
ELEV. BOTTOM OF BOREHOLE	6806.35
ELEV. BOTTOM OF WELL CASING	6807.55
ELEV. BOTTOM OF SCREENED INT.	6810.55
ELEVATION OF SCREENED INTERVAL	6830.55
SURVEYED ELEVATION OF CASING TOP	6880.71

DATE OF REPORT 2-2-96

SIGNATURE Dorinda Mancini
NAME (TYPED) Dorinda Mancini

Calculation Sheet for Semi-Annual Evaluation of Indicator Parameters

Prepared by:	Dorinda Mancini	Telephone:	(505) 722-0227
Facility Name:	**GIANT CINIZA**	EPA ID #:	NMD000333211-2
Date:	Fall, 1996	Parameter:	pH
Well Number:	MW-1	Up or Down Gradient:	DOWN

Please list the values calculated for the background parameters on the Background Indicator parameter Calculation Sheet:

X(b)=	8.316	S(b)2=	0.1956	t(b)=	1.708
W(b)=	0.0078	n(b)=	25		

Please list the current values for this monitoring well:

	Value	(Value-X(m))2
1	8.9	0
2	8.9	0
3	8.9	0
4	8.9	0
Total 1	35.6	Total 2 0

Mean Value X(m)	8.9	t(m)=	2.132
Variance S(m)2	0	W(m)=	0

t(*)=	6.602348
t(c)=	1.708

If t(*) absolute is less than t(c) there has not been an increase in the value.

Signature

Calculation Sheet for Semi-Annual Evaluation of Indicator Parameters

Prepared by:	Dorinda Mancini	Telephone:	(505) 722-0227
Facility Name:	**GIANT CINIZA**	EPA ID #:	NMD000333211-2
Date:	Fall, 1996	Parameter:	pH
Well Number:	MW-2	Up or Down Gradient:	DOWN

Please list the values calculated for the background parameters on the Background Indicator parameter Calculation Sheet:

X(b)=	8.316	S(b)2=	0.1956	t(b)=	1.708
W(b)=	0.0078	n(b)=	25		

Please list the current values for this monitoring well:

	Value	(Value-X(m))2
1	8.9	0
2	8.9	0
3	8.9	0
4	8.9	0
Total 1	35.6	Total 2 0

Mean Value X(m)	8.9	t(m)=	2.132
Variance S(m)2	0	W(m)=	0

t(*)=	6.602348
t(c)=	1.708

If t(*) absolute is less than t(c) there has not been an increase in the value.

Signature

Calculation Sheet for Semi-Annual Evaluation of Indicator Parameters

Prepared by:	Dorinda Mancini	Telephone:	(505) 722-0227
Facility Name:	**GIANT CINIZA**	EPA ID #:	NMD000333211-2
Date:	Fall, 1996	Parameter:	pH
Well Number:	MW-4	Up or Down Gradient:	DOWN

Please list the values calculated for the background parameters on the Background Indicator parameter Calculation Sheet:

X(b)=	8.316	S(b)2=	0.1956	t(b)=	1.708
W(b)=	0.0078	n(b)=	25		

Please list the current values for this monitoring well:

	Value	(Value-X(m))2
1	8.7	0
2	8.7	0
3	8.7	0
4	8.7	0
Total 1	34.8	Total 2 0

Mean Value X(m)	8.7	t(m)=	2.132
Variance S(m)2	0	W(m)=	0

t(*)=	4.34127
t(c)=	1.708

If t(*) absolute is less than t(c) there has not been an increase in the value.

Dorinda Mancini

Signature

Calculation Sheet for Semi-Annual Evaluation of Indicator Parameters

Prepared by:	Dorinda Mancini	Telephone:	(505) 722-0227
Facility Name:	**GIANT CINIZA**	EPA ID #:	NMD000333211-2
Date:	Fall, 1996	Parameter:	pH
Well Number:	MW-5	Up or Down Gradient:	DOWN

Please list the values calculated for the background parameters on the Background Indicator parameter Calculation Sheet:

X(b)=	8.316	S(b)2=	0.1956	t(b)=	1.708
W(b)=	0.0078	n(b)=	25		

Please list the current values for this monitoring well:

	Value	(Value-X(m))2
1	8.9	0
2	8.9	0
3	8.9	0
4	8.9	0
Total 1	35.6	Total 2 0

Mean Value X(m)	8.9	t(m)=	2.132
Variance S(m)2	0	W(m)=	0

t(*)=	6.602348
t(c)=	1.708

If t(*) absolute is less than t(c) there has not been an increase in the value.

Signature

Conductivity

Calculation Sheet for Semi-Annual Evaluation of Indicator Parameters

Prepared by:	Dorinda Mancini	Telephone:	(505) 722-0227
Facility Name:	**GIANT CINIZA**	EPA ID #:	NMD000333211-2
Date:	Fall, 1996	Parameter:	SPEC. COND.
Well Number:	MW-1	Up or Down Gradient:	DOWN

Please list the values calculated for the background parameters on the Background Indicator parameter Calculation Sheet:

X(b)=	2184	S(b)2=	323	t(b)=	1.708
W(b)=	12.92	n(b)=	25		

Please list the current values for this monitoring well:

	Value	(Value-X(m))2
1	1144	0.25
2	1146	2.25
3	1145	0.25
4	1143	2.25
Total 1	4578	Total 2 5

Mean Value X(m)	1144.5	t(m)=	2.132
Variance S(m)2	1.666667	W(m)=	0.416667

t(*)=	-284.643
t(c)=	1.721247

If t(*) absolute is less than t(c) there has not been an increase in the value.

Dorinda Mancini

Signature

STUTEST96.xls

2/13/97

Calculation Sheet for Semi-Annual Evaluation of Indicator Parameters

Prepared by:	Dorinda Mancini	Telephone:	(505) 722-0227
Facility Name:	**GIANT CINIZA**	EPA ID #:	NMD000333211-2
Date:	Fall, 1996	Parameter:	SPEC. COND.
Well Number:	MW-2	Up or Down Gradient:	DOWN

Please list the values calculated for the background parameters on the Background Indicator parameter Calculation Sheet:

X(b)=	2184	S(b)=	323	t(b)=	1.708
W(b)=	12.92	n(b)=	25		

Please list the current values for this monitoring well:

	Value	(Value-X(m))2
1	1163	1
2	1160	4
3	1162	0
4	1163	1
Total 1	4648	Total 2 6

Mean Value X(m)	1162	t(m)=	2.132
Variance S(m)2	2	W(m)=	0.5

t(*)=	-278.981
t(c)=	1.723797

If t(*) absolute is less than t(c) there has not been an increase in the value.

Signature

Calculation Sheet for Semi-Annual Evaluation of Indicator Parameters

Prepared by:	Dorinda Mancini	Telephone:	(505) 722-0227
Facility Name:	**GIANT CINIZA**	EPA ID #:	NMD000333211-2
Date:	Fall, 1996	Parameter:	SPEC. COND.
Well Number:	MW-4	Up or Down Gradient:	DOWN

Please list the values calculated for the background parameters on the Background Indicator parameter Calculation Sheet:

X(b)=	2184	S(b)2=	323	t(b)=	1.708
W(b)=	12.92	n(b)=	25		

Please list the current values for this monitoring well:

	Value	(Value-X(m))2
1	1188	0.5625
2	1188	0.5625
3	1190	1.5625
4	1189	0.0625
Total 1	4755	Total 2 2.75

Mean Value X(m)	1188.75	t(m)=	2.132
Variance S(m)2	0.916667	W(m)=	0.229167

t(*)=	-274.463
t(c)=	1.71539

If t(*) absolute is less than t(c) there has not been an increase in the value.

Signature

Calculation Sheet for Semi-Annual Evaluation of Indicator Parameters

Prepared by:	Dorinda Mancini	Telephone:	(505) 722-0227
Facility Name:	**GIANT CINIZA**	EPA ID #:	NMD000333211-2
Date:	Fall, 1996	Parameter:	SPEC. COND.
Well Number:	MW-5	Up or Down Gradient:	DOWN

Please list the values calculated for the background parameters on the Background Indicator parameter Calculation Sheet:

X(b)=	2184	S(b)2=	323	t(b)=	1.708
W(b)=	12.92	n(b)=	25		

Please list the current values for this monitoring well:

	Value	(Value-X(m))2
1	1175	0.25
2	1173	2.25
3	1175	0.25
4	1175	0.25
Total 1	4698	Total 2 3

Mean Value X(m)	1174.5	t(m)=	2.132
Variance S(m)2	1	W(m)=	0.25

t(*)=	-278.172
t(c)=	1.716049

If t(*) absolute is less than t(c) there has not been an increase in the value.

Signature

TOLERANCE INTERVAL

1996

pH

WELL	DATE				
SMW-3	Mar-96	MEAN-	7.8446	SD	0.1551
	Nov-96		7.8377		0.1287
		RESULT	TOL LIMIT	UNITS	
	Mar-96	7.86	8.155	---	Does not exceed the tolerance limit.
	Nov-96	7.7	8.095		Does not exceed the tolerance limit.
SMW-4	Mar-96	MEAN-	8.335	SD	0.1924
	Nov-96		8.0208		0.1782
		RESULT	TOL LIMIT	UNITS	
*	Mar-96	8.77	8.720	---	Does exceed the tol. limit .05 units
**	Nov-96	8.5	8.377		Does exceed the tol.limit 0.125 units
SMW-5	Mar-96	MEAN-	8.20	SD	1.696
	Nov-96		8.552		0.3087
		RESULT	TOL LIMIT	UNITS	
	Mar-96	8.85	11.596	---	Does not exceed the tolerance limit.
	Nov-96	8.6	9.170		Does not exceed the tolerance limit.
SMW-6	Mar-96	MEAN-		SD	
	Nov-96				
		RESULT	TOL LIMIT	UNITS	
	Mar-96	NO SAMPLE WAS TAKEN DURING THIS SAMPLING EVENT DUE TO THE LACK OF WATER.			
	Nov-96	NO SAMPLE WAS TAKEN DURING THIS SAMPLING EVENT DUE TO THE LACK OF WATER.			

* **NOTE**: LAB TESTS SHOW RESULTS AT 8.4 W

** **NOTE**: See change in mean from previous mean.

TOLERANCE INTERVAL

1996

EC

WELL	DATE				
SMW-3	Mar-96	MEAN-	3225.3	SD	313.86
	Nov-96		3210.4		316.78
		RESULT	TOL LIMIT	UNITS	
	Mar-96	2905.0	3853.0	---	Does not exceed the tolerance limit.
	Nov-96	2913.0	3844.0		Does not exceed the tolerance limit.
SMW-4	Mar-96	MEAN-	1301.6	SD	175.13
	Nov-96		1240.0		87.16
		RESULT	TOL LIMIT	UNITS	
	Mar-96	1269.8	1651.9	---	Does not exceed the tolerance limit.
	Nov-96	1263.0	1414.3		Does not exceed the tolerance limit.
SMW-5	Mar-96	MEAN-	1135.2	SD	68.09
	Nov-96		1140.3		70.49
		RESULT	TOL LIMIT	UNITS	
	Mar-96	1130.3	1271.3	---	Does not exceed the tolerance limit.
	Nov-96	1230.0	1281.3		Does not exceed the tolerance limit.
SMW-6	Mar-96	MEAN-	NO SAMPLE	SD	
	Nov-96		NO SAMPLE		
		RESULT	TOL LIMIT	UNITS	
	Mar-96	NO SAMPLE WAS TAKEN DURING THIS SAMPLING EVENT DUE TO A LACK OF WATER.			
	Nov-96	NO SAMPLE WAS TAKEN DURING THIS SAMPLING EVENT DUE TO A LACK OF WATER.			

TOLERANCE INTERVAL

1996

TEMPERATURE

WELL	DATE				
SMW-3	Mar-96	MEAN-	55.17	SD	2.48
	Nov-96		55.23		2.4
		RESULT	TOL LIMIT	UNITS	
	Mar-96	54	60.13	degrees	Does not exceed the tolerance limit.
	Nov-96	56	60.03		Does not exceed the tolerance limit.
SMW-4	Mar-96	MEAN-	55.62	SD	2.6
	Nov-96		55.57		2.51
		RESULT	TOL LIMIT	UNITS	
	Mar-96	53.5	60.82	degrees	Does not exceed the tolerance limit.
	Nov-96	55	60.59		Does not exceed the tolerance limit.
SMW-5	Mar-96	MEAN-	54.77	SD	2.8
	Nov-96		55.00		2.82
		RESULT	TOL LIMIT	UNITS	
	Mar-96	53	60.37	degrees	Does not exceed the tolerance limit.
	Nov-96	58	60.64		Does not exceed the tolerance limit.
SMW-6	Mar-96	MEAN-	NO SAMPLE	SD	
	Nov-96		NO SAMPLE		
		RESULT	TOL LIMIT	UNITS	
	Mar-96	NO SAMPLE WAS TAKEN DURING THIS SAMPLING EVENT DUE TO THE LACK OF WATER.			
	Nov-96	NO SAMPLE WAS TAKEN DURING THIS SAMPLING EVENT DUE TO THE LACK OF WATER.			

TOLERANCE INTERVAL

1996

LEAD

WELL		DATE				
SMW-3		Mar-96	MEAN-	0.0224	SD	0.0803
		Nov-96		0.0225		0.0016
			RESULT	TOL LIMIT	UNITS	
	*	Mar-96	0.0025	0.183	ppm	Does not exceed the tolerance limit.
	**	Nov-96	0.025	0.026	ppm	Does not exceed the tolerance limit.
SMW-4		Mar-96	MEAN-	0.0020	SD	0.0012
		Nov-96		0.0032		0.0056
			RESULT	TOL LIMIT	UNITS	
	*	Mar-96	0.0025	0.004	ppm	Does not exceed the tolerance limit.
	**	Nov-96	0.025	0.014	ppm	Does exceed the tolerance limit.
SMW-5		Mar-96	MEAN-	0.0022	SD	0.0017
		Nov-96		0.004		0.0057
			RESULT	TOL LIMIT	UNITS	
	*	Mar-96	0.0025	0.006	ppm	Does not exceed the tolerance limit.
	**	Nov-96	0.025	0.015	ppm	Does exceed the tolerance limit.
SMW-6		Mar-96	MEAN-	NO SAMPLE	SD	
		Nov-96		NO SAMPLE		
			RESULT	TOL LIMIT	UNITS	
		Mar-96	NO SAMPLE WAS TAKEN DURING THIS SAMPLING EVENT DUE TO THE LACK OF WATER.			
		Nov-96	NO SAMPLE WAS TAKEN DURING THIS SAMPLING EVENT DUE TO THE LACK OF WATER.			

* **NOTE**: 1/2 of the Detection Limit was used to report Not Detected. DL = 0.005

** **NOTE** Detection Limit used by Lab was 0.05 rather than 0.005. 1/2 DL used to report Not Detected

TOLERANCE INTERVAL

1996

CHROME

WELL		DATE				
SMW-3		Mar-96	MEAN-	0.0436	SD	0.1556
		Nov-96		0.0420		0.1775
			RESULT	TOL LIMIT	UNITS	
	*	Mar-96	0.005	0.355	ppm	Does not exceed the tolerance limit.
	*	Nov-96	0.011	0.397	ppm	Does not exceed the tolerance limit.
SMW-4		Mar-96	MEAN-	0.0062	SD	0.0058
		Nov-96		0.0064		0.0067
			RESULT	TOL LIMIT	UNITS	
	*	Mar-96	0.005	0.018	ppm	Does not exceed the tolerance limit.
	*	Nov-96	0.005	0.020	ppm	Does not exceed the tolerance limit.
SMW-5		Mar-96	MEAN-	0.0113	SD	0.0223
		Nov-96		0.0145		0.0264
			RESULT	TOL LIMIT	UNITS	
	*	Mar-96	0.005	0.056	ppm	Does not exceed the tolerance limit.
	*	Nov-96	0.005	0.067	ppm	Does not exceed the tolerance limit.
SMW-6		Mar-96	MEAN-	NO SAMPLE	SD	
		Nov-96		NO SAMPLE		
			RESULT	TOL LIMIT	UNITS	
		Mar-96	NO SAMPLE WAS TAKEN DURING THIS SAMPLING EVENT DUE TO THE LACK OF WATER			
		Nov-96	NO SAMPLE WAS TAKEN DURING THIS SAMPLING EVENT DUE TO THE LACK OF WATER			

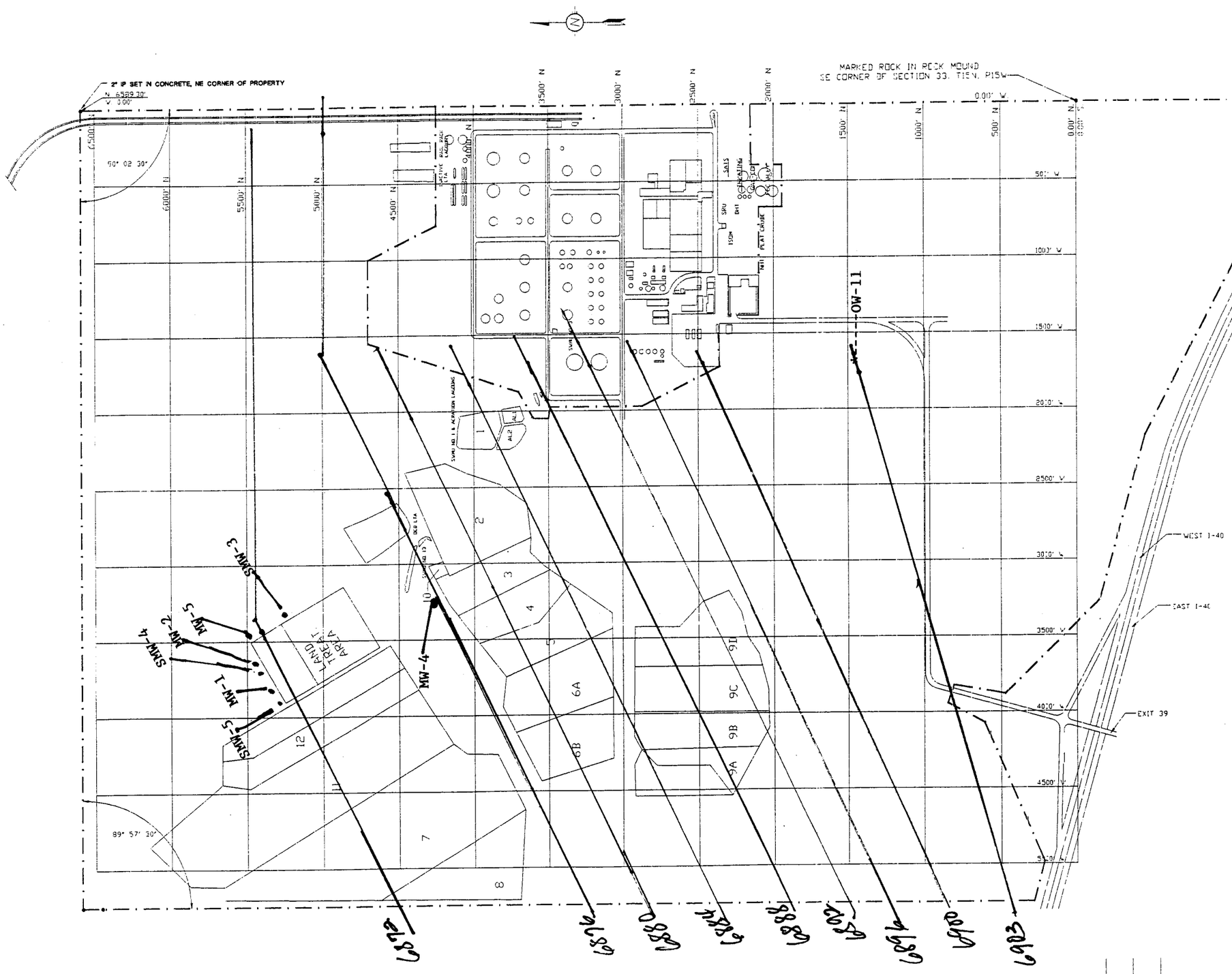
* **NOTE**: 1/2 of the Detection Limit was used to report Not Detected. DL = 0.01

** **NOTE** Detection Limit used by Lab was 0.05 rather than 0.005. 1/2 DL used to report Not Detected

GIANT REFINING CO. - CINIZA

ANNUAL GROUNDWATER MEASUREMENT

Well No.	Date	Casing Elevation	Depth to Water	Groundwater Elevation
MW-1	Mar-96	6878.52	6	6872.52
	Nov-96		6.25	6872.27
MW-2	Mar-96	6880.84	13.3	6867.54
	Nov-96		10	6870.84
MW-4	Mar-96	6882.54	6.5	6876.04
	Nov-96		7.16	6875.38
MW-5	Mar-96	6883.32	12.5	6870.82
	Nov-96		11.85	6871.47
OW-11	Mar-96	6923.89	20	6903.89
	Nov-96		21	6902.89
SMW-3	Mar-96	6884.56	30	6854.56
	Nov-96		31.6	6852.96
SMW-4	Mar-96	6880.8	30.1	6850.7
	Nov-96		30.92	6849.88
SMW-5	Mar-96	6878.02	30.2	6847.82
	Nov-96		31	6847.02



1996
GROUNDWATER ELEVATION CONTOUR MAP

MW-1	6872.5
MW-2	6870.5
MW-4	6875.4
MW-5	6871.5
OW-11	6902.9

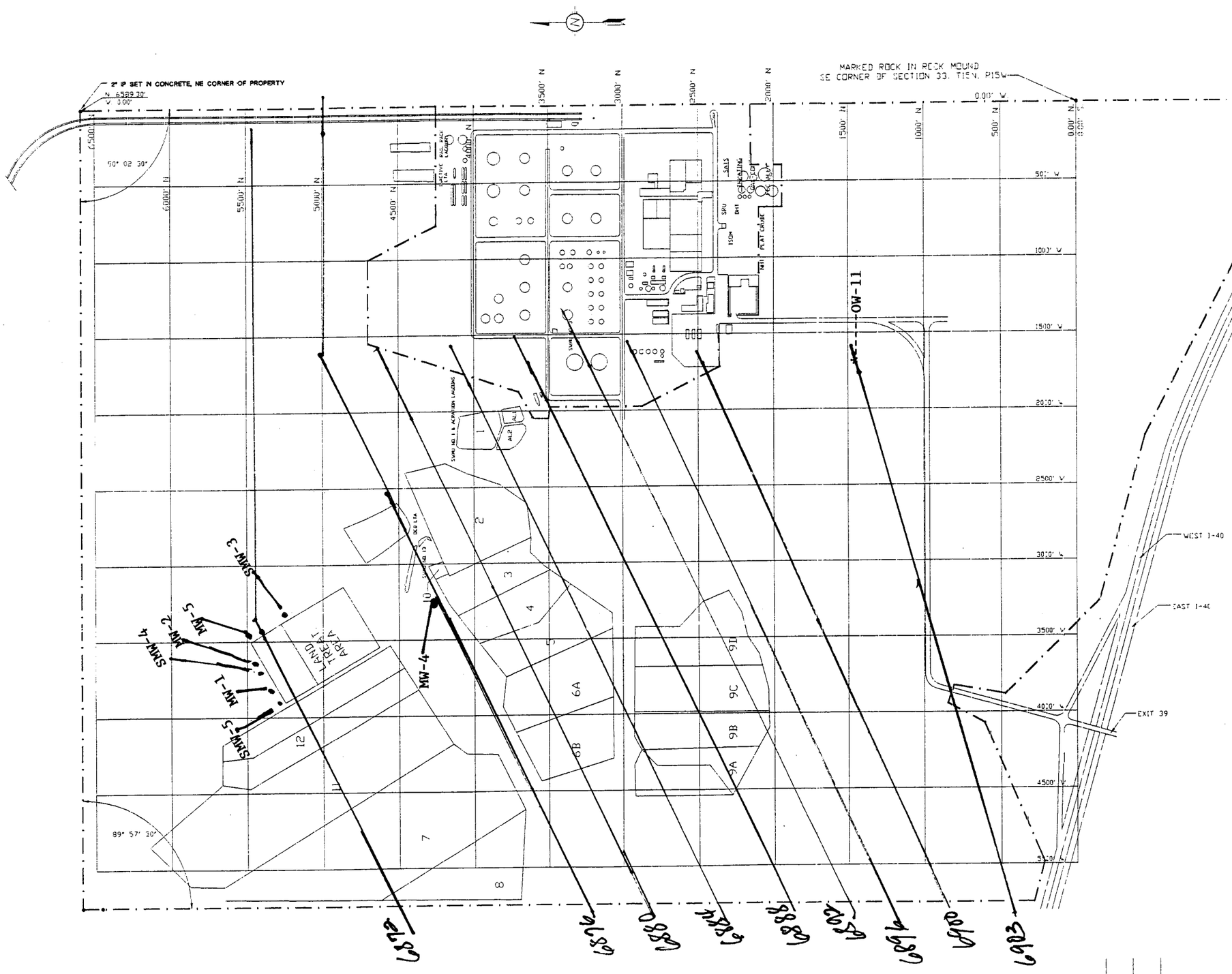
REFERENCE DRAWINGS

CINIZA REFINERY — GIANT REFINING CO. — GALLUP NEW MEXICO
A DIVISION OF GIANT INDUSTRIES

MASTER PLOT PLAN

SCALE	1"=300'	APRV'D	
DATE	9-1-94	APRV'D	
DRN	SPS	IPS 300MS	REV
CHK'D	RWJ NO	7-02-96	1

MARK	DATE	DESCRIPTION	BY	APR'VD



1996
GROUNDWATER ELEVATION CONTOUR MAP

MW-1	6872.5
MW-2	6870.5
MW-4	6875.4
MW-5	6871.5
OW-11	6902.9

REFERENCE DRAWINGS

CINIZA REFINERY — GIANT REFINING CO. — GALLUP NEW MEXICO
A DIVISION OF GIANT INDUSTRIES

MASTER PLOT PLAN

SCALE	1"=300'	APRV'D	
DATE	9-1-94	APRV'D	
DRN	SPS	IPS 300MS	REV
CHK'D	RWJ NO	7-02-96	1

MARK	DATE	DESCRIPTION	BY	APR'VD

GROUNDWATER VELOCITY

SONSELA AQUIFER

The groundwater velocity in the Sonsela aquifer under the Land Treatment Unit is estimated to be .0109 ft/day (3.97 ft/year), using the following calculation:

V	=	(KI/n)
V	=	Velocity, ft/day
K	=	Horizontal Hydraulic Conductivity, 0.35 ft/day
I	=	Potentiometric Gradient, .00311 ft/day
n	=	Porosity, 10%

"I" was calculated by using the differential elevation between wells MW-2 and MW-4 in 1996.

MW-1 GIANT REFINING - CINIZA

Volatile Organics (8240)

Parameter	29-Oct-93 Result	28-Apr-94 Result	19-Oct-94 Result	16-May-95 Result	26-Oct-95 Result	16-Mar-96 Result	4-Nov-96 Result	Units
Chloromethane	ND	ND	ND	ND	ND	ND	ND	ug/L
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ug/L
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ug/L
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ug/L
Methylene chloride	ND	ND	ND	ND	ND	ND	ND	ug/L
Acetone	ND	ND	ND	ND	ND	ND	ND	ug/L
Carbon disulfide	ND	ND	ND	ND	ND	ND	ND	ug/L
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ug/L
1,1-Dichoroethane	ND	ND	ND	ND	ND	ND	ND	ug/L
1,2-Dichloroethene (cis/trans)	ND	ND	ND	ND	ND	ND	ND	ug/L
Chloroform	ND	ND	ND	ND	ND	ND	ND	ug/L
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ug/L
2-Butanone	ND	ND	ND	ND	ND	ND	ND	ug/L
1,1,1-Trichoroethane	ND	ND	ND	ND	ND	ND	ND	ug/L
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	ug/L
Vinyl acetate	ND	ND	ND	ND	ND	ND		ug/L
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ug/L
trans-1,3-Dichoropropene	ND	ND	ND	ND	ND	ND	ND	ug/L
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ug/L
Chlorodibromomethane	ND	ND	ND	ND	ND	ND	ND	ug/L
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ug/L
Benzene	ND	ND	ND	ND	ND	ND	ND	ug/L
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ug/L
2-Chloroethyl vinyl ether	ND	ND	ND	ND	ND	ND		ug/L
Bromoform	ND	ND	ND	ND	ND	ND	ND	ug/L
4-Methyl-2-pentanone	ND	ND	ND	ND	ND	ND	ND	ug/L
2-Hexanone	ND	ND	ND	ND	ND	ND	ND	ug/L

MW-1

1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ug/L
Tetrachoroethene	ND	ND	ND	ND	ND	ND	ND	ug/L
Toluene	ND	ND	ND	ND	ND	ND	ND	ug/L
Chorobenzene	ND	ND	ND	ND	ND	ND	ND	ug/L
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ug/L
Stryene	ND	ND	ND	ND	ND	ND	ND	ug/L
Xylenes (total)	ND	ND	ND	ND	ND	ND	ND	ug/L

MW-1 GIANT REFINING - CINIZA

Dissolved Metals

Parameter	23-Apr-92 Result	28-Apr-93 Result	29-Apr-94 Result	16-May-95 Result	16-Mar-96 Result	Units
Arsenic	ND	ND	ND	ND	<0.005	mg/L
Barium	0.09	ND	0.016	0.01	<0.01	mg/L
Cadmium	0.0012	ND	ND	ND	<0.001	mg/L
Calcium	1.8	1.1	1.2	1.8	1	mg/L
Magnesium	0.26	0.2	0.3	0.2	0.12	mg/L
Manganese	0.1	ND	0.016	ND	<0.02	mg/L
Potassium	ND	ND	ND	ND	0.39	mg/L
Selenium	ND	ND	ND	ND	0.005	mg/L
Silver	ND	ND	ND	ND	0.01	mg/L
Sodium	72		254	242	264	mg/L

Total Metals

Parameter	29-Oct-93 Result	28-Apr-94 Result	19-Oct-94 Result	16-May-95 Result	16-Mar-96 Result	Units
Chromium	ND	ND	0.021	ND	<0.01	mg/L
Lead	0.036	ND	0.004	0.002	<0.005	mg/L
Mercury	ND	ND			<0.001	mg/L

MW-1 GIANT REFINING COMPANY - CINIZA

General Inorganics

Parameter	29-Oct-93 Result	28-Apr-94 Result	19-Oct-94 Result	16-May-95 Result	26-Oct-95 Result	16-Mar-96 Result	4-Nov-96 Result	Units
Alkalinity, Bicarb. as CaCO3 at ph 4.5		301		320		342		
Alkalinity, Carb. as CaCO3 at pH 8.3		48		23				
Chloride		52		47		55.4		
pH	9.05	9.06	8.97	8.9	8.91	9.52	8.9	s.u.
pH	9		9		8.88	9.33	8.9	s.u.
pH	9.08		9.03		8.88	9.23	8.9	s.u.
pH	9.08		9.05		8.9	9.26	8.9	s.u.
pH Average	9.05	9.06	9.01	8.9	8.9	9.34	8.9	s.u.
Phenolics								
Sulfate								
Specific Conductance at 25 deg. C	1090	1070	1090	1100	1110	1099	1144	umhos/cm
Specific Conductance at 25 deg. C	1080		1080		1130	1094	1146	umhos/cm
Specific Conductance at 25 deg. C	1080		1080		1120	1095	1145	umhos/cm
Specific Conductance at 25 deg. C	1090		1100		1120	1091	1143	umhos/cm
Specific Conductance at 25 deg. C Average	1085	1070	1088	1100	1120	1095	1144.5	umhos/cm
Total Organic Carbon	ND	ND	1	36	1	<1.0	0.8	mg/L
Total Organic Carbon	ND	ND	1	36	1	<1.0		mg/L
Total Organic Carbon								mg/L
Total Organic Carbon								mg/L
Total Organic Halogen as Cl	ND	ND	ND	30	69		13	mg/L

MW-1

Total Organic Halogen as Cl	ND	20	ND	30				mg/L
Total Organic Halogen as Cl								mg/L
Total Organic Halogen as Cl								mg/L
Total Dissolved Solids		720						
Water Elevation	6864.6	6873.3	6873	6870.7	6872.4	6872.5	6872.2	

MW-2 GIANT REFINING - CINIZA

Volatile Organics (8240)

Parameter	29-Oct-93 Result	28-Apr-94 Result	19-Oct-94 Result	16-May-95 Result	28-Oct-95 Result	16-Mar-96 Result	4-Nov-96 Result	Units
Chloromethane	ND	ND	ND	ND	ND	ND	ND	ug/L
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ug/L
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ug/L
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ug/L
Methylene chloride	ND	ND	ND	ND	7	ND	ND	ug/L
Acetone	ND	ND	ND	ND	ND	ND	ND	ug/L
Carbon disulfide	ND	ND	ND	ND	ND	ND	ND	ug/L
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ug/L
1,1-Dichoroethane	ND	ND	ND	ND	ND	ND	ND	ug/L
1,2-Dichloroethene (cis/trans)	ND	ND	ND	ND	ND	ND	ND	ug/L
Chloroform	ND	ND	ND	ND	ND	ND	ND	ug/L
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ug/L
2-Butanone	ND	ND	ND	ND	ND	ND	ND	ug/L
1,1,1-Trichoroethane	ND	ND	ND	ND	ND	ND	ND	ug/L
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	ug/L
Vinyl acetate	ND	ND	ND	ND	ND	ND		ug/L
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ug/L
trans-1,3-Dichoropropene	ND	ND	ND	ND	ND	ND	ND	ug/L
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ug/L
Chlorodibromomethane	ND	ND	ND	ND	ND	ND	ND	ug/L
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ug/L
Benzene	ND	ND	ND	ND	ND	ND	ND	ug/L
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ug/L
2-Choroethyl vinyl ether	ND	ND	ND	ND	ND	ND		ug/L
Bromoform	ND	ND	ND	ND	ND	ND	ND	ug/L
4-Methyl-2-pentanone	ND	ND	ND	ND	ND	ND	ND	ug/L
2-Hexanone	ND	ND	ND	ND	ND	ND	ND	ug/L

MW-2

1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ug/L
Tetrachoroethene	ND	ND	ND	ND	ND	ND	ND	ug/L
Toluene	ND	ND	ND	ND	ND	ND	ND	ug/L
Chorobenzene	ND	ND	ND	ND	ND	ND	ND	ug/L
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ug/L
Stryene	ND	ND	ND	ND	ND	ND	ND	ug/L
Xylenes (total)	ND	ND	ND	ND	ND	ND	ND	ug/L

MW-2 GIANT REFINING - CINIZA

Dissolved Metals

Parameter	23-Apr-92 Result	28-Apr-93 Result	28-Apr-94 Result	16-May-95 Result	16-Mar-96 Result	Units
Arsenic	ND	ND	ND	ND	<0.005	mg/L
Barium	ND	0.015	0.021	0.02	<0.01	mg/L
Cadmium	ND	ND	ND	ND	<0.001	mg/L
Calcium	1.6	0.9	0.6	1.4	1	mg/L
Magnesium	0.18	0.1	ND	0.1	0.12	mg/L
Manganese	ND	ND	ND	ND	<0.02	mg/L
Potassium	ND	ND	ND	ND	0.39	mg/L
Selenium	ND	ND	ND	ND	0.005	mg/L
Silver	ND	ND	ND	ND	0.01	mg/L
Sodium	78		257	246	264	mg/L

Total Metals

Parameter	29-Oct-93 Result	28-Apr-94 Result	19-Oct-94 Result	16-May-95 Result	16-Mar-96 Result	Units
Chromium	ND	0.011	ND	ND	<0.01	mg/L
Lead	0.003	ND	ND	ND	<0.005	mg/L
Mercury		ND		ND	<0.001	mg/L

MW-2 GIANT REFINING COMPANY - CINIZA

General Inorganics

Parameter	29-Oct-93 Result	28-Apr-94 Result	19-Oct-94 Result	16-May-95 Result	28-Oct-95 Result	16-Mar-96 Result	04-Nov-96 Result	Units
Alkalinity, Bicarb. as CaCO3 at ph 4.5	---	294	---	320	---	331		mg/L
Alkalinity, Carb. as CaCO3 at pH 8.3	---	42	---	ND	---	---		mg/L
Chloride	---	61	---	58	---	62.9		mg/L
pH	9.09	9.1	9.06	9	9.01	9.4	8.9	s.u
pH	9.08	---	9.07	---	9.04	9.32	8.9	s.u
pH	9.1	---	9.06	---	9.03	9.29	8.9	s.u
pH	9.07	---	9.08	---	9.05	9.25	8.9	s.u
pH Average	9.085	9.1	9.0675	9	9.0325	9.315	8.9	s.u
Phenolics	---	ND	---	ND	---	<0.01		mg/L
Sulfate	---	160	---	170	---	175		mg/L
Specific Conductance at 25 deg. C	1100	1120	1130	1100	1080	1110	1163	umhos/cm
Specific Conductance at 25 deg. C	1110	---	1100	---	1100	1092	1160	umhos/cm
Specific Conductance at 25 deg. C	1090	---	1110	---	1100	1102	1162	umhos/cm
Specific Conductance at 25 deg. C	1090	---	1110	---	1100	1094	1163	umhos/cm
Specific Conductance at 25 deg. C	1097.5	1120	1112.5	1100	1095	1099.5	1162	umhos/cm
Total Organic Carbon	ND	ND	ND	ND	1.3	<1.0	0.8	mg/L
Total Organic Carbon	ND	ND	ND	ND	---	---		
Total Organic Carbon	---	---	---	---	---	---		
Total Organic Carbon	---	---	---	---	---	---		
Total Organic Halogen as Cl	ND	20	ND	40	22	ND	0.044	mg/L

Total Organic Halogen as Cl	ND	20	ND	20	---	ND		mg/L
Total Organic Halogen as Cl	---	---	---	---	---	---		
Total Organic Halogen as Cl	---	---	---	---	---	---		
Total Dissolved Solids	---	700	---	---	---	676		mg/L
Water Elevation	6872.7	6873.62	6870.01	6873.13	6872.34	6867.54	6870.8	feet

MW-4 GIANT REFINING - CINIZA

Volatile Organics (8240)

Parameter	29-Oct-93 Result	28-Apr-94 Result	19-Oct-94 Result	16-May-95 Result	26-Oct-95 Result	16-Mar-96 Result	4-Nov-96 Result	Units
Chloromethane	ND	ND	ND	ND	ND	ND	ND	ug/L
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ug/L
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ug/L
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ug/L
Methylene chloride	ND	ND	ND	ND	ND	ND	ND	ug/L
Acetone	ND	ND	ND	ND	ND	ND	ND	ug/L
Carbon disulfide	ND	ND	ND	ND	ND	ND	ND	ug/L
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ug/L
1,1-Dichoroethane	ND	ND	ND	ND	ND	ND	ND	ug/L
1,2-Dichloroethene (cis/trans)	ND	ND	ND	ND	ND	ND	ND	ug/L
Chloroform	ND	ND	ND	ND	ND	ND	ND	ug/L
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ug/L
2-Butanone	ND	ND	ND	ND	ND	ND	ND	ug/L
1,1,1-Trichoroethane	ND	ND	ND	ND	ND	ND	ND	ug/L
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	ug/L
Vinyl acetate	ND	ND	ND	ND	ND	ND		ug/L
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ug/L
trans-1,3-Dichoropropene	ND	ND	ND	ND	ND	ND	ND	ug/L
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ug/L
Chlorodibromomethane	ND	ND	ND	ND	ND	ND	ND	ug/L
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ug/L
Benzene	ND	ND	ND	ND	ND	ND	ND	ug/L
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ug/L
2-Choroethyl vinyl ether	ND	ND	ND	ND	ND	ND		ug/L
Bromoform	ND	ND	ND	ND	ND	ND	ND	ug/L
4-Methyl-2-pentanone	ND	ND	ND	ND	ND	ND	ND	ug/L
2-Hexanone	ND	ND	ND	ND	ND	ND	ND	ug/L

1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ug/L
Tetrachoroethene	ND	ND	ND	ND	ND	ND	ND	ug/L
Toluene	ND	ND	ND	ND	ND	ND	ND	ug/L
Chorobenzene	ND	ND	ND	ND	ND	ND	ND	ug/L
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ug/L
Stryene	ND	ND	ND	ND	ND	ND	ND	ug/L
Xylenes (total)	ND	ND	ND	ND	ND	ND	ND	ug/L

MW-4 GIANT REFINING - CINIZA

Dissolved Metals

Parameter	23-Apr-92 Result	28-Apr-93 Result	28-Apr-94 Result	16-May-95 Result	16-Mar-96 Result	Units
Arsenic	ND	ND	ND	ND	<0.005	mg/L
Barium	0.09	ND	0.016	0.01	<0.01	mg/L
Cadmium	0.0012	ND	ND	ND	<0.001	mg/L
Calcium	1.8	1.1	1.2	1.8	1	mg/L
Magnesium	0.26	0.2	0.3	0.2	0.12	mg/L
Manganese	0.1	ND	0.016	ND	<0.02	mg/L
Potassium	ND	ND	ND	ND	0.39	mg/L
Selenium	ND	ND	ND	ND	0.005	mg/L
Silver	ND	ND	ND	ND	0.01	mg/L
Sodium	72		254	242	264	mg/L

Total Metals

Parameter	29-Oct-93 Result	28-Apr-94 Result	19-Oct-94 Result	16-May-95 Result	16-Mar-96 Result	Units
Chromium	ND	ND	0.013	ND	<0.01	mg/L
Lead	ND	ND	ND	ND	<0.005	mg/L
Mercury		ND			<0.001	mg/L

MW-4 GIANT REFINING COMPANY - CINIZA

General Inorganics

Parameter	29-Oct-93 Result	28-Apr-94 Result	19-Oct-94 Result	16-May-95 Result	26-Oct-95 Result	16-Mar-96 Result	4-Nov-96 Result	Units
Alkalinity, Bicarb. as CaCO3 at ph 4.5		431		440		446		
Alkalinity, Carb. as CaCO3 at pH 8.3		33		21				
Chloride		17		180		20.6		
pH	8.82	8.76	8.77	8.7	9.02	9.12	8.52	s.u.
pH	8.83		8.77		9.01	8.99	8.56	s.u.
pH	8.8		8.78		9.02	8.94	8.57	s.u.
pH	8.8		8.77		9	8.91	8.92	s.u.
pH Average	8.81	8.76	8.77	8.7	9.01	8.99	8.64	s.u.
Phenolics	ND	ND		ND		<0.01		
Sulfate		150		180		160		
Specific Conductance at 25 deg. C	1140	1140	1140	1200	1100	1144	1180	umhos/cm
Specific Conductance at 25 deg. C	1130		1150		1110	1125	1210	umhos/cm
Specific Conductance at 25 deg. C	1130		1150		1100	1129	1220	umhos/cm
Specific Conductance at 25 deg. C	1150		1160		1190	1135	1220	umhos/cm
Specific Conductance at 25 deg. C. AVERAGE	1138	1140	1150	1200	1100	1133	1208	umhos/cm
Total Organic Carbon	ND	ND	ND	ND	1.8	1.1	1	mg/L
Total Organic Carbon	ND	ND	ND	ND				mg/L
Total Organic Carbon								mg/L
Total Organic Carbon								mg/L
Total Organic Halogen as Cl	ND	20	ND	20	<8.0	20.6	8	ug/L

Total Organic Halogen as Cl	ND	40	ND	20				ug/L
Total Organic Halogen as Cl								ug/L
Total Organic Halogen as Cl								ug/L
Total Dissolved Solids		740				741		mg/L
Water Elevation	6877.1	6876.8	6876.1	6872.7	6875.9	6876		ft

MW-5 GIANT REFINING - CINIZA

Volatile Organics (8240)

Parameter	29-Oct-93 Result	28-Apr-94 Result	19-Oct-94 Result	16-May-94 Result	26-Oct-95 Result	16-Mar-96 Result	4-Nov-96 Result	Units
Chloromethane	ND	ND	ND	ND	ND	ND	ND	ug/L
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ug/L
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ug/L
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ug/L
Methylene chloride	ND	ND	ND	ND	5	ND	ND	ug/L
Acetone	ND	ND	ND	ND	14	ND	ND	ug/L
Carbon disulfide	ND	ND	ND	ND	ND	ND	ND	ug/L
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ug/L
1,1-Dichoroethane	ND	ND	ND	ND	ND	ND	ND	ug/L
1,2-Dichloroethene (cis/trans)	ND	ND	ND	ND	ND	ND	ND	ug/L
Chloroform	ND	ND	ND	ND	ND	ND	ND	ug/L
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ug/L
2-Butanone	ND	ND	ND	ND	ND	ND	ND	ug/L
1,1,1-Trichoroethane	ND	ND	ND	ND	ND	ND	ND	ug/L
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	ug/L
Vinyl acetate	ND	ND	ND	ND	ND	ND		ug/L
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ug/L
trans-1,3-Dichoropropene	ND	ND	ND	ND	ND	ND	ND	ug/L
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ug/L
Chlorodibromomethane	ND	ND	ND	ND	ND	ND	ND	ug/L
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ug/L
Benzene	ND	ND	ND	ND	ND	ND	ND	ug/L
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ug/L
2-Choroethyl vinyl ether	ND	ND	ND	ND	ND	ND		ug/L
Bromoform	ND	ND	ND	ND	ND	ND	ND	ug/L
4-Methyl-2-pentanone	ND	ND	ND	ND	ND	ND	ND	ug/L
2-Hexanone	ND	ND	ND	ND	ND	ND	ND	ug/L

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1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ug/L
Tetrachoroethene	ND	ND	ND	ND	ND	ND	ND	ug/L
Toluene	ND	ND	ND	ND	ND	ND	ND	ug/L
Chorobenzene	ND	ND	ND	ND	ND	ND	ND	ug/L
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ug/L
Stryene	ND	ND	ND	ND	ND	ND	ND	ug/L
Xylenes (total)	ND	ND	ND	ND	ND	ND	ND	ug/L

MW-5 GIANT REFINING - CINIZA

Dissolved Metals

Parameter	29-Apr-92 Result	30-Apr-93 Result	29-Apr-94 Result	16-May-95 Result	16-Mar-96 Result	Units
Arsenic	ND	ND	ND	ND	<0.005	mg/L
Barium	ND	ND	0.018	0.02	0.02	mg/L
Cadmium	ND	ND	ND	ND	<0.002	mg/L
Calcium	1.1	1.4	1.4	1.5	1.6	mg/L
Magnesium	0.15	0.2	0.1	0.1	0.24	mg/L
Manganese	0.1	ND	ND	ND	<0.02	mg/L
Potassium	ND	ND	ND	ND	0.78	mg/L
Selenium	ND	ND	ND	ND	<0.005	mg/L
Silver	ND	ND	0.01	ND	<0.01	mg/L
Sodium	64	269	263	246	275	mg/L

Total Metals

Parameter	29-Oct-93 Result	28-Apr-94 Result	19-Oct-94 Result	16-May-95 Result	16-Mar-96 Result	Units
Chromium	ND	ND	ND	ND	<0.01	mg/L
Lead	0.002	ND	ND	ND	<0.005	mg/L
Mercury		ND		ND	<0.001	mg/L

MW-5 GIANT REFINING COMPANY - CINIZA

General Inorganics

Parameter	29-Oct-93 Result	28-Apr-94 Result	19-Oct-94 Result	16-May-94 Result	26-Oct-95 Result	16-Mar-96 Result	4-Nov-96 Result	Units
Alkalinity, Bicarb. as CaCO3 at ph 4.5		289		330		322		
Alkalinity, Carb. as CaCO3 at pH 8.3		42						
Chloride		66		63		65.7		
pH	8.96	9.1	9.09	9	9.01	9.65	9.06	s.u.
pH	8.96		9.09		9.03	9.42	8.96	s.u.
pH	9		9.09		9.06	9.32	8.94	s.u.
pH	8.97		9.11		9.06	9.28	8.92	s.u.
pH Average	8.97	9.1	9.1	9	9.04	9.42	8.97	s.u.
Phenolics		ND	ND	ND		<0.01		
Sulfate		170		190		175		
Specific Conductance at 25 deg. C	1110	1260	1120	1100	1120	1111	1135	umhos/cm
Specific Conductance at 25 deg. C	1130		1130		1100	1110	1143	umhos/cm
Specific Conductance at 25 deg. C	1120		1130		1110	1118	1137	umhos/cm
Specific Conductance at 25 deg. C	1130		1120		1120	1118	1142	umhos/cm
Specific Conductance at 25 deg. C Average	1123	1260	1125	1100	1113	1114	1139.25	umhos/cm
Total Organic Carbon	ND		ND	ND	1.7	<1.0	0.8	mg/L
Total Organic Carbon	ND		ND	ND				mg/L
Total Organic Carbon								mg/L
Total Organic Carbon								mg/L
Total Organic Halogen as Cl	ND		ND	20	14	ND	24	ug/L

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Total Organic Halogen as Cl	ND		ND	20				ug/L
Total Organic Halogen as Cl								ug/L
Total Organic Halogen as Cl								ug/L
Total Dissolved Solids		700				714		mg/L
Water Elevation	6873.5	6873.8	6869.4	6877.3	6874	6870.8	6871.5	ft

OW-11 GIANT REFINING - CINIZA

Volatile Organics (8240)

Parameter	29-Oct-93 Result	28-Apr-94 Result	19-Oct-94 Result	16-May-94 Result	26-Oct-95 Result	13-Mar-96 Result	4-Nov-96 Result	Units
Chloromethane	ND	ND	ND	ND	ND	ND	ND	ug/L
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ug/L
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ug/L
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ug/L
Methylene chloride	ND	ND	ND	ND	5	ND	ND	ug/L
Acetone	ND	ND	ND	ND	13	ND	ND	ug/L
Carbon disulfide	ND	ND	ND	ND	ND	ND	ND	ug/L
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ug/L
1,1-Dichoroethane	ND	ND	ND	ND	ND	ND	ND	ug/L
1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ug/L
Chloroform	ND	ND	ND	ND	ND	ND	ND	ug/L
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ug/L
2-Butanone	ND	ND	ND	ND	ND	ND	ND	ug/L
1,1,1-Trichoroethane	ND	ND	ND	ND	ND	ND	ND	ug/L
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	ug/L
Vinyl acetate	ND	ND	ND	ND	ND	ND		ug/L
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ug/L
trans-1,3-Dichoropropene	ND	ND	ND	ND	ND	ND	ND	ug/L
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ug/L
Chlorodibromomethane	ND	ND	ND	ND	ND	ND	ND	ug/L
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ug/L
Benzene	ND	ND	ND	ND	ND	ND	ND	ug/L
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ug/L
2-Choroethyl vinyl ether	ND	ND	ND	ND	ND	ND		ug/L
Bromoform	ND	ND	ND	ND	ND	ND	ND	ug/L
4-Methyl-2-pentanone	ND	ND	ND	ND	ND	ND	ND	ug/L
2-Hexanone	ND	ND	ND	ND	ND	ND	ND	ug/L
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ug/L

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Tetrachoroethene	ND	ND	ND	ND	ND	ND	ND	ug/L
Toluene	ND	ND	ND	ND	ND	ND	ND	ug/L
Chorobenzene	ND	ND	ND	ND	ND	ND	ND	ug/L
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ug/L
Stryene	ND	ND	ND	ND	ND	ND	ND	ug/L
Xylenes (total)	ND	ND	ND	ND	ND	ND	ND	ug/L

OW-11 GIANT REFINING - CINIZA

Dissolved Metals

Parameter	29-Apr-92 Result	30-Apr-93 Result	29-Apr-94 Result	16-May-95 Result	16-Mar-96 Result	Units
Arsenic	ND	ND	ND	ND	<0.005	mg/L
Barium	ND	ND	0.015	0.01	0.01	mg/L
Cadmium	ND	ND	ND	ND	<0.002	mg/L
Calcium	7.1	4.8	5.5	7.6	9.42	mg/L
Magnesium				0.8	1.09	mg/L
Manganese	ND	ND	ND	ND	<0.02	mg/L
Potassium	1.2	1.1	ND	ND	1.56	mg/L
Selenium	ND	ND	ND	ND	<0.005	mg/L
Silver	ND	ND	ND	ND	<0.01	mg/L
Sodium	140	421	505	480	575	mg/L

Total Metals

Parameter	29-Oct-92 Result	28-Apr-93 Result	29-Oct-93 Result	29-Apr-94 Result	16-Oct-94 Result	15-May-95 Result	16-Mar-97 Result	Units
Chromium	0.01	ND	ND	ND	ND	ND	<0.01	mg/L
Lead	ND	ND	ND	ND	ND	ND	<0.005	mg/L
Mercury		ND		ND		ND	<0.001	mg/L

OW-11 GIANT REFINING - CINIZA

General Inorganics

Parameter	29-Oct-93 Result	28-Apr-94 Result	19-Oct-94 Result	16-May-95 Result	26-Oct-95 Result	13-Mar-96 Result	4-Nov-96 Result	Units
Alkalinity, Bicarb. as CaCO3 at ph 4.5		374		330		420		
Alkalinity, Carb. as CaCO3 at pH 8.3		11		10		2.4		
Chloride		144		100		108		
pH	8.26	8.38	8.34	8.5	8.39	8.3	8.4	s.u.
pH	8.31		8.34		8.31		8.3	s.u.
pH	8.32		8.35		8.31		8.4	s.u.
pH	8.30		8.35		8.3		8.4	s.u.
pH Average	8.30	8.38	8.35	8.5	8.33		8.40	s.u.
Phenolics	ND	ND		ND		ND		
Sulfate		600		680		708		
Specific Conductance at 25 deg. C	1840	2080	2120	2500	2340	2510	2730	umhos/cm
Specific Conductance at 25 deg. C	1870		2180		2360		2730	umhos/cm
Specific Conductance at 25 deg. C	1820		2190		2380		2700	umhos/cm
Specific Conductance at 25 deg. C	1880		2190		2340		2720	umhos/cm
Specific Conductance at 25 deg. C Average	1853	2080	2170	2500	2355	2510	2720	umhos/cm
Total Organic Carbon	3	2	2	1	1.9	2.8	2.1	mg/L
Total Organic Carbon	3	2	2	1				mg/L
Total Organic Carbon								mg/L
Total Organic Carbon								mg/L
Total Organic Halogen as Cl	200	30	ND	30	9	ND	14	ug/L

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Total Organic Halogen as Cl	200	ND	ND	60		ND		ug/L
Total Organic Halogen as Cl						ND		ug/L
Total Organic Halogen as Cl								ug/L
Total Dissolved Solids		1400		1600		1630		mg/L
Water Elevation	6905.6	6905.6	6890.8	6905.5	6904.1	6893.3	6893.6	

SMW-3 GIANT REFINING - CINIZA

Volatile Organics (8240)

Parameter	29 APR 93 Result	30 NOV 93 Result	29 APR 94 Result	18 OCT 94 Result	15 MAY 95 Result	26 OCT 95 Result	15 MAR 96 Result	04 Nov 96 Result	Units	Reporting Limit
Chloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	10
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	10
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	10
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	10
Methylene chloride	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
Acetone	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	10
Carbon disulfide	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
1,2-Dichloroethene (cis/trans)	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
2-Butanone	---	---	---	---	---	---	---	ND	ug/L	5.0
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	10
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
Vinyl acetate	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	10
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
Chlorodibromomethane	---	---	---	---	---	---	---	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
2-Chloroethyl vinyl ether	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	10
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
4-Methyl-2-pentanone	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	10
2-Hexanone	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	10
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0

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Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
Stryene	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
Xylenes (total)	ND	ND	ND	6.0	ND	ND	ND		ug/L	5.0
Acetonitrile		---	---	ND	---	---	---		ug/L	10.0
Acrolein		---	---	ND	ND	ND	ND		ug/L	20.0
Acrylonitrile		---	---	ND	ND	ND	ND		ug/L	10.0
1,2-Dibromoethane		---	---	ND	ND	ND			ug/L	5.0
Dibromomethane		---	---	ND	ND	ND	ND		ug/L	5.0
Dichlorodiflouromethane		---	---	ND	ND	ND	ND		ug/L	5.0
Methyl Iodide		---	---	ND	ND	ND	ND		ug/L	5.0
Trans-1,4-Dichloro-2-Butene		---	---	ND	ND	ND	ND		ug/L	5.0
Trichloromonoflouromethane		---	---	ND	ND	ND	ND		ug/L	5.0
1,2,3-Trichloropropane		---	---	ND	ND	ND	ND		ug/L	5.0
Ethyl Methacrylate		---	---	ND	ND	ND	ND		ug/L	5.0

SMW-3 GIANT REFINING - CINIZA

Dissolved Metals

Parameter	22 APR 92 Result	29-Apr-93 Result	29-Apr-94 Result	15 MAY 95 Result	15 MAR 96 Result	Units	Reporting Limit
Calcium	42	43.5	45	37.7	47	mg/L	0.40
Magnesium	12	15.6	13.9	12.1	14	mg/L	0.40
Potassium	ND	ND	ND	ND	0.78	mg/L	10.0
Sodium	220	820	744	564	669	mg/L	10.0

Total Metals

Parameter	29 APR 93 Result	30 NOV 93 Result	29 APR 94 Result	18 OCT 94 Result	15 MAY 95 Result	26 OCT 95 Result	15 MAR 96 Result	04 Nov 96 Result	Units	Reporting Limit
Chromium	0.012	ND	0.062	.718	0.01	0.08	<0.01	0.001	mg/L	0.010
Lead	ND	ND	ND	.043	ND	ND	<0.005	<.05	mg/L	0.0050

SMW-3 GIANT REFINING - CINIZA

General Inorganics

Parameter	29 APR 93 Result	30 NOV 93 Result	29 APR 94 Result	18 OCT 94 Result	15 MAY 95 Result	26 OCT 95 Result	15 MAR 96 Result	04 Nov 96 Result	Units	Reporting Limit
Alkalinity, Bicarb. as CaCO3 at pH 4.5	630	---	660	---	590	---	644		mg/L	5.0
Alkalinity, Carb. as CaCO3 at pH 8.3	ND	---	ND	---	3	---			mg/L	5.0
Chloride	70	---	83	---	69	---	91		mg/L	3.0
pH	7.9	7.66	7.81	7.63	7.80	7.77	8.00	7.95	units	---
pH	---	7.68	---	7.68	---	7.74	7.87	7.72	units	---
pH	---	7.71	---	7.7	---	7.73	7.8	7.63	units	---
pH	---	7.72	---	7.79	---	7.74	7.77	7.59	units	---
Average pH		7.6925		7.7	7.80	7.75	7.86	7.72	units	---
Sulfate	1000	---	1000	---	680	---	844		mg/L	5.0
Specific Conductance at 25 deg.C	3170	3220	3160	3360	2700	2890	2830	2870	umhos/c	1.0
Specific Conductance at 25 deg.C	---	3250	---	3340	---	2880	2830	2880	umhos/c	1.0
Specific Conductance at 25 deg.C	---	3190	---	3500	---	2900	2870	2870	umhos/c	1.0
Specific Conductance at 25 deg.C	---	3230	---	3520	---	2890	3090	2850	umhos/c	1.0
Average Specific Conductance at 25 deg.C		3222.5		3430	2700	2890	2905	2867.5	umhos/c	1.0
Total Organic Carbon	3	2	2	5	5	14.9	3.2	3.1	mg/L	0.50
Total Organic Carbon	---	2	2	5	5	---	---		mg/L	0.50
Total Organic Carbon	---	---	---	---	---	---	---		mg/L	0.50
Total Organic Carbon	---	---	---	---	---	---	---		mg/L	0.50
Total Organic Halogen as Cl	40	30	30	20	80	60		28	ug/L	30
Total Organic Halogen as Cl	---	30	30	20	70	---	---		ug/L	30

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Total Organic Halogen as Cl	---	---	---	---	---	---	---		ug/L	30
Total Organic Halogen as Cl	---	---	---	---	---	---	---		ug/L	30
Total Dissolved Solids	2300	---	2300	---	1900	---	2040	---	mg/L	10
Water Elevation	6846.24	6852.43	6855.35	6852.76	6853.16	6853	6854.56	6853	ft	

SMW-4 GIANT REFINING - CINIZA

Volatile Organics (8240)

Parameter	29 APR 93 Result	29 APR 93 DUP	30 NOV 93 Result	29 APR 94 Result	18 OCT 94 Result	15 MAY 95 Result	26 OCT 95 Result	15 MAR 96 Result	04 NOV 96 Result	Units	Reporting Limit
Chloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	10
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	10
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	10
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	10
Methylene chloride	ND	ND	ND	ND	ND	ND	3	ND	ND	ug/L	3
Acetone	ND	ND	ND	ND	ND	ND	54	ND	ND	ug/L	10
Carbon disulfide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
1,2-Dichloroethene (cis/trans)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
2-Butanone	---	---	---	---	---	---	---	ND	ND	ug/L	5.0
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	10
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
Vinyl acetate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	10
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
Chlorodibromomethane	---	---	---	---	---	---	---	ND	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
4-Methyl-2-Pentanone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	10
2-Hexanone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	10
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	10

Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
Styrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
Xylenes (Total)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
Acetonitrile	ND	ND	ND	ND	ND	---	---	---		ug/L	10.0
Acrolein	ND	ND	ND	ND	ND	ND	ND	ND		ug/L	20.0
Acrylonitrile	---	---	---	---	ND	ND	ND	ND		ug/L	10.0
1,2-Dibromoethane	---	---	---	---	ND	ND	ND	---		ug/L	5.0
Dichlorodifluoromethane	---	---	---	---	ND	ND	ND	ND		ug/L	5.0
Methyl Iodide	---	---	---	---	ND	ND	ND	ND		ug/L	5.0
Trans-1,4-Dichloro-2-Butene	---	---	---	---	ND	ND	ND	ND		ug/L	5.0
Trichloromonofluoromethane	---	---	---	---	ND	ND	2	ND		ug/L	1
1,2,3-Tichloropropane	---	---	---	---	ND	ND	ND	ND		ug/L	5.0
Ethyl Methacrylate	---	---	---	---	ND	ND	ND	ND		ug/L	5.0

SMW-4 GIANT REFINING - CINIZA

Dissolved Metals

Parameter	29 APR 93 Result	29 APR 93 DUP	29 APR 94 Result	15 MAY 95 Result	15 MAR 96 Result	Units	Reporting Limit
Calcium	4.2	4.6	2.6	3.3	3.01	mg/L	0.40
Magnesium	1.4	1.5	0.7	0.7	0.97	mg/L	0.40
Potassium	ND	ND	ND	ND	0.78	mg/L	10.0
Sodium	318	321	286	266	292	mg/L	10.0

Total Metals

Parameter	29 APR 93 Result	29 APR 93 DUP	30 NOV 93 Result	29 APR 94 Result	18 OCT 94 Result	15 MAY 95 Result	26 Oct 95 Result	15 MAR 96 Result	04 NOV 96 Result	Units	Reporting Limit
Chromium	0.014	0.011	ND	ND	0.03	ND	0.01	<0.01	<.01	mg/L	0.010
Lead	ND	ND	ND	ND	ND	ND	ND	<0.005	<.05	mg/L	0.0050

SMW-4 GIANT REFINING - CINIZA

General Inorganics

Parameter	29 APR 93 Result	29 APR 93 DUP	30 NOV 93 Result	29 APR 94 Result	18 OCT 94 Result	15 MAY 95 Result	26 OCT 95 Result	15 MAR 96 Result	04 NOV 96 Result	Units	Reporting Limit
Alkalinity, Bicarb. as CaCO3 at pH 4.5	420	426	---	393	---	380	---	398		mg/L	5.0
Alkalinity, Carb. as CaCO3 at pH 8.3	ND	ND	---	18	---	11	---			mg/L	5.0
Chloride	61	60	---	56	---	53	---	61		mg/L	3.0
pH	8.2	8.2	8.52	8.49	8.53	8.50	8.47	8.88	8.75	units	---
pH	---	---	8.48	---	8.48		8.40	8.69	8.63	units	---
pH	---	---	8.48	---	8.51		8.35	8.55	8.58	units	---
pH	---	---	8.52	---	8.48		8.34	8.95	8.53	units	---
Average pH			8.5		8.5	8.50	8.39	8.77	8.62	units	---
Sulfate	180	180	---	160	---	220	---	170		mg/L	5.0
Specific Conductance at 25 deg.C	1310	1300	1260	1190	1270	1300	1280	1255	1280	mhos/c	1.0
Specific Conductance at 25 deg.C	---	---	1270	---	1280	---	1280	1278	1280	mhos/c	1.0
Specific Conductance at 25 deg.C	---	---	1280	---	1250	---	1280	1273	1250	mhos/c	1.0
Specific Conductance at 25 deg.C	---	---	1270	---	1230	---	1280	1273	1240	mhos/c	1.0
Average Specific Conductance at 25 deg.C			1270		1257.5	1300	1280	1269.75	1262.5	mhos/c	1.0
Total Organic Carbon	3	4	ND	3	ND	ND	1	1	0.9	mg/L	0.50
Total Organic Carbon	---	---	ND	3	ND	ND	---			mg/L	0.50
Total Organic Carbon	---	---	---	---	---	---	---			mg/L	0.50
Total Organic Carbon	---	---	---	---	---	---	---			mg/L	0.50
Total Organic Halogen as Cl	40	90	ND	80	ND	30	110		0.006	ug/L	30

Total Organic Halogen as Cl	---	---	ND	50	ND	20	---			ug/L	30
Total Organic Halogen as Cl	---	---	---	---	---	---	---			ug/L	30
Total Organic Halogen as Cl	---	---	---	---	---	---	---			ug/L	30
Total Dissolved Solids	840	840	---	760	---	790	---	740		mg/L	10
Water Elevation	6848.84	6848.84	6848.99	6850.29	6849.88	6849.30	6848.52	6849.98	6850	ft	

SMW-5 GIANT REFINING - CINIZA

Volatile Organics (8240)

Parameter	29 APR 93 Result	30 NOV 93 Result	29 APR 94 Result	18 OCT 94 Result	15 MAY 95 Result	26 OCT 95 Result	14 MAR 96 Result	30 OCT 96 Result	Units	Reporting Limit
Chloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	10
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	10
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	10
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	10
Methylene chloride	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
Acetone	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	10
Carbon disulfide	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
1,2-Dichloroethene (cis/trans)	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
2-Butanone	---	---	---	---	---	---	ND	ND	ug/L	5.0
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	10
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
Vinyl acetate	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	10
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
Chlorodibromomethane	---	---	---	---	---	---	ND	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
2-Chloroethyl vinyl ether	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	10
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
4-Methyl-2-pentanone	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	10
2-Hexanone	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	10

1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
Stryene	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
Xylenes (total)	ND	ND	ND	ND	ND	ND	ND	ND	ug/L	5.0
Acetonitrile	---	---	---	---	---	---			ug/L	10.0
Acrolein	---	---	---	---	---	---	ND		ug/L	20.0
Acrylonitrile	---	---	---	---	---	---	ND		ug/L	10.0
1,2-Dibromoethane	---	---	---	---	---	---	ND		ug/L	5.0
Dibromomethane	---	---	---	---	---	---	ND		ug/L	5.0
Dichlorodifluoromethane	---	---	---	---	---	---	ND		ug/L	5.0
Methyl Iodide	---	---	---	---	---	---	ND		ug/L	5.0
Trans-1,4-Dichloro-2-Butene	---	---	---	---	---	---	ND		ug/L	5.0
Trichloromonofluoromethane	---	---	---	---	---	---	ND		ug/L	5.0
1,2,3-Trichloropropane	---	---	---	---	---	---	ND		ug/L	5.0
Ethyl Methacrylate	---	---	---	---	---	---	ND		ug/L	5.0

SMW-5 GIANT REFINING - CINIZA

Dissolved Metals

Parameter	22 APR 92 Result	29 APR 93 Result	29 APR 94 Result	15 MAY 95 Result	14 MAR 96 Result	Units	Reporting Limit
Calcium	2.7		3.4	1.6	2.2	mg/L	0.40
Magnesium	0.64		1.5	0.7	1.82	mg/L	0.40
Potassium	ND		1.3	ND	1.96	mg/L	10.0
Sodium	ND		256	267	276	mg/L	10.0

Total Metals

Parameter	29 APR 93 Result	30 NOV 93 Result	29 APR 94 Result	19 OCT 94 Result	15 MAY 95 Result	26 OCT 95 Result	14 MAR 96 Result	30 OCT 96 Result	Units	Reporting Limit
Chromium	0.012	ND	0.094	.076	0.01	0.02	<0.01	<.01	mg/L	0.010
Lead	ND	ND	ND	.008	ND	ND	<0.005	<.05	mg/L	0.0050

SMW-5 GIANT REFINING - CINIZA

General Organics

Parameter	29 APR 93 Result	30 NOV 93 Result	29 APR 94 Result	18 OCT 94 Result	15 MAY 95 Result	26 OCT 95 Result	14 MAR 96 Result	30 OCT 96 Result	Units	Reporting Limit
Alkalinity, Bicarb. as CaCO3 at pH 4.5	335	---	349	---	350	---	366		mg/L	5.0
Alkalinity, Carb. as CaCO3 at pH 8.3	10	---	24	---	21	---			mg/L	5.0
Chloride	61	---	67	---	54	---	66.6		mg/L	3.0
pH	8.5	8.74	8.85	8.58	8.80	8.69	8.60	8.60	units	---
pH	---	8.71	---	8.6		8.69	9.01	8.70	units	---
pH	---	8.76	---	8.6		8.69	8.90	8.64	units	---
pH	---	8.76	---	8.64		8.70	8.89	8.60	units	---
Average pH		8.7425		8.605	8.80	8.69	8.85	8.64	units	---
Sulfate	140	---	150	---	1800	---	160		mg/L	5.0
Specific Conductance at 25 deg.C	1130	1140	1130	1120	1100	1170	1126	1280	umhos/cm	1.0
Specific Conductance at 25 deg.C	---	1140	---	1130	---	1160	1123	1290	umhos/cm	1.0
Specific Conductance at 25 deg.C	---	1150	---	1120	---	1170	1146	1280	umhos/cm	1.0
Specific Conductance at 25 deg.C	---	1150	---	1150	---	1170	1126	1280	umhos/cm	1.0
Average Specific Conductance at 25 deg.C		1145		1130	1100	1167.5	1130.25	1282.5	umhos/cm	1.0
Total Organic Carbon	8	ND	2	8	ND	1.2	1	1.2	mg/L	0.50
Total Organic Carbon	---	ND	2	8	ND	---			mg/L	0.50
Total Organic Carbon	---	---	---	---	---	---			mg/L	0.50
Total Organic Carbon	---	---	---	---	---	---			mg/L	0.50
Total Organic Halogen as Cl	90	ND	30	ND	16	15		8.25	ug/L	30

Total Organic Halogen as Cl	---	ND	ND	ND	30	---			ug/L	30
Total Organic Halogen as Cl	---	---	---	---	---	---			ug/L	30
Total Organic Halogen as Cl	---	---	---	---	---	---			ug/L	30
Total Dissolved Solids	770	---	720	---	790	---	704		mg/L	10
Water Elevation	6847.02	6846.98	6848.13	6848.02	6848.38	6847.47	6847.82	6847	ft	

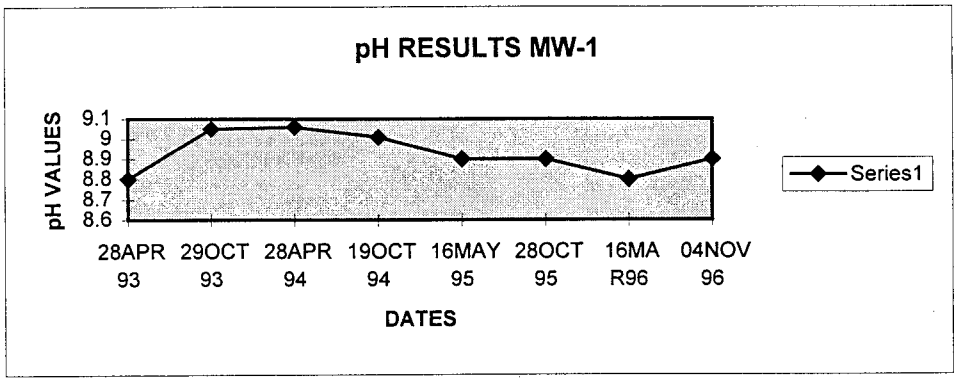
1996 Graphs

pH, EC, WATER ELEVATIONS
LEAD, CHROMIUM

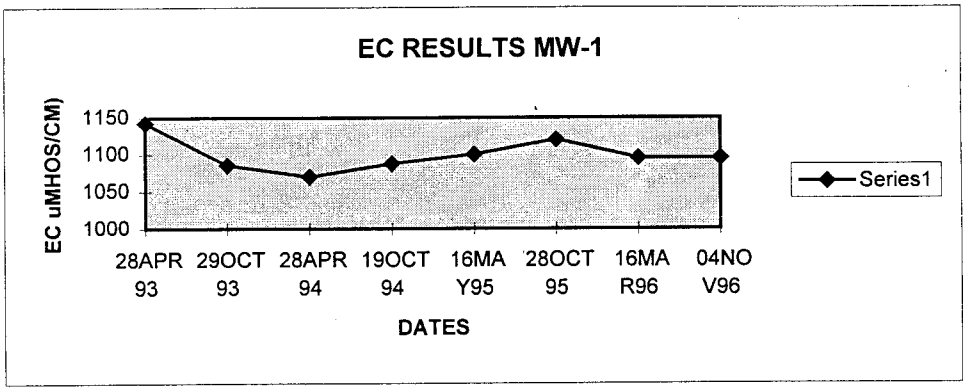
WELLS: MW-1, MW-2, MW-4, MW-5, OW-11

MW-1 GRAPHS

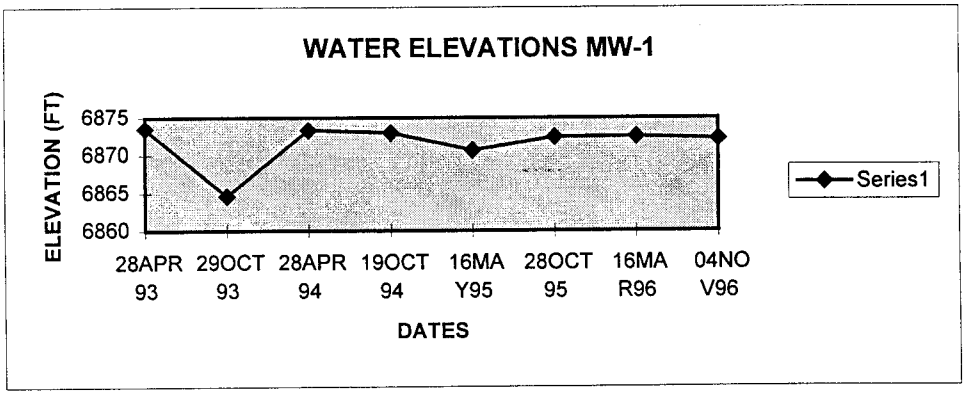
28APR93	8.8
29OCT93	9.1
28APR94	9.1
19OCT94	9.0
16MAY95	8.9
28OCT95	8.9
16MAR96	8.8
04NOV96	8.9



28APR93	1143
29OCT93	1085
28APR94	1070
19OCT94	1088
16MAY95	1100
28OCT95	1120
16MAR96	1095
04NOV96	1095

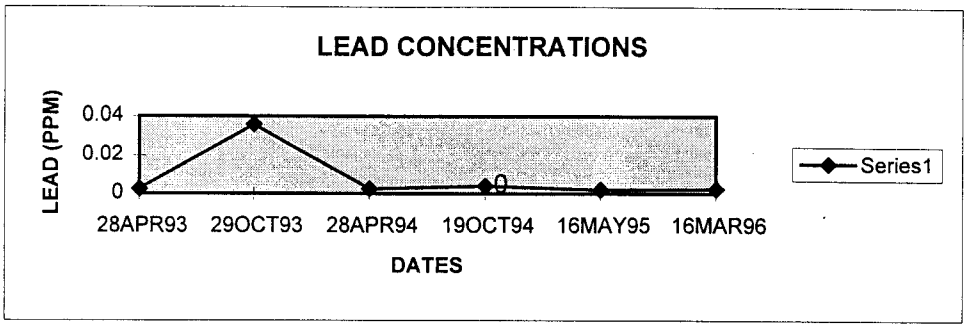


28APR93	6873.5
29OCT93	6864.6
28APR94	6873.3
19OCT94	6873.0
16MAY95	6870.7
28OCT95	6872.4
16MAR96	6872.5
04NOV96	6872.2



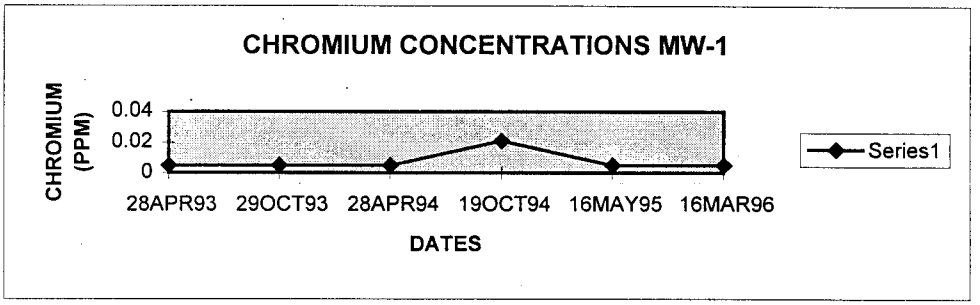
MW-1 GRAPHS

*	28APR93	0.0025
	29OCT93	0.036
*	28APR94	0.0025
	19OCT94	0.004
	16MAY95	0.002
*	16MAR96	0.0025



* **NOTE**: 1/2 the Detection Limit was used to report Not Detected. DL = 0.005

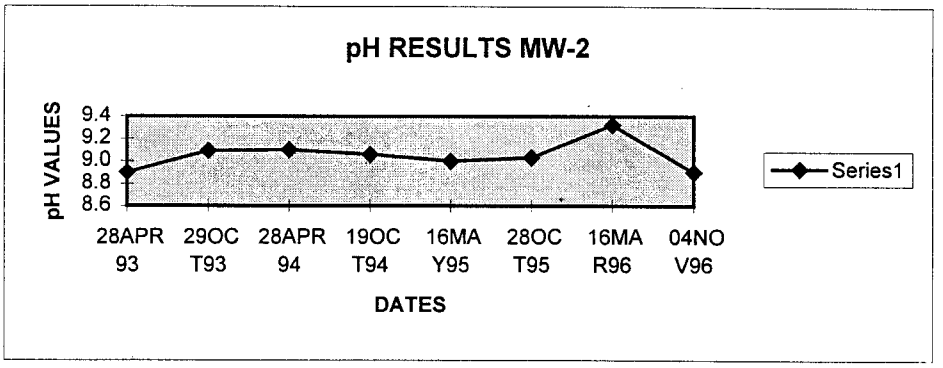
*	28APR93	0.005
*	29OCT93	0.005
*	28APR94	0.005
	19OCT94	0.021
*	16MAY95	0.005
*	16MAR96	0.005



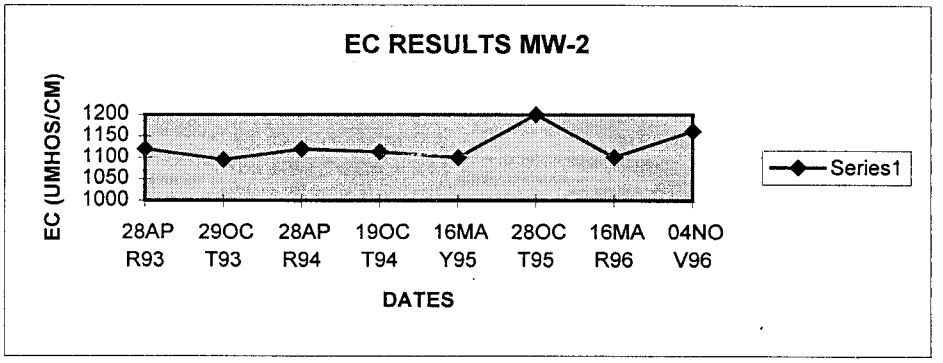
* **NOTE:** 1/2 the Detection Limit was used to report Not Detected. DL = 0.01

MW-2 GRAPHS

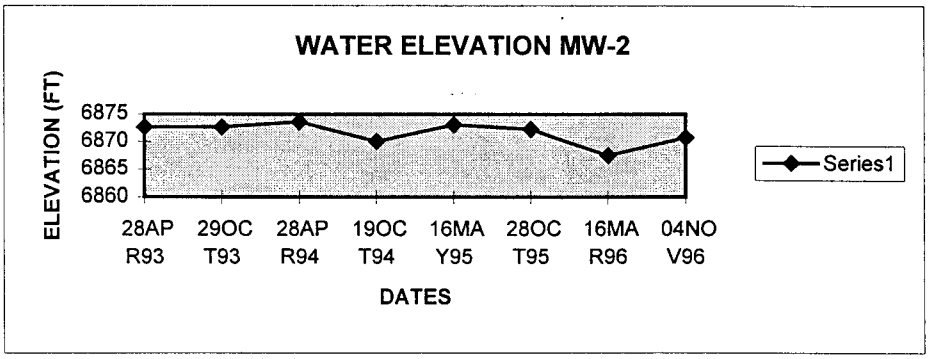
28APR93	8.9
29OCT93	9.1
28APR94	9.1
19OCT94	9.1
16MAY95	9.0
28OCT95	9.0
16MAR96	9.3
04NOV96	8.9



28APR93	1120
29OCT93	1095
28APR94	1120
19OCT94	1113
16MAY95	1100
28OCT95	1200
16MAR96	1101
04NOV96	1162

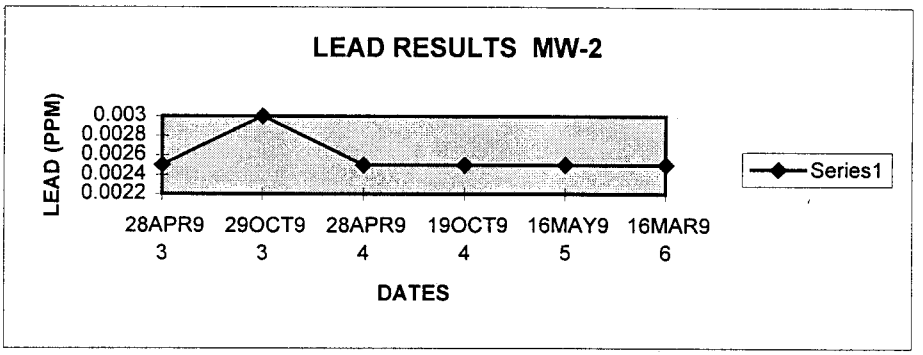


28APR93	6872.6
29OCT93	6872.7
28APR94	6873.6
19OCT94	6870.1
16MAY95	6873.1
28OCT95	6872.3
16MAR96	6867.5
04NOV96	6870.8



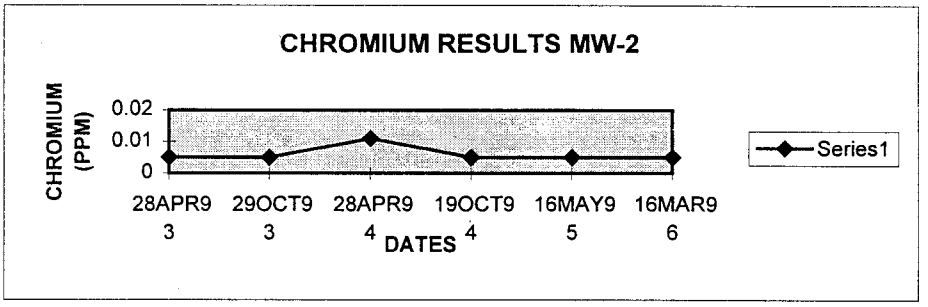
MW-2 GRAPHS

*	28APR93	0.0025
	29OCT93	0.003
*	28APR94	0.0025
*	19OCT94	0.0025
*	16MAY95	0.0025
*	16MAR96	0.0025



*** NOTE:** 1/2 the Detection Limit was used to report Not Detected. DL = 0.005

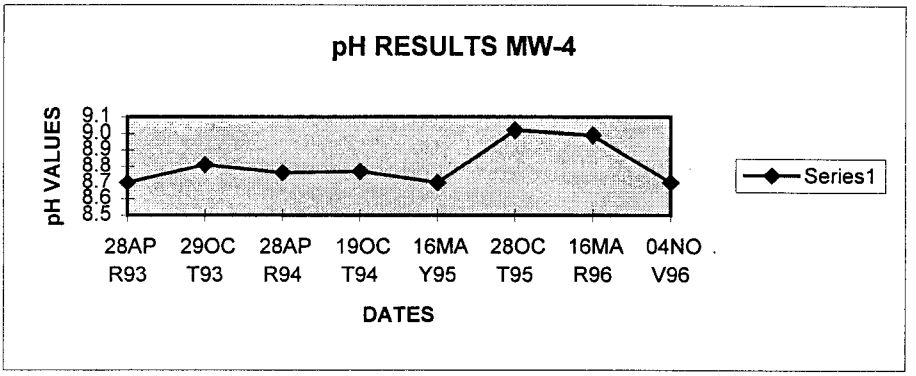
*	28APR93	0.005
*	29OCT93	0.005
	28APR94	0.011
*	19OCT94	0.005
*	16MAY95	0.005
*	16MAR96	0.005



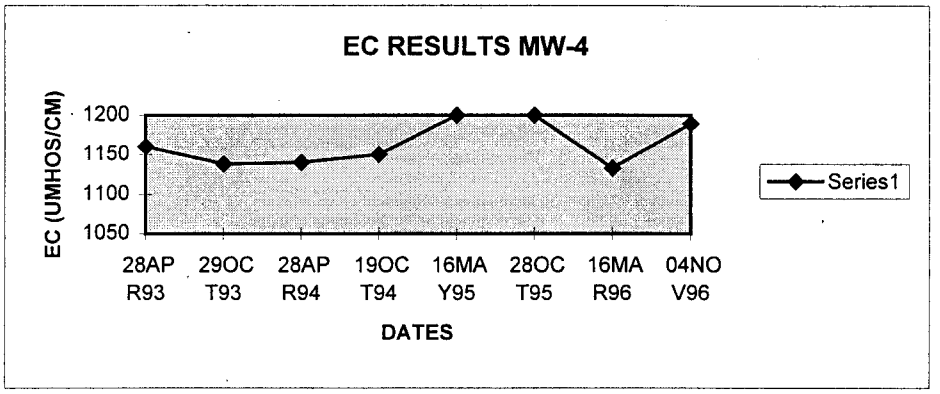
*** NOTE:** 1/2 the Detection Limit was used to report Not Detected. DL = 0.01

MW-4 GRAPHS

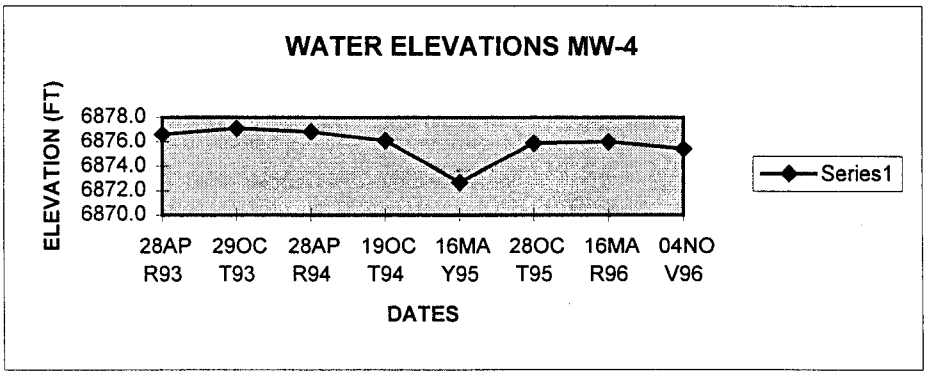
28APR93	8.7
29OCT93	8.8
28APR94	8.8
19OCT94	8.8
16MAY95	8.7
28OCT95	9.0
16MAR96	9.0
04NOV96	8.7



28APR93	1160
29OCT93	1138
28APR94	1140
19OCT94	1150
16MAY95	1200
28OCT95	1200
16MAR96	1133
04NOV96	1189

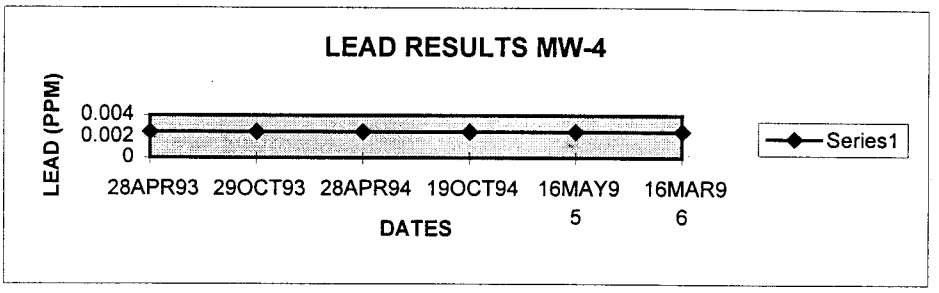


28APR93	6876.6
29OCT93	6877.1
28APR94	6876.8
19OCT94	6876.1
16MAY95	6872.7
28OCT95	6875.9
16MAR96	6876.0
04NOV96	6875.4



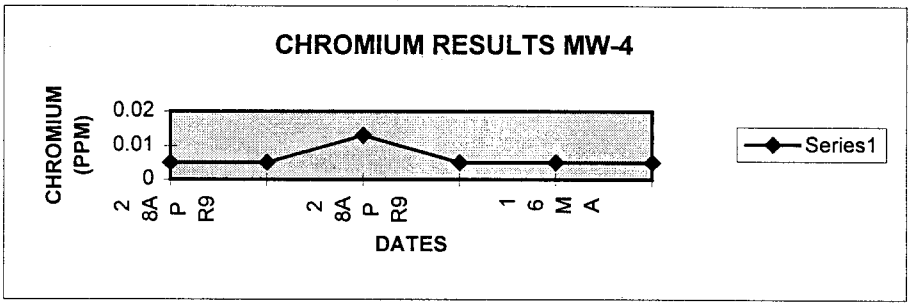
MW-4 GRAPHS

*	28APR93	0.0025
*	29OCT93	0.0025
*	28APR94	0.0025
*	19OCT94	0.0025
*	16MAY95	0.0025
*	16MAR96	0.0025



*** NOTE:** 1/2 the Detection Limit was used to report Not Detected. DL = 0.005

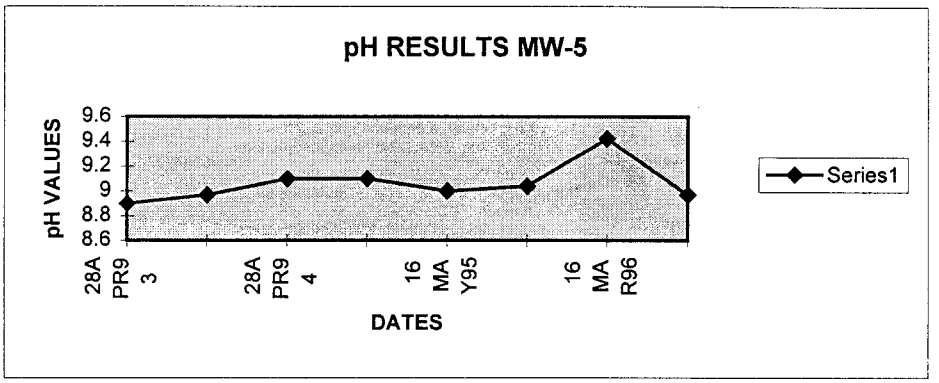
*	28APR93	0.005
*	29OCT93	0.005
	28APR94	0.013
*	19OCT94	0.005
*	16MAY95	0.005
*	16MAR96	0.005



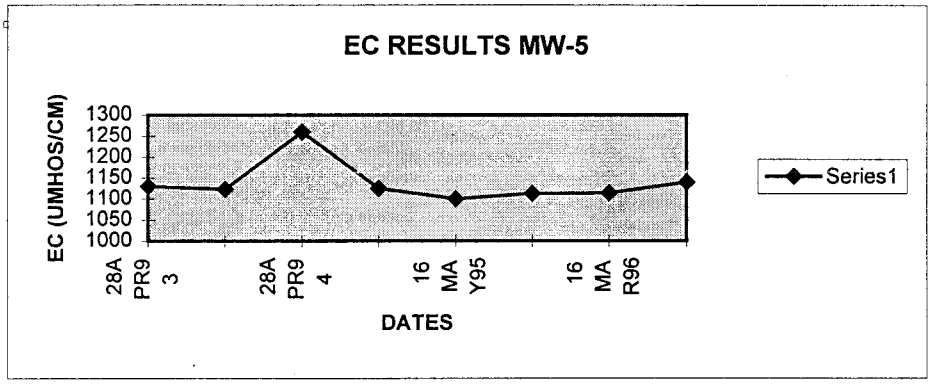
*** NOTE:** 1/2 the Detection Limit was used to report Not Detected. DL = 0.01

MW-5 GRAPHS

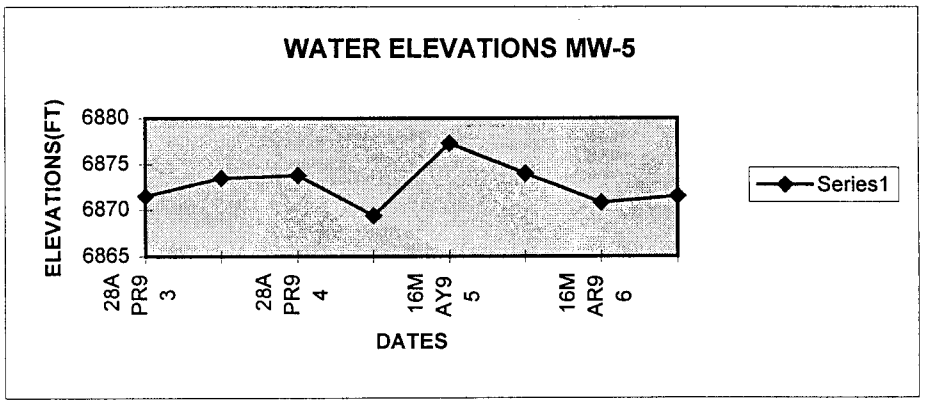
28APR93	8.9
29OCT93	8.97
28APR94	9.1
19OCT94	9.1
16MAY95	9
28OCT95	9.04
16MAR96	9.42
04NOV96	8.97



28APR93	1130
29OCT93	1123
28APR94	1260
19OCT94	1125
16MAY95	1100
28OCT95	1113
16MAR96	1114
04NOV96	1140

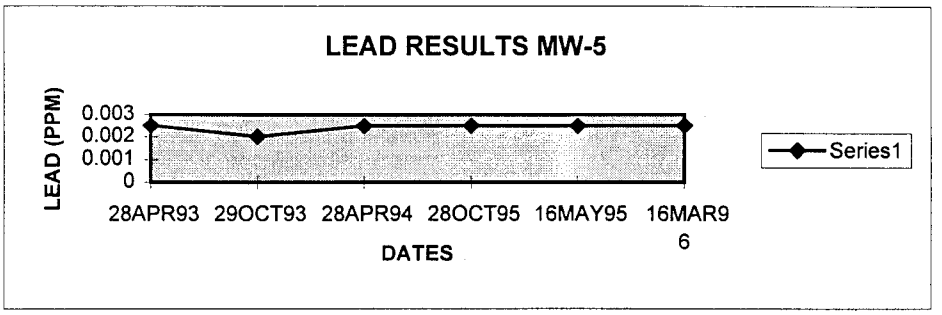


28APR93	6871.5
29OCT93	6873.5
28APR94	6873.8
19OCT94	6869.4
16MAY95	6877.3
28OCT95	6874
16MAR96	6870.8
04NOV96	6871.5



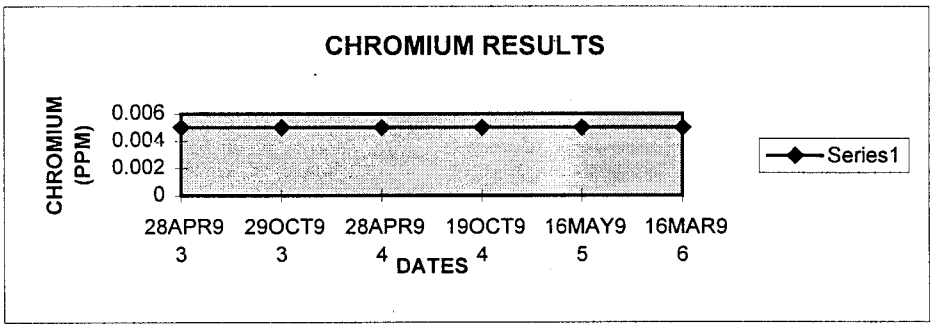
MW-5 GRAPHS

*	28APR93	0.0025
	29OCT93	0.002
*	28APR94	0.0025
*	28OCT95	0.0025
*	16MAY95	0.0025
*	16MAR96	0.0025



*** NOTE:** 1/2 the Detection Limit was used to report Not Detected. DL = 0.005

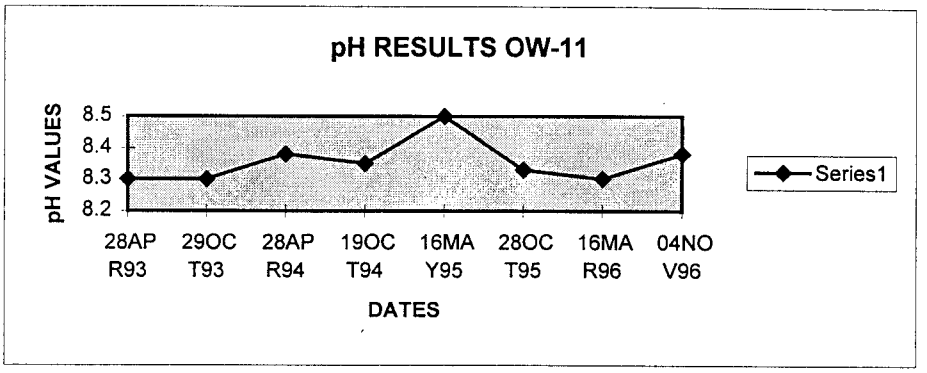
*	28APR93	0.005
*	29OCT93	0.005
*	28APR94	0.005
*	19OCT94	0.005
*	16MAY95	0.005
*	16MAR96	0.005



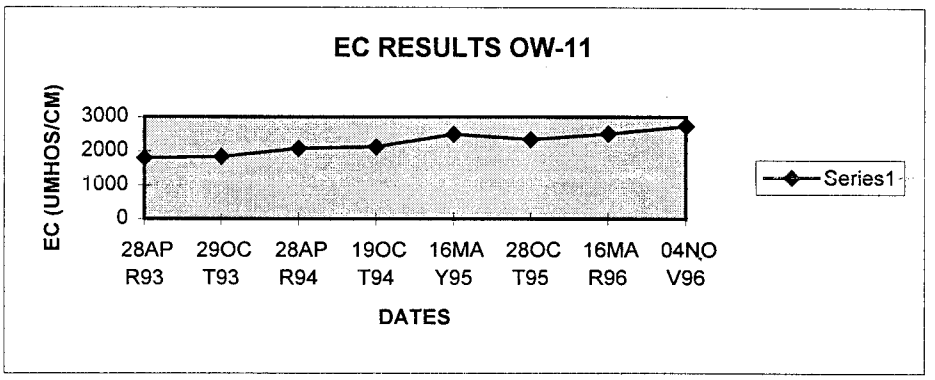
*** NOTE:** 1/2 the Detection Limit was used to report Not Detected. DL = 0.01

OW-11 GRAPHS

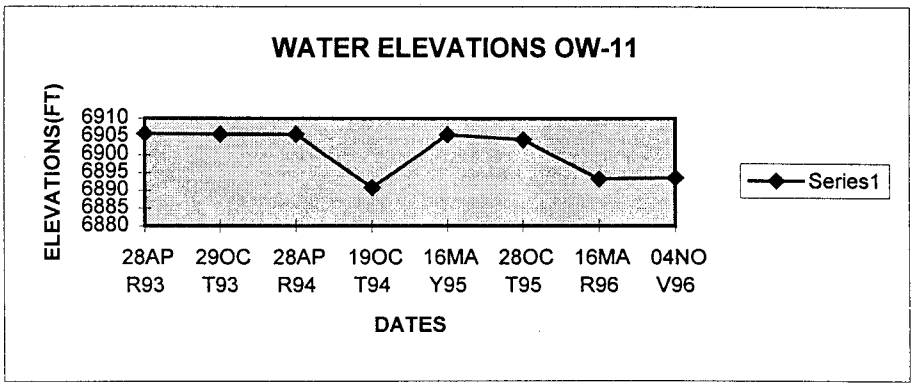
28APR93	8.3
29OCT93	8.3
28APR94	8.4
19OCT94	8.4
16MAY95	8.5
28OCT95	8.3
16MAR96	8.3
04NOV96	8.4



28APR93	1800
29OCT93	1840
28APR94	2080
19OCT94	2120
16MAY95	2500
28OCT95	2340
16MAR96	2510
04NOV96	2730

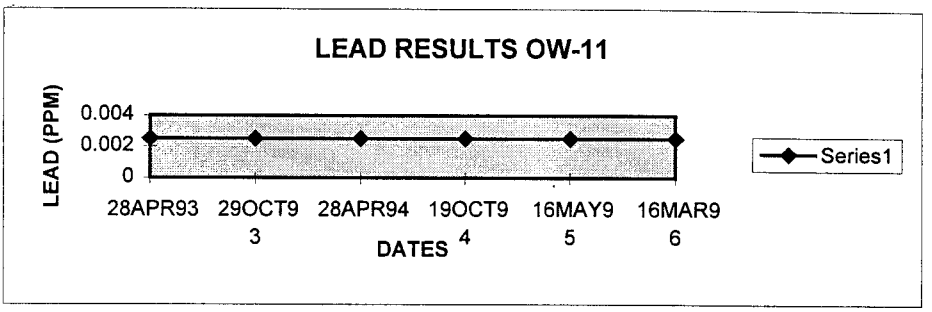


28APR93	6905.8
29OCT93	6905.6
28APR94	6905.6
19OCT94	6890.8
16MAY95	6905.5
28OCT95	6904.1
16MAR96	6893.3
04NOV96	6893.6



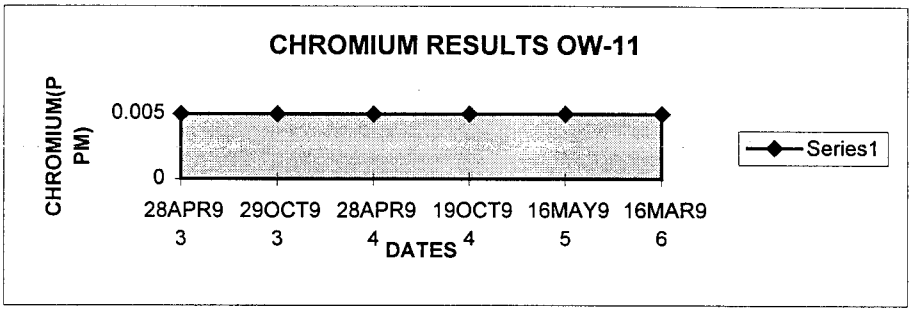
OW-11 GRAPHS

*	28APR93	0.0025
*	29OCT93	0.0025
*	28APR94	0.0025
*	19OCT94	0.0025
*	16MAY95	0.0025
*	16MAR96	0.0025



*** NOTE:** 1/2 the Detection Limit was used to report Not Detected. DL = 0.005

*	28APR93	0.005
*	29OCT93	0.005
*	28APR94	0.005
*	19OCT94	0.005
*	16MAY95	0.005
*	16MAR96	0.005



*** NOTE:** 1/2 the Detection Limit was used to report Not Detected. DL = 0.01

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client:	**Giant Refining Company**		
Project:	Ciniza		
Sample ID:	MW1-031696	Date Reported:	04/22/96
Laboratory ID:	0396W00443	Date Sampled:	03/16/96
Sample Matrix:	Water	Time Sampled:	1:00 PM
Condition:	Cool/Intact	Date Received:	03/21/96

Parameter	Analytical Result	Units		Units
Lab pH	8.8	s.u.		
Lab Conductivity @ 25° C	1,200	umhos/cm		
Total Dissolved Solids @ 180°C	670	mg/L		
Total Dissolved Solids (Calc)	702			
Phenols	<0.01	mg/L		
Total Alkalinity as CaCO3	342	mg/L		
Total Hardness as CaCO3	3.00	mg/L		
Total Organic Carbon	<1	mg/L		
Bicarbonate as HCO3	373	mg/L	6.12	meq/L
Carbonate as CO3	22	mg/L	0.72	meq/L
Hydroxide as OH	<1	mg/L	<0.01	meq/L
Chloride	55.4	mg/L	1.56	meq/L
Sulfate	175	mg/L	3.65	meq/L
Calcium	1.00	mg/L	0.05	meq/L
Magnesium	0.12	mg/L	0.01	meq/L
Potassium	0.39	mg/L	0.01	meq/L
Sodium	264	mg/L	11.5	meq/L
Cations			11.6	meq/L
Anions			12.1	meq/L
Cation/Anion Difference			2.05	%

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 19th ed., 1995.

Comments:

Reported by WM

Reviewed by [illegible]

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client:	**Giant Refining Company**		
Project:	Ciniza	Date Reported:	04/22/96
Sample ID:	MW1-031696	Date Sampled:	03/16/96
Laboratory ID:	0396W00443	Time Sampled:	1:00 PM
Sample Matrix:	Water	Date Received:	03/21/96
Condition:	Cool/Intact		

Parameter	Dissolved Analytical Result	Units	Total Analytical Result	Units
Trace Metals				
Arsenic.....	<0.005	mg/L		
Barium.....	<0.01	mg/L		
Cadmium.....	<0.001	mg/L		
Chromium.....	NA	mg/L	<0.01	mg/L
Lead.....	NA	mg/L	<0.005	mg/L
Manganese.....	<0.02	mg/L		
Mercury.....	NA	mg/L	<0.001	mg/L
Selenium.....	<0.005	mg/L		
Silver.....	<0.01	mg/L		

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 19th ed., 1995.

Comments:

Reported by WM

Reviewed by

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Organics Laboratory
3304 Longmire Drive College Station, Texas 77845
Phone (409) 774-4999 Fax (409) 696-0962

EPA Method 8260
VOLATILE ORGANIC COMPOUNDS

Client: GIANT REFINING COMPANY
Project: NA
Sample ID: MW-1 - 031696
Laboratory ID: 0396G00443 / 0696G00542
Sample Matrix Water
Preservative: HCl
Condition: Intact, pH < 2

Report Date: 04/01/96
Date Sampled: 03/16/96
Date Received: 03/22/96
Date Extracted: 03/26/96
Date Analyzed: 03/26/96
Time Analyzed: 11:19 PM

Analyte	Concentration (mg/L)	Detection Limit (mg/L)
Acetone	ND	0.03
Acrolein	ND	0.02
Acrylonitrile	ND	0.01
Benzene	ND	0.005
Bromodichloromethane	ND	0.005
Bromoform	ND	0.005
Bromomethane	ND	0.005
Carbon Disulfide	ND	0.01
Carbon Tetrachloride	ND	0.005
Chlorobenzene	ND	0.005
Chlorodibromoethane	ND	0.005
Chloroethane	ND	0.005
2-Chloroethylvinyl ether	ND	0.005
Chloroform	ND	0.005
Chloromethane	ND	0.005
Dibromomethane	ND	0.005
t-1,4-Dichloro-2-butene	ND	0.05
Dichlorodifluoromethane	ND	0.005
1,1-Dichloroethane	ND	0.005
1,2-Dichloroethane	ND	0.005
1,1-Dichloroethene	ND	0.005
trans-1,2-Dichloroethene	ND	0.005
1,2-Dichloropropane	ND	0.005
cis-1,3-Dichloropropene	ND	0.005
trans-1,3-Dichloropropene	ND	0.005
Ethyl Benzene	ND	0.005
Ethyl Methacrylate	ND	0.005
2-Hexanone	ND	0.01
Iodomethane	ND	0.01
Methylene Chloride	ND	0.02
Methyl Ethyl Ketone	ND	0.01
4-Methyl-2-Petanone	ND	0.01
Styrene	ND	0.005

ND - Analyte not detected at stated limit of detection

imL

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EPA Method 8260
VOLATILE ORGANIC COMPOUNDS

Client: GIANT REFINING COMPANY
Sample ID: MW-1 - 031696
Laboratory ID: 0396G00443 / 0696G00542
Matrix: Water

Report Date: 04/01/96
Date Sampled: 03/16/96
Date Analyzed: 03/26/96
Time Analyzed: 11:19 PM

Analyte	Concentration (mg/L)	Detection Limit (mg/L)
1,1,2,2-Tetrachloroethane	ND	0.005
Tetrachloroethene	ND	0.005
Toluene	ND	0.005
1,1,1-Trichloroethane	ND	0.005
1,1,2-Trichloroethane	ND	0.005
Trichloroethene	ND	0.005
Trichlorofluoromethane	ND	0.005
1,2,3-Trichloropropane	ND	0.02
Vinyl Acetate	ND	0.01
Vinyl Chloride	ND	0.005
Xylenes	ND	0.005

ND - Analyte not detected at stated limit of detection

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Dibromofluoromethane	100%	86 - 118%
Toluene-d8	99%	88 - 110%
Bromofluorobenzene	98%	86 - 117%

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EPA Method 8260
VOLATILE ORGANIC COMPOUNDS
ADDITIONAL DETECTED COMPOUNDS

Client: GIANT REFINING COMPANY
Sample ID: MW-1 - 031696
Laboratory ID: 0396G00443 / 0696G00542
Matrix: Water

Report Date: 04/01/96
Date Sampled: 03/16/96
Date Analyzed: 03/26/96
Time Analyzed: 11:19 PM

Tentative Identification	Retention Time (Minutes)	Concentration * (mg/L)
None detected at reportable levels		

* - Concentration calculated using assumed Relative Response Factor = 1

Reference: Method 8260: Volatile Organic Compounds by Gas Chromatography / Mass Spectrometry: Capillary Column Technique. Test Methods for Evaluating Solid Waste, SW - 846, United States Environmental Protection Agency, Final Update II, September 1994.

Comments:

Analyst

Review

imL

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TOX
TOTAL ORGANIC HALIDES

Client: GIANT REFINING COMPANY
Project Location: Unknown
Sample ID: MW1-031696
Sample Number: 0396W00443/0696G00553
Sample Matrix: Water
Condition: Intact, Cool, pH=7

Report Date: 04/09/96
Date Sampled: 03/16/96
Date Received: 03/26/96
Date Analyzed: 04/09/96

Parameter	Concentration (ug/L)	Detection Limit (ug/L)
Total Organic Halides	ND	30
Concentration is the average of the replicates reported below		
Replicate #1	ND	30
Replicate #2	ND	30

ND - Analyte not detected at stated detection limit.

Reference: Method 9020B: TOTAL ORGANIC HALIDES (TOX)
Test Methods for Evaluating Solid Waste, SW-846, United States Environmental Protection Agency, Third Edition, Final Update II, September 1994.

Comments:

DG / RRD
Analyst

Review

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client:	GIANT REFINING COMPANY		Date Reported:	11/12/96
Sample ID:	MW-1-11496		Date Sampled:	11/04/96
Project ID:	Ciniza Refinery		Date Received:	11/08/96
Lab ID:	B9610064	0396G02433	Date Extracted:	NA
Matrix:	Water		Date Analyzed:	11/11/96

Parameter	Result	PQL	Units
1,1,1-Trichloroethane	ND	5.0	ug/L
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L
1,1,2-Trichloroethane	ND	5.0	ug/L
1,1-Dichloroethane	ND	5.0	ug/L
1,1-Dichloroethene	ND	5.0	ug/L
1,2-Dichloroethane	ND	5.0	ug/L
1,2-Dichloropropane	ND	5.0	ug/L
2-Butanone (MEK)	ND	20	ug/L
2-Hexanone	ND	5.0	ug/L
4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L
Acetone	ND	20	ug/L
Benzene	ND	5.0	ug/L
Bromodichloromethane	ND	5.0	ug/L
Bromoform	ND	5.0	ug/L
Bromomethane	ND	5.0	ug/L
Carbon Disulfide	ND	5.0	ug/L
Carbon Tetrachloride	ND	5.0	ug/L
Chlorobenzene	ND	5.0	ug/L
Chloroethane	ND	5.0	ug/L
Chloroform	ND	5.0	ug/L
Chloromethane	ND	5.0	ug/L
cis-1,3-Dichloropropene	ND	5.0	ug/L
Dibromochloromethane	ND	5.0	ug/L
Ethylbenzene	ND	5.0	ug/L
m,p-Xylene	ND	5.0	ug/L
Methylene chloride	ND	20	ug/L
o-Xylene	ND	5.0	ug/L
Styrene	ND	5.0	ug/L
Tetrachloroethene (PCE)	ND	5.0	ug/L
Toluene	ND	5.0	ug/L

Continued

Inter-Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client:	**GIANT REFINING COMPANY**		Date Reported:	11/12/96
Sample ID:	MW-1-11496		Date Sampled:	11/04/96
Project ID:	Ciniza Refinery		Date Received:	11/08/96
Lab ID:	B9610064	0396G02433	Date Extracted:	NA
Matrix:	Water		Date Analyzed:	11/11/96

Parameter	Result	PQL	Units
Continued			
trans-1,2-Dichloroethene	ND	5.0	ug/L
trans-1,3-Dichloropropene	ND	5.0	ug/L
Trichloroethene (TCE)	ND	5.0	ug/L
Vinyl Chloride	ND	5.0	ug/L
Xylenes (total)	ND	5.0	ug/L

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
1,2-Dichloroethane-d4	92	81 - 126
Bromofluorobenzene	106	78 - 112
Toluene-d8	110	83 - 127

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8260, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Rev. 1, November 1992.

Analyst E.D.

Reviewed [illegible]

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client:	**Giant Refining Company - Ciniza**		
Project:	Gallup, NM	Date Reported:	12/10/96
Sample ID:	MW - 1 - 11496	Date Sampled:	11/04/96
Laboratory ID:	0396G02433	Time Sampled:	7:45 AM
Sample Matrix:	Water	Date Received:	11/06/96
Condition:	Cool/Intact		

Parameter	Analytical Result	Units
Lab pH (1)	8.9	s.u.
Lab pH (2)	8.9	s.u.
Lab pH (3)	8.9	s.u.
Lab pH (4)	8.9	s.u.
Lab Conductivity @ 25° C (1)	1144	umhos/cm
Lab Conductivity @ 25° C (2)	1146	umhos/cm
Lab Conductivity @ 25° C (3)	1145	umhos/cm
Lab Conductivity @ 25° C (4)	1143	umhos/cm
Total Organic Carbon	0.8	mg/L
Total Organic Halogens	0.013	mg/L

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 18th ed., 1992.

Comments:

Reported by _____

Reviewed by _____

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client:	Giant Refining Company		
Project:	Ciniza		
Sample ID:	MW2-031696	Date Reported:	04/22/96
Laboratory ID:	0396W00442	Date Sampled:	03/16/96
Sample Matrix:	Water	Time Sampled:	9:00 AM
Condition:	Cool/Intact	Date Received:	03/21/96

Parameter	Analytical Result	Units		Units
Lab pH	8.8	s.u.		
Lab Conductivity @ 25° C	1,210	umhos/cm		
Total Dissolved Solids @ 180°C	676	mg/L		
Phenols	<0.01	mg/L		
Total Alkalinity as CaCO3	331	mg/L		
Total Hardness as CaCO3	3.00	mg/L		
Total Organic Carbon	<1	mg/L		
Bicarbonate as HCO3	365	mg/L	5.98	meq/L
Carbonate as CO3	19	mg/L	0.64	meq/L
Hydroxide as OH	<1	mg/L	<0.01	meq/L
Chloride	62.9	mg/L	1.77	meq/L
Sulfate	175	mg/L	3.65	meq/L
Calcium	1.00	mg/L	0.05	meq/L
Magnesium	0.12	mg/L	0.01	meq/L
Potassium	0.78	mg/L	0.01	meq/L
Sodium	269	mg/L	11.7	meq/L
Cations			11.8	meq/L
Anions			12.0	meq/L
Cation/Anion Difference			1.24	%

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 19th ed., 1995.

Comments:

Reported by WM

Reviewed by [signature]

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client:	Giant Refining Company		
Project:	Ciniza	Date Reported:	04/22/96
Sample ID:	MW2-031696	Date Sampled:	03/16/96
Laboratory ID:	0396W00442	Time Sampled:	9:00 AM
Sample Matrix:	Water	Date Received:	03/21/96
Condition:	Cool/Intact		

Parameter	Dissolved Analytical Result	Units	Total Analytical Result	Units
Trace Metals				
Arsenic	<0.005	mg/L		
Barium	0.02	mg/L		
Cadmium	<0.001	mg/L		
Chromium	NA	mg/L	<0.01	mg/L
Lead	NA	mg/L	<0.005	mg/L
Manganese	<0.02	mg/L		
Mercury	NA	mg/L	<0.001	mg/L
Selenium	<0.005	mg/L		
Silver	<0.01	mg/L		

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 19th ed., 1995.

Comments:

Reported by WM

Reviewed by [illegible]

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EPA Method 8260
VOLATILE ORGANIC COMPOUNDS

Client: GIANT REFINING COMPANY
Project: NA
Sample ID: MW-2 - 031696
Laboratory ID: 0396G00442 / 0696G00541
Sample Matrix Water
Preservative: HCl
Condition: Intact, pH < 2

Report Date: 04/01/96
Date Sampled: 03/16/96
Date Received: 03/22/96
Date Extracted: 03/26/96
Date Analyzed: 03/26/96
Time Analyzed: 10:38 PM

Analyte	Concentration (mg/L)	Detection Limit (mg/L)
Acetone	ND	0.03
Acrolein	ND	0.02
Acrylonitrile	ND	0.01
Benzene	ND	0.005
Bromodichloromethane	ND	0.005
Bromoform	ND	0.005
Bromomethane	ND	0.005
Carbon Disulfide	ND	0.01
Carbon Tetrachloride	ND	0.005
Chlorobenzene	ND	0.005
Chlorodibromoethane	ND	0.005
Chloroethane	ND	0.005
2-Chloroethylvinyl ether	ND	0.005
Chloroform	ND	0.005
Chloromethane	ND	0.005
Dibromomethane	ND	0.005
t-1,4-Dichloro-2-butene	ND	0.05
Dichlorodifluoromethane	ND	0.005
1,1-Dichloroethane	ND	0.005
1,2-Dichloroethane	ND	0.005
1,1-Dichloroethene	ND	0.005
trans-1,2-Dichloroethene	ND	0.005
1,2-Dichloropropane	ND	0.005
cis-1,3-Dichloropropene	ND	0.005
trans-1,3-Dichloropropene	ND	0.005
Ethyl Benzene	ND	0.005
Ethyl Methacrylate	ND	0.005
2-Hexanone	ND	0.01
Iodomethane	ND	0.01
Methylene Chloride	ND	0.02
Methyl Ethyl Ketone	ND	0.01
4-Methyl-2-Petanone	ND	0.01
Styrene	ND	0.005

ND - Analyte not detected at stated limit of detection

Inter-Mountain Laboratories, Inc.

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Phone (409) 774-4999 Fax (409) 696-0962

EPA Method 8260
VOLATILE ORGANIC COMPOUNDS

Client: GIANT REFINING COMPANY
Sample ID: MW-2 - 031696
Laboratory ID: 0396G00442 / 0696G00541
Matrix: Water

Report Date: 04/01/96
Date Sampled: 03/16/96
Date Analyzed: 03/26/96
Time Analyzed: 10:38 PM

Analyte	Concentration (mg/L)	Detection Limit (mg/L)
1,1,2,2-Tetrachloroethane	ND	0.005
Tetrachloroethene	ND	0.005
Toluene	ND	0.005
1,1,1-Trichloroethane	ND	0.005
1,1,2-Trichloroethane	ND	0.005
Trichloroethene	ND	0.005
Trichlorofluoromethane	ND	0.005
1,2,3-Trichloropropane	ND	0.02
Vinyl Acetate	ND	0.01
Vinyl Chloride	ND	0.005
Xylenes	ND	0.005

ND - Analyte not detected at stated limit of detection

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Dibromofluoromethane	100%	86 - 118%
Toluene-d8	99%	88 - 110%
Bromofluorobenzene	99%	86 - 117%

imL

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3304 Longmire Drive College Station, Texas 77845
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EPA Method 8260
VOLATILE ORGANIC COMPOUNDS
ADDITIONAL DETECTED COMPOUNDS

Client: GIANT REFINING COMPANY
Sample ID: MW-2 - 031696
Laboratory ID: 0396G00442 / 0696G00541
Matrix: Water

Report Date: 04/01/96
Date Sampled: 03/16/96
Date Analyzed: 03/26/96
Time Analyzed: 10:38 PM

Tentative Identification	Retention Time (Minutes)	Concentration * (mg/L)
None detected at reportable levels		

* - Concentration calculated using assumed Relative Response Factor = 1

Reference: Method 8260: Volatile Organic Compounds by Gas Chromatography / Mass Spectrometry: Capillary Column Technique. Test Methods for Evaluating Solid Waste, SW - 846, United States Environmental Protection Agency, Final Update II, September 1994.

Comments:

Analyst

Ramona R. Dennis
Review

iml

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TOX
TOTAL ORGANIC HALIDES

Client: GIANT REFINING COMPANY
Project Location: Unknown
Sample ID: MW2-031696
Sample Number: 0396W00442/0696G00552
Sample Matrix: Water
Condition: Intact, Cool, pH=7

Report Date: 04/09/96
Date Sampled: 03/16/96
Date Received: 03/26/96
Date Analyzed: 04/09/96

Parameter	Concentration (ug/L)	Detection Limit (ug/L)
Total Organic Halides	ND	30
Concentration is the average of the replicates reported below		
Replicate #1	ND	30
Replicate #2	ND	30

ND - Analyte not detected at stated detection limit.

Reference: Method 9020B: TOTAL ORGANIC HALIDES (TOX)
Test Methods for Evaluating Solid Waste, SW-846, United States Environmental Protection Agency, Third Edition, Final Update II, September 1994.

Comments:

DG / RRD
Analyst

Review

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client:	GIANT REFINING COMPANY			
Sample ID:	MW-2-11496		Date Reported:	11/12/96
Project ID:	Ciniza Refinery		Date Sampled:	11/04/96
Lab ID:	B9610065	0396G02434	Date Received:	11/08/96
Matrix:	Water		Date Extracted:	NA
			Date Analyzed:	11/11/96

Parameter	Result	PQL	Units
1,1,1-Trichloroethane	ND	5.0	ug/L
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L
1,1,2-Trichloroethane	ND	5.0	ug/L
1,1-Dichloroethane	ND	5.0	ug/L
1,1-Dichloroethene	ND	5.0	ug/L
1,2-Dichloroethane	ND	5.0	ug/L
1,2-Dichloropropane	ND	5.0	ug/L
2-Butanone (MEK)	ND	20	ug/L
2-Hexanone	ND	5.0	ug/L
4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L
Acetone	ND	20	ug/L
Benzene	ND	5.0	ug/L
Bromodichloromethane	ND	5.0	ug/L
Bromoform	ND	5.0	ug/L
Bromomethane	ND	5.0	ug/L
Carbon Disulfide	ND	5.0	ug/L
Carbon Tetrachloride	ND	5.0	ug/L
Chlorobenzene	ND	5.0	ug/L
Chloroethane	ND	5.0	ug/L
Chloroform	ND	5.0	ug/L
Chloromethane	ND	5.0	ug/L
cis-1,3-Dichloropropene	ND	5.0	ug/L
Dibromochloromethane	ND	5.0	ug/L
Ethylbenzene	ND	5.0	ug/L
m,p-Xylene	ND	5.0	ug/L
Methylene chloride	ND	20	ug/L
o-Xylene	ND	5.0	ug/L
Styrene	ND	5.0	ug/L
Tetrachloroethene (PCE)	ND	5.0	ug/L
Toluene	ND	5.0	ug/L

Continued

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client:	**GIANT REFINING COMPANY**		Date Reported:	11/12/96
Sample ID:	MW-2-11496		Date Sampled:	11/04/96
Project ID:	Ciniza Refinery		Date Received:	11/08/96
Lab ID:	B9610065	0396G02434	Date Extracted:	NA
Matrix:	Water		Date Analyzed:	11/11/96

Parameter	Result	PQL	Units
Continued			
trans-1,2-Dichloroethene	ND	5.0	ug/L
trans-1,3-Dichloropropene	ND	5.0	ug/L
Trichloroethene (TCE)	ND	5.0	ug/L
Vinyl Chloride	ND	5.0	ug/L
Xylenes (total)	ND	5.0	ug/L

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
1,2-Dichloroethane-d4	94	81 - 126
Bromofluorobenzene	103	78 - 112
Toluene-d8	102	83 - 127

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8260, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Rev. 1, November 1992.

Analyst E.D.

Reviewed CZB

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client:	**Giant Refining Company - Ciniza**		
Project:	Gallup, NM	Date Reported:	12/10/96
Sample ID:	MW - 2 - 11496	Date Sampled:	11/04/96
Laboratory ID:	0396G02434	Time Sampled:	9:00 AM
Sample Matrix:	Water	Date Received:	11/06/96
Condition:	Cool/Intact		

Parameter	Analytical Result	Units
Lab pH (1)	8.9	s.u.
Lab pH (2)	8.9	s.u.
Lab pH (3)	8.9	s.u.
Lab pH (4)	8.9	s.u.
Lab Conductivity @ 25° C (1)	1163	umhos/cm
Lab Conductivity @ 25° C (2)	1160	umhos/cm
Lab Conductivity @ 25° C (3)	1162	umhos/cm
Lab Conductivity @ 25° C (4)	1163	umhos/cm
Total Organic Carbon	0.8	mg/L
Total Organic Halogens	0.044	mg/L

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 18th ed., 1992.

Comments:

Reported by _____ Reviewed by _____

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client:	**Giant Refining**		
Project:	NMED-LTA		
Sample ID:	MW4-031396	Date Reported:	04/10/96
Laboratory ID:	0396W00418	Date Sampled:	03/13/96
Sample Matrix:	Water	Time Sampled:	1:00 PM
Condition:	Cool/Intact	Date Received:	03/20/96

Parameter	Analytical Result	Units		Units
Lab pH	8.7	s.u.		
Lab Conductivity @ 25° C	1,220	umhos/cm		
Total Dissolved Solids @ 180°C	766	mg/L		
Total Dissolved Solids (Calc)	741	mg/L		
Phenols	<0.01	mg/L		
Total Alkalinity as CaCO3	446	mg/L		
Total Hardness as CaCO3	6.00	mg/L		
Total Organic Carbon	1.1	mg/L		
Bicarbonate as HCO3	528	mg/L	8.65	meq/L
Carbonate as CO3	8.4	mg/L	0.28	meq/L
Hydroxide as OH	<1	mg/L	<0.01	meq/L
Chloride	20.6	mg/L	0.58	meq/L
Sulfate	160	mg/L	3.33	meq/L
Calcium	2.00	mg/L	0.10	meq/L
Magnesium	0.24	mg/L	0.02	meq/L
Potassium	0.78	mg/L	0.02	meq/L
Sodium	290	mg/L	12.6	meq/L
Cations			12.7	meq/L
Anions			12.8	meq/L
Cation/Anion Difference			0.37	%

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 19th ed., 1995.

Comments:

Reported by SB

Reviewed by WM

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client:	**Giant Refining**	Date Reported:	04/10/96
Project:	NMED-LTA	Date Sampled:	03/13/96
Sample ID:	MW4-031396	Time Sampled:	1:00 PM
Laboratory ID:	0396W00418	Date Received:	03/20/96
Sample Matrix:	Water		
Condition:	Cool/Intact		

Parameter	Dissolved Analytical Result	Units	Total Analytical Result	Units
Trace Metals				
Arsenic.....	<0.005	mg/L		
Barium.....	0.02	mg/L		
Cadmium.....	<0.002	mg/L		
Chromium.....	NA	mg/L	<0.01	mg/L
Lead.....	NA	mg/L	<0.005	mg/L
Manganese.....	<0.02	mg/L		
Mercury.....	NA	mg/L	<0.001	mg/L
Selenium.....	<0.005	mg/L		
Silver.....	<0.01	mg/L		

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 19th ed., 1995.

Comments:

Reported by JB

Reviewed by WM

imL

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EPA Method 8260
VOLATILE ORGANIC COMPOUNDS

Client: GIANT REFINING COMPANY
Project: NMED-LTA
Sample ID: MW4-031396
Laboratory ID: 0396W00418 / 0696G00476
Sample Matrix Water
Preservative: HCl
Condition: Intact, pH < 2

Report Date: 04/01/96
Date Sampled: 03/13/96
Date Received: 03/21/96
Date Extracted: 03/22/96
Date Analyzed: 03/22/96
Time Analyzed: 10:33 PM

Analyte	Concentration (mg/L)	Detection Limit (mg/L)
Acetone	ND	0.03
Acrolein	ND	0.02
Acrylonitrile	ND	0.01
Benzene	ND	0.005
Bromodichloromethane	ND	0.005
Bromoform	ND	0.005
Bromomethane	ND	0.005
Carbon Disulfide	ND	0.01
Carbon Tetrachloride	ND	0.005
Chlorobenzene	ND	0.005
Chlorodibromoethane	ND	0.005
Chloroethane	ND	0.005
2-Chloroethylvinyl ether	ND	0.005
Chloroform	ND	0.005
Chloromethane	ND	0.005
Dibromomethane	ND	0.005
t-1,4-Dichloro-2-butene	ND	0.05
Dichlorodifluoromethane	ND	0.005
1,1-Dichloroethane	ND	0.005
1,2-Dichloroethane	ND	0.005
1,1-Dichloroethene	ND	0.005
trans-1,2-Dichloroethene	ND	0.005
1,2-Dichloropropane	ND	0.005
cis-1,3-Dichloropropene	ND	0.005
trans-1,3-Dichloropropene	ND	0.005
Ethyl Benzene	ND	0.005
Ethyl Methacrylate	ND	0.005
2-Hexanone	ND	0.01
Iodomethane	ND	0.01
Methylene Chloride	ND	0.02
Methyl Ethyl Ketone	ND	0.01
4-Methyl-2-Petanone	ND	0.01
Styrene	ND	0.005

ND - Analyte not detected at stated limit of detection

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EPA Method 8260
VOLATILE ORGANIC COMPOUNDS

Client: GIANT REFINING COMPANY
Sample ID: MW4-031396
Laboratory ID: 0396W00418 / 0696G00476
Matrix: Water

Report Date: 04/01/96
Date Sampled: 03/13/96
Date Analyzed: 03/22/96
Time Analyzed: 10:33 PM

Analyte	Concentration (mg/L)	Detection Limit (mg/L)
1,1,2,2-Tetrachloroethane	ND	0.005
Tetrachloroethene	ND	0.005
Toluene	ND	0.005
1,1,1-Trichloroethane	ND	0.005
1,1,2-Trichloroethane	ND	0.005
Trichloroethene	ND	0.005
Trichlorofluoromethane	ND	0.005
1,2,3-Trichloropropane	ND	0.02
Vinyl Acetate	ND	0.01
Vinyl Chloride	ND	0.005
Xylenes	ND	0.005

ND - Analyte not detected at stated limit of detection

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Dibromofluoromethane	100%	86 - 118%
Toluene-d8	100%	88 - 110%
Bromofluorobenzene	98%	86 - 117%

imL

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EPA Method 8260
VOLATILE ORGANIC COMPOUNDS
ADDITIONAL DETECTED COMPOUNDS

Client: GIANT REFINING COMPANY
Sample ID: MW4-031396
Laboratory ID: 0396W00418 / 0696G00476
Matrix: Water

Report Date: 04/01/96
Date Sampled: 03/13/96
Date Analyzed: 03/22/96
Time Analyzed: 10:33 PM

Tentative Identification	Retention Time (Minutes)	Concentration * (mg/L)
None detected at reportable levels		

* - Concentration calculated using assumed Relative Response Factor = 1

Reference: Method 8260: Volatile Organic Compounds by Gas Chromatography / Mass Spectrometry: Capillary Column Technique. Test Methods for Evaluating Solid Waste, SW - 846, United States Environmental Protection Agency, Final Update II, September 1994.

Comments:

Analyst

Review

iml

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TOX
TOTAL ORGANIC HALIDES

Client:	GIANT REFINING COMPANY		
Project Location:	Unknown	Report Date:	04/09/96
Sample ID:	MW4-031396	Date Sampled:	03/13/96
Sample Number:	0396W00418/0696G00546	Date Received:	03/26/96
Sample Matrix:	Water	Date Analyzed:	04/08/96
Condition:	Intact, Cool, pH=7		

Parameter	Concentration (ug/L)	Detection Limit (ug/L)
Total Organic Halides	ND	30
Concentration is the average of the replicates reported below		
Replicate #1	ND	30
Replicate #2	ND	30

ND - Analyte not detected at stated detection limit.

Reference: Method 9020B: TOTAL ORGANIC HALIDES (TOX)
Test Methods for Evaluating Solid Waste, SW-846, United States Environmental Protection Agency, Third Edition, Final Update II, September 1994.

Comments:

DG / RRD
Analyst

Review

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client:	GIANT REFINING COMPANY		Date Reported:	11/12/96
Sample ID:	MW-4-11496		Date Sampled:	11/04/96
Project ID:	Ciniza Refinery		Date Received:	11/08/96
Lab ID:	B9610066	0396G02435	Date Extracted:	NA
Matrix:	Water		Date Analyzed:	11/11/96

Parameter	Result	PQL	Units
1,1,1-Trichloroethane	ND	5.0	ug/L
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L
1,1,2-Trichloroethane	ND	5.0	ug/L
1,1-Dichloroethane	ND	5.0	ug/L
1,1-Dichloroethene	ND	5.0	ug/L
1,2-Dichloroethane	ND	5.0	ug/L
1,2-Dichloropropane	ND	5.0	ug/L
2-Butanone (MEK)	ND	20	ug/L
2-Hexanone	ND	5.0	ug/L
4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L
Acetone	ND	20	ug/L
Benzene	ND	5.0	ug/L
Bromodichloromethane	ND	5.0	ug/L
Bromoform	ND	5.0	ug/L
Bromomethane	ND	5.0	ug/L
Carbon Disulfide	ND	5.0	ug/L
Carbon Tetrachloride	ND	5.0	ug/L
Chlorobenzene	ND	5.0	ug/L
Chloroethane	ND	5.0	ug/L
Chloroform	ND	5.0	ug/L
Chloromethane	ND	5.0	ug/L
cis-1,3-Dichloropropene	ND	5.0	ug/L
Dibromochloromethane	ND	5.0	ug/L
Ethylbenzene	ND	5.0	ug/L
m,p-Xylene	ND	5.0	ug/L
Methylene chloride	ND	20	ug/L
o-Xylene	ND	5.0	ug/L
Styrene	ND	5.0	ug/L
Tetrachloroethene (PCE)	ND	5.0	ug/L
Toluene	ND	5.0	ug/L

Continued

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client:	GIANT REFINING COMPANY		Date Reported:	11/12/96
Sample ID:	MW-4-11496		Date Sampled:	11/04/96
Project ID:	Ciniza Refinery		Date Received:	11/08/96
Lab ID:	B9610066	0396G02435	Date Extracted:	NA
Matrix:	Water		Date Analyzed:	11/11/96

Parameter	Result	PQL	Units
Continued			
trans-1,2-Dichloroethene	ND	5.0	ug/L
trans-1,3-Dichloropropene	ND	5.0	ug/L
Trichloroethene (TCE)	ND	5.0	ug/L
Vinyl Chloride	ND	5.0	ug/L
Xylenes (total)	ND	5.0	ug/L

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
1,2-Dichloroethane-d4	90	81 - 126
Bromofluorobenzene	100	78 - 112
Toluene-d8	108	83 - 127

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8260, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Rev. 1, November 1992.

Analyst E.D.

Reviewed CEB

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client:	**Giant Refining Company - Ciniza**		
Project:	Gallup, NM	Date Reported:	12/10/96
Sample ID:	MW - 4 - 11496	Date Sampled:	11/04/96
Laboratory ID:	0396G02435	Time Sampled:	11:35 AM
Sample Matrix:	Water	Date Received:	11/06/96
Condition:	Cool/Intact		

Parameter	Analytical Result	Units
Lab pH (1)	8.7	s.u.
Lab pH (2)	8.7	s.u.
Lab pH (3)	8.7	s.u.
Lab pH (4)	8.7	s.u.
Lab Conductivity @ 25° C (1)	1188	umhos/cm
Lab Conductivity @ 25° C (2)	1188	umhos/cm
Lab Conductivity @ 25° C (3)	1190	umhos/cm
Lab Conductivity @ 25° C (4)	1189	umhos/cm
Total Organic Carbon	1.0	mg/L
Total Organic Halogens	0.008	mg/L

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 18th ed., 1992.

Comments:

Reported by _____

Reviewed by _____

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client:	**Giant Refining**		
Project:	NMED-LTA		
Sample ID:	MW5-031396	Date Reported:	04/10/96
Laboratory ID:	0396W00419	Date Sampled:	03/13/96
Sample Matrix:	Water	Time Sampled:	9:00 AM
Condition:	Cool/Intact	Date Received:	03/20/96

Parameter	Analytical Result	Units		Units
Lab pH	8.9	s.u.		
Lab Conductivity @ 25° C	1,200	umhos/cm		
Total Dissolved Solids @ 180°C	714	mg/L		
Total Dissolved Solids (Calc)	712	mg/L		
Phenols	<0.01	mg/L		
Total Alkalinity as CaCO3	322	mg/L		
Total Hardness as CaCO3	5.00	mg/L		
Total Organic Carbon	<1	mg/L		
Bicarbonate as HCO3	339	mg/L	5.56	meq/L
Carbonate as CO3	26	mg/L	0.88	meq/L
Hydroxide as OH	<1	mg/L	<0.01	meq/L
Chloride	65.7	mg/L	1.85	meq/L
Sulfate	175	mg/L	3.65	meq/L
Calcium	1.60	mg/L	0.08	meq/L
Magnesium	0.24	mg/L	0.02	meq/L
Potassium	0.78	mg/L	0.02	meq/L
Sodium	275	mg/L	12.0	meq/L
Cations			12.1	meq/L
Anions			11.9	meq/L
Cation/Anion Difference			0.52	%

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 19th ed., 1995.

Comments:

Reported by SB

Reviewed by WM

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client:	**Giant Refining**		
Project:	NMED-LTA	Date Reported:	04/10/96
Sample ID:	MW5-031396	Date Sampled:	03/13/96
Laboratory ID:	0396W00419	Time Sampled:	9:00 AM
Sample Matrix:	Water	Date Received:	03/20/96
Condition:	Cool/Intact		

Parameter	Dissolved Analytical Result	Units	Total Analytical Result	Units
Trace Metals				
Arsenic.....	<0.005	mg/L		
Barium.....	0.02	mg/L		
Cadmium.....	<0.002	mg/L		
Chromium.....	NA	mg/L	<0.01	mg/L
Lead.....	NA	mg/L	<0.005	mg/L
Manganese.....	<0.02	mg/L		
Mercury.....	NA	mg/L	<0.001	mg/L
Selenium.....	<0.005	mg/L		
Silver.....	<0.01	mg/L		

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 19th ed., 1995.

Comments:

Reported by SB

Reviewed by WM

Inter-Mountain Laboratories, Inc.

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EPA Method 8260
VOLATILE ORGANIC COMPOUNDS

Client: GIANT REFINING COMPANY
Project: NMED-LTA
Sample ID: MW5-031396
Laboratory ID: 0396W00419 / 0696G00477
Sample Matrix Water
Preservative: HCl
Condition: Intact, pH < 2

Report Date: 04/01/96
Date Sampled: 03/13/96
Date Received: 03/21/96
Date Extracted: 03/22/96
Date Analyzed: 03/22/96
Time Analyzed: 11:15 PM

Analyte	Concentration (mg/L)	Detection Limit (mg/L)
Acetone	ND	0.03
Acrolein	ND	0.02
Acrylonitrile	ND	0.01
Benzene	ND	0.005
Bromodichloromethane	ND	0.005
Bromoform	ND	0.005
Bromomethane	ND	0.005
Carbon Disulfide	ND	0.01
Carbon Tetrachloride	ND	0.005
Chlorobenzene	ND	0.005
Chlorodibromoethane	ND	0.005
Chloroethane	ND	0.005
2-Chloroethylvinyl ether	ND	0.005
Chloroform	ND	0.005
Chloromethane	ND	0.005
Dibromomethane	ND	0.005
t-1,4-Dichloro-2-butene	ND	0.05
Dichlorodifluoromethane	ND	0.005
1,1-Dichloroethane	ND	0.005
1,2-Dichloroethane	ND	0.005
1,1-Dichloroethene	ND	0.005
trans-1,2-Dichloroethene	ND	0.005
1,2-Dichloropropane	ND	0.005
cis-1,3-Dichloropropene	ND	0.005
trans-1,3-Dichloropropene	ND	0.005
Ethyl Benzene	ND	0.005
Ethyl Methacrylate	ND	0.005
2-Hexanone	ND	0.01
Iodomethane	ND	0.01
Methylene Chloride	ND	0.02
Methyl Ethyl Ketone	ND	0.01
4-Methyl-2-Petanone	ND	0.01
Styrene	ND	0.005

ND - Analyte not detected at stated limit of detection

imL

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Organics Laboratory
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EPA Method 8260
VOLATILE ORGANIC COMPOUNDS

Client: GIANT REFINING COMPANY
Sample ID: MW5-031396
Laboratory ID: 0396W00419 / 0696G00477
Matrix: Water

Report Date: 04/01/96
Date Sampled: 03/13/96
Date Analyzed: 03/22/96
Time Analyzed: 11:15 PM

Analyte	Concentration (mg/L)	Detection Limit (mg/L)
1,1,2,2-Tetrachloroethane	ND	0.005
Tetrachloroethene	ND	0.005
Toluene	ND	0.005
1,1,1-Trichloroethane	ND	0.005
1,1,2-Trichloroethane	ND	0.005
Trichloroethene	ND	0.005
Trichlorofluoromethane	ND	0.005
1,2,3-Trichloropropane	ND	0.02
Vinyl Acetate	ND	0.01
Vinyl Chloride	ND	0.005
Xylenes	ND	0.005

ND - Analyte not detected at stated limit of detection

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Dibromofluoromethane	100%	86 - 118%
Toluene-d8	99%	88 - 110%
Bromofluorobenzene	99%	86 - 117%

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EPA Method 8260
VOLATILE ORGANIC COMPOUNDS
ADDITIONAL DETECTED COMPOUNDS

Client: GIANT REFINING COMPANY
Sample ID: MW5-031396
Laboratory ID: 0396W00419 / 0696G00477
Matrix: Water

Report Date: 04/01/96
Date Sampled: 03/13/96
Date Analyzed: 03/22/96
Time Analyzed: 11:15 PM

Tentative Identification	Retention Time (Minutes)	Concentration * (mg/L)
None detected at reportable levels		

* - Concentration calculated using assumed Relative Response Factor = 1

Reference: Method 8260: Volatile Organic Compounds by Gas Chromatography / Mass Spectrometry: Capillary Column Technique. Test Methods for Evaluating Solid Waste, SW - 846, United States Environmental Protection Agency, Final Update II, September 1994.

Comments:

Analyst

Review

imL

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TOX
TOTAL ORGANIC HALIDES

Client:	GIANT REFINING COMPANY		
Project Location:	Unknown	Report Date:	04/09/96
Sample ID:	MW5-031396	Date Sampled:	03/13/96
Sample Number:	0396W00419/0696G00547	Date Received:	03/26/96
Sample Matrix:	Water	Date Analyzed:	04/08/96
Condition:	Intact, Cool, pH=7		

Parameter	Concentration (ug/L)	Detection Limit (ug/L)
Total Organic Halides	ND	30
Concentration is the average of the replicates reported below		
Replicate #1	ND	30
Replicate #2	ND	30

ND - Analyte not detected at stated detection limit.

Reference: Method 9020B: TOTAL ORGANIC HALIDES (TOX)
Test Methods for Evaluating Solid Waste, SW-846, United States Environmental Protection Agency, Third Edition, Final Update II, September 1994.

Comments:

DG / RRD
Analyst

Review

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client:	GIANT REFINING COMPANY		Date Reported:	11/12/96
Sample ID:	MW-5-11496		Date Sampled:	11/04/96
Project ID:	Ciniza Refinery		Date Received:	11/08/96
Lab ID:	B9610067	0396G02436	Date Extracted:	NA
Matrix:	Water		Date Analyzed:	11/11/96

Parameter	Result	PQL	Units
1,1,1-Trichloroethane	ND	5.0	ug/L
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L
1,1,2-Trichloroethane	ND	5.0	ug/L
1,1-Dichloroethane	ND	5.0	ug/L
1,1-Dichloroethene	ND	5.0	ug/L
1,2-Dichloroethane	ND	5.0	ug/L
1,2-Dichloropropane	ND	5.0	ug/L
2-Butanone (MEK)	ND	20	ug/L
2-Hexanone	ND	5.0	ug/L
4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L
Acetone	ND	20	ug/L
Benzene	ND	5.0	ug/L
Bromodichloromethane	ND	5.0	ug/L
Bromoform	ND	5.0	ug/L
Bromomethane	ND	5.0	ug/L
Carbon Disulfide	ND	5.0	ug/L
Carbon Tetrachloride	ND	5.0	ug/L
Chlorobenzene	ND	5.0	ug/L
Chloroethane	ND	5.0	ug/L
Chloroform	ND	5.0	ug/L
Chloromethane	ND	5.0	ug/L
cis-1,3-Dichloropropene	ND	5.0	ug/L
Dibromochloromethane	ND	5.0	ug/L
Ethylbenzene	ND	5.0	ug/L
m,p-Xylene	ND	5.0	ug/L
Methylene chloride	ND	20	ug/L
o-Xylene	ND	5.0	ug/L
Styrene	ND	5.0	ug/L
Tetrachloroethene (PCE)	ND	5.0	ug/L
Toluene	ND	5.0	ug/L

Continued

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client:	GIANT REFINING COMPANY		Date Reported:	11/12/96
Sample ID:	MW-5-11496		Date Sampled:	11/04/96
Project ID:	Ciniza Refinery		Date Received:	11/08/96
Lab ID:	B9610067	0396G02436	Date Extracted:	NA
Matrix:	Water		Date Analyzed:	11/11/96

Parameter	Result	PQL	Units
Continued			
trans-1,2-Dichloroethene	ND	5.0	ug/L
trans-1,3-Dichloropropene	ND	5.0	ug/L
Trichloroethene (TCE)	ND	5.0	ug/L
Vinyl Chloride	ND	5.0	ug/L
Xylenes (total)	ND	5.0	ug/L

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
1,2-Dichloroethane-d4	97	81 - 126
Bromofluorobenzene	98	78 - 112
Toluene-d8	100	83 - 127

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8260, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Rev. 1, November 1992.

Analyst E.D.

Reviewed CEB

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client:	**Giant Refining Company - Ciniza**	Date Reported:	12/10/96
Project:	Gallup, NM	Date Sampled:	11/04/96
Sample ID:	MW - 5 - 11496	Time Sampled:	9:40 AM
Laboratory ID:	0396G02436	Date Received:	11/06/96
Sample Matrix:	Water		
Condition:	Cool/Intact		

Parameter	Analytical Result	Units
Lab pH (1)	8.9	s.u.
Lab pH (2)	8.9	s.u.
Lab pH (3)	8.9	s.u.
Lab pH (4)	8.9	s.u.
Lab Conductivity @ 25° C (1)	1175	umhos/cm
Lab Conductivity @ 25° C (2)	1173	umhos/cm
Lab Conductivity @ 25° C (3)	1175	umhos/cm
Lab Conductivity @ 25° C (4)	1175	umhos/cm
Total Organic Carbon	0.8	mg/L
Total Organic Halogens	0.024	mg/L

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 18th ed., 1992.

Comments:

Reported by _____

Reviewed by _____

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

t:	Giant Refining Company		
Project:	Ciniza		
Sample ID:	SMW3-031596	Date Reported:	04/22/96
Laboratory ID:	0396W00439	Date Sampled:	03/15/96
Sample Matrix:	Water	Time Sampled:	1:05 PM
Condition:	Cool/Intact	Date Received:	03/21/96

Parameter	Analytical Result	Units		Units
Lab pH	7.7	s.u.		
Lab Conductivity @ 25° C	3,090	umhos/cm		
Total Dissolved Solids @ 180°C	2,040	mg/L		
Phenols	<0.01	mg/L		
Total Alkalinity as CaCO3	644	mg/L		
Total Hardness as CaCO3	176	mg/L		
Total Organic Carbon	3.2	mg/L		
Bicarbonate as HCO3	786	mg/L	12.9	meq/L
Carbonate as CO3	<1	mg/L	<0.01	meq/L
lydroxide as OH	<1	mg/L	<0.01	meq/L
Chloride	91.0	mg/L	2.57	meq/L
Sulfate	844	mg/L	17.57	meq/L
Calcium	47	mg/L	2.36	meq/L
Magnesium	14	mg/L	1.19	meq/L
Potassium	0.78	mg/L	0.02	meq/L
Sodium	669	mg/L	29.1	meq/L
Cations			32.7	meq/L
Anions			33.0	meq/L
Cation/Anion Difference			0.54	%

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 19th ed., 1995.

Comments:

Reported by WM

Reviewed by

imL

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TOX
TOTAL ORGANIC HALIDES

Client:	GIANT REFINING COMPANY		
Project Location:	Unknown	Report Date:	04/09/96
Sample ID:	SMW3-031596	Date Sampled:	03/15/96
Sample Number:	0396W00439/0696G00549	Date Received:	03/26/96
Sample Matrix:	Water	Date Analyzed:	04/08/96
Condition:	Intact, Cool, pH=7		

Parameter	Concentration (ug/L)	Detection Limit (ug/L)
Total Organic Halides	ND	30
Concentration is the average of the replicates reported below		
Replicate #1	ND	30
Replicate #2	ND	30

ND - Analyte not detected at stated detection limit.

Reference: Method 9020B: TOTAL ORGANIC HALIDES (TOX)
Test Methods for Evaluating Solid Waste, SW-846, United States Environmental Protection Agency, Third Edition, Final Update II, September 1994.

Comments:

DG/RPD
Analyst

Review

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client:	Giant Refining Company		
Project:	Ciniza	Date Reported:	04/22/96
Sample ID:	SMW3-031596	Date Sampled:	03/15/96
Laboratory ID:	0396W00439	Time Sampled:	1:05 PM
Sample Matrix:	Water	Date Received:	03/21/96
Condition:	Cool/Intact		

Parameter	Total Analytical Result	Units
Trace Metals		
Chromium.....	<0.01	mg/L
Lead.....	<0.005	mg/L

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 19th ed., 1995.

Comments:

Reported by WM

Reviewed by [illegible]

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EPA Method 8260
VOLATILE ORGANIC COMPOUNDS

Client: GIANT REFINING COMPANY
Project: NA
Sample ID: SMW3-031596
Laboratory ID: 0396G00439 / 0696G00538
Sample Matrix Water
Preservative: HCl
Condition: Intact, pH < 2

Report Date: 03/25/96
Date Sampled: 03/15/96
Date Received: 03/22/96
Date Extracted: 03/22/96
Date Analyzed: 03/23/96
Time Analyzed: 1:21 AM

Analyte	Concentration (mg/L)	Detection Limit (mg/L)
Acetone	ND	0.03
Acrolein	ND	0.02
Acrylonitrile	ND	0.01
Benzene	ND	0.005
Bromodichloromethane	ND	0.005
Bromoform	ND	0.005
Bromomethane	ND	0.005
Carbon Disulfide	ND	0.01
Carbon Tetrachloride	ND	0.005
Chlorobenzene	ND	0.005
Chlorodibromoethane	ND	0.005
Chloroethane	ND	0.005
2-Chloroethylvinyl ether	ND	0.005
Chloroform	ND	0.005
Chloromethane	ND	0.005
Dibromomethane	ND	0.005
t-1,4-Dichloro-2-butene	ND	0.05
Dichlorodifluoromethane	ND	0.005
1,1-Dichloroethane	ND	0.005
1,2-Dichloroethane	ND	0.005
1,1-Dichloroethene	ND	0.005
trans-1,2-Dichloroethene	ND	0.005
1,2-Dichloropropane	ND	0.005
cis-1,3-Dichloropropene	ND	0.005
trans-1,3-Dichloropropene	ND	0.005
Ethyl Benzene	ND	0.005
Ethyl Methacrylate	ND	0.005
2-Hexanone	ND	0.01
Iodomethane	ND	0.01
Methylene Chloride	ND	0.02
Methyl Ethyl Ketone	ND	0.01
4-Methyl-2-Petanone	ND	0.01
Styrene	ND	0.005

ND - Analyte not detected at stated limit of detection

imL

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EPA Method 8260
VOLATILE ORGANIC COMPOUNDS

Client: GIANT REFINING COMPANY
Sample ID: SMW3-031596
Laboratory ID: 0396G00439 / 0696G00538
Matrix: Water

Report Date: 03/25/96
Date Sampled: 03/15/96
Date Analyzed: 03/23/96
Time Analyzed: 1:21 AM

Analyte	Concentration (mg/L)	Detection Limit (mg/L)
1,1,2,2-Tetrachloroethane	ND	0.005
Tetrachloroethene	ND	0.005
Toluene	ND	0.005
1,1,1-Trichloroethane	ND	0.005
1,1,2-Trichloroethane	ND	0.005
Trichloroethene	ND	0.005
Trichlorofluoromethane	ND	0.005
1,2,3-Trichloropropane	ND	0.02
Vinyl Acetate	ND	0.01
Vinyl Chloride	ND	0.005
Xylenes	ND	0.005

ND - Analyte not detected at stated limit of detection

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Dibromofluoromethane	100%	86 - 118%
Toluene-d8	99%	88 - 110%
Bromofluorobenzene	99%	86 - 117%

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EPA Method 8260
VOLATILE ORGANIC COMPOUNDS
ADDITIONAL DETECTED COMPOUNDS

Client: GIANT REFINING COMPANY
Sample ID: SMW3-031596
Laboratory ID: 0396G00439 / 0696G00538
Matrix: Water

Report Date: 03/25/96
Date Sampled: 03/15/96
Date Analyzed: 03/23/96
Time Analyzed: 1:21 AM

Tentative Identification	Retention Time (Minutes)	Concentration * (mg/L)
None detected at reportable levels		

* - Concentration calculated using assumed Relative Response Factor = 1

Reference: Method 8260: Volatile Organic Compounds by Gas Chromatography / Mass Spectrometry: Capillary Column Technique. Test Methods for Evaluating Solid Waste, SW - 846, United States Environmental Protection Agency, Final Update II, September 1994.

Comments:

Analyst

Ramona R. Dennis
Review

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client:	GIANT REFINING COMPANY		Date Reported:	11/12/96
Sample ID:	SMW-3-11496		Date Sampled:	11/04/96
Project ID:	Ciniza Refinery		Date Received:	11/08/96
Lab ID:	B9610069	0396G02438	Date Extracted:	NA
Matrix:	Water		Date Analyzed:	11/11/96

Parameter	Result	PQL	Units
1,1,1-Trichloroethane	ND	5.0	ug/L
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L
1,1,2-Trichloroethane	ND	5.0	ug/L
1,1-Dichloroethane	ND	5.0	ug/L
1,1-Dichloroethene	ND	5.0	ug/L
1,2-Dichloroethane	ND	5.0	ug/L
1,2-Dichloropropane	ND	5.0	ug/L
2-Butanone (MEK)	ND	20	ug/L
2-Hexanone	ND	5.0	ug/L
4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L
Acetone	ND	20	ug/L
Benzene	ND	5.0	ug/L
Bromodichloromethane	ND	5.0	ug/L
Bromoform	ND	5.0	ug/L
Bromomethane	ND	5.0	ug/L
Carbon Disulfide	ND	5.0	ug/L
Carbon Tetrachloride	ND	5.0	ug/L
Chlorobenzene	ND	5.0	ug/L
Chloroethane	ND	5.0	ug/L
Chloroform	ND	5.0	ug/L
Chloromethane	ND	5.0	ug/L
cis-1,3-Dichloropropene	ND	5.0	ug/L
Dibromochloromethane	ND	5.0	ug/L
Ethylbenzene	ND	5.0	ug/L
m,p-Xylene	ND	5.0	ug/L
Methylene chloride	ND	20	ug/L
o-Xylene	ND	5.0	ug/L
Styrene	ND	5.0	ug/L
Tetrachloroethene (PCE)	ND	5.0	ug/L
Toluene	ND	5.0	ug/L

Continued

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client:	GIANT REFINING COMPANY		Date Reported:	11/12/96
Sample ID:	SMW-3-11496		Date Sampled:	11/04/96
Project ID:	Ciniza Refinery		Date Received:	11/08/96
Lab ID:	B9610069	0396G02438	Date Extracted:	NA
Matrix:	Water		Date Analyzed:	11/11/96

Parameter	Result	PQL	Units
Continued			
trans-1,2-Dichloroethene	ND	5.0	ug/L
trans-1,3-Dichloropropene	ND	5.0	ug/L
Trichloroethene (TCE)	ND	5.0	ug/L
Vinyl Chloride	ND	5.0	ug/L
Xylenes (total)	ND	5.0	ug/L

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
1,2-Dichloroethane-d4	91	81 - 126
Bromofluorobenzene	101	78 - 112
Toluene-d8	108	83 - 127

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8260, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Rev. 1, November 1992.

Analyst E.D.

Reviewed [illegible]

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client: **Giant Refining Company - Ciniza**
Project: Gallup, NM
Sample ID: SMW - 3 - 11496
Laboratory ID: 0396G02438
Sample Matrix: Water
Condition: Cool/Intact

Date Reported: 12/10/96
Date Sampled: 11/04/96
Time Sampled: 10:50 AM
Date Received: 11/06/96

Parameter	Analytical Result	Units
Lab pH (1)	7.7	s.u.
Lab pH (2)	7.7	s.u.
Lab pH (3)	7.7	s.u.
Lab pH (4)	7.7	s.u.
Lab Conductivity @ 25° C (1)	2910	umhos/cm
Lab Conductivity @ 25° C (2)	2910	umhos/cm
Lab Conductivity @ 25° C (3)	2900	umhos/cm
Lab Conductivity @ 25° C (4)	2930	umhos/cm
Total Organic Carbon	3.1	mg/L
Total Organic Halogens	0.028	mg/L
Trace Metals (Total)		
Chromium	0.011	mg/L
Lead	<0.05	mg/L

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 18th ed., 1992.

Comments:

Reported by _____

Reviewed by _____

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

t:	**Giant Refining Company**		
roject:	Ciniza		
Sample ID:	SMW4-031596	Date Reported:	04/22/96
aboratory ID:	0396W00440	Date Sampled:	03/15/96
Sample Matrix:	Water	Time Sampled:	10:38 AM
ondition:	Cool/Intact	Date Received:	03/21/96

arameter	Analytical Result	Units		Units
Lab pH	8.4	s.u.		
ab Conductivity @ 25° C	1,300	umhos/cm		
Total Dissolved Solids @ 180°C	740	mg/L		
Phenols	<0.01	mg/L		
otal Alkalinity as CaCO3	398	mg/L		
Total Hardness as CaCO3	11	mg/L		
otal Organic Carbon	1.0	mg/L		
Bicarbonate as HCO3	461	mg/L	7.56	meq/L
Carbonate as CO3	12	mg/L	0.40	meq/L
ydroxide as OH	<1	mg/L	<0.01	meq/L
Chloride	61.0	mg/L	1.72	meq/L
Sulfate	170	mg/L	3.53	meq/L
Calcium	3.01	mg/L	0.15	meq/L
Magnesium	0.97	mg/L	0.08	meq/L
Potassium	0.78	mg/L	0.02	meq/L
Sodium	292	mg/L	12.7	meq/L
Cations			13.0	meq/L
nions			13.2	meq/L
Cation/Anion Difference			1.01	%

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 19th ed., 1995.

Comments:

Reported by WM

Reviewed by

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client:	Giant Refining Company		
Project:	Ciniza	Date Reported:	04/22/96
Sample ID:	SMW4-031596	Date Sampled:	03/15/96
Laboratory ID:	0396W00440	Time Sampled:	10:38 AM
Sample Matrix:	Water	Date Received:	03/21/96
Condition:	Cool/Intact		

Parameter	Total Analytical Result	Units
Trace Metals		
Chromium.....	<0.01	mg/L
Lead.....	<0.005	mg/L

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 19th ed., 1995.

Comments:

Reported by WM

Reviewed by CB Hallad

imL

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TOX
TOTAL ORGANIC HALIDES

Client:	GIANT REFINING COMPANY		
Project Location:	Unknown	Report Date:	04/09/96
Sample ID:	SMW4-031596	Date Sampled:	03/15/96
Sample Number:	0396W00440/0696G00550	Date Received:	03/26/96
Sample Matrix:	Water	Date Analyzed:	04/08/96
Condition:	Intact, Cool, pH=7		

Parameter	Concentration (ug/L)	Detection Limit (ug/L)
Total Organic Halides	ND	30
Concentration is the average of the replicates reported below		
Replicate #1	ND	30
Replicate #2	ND	30

ND - Analyte not detected at stated detection limit.

Reference: Method 9020B: TOTAL ORGANIC HALIDES (TOX)
Test Methods for Evaluating Solid Waste, SW-846, United States Environmental Protection Agency, Third Edition, Final Update II, September 1994.

Comments:

DG/RPD
Analyst

Review

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EPA Method 8260
VOLATILE ORGANIC COMPOUNDS

Client: GIANT REFINING COMPANY
Project: NA
Sample ID: SMW4-031596
Laboratory ID: 0396G00440 / 0696G00539
Sample Matrix Water
Preservative: HCl
Condition: Intact, pH < 2

Report Date: 03/25/96
Date Sampled: 03/15/96
Date Received: 03/22/96
Date Extracted: 03/22/96
Date Analyzed: 03/23/96
Time Analyzed: 2:04 AM

Analyte	Concentration (mg/L)	Detection Limit (mg/L)
Acetone	ND	0.03
Acrolein	ND	0.02
Acrylonitrile	ND	0.01
Benzene	ND	0.005
Bromodichloromethane	ND	0.005
Bromoform	ND	0.005
Bromomethane	ND	0.005
Carbon Disulfide	ND	0.01
Carbon Tetrachloride	ND	0.005
Chlorobenzene	ND	0.005
Chlorodibromoethane	ND	0.005
Chloroethane	ND	0.005
2-Chloroethylvinyl ether	ND	0.005
Chloroform	ND	0.005
Chloromethane	ND	0.005
Dibromomethane	ND	0.005
t-1,4-Dichloro-2-butene	ND	0.05
Dichlorodifluoromethane	ND	0.005
1,1-Dichloroethane	ND	0.005
1,2-Dichloroethane	ND	0.005
1,1-Dichloroethene	ND	0.005
trans-1,2-Dichloroethene	ND	0.005
1,2-Dichloropropane	ND	0.005
cis-1,3-Dichloropropene	ND	0.005
trans-1,3-Dichloropropene	ND	0.005
Ethyl Benzene	ND	0.005
Ethyl Methacrylate	ND	0.005
2-Hexanone	ND	0.01
Iodomethane	ND	0.01
Methylene Chloride	ND	0.02
Methyl Ethyl Ketone	ND	0.01
4-Methyl-2-Petanone	ND	0.01
Styrene	ND	0.005

ND - Analyte not detected at stated limit of detection

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EPA Method 8260
VOLATILE ORGANIC COMPOUNDS

Client: GIANT REFINING COMPANY
Sample ID: SMW4-031596
Laboratory ID: 0396G00440 / 0696G00539
Matrix: Water

Report Date: 03/25/96
Date Sampled: 03/15/96
Date Analyzed: 03/23/96
Time Analyzed: 2:04 AM

Analyte	Concentration (mg/L)	Detection Limit (mg/L)
1,1,2,2-Tetrachloroethane	ND	0.005
Tetrachloroethene	ND	0.005
Toluene	ND	0.005
1,1,1-Trichloroethane	ND	0.005
1,1,2-Trichloroethane	ND	0.005
Trichloroethene	ND	0.005
Trichlorofluoromethane	ND	0.005
1,2,3-Trichloropropane	ND	0.02
Vinyl Acetate	ND	0.01
Vinyl Chloride	ND	0.005
Xylenes	ND	0.005

ND - Analyte not detected at stated limit of detection

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Dibromofluoromethane	100%	86 - 118%
Toluene-d8	99%	88 - 110%
Bromofluorobenzene	99%	86 - 117%

imL

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EPA Method 8260
VOLATILE ORGANIC COMPOUNDS
ADDITIONAL DETECTED COMPOUNDS

Client: GIANT REFINING COMPANY
Sample ID: SMW4-031596
Laboratory ID: 0396G00440 / 0696G00539
Matrix: Water

Report Date: 03/25/96
Date Sampled: 03/15/96
Date Analyzed: 03/23/96
Time Analyzed: 2:04 AM

Tentative Identification	Retention Time (Minutes)	Concentration * (mg/L)
None detected at reportable levels		

* - Concentration calculated using assumed Relative Response Factor = 1

Reference: Method 8260: Volatile Organic Compounds by Gas Chromatography / Mass Spectrometry: Capillary Column Technique. Test Methods for Evaluating Solid Waste, SW - 846, United States Environmental Protection Agency, Final Update II, September 1994.

Comments:

Analyst

Ramona R. Dennis
Review

Inter-Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client:	GIANT REFINING COMPANY		Date Reported:	11/12/96
Sample ID:	SMW-4-11496		Date Sampled:	11/04/96
Project ID:	Ciniza Refinery		Date Received:	11/08/96
Lab ID:	B9610070	0396G02439	Date Extracted:	NA
Matrix:	Water		Date Analyzed:	11/11/96

Parameter	Result	PQL	Units
1,1,1-Trichloroethane	ND	5.0	ug/L
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L
1,1,2-Trichloroethane	ND	5.0	ug/L
1,1-Dichloroethane	ND	5.0	ug/L
1,1-Dichloroethene	ND	5.0	ug/L
1,2-Dichloroethane	ND	5.0	ug/L
1,2-Dichloropropane	ND	5.0	ug/L
2-Butanone (MEK)	ND	20	ug/L
2-Hexanone	ND	5.0	ug/L
4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L
Acetone	ND	20	ug/L
Benzene	ND	5.0	ug/L
Bromodichloromethane	ND	5.0	ug/L
Bromoform	ND	5.0	ug/L
Bromomethane	ND	5.0	ug/L
Carbon Disulfide	ND	5.0	ug/L
Carbon Tetrachloride	ND	5.0	ug/L
Chlorobenzene	ND	5.0	ug/L
Chloroethane	ND	5.0	ug/L
Chloroform	ND	5.0	ug/L
Chloromethane	ND	5.0	ug/L
cis-1,3-Dichloropropene	ND	5.0	ug/L
Dibromochloromethane	ND	5.0	ug/L
Ethylbenzene	ND	5.0	ug/L
m,p-Xylene	ND	5.0	ug/L
Methylene chloride	ND	20	ug/L
o-Xylene	ND	5.0	ug/L
Styrene	ND	5.0	ug/L
Tetrachloroethene (PCE)	ND	5.0	ug/L
Toluene	ND	5.0	ug/L

Continued

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client:	GIANT REFINING COMPANY		Date Reported:	11/12/96
Sample ID:	SMW-4-11496		Date Sampled:	11/04/96
Project ID:	Ciniza Refinery		Date Received:	11/08/96
Lab ID:	B9610070	0396G02439	Date Extracted:	NA
Matrix:	Water		Date Analyzed:	11/11/96

Parameter	Result	PQL	Units
Continued			
trans-1,2-Dichloroethene	ND	5.0	ug/L
trans-1,3-Dichloropropene	ND	5.0	ug/L
Trichloroethene (TCE)	ND	5.0	ug/L
Vinyl Chloride	ND	5.0	ug/L
Xylenes (total)	ND	5.0	ug/L

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
1,2-Dichloroethane-d4	87	81 - 126
Bromofluorobenzene	105	78 - 112
Toluene-d8	121	83 - 127

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8260, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Rev. 1, November 1992.

Analyst E.D.

Reviewed CB

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client:	**Giant Refining Company - Ciniza**	Date Reported:	12/10/96
Project:	Gallup, NM	Date Sampled:	11/04/96
Sample ID:	SMW - 4 - 11496	Time Sampled:	8:25 AM
Laboratory ID:	0396G02439	Date Received:	11/06/96
Sample Matrix:	Water		
Condition:	Cool/Intact		

Parameter	Analytical Result	Units
Lab pH (1)	8.5	s.u.
Lab pH (2)	8.5	s.u.
Lab pH (3)	8.5	s.u.
Lab pH (4)	8.5	s.u.
Lab Conductivity @ 25° C (1)	1243	umhos/cm
Lab Conductivity @ 25° C (2)	1240	umhos/cm
Lab Conductivity @ 25° C (3)	1239	umhos/cm
Lab Conductivity @ 25° C (4)	1239	umhos/cm
Total Organic Carbon	0.9	mg/L
Total Organic Halogens	0.006	mg/L
Trace Metals (Total)		
Chromium	<0.01	mg/L
Lead	<0.05	mg/L

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 18th ed., 1992.

Comments:

Reported by _____

Reviewed by DB

imL

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EPA Method 8260
VOLATILE ORGANIC COMPOUNDS

Client: GIANT REFINING COMPANY
Project: NA
Sample ID: SMW5-031496
Laboratory ID: 0396G00441 / 0696G00540
Sample Matrix Water
Preservative: HCl
Condition: Intact, pH < 2

Report Date: 03/25/96
Date Sampled: 03/15/96
Date Received: 03/22/96
Date Extracted: 03/22/96
Date Analyzed: 03/23/96
Time Analyzed: 2:45 AM

Analyte	Concentration (mg/L)	Detection Limit (mg/L)
Acetone	ND	0.03
Acrolein	ND	0.02
Acrylonitrile	ND	0.01
Benzene	ND	0.005
Bromodichloromethane	ND	0.005
Bromoform	ND	0.005
Bromomethane	ND	0.005
Carbon Disulfide	ND	0.01
Carbon Tetrachloride	ND	0.005
Chlorobenzene	ND	0.005
Chlorodibromoethane	ND	0.005
Chloroethane	ND	0.005
2-Chloroethylvinyl ether	ND	0.005
Chloroform	ND	0.005
Chloromethane	ND	0.005
Dibromomethane	ND	0.005
t-1,4-Dichloro-2-butene	ND	0.05
Dichlorodifluoromethane	ND	0.005
1,1-Dichloroethane	ND	0.005
1,2-Dichloroethane	ND	0.005
1,1-Dichloroethene	ND	0.005
trans-1,2-Dichloroethene	ND	0.005
1,2-Dichloropropane	ND	0.005
cis-1,3-Dichloropropene	ND	0.005
trans-1,3-Dichloropropene	ND	0.005
Ethyl Benzene	ND	0.005
Ethyl Methacrylate	ND	0.005
2-Hexanone	ND	0.01
Iodomethane	ND	0.01
Methylene Chloride	ND	0.02
Methyl Ethyl Ketone	ND	0.01
4-Methyl-2-Petanone	ND	0.01
Styrene	ND	0.005

ND - Analyte not detected at stated limit of detection

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EPA Method 8260
VOLATILE ORGANIC COMPOUNDS

Client: GIANT REFINING COMPANY
Sample ID: SMW5-031496
Laboratory ID: 0396G00441 / 0696G00540
Matrix: Water

Report Date: 03/25/96
Date Sampled: 03/15/96
Date Analyzed: 03/23/96
Time Analyzed: 2:45 AM

Analyte	Concentration (mg/L)	Detection Limit (mg/L)
1,1,2,2-Tetrachloroethane	ND	0.005
Tetrachloroethene	ND	0.005
Toluene	ND	0.005
1,1,1-Trichloroethane	ND	0.005
1,1,2-Trichloroethane	ND	0.005
Trichloroethene	ND	0.005
Trichlorofluoromethane	ND	0.005
1,2,3-Trichloropropane	ND	0.02
Vinyl Acetate	ND	0.01
Vinyl Chloride	ND	0.005
Xylenes	ND	0.005

ND - Analyte not detected at stated limit of detection

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Dibromofluoromethane	101%	86 - 118%
Toluene-d8	98%	88 - 110%
Bromofluorobenzene	100%	86 - 117%

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client:	Giant Refining Company	Date Reported:	04/22/96
Project:	Ciniza	Date Sampled:	03/14/96
Sample ID:	SMW5-031496	Time Sampled:	1:08 PM
Laboratory ID:	0396W00441	Date Received:	03/21/96
Sample Matrix:	Water		
Condition:	Cool/Intact		

Parameter	Total Analytical Result	Units
Trace Metals		
Chromium.....	<0.01	mg/L
Lead.....	<0.005	mg/L

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 19th ed., 1995.

Comments:

Reported by WM

Reviewed by [illegible]

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client:	**Giant Refining Company**		
Project:	Ciniza		
Sample ID:	SMW5-031496	Date Reported:	04/22/96
Laboratory ID:	0396W00441	Date Sampled:	03/14/96
Sample Matrix:	Water	Time Sampled:	1:08 PM
Condition:	Cool/Intact	Date Received:	03/21/96

Parameter	Analytical Result	Units		Units
Lab pH	8.6	s.u.		
Lab Conductivity @ 25° C	1,230	umhos/cm		
Total Dissolved Solids @ 180°C	704	mg/L		
Phenols	<0.01	mg/L		
Total Alkalinity as CaCO3	366	mg/L		
Total Hardness as CaCO3	9.0	mg/L		
Total Organic Carbon	1.0	mg/L		
Bicarbonate as HCO3	427	mg/L	7.00	meq/L
Carbonate as CO3	9.6	mg/L	0.32	meq/L
Hydroxide as OH	<1	mg/L	<0.01	meq/L
Chloride	66.6	mg/L	1.88	meq/L
Sulfate	160	mg/L	3.34	meq/L
Calcium	2.20	mg/L	0.11	meq/L
Magnesium	1.82	mg/L	0.15	meq/L
Potassium	1.96	mg/L	0.05	meq/L
Sodium	276	mg/L	12.0	meq/L
Cations			12.3	meq/L
Anions			12.5	meq/L
Cation/Anion Difference			0.93	%

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 19th ed., 1995.

Comments:

Reported by WM

Reviewed by [signature]

imL

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TOX
TOTAL ORGANIC HALIDES

Client:	GIANT REFINING COMPANY		
Project Location:	Unknown	Report Date:	04/09/96
Sample ID:	SMW5-031496	Date Sampled:	03/14/96
Sample Number:	0396W00441/0696G00551	Date Received:	03/26/96
Sample Matrix:	Water	Date Analyzed:	04/09/96
Condition:	Intact, Cool, pH=7		

Parameter	Concentration (ug/L)	Detection Limit (ug/L)
Total Organic Halides	ND	30
Concentration is the average of the replicates reported below		
Replicate #1	ND	30
Replicate #2	ND	30

ND - Analyte not detected at stated detection limit.

Reference: Method 9020B: TOTAL ORGANIC HALIDES (TOX)
Test Methods for Evaluating Solid Waste, SW-846, United States Environmental Protection Agency, Third Edition, Final Update II, September 1994.

Comments:

DG/RRD
Analyst

Review

imL

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EPA Method 8260
VOLATILE ORGANIC COMPOUNDS
ADDITIONAL DETECTED COMPOUNDS

Client: GIANT REFINING COMPANY
Sample ID: SMW5-031496
Laboratory ID: 0396G00441 / 0696G00540
Matrix: Water

Report Date: 03/25/96
Date Sampled: 03/15/96
Date Analyzed: 03/23/96
Time Analyzed: 2:45 AM

Tentative Identification	Retention Time (Minutes)	Concentration * (mg/L)
None detected at reportable levels		

* - Concentration calculated using assumed Relative Response Factor = 1

Reference: Method 8260: Volatile Organic Compounds by Gas Chromatography / Mass Spectrometry: Capillary Column Technique. Test Methods for Evaluating Solid Waste, SW - 846, United States Environmental Protection Agency, Final Update II, September 1994.

Comments:

Analyst

Ramona R. Dennis
Review

Inter-Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client:	GIANT REFINING COMPANY		Date Reported:	11/12/96
Sample ID:	SMW-5-103096		Date Sampled:	10/30/96
Project ID:	Ciniza		Date Received:	11/05/96
Lab ID:	B9610004	0396G02415	Date Extracted:	NA
Matrix:	Water		Date Analyzed:	11/06/96

Parameter	Result	PQL	Units
1,1,1-Trichloroethane	ND	5.0	ug/L
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L
1,1,2-Trichloroethane	ND	5.0	ug/L
1,1-Dichloroethane	ND	5.0	ug/L
1,1-Dichloroethene	ND	5.0	ug/L
1,2-Dichloroethane	ND	5.0	ug/L
1,2-Dichloropropane	ND	5.0	ug/L
2-Butanone (MEK)	ND	20	ug/L
2-Hexanone	ND	5.0	ug/L
4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L
Acetone	ND	20	ug/L
Benzene	ND	5.0	ug/L
Bromodichloromethane	ND	5.0	ug/L
Bromoform	ND	5.0	ug/L
Bromomethane	ND	5.0	ug/L
Carbon Disulfide	ND	5.0	ug/L
Carbon Tetrachloride	ND	5.0	ug/L
Chlorobenzene	ND	5.0	ug/L
Chloroethane	ND	5.0	ug/L
Chloroform	ND	5.0	ug/L
Chloromethane	ND	5.0	ug/L
cis-1,3-Dichloropropene	ND	5.0	ug/L
Dibromochloromethane	ND	5.0	ug/L
Ethylbenzene	ND	5.0	ug/L
m,p-Xylene	ND	5.0	ug/L
Methylene chloride	ND	20	ug/L
o-Xylene	ND	5.0	ug/L
Styrene	ND	5.0	ug/L
Tetrachloroethene (PCE)	ND	5.0	ug/L
Toluene	ND	5.0	ug/L

Continued

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client:	GIANT REFINING COMPANY		Date Reported:	11/12/96
Sample ID:	SMW-5-103096		Date Sampled:	10/30/96
Project ID:	Ciniza		Date Received:	11/05/96
Lab ID:	B9610004	0396G02415	Date Extracted:	NA
Matrix:	Water		Date Analyzed:	11/06/96

Parameter	Result	PQL	Units
Continued			
trans-1,2-Dichloroethene	ND	5.0	ug/L
trans-1,3-Dichloropropene	ND	5.0	ug/L
Trichloroethene (TCE)	ND	5.0	ug/L
Vinyl Chloride	ND	5.0	ug/L
Xylenes (total)	ND	5.0	ug/L

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
1,2-Dichloroethane-d4	98	76 - 114
Bromofluorobenzene	100	86 - 115
Toluene-d8	99	88 - 110

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8260, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Rev. 1, November 1992.

Analyst RRD

Reviewed CTB

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client:	**Giant Refining Company - Ciniza**	Date Reported:	12/05/96
Project:	Gallup	Date Sampled:	10/30/96
Sample ID:	SMW - 5 -103096	Time Sampled:	12:02 PM
Laboratory ID:	0396W02415	Date Received:	11/01/96
Sample Matrix:	Water		
Condition:	Cool/Intact		

Parameter	Analytical Result	Units
Lab pH (1)	8.6	s.u.
Lab pH (2)	8.6	s.u.
Lab pH (3)	8.6	s.u.
Lab pH (4)	8.6	s.u.
Lab Conductivity @ 25° C (1)	1231	umhos/cm
Lab Conductivity @ 25° C (2)	1230	umhos/cm
Lab Conductivity @ 25° C (3)	1227	umhos/cm
Lab Conductivity @ 25° C (4)	1233	umhos/cm
Total Organic Carbon	1.2	mg/L
Total Organic Halogens	8.25	mg/L
Trace Metals (Total)		
Chromium	<0.01	mg/L
Lead	<0.05	mg/L

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 18th ed., 1992.

Comments:

Reported by_____

Reviewed by JB

nter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client: **Giant Refinery**
Project: Not given
Sample ID: OW1-032596
Laboratory ID: 0396W00503
Sample Matrix: Water
Condition: Cool/Intact

Date Reported: 04/17/96
Date Sampled: 03/25/96
Time Sampled: 13:00
Date Received: 04/01/96

Parameter	Analytical Result	Units		Units
Lab pH	8.6	s.u.		
Lab Conductivity @ 25° C	1,380	umhos/cm		
Total Dissolved Solids @ 180°C	832	mg/L		
Total Dissolved Solids (Calc)	813	mg/L		
Total Alkalinity as CaCO3	407	mg/L		
Total Hardness as CaCO3	8	mg/L		
Bicarbonate as HCO3	467	mg/L	7.66	meq/L
Carbonate as CO3	14	mg/L	0.48	meq/L
Hydroxide	<1	mg/L	<0.01	meq/L
Chloride	49	mg/L	1.38	meq/L
Sulfate	216	mg/L	4.51	meq/L
Calcium	2.6	mg/L	0.13	meq/L
Magnesium	0.2	mg/L	0.02	meq/L
Potassium	0.8	mg/L	0.02	meq/L
Sodium	299	mg/L	13.02	meq/L
Cations			13.19	meq/L
Anions			14.03	meq/L
Cation/Anion Difference			3.09	%

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 19th ed., 1995.

Reported by WM

Reviewed by CSH

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

VOLATILE AROMATIC HYDROCARBONS

Giant Refining Co.

Project ID:	Not Given	Report Date:	04/11/96
Sample ID:	OW1-032596	Date Sampled:	03/25/96
Lab ID:	0396W00503	Date Received:	04/01/96
Sample Matrix:	Water	Date Extracted:	NA
Condition:	Cool/Intact	Date Analyzed:	04/04/96

Target Analyte	Concentration (ppb)	Detection Limit (ppb)
Benzene	ND	0.2
Toluene	ND	0.2
Ethylbenzene	ND	0.2
m,p-Xylenes	ND	0.2
o-Xylene	ND	0.2

ND - Analyte not detected at the stated detection limit.

Quality Control:	Surrogate	Percent Recovery	Acceptance Limits
	Bromofluorobenzene	103.0	75 -125%

Reference: Method 5030, Purge and Trap; Method 8020, Aromatic Volatile Organics; Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1986.

Comments:

alyst

Review

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client:	**Giant Refinery**	Date Reported:	04/10/96
Project:	NMED-LTA	Date Sampled:	03/18/96
Sample ID:	OW2-031896	Time Sampled:	15:00
Laboratory ID:	0396W00421	Date Received:	03/20/96
Sample Matrix:	Water		
Condition:	Cool/Intact		

Parameter	Analytical Result	Units		Units
Lab pH	7.9	s.u.		
Lab Conductivity @ 25° C	1,340	umhos/cm		
Total Dissolved Solids @ 180°C	840	mg/L		
Total Dissolved Solids (Calc)	786	mg/L		
Total Alkalinity as CaCO3	664	mg/L		
Total Hardness as CaCO3	35.5	mg/L		
Bicarbonate as HCO3	810	mg/L	13.3	meq/L
Carbonate as CO3	<1	mg/L	<0.01	meq/L
Hydroxide	<1	mg/L	<0.01	meq/L
Chloride	42.4	mg/L	1.20	meq/L
Sulfate	12.3	mg/L	0.26	meq/L
Calcium	9.02	mg/L	0.45	meq/L
Magnesium	3.16	mg/L	0.26	meq/L
Potassium	0.39	mg/L	0.01	meq/L
Sodium	320	mg/L	13.9	meq/L
Cations			14.6	meq/L
Anions			14.7	meq/L
Cation/Anion Difference			0.32	%

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 19th ed., 1995.

Reported by JB

Reviewed by WM

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

VOLATILE AROMATIC HYDROCARBONS

Giant Refining Co.

Project ID:	NMED-LTA	Report Date:	04/02/96
Sample ID:	OW2 031896	Date Sampled:	03/18/96
Lab ID:	0396W00421	Date Received:	03/20/96
Sample Matrix:	Water	Date Extracted:	NA
Condition:	Cool/Intact	Date Analyzed:	03/27/96

Target Analyte	Concentration (ppb)	Detection Limit (ppb)
Benzene	ND	0.2
Toluene	ND	0.2
Ethylbenzene	ND	0.2
m,p-Xylenes	ND	0.2
o-Xylene	ND	0.2

ND - Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Bromofluorobenzene	120.8	75 -125%

Reference: Method 5030, Purge and Trap; Method 8020, Aromatic Volatile Organics; Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1986.

Comments:

alyst

Review

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client: **Giant Refinery**
Project: NMED-LTA
Sample ID: OW3-031896
Laboratory ID: 0396W00422
Sample Matrix: Water
Condition: Cool/Intact

Date Reported: 04/10/96
Date Sampled: 03/18/96
Time Sampled: 13:15
Date Received: 03/20/96

Parameter	Analytical Result	Units		Units
Lab pH	8.0	s.u.		
Lab Conductivity @ 25° C	1,340	umhos/cm		
Total Dissolved Solids @ 180°C	844	mg/L		
Total Dissolved Solids (Calc)	798	mg/L		
Total Alkalinity as CaCO3	665	mg/L		
Total Hardness as CaCO3	36.0	mg/L		
Bicarbonate as HCO3	811	mg/L	13.3	meq/L
Carbonate as CO3	<1	mg/L	<0.01	meq/L
Hydroxide	<1	mg/L	<0.01	meq/L
Chloride	42.2	mg/L	1.19	meq/L
Sulfate	26.3	mg/L	0.55	meq/L
Calcium	9.42	mg/L	0.47	meq/L
Magnesium	3.04	mg/L	0.25	meq/L
Potassium	0.78	mg/L	0.02	meq/L
Sodium	317	mg/L	13.8	meq/L
Cations			14.6	meq/L
Anions			15.0	meq/L
Cation/Anion Difference			1.65	%

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 19th ed., 1995.

Reported by SB

Reviewed by WM

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

VOLATILE AROMATIC HYDROCARBONS

Giant Refining Co.

Project ID:	NMED-LTA	Report Date:	04/02/96
Sample ID:	OW3 031896	Date Sampled:	03/18/96
Lab ID:	0396W00422	Date Received:	03/20/96
Sample Matrix:	Water	Date Extracted:	NA
Condition:	Cool/Intact	Date Analyzed:	03/27/96

Target Analyte	Concentration (ppb)	Detection Limit (ppb)
Benzene	ND	0.2
Toluene	ND	0.2
Ethylbenzene	ND	0.2
m,p-Xylenes	ND	0.2
o-Xylene	ND	0.2

ND - Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Bromofluorobenzene	100.8	75 -125%

Reference: Method 5030, Purge and Trap; Method 8020, Aromatic Volatile Organics; Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1986.

Comments:

Analyst

Review

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client:	Giant Refining		
Project:	NMED-LTA		
Sample ID:	OW11-031396	Date Reported:	04/26/96
Laboratory ID:	0396W00420	Date Sampled:	03/13/96
Sample Matrix:	Water	Time Sampled:	2:05 PM
Condition:	Cool/Intact	Date Received:	03/20/96

Parameter	Analytical Result	Units		Units
Lab pH	8.3	s.u.		
Lab Conductivity @ 25° C	2,510	umhos/cm		
Total Dissolved Solids @ 180°C	1,630	mg/L		
Total Dissolved Solids (Calc)	1,610	mg/L		
Phenols	<0.01	mg/L		
Total Alkalinity as CaCO3	348	mg/L		
Total Hardness as CaCO3	28.0	mg/L		
Total Organic Carbon	2.8	mg/L		
Bicarbonate as HCO3	420	mg/L	6.88	meq/L
Carbonate as CO3	2.4	mg/L	0.08	meq/L
Hydroxide as OH	<1	mg/L	<0.01	meq/L
Chloride	108	mg/L	3.05	meq/L
Sulfate	708	mg/L	14.7	meq/L
Calcium	9.42	mg/L	0.47	meq/L
Magnesium	1.09	mg/L	0.09	meq/L
Potassium	1.56	mg/L	0.04	meq/L
Sodium	575	mg/L	25.0	meq/L
Cations			25.6	meq/L
Anions			24.8	meq/L
Cation/Anion Difference			1.74	%

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 19th ed., 1995.

Comments:

Reported by SB

Reviewed by AV

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client:	Giant Refining		
Project:	NMED-LTA	Date Reported:	04/26/96
Sample ID:	OW11-031396	Date Sampled:	03/13/96
Laboratory ID:	0396W00420	Time Sampled:	2:05 PM
Sample Matrix:	Water	Date Received:	03/20/96
Condition:	Cool/Intact		

Parameter	Dissolved Analytical Result	Units	Total Analytical Result	Units
Trace Metals				
Arsenic.....	<0.005	mg/L		
Barium.....	0.01	mg/L		
Cadmium.....	<0.002	mg/L		
Chromium.....	NA	mg/L	<0.01	mg/L
Lead.....	NA	mg/L	<0.005	mg/L
Manganese.....	<0.02	mg/L		
Mercury.....	NA	mg/L	<0.001	mg/L
Selenium.....	<0.005	mg/L		
Silver.....	<0.01	mg/L		

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 19th ed., 1995.

Comments:

Reported by SB

Reviewed by

Inter-Mountain Laboratories, Inc.

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Organics Laboratory
3304 Longmire Drive College Station, Texas 77845
Phone (409) 774-4999 Fax (409) 696-0962

EPA Method 8260
VOLATILE ORGANIC COMPOUNDS

Client: GIANT REFINING COMPANY
Project: NMED-LTA
Sample ID: OW-11 031396
Laboratory ID: 0396W00420 / 0696G00478
Sample Matrix Water
Preservative: HCl
Condition: Intact, pH < 2

Report Date: 04/01/96
Date Sampled: 03/13/96
Date Received: 03/21/96
Date Extracted: 03/27/96
Date Analyzed: 03/27/96
Time Analyzed: 1:20 AM

Analyte	Concentration (mg/L)	Detection Limit (mg/L)
Acetone	ND	0.03
Acrolein	ND	0.02
Acrylonitrile	ND	0.01
Benzene	ND	0.005
Bromodichloromethane	ND	0.005
Bromoform	ND	0.005
Bromomethane	ND	0.005
Carbon Disulfide	ND	0.01
Carbon Tetrachloride	ND	0.005
Chlorobenzene	ND	0.005
Chlorodibromoethane	ND	0.005
Chloroethane	ND	0.005
2-Chloroethylvinyl ether	ND	0.005
Chloroform	ND	0.005
Chloromethane	ND	0.005
Dibromomethane	ND	0.005
t-1,4-Dichloro-2-butene	ND	0.05
Dichlorodifluoromethane	ND	0.005
1,1-Dichloroethane	ND	0.005
1,2-Dichloroethane	ND	0.005
1,1-Dichloroethene	ND	0.005
trans-1,2-Dichloroethene	ND	0.005
1,2-Dichloropropane	ND	0.005
cis-1,3-Dichloropropene	ND	0.005
trans-1,3-Dichloropropene	ND	0.005
Ethyl Benzene	ND	0.005
Ethyl Methacrylate	ND	0.005
2-Hexanone	ND	0.01
Iodomethane	ND	0.01
Methylene Chloride	ND	0.02
Methyl Ethyl Ketone	ND	0.01
4-Methyl-2-Petanone	ND	0.01
Styrene	ND	0.005

ND - Analyte not detected at stated limit of detection

Inter-Mountain Laboratories, Inc.

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EPA Method 8260
VOLATILE ORGANIC COMPOUNDS

Client: GIANT REFINING COMPANY
Sample ID: OW-11 031396
Laboratory ID: 0396W00420 / 0696G00478
Matrix: Water

Report Date: 04/01/96
Date Sampled: 03/13/96
Date Analyzed: 03/27/96
Time Analyzed: 1:20 AM

Analyte	Concentration (mg/L)	Detection Limit (mg/L)
1,1,2,2-Tetrachloroethane	ND	0.005
Tetrachloroethene	ND	0.005
Toluene	ND	0.005
1,1,1-Trichloroethane	ND	0.005
1,1,2-Trichloroethane	ND	0.005
Trichloroethene	ND	0.005
Trichlorofluoromethane	ND	0.005
1,2,3-Trichloropropane	ND	0.02
Vinyl Acetate	ND	0.01
Vinyl Chloride	ND	0.005
Xylenes	ND	0.005

ND - Analyte not detected at stated limit of detection

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Dibromofluoromethane	101%	86 - 118%
Toluene-d8	98%	88 - 110%
Bromofluorobenzene	98%	86 - 117%

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Phone (409) 774-4999 Fax (409) 696-0962

EPA Method 8260
VOLATILE ORGANIC COMPOUNDS
ADDITIONAL DETECTED COMPOUNDS

Client: **GIANT REFINING COMPANY**
Sample ID: OW-11 031396
Laboratory ID: 0396W00420 / 0696G00478
Matrix: Water

Report Date: 04/01/96
Date Sampled: 03/13/96
Date Analyzed: 03/27/96
Time Analyzed: 1:20 AM

Tentative Identification	Retention Time (Minutes)	Concentration * (mg/L)
None detected at reportable levels		

* - Concentration calculated using assumed Relative Response Factor = 1

Reference: Method 8260: Volatile Organic Compounds by Gas Chromatography / Mass Spectrometry: Capillary Column Technique. Test Methods for Evaluating Solid Waste, SW - 846, United States Environmental Protection Agency, Final Update II, September 1994.

Comments:

Analyst

Ramona R. Dennis
Review

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Inter-Mountain Laboratories, In

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3304 Longmire Drive College Station, Texas 77
Phone (409) 774-4999 Fax (409) 696-0

TOX
TOTAL ORGANIC HALIDES

Client:	GIANT REFINING COMPANY		
Project Location:	Unknown	Report Date:	04/09/96
Sample ID:	DW11-031396	Date Sampled:	03/13/96
Sample Number:	0396W00420/0696G00548	Date Received:	03/26/96
Sample Matrix:	Water	Date Analyzed:	04/08/96
Condition:	Intact, Cool, pH=7		

Parameter	Concentration (ug/L)	Detection Limit (ug/L)
Total Organic Halides	ND	30
Concentration is the average of the replicates reported below		
Replicate #1	ND	30
Replicate #2	ND	30

ND - Analyte not detected at stated detection limit.

Reference: Method 9020B: TOTAL ORGANIC HALIDES (TOX)
Test Methods for Evaluating Solid Waste, SW-846, United States Environmental Protection Agency, Third Edition, Final Update II, September 1994.

Comments:

DG / RRS
Analyst

Review

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client: **GIANT REFINING COMPANY**
Sample ID: OW-11-11496
Project ID: Ciniza Refinery
Lab ID: B9610068 0396G02437
Matrix: Water

Date Reported: 11/12/96
Date Sampled: 11/04/96
Date Received: 11/08/96
Date Extracted: NA
Date Analyzed: 11/11/96

Parameter	Result	PQL	Units
1,1,1-Trichloroethane	ND	5.0	ug/L
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L
1,1,2-Trichloroethane	ND	5.0	ug/L
1,1-Dichloroethane	ND	5.0	ug/L
1,1-Dichloroethene	ND	5.0	ug/L
1,2-Dichloroethane	ND	5.0	ug/L
1,2-Dichloropropane	ND	5.0	ug/L
2-Butanone (MEK)	ND	20	ug/L
2-Hexanone	ND	5.0	ug/L
4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L
Acetone	ND	20	ug/L
Benzene	ND	5.0	ug/L
Bromodichloromethane	ND	5.0	ug/L
Bromoform	ND	5.0	ug/L
Bromomethane	ND	5.0	ug/L
Carbon Disulfide	ND	5.0	ug/L
Carbon Tetrachloride	ND	5.0	ug/L
Chlorobenzene	ND	5.0	ug/L
Chloroethane	ND	5.0	ug/L
Chloroform	ND	5.0	ug/L
Chloromethane	ND	5.0	ug/L
cis-1,3-Dichloropropene	ND	5.0	ug/L
Dibromochloromethane	ND	5.0	ug/L
Ethylbenzene	ND	5.0	ug/L
m,p-Xylene	ND	5.0	ug/L
Methylene chloride	ND	20	ug/L
o-Xylene	ND	5.0	ug/L
Styrene	ND	5.0	ug/L
Tetrachloroethene (PCE)	ND	5.0	ug/L
Toluene	ND	5.0	ug/L

Continued

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client:	GIANT REFINING COMPANY		Date Reported:	11/12/96
Sample ID:	OW-11-11496		Date Sampled:	11/04/96
Project ID:	Ciniza Refinery		Date Received:	11/08/96
Lab ID:	B9610068	0396G02437	Date Extracted:	NA
Matrix:	Water		Date Analyzed:	11/11/96

Parameter	Result	PQL	Units
Continued			
trans-1,2-Dichloroethene	ND	5.0	ug/L
trans-1,3-Dichloropropene	ND	5.0	ug/L
Trichloroethene (TCE)	ND	5.0	ug/L
Vinyl Chloride	ND	5.0	ug/L
Xylenes (total)	ND	5.0	ug/L

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
1,2-Dichloroethane-d4	90	81 - 126
Bromofluorobenzene	102	78 - 112
Toluene-d8	108	83 - 127

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8260, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Rev. 1, November 1992.

Analyst E.D.

Reviewed CEB

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client: **Giant Refining Company - Ciniza**
Project: Gallup, NM
Sample ID: OW - 11 - 11496
Laboratory ID: 0396G02437
Sample Matrix: Water
Condition: Cool/Intact

Date Reported: 12/13/96
Date Sampled: 11/04/96
Time Sampled: 12:25 PM
Date Received: 11/06/96

Parameter	Analytical Result	Units
Lab pH (1)	8.4	s.u.
Lab pH (2)	8.3	s.u.
Lab pH (3)	8.4	s.u.
Lab pH (4)	8.4	s.u.
Lab Conductivity @ 25° C (1)	2730	umhos/cm
Lab Conductivity @ 25° C (2)	2730	umhos/cm
Lab Conductivity @ 25° C (3)	2700	umhos/cm
Lab Conductivity @ 25° C (4)	2720	umhos/cm
Total Organic Carbon	2.1	mg/L
Total Organic Halogens	0.014	mg/L

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 18th ed., 1992.

Comments:

Reported by _____

Reviewed by _____

TO: TEXAS ORGANIC

FROM: IML FARMINGTON, NM

CHAIN OF CUSTODY RECORD

iml Inter-Mountain Laboratories, Inc.

Project Name

Project Location

ANALYSES / PARAMETERS

ler: (Signature)

Chain of Custody Tape No.

Sample No./ Identification	Date	Time	Lab Number	Matrix	No. of Containers	Remarks
W3-031596	3-15-96	1305		H_2O	8	SEE ATTACHED LIST
W4-031596	3-15-96	10:38		"	8	
W5-031496	3-14-96	1308		"	8	
W2-031696	3-16-96	0900	0396W00442	"	8	
W1-031696	3-16-96	1390	0396W00443	"	8	
						cool + intact

	Date	Time	Received by: (Signature)	Date	Time
nquished by: (Signature)	3-20-96	11:04	Chris Raymer	3/21/96	0900
nquished by: (Signature)			Received by: (Signature)		
nquished by: (Signature)			Received by laboratory: (Signature)		

Inter-Mountain Laboratories, Inc.

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1701 Phillips Circle, Gillette, Wyoming 82718, Telephone (307) 682-8945

2506 West Main Street, Farmington, NM 87401, Telephone (505) 326-4737

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Phone (409) 774-4999 Fax (409) 696-0962

QUALITY CONTROL REPORT - METHOD BLANK

EPA METHOD 8260 - VOLATILE ORGANIC COMPOUNDS

Sample ID: Method Blank
Laboratory ID: MB0322
Sample Matrix Water

Report Date: 03/25/96
Date Extracted: 03/22/96
Date Analyzed: 03/22/96
Time Analyzed: 7:04 PM

Analyte	Concentration (mg/L)	Detection Limit (mg/L)
Acetone	ND	0.03
Acrolein	ND	0.02
Acrylonitrile	ND	0.01
Benzene	ND	0.005
Bromodichloromethane	ND	0.005
Bromoform	ND	0.005
Bromomethane	ND	0.005
Carbon Disulfide	ND	0.01
Carbon Tetrachloride	ND	0.005
Chlorobenzene	ND	0.005
Chlorodibromoethane	ND	0.005
Chloroethane	ND	0.005
2-Chloroethylvinyl ether	ND	0.005
Chloroform	ND	0.005
Chloromethane	ND	0.005
Dibromomethane	ND	0.005
t-1,4-Dichloro-2-butene	ND	0.05
Dichlorodifluoromethane	ND	0.005
1,1-Dichloroethane	ND	0.005
1,2-Dichloroethane	ND	0.005
1,1-Dichloroethene	ND	0.005
trans-1,2-Dichloroethene	ND	0.005
1,2-Dichloropropane	ND	0.005
cis-1,3-Dichloropropene	ND	0.005
trans-1,3-Dichloropropene	ND	0.005
Ethyl Benzene	ND	0.005
Ethyl Methacrylate	ND	0.005
2-Hexanone	ND	0.01
Iodomethane	ND	0.01
Methylene Chloride	ND	0.02
Methyl Ethyl Ketone	ND	0.01
4-Methyl-2-Petanone	ND	0.01
Styrene	ND	0.005

ND - Analyte not detected at stated limit of detection

Inter-Mountain Laboratories, Inc.

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Phone (409) 774-4999 Fax (409) 696-0962

QUALITY CONTROL REPORT - METHOD BLANK

EPA METHOD 8260 - VOLATILE ORGANIC COMPOUNDS

Sample ID: Method Blank
Laboratory ID: MB0322

Report Date: 03/25/96
Date Sampled: 03/22/96
Date Analyzed: 03/22/96
Time Analyzed: 7:04 PM

Analyte	Concentration (mg/L)	Detection Limit (mg/L)
1,1,2,2-Tetrachloroethane	ND	0.005
Tetrachloroethene	ND	0.005
Toluene	ND	0.005
1,1,1-Trichloroethane	ND	0.005
1,1,2-Trichloroethane	ND	0.005
Trichloroethene	ND	0.005
Trichlorofluoromethane	ND	0.005
1,2,3-Trichloropropane	ND	0.02
Vinyl Acetate	ND	0.01
Vinyl Chloride	ND	0.005
Xylenes	ND	0.005

ND - Analyte not detected at stated limit of detection

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Dibromofluoromethane	99%	86 - 118%
Toluene-d8	101%	88 - 110%
Bromofluorobenzene	99%	86 - 117%

Inter-Mountain Laboratories, Inc.

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QUALITY CONTROL REPORT - METHOD BLANK
EPA METHOD 8260 - VOLATILE ORGANIC COMPOUNDS
ADDITIONAL DETECTED COMPOUNDS

Sample ID: Method Blank
Laboratory ID: MB0322

Report Date: 03/25/96
Date Sampled: 03/22/96
Date Analyzed: 03/22/96
Time Analyzed: 7:04 PM

Tentative Identification	Retention Time (Minutes)	Concentration * (mg/L)
None detected at reportable levels		

* - Concentration calculated using assumed Relative Response Factor = 1

Reference: Method 8260: Volatile Organic Compounds by Gas Chromatography / Mass Spectrometry: Capillary Column Technique. Test Methods for Evaluating Solid Waste, SW - 846, United States Environmental Protection Agency, Final Update II, September 1994.

Comments:

Analyst

Review

iml

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QUALITY CONTROL REPORT - METHOD BLANK
EPA METHOD 8260 - VOLATILE ORGANIC COMPOUNDS

Sample ID: Method Blank
Laboratory ID: MB0326
Sample Matrix Water

Report Date: 03/29/96
Date Extracted: 03/26/96
Date Analyzed: 03/26/96
Time Analyzed: 8:35 PM

Analyte	Concentration (mg/L)	Detection Limit (mg/L)
Acetone	ND	0.03
Acrolein	ND	0.02
Acrylonitrile	ND	0.01
Benzene	ND	0.005
Bromodichloromethane	ND	0.005
Bromoform	ND	0.005
Bromomethane	ND	0.005
Carbon Disulfide	ND	0.01
Carbon Tetrachloride	ND	0.005
Chlorobenzene	ND	0.005
Chlorodibromoethane	ND	0.005
Chloroethane	ND	0.005
2-Chloroethylvinyl ether	ND	0.005
Chloroform	ND	0.005
Chloromethane	ND	0.005
Dibromomethane	ND	0.005
t-1,4-Dichloro-2-butene	ND	0.05
Dichlorodifluoromethane	ND	0.005
1,1-Dichloroethane	ND	0.005
1,2-Dichloroethane	ND	0.005
1,1-Dichloroethene	ND	0.005
trans-1,2-Dichloroethene	ND	0.005
1,2-Dichloropropane	ND	0.005
cis-1,3-Dichloropropene	ND	0.005
trans-1,3-Dichloropropene	ND	0.005
Ethyl Benzene	ND	0.005
Ethyl Methacrylate	ND	0.005
2-Hexanone	ND	0.01
Iodomethane	ND	0.01
Methylene Chloride	ND	0.02
Methyl Ethyl Ketone	ND	0.01
4-Methyl-2-Petanone	ND	0.01
Styrene	ND	0.005

ND - Analyte not detected at stated limit of detection

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QUALITY CONTROL REPORT - METHOD BLANK

EPA METHOD 8260 - VOLATILE ORGANIC COMPOUNDS

Sample ID: Method Blank
Laboratory ID: MB0326

Report Date: 03/29/96
Date Sampled: 03/26/96
Date Analyzed: 03/26/96
Time Analyzed: 8:35 PM

Analyte	Concentration (mg/L)	Detection Limit (mg/L)
1,1,2,2-Tetrachloroethane	ND	0.005
Tetrachloroethene	ND	0.005
Toluene	ND	0.005
1,1,1-Trichloroethane	ND	0.005
1,1,2-Trichloroethane	ND	0.005
Trichloroethene	ND	0.005
Trichlorofluoromethane	ND	0.005
1,2,3-Trichloropropane	ND	0.02
Vinyl Acetate	ND	0.01
Vinyl Chloride	ND	0.005
Xylenes	ND	0.005

ND - Analyte not detected at stated limit of detection

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Dibromofluoromethane	98%	86 - 118%
Toluene-d8	100%	88 - 110%
Bromofluorobenzene	98%	86 - 117%

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QUALITY CONTROL REPORT - METHOD BLANK
EPA METHOD 8260 - VOLATILE ORGANIC COMPOUNDS
ADDITIONAL DETECTED COMPOUNDS

Sample ID: Method Blank
Laboratory ID: MB0326

Report Date: 03/29/96
Date Sampled: 03/26/96
Date Analyzed: 03/26/96
Time Analyzed: 8:35 PM

Tentative Identification	Retention Time (Minutes)	Concentration * (mg/L)
None detected at reportable levels		

* - Concentration calculated using assumed Relative Response Factor = 1

Reference: Method 8260: Volatile Organic Compounds by Gas Chromatography / Mass Spectrometry: Capillary Column Technique. Test Methods for Evaluating Solid Waste, SW - 846, United States Environmental Protection Agency, Final Update II, September 1994.

Comments:

Analyst

Review

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EPA Method 8260
VOLATILE ORGANIC COMPOUNDS

Client: GIANT REFINING COMPANY
Project: NA
Sample ID: Trip Blank
Laboratory ID: 0696G00543
Sample Matrix Water
Preservative: HCl
Condition: Intact, pH < 2

Report Date: 04/01/96
Date Sampled: NA
Date Received: 03/22/96
Date Extracted: 03/26/96
Date Analyzed: 03/26/96
Time Analyzed: 11:59 PM

Analyte	Concentration (mg/L)	Detection Limit (mg/L)
Acetone	ND	0.03
Acrolein	ND	0.02
Acrylonitrile	ND	0.01
Benzene	ND	0.005
Bromodichloromethane	ND	0.005
Bromoform	ND	0.005
Bromomethane	ND	0.005
Carbon Disulfide	ND	0.01
Carbon Tetrachloride	ND	0.005
Chlorobenzene	ND	0.005
Chlorodibromoethane	ND	0.005
Chloroethane	ND	0.005
2-Chloroethylvinyl ether	ND	0.005
Chloroform	ND	0.005
Chloromethane	ND	0.005
Dibromomethane	ND	0.005
t-1,4-Dichloro-2-butene	ND	0.05
Dichlorodifluoromethane	ND	0.005
1,1-Dichloroethane	ND	0.005
1,2-Dichloroethane	ND	0.005
1,1-Dichloroethene	ND	0.005
trans-1,2-Dichloroethene	ND	0.005
1,2-Dichloropropane	ND	0.005
cis-1,3-Dichloropropene	ND	0.005
trans-1,3-Dichloropropene	ND	0.005
Ethyl Benzene	ND	0.005
Ethyl Methacrylate	ND	0.005
2-Hexanone	ND	0.01
Iodomethane	ND	0.01
Methylene Chloride	ND	0.02
Methyl Ethyl Ketone	ND	0.01
4-Methyl-2-Petanone	ND	0.01
Styrene	ND	0.005

ND - Analyte not detected at stated limit of detection

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EPA Method 8260
VOLATILE ORGANIC COMPOUNDS

Client: GIANT REFINING COMPANY
Sample ID: Trip Blank
Laboratory ID: 0696G00543
Matrix: Water

Report Date: 04/01/96
Date Sampled: NA
Date Analyzed: 03/26/96
Time Analyzed: 11:59 PM

Analyte	Concentration (mg/L)	Detection Limit (mg/L)
1,1,2,2-Tetrachloroethane	ND	0.005
Tetrachloroethene	ND	0.005
Toluene	ND	0.005
1,1,1-Trichloroethane	ND	0.005
1,1,2-Trichloroethane	ND	0.005
Trichloroethene	ND	0.005
Trichlorofluoromethane	ND	0.005
1,2,3-Trichloropropane	ND	0.02
Vinyl Acetate	ND	0.01
Vinyl Chloride	ND	0.005
Xylenes	ND	0.005

ND - Analyte not detected at stated limit of detection

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Dibromofluoromethane	101%	86 - 118%
Toluene-d8	99%	88 - 110%
Bromofluorobenzene	97%	86 - 117%

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EPA Method 8260
VOLATILE ORGANIC COMPOUNDS
ADDITIONAL DETECTED COMPOUNDS

Client: GIANT REFINING COMPANY
Sample ID: Trip Blank
Laboratory ID: 0696G00543
Matrix: Water

Report Date: 04/01/96
Date Sampled: NA
Date Analyzed: 03/26/96
Time Analyzed: 11:59 PM

Tentative Identification	Retention Time (Minutes)	Concentration * (mg/L)
None detected at reportable levels		

* - Concentration calculated using assumed Relative Response Factor = 1

Reference: Method 8260: Volatile Organic Compounds by Gas Chromatography / Mass Spectrometry: Capillary Column Technique. Test Methods for Evaluating Solid Waste, SW - 846, United States Environmental Protection Agency, Final Update II, September 1994.

Comments:

Analyst

Ramona R. Dennis
Review

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EPA Method 8260
VOLATILE ORGANIC COMPOUNDS

Client: GIANT REFINING COMPANY
Project: NMED-LTA
Sample ID: Trip Blank
Laboratory ID: 0696G00479
Sample Matrix: Water
Preservative: HCl
Condition: Intact, pH < 2

Report Date: 04/01/96
Date Sampled: NA
Date Received: 03/21/96
Date Extracted: 03/22/96
Date Analyzed: 03/22/96
Time Analyzed: 11:59 PM

Analyte	Concentration (mg/L)	Detection Limit (mg/L)
Acetone	ND	0.03
Acrolein	ND	0.02
Acrylonitrile	ND	0.01
Benzene	ND	0.005
Bromodichloromethane	ND	0.005
Bromoform	ND	0.005
Bromomethane	ND	0.005
Carbon Disulfide	ND	0.01
Carbon Tetrachloride	ND	0.005
Chlorobenzene	ND	0.005
Chlorodibromoethane	ND	0.005
Chloroethane	ND	0.005
2-Chloroethylvinyl ether	ND	0.005
Chloroform	ND	0.005
Chloromethane	ND	0.005
Dibromomethane	ND	0.005
t-1,4-Dichloro-2-butene	ND	0.05
Dichlorodifluoromethane	ND	0.005
1,1-Dichloroethane	ND	0.005
1,2-Dichloroethane	ND	0.005
1,1-Dichloroethene	ND	0.005
trans-1,2-Dichloroethene	ND	0.005
1,2-Dichloropropane	ND	0.005
cis-1,3-Dichloropropene	ND	0.005
trans-1,3-Dichloropropene	ND	0.005
Ethyl Benzene	ND	0.005
Ethyl Methacrylate	ND	0.005
2-Hexanone	ND	0.01
Iodomethane	ND	0.01
Methylene Chloride	ND	0.02
Methyl Ethyl Ketone	ND	0.01
4-Methyl-2-Petanone	ND	0.01
Styrene	ND	0.005

ND - Analyte not detected at stated limit of detection

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EPA Method 8260
VOLATILE ORGANIC COMPOUNDS

Client: GIANT REFINING COMPANY
Sample ID: Trip Blank
Laboratory ID: 0696G00479
Matrix: Water

Report Date: 04/01/96
Date Sampled: NA
Date Analyzed: 03/22/96
Time Analyzed: 11:59 PM

Analyte	Concentration (mg/L)	Detection Limit (mg/L)
1,1,2,2-Tetrachloroethane	ND	0.005
Tetrachloroethene	ND	0.005
Toluene	ND	0.005
1,1,1-Trichloroethane	ND	0.005
1,1,2-Trichloroethane	ND	0.005
Trichloroethene	ND	0.005
Trichlorofluoromethane	ND	0.005
1,2,3-Trichloropropane	ND	0.02
Vinyl Acetate	ND	0.01
Vinyl Chloride	ND	0.005
Xylenes	ND	0.005

ND - Analyte not detected at stated limit of detection

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Dibromofluoromethane	99%	86 - 118%
Toluene-d8	99%	88 - 110%
Bromofluorobenzene	98%	86 - 117%

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EPA Method 8260
VOLATILE ORGANIC COMPOUNDS
ADDITIONAL DETECTED COMPOUNDS

Client: GIANT REFINING COMPANY
Sample ID: Trip Blank
Laboratory ID: 0696G00479
Matrix: Water

Report Date: 04/01/96
Date Sampled: NA
Date Analyzed: 03/22/96
Time Analyzed: 11:59 PM

Tentative Identification	Retention Time (Minutes)	Concentration * (mg/L)
None detected at reportable levels		

* - Concentration calculated using assumed Relative Response Factor = 1

Reference: Method 8260: Volatile Organic Compounds by Gas Chromatography / Mass Spectrometry: Capillary Column Technique. Test Methods for Evaluating Solid Waste, SW - 846, United States Environmental Protection Agency, Final Update II, September 1994.

Comments:

Analyst

Ramona B. Dennis
Review

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

VOLATILE AROMATIC HYDROCARBONS
QUALITY CONTROL REPORT

Duplicate Analysis

Lab ID: 0396G00506
Sample Matrix: Water
Condition: Cool/Intact

Report Date: 04/11/96
Date Analyzed: 04/04/96

Target Analyte	Duplicate Concentration (ppb)	Original Concentration (ppb)	% Difference
Benzene	102,100	129,200	23.4
Toluene	113,100	152,300	29.5
Ethylbenzene	4,720	6,350	29.4
m,p-Xylenes	16,700	21,500	25.1
o-Xylene	7,470	9,290	21.7

ND - Analyte not detected at the stated detection limit.
NA - Not applicable or not calculated.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Bromofluorobenzene	99.6%	75 -115%

Reference: Method 5030, Purge and Trap; Method 8020, Aromatic Volatile Organics; Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1986.

Comments:

Analyst

Review

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

VOLATILE AROMATIC HYDROCARBONS
QUALITY CONTROL REPORT

Matrix Spike Analysis

Lab ID: 0396W00503
Sample Matrix: Water
Condition: Cool/Intact

Report Date: 04/11/96
Date Analyzed: 04/04/96

Target Analyte	Spiked Sample Result in ng	Sample result in ng	Spike Added (ng)	% Recovery	Acceptance Limits (%)
Benzene	40.28	0.61	45	88.2%	70-130
Toluene	37.75	0.32	45	83.2%	70-130
Ethylbenzene	39.08	0.00	45	86.8%	70-130
m,p-Xylenes	81.66	0.37	90	90.3%	70-130
o-Xylene	38.98	0.00	45	86.6%	70-130

ND - Analyte not detected at the stated detection limit.
NA - Not applicable or not calculated.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Bromofluorobenzene	105.4%	75 -125%

Reference: Method 5030, Purge and Trap; Method 8020, Aromatic Volatile Organics; Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1986.

Comments:

Analyst

Review

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Quality Control / Quality Assurance

Known Analysis
BTEX

Client: Giant Refining Co.
Project: Not Given

Date Reported: 04/09/96
Date Analyzed: 04/04/96

Known Analysis

Parameter	Found Concentration (ppb)	Known Concentration (ppb)	Percent Recovery	Acceptance Limits
Benzene	8.89	9.0	99%	70-130%
Toluene	8.62	9.0	96%	70-130%
Ethylbenzene	8.11	9.0	90%	70-130%
m+p-Xylene	17.1	18.0	95%	70-130%
o-Xylene	8.23	9.0	91%	70-130%

Quality Control:	Surrogate	Percent Recovery	Acceptance Limits
	Bromofluorobenzene	103.9	75-125%

Reference: Method 5030, Purge and Trap: Method 8020, Aromatic Volatile Organics; Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1986.

Comments:

Reported by _____

Reviewed by _____

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QUALITY CONTROL REPORT - METHOD BLANK

EPA METHOD 8260 - VOLATILE ORGANIC COMPOUNDS

Sample ID: Method Blank
Laboratory ID: MB0322
Sample Matrix Water

Report Date: 03/25/96
Date Extracted: 03/22/96
Date Analyzed: 03/22/96
Time Analyzed: 7:04 PM

Analyte	Concentration (mg/L)	Detection Limit (mg/L)
Acetone	ND	0.03
Acrolein	ND	0.02
Acrylonitrile	ND	0.01
Benzene	ND	0.005
Bromodichloromethane	ND	0.005
Bromoform	ND	0.005
Bromomethane	ND	0.005
Carbon Disulfide	ND	0.01
Carbon Tetrachloride	ND	0.005
Chlorobenzene	ND	0.005
Chlorodibromoethane	ND	0.005
Chloroethane	ND	0.005
2-Chloroethylvinyl ether	ND	0.005
Chloroform	ND	0.005
Chloromethane	ND	0.005
Dibromomethane	ND	0.005
t-1,4-Dichloro-2-butene	ND	0.05
Dichlorodifluoromethane	ND	0.005
1,1-Dichloroethane	ND	0.005
1,2-Dichloroethane	ND	0.005
1,1-Dichloroethene	ND	0.005
trans-1,2-Dichloroethene	ND	0.005
1,2-Dichloropropane	ND	0.005
cis-1,3-Dichloropropene	ND	0.005
trans-1,3-Dichloropropene	ND	0.005
Ethyl Benzene	ND	0.005
Ethyl Methacrylate	ND	0.005
2-Hexanone	ND	0.01
Iodomethane	ND	0.01
Methylene Chloride	ND	0.02
Methyl Ethyl Ketone	ND	0.01
4-Methyl-2-Petanone	ND	0.01
Styrene	ND	0.005

ND - Analyte not detected at stated limit of detection

Inter-Mountain Laboratories, Inc.

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QUALITY CONTROL REPORT - METHOD BLANK

EPA METHOD 8260 - VOLATILE ORGANIC COMPOUNDS

Sample ID: Method Blank
Laboratory ID: MB0322

Report Date: 03/25/96
Date Sampled: 03/22/96
Date Analyzed: 03/22/96
Time Analyzed: 7:04 PM

Analyte	Concentration (mg/L)	Detection Limit (mg/L)
1,1,2,2-Tetrachloroethane	ND	0.005
Tetrachloroethene	ND	0.005
Toluene	ND	0.005
1,1,1-Trichloroethane	ND	0.005
1,1,2-Trichloroethane	ND	0.005
Trichloroethene	ND	0.005
Trichlorofluoromethane	ND	0.005
1,2,3-Trichloropropane	ND	0.02
Vinyl Acetate	ND	0.01
Vinyl Chloride	ND	0.005
Xylenes	ND	0.005

ND - Analyte not detected at stated limit of detection

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Dibromofluoromethane	99%	86 - 118%
Toluene-d8	101%	88 - 110%
Bromofluorobenzene	99%	86 - 117%

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QUALITY CONTROL REPORT - METHOD BLANK
EPA METHOD 8260 - VOLATILE ORGANIC COMPOUNDS
ADDITIONAL DETECTED COMPOUNDS

Sample ID: Method Blank
Laboratory ID: MB0322

Report Date: 03/25/96
Date Sampled: 03/22/96
Date Analyzed: 03/22/96
Time Analyzed: 7:04 PM

Tentative Identification	Retention Time (Minutes)	Concentration * (mg/L)
None detected at reportable levels		

* - Concentration calculated using assumed Relative Response Factor = 1

Reference: Method 8260: Volatile Organic Compounds by Gas Chromatography / Mass Spectrometry: Capillary Column Technique. Test Methods for Evaluating Solid Waste, SW - 846, United States Environmental Protection Agency, Final Update II, September 1994.

Comments:

Analyst

Ramona R. Dennis
Review

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QUALITY CONTROL REPORT - METHOD BLANK
EPA METHOD 8260 - VOLATILE ORGANIC COMPOUNDS

Sample ID: Method Blank
Laboratory ID: MB0326
Sample Matrix Water

Report Date: 03/29/96
Date Extracted: 03/26/96
Date Analyzed: 03/26/96
Time Analyzed: 8:35 PM

Analyte	Concentration (mg/L)	Detection Limit (mg/L)
Acetone	ND	0.03
Acrolein	ND	0.02
Acrylonitrile	ND	0.01
Benzene	ND	0.005
Bromodichloromethane	ND	0.005
Bromoform	ND	0.005
Bromomethane	ND	0.005
Carbon Disulfide	ND	0.01
Carbon Tetrachloride	ND	0.005
Chlorobenzene	ND	0.005
Chlorodibromoethane	ND	0.005
Chloroethane	ND	0.005
2-Chloroethylvinyl ether	ND	0.005
Chloroform	ND	0.005
Chloromethane	ND	0.005
Dibromomethane	ND	0.005
t-1,4-Dichloro-2-butene	ND	0.05
Dichlorodifluoromethane	ND	0.005
1,1-Dichloroethane	ND	0.005
1,2-Dichloroethane	ND	0.005
1,1-Dichloroethene	ND	0.005
trans-1,2-Dichloroethene	ND	0.005
1,2-Dichloropropane	ND	0.005
cis-1,3-Dichloropropene	ND	0.005
trans-1,3-Dichloropropene	ND	0.005
Ethyl Benzene	ND	0.005
Ethyl Methacrylate	ND	0.005
2-Hexanone	ND	0.01
Iodomethane	ND	0.01
Methylene Chloride	ND	0.02
Methyl Ethyl Ketone	ND	0.01
4-Methyl-2-Petanone	ND	0.01
Styrene	ND	0.005

ND - Analyte not detected at stated limit of detection

Inter-Mountain Laboratories, Inc.

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QUALITY CONTROL REPORT - METHOD BLANK

EPA METHOD 8260 - VOLATILE ORGANIC COMPOUNDS

Sample ID: Method Blank
Laboratory ID: MB0326

Report Date: 03/29/96
Date Sampled: 03/26/96
Date Analyzed: 03/26/96
Time Analyzed: 8:35 PM

Analyte	Concentration (mg/L)	Detection Limit (mg/L)
1,1,2,2-Tetrachloroethane	ND	0.005
Tetrachloroethene	ND	0.005
Toluene	ND	0.005
1,1,1-Trichloroethane	ND	0.005
1,1,2-Trichloroethane	ND	0.005
Trichloroethene	ND	0.005
Trichlorofluoromethane	ND	0.005
1,2,3-Trichloropropane	ND	0.02
Vinyl Acetate	ND	0.01
Vinyl Chloride	ND	0.005
Xylenes	ND	0.005

ND - Analyte not detected at stated limit of detection

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Dibromofluoromethane	98%	86 - 118%
Toluene-d8	100%	88 - 110%
Bromofluorobenzene	98%	86 - 117%

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QUALITY CONTROL REPORT - METHOD BLANK
EPA METHOD 8260 - VOLATILE ORGANIC COMPOUNDS
ADDITIONAL DETECTED COMPOUNDS

Sample ID: Method Blank
Laboratory ID: MB0326

Report Date: 03/29/96
Date Sampled: 03/26/96
Date Analyzed: 03/26/96
Time Analyzed: 8:35 PM

Tentative Identification	Retention Time (Minutes)	Concentration * (mg/L)
None detected at reportable levels		

* - Concentration calculated using assumed Relative Response Factor = 1

Reference: Method 8260: Volatile Organic Compounds by Gas Chromatography / Mass Spectrometry: Capillary Column Technique. Test Methods for Evaluating Solid Waste, SW - 846, United States Environmental Protection Agency, Final Update II, September 1994.

Comments:

Analyst

Review

imL

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QUALITY CONTROL REPORT - BLANK SPIKE / SPIKE DUPLICATE ANALYSIS

EPA METHOD 8260 - VOLATILE ORGANICS

Laboratory ID: Blank Spike and Blank Spike Duplicate
Sample Matrix: Water
Preservative: NA
Condition: NA

Report Date: 03/25/96
Date Sampled: NA
Date Received: NA
Date Analyzed: 03/22/96
Time Analyzed: 7:46 PM / 8:28 PM

BLANK SPIKE ANALYSIS

Analyte	Spiked Sample Result (mg/L)	Sample Result (mg/L)	Spike Added (mg/L)	Percent Recovery	QC Limits Recovery
1,1 - Dichloroethene	0.055	ND	0.050	110%	61 - 145
Trichloroethene	0.051	ND	0.050	102%	71 - 120
Benzene	0.050	ND	0.050	100%	76 - 127
Toluene	0.049	ND	0.050	98%	76 - 125
Chlorobenzene	0.049	ND	0.050	98%	75 - 130

BLANK SPIKE DUPLICATE ANALYSIS

Analyte	Duplicate Result (mg/L)	Percent Recovery	Original Spike Result (%)	RPD	QC Limits RPD	QC Limits Rec.
1 - Dichloroethene	0.057	114%	110%	4%	14%	61 - 145
richloroethene	0.052	104%	102%	2%	14%	71 - 120
Benzene	0.051	102%	100%	2%	11%	76 - 127
Toluene	0.051	102%	98%	4%	13%	76 - 125
Chlorobenzene	0.050	100%	98%	2%	13%	75 - 130

ND - Analyte not detected at stated limit of detection

Spike Recovery: 0 out of 10 outside QC Limits
RPD: 0 out of 5 outside QC Limits

Quality Control:

Surrogate	Spike Recovery	Duplicate Recovery	Recovery Limits
Dibromofluoromethane	99%	100%	86 - 118%
Toluene-d8	100%	100%	88 - 110%
Bromofluorobenzene	98%	97%	86 - 115%

Reference: Method 8260A: Gas Chromatography / Mass Spectrometry for Volatile Organics Test Methods for Evaluating Solid Waste, SW - 846, Final Update II, United States Environmental Protection Agency, September 1994.

Comments:

Analyst

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Review

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QUALITY CONTROL REPORT - BLANK SPIKE / SPIKE DUPLICATE ANALYSIS

EPA METHOD 8260 - VOLATILE ORGANICS

Laboratory ID: Blank Spike and Blank Spike Duplicate
Sample Matrix: Water
Preservative: NA
Condition: NA

Report Date: 03/27/96
Date Sampled: NA
Date Received: NA
Date Analyzed: 03/26/96
Time Analyzed: 9:16 PM / 9:57 PM

BLANK SPIKE ANALYSIS

Analyte	Spiked Sample Result (mg/L)	Sample Result (mg/L)	Spike Added (mg/L)	Percent Recovery	QC Limits Recovery
1,1 - Dichloroethene	0.056	ND	0.050	112%	61 - 145
Trichloroethene	0.049	ND	0.050	98%	71 - 120
Benzene	0.048	ND	0.050	96%	76 - 127
Toluene	0.047	ND	0.050	94%	76 - 125
Chlorobenzene	0.046	ND	0.050	92%	75 - 130

BLANK SPIKE DUPLICATE ANALYSIS

Analyte	Duplicate Result (mg/L)	Percent Recovery	Original Spike Result (%)	RPD	QC Limits RPD	QC Limits Rec.
1,1 - Dichloroethene	0.055	110%	112%	2%	14%	61 - 145
Trichloroethene	0.047	94%	98%	4%	14%	71 - 120
Benzene	0.047	94%	96%	2%	11%	76 - 127
Toluene	0.042	84%	94%	11%	13%	76 - 125
Chlorobenzene	0.045	90%	92%	2%	13%	75 - 130

ND - Analyte not detected at stated limit of detection

Spike Recovery: 0 out of 10 outside QC Limits
RPD: 0 out of 5 outside QC Limits

Quality Control:

Surrogate	Spike Recovery	Duplicate Recovery	Recovery Limits
Dibromofluoromethane	99%	99%	86 - 118%
Toluene-d8	100%	100%	88 - 110%
Bromofluorobenzene	97%	97%	86 - 115%

Reference: Method 8260A: Gas Chromatography / Mass Spectrometry for Volatile Organics
Test Methods for Evaluating Solid Waste, SW - 846, Final Update II, United States Environmental Protection Agency, September 1994.

Comments:

Analyst

Ramona R. Dennis
Review

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
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VOLATILE AROMATIC HYDROCARBONS
QUALITY CONTROL REPORT

Duplicate Analysis

Lab ID: 0396W00421
Sample Matrix: Water
Condition: Cool/Intact

Report Date: 04/02/96
Date Analyzed: 03/27/96

Target Analyte	Duplicate Concentration (ppb)	Original Concentration (ppb)	% Difference
Benzene	ND	ND	NA
Toluene	ND	ND	NA
Ethylbenzene	ND	ND	NA
m,p-Xylenes	ND	ND	NA
o-Xylene	ND	ND	NA

ND - Analyte not detected at the stated detection limit.
NA - Not applicable or not calculated.

Quality Control:	Surrogate	Percent Recovery	Acceptance Limits
	Bromofluorobenzene	120.5%	75 -115%

Reference: Method 5030, Purge and Trap; Method 8020, Aromatic Volatile Organics; Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1986.

Comments:

Analyst

SB
Review

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

VOLATILE AROMATIC HYDROCARBONS
QUALITY CONTROL REPORT

Matrix Spike Analysis

Lab ID: 0396W00422
Sample Matrix: Water
Condition: Cool/Intact

Report Date: 04/02/96
Date Analyzed: 03/27/96

Target Analyte	Spiked Sample Result in ng	Sample result in ng	Spike Added (ng)	% Recovery	Acceptance Limits (%)
Benzene	57.66	0.86	60	94.7%	70-130
Toluene	53.22	0.00	60	88.7%	70-130
Ethylbenzene	55.14	0.00	60	91.9%	70-130
m,p-Xylenes	114.38	0.00	120	95.3%	70-130
o-Xylene	55.79	0.00	60	93.0%	70-130

ND - Analyte not detected at the stated detection limit.
NA - Not applicable or not calculated.

Quality Control:	Surrogate	Percent Recovery	Acceptance Limits
	Bromofluorobenzene	107.6%	75 -125%

Reference: Method 5030, Purge and Trap; Method 8020, Aromatic Volatile Organics; Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1986.

Comments:

alyst

Review

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2506 W. Main Street
Farmington, New Mexico 87401

Quality Control / Quality Assurance

Known Analysis
BTEX

Client: Giant Refining Co.
Project: NMED-LTA

Date Reported: 03/28/96
Date Analyzed: 03/27/96

Known Analysis

Parameter	Found Concentration (ppb)	Known Concentration (ppb)	Percent Recovery	Acceptance Limits
Benzene	8.95	9.0	99%	70-130%
Toluene	8.43	9.0	94%	70-130%
Ethylbenzene	8.20	9.0	91%	70-130%
m+p-Xylene	17.3	18.0	96%	70-130%
o-Xylene	8.31	9.0	92%	70-130%

Quality Control:	Surrogate	Percent Recovery	Acceptance Limits
	Bromofluorobenzene	104.9	75-125%

Reference: Method 5030, Purge and Trap: Method 8020, Aromatic Volatile Organics; Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1986.

Comments:

Reported by _____

Reviewed by _____

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

VOLATILE AROMATIC HYDROCARBONS
QUALITY CONTROL REPORT

Method Blank Analysis

Sample Matrix: Water
Lab ID: Method Blank

Report Date: 04/02/96
Date Analyzed: 03/27/96

Target Analyte	Concentration (ppb)	Detection Limit (ppb)
Benzene	ND	0.2
Toluene	ND	0.2
Ethylbenzene	ND	0.2
m,p-Xylenes	ND	0.2
o-Xylene	ND	0.2

ND - Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Bromofluorobenzene	100.4	75-125%

Reference: Method 5030, Purge and Trap; Method 8020, Aromatic Volatile Organics; Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1986.

Comments:

Analyst

Review

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QUALITY CONTROL REPORT - BLANK SPIKE / SPIKE DUPLICATE ANALYSIS

EPA METHOD 8260 - VOLATILE ORGANICS

Laboratory ID: Blank Spike and Blank Spike Duplicate
Sample Matrix: Water
Preservative: NA
Condition: NA

Report Date: 03/25/96
Date Sampled: NA
Date Received: NA
Date Analyzed: 03/22/96
Time Analyzed: 7:46 PM / 8:28 PM

BLANK SPIKE ANALYSIS

Analyte	Spiked Sample Result (mg/L)	Sample Result (mg/L)	Spike Added (mg/L)	Percent Recovery	QC Limits Recovery
1,1 - Dichloroethene	0.055	ND	0.050	110%	61 - 145
Trichloroethene	0.051	ND	0.050	102%	71 - 120
Benzene	0.050	ND	0.050	100%	76 - 127
Toluene	0.049	ND	0.050	98%	76 - 125
Chlorobenzene	0.049	ND	0.050	98%	75 - 130

BLANK SPIKE DUPLICATE ANALYSIS

Analyte	Duplicate Result (mg/L)	Percent Recovery	Original Spike Result (%)	RPD	QC Limits RPD	QC Limits Rec.
1,1 - Dichloroethene	0.057	114%	110%	4%	14%	61 - 145
richloroethene	0.052	104%	102%	2%	14%	71 - 120
Benzene	0.051	102%	100%	2%	11%	76 - 127
Toluene	0.051	102%	98%	4%	13%	76 - 125
Chlorobenzene	0.050	100%	98%	2%	13%	75 - 130

ND - Analyte not detected at stated limit of detection

Spike Recovery: 0 out of 10 outside QC Limits
RPD: 0 out of 5 outside QC Limits

Quality Control:

Surrogate	Spike Recovery	Duplicate Recovery	Recovery Limits
Dibromofluoromethane	99%	100%	86 - 118%
Toluene-d8	100%	100%	88 - 110%
Bromofluorobenzene	98%	97%	86 - 115%

Reference: Method 8260A: Gas Chromatography / Mass Spectrometry for Volatile Organics Test Methods for Evaluating Solid Waste, SW - 846, Final Update II, United States Environmental Protection Agency, September 1994.

Comments:

Analyst

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QUALITY CONTROL REPORT - BLANK SPIKE / SPIKE DUPLICATE ANALYSIS

EPA METHOD 8260 - VOLATILE ORGANICS

Laboratory ID: Blank Spike and Blank Spike Duplicate
Sample Matrix: Water
Preservative: NA
Condition: NA

Report Date: 03/27/96
Date Sampled: NA
Date Received: NA
Date Analyzed: 03/26/96
Time Analyzed: 9:16 PM / 9:57 PM

BLANK SPIKE ANALYSIS

Analyte	Spiked Sample Result (mg/L)	Sample Result (mg/L)	Spike Added (mg/L)	Percent Recovery	QC Limits Recovery
1,1 - Dichloroethene	0.056	ND	0.050	112%	61 - 145
Trichloroethene	0.049	ND	0.050	98%	71 - 120
Benzene	0.048	ND	0.050	96%	76 - 127
Toluene	0.047	ND	0.050	94%	76 - 125
Chlorobenzene	0.046	ND	0.050	92%	75 - 130

BLANK SPIKE DUPLICATE ANALYSIS

Analyte	Duplicate Result (mg/L)	Percent Recovery	Original Spike Result (%)	RPD	QC Limits RPD	QC Limits Rec.
1,1 - Dichloroethene	0.055	110%	112%	2%	14%	61 - 145
Trichloroethene	0.047	94%	98%	4%	14%	71 - 120
Benzene	0.047	94%	96%	2%	11%	76 - 127
Toluene	0.042	84%	94%	11%	13%	76 - 125
Chlorobenzene	0.045	90%	92%	2%	13%	75 - 130

ND - Analyte not detected at stated limit of detection

Spike Recovery: 0 out of 10 outside QC Limits
RPD: 0 out of 5 outside QC Limits

Quality Control:

Surrogate	Spike Recovery	Duplicate Recovery	Recovery Limits
Dibromofluoromethane	99%	99%	86 - 118%
Toluene-d8	100%	100%	88 - 110%
Bromofluorobenzene	97%	97%	86 - 115%

Reference: Method 8260A: Gas Chromatography / Mass Spectrometry for Volatile Organics Test Methods for Evaluating Solid Waste, SW - 846, Final Update II, United States Environmental Protection Agency, September 1994.

Comments:

Analyst

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QUALITY CONTROL REPORT - METHOD BLANK

TOX

TOTAL ORGANIC HALIDES

Sample ID:	Method Blank	Report Date:	04/09/96
Sample Number:	MB040896	Date Sampled:	NA
Sample Matrix:	Water	Date Received:	NA
Condition:	NA	Date Analyzed:	04/08/96

Parameter	Concentration (ug/L)	Detection Limit (ug/L)
Total Organic Halides	ND	10
Concentration is the average of the replicates reported below		
Replicate #1	ND	10
Replicate #2	ND	10

ND - Analyte not detected at stated detection limit.

Reference: Method 9020B: TOTAL ORGANIC HALIDES (TOX)
Test Methods for Evaluating Solid Waste, SW-846, United States Environmental Protection Agency, Third Edition, Final Update II, September 1994.

Comments:

Analyst

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QUALITY CONTROL REPORT - METHOD BLANK
TOX
TOTAL ORGANIC HALIDES

Sample ID:	Method Blank	Report Date:	04/09/96
Sample Number:	MB040996	Date Sampled:	NA
Sample Matrix:	Water	Date Received:	NA
Condition:	NA	Date Analyzed:	04/09/96

Parameter	Concentration (ug/L)	Detection Limit (ug/L)
Total Organic Halides	ND	10
Concentration is the average of the replicates reported below		
Replicate #1	ND	10
Replicate #2	ND	10

ND - Analyte not detected at stated detection limit.

Reference: Method 9020B: TOTAL ORGANIC HALIDES (TOX)
Test Methods for Evaluating Solid Waste, SW-846, United States Environmental Protection Agency, Third Edition, Final Update II, September 1994.

Comments:

Analyst

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QUALITY CONTROL REPORT - MATRIX SPIKE

TOX

TOTAL ORGANIC HALIDES

Sample ID: Matrix Spike / Spike Duplicate
Sample Number: 0696G00546 MS/MSD
Sample Matrix: Water
Condition: Intact, Cool, pH=7

Report Date: 04/09/96
Date Sampled: 03/13/96
Date Received: 03/26/96
Date Analyzed: 04/08/96

Total Organic Halides	Spiked Sample Concentration	Sample Concentration	Spike Amount	Percent Recovery	Acceptance Limits
Matrix Spike	54	ND	50	109%	75-125
Matrix Spike Dup	55	ND	50	109%	75-125
%RPD				0%	

ND - Analyte not detected at stated detection limit
%RPD - Relative percent deviation
All unlabeled values are in units of micrograms per liter (ug/L)

Reference: Method 9020B: TOTAL ORGANIC HALIDES (TOX)
Test Methods for Evaluating Solid Waste, SW-846, United States Environmental Protection Agency, Third Edition, Final Update II, September 1994.

Comments:

Analyst

Review

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QUALITY CONTROL REPORT - MATRIX SPIKE

TOX

TOTAL ORGANIC HALIDES

Sample ID:	Matrix Spike / Spike Duplicate	Report Date:	04/09/96
Sample Number:	0696G00551 MS/MSD	Date Sampled:	Unknown
Sample Matrix:	Water	Date Received:	03/26/96
Condition:	Intact, Cool, pH=7	Date Analyzed:	04/09/96

Total Organic Halides	Spiked Sample Concentration	Sample Concentration	Spike Amount	Percent Recovery	Acceptance Limits
Matrix Spike	58	ND	50	116%	75-125
Matrix Spike Dup	55	ND	50	109%	75-125
%RPD				6%	

ND - Analyte not detected at stated detection limit
%RPD - Relative percent deviation
All unlabeled values are in units of micrograms per liter (ug/L)

Reference: Method 9020B: TOTAL ORGANIC HALIDES (TOX)
Test Methods for Evaluating Solid Waste, SW-846, United States Environmental Protection Agency, Third Edition, Final Update II, September 1994.

Comments:

Analyst

Review

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Quality Control / Quality Assurance

Known Analysis/Spike Analysis

Dissolved Metals

Client:	Giant Refining Company	Date Reported:	04/22/96
Project:	Ciniza	Date Sampled:	03/16/96
Lab ID:	0396W00442-443	Date Received:	03/21/96
Matrix:	Water		

Known Analysis

Parameter	Found Result	Known Result	Units	Percent Recovery
Arsenic	0.009	0.010	mg/L	90%
Barium	0.97	1.00	mg/L	97%
Cadmium	0.004	0.004	mg/L	101%
Manganese	0.99	1.00	mg/L	99%
Selenium	0.011	0.010	mg/L	110%
Silver	0.98	1.00	mg/L	98%

Spike Analysis

Parameter	Spiked Sample Result	Sample Result	Spike Added	Percent Recovery
Arsenic	0.019	0.001	0.020	85%
Barium	3.09	2.83	0.50	109%
Cadmium	0.002	<0.001	0.003	91%
Manganese	0.64	0.18	0.50	37%
Selenium	0.019	<0.005	0.020	95%
Silver	0.47	<0.01	0.50	95%

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 19th ed., 1995.

Comments: Quality control run concurrently with the above sample lab numbers.

Reported by: WM

Reviewed by: [signature]

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Quality Control / Quality Assurance

Known Analysis/Spike Analysis

Dissolved Metals

Client:	Giant Refinery	Date Reported:	04/10/96
Project:	NMED-LTA	Date Sampled:	03/13/96
Lab ID:	0396W00418-420	Date Received:	03/20/96
Matrix:	Water		

Known Analysis

Parameter	Found Result	Known Result	Units	Percent Recovery
Arsenic	0.009	0.010	mg/L	90%
Barium	0.97	1.00	mg/L	97%
Cadmium	0.004	0.004	mg/L	109%
Manganese	0.99	1.00	mg/L	99%
Selenium	0.011	0.010	mg/L	110%
Silver	1.00	1.00	mg/L	100%

Spike Analysis

Parameter	Spiked Sample Result	Sample Result	Spike Added	Percent Recovery
Arsenic	0.018	<0.005	0.020	90%
Barium	3.09	2.83	0.50	109%
Cadmium	0.002	<0.001	0.003	97%
Manganese	0.64	0.18	0.50	97%
Selenium	0.021	0.001	0.020	100%
Silver	0.47	<0.01	0.50	95%

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 19th ed., 1995.

Comments: Quality control run concurrently with the above sample lab numbers.

Reported by: CB

Reviewed by: WM

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Quality Control / Quality Assurance

Spike Analysis / Known Analysis / Blank
Total Metals

Client:	**Giant Refinery**		
Project:	NMED-LTA	Date Reported:	04/10/96
Lab ID:	0396W00418-420	Date Sampled:	03/13/96
Matrix:	Water	Date Received:	03/20/96
Condition:	Cool / Intact		

Spike Analysis

Parameter	Spike Result (mg/L)	Unspiked Sample Result (mg/L)	Spike Amount (mg/L)	Percent Recovery
Chromium	0.45	<0.01	0.50	90%
Lead	0.030	<0.005	0.025	119%
Mercury	0.009	<0.001	0.010	91%

Known Analysis

Parameter	Found Result (mg/L)	Known Result (mg/L)	Percent Recovery
Chromium	1.04	1.00	104%
Lead.	0.041	0.040	101%
Mercury	0.010	0.010	102%

Blank Analysis

Parameter	Result	Detection Level (mg/L)
Chromium	ND	0.01
Lead	ND	0.005
Mercury	ND	0.001

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 19th ed., 1995.

Comments: Quality control run concurrently with the above sample lab numbers.

LB
Reported By:

WM
Reviewed By:

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Quality Control / Quality Assurance

Spike Analysis / Known Analysis / Blank
Total Metals

Client:	**Giant Refining Company**		
Project:	Ciniza	Date Reported:	04/22/96
Lab ID:	0396W00439-441	Date Sampled:	3/14-15/96
Matrix:	Water	Date Received:	03/21/96
Condition:	Cool / Intact		

Spike Analysis

Parameter	Spike Result (mg/L)	Unspiked Sample Result (mg/L)	Spike Amount (mg/L)	Percent Recovery
Chromium	0.53	<0.01	0.50	105%
Lead	0.029	<0.005	0.025	117%

Known Analysis

Parameter	Found Result (mg/L)	Known Result (mg/L)	Percent Recovery
Chromium	1.07	1.00	107%
Lead	0.041	0.040	101%

Blank Analysis

Parameter	Result	Detection Level (mg/L)
Chromium	ND	0.01
Lead	ND	0.005

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 19th ed., 1995.

Comments: Quality control run concurrently with the above sample lab numbers.

WM
Reported By:

Reviewed By:

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Quality Control / Quality Assurance

Spike Analysis / Known Analysis / Blank
Total Metals

Client: Giant Refining Company
Project: Ciniza
Lab ID: 0396W00442-443
Matrix: Water
Condition: Cool / Intact

Date Reported: 04/22/96
Date Sampled: 03/16/96
Date Received: 03/21/96

Spike Analysis

Parameter	Spike Result (mg/L)	Unspiked Sample Result (mg/L)	Spike Amount (mg/L)	Percent Recovery
Chromium	0.45	<0.01	0.50	90%
Lead	0.030	<0.005	0.025	117%
Mercury	NS	NS	NS	NA

Known Analysis

Parameter	Found Result (mg/L)	Known Result (mg/L)	Percent Recovery
Chromium	1.04	1.00	104%
Lead	0.041	0.040	101%
Mercury	0.010	0.010	102%

Blank Analysis

Parameter	Result	Detection Level (mg/L)
Chromium	ND	0.01
Lead	ND	0.005
Mercury	ND	0.001

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 19th ed., 1995.

Comments: Quality control run concurrently with the above sample lab numbers.

WM
Reported By:

Reviewed By:

Inter-Mountain Laboratories, Inc.

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1183 SH 30 College Station, Texas 77845
P (409) 776-8945 FAX (409) 774-4705

Organics Laboratory
3304 Longmire Drive College Station, Texas 77845
Phone (409) 774-4999 Fax (409) 696-0962

QUALITY CONTROL REPORT - MATRIX SPIKE
TOX
TOTAL ORGANIC HALIDES

Sample ID:	Matrix Spike / Spike Duplicate	Report Date:	04/09/96
Sample Number:	0696G00546 MS/MSD	Date Sampled:	03/13/96
Sample Matrix:	Water	Date Received:	03/26/96
Condition:	Intact, Cool, pH=7	Date Analyzed:	04/08/96

Total Organic Halides	Spiked Sample Concentration	Sample Concentration	Spike Amount	Percent Recovery	Acceptance Limits
Matrix Spike	54	ND	50	109%	75-125
Matrix Spike Dup	55	ND	50	109%	75-125
%RPD				0%	

ND - Analyte not detected at stated detection limit
%RPD - Relative percent deviation
All unlabeled values are in units of micrograms per liter (ug/L)

Reference: Method 9020B: TOTAL ORGANIC HALIDES (TOX)
Test Methods for Evaluating Solid Waste, SW-846, United States Environmental Protection Agency, Third Edition, Final Update II, September 1994.

Comments:

DG | RRD
Analyst

Review

imL

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QUALITY CONTROL REPORT - METHOD BLANK
TOX
TOTAL ORGANIC HALIDES

Sample ID:	Method Blank	Report Date:	04/09/96
Sample Number:	MB040896	Date Sampled:	NA
Sample Matrix:	Water	Date Received:	NA
Condition:	NA	Date Analyzed:	04/08/96

Parameter	Concentration (ug/L)	Detection Limit (ug/L)
Total Organic Halides	ND	30
Concentration is the average of the replicates reported below		
Replicate #1	ND	30
Replicate #2	ND	30

ND - Analyte not detected at stated detection limit.

Reference: Method 9020B: TOTAL ORGANIC HALIDES (TOX)
Test Methods for Evaluating Solid Waste, SW-846, United States Environmental Protection Agency, Third Edition, Final Update II, September 1994.

Comments:

DG / RRS
Analyst

Review

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QUALITY CONTROL REPORT - METHOD BLANK
TOX
TOTAL ORGANIC HALIDES

Sample ID:	Method Blank	Report Date:	04/09/96
Sample Number:	MB040996	Date Sampled:	NA
Sample Matrix:	Water	Date Received:	NA
Condition:	NA	Date Analyzed:	04/09/96

Parameter	Concentration (ug/L)	Detection Limit (ug/L)
Total Organic Halides	ND	30
Concentration is the average of the replicates reported below		
Replicate #1	ND	30
Replicate #2	ND	30

ND - Analyte not detected at stated detection limit.

Reference: Method 9020B: TOTAL ORGANIC HALIDES (TOX)
Test Methods for Evaluating Solid Waste, SW-846, United States Environmental Protection Agency, Third Edition, Final Update II, September 1994.

Comments:

DG / RRD
Analyst

Review

imL

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QUALITY CONTROL REPORT - MATRIX SPIKE

TOX

TOTAL ORGANIC HALIDES

Sample ID:	Matrix Spike / Spike Duplicate	Report Date:	04/09/96
Sample Number:	0696G00551 MS/MSD	Date Sampled:	03/14/96
Sample Matrix:	Water	Date Received:	03/26/96
Condition:	Intact, Cool, pH=7	Date Analyzed:	04/09/96

Total Organic Halides	Spiked Sample Concentration	Sample Concentration	Spike Amount	Percent Recovery	Acceptance Limits
Matrix Spike	58	ND	50	116%	75-125
Matrix Spike Dup	55	ND	50	109%	75-125
%RPD				6%	

ND - Analyte not detected at stated detection limit
%RPD - Relative percent deviation
All unlabeled values are in units of micrograms per liter (ug/L)

Reference: Method 9020B: TOTAL ORGANIC HALIDES (TOX)
Test Methods for Evaluating Solid Waste, SW-846, United States Environmental Protection Agency, Third Edition, Final Update II, September 1994.

Comments:

DG/RRD
Analyst

Review

Inter- Mountain Laboratories, Inc.

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location	ANALYSES / PARAMETERS
Giant - Ciniza	Gallup	
Sampler: (Signature) SC Morris	Chain of Custody Tape No.	

Sample No./ Identification	Date	Time	Lab Number	Matrix	No. of Containers					Remarks
SMW-5-103096	10/30/96	12:02		H_2O	6					See attached
~~SMW-5-103096~~	~~10/31/96~~	~~0735~~		~~H_2O~~	~~1~~					sheet
										removed sample
										as per phone
										conversation
										w/ Steve Morris
										on 11-1-96 at
										1550. CR
										cool + intact

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
SC Morris	10/31/96	0900	Chris Raynes	11-1-96	0740
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by laboratory: (Signature)	Date	Time

Inter-Mountain Laboratories, Inc.

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- ☐ 1701 Phillips Circle, Gillette, Wyoming 82718, Telephone (307) 682-8945
- ☒ 2506 West Main Street, Farmington, NM 87401, Telephone (505) 326-4737
- ☐ 1160 Research Dr., Bozeman, Montana 59715, Telephone (406) 586-8450
- ☐ 11183 SH 30, College Station, TX 77845, Telephone (409) 776-8945
- ☐ 3304 Longmire Drive, College Station, TX 77845, Telephone (409) 774-4999

37870

Inter- Mountain Laboratories, Inc.

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location
GIANT AT CINIZA	Gallup NM

Sampler: (Signature)	Chain of Custody Tape No.
SC Morris	

ANALYSES / PARAMETERS

Sample No./ Identification	Date	Time	Lab Number	Matrix	No. of Containers					Remarks
MW-1-11496	11/4/96	0745		Water	6					SEE
MW-2-11496	"	0900		"	6					ATTACHED
MW-4-11496	"	1135		"	6					SHEET
MW-5-11496	"	0940		"	6					
OW-11-11496	"	1225		"	6					
SMW-3-11496	"	1050		"	7					
SMW-4-11496	"	0825		"	7					
~~SMW-5-11496~~	~~"~~									
										cool + intact

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
SC Morris	11-5-96	0900	Chris Rayner	11-6-96	1200
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by laboratory: (Signature)	Date	Time

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☐ 11183 SH 30, College Station, TX 77845, Telephone (409) 776-8945

43570

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

LAB QA/QC
EPA METHOD 8240
INSTRUMENT BLANK

Date Analyzed: **11/06/96**
Lab ID: IBW96311
Matrix: Water

Parameter	Result	PQL	Units
1,1,1-Trichloroethane	ND	5.0	ug/L
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L
1,1,2-Trichloroethane	ND	5.0	ug/L
1,1-Dichloroethane	ND	5.0	ug/L
1,1-Dichloroethene	ND	5.0	ug/L
1,2-Dichloroethane	ND	5.0	ug/L
1,2-Dichloropropane	ND	5.0	ug/L
2-Butanone (MEK)	ND	20	ug/L
2-Hexanone	ND	5.0	ug/L
4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L
Acetone	ND	20	ug/L
Benzene	ND	5.0	ug/L
Bromodichloromethane	ND	5.0	ug/L
Bromoform	ND	5.0	ug/L
Bromomethane	ND	5.0	ug/L
Carbon Disulfide	ND	5.0	ug/L
Carbon Tetrachloride	ND	5.0	ug/L
Chlorobenzene	ND	5.0	ug/L
Chloroethane	ND	5.0	ug/L
Chloroform	ND	5.0	ug/L
Chloromethane	ND	5.0	ug/L
cis-1,3-Dichloropropene	ND	5.0	ug/L
Dibromochloromethane	ND	5.0	ug/L
Ethylbenzene	ND	5.0	ug/L
m,p-Xylene	ND	5.0	ug/L
Methylene chloride	ND	20	ug/L
o-Xylene	ND	5.0	ug/L
Styrene	ND	5.0	ug/L
Tetrachloroethene (PCE)	ND	5.0	ug/L
Toluene	ND	5.0	ug/L
trans-1,2-Dichloroethene	ND	5.0	ug/L
trans-1,3-Dichloropropene	ND	5.0	ug/L
Trichloroethene (TCE)	ND	5.0	ug/L

Continued

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

LAB QA/QC
EPA METHOD 8240
INSTRUMENT BLANK

Date Analyzed: **11/06/96**
Lab ID: IBW96311
Matrix: Water

Parameter	Result	PQL	Units
Continued			
Vinyl Chloride	ND	5.0	ug/L
Xylenes (total)	ND	5.0	ug/L

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
1,2-Dichloroethane-d4	98	81 - 126
Bromofluorobenzene	99	78 - 112
Toluene-d8	100	83 - 127

ND - Not Detected at Practical Quantitation Level (PQL)
Sample initially analyzed on 10/30/96

Analyst RRD

Reviewed CTB

Inter-Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client:	GIANT REFINING COMPANY		Date Reported:	11/12/96
Sample ID:	Trip Blank		Date Sampled:	10/30/96
Project ID:	Ciniza		Date Received:	11/05/96
Lab ID:	B9610005	0396G02415	Date Extracted:	NA
Matrix:	Water		Date Analyzed:	11/06/96

Parameter	Result	PQL	Units
1,1,1-Trichloroethane	ND	5.0	ug/L
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L
1,1,2-Trichloroethane	ND	5.0	ug/L
1,1-Dichloroethane	ND	5.0	ug/L
1,1-Dichloroethene	ND	5.0	ug/L
1,2-Dichloroethane	ND	5.0	ug/L
1,2-Dichloropropane	ND	5.0	ug/L
2-Butanone (MEK)	ND	20	ug/L
2-Hexanone	ND	5.0	ug/L
4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L
Acetone	ND	20	ug/L
Benzene	ND	5.0	ug/L
Bromodichloromethane	ND	5.0	ug/L
Bromoform	ND	5.0	ug/L
Bromomethane	ND	5.0	ug/L
Carbon Disulfide	ND	5.0	ug/L
Carbon Tetrachloride	ND	5.0	ug/L
Chlorobenzene	ND	5.0	ug/L
Chloroethane	ND	5.0	ug/L
Chloroform	ND	5.0	ug/L
Chloromethane	ND	5.0	ug/L
cis-1,3-Dichloropropene	ND	5.0	ug/L
Dibromochloromethane	ND	5.0	ug/L
Ethylbenzene	ND	5.0	ug/L
m,p-Xylene	ND	5.0	ug/L
Methylene chloride	ND	20	ug/L
o-Xylene	ND	5.0	ug/L
Styrene	ND	5.0	ug/L
Tetrachloroethene (PCE)	ND	5.0	ug/L
Toluene	ND	5.0	ug/L

Continued

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client:	**GIANT REFINING COMPANY**			
Sample ID:	Trip Blank		Date Reported:	11/12/96
Project ID:	Ciniza		Date Sampled:	10/30/96
Lab ID:	B9610005	0396G02415	Date Received:	11/05/96
Matrix:	Water		Date Extracted:	NA
			Date Analyzed:	11/06/96

Parameter	Result	PQL	Units
Continued			
trans-1,2-Dichloroethene	ND	5.0	ug/L
trans-1,3-Dichloropropene	ND	5.0	ug/L
Trichloroethene (TCE)	ND	5.0	ug/L
Vinyl Chloride	ND	5.0	ug/L
Xylenes (total)	ND	5.0	ug/L

QUALITY CONTROL - Surrogate Recovery	%	**QC Limits**
1,2-Dichloroethane-d4	96	76 - 114
Bromofluorobenzene	98	86 - 115
Toluene-d8	102	88 - 110

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8260, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Rev. 1, November 1992.

Analyst RRD **Reviewed** CTB

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client: GIANT REFINING COMPANY
Sample ID: Trip Blank
Project ID: Ciniza Refinery
Lab ID: B9610071
Matrix: Water

Date Reported: 11/12/96
Date Sampled: 11/04/96
Date Received: 11/08/96
Date Extracted: NA
Date Analyzed: 11/11/96

Parameter	Result	PQL	Units
1,1,1-Trichloroethane	ND	5.0	ug/L
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L
1,1,2-Trichloroethane	ND	5.0	ug/L
1,1-Dichloroethane	ND	5.0	ug/L
1,1-Dichloroethene	ND	5.0	ug/L
1,2-Dichloroethane	ND	5.0	ug/L
1,2-Dichloropropane	ND	5.0	ug/L
2-Butanone (MEK)	ND	20	ug/L
2-Hexanone	ND	5.0	ug/L
4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L
Acetone	28	20	ug/L
Benzene	ND	5.0	ug/L
Bromodichloromethane	ND	5.0	ug/L
Bromoform	ND	5.0	ug/L
Bromomethane	ND	5.0	ug/L
Carbon Disulfide	ND	5.0	ug/L
Carbon Tetrachloride	ND	5.0	ug/L
Chlorobenzene	ND	5.0	ug/L
Chloroethane	ND	5.0	ug/L
Chloroform	ND	5.0	ug/L
Chloromethane	ND	5.0	ug/L
cis-1,3-Dichloropropene	ND	5.0	ug/L
Dibromochloromethane	ND	5.0	ug/L
Ethylbenzene	ND	5.0	ug/L
m,p-Xylene	ND	5.0	ug/L
Methylene chloride	ND	20	ug/L
o-Xylene	ND	5.0	ug/L
Styrene	ND	5.0	ug/L
Tetrachloroethene (PCE)	ND	5.0	ug/L
Toluene	ND	5.0	ug/L

Continued

Inter·Mountain Laboratories, Inc.

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EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client:	GIANT REFINING COMPANY	Date Reported:	11/12/96
Sample ID:	Trip Blank	Date Sampled:	11/04/96
Project ID:	Ciniza Refinery	Date Received:	11/08/96
Lab ID:	B9610071	Date Extracted:	NA
Matrix:	Water	Date Analyzed:	11/11/96

Parameter	Result	PQL	Units
Continued			
trans-1,2-Dichloroethene	ND	5.0	ug/L
trans-1,3-Dichloropropene	ND	5.0	ug/L
Trichloroethene (TCE)	ND	5.0	ug/L
Vinyl Chloride	ND	5.0	ug/L
Xylenes (total)	ND	5.0	ug/L

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
1,2-Dichloroethane-d4	99	81 - 126
Bromofluorobenzene	96	78 - 112
Toluene-d8	97	83 - 127

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8260, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Rev. 1, November 1992.

Analyst E.P.

Reviewed CCB

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

LAB QA/QC
EPA METHOD 8240
INSTRUMENT BLANK

Date Analyzed: 11/11/96
Lab ID: IBW96316
Matrix: Water

Parameter	Result	PQL	Units
1,1,1-Trichloroethane	ND	5.0	ug/L
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L
1,1,2-Trichloroethane	ND	5.0	ug/L
1,1-Dichloroethane	ND	5.0	ug/L
1,1-Dichloroethene	ND	5.0	ug/L
1,2-Dibromoethane (EDB)	ND	5.0	ug/L
1,2-Dichloroethane	ND	5.0	ug/L
1,2-Dichloropropane	ND	5.0	ug/L
1,4-Dichlorobenzene	ND	5.0	ug/L
2-Butanone (MEK)	ND	20	ug/L
2-Hexanone	ND	5.0	ug/L
4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L
Acetone	ND	20	ug/L
Benzene	ND	5.0	ug/L
Bromodichloromethane	ND	5.0	ug/L
Bromoform	ND	5.0	ug/L
Bromomethane	ND	5.0	ug/L
Carbon Disulfide	ND	5.0	ug/L
Carbon Tetrachloride	ND	5.0	ug/L
Chlorobenzene	ND	5.0	ug/L
Chloroethane	ND	5.0	ug/L
Chloroform	ND	5.0	ug/L
Chloromethane	ND	5.0	ug/L
cis-1,3-Dichloropropene	ND	5.0	ug/L
Dibromochloromethane	ND	5.0	ug/L
Ethylbenzene	ND	5.0	ug/L
m,p-Xylene	ND	5.0	ug/L
Methylene chloride	ND	20	ug/L
o-Xylene	ND	5.0	ug/L
Styrene	ND	5.0	ug/L
Tetrachloroethene (PCE)	ND	5.0	ug/L
Toluene	ND	5.0	ug/L
trans-1,2-Dichloroethene	ND	5.0	ug/L

Continued

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LAB QA/QC
EPA METHOD 8240
INSTRUMENT BLANK

Date Analyzed: 11/11/96
Lab ID: IBW96316
Matrix: Water

Parameter	Result	PQL	Units
Continued			
trans-1,3-Dichloropropene	ND	5.0	ug/L
Trichloroethene (TCE)	ND	5.0	ug/L
Vinyl Chloride	ND	5.0	ug/L
Xylenes (total)	ND	5.0	ug/L

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
1,2-Dichloroethane-d4	90	81 - 126
Bromofluorobenzene	102	78 - 112
Toluene-d8	108	83 - 127

ND - Not Detected at Practical Quantitation Level (PQL)

Analyst E.D.

Reviewed CCB

Inter-Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

LAB QA/QC
EPA METHOD 8240
MATRIX SPIKE

Date Analyzed: 11/06/96
Lab ID: 0596H10004 SK1 0396G02415
Matrix: Water

Parameter	Spike Added (ug/L)	Sample Result (ug/L)	Spike Result (ug/L)	MS Recovery %	QC Limits Rec.
1,1-Dichloroethene	50	0	56	112	75 -145
Benzene	50	0	52	104	71 -120
Chlorobenzene	50	0	52	104	76 -127
Toluene	50	0	54	108	71 -127
Trichloroethene (TCE)	50	0	49	98	75 -130

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
1,2-Dichloroethane-d4	95	76 -114
Bromofluorobenzene	99	86 -115
Toluene-d8	98	88 -110

Note: Spike Recoveries are calculated using zero for Sample result if Sample result was less than PQL (Practical Quantitation Level).

Spike Recovery: 0 out of 5 outside QC limits.

Analyst RRD **Reviewed** CTB

Inter-Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

LAB QA/QC
EPA METHOD 8240
LAB CONTROL SAMPLE DUPLICATE SUMMARY

Date Analyzed: 11/06/96
Lab ID: LCW96311
Matrix: Water

Original Sample Parameters

Parameter	Spike Added (mg/L)	Sample Result (mg/L)	Spike Result (mg/L)	LCS Recovery %	QC Limits Rec.
1,1,2-Trichloroethane	0.02	0	0.021	105	70 - 130
1,2-Dibromoethane (EDB)	0.02	0	0.02	100	70 - 130
1,2-Dichloroethane	0.02	0	0.019	95	70 - 130
1,2-Dichloropropane	0.02	0	0.021	105	70 - 130
1,4-Dichlorobenzene	0.02	0	0.023	115	70 - 130
Benzene	0.02	0	0.021	105	70 - 130
Bromoform	0.02	0	0.019	95	70 - 130
Carbon Tetrachloride	0.02	0	0.021	105	70 - 130
cis-1,3-Dichloropropene	0.02	0	0.019	95	70 - 130
Tetrachloroethene (PCE)	0.02	0	0.019	95	70 - 130
Trichloroethene (TCE)	0.02	0	0.018	90	70 - 130
Vinyl Chloride	0.02	0	0.016	80	70 - 130

Duplicate Sample Parameters

Parameter	Spike Added (mg/L)	LCSD Result (mg/L)	LCSD Recovery %	RPD %	QC Limits RPD	QC Limits Rec.
1,1,2-Trichloroethane	0.02	.019	95	10	12	70 - 130
1,2-Dibromoethane (EDB)	0.02	.018	90	11	12	70 - 130
1,2-Dichloroethane	0.02	.017	85	11	13	70 - 130
1,2-Dichloropropane	0.02	.019	95	10	12	70 - 130
1,4-Dichlorobenzene	0.02	.022	110	4	12	70 - 130
Benzene	0.02	.019	95	10	14	70 - 130
Bromoform	0.02	.018	90	5	12	70 - 130
Carbon Tetrachloride	0.02	.019	95	10	11	70 - 130
cis-1,3-Dichloropropene	0.02	.018	90	5	12	70 - 130
Tetrachloroethene (PCE)	0.02	.018	90	5	12	70 - 130
Trichloroethene (TCE)	0.02	.017	85	6	13	70 - 130
Vinyl Chloride	0.02	.015	75	6	14	70 - 130

Spike Recovery: 0 out of 24 outside QC limits.
RPD: 0 out of 12 outside QC limits.

Analyst RRD

Reviewed

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

LAB QA/QC
EPA METHOD 8240
LAB CONTROL SAMPLE

Date Analyzed: **11/11/96**
Lab ID: LCW96316B
Matrix: Water

Parameter	Spike Added (mg/L)	Sample Result (mg/L)	LCS Result (mg/L)	LCS Recovery %	QC Limits Rec.
1,4-Dichlorobenzene	0.05	0	0.048	96	70 -130
1,1,2-Trichloroethane	0.05	0	0.051	102	70 -130
1,2-Dibromoethane (EDB)	0.05	0	0.045	90	70 -130
1,2-Dichloroethane	0.05	0	0.044	88	70 -130
1,2-Dichloropropane	0.05	0	0.049	98	70 -130
Benzene	0.05	0	0.048	96	70 -130
Bromoform	0.05	0	0.047	94	70 -130
Carbon Tetrachloride	0.05	0	0.045	90	70 -130
cis-1,3-Dichloropropene	0.05	0	0.047	94	70 -130
Tetrachloroethene (PCE)	0.05	0	0.047	94	70 -130
Trichloroethene (TCE)	0.05	0	0.045	90	70 -130
Vinyl Chloride	0.05	0	0.035	70	70 -130

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
Bromofluorobenzene	93	86 -115
1,2-Dichloroethane-d4	98	76 -114
Toluene-d8	96	88 -110

Spike Recovery: 0 out of 12 outside QC limits.
Surrogates: Surrogate Recoveries within QC Limits.

Analyst E.P.

Reviewed CEB

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

LAB QA/QC
EPA METHOD 8240
MATRIX SPIKE

Date Analyzed: **11/11/96**
Lab ID: 0596H10064 SK1 0396G02433
Matrix: Water

Parameter	Spike Added (ug/L)	Sample Result (ug/L)	Spike Result (ug/L)	MS Recovery %	QC Limits Rec.
1,1-Dichloroethene	50	0	37	74 *	75 -145
Benzene	50	0	45	90	71 -120
Chlorobenzene	50	0	40	80	76 -127
Toluene	50	0	53	106	71 -127
Trichloroethene (TCE)	50	0	38	76	75 -130

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
1,2-Dichloroethane-d4	87	81 -126
Bromofluorobenzene	104	78 -112
Toluene-d8	116	83 -127

Note: Spike Recoveries are calculated using zero for Sample result if Sample result was less than PQL (Practical Quantitation Level).

Spike Recovery: 1 out of 5 outside QC limits.

Analyst E.D.

Reviewed

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Quality Control / Quality Assurance

Blank Analysis

Dissolved Metals

Client:	**Giant Refining Company - Ciniza**		
Project:	Gallup	Date Reported:	12/05/96
Lab ID:	0396W02415	Date Sampled:	10/30/96
Matrix:	Water	Date Received:	11/01/96
Condition:	Cool / Intact		

Blank Analysis

Parameter	Found Result	Detection Limit mg/L
Chromium	ND	**0.01**
Lead	ND	**0.05**

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 18th ed., 1992.

Comments: Quality control run concurrently with the above sample lab numbers.
ND = None Detected.

Reported by: _____

Reviewed by: _____

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Quality Control / Quality Assurance

Known Analysis

Total Metals

Client: **Giant Refining Company - Ciniza**
Project: Gallup
Lab ID: 0396W02415
Matrix: Water
Condition: Cool / Intact

Date Reported: 12/05/96
Date Sampled: 10/30/96
Date Received: 11/01/96

Known Analysis

Parameter	Found Result	Known Result	Units	Percent Recovery
Chromium	1.04	1.00	mg/L	**104%**
Lead	1.03	1.00	mg/L	**103%**

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 18th ed., 1992.

Comments: Quality control run concurrently with the above sample lab numbers.

Reported by: SW

Reviewed by: JB

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Quality Control / Quality Assurance

Spike Analysis

Total Metals

Client:	**Giant Refining Company - Ciniza**		
Project:	Gallup	Date Reported:	12/05/96
Lab ID:	0396W02415	Date Sampled:	10/30/96
Matrix:	Water	Date Received:	11/01/96
Condition:	Cool / Intact		

Spike Analysis

Parameter	Spiked Sample Result	Sample Result	Spike Added	Percent Recovery
Chromium	0.92	<0.01	1.00	**92%**
Lead	0.95	<0.05	1.00	**93%**

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 18th ed., 1992.

Comments: Quality control run concurrently with the above sample lab numbers.

Reported by: SW

Reviewed by: JB

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Quality Control / Quality Assurance

Blank Analysis

Total Metals

Client:	**Giant Refining Company - Ciniza**		
Project:	Gallup, NM	Date Reported:	12/10/96
Lab ID:	0396W02433-2439	Date Sampled:	11/04/96
Matrix:	Water	Date Received:	11/06/96
Condition:	Cool / Intact		

Blank Analysis

Parameter	Found Result	Detection Limit mg/L
Chromium	ND	**0.01**
Lead	ND	**0.05**

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 18th ed., 1992.

Comments: Quality control run concurrently with the above sample lab numbers.
ND = None Detected.

Reported by: _____

Reviewed by: _____

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Known Analysis
Total Metals

Client: **Giant Refining Company - Ciniza**
Project: Gallup, NM
Lab ID: 0396W02433-2439
Matrix: Water
Condition: Cool / Intact

Date Reported: 12/10/96
Date Sampled: 11/04/96
Date Received: 11/06/96

Known Analysis

Parameter	Found Result	Known Result	Units	Percent Recovery
Chromium	1.06	1.00	mg/L	**106%**
Lead	1.07	1.00	mg/L	**107%**

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 18th ed., 1992.

Comments: Quality control run concurrently with the above sample lab numbers.

Reported by: _____

Reviewed by: _____