

GIANT REFINING COMPANY

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June 19, 1992

Steve Alexander
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department
P.O. Box 26110
Santa Fe, NM 87502



Dear Mr. Alexander:

Please accept the enclosed tabulated data for our annual ground water sampling event. I noticed that I had not included your copies with our recent submission of groundwater analytical data.

While doing routine QA on our records, I noticed a typographical error in our submission of the updated Annual Groundwater Measurements which is APPENDIX B, SUPPLEMENT 1, of our 1991 Annual Groundwater Report. A new copy is included for your copy of the report. (*See 1990 Annual Report*)

For any information, please contact me at (505) 722-0227.

Sincerely:

Handwritten signature of Lynn Shelton in cursive.

Lynn Shelton
Environmental Assistant
Giant Refining Company-Ciniza

cc: Kim Bullerdick, Corporate Counsel
Giant Industries Arizona, Inc.

SMW-1

Giant Refining

Gallup, New Mexico

TCL Volatile Organics
Method 8240

Parameter	05 MAR 91 Result*	24 SEP 91 Result*	24 APR 92 Result	Units
Chloromethane	<10	<5	ND	ug/L
Bromomethane	<10	<10	ND	ug/L
Vinyl chloride	<1	<0.5	ND	ug/L
Chloroethane	<1	<0.5	ND	ug/L
Methylene chloride	<5	<5	ND	ug/L
Acetone	<10	<10	ND	ug/L
Carbon disulfide	<1	<5	ND	ug/L
1,1-Dichloroethene	<1	<5	ND	ug/L
1,1-Dichloroethane	<1	<5	ND	ug/L
1,2-Dichloroethene (cis/trans)	<1	<5	ND	ug/L
Chloroform	<1	<5	ND	ug/L
1,2-Dichloroethane	<1	<5	ND	ug/L
2-Butanone	<2	<5	ND	ug/L
1,1,1-Trichloroethane	<1	<5	ND	ug/L
Carbon tetrachloride	<1	<5	ND	ug/L
Vinyl acetate	<10	<5	ND	ug/L
Bromodichloromethane	<1	<5	ND	ug/L
trans-1,3-Dichloropropene	<1	<5	ND	ug/L
Trichloroethene	<1	<5	ND	ug/L
Chlorodibromomethane	<1	<5	ND	ug/L
1,1,2-Trichloroethane	<1	<5	ND	ug/L
Benzene	<1	<5	ND	ug/L
cis-1,3-Dichloropropene	<1	<3	ND	ug/L
2-Chloroethyl vinyl ether	<10	<5	ND	ug/L
Bromoform	<5	<5	ND	ug/L
4-Methyl-2-pentanone	<10	<5	ND	ug/L
2-Hexanone	<10	<5	ND	ug/L
1,1,2,2-Tetrachloroethane	<1	<5	ND	ug/L
Tetrachloroethene	<1	<5	ND	ug/L
Toluene	<1	<5	ND	ug/L
Chlorobenzene	<1	<5	ND	ug/L
Ethylbenzene	<1	<5	ND	ug/L
Stryene	<1	<5	ND	ug/L
Xylenes (total)	<1	<5	ND	ug/L
1,1,2 Trichloro-1,2,2- trifluoroethane	---	---	ND	ug/L
1,2-Dibromoethane (EDB)	---	---	---	ug/L
1,2-Dichlorobenzene	---	---	ND	ug/L
1,4-Dichlorobenzene	---	---	ND	ug/L
Acrolein	---	<20	---	ug/L
Acrylonitrile	---	<10	---	ug/L
Dibromomethane	---	<5	ND	ug/L
Dichlorodiflouromethane	---	<5	ND	ug/L
Methyl Iodide	---	<5	---	ug/L
Trans-1,4-dichloro-2-Butene	---	<5	---	ug/L
Trichloromonoflouromethane	---	<5	---	ug/L
1,2,3-Trichloropropane	---	<5	---	ug/L
Ethyl Methacrylate	---	<5	---	ug/L
Ethanol	---	<100	---	ug/L
1,4-Dichloro-2-Butane	---	<5	---	ug/L

* Data from Analytical Technologies, Inc.

SMW-1

Giant Refining Gallup, New Mexico

Metals
Dissolved Metals

Parameter	Date:	27 MAR 90 Result	05 MAR 91 Result*	24 APR 92 Result	Units
Calcium		182	185	140	mg/L
Magnesium		56.5	50.6	38	mg/L
Potassium		ND	1.9	ND	mg/L
Sodium		1250	1390	340	mg/L

* Data from Analytical Technologies, Inc.

SMW-1

Giant Refining Gallup, New Mexico

Metals
Total Metals

Parameter	05 MAR 91 Result*	24 SEP 91 Result*	24 APR 92 Result	Units
Chromium	0.075	0.058	0.13	mg/L
Lead	0.007	0.008	ND	mg/L

* Data from Analytical Technologies, Inc.

SMW-1

Giant Refining Gallup, New Mexico

General Inorganics

Parameter	05 MAR 91 Result*	24 SEP 91 Result*	24 APR 92 Result	Units
Alkalinity, Bicarb. as CaCO3 at pH 4.5	620	---	620	mg/L
Alkalinity, Carb. as CaCO3 at pH 8.3	<1	---	ND	mg/L
Chloride	1130	---	1200	mg/L
pH	7.52	7.21	7.7	units
pH	7.69	7.22		units
pH	7.54	7.20		units
pH	7.55	7.21		units
Average pH				units
Sulfate	1300	---	1400	mg/L
Specific Conductance at 25 deg.C	6320	5610	4200	umhos/cm
Specific Conductance at 25 deg.C	6170	5590		umhos/cm
Specific Conductance at 25 deg.C	6180	5580		umhos/cm
Specific Conductance at 25 deg.C	6240	5586		umhos/cm
Average Specific Conductance at 25 deg.C				umhos/cm
Total Organic Carbon	14.0	11.2	63	mg/L
Total Organic Carbon	12.8	11.9		mg/L
Total Organic Carbon	15.8	12.2		mg/L
Total Organic Carbon	11.4	11.7		mg/L
Total Organic Halogen as Cl	0.032 (1)	0.076	ND	ug/L
Total Organic Halogen as Cl	0.039 (1)	0.058		ug/L
Total Organic Halogen as Cl	0.053 (1)	0.071		ug/L
Total Organic Halogen as Cl	0.037 (1)	0.052		ug/L
Total Dissolved Solids	4700	---	4500	mg/L
Water Elevation	6860.51	6860.75	6858.91	ft

* Data from Analytical Technologies, Inc.
 (1) Total Organic Halide as reported by ATI

TCL Volatile Organics
Method 8240

Parameter	05 MAR 91	24 SEP 91	24 APR 92	Units
	Result*	Result*	Result	
Chloromethane	<10	<5	ND	ug/L
Bromomethane	<10	<10	ND	ug/L
Vinyl chloride	<1	<0.5	ND	ug/L
Chloroethane	<1	<0.5	ND	ug/L
Methylene chloride	<5	<5	ND	ug/L
Acetone	<10	<10	ND	ug/L
Carbon disulfide	<1	<5	ND	ug/L
1,1-Dichloroethene	<1	<5	ND	ug/L
1,1-Dichloroethane	<1	<5	ND	ug/L
1,2-Dichloroethene (cis/trans)	<1	<5	ND	ug/L
Chloroform	<1	<5	ND	ug/L
1,2-Dichloroethane	<1	<5	ND	ug/L
2-Butanone	<2	<5	ND	ug/L
1,1,1-Trichloroethane	<1	<5	ND	ug/L
Carbon tetrachloride	<1	<5	ND	ug/L
Vinyl acetate	<10	<5	ND	ug/L
Bromodichloromethane	<1	<5	ND	ug/L
trans-1,3-Dichloropropene	<1	<5	ND	ug/L
Trichloroethene	<1	<5	ND	ug/L
Chlorodibromomethane	<1	<5	ND	ug/L
1,1,2-Trichloroethane	<1	<5	ND	ug/L
Benzene	<1	<5	ND	ug/L
cis-1,3-Dichloropropene	<1	<3	ND	ug/L
2-Chloroethyl vinyl ether	<10	<5	ND	ug/L
Bromoform	<5	<5	ND	ug/L
4-Methyl-2-pentanone	<10	<5	ND	ug/L
2-Hexanone	<10	<5	ND	ug/L
1,1,2,2-Tetrachloroethane	<1	<5	ND	ug/L
Tetrachloroethene	<1	<5	ND	ug/L
Toluene	<1	<5	ND	ug/L
Chlorobenzene	<1	<5	ND	ug/L
Ethylbenzene	<1	<5	ND	ug/L
Stryene	<1	<5	ND	ug/L
Xylenes (total)	<1	<5	ND	ug/L
1,1,2 Trichloro-1,2,2- trifluoroethane	---	---	---	ug/L
1,2-Dibromoethane (EDB)	---	---	---	ug/L
1,2-Dichlorobenzene	---	---	ND	ug/L
1,4-Dichlorobenzene	---	---	ND	ug/L
Acrolein	---	<20	---	ug/L
Acrylonitrile	---	<10	---	ug/L
Dibromomethane	---	<5	ND	ug/L
Dichlorodiflouromethane	---	<5	ND	ug/L
Methyl Iodide	---	<5	---	ug/L
Trans-1,4-dichloro-2-Butene	---	<5	---	ug/L
Trichloromonoflouromethane	---	<5	---	ug/L
1,2,3-Trichloropropane	---	<5	---	ug/L
Ethyl Methacrylate	---	<5	---	ug/L
Ethanol	---	<100	---	ug/L
1,4-Dichloro-2-Butane	---	<5	---	ug/L

* Data from Analytical Technologies, Inc.

SMW-2

Giant Refining Gallup, New Mexico

Metals
Dissolved Metals

Parameter	03 APR 90 Result	05 MAR 91 Result*	24 APR 92 Result	Units
Calcium	147	132	100	mg/L
Magnesium	44.3	37.8	29	mg/L
Potassium	ND	<1.0	ND	mg/L
Sodium	1630	1620	420	mg/L

* Data from Analytical Technologies, Inc.

SMW-2

Giant Refining Gallup, New Mexico

Total Metals

Parameter	05 MAR 91 Result*	24 SEP 91 Result*	24 APR 92 Result	Units
Chromium	0.245	0.168	0.09	mg/L
Lead	0.010	0.010	ND	mg/L

* Data from Analytical Technologies, Inc.

SMW-2

Giant Refining Gallup, New Mexico

General Inorganics

Parameter	05 MAR 91 Result*	24 SEP 91 Result*	24 APR 92 Result	Units
Alkalinity, Bicarb. as CaCO3 at pH 4.5	578	---	620	mg/L
Alkalinity, Carb. as CaCO3 at pH 8.3	<1	---	ND	mg/L
Chloride	---	---	1300	mg/L
pH	7.7	7.37	7.2	units
pH	7.65	7.38		units
pH	7.68	7.36		units
pH	7.69	7.37		units
Average pH	7.66			units
Sulfate	1600	---	1600	mg/L
Specific Conductance at 25 deg.C	6940	6140	4600	umhos/cm
Specific Conductance at 25 deg.C	7030	6130		umhos/cm
Specific Conductance at 25 deg.C	7100	6140		umhos/cm
Specific Conductance at 25 deg.C	7100	6130		umhos/cm
Average Specific Conductance at 25 deg.C				umhos/cm
Total Organic Carbon	14.3	9.9	58	mg/L
Total Organic Carbon	11.6	8.7		mg/L
Total Organic Carbon	15.2	11.2		mg/L
Total Organic Carbon	10.2	9.5		mg/L
Total Organic Halogen as Cl	0.051 (1)	0.040	58	ug/L
Total Organic Halogen as Cl	0.061 (1)	0.031		ug/L
Total Organic Halogen as Cl	0.051 (1)	0.040		ug/L
Total Organic Halogen as Cl	0.037 (1)	0.038		ug/L
Total Dissolved Solids	5000	---	5200	mg/L
Water Elevation	6854.26	6854.22	6854.51	ft

* Data from Analytical Technologies, Inc.
(1) Total Organic Halide as reported by ATI.

TCL Volatile Organics
Method 8240

Parameter	05 MAR 91 Result*	24 SEP 91 Result*	24 APR 92 Result	Units
Chloromethane	<10	<5	ND	ug/L
Bromomethane	<10	<10	ND	ug/L
Vinyl chloride	<1	<0.5	ND	ug/L
Chloroethane	<1	<0.5	ND	ug/L
Methylene chloride	<5	<5	ND	ug/L
Acetone	<10	<10	ND	ug/L
Carbon disulfide	<1	<5	ND	ug/L
1,1-Dichloroethene	<1	<5	ND	ug/L
1,1-Dichloroethane	<1	<5	ND	ug/L
1,2-Dichloroethene (cis/trans)	<1	<5	ND	ug/L
Chloroform	<1	<5	ND	ug/L
1,2-Dichloroethane	<1	<5	ND	ug/L
2-Butanone	<2	<5	ND	ug/L
1,1,1-Trichloroethane	<1	<5	ND	ug/L
Carbon tetrachloride	<1	<5	ND	ug/L
Vinyl acetate	<10	<5	ND	ug/L
Bromodichloromethane	<1	<5	ND	ug/L
trans-1,3-Dichloropropene	<1	<5	ND	ug/L
Trichloroethene	<1	<5	ND	ug/L
Chlorodibromomethane	<1	<5	ND	ug/L
1,1,2-Trichloroethane	<1	<5	ND	ug/L
Benzene	<1	<5	ND	ug/L
cis-1,3-Dichloropropene	<1	<3	ND	ug/L
2-Chloroethyl vinyl ether	<10	<5	ND	ug/L
Bromoform	<5	<5	ND	ug/L
4-Methyl-2-pentanone	<10	<5	ND	ug/L
2-Hexanone	<10	<5	ND	ug/L
1,1,2,2-Tetrachloroethane	<1	<5	ND	ug/L
Tetrachloroethene	<1	<5	ND	ug/L
Toluene	<1	<5	ND	ug/L
Chlorobenzene	<1	<5	ND	ug/L
Ethylbenzene	<1	<5	ND	ug/L
Stryene	<1	<5	ND	ug/L
Xylenes (total)	<1	<5	ND	ug/L
1,1,2 Trichloro-1,2,2- trifluoroethane	---	---	---	ug/L
1,2-Dibromoethane (EDB)	---	---	---	ug/L
1,2-Dichlorobenzene	---	---	ND	ug/L
1,4-Dichlorobenzene	---	---	ND	ug/L
Acrolein	---	<20	---	ug/L
Acrylonitrile	---	<10	---	ug/L
Dibromomethane	---	<5	ND	ug/L
Dichlorodiflouromethane	---	<5	ND	ug/L
Methyl Iodide	---	<5	---	ug/L
Trans-1,4-dichloro-2-Butene	---	<5	---	ug/L
Trichloromonoflouromethane	---	<5	---	ug/L
1,2,3-Trichloropropane	---	<5	---	ug/L
Ethyl Methacrylate	---	<5	---	ug/L
Ethanol	---	<100	---	ug/L
1,4-Dichloro-2-Butane	---	<5	---	ug/L

* Data from Analytical Technologies, Inc.

SMW-3

Giant Refining

Gallup, New Mexico

Metals
Dissolved Metals

Parameter	03 APR 90 Result	05 MAR 91 Result*	24 APR 92 Result	Units
Calcium	59.0	50.4	42	mg/L
Magnesium	16.2	14.7	12	mg/L
Potassium	ND	1.3	ND	mg/L
Sodium	739	815	220	mg/L

* Data from Analytical Technologies, Inc.

SMW-3

Giant Refining Gallup, New Mexico

Total Metals

Parameter	05 MAR 91 Result*	24 SEP 91 Result*	24 APR 92 Result	Units
Chromium	0.038	0.010	ND	mg/L
Lead	0.010	0.011	ND	mg/L

* Data from Analytical Technologies, Inc.

SMW-3

Giant Refining Gallup, New Mexico

General Inorganics

Parameter	05 MAR 91 Result*	24 SEP 91 Result*	24 APR 92 Result	Units
Alkalinity, Bicarb. as CaCO3 at pH 4.5	664	---	680	mg/L
Alkalinity, Carb. as CaCO3 at pH 8.3	<1	---	ND	mg/L
Chloride	59	---	71	mg/L
pH	7.94	7.77	7.6	units
pH	8.09	7.76		units
pH	8.04	7.75		units
pH	7.92	7.76		units
Average pH	---			units
Sulfate	1200	---	1100	mg/L
Specific Conductance at 25 deg.C	3400	3360	2600	umhos/cm
Specific Conductance at 25 deg.C	3410	3380		umhos/cm
Specific Conductance at 25 deg.C	3330	3370		umhos/cm
Specific Conductance at 25 deg.C	3590	3370		umhos/cm
Average Specific Conductance at 25 deg.C				umhos/cm
Total Organic Carbon	3.0	1.1	46	mg/L
Total Organic Carbon	5.1	4.1		mg/L
Total Organic Carbon	2.5	2.7		mg/L
Total Organic Carbon	3.3	3.4		mg/L
Total Organic Halogen as Cl	<0.008 (1)	<0.008	ND	ug/L
Total Organic Halogen as Cl	0.015 (1)	<0.008		ug/L
Total Organic Halogen as Cl	<0.008 (1)	<0.008		ug/L
Total Organic Halogen as Cl	<0.008 (1)	<0.008		ug/L
Total Dissolved Solids	5200	---	3200	mg/L
Water Elevation	6852.45	6852.04	6852.31	ft

* Data from Analytical Technologies, Inc.
 (1) Total Organic Halide as reported by ATI.

SMW-4

Giant Refining

Gallup, New Mexico

TCL Volatile Organics
Method 8240

Parameter	05 MAR 91 Result*	24 SEP 91 Result*	24 APR 92 Result	Units
Chloromethane	<10	<5	ND	ug/L
Bromomethane	<10	<10	ND	ug/L
Vinyl chloride	<1	<0.5	ND	ug/L
Chloroethane	<1	<0.5	ND	ug/L
Methylene chloride	<5	<5	ND	ug/L
Acetone	<10	<10	ND	ug/L
Carbon disulfide	<1	<5	ND	ug/L
1,1-Dichloroethene	<1	<5	ND	ug/L
1,1-Dichloroethane	<1	<5	ND	ug/L
1,2-Dichloroethene (cis/trans)	<1	<5	ND	ug/L
Chloroform	<1	<5	ND	ug/L
1,2-Dichloroethane	<1	<5	ND	ug/L
2-Butanone	<2	<5	ND	ug/L
1,1,1-Trichloroethane	<1	<5	ND	ug/L
Carbon tetrachloride	<1	<5	ND	ug/L
Vinyl acetate	<10	<5	ND	ug/L
Bromodichloromethane	<1	<5	ND	ug/L
trans-1,3-Dichloropropene	<1	<5	ND	ug/L
Trichloroethene	<1	<5	ND	ug/L
Chlorodibromomethane	<1	<5	ND	ug/L
1,1,2-Trichloroethane	<1	<5	ND	ug/L
Benzene	<1	<5	ND	ug/L
cis-1,3-Dichloropropene	<1	<3	ND	ug/L
2-Chloroethyl vinyl ether	<10	<5	ND	ug/L
Bromoform	<5	<5	ND	ug/L
4-Methyl-2-pentanone	<10	<5	ND	ug/L
2-Hexanone	<10	<5	ND	ug/L
1,1,2,2-Tetrachloroethane	<1	<5	ND	ug/L
Tetrachloroethene	<1	<5	ND	ug/L
Toluene	<1	<5	ND	ug/L
Chlorobenzene	<1	<5	ND	ug/L
Ethylbenzene	<1	<5	ND	ug/L
Stryene	<1	<5	ND	ug/L
Xylenes (total)	<1	<5	ND	ug/L
1,1,2 Trichloro-1,2,2- trifluoroethane	---	---	---	ug/L
1,2-Dibromoethane (EDB)	---	---	---	ug/L
1,2-Dichlorobenzene	---	---	ND	ug/L
1,4-Dichlorobenzene	---	---	ND	ug/L
Acrolein	---	<20	---	ug/L
Acrylonitrile	---	<10	---	ug/L
Dibromomethane	---	<5	ND	ug/L
Dichlorodifluoromethane	---	<5	ND	ug/L
Methyl Iodide	---	<5	---	ug/L
Trans-1,4-dichloro-2-Butene	---	<5	---	ug/L
Trichloromonofluoromethane	---	<5	---	ug/L
1,2,3-Trichloropropane	---	<5	---	ug/L
Ethyl Methacrylate	---	<5	---	ug/L
Ethanol	---	<100	---	ug/L
1,4-Dichloro-2-Butane	---	<5	---	ug/L

* Data from Analytical Technologies, Inc.

SMW-4

Giant Refining Gallup, New Mexico

Total Metals

Parameter	05 MAR 91 Result*	24 SEP 91 Result*	24 APR 92 Result	Units
Chromium	0.032	<0.010	ND	mg/L
Lead	0.008	0.005	ND	mg/L

* Data from Analytical Technologies, Inc.

SMW-4

Giant Refining

Gallup, New Mexico

General Inorganics

Parameter	05 MAR 91 Result*	24 SEP 91 Result*	24 APR 92 Result	Units
Alkalinity, Bicarb. as CaCO3 at pH 4.5	418	---	430	mg/L
Alkalinity, Carb. as CaCO3 at pH 8.3	24	---	ND	mg/L
Chloride	58	---	63	mg/L
pH	8.54	8.42	8.3	units
pH	8.39	8.42		units
pH	8.38	8.42		units
pH	8.37	8.41		units
Average pH	---	---	170	mg/L
Sulfate	170	---	170	mg/L
Specific Conductance at 25 deg.C	1210	1350	1100	umhos/cm
Specific Conductance at 25 deg.C	1210	1350		umhos/cm
Specific Conductance at 25 deg.C	1230	1360		umhos/cm
Specific Conductance at 25 deg.C	1240	1350		umhos/cm
Average Specific Conductance at 25 deg.C				umhos/cm
Total Organic Carbon	2.6	1.4	68	mg/L
Total Organic Carbon	2.2	1.3		mg/L
Total Organic Carbon	1.6	1.1		mg/L
Total Organic Carbon	1.7	1.2		mg/L
Total Organic Halogen as Cl	<0.008 (1)	<0.008	43	ug/L
Total Organic Halogen as Cl	<0.008 (1)	<0.008		ug/L
Total Organic Halogen as Cl	<0.008 (1)	<0.008		ug/L
Total Organic Halogen as Cl	<0.008 (1)	<0.008		ug/L
Total Dissolved Solids	860	---	1400	mg/L
Water Elevation	6849.71	6849.52	6849.69	ft

* Data from Analytical Technologies, Inc.
 (1) Total Organic Halide as reported by ATI.

SMW-5

Giant Refining Gallup, New Mexico

TCL Volatile Organics
Method 8240

Parameter	05 MAR 91 Result*	24 SEP 91 Result*	24 APR 92 Result	Units
Chloromethane	<10	<5	ND	ug/L
Bromomethane	<10	<10	ND	ug/L
Vinyl chloride	<1	<0.5	ND	ug/L
Chloroethane	<1	<0.5	ND	ug/L
Methylene chloride	<5	<5	ND	ug/L
Acetone	<10	<10	ND	ug/L
Carbon disulfide	<1	<5	ND	ug/L
1,1-Dichloroethene	<1	<5	ND	ug/L
1,1-Dichloroethane	<1	<5	ND	ug/L
1,2-Dichloroethene (cis/trans)	<1	<5	ND	ug/L
Chloroform	<1	<5	ND	ug/L
1,2-Dichloroethane	<1	<5	ND	ug/L
2-Butanone	<2	<5	ND	ug/L
1,1,1-Trichloroethane	<1	<5	ND	ug/L
Carbon tetrachloride	<1	<5	ND	ug/L
Vinyl acetate	<10	<5	ND	ug/L
Bromodichloromethane	<1	<5	ND	ug/L
trans-1,3-Dichloropropene	<1	<5	ND	ug/L
Trichloroethene	<1	<5	ND	ug/L
Chlorodibromomethane	<1	<5	ND	ug/L
1,1,2-Trichloroethane	<1	<5	ND	ug/L
Benzene	<1	<5	ND	ug/L
cis-1,3-Dichloropropene	<1	<3	ND	ug/L
2-Chloroethyl vinyl ether	<10	<5	ND	ug/L
Bromoform	<5	<5	ND	ug/L
4-Methyl-2-pentanone	<10	<5	ND	ug/L
2-Hexanone	<10	<5	ND	ug/L
1,1,2,2-Tetrachloroethane	<1	<5	ND	ug/L
Tetrachloroethene	<1	<5	ND	ug/L
Toluene	<1	<5	ND	ug/L
Chlorobenzene	<1	<5	ND	ug/L
Ethylbenzene	<1	<5	ND	ug/L
Stryene	<1	<5	ND	ug/L
Xylenes (total)	<1	<5	ND	ug/L
1,1,2 Trichloro-1,2,2- trifluoroethane	---	---	---	ug/L
1,2-Dibromoethane (EDB)	---	---	---	ug/L
1,2-Dichlorobenzene	---	---	ND	ug/L
1,4-Dichlorobenzene	---	---	ND	ug/L
Acrolein	---	<20	---	ug/L
Acrylonitrile	---	<10	---	ug/L
Dibromomethane	---	<5	ND	ug/L
Dichlorodiflouromethane	---	<5	ND	ug/L
Methyl Iodide	---	<5	---	ug/L
Trans-1,4-dichloro-2-Butene	---	<5	---	ug/L
Trichloromonoflouromethane	---	<5	---	ug/L
1,2,3-Trichloropropane	---	<5	---	ug/L
Ethyl Methacrylate	---	<5	---	ug/L
Ethanol	---	<100	---	ug/L
1,4-Dichloro-2-Butane	---	<5	---	ug/L

* Data from Analytical Technologies, Inc.

SMW-5

Giant Refinery Gallup, New Mexico

Metals
Dissolved Metals

Parameter	03 APR 90 Result	05 MAR 91 Result*	24 APR 92 Result	Units
Calcium	3.9	3.3	2.7	mg/L
Magnesium	0.82	0.8	0.64	mg/L
Potassium	5.6	<1.0	ND	mg/L
Sodium	254	281	77	mg/L

* Data from Analytical Technologies, Inc.

SMW-5

Giant Refining Gallup, New Mexico

Metals
Total Metals

Parameter	05 MAR 91 Result*	24 Sep 91 Result*	24 APR 92 Result	Units
Chromium	0.042	0.035	ND	mg/L
Lead	<0.002	0.003	ND	mg/L

* Data from Analytical Technologies, Inc.

SMW-5

Giant Refining Gallup, New Mexico

General Inorganics

Parameter	05 MAR 91 Result*	24 SEP 91 Result*	24 APR 92 Result	Units
Alkalinity, Bicarb. as CaCO3 at pH 4.5	378	---	310	mg/L
Alkalinity, Carb. as CaCO3 at pH 8.3	20	---	ND	mg/L
Chloride	65	---	77	mg/L
pH	8.56	8.02	7.6	units
pH	8.54	8.04		units
pH	8.51	8.03		units
pH	8.55	8.04		units
Average pH	---			units
Sulfate	150	---	160	mg/L
Specific Conductance at 25 deg.C	1160	1250	1000	umhos/cm
Specific Conductance at 25 deg.C	1150	1250		umhos/cm
Specific Conductance at 25 deg.C	1120	1270		umhos/cm
Specific Conductance at 25 deg.C	1150	1260		umhos/cm
Average Specific Conductance at 25 deg.C				umhos/cm
Total Organic Carbon	2.3	2.2	39	mg/L
Total Organic Carbon	3.2	2.2		mg/L
Total Organic Carbon	1.3	1.6		mg/L
Total Organic Carbon	1.5	1.2		mg/L
Total Organic Halogen as Cl	<0.008 (1)	<0.008	24	ug/L
Total Organic Halogen as Cl	<0.008 (1)	<0.008		ug/L
Total Organic Halogen as Cl	<0.008 (1)	<0.008		ug/L
Total Organic Halogen as Cl	<0.008 (1)	<0.008		ug/L
Total Dissolved Solids	1500	---	1700	mg/L
Water Elevation	6847.40	6846.48	6847.89	ft

* Data from Analytical Technologies, Inc.

(1) Total Organic Halide as reported by ATI.

TCL Volatile Organics
Method 8240

Parameter	05 MAR 91 Result*	24 SEP 91 Result*	24 APR 92 Result	Units
Chloromethane	<10	<5	ND	ug/L
Bromomethane	<10	<10	ND	ug/L
Vinyl chloride	<1	<0.5	ND	ug/L
Chloroethane	<1	<0.5	ND	ug/L
Methylene chloride	<5	<5	ND	ug/L
Acetone	15	<10	ND	ug/L
Carbon disulfide	<1	<5	ND	ug/L
1,1-Dichloroethene	<1	<5	ND	ug/L
1,1-Dichloroethane	<1	<5	ND	ug/L
1,2-Dichloroethene (cis/trans)	<1	<5	ND	ug/L
Chloroform	<1	<5	ND	ug/L
1,2-Dichloroethane	<1	<5	ND	ug/L
2-Butanone	<2	<5	ND	ug/L
1,1,1-Trichloroethane	<1	<5	ND	ug/L
Carbon tetrachloride	<1	<5	ND	ug/L
Vinyl acetate	<10	<5	ND	ug/L
Bromodichloromethane	<1	<5	ND	ug/L
trans-1,3-Dichloropropene	<1	<5	ND	ug/L
Trichloroethene	<1	<5	ND	ug/L
Chlorodibromomethane	<1	<5	ND	ug/L
1,1,2-Trichloroethane	<1	<5	ND	ug/L
Benzene	<1	<5	ND	ug/L
cis-1,3-Dichloropropene	<1	<3	ND	ug/L
2-Chloroethyl vinyl ether	<10	<5	ND	ug/L
Bromoform	<5	<5	ND	ug/L
4-Methyl-2-pentanone	<10	<5	ND	ug/L
2-Hexanone	<10	<5	ND	ug/L
1,1,2,2-Tetrachloroethane	<1	<5	ND	ug/L
Tetrachloroethene	<1	<5	ND	ug/L
Toluene	<1	<5	ND	ug/L
Chlorobenzene	<1	<5	ND	ug/L
Ethylbenzene	<1	<5	ND	ug/L
Stryene	<1	<5	ND	ug/L
Xylenes (total)	<1	<5	ND	ug/L
1,1,2 Trichloro-1,2,2- trifluoroethane	---	---	---	ug/L
1,2-Dibromoethane (EDB)	---	---	---	ug/L
1,2-Dichlorobenzene	---	---	ND	ug/L
1,4-Dichlorobenzene	---	---	ND	ug/L
Acrolein	---	<20	---	ug/L
Acrylonitrile	---	<10	---	ug/L
Dibromomethane	---	<5	ND	ug/L
Dichlorodiflouromethane	---	<5	ND	ug/L
Methyl Iodide	---	<5	---	ug/L
Trans-1,4-dichloro-2-Butene	---	<5	---	ug/L
Trichloromonoflouromethane	---	<5	---	ug/L
1,2,3-Trichloropropane	---	<5	---	ug/L
Ethyl Methacrylate	---	<5	---	ug/L
Ethanol	---	<100	---	ug/L
1,4-Dichloro-2-Butane	---	<5	---	ug/L

* Data from Analytical Technologies, Inc.

SMW-6

Giant Refinery Gallup, New Mexico

Metals
Dissolved Metals

Parameter	27 MAR 90 Result	05 MAR 91 Result*	24 APR 92 Result	Units
Calcium	8.3	6.6	4.6	mg/L
Magnesium	2.5	1.9	1.4	mg/L
Potassium	ND	3.6	1.0	mg/L
Sodium	379	376	86	mg/L

* Data from Analytical Technologies, Inc.

SMW-6

Giant Refining Gallup, New Mexico

Total Metals

Parameter	05 MAR 91 Result*	24 SEP 91 Result*	24 APR 92 Result	Units
Chromium	<0.010	0.097	ND	mg/L
Lead	<0.002	0.009	ND	mg/L

* Data from Analytical Technologies, Inc.

SMW-6

Giant Refining

Gallup, New Mexico

General Inorganics

Parameter	05 MAR 91 Result*	24 SEP 91 Result*	24 APR 92 Result	Units
Alkalinity, Bicarb. as CaCO3 at pH 4.5	604	---	550	mg/L
Alkalinity, Carb. as CaCO3 at pH 8.3	8	---	nd	mg/L
Chloride	82	---	89	mg/L
pH	8.41	7.56	8.4	units
pH	8.20	7.57		units
pH	8.20	7.57		units
pH	8.17	7.56		units
Average pH	---			units
Sulfate	200	---	190	mg/L
Specific Conductance at 25 deg.C	1520	1660	1300	umhos/cm
Specific Conductance at 25 deg.C	1540	1670		umhos/cm
Specific Conductance at 25 deg.C	1520	1690		umhos/cm
Specific Conductance at 25 deg.C	1490	1670		umhos/cm
Average Specific Conductance at 25 deg.C				umhos/cm
Total Organic Carbon	2.0	3.2	72	mg/L
Total Organic Carbon	1.2	3.0		mg/L
Total Organic Carbon	1.2	2.6		mg/L
Total Organic Carbon	1.3	2.4		mg/L
Total Organic Halogen as Cl	<0.008 (1)	<0.008	120	ug/L
Total Organic Halogen as Cl	<0.008 (1)	<0.008		ug/L
Total Organic Halogen as Cl	<0.008 (1)	<0.008		ug/L
Total Organic Halogen as Cl	<0.008 (1)	<0.008		ug/L
Total Dissolved Solids	1100	---	1700	mg/L
Water Elevation	6850.11	6850.01	6850.18	ft

* Data from Analytical Technologies, Inc.

(1) Total Organic Halide as reported by ATI.

OW-11

Giant Refining Gallup, New Mexico

TCL Volatile Organics
Method 8240

Parameter	06 MAR 91 Result*	24 SEP 91 Result*	22 APR 92 Result	Units
1,1-Dichloroethene	<1	<5	ND	ug/L
2-Butanone	<2	<5	ND	ug/L
1,1,1-Trichloroethane	<1	<5	ND	ug/L
Benzene	<1	<5	ND	ug/L
Tetrachloroethene	<1	<5	ND	ug/L
Toluene	<1	<5	ND	ug/L
Ethylbenzene	<1	<5	ND	ug/L
Xylenes (total)	<1	<5	ND	ug/L
Chloromethane	<10	<5	ND	ug/L
Bromomethane	<10	<10	ND	ug/L
Vinyl Chloride	<1	<0.5	ND	ug/L
Chloroethane	<1	<0.5	ND	ug/L
Methylene Chloride	<5	<5	ND	ug/L
Carbon Disulfide	<1	<5	ND	ug/L
1,1-Dichloroethane	<1	<5	ND	ug/L
1,2-Dichloroethene (Total)	<1	<5	ND	ug/L
Chloroform	<1	<5	ND	ug/L
1,2-Dichloroethane	<1	<5	ND	ug/L
Carbon Tetrachloride	<1	<5	ND	ug/L
Vinyl Acetate	<10	<5	ND	ug/L
Bromodichloromethane	<1	<5	ND	ug/L
1,1,2,2-Tetrachloroethane	<1	<5	ND	ug/L
1,2-Dichloropropane	<1	<5	ND	ug/L
Trans-1,3-Dichloropropene	<1	<5	ND	ug/L
Trichloroethene	<1	<5	ND	ug/L
Dibromochloromethane	<1	<5	ND	ug/L
1,1,2-Trichloroethane	<1	<5	ND	ug/L
Cis-1,3-Dichloropropene	<1	<5	ND	ug/L
2-Chloroethylvinylether	<10	<5	ND	ug/L
Bromoform	<5	<3	ND	ug/L
2-Hexanone (MBK)	<10	<5	ND	ug/L
4-Methyl-2-Pentanone (MIBK)	<10	<5	ND	ug/L
Chlorobenzene	<1	<5	ND	ug/L
Styrene	<1	<5	ND	ug/L
Acrolein	---	<20	---	ug/L
Acrylonitrile	---	<10	---	ug/L
Dibromomethane	---	<5	ND	ug/L
Dichlorodifluoromethane	---	<5	ND	ug/L
Methyl Iodide	---	<5	---	ug/L
Trans-1,4-Dichloro-2-Butene	---	<5	---	ug/L
Trichloromonofluoromethane	---	<5	---	ug/L
1,2,3-Trichloropropane	---	<5	---	ug/L
Ethyl Methacrylate	---	<5	---	ug/L
Ethanol	---	<100	---	ug/L
1,4-Dichloro-2-Butane	---	<5	---	ug/L

* Data from Analytical Technologies, Inc.

OW-11

Giant Refining

Gallup, New Mexico

Metals
Dissolved Metals

Parameter	06 MAR 91 Result*	22 APR 92 Result	Units
Arsenic	<0.005	ND	mg/L
Barium	0.023	ND	mg/L
Cadmium	<0.005	ND	mg/L
Calcium	5.0	7.1	mg/L
Copper	---	---	mg/L
Manganese	<0.010	ND	mg/L
Nickel	---	---	mg/L
Selenium	0.036	ND	mg/L
Silver	0.028	ND	mg/L
Sodium	426	140	mg/L
Zinc	---	---	mg/L
Potassium	1.4	1.2	mg/L

* Data from Analytical Technologies, Inc.

OW-11

Giant Refining Gallup, New Mexico

Parameter	Metals Total Metals			Units
	06 MAR 91 Result*	24 SEP 91 Result*	22 APR 92 Result	
Chromium	<0.010	<0.010	ND	mg/L
Lead	0.003	0.002	ND	mg/L
Mercury	<0.0002	---	ND	mg/L

* Data from Analytical Technologies, Inc.

OW-11

Giant Refining Gallup, New Mexico

General Inorganics

Parameter	06 MAR 91 Result*	24 SEP 91 Result*	22 APR 92 Result	Units
Alkalinity, Bicarb. as CaCO3 at pH 4.5	456	---	450	mg/L
Alkalinity, Carb. as CaCO3 at pH 8.3	<1	---	ND	mg/L
Chloride	140	---	160	mg/L
pH	8.30	7.79	8.5	units
pH	8.18	7.80	---	units
pH	8.14	7.80	---	units
pH	8.07	7.79	---	units
Phenolics	<0.02	---	ND	mg/L
Sulfate	200	---	410	mg/L
Specific Conductance at 25 deg.C	1760	1800	2000	umhos/cm
Specific Conductance at 25 deg.C	1760	1800	---	umhos/cm
Specific Conductance at 25 deg.C	1700	1790	---	umhos/cm
Specific Conductance at 25 deg.C	1720	1790	---	umhos/cm
Total Organic Carbon	5.9	6.5	10	mg/L
Total Organic Carbon	5.1	4.4	---	mg/L
Total Organic Carbon	5.7	4.7	---	mg/L
Total Organic Carbon	5.5	4.3	---	mg/L
Total Organic Halogen as Cl	0.013 (1)	0.021	170	ug/L
Total Organic Halogen as Cl	0.015 (1)	0.032	---	ug/L
Total Organic Halogen as Cl	0.011 (1)	0.025	---	ug/L
Total Organic Halogen as Cl	0.010 (1)	0.022	---	ug/L
Total Dissolved Solids	1100	---	---	mg/L
Water Elevation	6905.19	6909.96	6904.56	ft

* Data from Analytical Technologies, Inc.
 (1) Total Organic Halide as reported by ATI.

MW-1

TCL Volatile Organics
Method 8240

Parameter	Date:	06 MAR 91	24 SEP 91	23 APR 92	Units
		Result*	Result*	Result	
Chloromethane		<10	<5	ND	ug/L
Bromomethane		<10	<10	ND	ug/L
Vinyl chloride		<1	<0.5	ND	ug/L
Chloroethane		<1	<0.5	ND	ug/L
Methylene chloride		<5	<5	ND	ug/L
Acetone		<10	<10	ND	ug/L
Carbon disulfide		<1	<5	ND	ug/L
1,1-Dichloroethene		<1	<5	ND	ug/L
1,1-Dichloroethane		<1	<5	ND	ug/L
1,2-Dichloroethene		<1	<5	ND	ug/L
(cis/trans)					
Chloroform		<1	<5	ND	ug/L
1,2-Dichloroethane		<1	<5	ND	ug/L
2-Butanone		<2	<5	ND	ug/L
1,1,1-Trichloroethane		<1	<5	ND	ug/L
Carbon tetrachloride		<1	<5	ND	ug/L
Vinyl acetate		<10	<5	ND	ug/L
Bromodichloromethane		<1	<5	ND	ug/L
trans-1,3-Dichloropropene		<1	<5	ND	ug/L
Trichloroethene		<1	<5	ND	ug/L
Chlorodibromomethane		<1	<5	ND	ug/L
1,1,2-Trichloroethane		<1	<5	ND	ug/L
Benzene		<1	<5	ND	ug/L
cis-1,3-Dichloropropene		<1	<5	ND	ug/L
2-Chloroethyl vinyl ether		<10	<5	ND	ug/L
Bromoform		<5	<3	ND	ug/L
4-Methyl-2-pentanone		<10	<5	ND	ug/L
2-Hexanone		<10	<5	ND	ug/L
1,1,2,2-Tetrachloroethane		<1	<5	ND	ug/L
Tetrachloroethene		<1	<5	ND	ug/L
Toluene		<1	<5	ND	ug/L
Chlorobenzene		<1	<5	ND	ug/L
Ethylbenzene		<1	<5	ND	ug/L
Styrene		<1	<5	ND	ug/L
Xylenes (total)		<1	<5	ND	ug/L
1,1,2 Trichloro-1,2,2-					
trifluoroethane		---	---	ND	ug/L
1,2-Dibromoethane (EDB)		---	---	---	ug/L
1,2-Dichlorobenzene		---	---	ND	ug/L
1,3-Dichlorobenzene		---	---	ND	ug/L
Acrolein		---	<10	---	ug/L
Acrylonitrile		---	<20	---	ug/L
Dibromomethane		---	<5	ND	ug/L
Dichlorodifluoromethane		---	<5	ND	ug/L
Methyl Iodide		---	<5	---	ug/L
Trans-1,4-Dichloro-2-Butene		---	<5	---	ug/L
Trichloromonofluoromethane		---	<5	---	ug/L
1,2,3-Trichloropropane		---	<5	---	ug/L
Ethyl Methacrylate		---	<5	---	ug/L
Ethanol		---	<100	---	ug/L
1,4-Dichloro-2-Butane		---	<5	---	ug/L

* Data from Analytical Technologies, Inc.

MW-1

Giant Refinery Gallup, New Mexico

Metals
Dissolved Metals

Parameter	Date:	01 APR 90 Result	06 MAR 91 Result*	23 APR 92 Result	Units
Arsenic		ND	<0.005	ND	mg/L
Barium		ND	<0.010	0.09	mg/L
Cadmium		ND	<0.005	0.0012	mg/L
Calcium		1.8	1.9	1.8	mg/L
Magnesium		0.25	0.3	0.26	mg/L
Manganese		ND	<0.010	0.10	mg/L
Potassium		ND	<1.0	ND	mg/L
Selenium		ND	<0.005	ND	mg/L
Silver		ND	<0.010	ND	mg/L
Sodium		252	267	72	mg/L

* Data from Analytical Technologies, Inc.

MW-1

Giant Refining Gallup, New Mexico

Metals
Total Metals

Parameter	Date:	06 MAR 91 Result*	24 SEP 91 Result*	23 APR 92 Result	Units
Chromium		<0.010	<0.010	ND	mg/L
Lead		0.010	0.003	ND	mg/L
Mercury		<0.0002	---	ND	mg/L

* Data from Analytical Technologies, Inc.

MW-1

Giant Refining

General Inorganics

Parameter	Date:	06 MAR 91 Result*	24 SEP 91 Result*	23 APR 92 Result	Units
Alkalinity, Bicarb. as CaCO3 at pH 4.5		304	---	270	mg/L
Alkalinity, Carb. as CaCO3 at pH 8.3		48	---	80	mg/L
Chloride		51	---	56	mg/L
pH		8.92	8.39	8.9	units
pH		8.92	8.41		units
pH		8.94	8.41		units
pH		8.94	8.40		units
Phenolics		<0.02	---	0.02	mg/L
Sulfate		160	---	160	mg/L
Specific Conductance at 25 deg.C		1080	1200	1100	umhos/cm
Specific Conductance at 25 deg.C		1110	1200		umhos/cm
Specific Conductance at 25 deg.C		1090	1190		umhos/cm
Specific Conductance at 25 deg.C		1110	1180		umhos/cm
Total Organic Carbon		1.9	1.6	15	mg/L
Total Organic Carbon		0.8	1.5		mg/L
Total Organic Carbon		0.6	2.7		mg/L
Total Organic Carbon		0.7	1.4		mg/L
Total Organic Halogen as Cl		<0.008 (1)	<0.008	ND	ug/L
Total Organic Halogen as Cl		<0.008 (1)	<0.008		ug/L
Total Organic Halogen as Cl		<0.008 (1)	<0.008		ug/L
Total Organic Halogen as Cl		<0.008 (1)	<0.008		ug/L
Total Dissolved Solids		710	---	1400	mg/L
Water Elevation		6873.45	6872.74	6871.35	ft

* Data from Analytical Technologies, Inc.
 (1) Total Organic Halide as reported by ATI.

MW-2

Giant Refining Gallup, New Mexico

TCL Volatile Organics
Method 8240

Parameter	Date:	06 MAR 91	24 SEP 91	23 APR 92	Units
		Result*	Result*	Result	
Chloromethane		<10	<5	ND	ug/L
Bromomethane		<10	<10	ND	ug/L
Vinyl chloride		<1	<0.5	ND	ug/L
Chloroethane		<1	<0.5	ND	ug/L
Methylene chloride		<5	<5	ND	ug/L
Acetone		<10	<10	ND	ug/L
Carbon disulfide		<1	<5	ND	ug/L
1,1-Dichloroethene		<1	<5	ND	ug/L
1,1-Dichloroethane		<1	<5	ND	ug/L
1,2-Dichloroethene (cis/trans)		<1	<5	ND	ug/L
Chloroform		<1	<5	ND	ug/L
1,2-Dichloroethane		<1	<5	ND	ug/L
2-Butanone		<2	<5	ND	ug/L
1,1,1-Trichloroethane		<1	<5	ND	ug/L
Carbon tetrachloride		<1	<5	ND	ug/L
Vinyl acetate		<10	<5	ND	ug/L
Bromodichloromethane		<1	<5	ND	ug/L
trans-1,3-Dichloropropene		<1	<5	ND	ug/L
Trichloroethene		<1	<5	ND	ug/L
Chlorodibromomethane		<1	<5	ND	ug/L
1,1,2-Trichloroethane		<1	<5	ND	ug/L
Benzene		<1	<5	ND	ug/L
cis-1,3-Dichloropropene		<1	<5	ND	ug/L
2-Chloroethyl vinyl ether		<1	<5	ND	ug/L
Bromoform		<10	<3	ND	ug/L
4-Methyl-2-pentanone		<5	<5	ND	ug/L
2-Hexanone		<10	<5	ND	ug/L
1,1,2,2-Tetrachloroethane		<10	<5	ND	ug/L
Tetrachloroethene		<1	<5	ND	ug/L
Toluene		<1	<5	ND	ug/L
Chlorobenzene		<1	<5	ND	ug/L
Ethylbenzene		<1	<5	ND	ug/L
Styrene		<1	<5	ND	ug/L
Xylenes (total)		<1	<5	ND	ug/L
1,1,2 Trichloro-1,2,2- trifluoroethane		---	---	---	ug/L
1,2-Dibromoethane (EDB)		---	---	---	ug/L
1,2-Dichlorobenzene		---	---	ND	ug/L
1,3-Dichlorobenzene		---	---	ND	ug/L
Acrolein		---	<10	---	ug/L
Acrylonitrile		---	<20	---	ug/L
Dibromomethane		---	<5	ND	ug/L
Dichlorodifluoromethane		---	<5	ND	ug/L
Methyl iodide		---	<5	---	ug/L
Trans-1,4-Dichloro-2-Butene		---	<5	---	ug/L
Trichloromonofluoromethane		---	<5	---	ug/L
1,2,3-Trichloropropane		---	<5	---	ug/L
Ethyl Methacrylate		---	<5	---	ug/L
Ethanol		---	<100	---	ug/L
1,4-Dichloro-2-Butane		---	<5	---	ug/L

* Data from Analytical Technologies, Inc.

MW-2

Giant Refinery Gallup, New Mexico

Metals
Dissolved Metals

Parameter	Date:	01 APR 90 Result	06 MAR 91 Result*	23 APR 92 Result	Units
Arsenic		ND	<0.005	ND	mg/L
Barium		0.019	0.019	ND	mg/L
Cadmium		ND	<0.005	ND	mg/L
Calcium		1.7	1.7	1.6	mg/L
Magnesium		ND	0.2	0.18	mg/L
Manganese		ND	<0.010	ND	mg/L
Potassium		ND	<1.0	ND	mg/L
Selenium		ND	<0.005	ND	mg/L
Silver		ND	<0.010	ND	mg/L
Sodium		259	270	78	mg/L

* Data from Analytical Technologies, Inc.

MW-2

Giant Refining Gallup, New Mexico

Metals
Total Metals

Parameter	Date:	06 MAR 91 Result*	24 SEP 91 Result*	23 APR 92 Result	Units
Chromium		<0.010	<0.010	ND	mg/L
Lead		<0.002	<0.002	ND	mg/L
Mercury		<0.0002	---	ND	mg/L

* Data from Analytical Technologies, Inc.

MW-2

Giant Refining Gallup, New Mexico

General Inorganics

Parameter	Date:	06 MAR 91 Result*	24 SEP 91 Result*	23 APR 92 Result	Units
Alkalinity, Bicarb. as CaCO3 at pH 4.5		304	---	250	mg/L
Alkalinity, Carb. as CaCO3 at pH 8.3		32	---	100	mg/L
Chloride		59	---	64	mg/L
pH		8.83	8.49	9.0	units
pH		8.96	8.51		units
pH		8.95	8.50		units
pH		8.95	8.50		units
Phenolics		<0.02	---	ND	mg/L
Sulfate		160	---	170	mg/L
Specific Conductance at 25 deg.C		1120	1200	1200	umhos/cm
Specific Conductance at 25 deg.C		1100	1190		umhos/cm
Specific Conductance at 25 deg.C		1130	1200		umhos/cm
Specific Conductance at 25 deg.C		1130	1200		umhos/cm
Total Organic Carbon		0.3	1.6	ND	mg/L
Total Organic Carbon		<0.5	1.9		mg/L
Total Organic Carbon		1.6	3.4		mg/L
Total Organic Carbon		0.8	2.8		mg/L
Total Organic Halogen as Cl		<0.008 (1)	<0.008	ND	ug/L
Total Organic Halogen as Cl		<0.008 (1)	<0.008		ug/L
Total Organic Halogen as Cl		<0.008 (1)	<0.008		ug/L
Total Organic Halogen as Cl		<0.008 (1)	<0.008		ug/L
Total Dissolved Solids		690	---	1200	mg/L
Water Elevation		6873.31	6872.74	6872.88	ft

* Data from Analytical Technologies, Inc.
 (1) Total Organic Halide as reported by ATI.

MW-4

Giant Refining Gallup, New Mexico

TCL Volatile Organics
Method 8240

Parameter	Date: 06 MAR 91	24 SEP 91	23 APR 92	Units
	Result*	Result*	Result	
Chloromethane	<10	<5	ND	ug/L
Bromomethane	<10	<10	ND	ug/L
Vinyl chloride	<1	<0.5	ND	ug/L
Chloroethane	<1	<0.5	ND	ug/L
Methylene chloride	<5	<5	ND	ug/L
Acetone	<10	<10	ND	ug/L
Carbon disulfide	<1	<5	ND	ug/L
1,1-Dichloroethene	<1	<5	ND	ug/L
1,1-Dichloroethane	<1	<5	ND	ug/L
1,2-Dichloroethene (cis/trans)	<1	<5	ND	ug/L
Chloroform	<1	<5	ND	ug/L
1,2-Dichloroethane	<1	<5	ND	ug/L
2-Butanone	<2	<5	ND	ug/L
1,1,1-Trichloroethane	<1	<5	ND	ug/L
Carbon tetrachloride	<1	<5	ND	ug/L
Vinyl acetate	<10	<5	ND	ug/L
Bromodichloromethane	<1	<5	ND	ug/L
trans-1,3-Dichloropropene	<1	<5	ND	ug/L
Trichloroethene	<1	<5	ND	ug/L
Chlorodibromomethane	<1	<5	ND	ug/L
1,1,2-Trichloroethane	<1	<5	ND	ug/L
Benzene	<1	<5	ND	ug/L
cis-1,3-Dichloropropene	<1	<5	ND	ug/L
2-Chloroethyl vinyl ether	<10	<5	ND	ug/L
Bromoform	<5	<3	ND	ug/L
4-Methyl-2-pentanone	<10	<5	ND	ug/L
2-Hexanone	<10	<5	ND	ug/L
1,1,2,2-Tetrachloroethane	<1	<5	ND	ug/L
Tetrachloroethene	<1	<5	ND	ug/L
Toluene	<1	<5	ND	ug/L
Chlorobenzene	<1	<5	ND	ug/L
Ethylbenzene	<1	<5	ND	ug/L
Styrene	<1	<5	ND	ug/L
Xylenes (total)	<1	<5	ND	ug/L
1,1,2 Trichloro-1,2,2- trifluoroethane	---	---	---	ug/L
1,2-Dibromoethane (EDB)	---	---	---	ug/L
1,2-Dichlorobenzene	---	---	ND	ug/L
1,3-Dichlorobenzene	---	---	ND	ug/L
Acrolein	---	<10	---	ug/L
Acrylonitrile	---	<20	---	ug/L
Dibromomethane	---	<5	ND	ug/L
Dichlorodifluoromethane	---	<5	ND	ug/L
Methyl Iodide	---	<5	---	ug/L
Trans-1,4-Dichloro-2-Butene	---	<5	---	ug/L
Trichloromonofluoromethane	---	<5	---	ug/L
1,2,3-Trichloropropane	---	<5	---	ug/L
Ethyl Methacrylate	---	<5	---	ug/L
Ethanol	---	<100	---	ug/L
1,4-Dichloro-2-Butane	---	<5	---	ug/L

* Data from Analytical Technologies, Inc.

MW-4

Giant Refinery Gallup, New Mexico

Metals
Dissolved Metals

Parameter	01 APR 90 Result	06 MAR 91 Result*	23 APR 92 Result	Units
Arsenic	ND	<0.005	ND	mg/L
Barium	0.017	0.019	0.06	mg/L
Cadmium	ND	<0.005	ND	mg/L
Calcium	2.0	2.0	1.5	mg/L
Magnesium	0.24	0.3	0.24	mg/L
Manganese	ND	0.010	0.08	mg/L
Potassium	ND	<1.0	ND	mg/L
Selenium	ND	<0.0005	ND	mg/L
Silver	ND	0.016	ND	mg/L
Sodium	277	292	78	mg/L

* Data from Analytical Technologies, Inc.

MW-4

Giant Refining Gallup, New Mexico

Metals
Total Metals

Parameter	06 MAR 91 Result*	24 SEP 91 Result*	23 APR 92 Result	Units
Chromium	<0.010	<0.010	ND	mg/L
Lead	0.010	<0.002	ND	mg/L
Mercury	<0.0002	---	ND	mg/L

* Data from Analytical Technologies, Inc.

MW-4

Giant Refining Gallup, New Mexico

General Inorganics

Parameter	06 MAR 91 Result*	24 SEP 91 Result*	22 APR 92 Result	Units
Alkalinity, Bicarb. as CaCO3 at pH 4.5	428	---	390	mg/L
Alkalinity, Carb. as CaCO3 at pH 8.3	28	---	60	mg/L
Chloride	19	---	19	mg/L
pH	8.65	8.42	8.7	units
pH	8.69	8.43		units
pH	8.69	8.42		units
pH	8.69	8.41		units
Phenolics	0.02	---	ND	mg/L
Sulfate	150	---	150	mg/L
Specific Conductance at 25 deg.C	1150	1250	1300	umhos/cm
Specific Conductance at 25 deg.C	1130	1250		umhos/cm
Specific Conductance at 25 deg.C	1150	1250		umhos/cm
Specific Conductance at 25 deg.C	1100	1240		umhos/cm
Total Organic Carbon	0.5	1.2	12	mg/L
Total Organic Carbon	1.5	3.1		mg/L
Total Organic Carbon	0.9	1.4		mg/L
Total Organic Carbon	0.6	1.3		mg/L
Total Organic Halogen as Cl	<0.008 (1)	<0.008	230	ug/L
Total Organic Halogen as Cl	<0.008 (1)	<0.008		ug/L
Total Organic Halogen as Cl	<0.008 (1)	<0.008		ug/L
Total Organic Halogen as Cl	<0.008 (1)	<0.008		ug/L
Total Dissolved Solids	1100	---	1700	mg/L
Water Elevation	6876.51	6875.97	6876.28	ft

* Data from Analytical Technologies, Inc.
 (1) Total Organic Halide as reported by ATI.

MW-5

Giant Refining Gallup, NM

Parameter	Date: 06 MAR 91	24 SEP 91	22 APR 92	Units
	Result*	Result*	Result	
Chloromethane	<10	<5	ND	ug/L
Bromomethane	<10	<10	ND	ug/L
Vinyl chloride	<1	<0.5	ND	ug/L
Chloroethane	<1	<0.5	ND	ug/L
Methylene chloride	<5	<5	ND	ug/L
Acetone	<10	<10	ND	ug/L
Carbon disulfide	<1	<5	ND	ug/L
1,1-Dichloroethene	<1	<5	ND	ug/L
1,1-Dichloroethane	<1	<5	ND	ug/L
1,2-Dichloroethene (cis/trans)	<1	<5	ND	ug/L
Chloroform	<1	<5	ND	ug/L
1,2-Dichloroethane	<1	<5	ND	ug/L
2-Butanone	<2	<5	ND	ug/L
1,1,1-Trichloroethane	<1	<5	ND	ug/L
Carbon tetrachloride	<1	<5	ND	ug/L
Vinyl acetate	<10	<5	ND	ug/L
Bromodichloromethane	<1	<5	ND	ug/L
trans-1,3-Dichloropropene	<1	<5	ND	ug/L
Trichloroethene	<1	<5	ND	ug/L
Chlorodibromomethane	<1	<5	ND	ug/L
1,1,2-Trichloroethane	<1	<5	ND	ug/L
Benzene	<1	<5	ND	ug/L
cis-1,3-Dichloropropene	<1	<5	ND	ug/L
2-Chloroethyl vinyl ether	<10	<5	ND	ug/L
Bromoform	<5	<3	ND	ug/L
4-Methyl-2-pentanone	<10	<5	ND	ug/L
2-Hexanone	<10	<5	ND	ug/L
1,1,2,2-Tetrachloroethane	<1	<5	ND	ug/L
Tetrachloroethene	<1	<5	ND	ug/L
Toluene	<1	<5	ND	ug/L
Chlorobenzene	<1	<5	ND	ug/L
Ethylbenzene	<1	<5	ND	ug/L
Styrene	<1	<5	ND	ug/L
Xylenes (total)	<1	<5	ND	ug/L
1,1,2 Trichloro-1,2,2- trifluoroethane	---	---	---	ug/L
1,2-Dibromoethane (EDB)	---	---	---	ug/L
1,2-Dichlorobenzene	---	---	ND	ug/L
1,3-Dichlorobenzene	---	---	ND	ug/L
Acrolein	---	<10	---	ug/L
Acrylonitrile	---	<20	---	ug/L
Dibromomethane	---	<5	ND	ug/L
Dichlorodifluoromethane	---	<5	ND	ug/L
Methyl Iodide	---	<5	---	ug/L
Trans-1,4-Dichloro-2-Butene	---	<5	---	ug/L
Trichloromonofluoromethane	---	<5	---	ug/L
1,2,3-Trichloropropane	---	<5	---	ug/L
Ethyl Methacrylate	---	<5	---	ug/L
Ethanol	---	<100	---	ug/L
1,4-Dichloro-2-Butane	---	<5	---	ug/L

* Data from Analytical Technologies, Inc.

MW-5

Giant Refinery Gallup, New Mexico

Metals
Dissolved Metals

Parameter	Date:	02 APR 90 Result	06 MAR 91 Result*	23 APR 92 Result	Units
Arsenic		ND	<0.005	ND	mg/L
Barium		0.12	0.017	ND	mg/L
Cadmium		ND	<0.005	ND	mg/L
Calcium		1.9	1.7	1.1	mg/L
Magnesium		0.20	0.2	0.15	mg/L
Manganese		ND	<0.010	ND	mg/L
Potassium		ND	<1.0	ND	mg/L
Selenium		ND	0.005	ND	mg/L
Silver		ND	<0.010	ND	mg/L
Sodium		255	270	64	mg/L

* Data from Analytical Technologies, Inc.

MW-5

Giant Refining Gallup, New Mexico

Metals
Total Metals

Parameter	06 MAR 91 Result*	24 SEP 91 Result*	23 APR 92 Result	Units
Chromium	<0.010	<0.010	ND	mg/L
Lead	<0.002	<0.002	ND	mg/L
Mercury	<0.0002	---	ND	mg/L

* Data from Analytical Technologies, Inc.

MW-5

Giant Refining Gallup, New Mexico

General Inorganics

Parameter	Date:	06 MAR 91 Result*	24 SEP 91 Result*	23 APR 92 Result	Units
Alkalinity, Bicarb. as CaCO3 at pH 4.5		314	---	310	mg/L
Alkalinity, Carb. as CaCO3 at pH 8.3		32	---	100	mg/L
Chloride		67	---	74	mg/L
pH		8.87	8.43	9.0	units
pH		8.97	8.44		units
pH		8.95	8.42		units
pH		8.94	8.44		units
Phenolics		<0.02	---	ND	mg/L
Sulfate		160	---	170	mg/L
Specific Conductance at 25 deg.C		1100	1220	1200	umhos/cm
Specific Conductance at 25 deg.C		1160	1230		umhos/cm
Specific Conductance at 25 deg.C		1140	1210		umhos/cm
Specific Conductance at 25 deg.C		1130	1220		umhos/cm
Total Organic Carbon		1.0	1.3	21	mg/L
Total Organic Carbon		0.8	1.0		mg/L
Total Organic Carbon		1.6	1.0		mg/L
Total Organic Carbon		0.7	2.0		mg/L
Total Organic Halogen as Cl		<0.008 (1)	<0.008	64	ug/L
Total Organic Halogen as Cl		<0.008 (1)	<0.008		ug/L
Total Organic Halogen as Cl		<0.008 (1)	<0.008		ug/L
Total Organic Halogen as Cl		<0.008 (1)	<0.008		ug/L
Total Dissolved Solids		700	---	1300	mg/L
Water Elevation		6873.72	6872.84	6874.25	ft

* Data from Analytical Technologies, Inc.
 (1) Total Organic Halide as reported by ATI.