



Beuco

January 24, 1992

Route 3, Box 7
Gallup, New Mexico
87301

505
722-3833

Ed Horst
Program Manager
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department
P.O. Box 26110
Santa Fe, New Mexico 87502

Re: 1990 and 1991 Annual Groundwater Reports
Giant Refining Company
Route 3 Box 7
Gallup, New Mexico 87301
Permit No. NMD000333211-2

Dear Mr. Horst:

Pursuant to Attachment G: Groundwater Monitoring Plan, 2., E. of the indicated permit, Giant Refining Company is providing the following information:


Appendix F: Calculation of Groundwater Flow Rate
Appendix G: Groundwater Elevation Contour Map

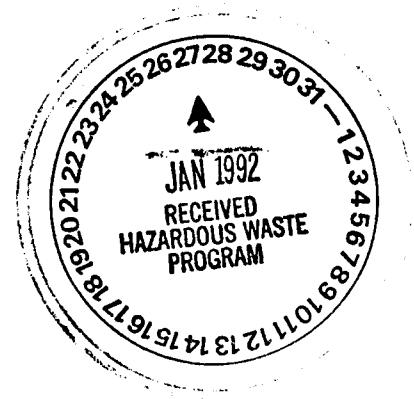
This information is provided for the years 1990 and 1991. Additionally, a corrected table of groundwater elevations for 1990, using updated survey data acquired in 1991, is provided as Appendix B, Supplemental I.

The new survey data is from our conversion, at your request, to the New Mexico coordinate system, in May, 1991.

If you require additional data or information, please contact Lynn Shelton, of my staff, at (505) 722-0227.

Sincerely,


John Stokes
Refinery Manager
Ciniza Refinery



JJS/TLS:sp

cc: Kim Bullerdick, Corporate Counsel, Giant Industries Arizona, Inc.
Lynn Shelton, Environmental Assistant, Ciniza Refinery

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1990

ANNUAL GROUNDWATER REPORT

ADDITIONAL INFORMATION

APPENDIX B
SUPPLEMENTAL I

CORRECTED ANNUAL GROUNDWATER MEASUREMENTS

GIANT REFINING CO.-CINIZA

ANNUAL GROUNDWATER MEASUREMENT - 1990*

Well No.	Date	Casing Elevation	Depth to Water	Groundwater Elevation
MW-1	03-27-90	6872.52	7.08	6871.44
	10-02-90		6.55	6871.97
MW-2	03-27-90	6880.84	8.32	6872.52
	10-02-90		9.75	6871.09
MW-4	03-27-90	6882.54	6.68	6875.86
	10-02-90		7.02	6875.52
MW-5	03-27-90	6883.32	10.36	6872.96
	10-02-90		12.53	6870.79
OW-11	03-28-90	6923.89	20.91	6902.98
	06-12-90		20.94	6902.95
	09-13-90		20.93	6902.96
	12-02-90		20.51	6903.38
SMW-1	03-27-90	6883.29	22.92	6860.37
	09-13-90		23.59	6859.70
SMW-2	03-27-90	6884.44	30.17	6854.27
	09-13-90		30.89	6853.55
SMW-3	03-27-90	6884.56	32.50	6852.06
	09-13-90		33.48	6851.08
SMW.4	03-27-90	6880.08	31.98	6848.10
	09-13-90		31.78	6848.30
SMW-5	03-27-90	6878.02	30.87	6847.15
	09-13-90		32.38	6845.64
SMW-6	03-27-90	6880.71	31.94	6848.77
	09-13-90		31.91	6848.80

* Corrected figures using new elevations surveyed to the New Mexi coordinate system. Those elevations were supplied to the NMED i 1991.

APPENDIX F
CALCULATION OF GROUNDWATER VELOCITY
SONSELA AQUIFIER

The groundwater velocity in the Sonsela aquifer under the land treatment area is estimated to be .00753 ft/day (2.75 ft/yr) by the following calculation:

$$V = (KI/n)$$

V = Velocity, ft/day

K = Horizontal Hydraulic Conductivity, 0.35 ft/day

I = Potentiometric Gradient, .00215 ft/day

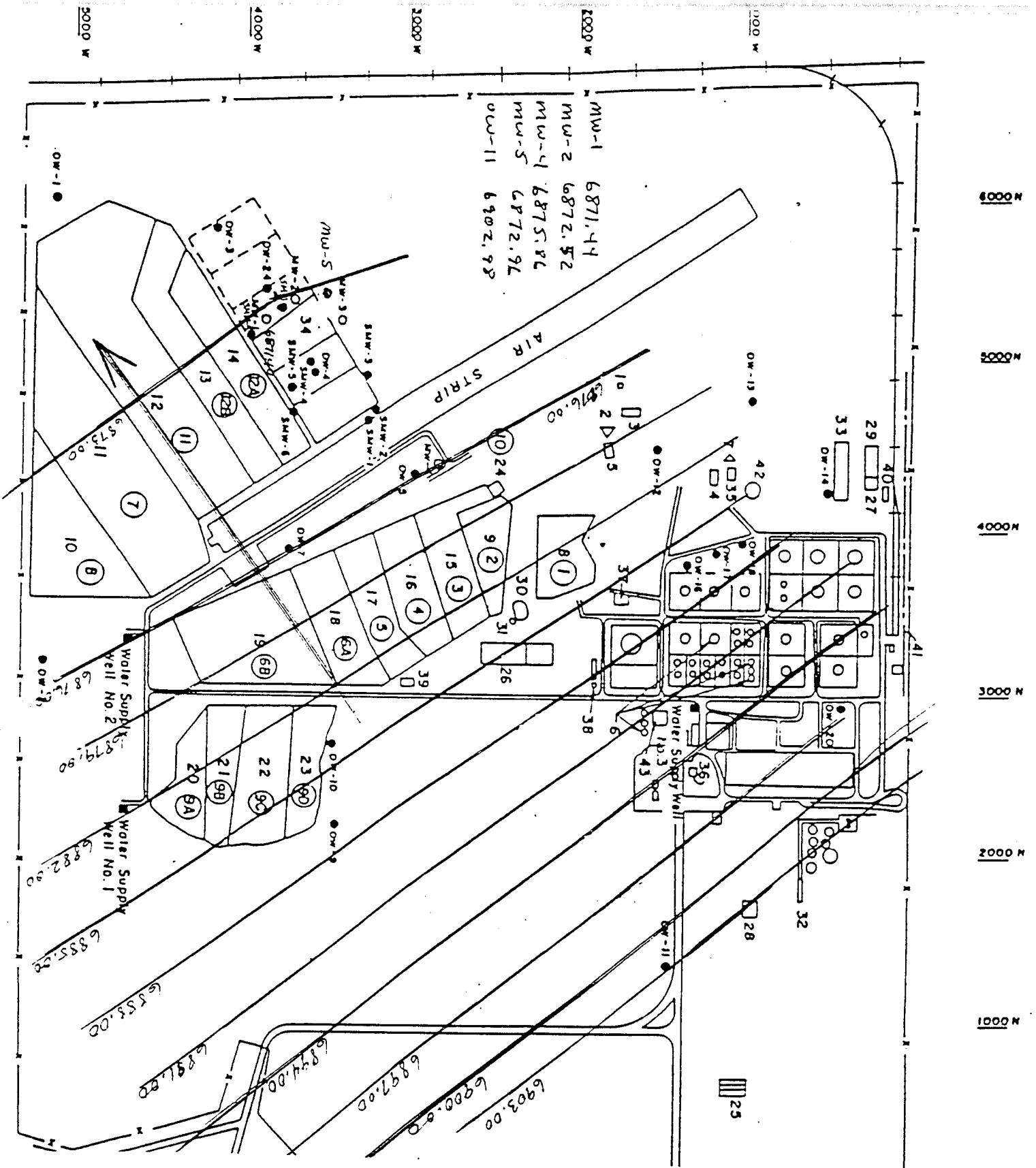
n = Porosity, 10%

"I" was calculated by using the differential elevation between wells MW-4 and MW-2 in 1991.

APPENDIX G

GROUNDWATER ELEVATION CONTOUR MAP

SONSELA AQUIFIER



GIANT REFINING CO.
 CINIZA REFINERY
 GALLUP, NM

1990
 GROUNDWATER ELEVATION
 CONTOUR MAP
 1-22-92 TLS

1991

ANNUAL GROUNDWATER REPORT

ADDITIONAL INFORMATION

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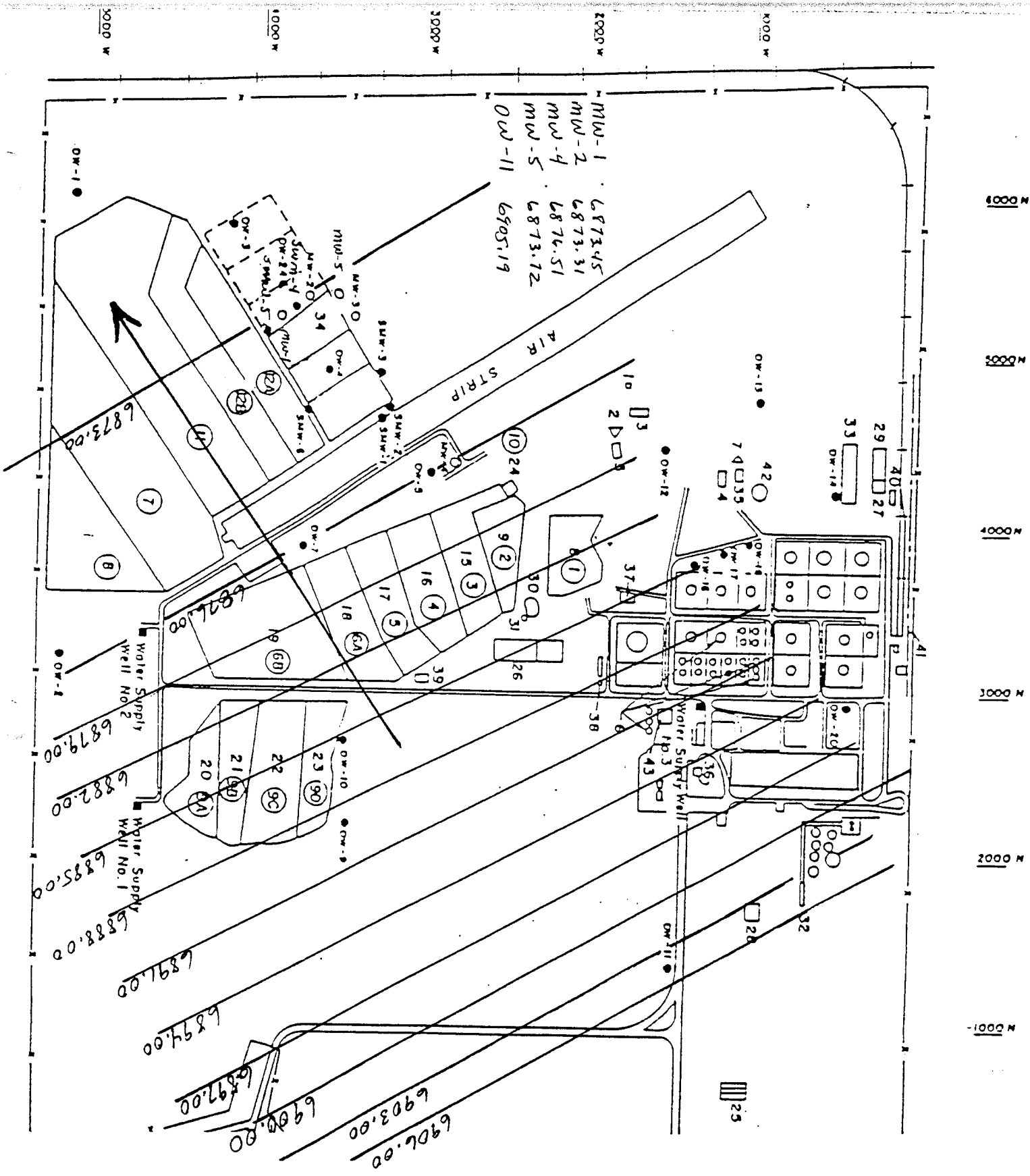
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 CINIZA REFINERY
 GALLUP, NM

1991
 GROUNDWATER ELEVATION
 CONTOUR MAP

1-22-92 TLS