ANACONDA Minerals Co. any
New Mexico Operations
P.O. Box 638
Grants, New Mexico 37020
Telephone 505 876 2211

MF Lee
Environmental Monitoring

May 5, 1982

ALBUQUERQUE DISTRICT MINING
RECEIVED
MAY 12 1982
MINERALS MANAGEMENT SERVICE
ALBUQUERQUE, NEW MEXICO

Mr. Dale C. Jones
District Mining Supervisor
Minerals Management Service
500 Gold Avenue, S.W.
Federal Building, Room 116
Albuquerque, N.M. 87102

Dear Mr. Jones:

The following information is being submitted in accordance with the Jackpile-Paguate Minesite Sampling Program for the First Quarter of 1982.

1. Radiological Analysis of Ground and Surface Water.

2. Chemical Analysis of Ground and Surface Water.

3. Maps showing Ground and Surface Water Sampling Locations.

4. Results of the Air Monitoring Program.

5. Results of the Ambient Radon Monitoring Study.

6. Map showing location of Air and Radon Monitoring Stations.

Sincerely,

Meade A. Stirland, Manager
Environment, Health & Safety

mls
Encl sures
cc: R. D. Lynn
D. L. Roberts
C. E. Sanchez
File

AIR QUALITY MONITORING PROGRAM

One 168-hour sample is taken each month at each of the four locations specified by Marc Nelson. They are collected about three meters above the ground on GF/A Glass Microfibre filter paper, using an RAC Heavy-duty Sampler.

AMBIENT RADON STUDY

Radon-222 is monitored continuously at each of the air sampling locations specified by Marc Nelson. The samples are monitored by the use of the Model RGM-2 Radon Gas Monitor. Normal data output is printed hourly and a 24-hour average is printed at the end of a 24-hour period.

JACKPILE- WATER RADIOLOGICAL ANALYSIS

(FIRST QUARTER, 1982)

DESCRIPTIVE LOCATION	Radium-226 pCi/L			Uranium-Natural ppm		
	January	February	March	January	February	March
Rio Paguate Upstream	0.32	0.17	0.58	0.011	0.004	0.010
Rio Moquino Upstream	0.02	0.06	0.02	0.008	0.007	0.020
Rio Paguate Above the Confluence	2.09	0.68	1.71	0.046	0.065	0.017
Rio Moquino Above the Confluence	2.29	0.38	1.29	0.073	0.044	0.017
Rio Paguate Ford Crossing	2.75	0.77	1.16	0.135	0.118	0.074
Paguate Reservoir	0.63	1.89	0.76	0.250	0.265	0.217
Jackpile Well #4	0.56	0.76	0.93	0.010	0.005	0.030
Jackpile New Shop	1.99	1.96	3.61	0.003	0.011	0.010
Jackpile Old Shop	4.68	2.14	2.62	0.314	0.266	0.277
Mouth of Oak Canyon Wash	*	*	*	*	*	*

* No sample because the Mouth of Oak Canyon Wash was dry.

FOR THE MONTH OF: January 1982

DESCRIPTION	DATE	pH	TDS ppm	Cond umhos	HCO_3^- ppm	Cl^- ppm	$SO_4^=$ ppm	Na^+ ppm	K^+ ppm	Ca^{++} ppm	Mg^{++} ppm	NO_3^- ppm	F^- ppm	SiO_2 ppm	Mn^{++} ppm			
Paguate Upstream	1-02-82	8.30	788	550	361	10.5	218	44.4	6.5	100	45.2	1.0	0.50	14.0	0.10			
Rio Moquino Upstream	1-07-82	8.45	1606	1080	317	15.0	833	159	11.9	178	88	2.7	0.69	16.0	0.01			
Rio Paguate Above the Confluence	1-14-82	8.04	917	630	353	12.7	315	61	7.8	109	55.1	0.93	0.54	23.0	0.05			
Rio Moquino Above the Confluence	1-14-82	8.43	2297	1350	317	19.1	1324	253	12.6	223	145	1.2	0.82	16.0	0.06			
Rio Paguate Ford Crossing	1-14-82	8.28	1557	1150	302	16.2	809	156	10.0	170	91	1.0	0.68	14.0	0.04			
Paguate Reservoir	1-07-82	8.06	1316	800	195	19.3	732	95	17.5	205	50.2	1.0	0.62	8.8	0.02			
Jackpile #4	1-07-82	8.68	1019	900	366	15.6	329	294	2.4	6.4	0.67	2.7	1.4	12.0	0.01			
Jackpile New Shop	1-07-82	8.09	1541	1500	380	26.1	659	445	5.1	18.8	1.45	2.4	1.5	13.0	0.02			
Jackpile Old Shop	1-14-82	7.91	3850	3350	244	99.0	2369	504	15.0	336	224	56.0	0.79	18.0	0.01			
		As ppm	Ba ppm	Cd ppm	Cr ppm	Pb ppm	Hg ppm	Se ppm	Cu ppm	Fe ppm	Zn ppm	Mo ppm	Ni ppm	V ppm				
Rio Paguate Upstream	1-07-82	<0.005	<0.05	<0.001	<0.005	0.01	<0.0005	<0.005	0.004	0.02	0.004	<0.01	<0.005	<0.05				
Rio Moquino Upstream	1-02-82	<0.005	<0.05	<0.001	<0.005	0.01	<0.0005	<0.005	0.004	0.01	0.005	<0.01	<0.005	<0.05				
Rio Paguate Above the Confluence	1-14-82	<0.005	<0.05	<0.001	<0.005	0.01	<0.0005	<0.005	0.003	0.01	0.004	<0.01	<0.005	<0.05				
Rio Moquino Above the Confluence	1-14-82	<0.005	<0.05	<0.001	<0.005	0.02	<0.0005	<0.005	0.004	0.01	0.002	<0.01	<0.005	<0.05				
Rio Paguate Ford Crossing	1-14-82	<0.005	<0.05	<0.001	<0.005	0.01	<0.0005	<0.005	0.004	0.01	0.005	<0.01	<0.005	<0.05				
Paguate Reservoir	1-07-82	<0.005	<0.05	<0.001	<0.005	0.01	<0.0005	<0.005	0.004	0.03	0.004	<0.01	<0.005	<0.05				
Jackpile #4	1-07-82	<0.005	<0.05	<0.001	<0.005	0.02	<0.0005	<0.005	0.003	0.05	0.003	<0.01	<0.005	<0.05				
Jackpile New Shop	1-07-82	<0.005	<0.05	0.009	<0.005	0.01	<0.0005	<0.005	0.003	0.04	0.010	<0.01	<0.005	<0.05				
	4-82	<0.005	<0.05	<0.001	<0.005	0.02	<0.0005	0.20	0.006	0.01	1.59	<0.01	<0.005					

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FOR THE MONTH OF: February, 1982

DESCRIPTION	DATE	pH	TDS ppm	Cond umhos	HCO_3^- ppm	Cl^- ppm	$SO_4^=$ ppm	Na^+ ppm	K^+ ppm	Ca^{++} ppm	Mg^{++} ppm	NO_3^- ppm	F^- ppm	SiO_2 ppm	Mn^{++} ppm
Paguate Upstream	2-04-82	8.21	706	420	309	9.0	207	33.6	5.1	96	42.7	1.0	0.40	35.0	0.099
Rio Moquino Upstream	2-04-82	8.34	1806	1150	326	16.2	981	170	9.1	183	117	0.80	0.59	18.0	0.012
Rio Paguate Above the Confluence	2-04-82	8.55	2111	1310	280	17.9	1249	210	8.4	193	151	0.50	0.70	13.0	0.14
Rio Moquino Above the Confluence	2-11-82	8.24	692	520	280	10.0	227	42	5.2	80	45.8	0.40	0.40	30.0	0.029
Rio Paguate Ford Crossing	2-11-82	8.02	1395	1050	268	14.0	755	124	5.4	135	93	0.51	0.49	18.0	0.042
Paguate Reservoir	2-04-82	8.38	1752	1200	259	20.0	1000	163	11.3	195	0.013	0.54	0.55	12.0	0.013
Jackpile #4	2-04-82	8.64	998	900	378	14.5	304	291	1.9	5.4	0.53	0.50	1.2	12.0	0.008
Jackpile New Shop	2-04-82	8.02	1629	1500	400	25.5	687	484	4.2	19.1	1.5	0.54	1.3	15.0	0.020
Jackpile Old Shop	2-04-82	7.81	3918	3300	248	105	2447	485	11.5	347	232	10.0	0.65	8.1	0.024
		As ppm	Ba ppm	Cd ppm	Cr ppm	Pb ppm	Hg ppm	Se ppm	Cu ppm	Fe ppm	Zn ppm	Mo ppm	Ni ppm	V ppm	
Rio Paguate Upstream	2-04-82	<0.005	<0.05	<0.001	<0.005	<0.01	<0.0005	<0.005	0.002	0.02	0.016	<0.01	<0.005	<0.05	
Rio Moquino Upstream	2-04-82	<0.005	<0.05	<0.001	<0.005	<0.01	<0.0005	<0.005	0.001	0.01	0.011	<0.01	<0.005	<0.05	
Rio Paguate Above the Confluence	2-04-82	<0.005	<0.05	<0.001	<0.005	<0.01	<0.0005	<0.005	0.004	0.01	0.010	<0.01	<0.005	<0.05	
Rio Moquino Above the Confluence	2-11-82	<0.005	<0.05	<0.001	<0.005	<0.01	<0.0005	<0.005	<0.001	0.02	0.008	<0.01	<0.005	<0.05	
Rio Paguate Ford Crossing	2-11-82	<0.005	<0.05	<0.001	<0.005	<0.01	<0.0005	<0.005	0.006	0.01	0.008	<0.01	<0.005	<0.05	
Paguate Reservoir	2-04-82	<0.005	<0.05	<0.001	<0.005	<0.01	<0.0005	<0.005	<0.001	0.03	0.011	<0.01	<0.005	<0.05	
Jackpile #4	2-04-82	<0.005	<0.05	<0.001	<0.005	<0.01	<0.0005	<0.005	<0.001	0.09	0.018	<0.01	<0.005	<0.05	
Jackpile New Shop	2-04-82	<0.005	<0.05	<0.001	<0.005	<0.01	<0.0005	<0.005	0.001	0.04	0.010	<0.01	<0.005	<0.05	
[illegible]	1-82	<0.005	<0.05	<0.001	<0.005	<0.01	<0.0 05	0.36	0.004	0.02	0.17	<0.01	<0		

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FOR THE MONTH OF: March, 1982

DESCRIPTION	DATE	pH	TDS ppm	Cond umhos	HCO_3^- ppm	Cl^- ppm	$SO_4^=$ ppm	Na^+ ppm	K^+ ppm	Ca^{++} ppm	Mg^{++} ppm	NO_3^- ppm	F^- ppm	SiO_2 ppm	Mn^{++} ppm
Rio Paguate Upstream	3-08-82	8.13	667	800	329	9.9	159	33.0	4.9	93	34.5	1.4	0.81	36.0	0.074
Rio Moquino Upstream	3-01-82	8.30	1722	1200	309	15.0	932	155	7.8	201	97	2.8	0.62	30.0	0.006
Rio Paguate Above the Confluence	3-01-82	8.42	1740	1350	253	20.5	987	156	7.9	202	110	1.9	0.62	24.0	0.015
Rio Moquino Above the Confluence	3-04-82	8.31	737	1000	317	11.0	227	41.6	5.3	90	41.5	1.4	1.6	36.0	0.019
Rio Paguate Ford Crossing	3-01-82	8.10	1629	1100	312	16.5	868	140	7.7	180	101	1.5	0.81	25.0	0.011
Paguate Reservoir	3-04-82	8.02	1732	1400	276	23.5	961	162	11.2	196	99	1.5	0.81	17.0	0.060
Jackpile #4	3-01-82	8.50	1026	950	378	25.5	315	294	1.4	6.1	1.30	1.9	1.6	13.0	0.009
Jackpile New Shop	3-01-82	8.00	1566	1450	390	26.5	677	444	3.1	18.0	2.70	2.0	0.90	16.0	0.016
Jackpile Old Shop	3-04-82	8.07	4005	3300	251	112	2472	490	10.4	370.0	238.0	58.0	0.77	13.0	0.010
		As ppm	Ba ppm	Cd ppm	Cr ppm	Pb ppm	Hg ppm	Se ppm	Cu ppm	Fe ppm	Zn ppm	Mo ppm	Ni ppm	V ppm	
Rio Paguate Upstream	3-08-82	<0.005	0.06	<0.001	<0.005	<0.01	<0.0005	<0.005	0.006	0.03	0.009	<0.01	<0.005	<0.05	
Rio Moquino Upstream	3-01-82	<0.005	<0.05	<0.001	<0.005	<0.01	<0.0005	<0.005	0.004	0.02	0.003	<0.01	<0.005	<0.05	
Rio Paguate Above the Confluence	3-01-82	<0.005	<0.05	<0.001	<0.005	<0.01	<0.0005	<0.005	0.003	0.01	0.003	<0.01	<0.005	<0.05	
Rio Moquino Above the Confluence	3-04-82	<0.005	<0.05	<0.001	<0.005	<0.01	<0.0005	<0.005	0.002	0.02	0.004	<0.01	<0.005	<0.05	
Rio Paguate Ford Crossing	3-01-82	<0.005	<0.05	<0.001	<0.005	<0.01	<0.0005	<0.005	0.005	0.02	0.002	0.02	<0.005	<0.05	
Paguate Reservoir	3-04-82	<0.005	0.22	<0.001	<0.005	0.01	<0.0005	<0.005	0.003	0.03	0.013	<0.01	<0.005	<0.05	
Jackpile #4	3-01-82	<0.005	0.14	<0.001	<0.005	<0.01	<0.0005	<0.005	0.006	0.08	0.009	0.02	<0.005	<0.05	
Jackpile New Shop	3-01-82	<0.005	0.07	<0.001	<0.005	<0.01	<0.0005	<0.005	0.004	0.09	0.008	<0.01	<0.005	<0.05	
	4-82	<0.005	0.15	<0.001	<0.005	<0.01	<0.0005	0.23	0.003	0.01	1.08	0.02	<0		

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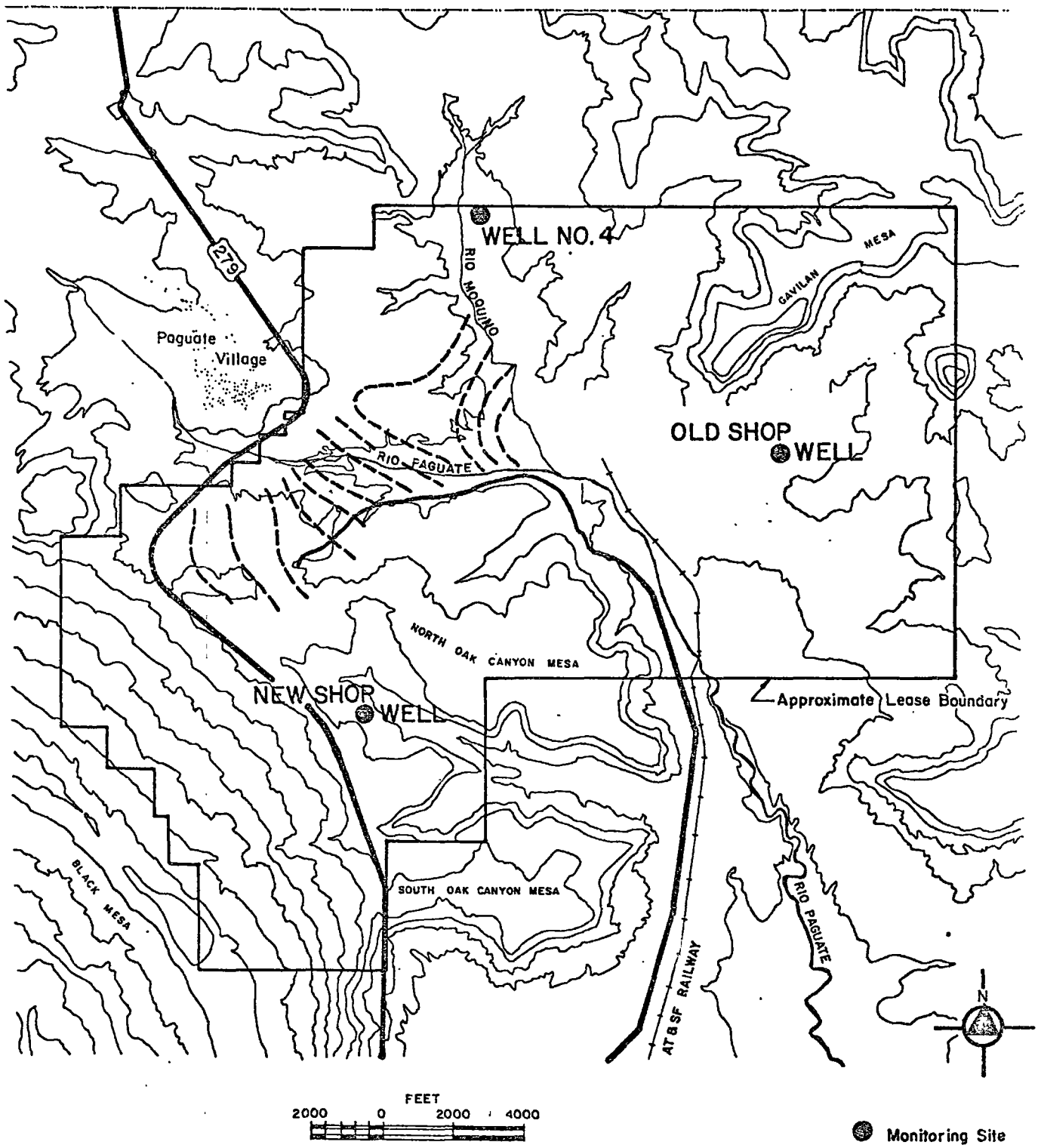
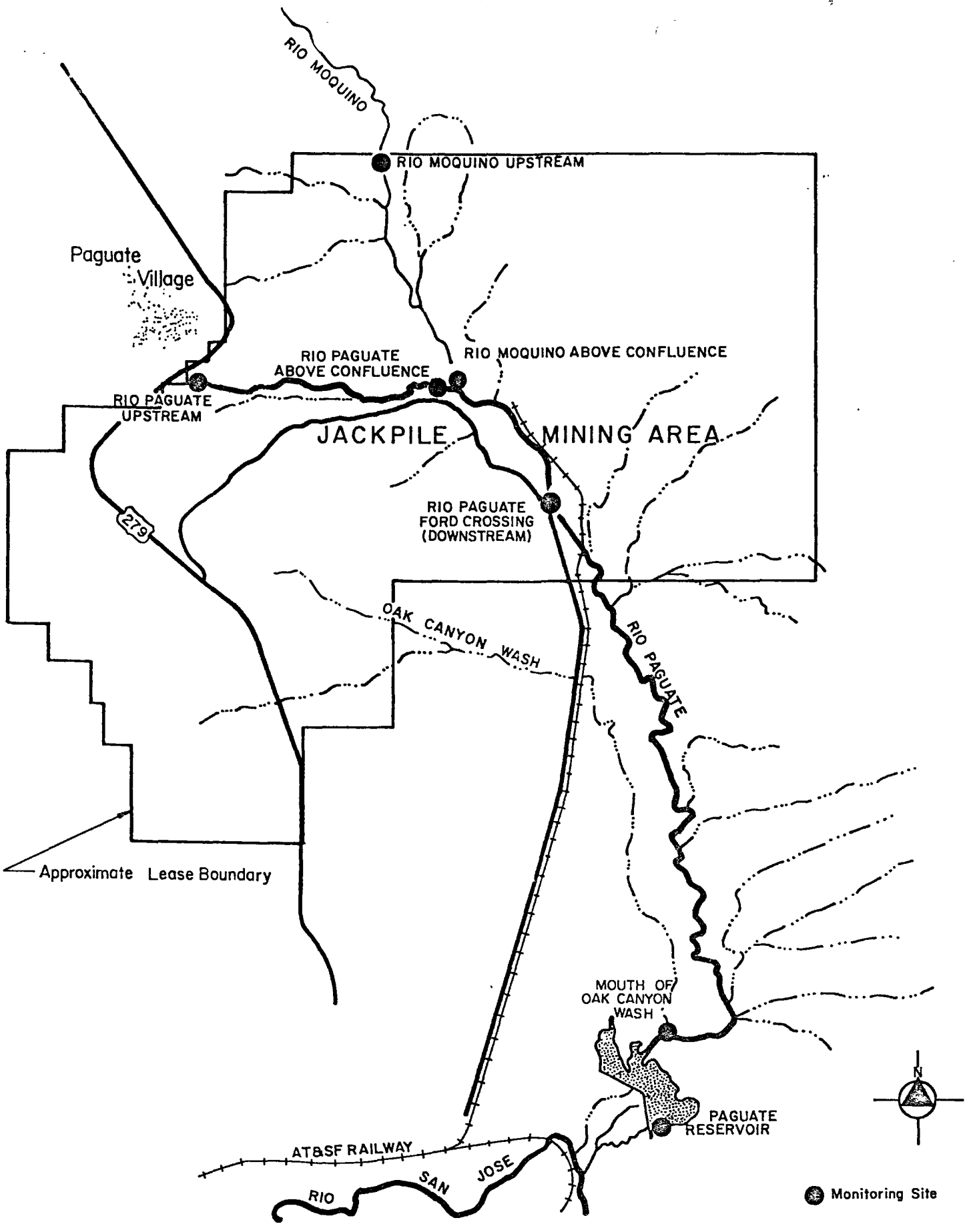
LOCATION OF GROUND WATER MONITORING STATIONS





LOCATION OF
SURFACE WATER MONITORING STATIONS

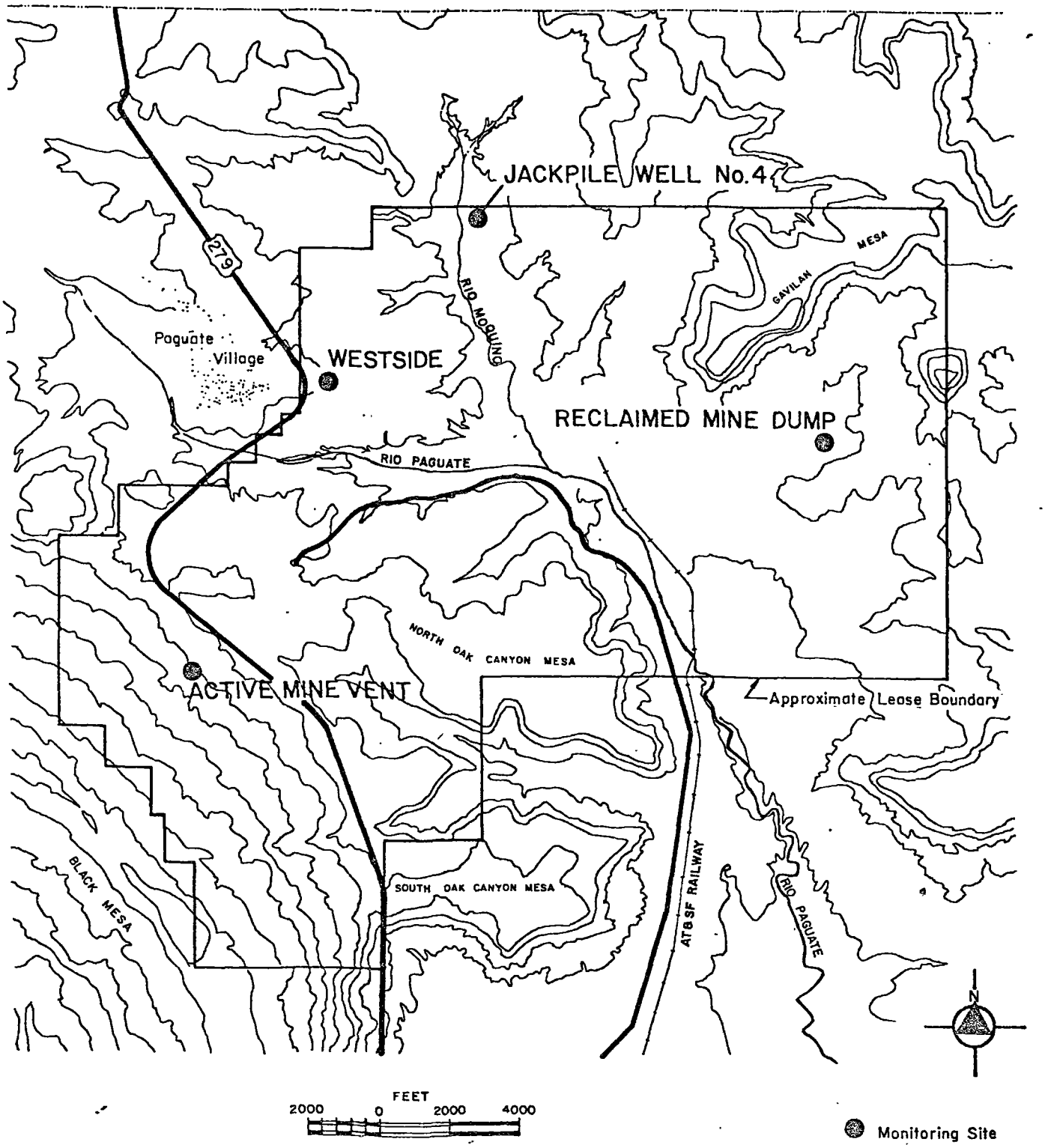
JACKPILE - AIR SAMPLING SURVEY

FIRST QUARTER, 1982

LOCATION	DATE	TOTAL PARTICULATE µgm/M^3	U-Nat. µCi/mlx10-15	Ra-226 µCi/mlx10-15	Th-230 µCi/mlx10-15	Pb-210 µCi/mlx10-15
1. Dump F	1/82	22.50	6.73	4.28	0.67	34.44
	2/82	23.37	8.34	1.10	1.32	31.49
	3/82	22.50	0.83	1.06	2.56	10.93
2. Mine Vent	1/82	10.30	4.39	0.48	0.84	24.10
	2/82	2.92	3.66	0.28	0.60	12.96
	3/82	10.30	5.54	0.30	0.12	38.38
3. West Gate	1/82	19.30	10.13	1.20	1.60	33.00
	2/82	19.81	9.68	0.45	2.56	39.74
	3/82	19.30	2.70	0.10	1.10	21.57
4. Well #4	1/82	19.40	7.13	1.59	1.59	31.84
	2/82	17.89	5.37	1.09	0.82	28.57
	3/82	19.40	6.77	0.35	0.10	18.30

JACKPILE-AMBIENT RADON SURVEY

FIRST QUARTER, 1982

LOCATION	DATE	Rn-222 pCi/L
1. Dump F	1/82	2.09
	2/82	2.21
	3/82	1.79
2. Mine Vent	1/82	1.46
	2/82	1.46
	3/82	1.44
3. Well #4	1/82	2.52
	2/82	2.40
	3/82	2.24
4. Westgate	1/82	1.15
	2/82	1.17
	3/82	1.01

LOCATION OF
AIR QUALITY MONITORING STATIONS