Wolff

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SAFETY FIRST

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RADIATION
REPORT OF INSPECTION

I.D. No. 2901598
Mariano Lake Mine (Gulf Mineral Resources Company) Mine
(Name)
Typed June 26, 1979
June 13,14,20, 1979
(Date of Inspection)

Underground Uranium Mine
(Classification of Mine)

McKinley
(County in which located)

Bill Hall, Gen. Mine Foreman; G. R. Mills, Safety & Security Sup.; David Liggins, Vent. Tech.
(Company representative present at inspection)

Pursuant to the Mining Laws of the State of New Mexico, Section 63-4-8, an inspection, as designated above, has been made. During this inspection the following was noted:

INTRODUCTION

The primary purpose of this inspection was to check radon-daughter concentrations in each working area of the mine, to measure quantity of air supplied to each man working underground and to calculate a time-weighted exposure for each of the various classes of mine personnel.

For collecting the alpha particles, the MSA Monitaire air sampler, U. S. Bureau of Mines approval No. 2F-2004 was used. For counting the alpha disintegration, the PS-1 Eberline portable scaler in combination with the SPA-1 Eberline millipore filter radon probe was used.

GENERAL INFORMATION

Owner of Property: U. S. Department of Interior, Bureau of Indian Affairs

Lessee: Gulf Mineral Rhsources Co.

Location: approx. 8 miles W of Smith Lake on Pinedale Road, No. 49 then 1½ mi. S on gravel road.

Employment: 82

Work Schedule:
Hours per day 8
Shifts per day 3
Hours per week 40

Mine Rescue trained: April 3. 1979

Company Officials:
Ray Shucavage, Mine Superintendent
Bill Hall, General Mine Foreman
Jim Owens, Environmental & Ventilation Engineer
Guy Mills, Safety & Security Coordinator

Previous Radiation Inspection: July 7, 1978

Mining method: modified room and pillar

Water pumped from mine: 180 GPM

Last lost-time accident: February 28, 1979

Last fire drill: May 10, & May 16, 1979

Self-Rescue Weighed: March 31, 1979

JOE D. LONGACRE, SR.
State Inspector of Mines

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First Aid trained; 75%

The inspector was accompanied by Messrs. G. R. Mills and David Liggins during the entire period of this inspection, Mr. Bill Hall also participated in some period of this inspection.

This mine is opened by one three-compartment steel set shaft, 5'x16' in size, and 519 feet deep. Two levels are being opened in this mine. 1-3 level is the ore level at 400 feet deep and the 1-4 level at 445 feet deep, the 1-4 level is the main ore haulage level.

The shaft is used for ventilation, for hoisting supplies, for hoisting development waste, ore and hoisting men.

RADIATION AND VENTILATION

This mine was ventilated by some 185,600 cubic feet per minute of fresh air, delivered and exhausted through the following openings:

Opening	Size	Air Direction	Air Volume c.f.m.	Make of Fan	Fan HP	Depth of Opening
3 compt. shaft	5'x16'	intake	185,600	-	-	519'
No. 1 vent shaft	48"ID	exhaust	105,600	Joy Series 1000	1-125	410'
No. 2 vent shaft	48"ID	exhaust	80,000	Joy Series 1000	1-125	440'
				Jet Air	1-150	

Main fans were electrically powered units and they were axial-flow type. The fans were mounted at the surface collar of the vent shafts. The vent shafts were steel lined throughout the length of the opening.

The second escapeway system was provided through vent shaft No. 1 and all hoisting equipment were available for utilizing in extreme cases of emergency.

Air underground was distributed to the working places by directing the primary airflow towards the working places with the aid of auxiliary fans and vent tubing. Airflow underground was controlled by bulkheads, air doors, curtains and brattices.

Listed below are the radon-daughter concentrations, ventilation volume measurements and exposure calculations from the men in each working place underground. All these were only possible with the data obtained during this inspection.

Sample No.	Sample Location	Ventilation c.f.m.	Man-Shift Exposure M&M	Stopes	Haulages	Working Level
1	2301 stope development drill	3,000	1.0	4.0		Nil
2	2102 stope development drill	1,200	1.0	4.0		Nil
3	2102 and 2300 haulage	6,000	1.0		1.0	0.1
4	1-3 lunchroom	3,200	1.0	1.0	1.0	0
5	4103 stope working drifts	2,800	1.0	1.0		0.1
6	4103 stope development slusher	2,800	1.0	1.0		Nil
7	4102 stope development slusher	2,000	1.0	1.0		Nil
8	4100 haulage	60,000	1.0		1.0	Nil
9	4101 and 4103 access drifts	7,000	1.0	1.0		0.1
10	4501 stope right development drill	200	1.0	2.0		0.4

Sample No.	Sample Location	Ventilation c.f.m.	Man-Shift Exposure M&M	Stopes	Haulages	Working Level
11	4501 stope left development drill	500	1.0	2.0		0.1
12	4501 stope right development drill	3,000 - Resampled				0.2
13	4501 stope development mucking w/FEL	2,500	1.0	2.0		0.3
14	4501 stope development slusher	convection	1.0	1.0		0.2
15	4500 and 4100 haulage	5,500	1.0		1.0	Nil
16	machine doctor's shop	convection	2.0			0
17	maintenance shop	7,000	6.0			Nil
18	7100 Section II raise	3,500	1.0	2.0		0.4
19	7100 haulage	6,000	1.0		1.0	0.6
20	8401 stope rockbolting	3,800	1.0	2.0		0.9
21	1102 stope development drill	4,200	1.0	2.0		1.1*
22	1102 stope development slusher	3,000	1.0	1.0		1.1*
23	1-4 station and trench	22,000	1.0		3.0	Nil
24	7100 lunchroom	3,000	1.0		1.0	Nil
25	7100 Section II raise & haulage - Resampled, Control Sample.					0.2
26	8401 top of m/w fan turned on 5 min. - Resampled, Control Sample, NO Exposure.					1.4
27	8401 top of m/w fan turned on 30 min. - Resampled, Control Sample, No Exposure.					1.0
28	8401 stope rockbolting - Resampled, Control Sample, Cease Work Order Abated 6-20-79.					0.6**
29	1102 stope development slusher - Resampled, Control Sample, Cease Work Order Abated 6-20-79.					0.5**
30	1102 stope development drill - Resampled, Control Sample, Cease Work Order Abated 6-20-79.					0.5**

* Cease Work Orders Issued.
** Cease Work Orders Abated.

The average time weighted exposure for the various classes of mine personnel and the mine exposure index are as follows:

Maintenance and Management - 0.2 x working level
Stopes and Developments - 0.3 x working level
Haulageways - 0.1 x working level
Total Mine Exposure Index - 0.2 x working level

ABATEMENT OF NOTICES ISSUED JULY 6, 1978

Notice No. 34, SIM Rule No. 75-3(2a); (57.5-50(a)M) Abated June 20, 1979.

Notice No. 35, Section 63-28-5, NMSA; (57.11-12M) Abated June 20, 1979.

ORDER ISSUED JUNE 14, 1979

Order No. 1, SIM Rule No. 76-1(2c): Employees shall not be exposed to radon-daughter concentrations above 1.0 working level in 1102 stope, drill and slusher positions. (57.5-39M) Abated June 20, 1979.

ACKNOWLEDGEMENT

The courtesy and cooperation of the staff and personnel of the Mariano Lake project Mine during this inspection, are hereby gratefully acknowledged.

Inspected and Reported by:
L. A. Quinones
Dust and Mine Gas Engineer
Deputy Inspector of Mines

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Approved Joe D. Longacre, Sr.
JOE D. LONGACRE, SR.
State Inspector of Mines