

SEP 14 1960

40-1366
Gunnison Mining Co.
P. O. Box 539
Gunnison, Colorado

Gentlemen:

Enclosed for your information is a report entitled "ABC Radiation Control Program for Uranium Mill Operators," dated May 11, 1960, which was prepared at the request of the Congressional Joint Committee on Atomic Energy. The purpose of this report was to advise interested members of Congress of the general radiation problems associated with uranium mill operations and the status of each licensed uranium mill with respect to each problem.

We understand that this report is to be included as an appendix to the published record of the Joint Committee hearings on radiation standards.

Sincerely yours,

H. L. Price, Director
Division of Licensing
and Regulation

Enclosure

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Gunnison Mining Company

GUNNISON, COLORADO

DOCKET

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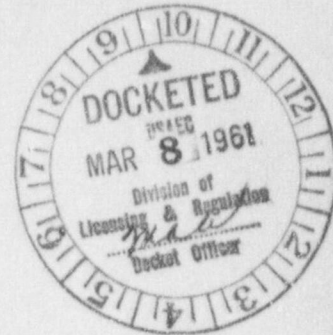
40-1366

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P. O. BOX 539

September 7, 1960

TELEPHONE 543



Mr. H. L. Price, Director
Division of Licensing and Regulation
U.S. Atomic Energy Commission
Washington 25, D.C.

Dear Mr. Price:

Enclosed please find our radiation Report for the
month of August, 1960.

Very truly yours,

GUNNISON MINING COMPANY

F. D. Jackson
F. D. Jackson
Mill Superintendent

FDJ:jam

Enclosure

8611069128 6pp.

GUNNISON MINING COMPANY
GUNNISON, COLORADO

TO: J. L. Robison, Vice President and General Manager
FROM: F. D. Jackson, Mill Superintendent
SUBJECT: Progress report for August Radiation protection program.

Work is progressing on the dust collection system at the crushing plant. The collecting fans are very effective, and a metal box with water sprays is being installed at a central discharge point of the fan ducts to collect the dust.

We have contracted with Radiation Detection Service of Palo Alto, California, to analyze our water samples that are taken quarterly for radium and thorium. They use the Idaho Falls method for determination so that we can use these same figures in our records and reports.

The dust survey continued, with the addition of three sampling points, these are the discharge of the yellow cake dryer stack and the down wind side of the mill 200 yards and 600 yards from the crushing plant.

Radiation surveys and the film badge program were carried on in the usual manner during the month. The results of all surveys are attached.

GUNNISON MINING COMPANY
RADIATION MONITORING PROGRAM

<u>PLANT LOCATIONS</u>	<u>AUGUST</u>
1. Foyer	.025
2. Conference Room	.025
3. Lockers	.030
4. Maintenance Shop	.030
5. Warehouse	.085
6. Scale Room	.035
7. Sample Storage	.065
8. Sample Preparation	.060
9. 1st. Floor-crusher	.125
10. 2nd. Floor-crusher	.075
11. 3rd. Floor-crusher	.050
12. Yellow cake packaging area	.600
13. Precipitation tanks	.300
14. Filter Presses	.950
15. Classifiers	.050
16. Thickeners	.050
17. Leach tanks	.075
18. Solvent extraction area	.100
19. Metallurgical Laboratory	.050
20. Lunch room	.025
21. Fine ore bins	.125
22. Stockpile area	.125
23. Parking area	.025
24. Tailings pond	.650
25. Rod & Ball mill area	.075
26. Sump Below thickeners	.350
27. Laboratory	.025

GUNNISON MINING COMPANY

Date	Name	B - Ray		G - Ray		Period Total Dosage	Total 13 Week	Total Year
		1/2 Day	13 Week	1/2 Day	13 Week			
6/25-7/23	J. Corza	30	60	10	40	40	70	100
7/23-8/6		0	60	20	60	20	90	120
8/7-8/20		20	30	20	60	40	130	160
6/25-7/23	G. Biggs	180	180	0	0	180	180	1100
7/23-8/6		70	250	10	10	60	260	1100
8/7-8/20		60	310	20	30	60	340	1260
6/25-7/23	F. Johnson	20	50	20	50	10	100	300
7/23-8/6		0	50	0	50	0	100	300
8/7-8/20		0	50	20	70	20	120	320
6/25-7/23	W. Roberts	100	100	0	30	100	130	580
7/23-8/6		0	100	10	40	10	140	590
8/7-8/20		50	150	20	60	70	210	660
6/25-7/23	J. Svaldi	20	20	0	30	20	50	200
7/23-8/6		0	20	0	30	0	50	200
8/7-8/20		0	20	20	50	20	70	220
6/25-7/23	G. Tucker	0	0	10	40	10	40	140
7/23-8/6		0	0	0	40	0	40	140
8/7-8/20		0	0	20	60	20	60	160
6/25-7/23	W. Bailey	0	0	0	30	0	30	220
7/23-8/6		0	0	0	30	0	30	220
8/7-8/20		0	0	10	40	10	40	230
6/25-7/23	G. Latimer	0	0	0	30	0	30	200
7/23-8/6		0	0	0	30	0	30	200
8/7-8/20		0	0	0	30	0	30	200
6/25-7/23	R. Merrill	60	60	10	40	70	100	570
7/23-8/6		0	60	10	50	10	110	580
8/7-8/20		20	80	10	60	30	140	610
6/25-7/23	F. Jardine	20	20	20	50	40	70	260
7/23-8/6		0	20	10	60	10	80	270
8/7-8/20		0	20	10	70	10	90	280
6/25-7/23	C. Mendennall	100	100	10	40	110	140	670
7/23-8/6		0	100	10	50	10	150	680
8/7-8/20		20	120	0	50	20	170	700
6/25-7/23	M. Hildreth	20	20	0	40	20	60	270
7/23-8/6		0	20	10	50	10	70	280
8/7-8/20		0	20	10	60	10	80	290
6/25-7/23	Yellow Cake	Not Reported						
7/23-8/6	Packaging	450	1000	30	120	480	1120	9000
8/7-8/20		870	1870	70	190	940	2060	9940
6/25-7/23	Yellow Cake	730	940	50	100	780	1040	6950
7/23-8/6	Dryer	180	1120	10	110	190	1230	7140
8/7-8/20		350	1470	30	140	380	1610	7520
6/25-7/23	Fine Ore Bins	110	110	70	120	180	230	1270
7/23-8/6		0	110	20	140	20	250	1290
8/7-8/20		60	170	40	180	100	350	1390
6/25-7/23	Tailings	20	20	20	50	40	70	300
7/23-8/6		0	20	0	50	0	70	300
8/7-8/20		0	20	20	70	20	90	320
6/25-7/23	Top Floor Crusher	0	0	30	60	30	60	330
7/23-8/6		0	0	0	60	0	60	330
8/7-8/20		0	0	30	90	30	90	360
6/25-7/23	Sample Prep. Lab.	0	0	0	30	0	30	240
7/23-8/6		0	0	0	30	0	30	240
8/7-8/20		0	0	10	40	10	40	250

GUMMISON MINING COMPANY

DUST SURVEY FOR AIRBORNE RADIOACTIVITY
FOR THE WEEK ENDING SEPTEMBER 3, 1960

Sample Area and Conditions	Sample Number	Liters of Air Sample/minute	Length of Sample Period	Milligrams U308	Milligrams U	Microcuries per ml of air
Yellow Cake Sample Bench: Normal Operating Conditions	1	991	2 min.	175713	149005	5.2 x 10 ⁻¹¹
Yellow Cake drum storage Area: Normal Operating Conditions	2	991	2 min.	173672	147274	5.2 x 10 ⁻¹¹
Yellow Cake Packaging Area: Normal Operating Conditions	3	991	2 min.	3496406	2961952	1.0 x 10 ⁻⁹
Yellow Cake Drying Room: Normal Operating Conditions	4	991	2 min.	30322	25713	9.0 x 10 ⁻¹²
Precipitation Tank area: normal operating conditions	5	991	2 min.	6129	5197	1.8 x 10 ⁻¹²
Filter Press Area: Normal operating conditions	6	991	2 min.	10537	8935	3.1 x 10 ⁻¹²
Striping Circuit Area: Normal Operating conditions	7	991	2 min.	6129	5251	1.8 x 10 ⁻¹²
Solvent Extraction Area: Normal Operating conditions	8	991	2 min.	19785	16777	5.8 x 10 ⁻¹²
Mill Laboratory Area: Normal Operating Conditions	9	991	2 min.	3333	2825	9.7 x 10 ⁻¹³
PH Meter Bench Area: Normal Operating Conditions	10	991	2 min.	6452	5471	1.9 x 10 ⁻¹²
Thickener Area: Normal Operating Conditions	11	991	2 min.	5911	5035	1.7 x 10 ⁻¹²
#2 Thickener Area: Normal Operating Conditions	12	991	2 min.	7423	6295	2.2 x 10 ⁻¹²
#3 Thickener Area: Normal Operating Conditions	13	991	2 min.	8866	7518	2.6 x 10 ⁻¹²
Fallings Tank Area: Normal Operating Conditions	14	991	2 min.	11031	9354	3.2 x 10 ⁻¹²

GUMMISON MINING COMPANY
DUST SURVEY OF AIRBORNE RADIOACTIVITY
FOR THE WEEK ENDING SEPTEMBER 3, 1960

Sample Area and Conditions	Sample Number	Liters of Air Length of		Milligrams		Milligrams Microcuries	
		Sample/Minute	Sample Period	U ₃ O ₈	U	per ml. of air	
Leach Tank Area: Normal Operating Conditions	15	991	2 min	1546	1311	4.5 x 10 ⁻¹³	
Red Mill Area: normal operating conditions	16	991	2 min.	1443	1224	4.1 x 10 ⁻¹³	
Maintenance Shop Area: normal operating conditions	17	991	2 min.	5361	4546	1.5 x 10 ⁻¹²	
• Ore Bins: Normal Operating conditions	18	991	2 min.	19794	16785	5.9 x 10 ⁻¹²	
Crushing Plant 3rd floor: See Note 1.	19	991	2 min.	349698	296544	1.0 x 10 ⁻¹⁰	
Crushing Plant 1st floor: See Note 1.	20	991	2 min.	0162384	6921701	2.4 x 10 ⁻⁹	
Sample Preparation Room: Normal Operating Conditions	21	991	2 min.	41020	34785	1.2 x 10 ⁻¹¹	
Sample Storage Room: Normal Operating Conditions	22	991	2 min.	26734	22670	7.9 x 10 ⁻¹²	
Scale House Area: Normal Operating Conditions	23	991	2 min.	16224	13758	4.8 x 10 ⁻¹²	
• Airport, West Fence:	24	1420	10 min.	11546	9745	4.7 x 10 ⁻¹¹	
Airport, East Fence:	25	1560	10 min.	11134	9397	3.0 x 10 ⁻¹¹	
Yellow Cake Dryer Exhaust: Normal Operating Conditions	26	991	2 min.	17443	14537	5.2 x 10 ⁻¹²	
Hydrofilter exhaust: Normal Operating Conditions	27	991	2 min	110407	93625	3.2 x 10 ⁻¹¹	

Note:

1. Samples taken during crushing operation on extremely dry ore.

Gunnison Mining Company

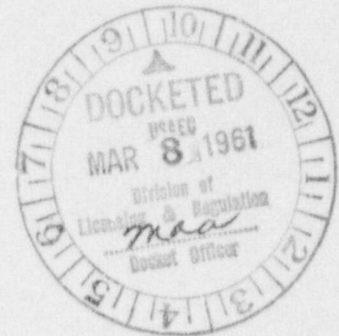
GUNNISON, COLORADO

August 8, 1960

P. O. BOX 539

DOCKET NO. 40-1366
File Copy

TELEPHONE 543



H. L. Price, Director
Division of Licensing and Regulation
U. S. Atomic Energy Commission
Washington 25, D.C.

Dear Mr. Price:

Enclosed please find our Radiation Report for the
month of July, 1960.

Very truly yours,

GUNNISON MINING COMPANY

Duffy Salinger
Duffy Salinger
Office Manager

DS:jam

Encl/

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GUNNISON MINING COMPANY

GUNNISON, COLORADO

TO: J. L. Robison, Vice President & General Manager DATE: August 8, 1960
FROM: F. D. Jackson, Mill Superintendent
SUBJECT: Progress report for July 1960, Protection against radiation,
Gunnison Mill.

During the month of July we were visited by Mr. Clyde Hawley of the Idaho Falls inspection bureau. He arrived Tuesday morning, July 12, and collected dust samples and water samples thru July 14. During the visit Mr. Hawley also inspected our records on surveys we have conducted.

We have continued with the dust surveys, radiation surveys, and film badge program. The dust collecting system in the crushing plant is still being worked on and the equipment we have installed seems to be working very well. We have also initiated a program where by the plant is swept down and the bottom floor is washed down every day.

Dust samples were taken with both the Gast Sampler and the new and larger Gelman sampler, the results of all surveys are attached.

GUNNISON MINING COMPANY
RADIATION MONITORING PROGRAM

<u>Plant Location</u>	<u>July</u>
1. Foyer	.015
2. Conference Room	.025
3. Lockers	.020
4. Maintenance Shop	.075
5. Warehouse	.050
6. Scale Room	.035
7. Sample Storage	.100
8. Sample Preparation	.125
9. First Floor - crusher	.150
10. Second Floor - Crusher	.125
11. Third Floor - Crusher	.125
12. Yellow Cake packaging area	.500
13. Precipitation Tanks	.750
14. Filter Presses	.350
15. Classifiers	.050
16. Thickeners	.075
17. Leach Tanks	.150
18. Solvent extraction area	.050
19. Metallurgical Laboratory	.050
20. Lunch room	.030
21. Fine Ore bins	.125
22. Stockpile area	.250
23. Parking Area	.010
24. Tailings pond	.350
25. Rod & Ball mill area	.050
26. Sump Bellow Thickeners	.175
27. Laboratory	.015

GUNNISON MINING COMPANY

A - Gelman Sampler

DUST SURVEY FOR AIRBORNE RADIOACTIVITY

B - Gast Sampler

FOR THE WEEK ENDING AUGUST 6, 1960

Sample Area and Conditions	Sample Number	Liters of Air Sampled/minute	Length of Sample Period	Milligrammas U308	Milligrammas U	Microcuries U per ml of Air
Yellow Cake Sample Bench: Normal operating conditions	1A 1B	1557.4 20	1 20	192400 7460	86835 6326	3.8×10^{-11} 1.20×10^{-11}
Yellow Cake Drum Storage Area: Normal operating conditions	2A 2B	1472.4 18	1 20	10706 1650	9078 1399	4.2×10^{-12} 2.64×10^{-12}
Yellow Cake Packaging Area: Normal Operating Conditions	3A 3B	1642.3 18	1 20	21059 3520	17858 2985	7.5×10^{-12} 5.64×10^{-12}
Yellow Cake Drying Room: Normal Operating Conditions	4A 4B	1642.3 18	1 20	16459 1970	13957 1671	5.8×10^{-12} 3.16×10^{-12}
Precipitation Tank Area: Normal Operating Conditions	5A 5B	11585.6 18	1 20	24705 7150	20950 6063	9.5×10^{-12} 1.15×10^{-11}
Filter Press Area: Normal Operating Conditions	6A 6B	1727.3 18	1 20	27703 1240	23492 1052	9.4×10^{-12} 1.99×10^{-12}
Stripping Circuit Area: Normal Operating Conditions	7A 7B	1642.3 18	1 20	8784 2690	7449 2281	3.1×10^{-12} 4.3×10^{-12}
Solvent Extraction Area: Normal Operating Conditions	8A 8B	1755.5 18	1 20	6216 9950	5271 8438	2.0×10^{-12} 1.59×10^{-11}
Mill Laboratory Area: Normal Operating Conditions	9A 9B	991.1 Not taken	1	7027	5959	4.0×10^{-12}
pH Meter Bench Area: Normal Operating Conditions	10A 10B	1557.4 18	1 20	4865 3280	4126 2761	1.8×10^{-12} 5.26×10^{-12}
No. 1 Thickener Area: Normal Operating Conditions	11A 11B	1529.1 19	1 20	8108 11320	6876 9599	3.0×10^{-12} 1.81×10^{-11}
No. 2 Thickener Area: Normal Operating Conditions	12A 12B	1585.7 19	1 20	6649 1590	7334 1348	3.7×10^{-12} 2.6×10^{-12}

GUNNISON MINING COMPANY

DUST SURVEY FOR AIRBORNE RADIOACTIVITY

FOR THE WEEK ENDING AUGUST 6, 1960

A - Gelman Sampler

B - Cast Sampler

Sample Area and Conditions	Sample Number	Liters of Air Sampled/Minute	Length of Sample Period	Milligrammas U308	Milligrammas U	Microcuries U per ml of Air
No. 3 Thickener Area: Normal Operating Conditions	13A	1614.0	1	965	8366	3.6×10^{-12}
	13B	18	20	1270	1077	2.04×10^{-12}
Tailings Tank Area: Normal Operating Conditions	14A	1500.1	1	6136	6899	3.1×10^{-12}
	14B	18	20	1058	897	1.7×10^{-12}
Leach Tank Area: Normal Operating Conditions	15A	1500.1	1	9379	7953	3.6×10^{-12}
	15B	18	20	1270	1077	2.04×10^{-12}
Rod Mill Area: Normal Operating Conditions	16A	1529.0	1	6102	5174	2.3×10^{-12}
	16B	18	20	655	538	1.02×10^{-12}
Maintenance Shop Area: Normal Operating Conditions	17A	1642.3	1	70060	59411	2.5×10^{-11}
	17B	18	20	2829	2399	4.5×10^{-12}
Pine Ore Bins: Normal Operating Conditions	18A	1557.4	1	5311	4504	2.0×10^{-12}
	18B	18	20	1778	1508	2.9×10^{-12}
Crushing Plant, First Floor: Normal Operating Conditions	19A	1529.1	1	209000	177232	7.6×10^{-11}
	19B	Not taken				
Crushing Plant, Third Floor: Normal Operating Conditions	20A	991.1	1	62150	52703	3.5×10^{-11}
	20B	18	20	1465600	124282	2.3×10^{-11}
Sample Preparation Room: Normal Operating Conditions	21A	1500.7	1	151400	128387	5.9×10^{-11}
	21B	18	20	2000	1696	3.2×10^{-12}
Sample Storage Room: Normal Operating Conditions	22A	1529.1	1	4409	3739	1.7×10^{-12}
	22B	18	20	489	414	7.8×10^{-13}
Scale House Area: Normal Operating Conditions	23A	1642.4	1	4301	3617	1.5×10^{-12}
	23B	18	20	2000	1696	3.2×10^{-12}

GUNNISON MINING COMPANY

Date	NAME	B - Ray		G - Ray		Period Total Dosage	Total 13 Week	Total Year
		14 Day	13 Week	14 Day	13 Week			
6/11-6/25	J. Cozza	0	30	30	30	30	30	100
6/11-6/25	G. Biggs	0	0	0	0	0	0	920
6/11-6/25	F. Johnson	30	30	30	30	60	60	260
6/11-6/25	W. Roberts	0	0	30	30	30	30	480
6/11-6/25	J. Svaldi	0	0	30	30	30	30	180
6/11-6/25	G. Tucker	0	0	30	30	30	30	130
6/11-6/25	W. Bailey, Jr.	0	0	30	30	30	30	220
6/11-6/25	G. Lawler	0	0	30	30	30	30	200
6/11-6/25	R. Merrill	0	0	30	30	30	30	500
6/11-6/25	F. Jardine	0	0	30	30	30	30	220
6/11-6/25	C. Mendenhall	0	0	30	30	30	30	560
6/11-6/25	M. Hildreth	0	0	40	40	40	40	250
6/11-6/25	Yellow cake packaging area:	550	550	90	90	640	640	8520
6/11-6/25	Yellow cake dryer compartment:	210	210	50	50	260	260	6170
6/11-6/25	Fine Ore Bins	0	0	50	50	50	50	1090
6/11-6/25	Tailings Bank	0	0	30	30	30	30	260
6/11-6/25	Top floor crusher	0	0	30	30	30	30	300
6/11-6/25	Sample Prep. Lab.	0	0	30	30	30	30	240

Gunnison Mining Company

GUNNISON, COLORADO

P. O. BOX 539

July 8, 1960

TELEPHONE 543

40-1366
DOCKET NO. 40-1366
File Copy



H. L. Price, Director
Division of Licensing and Regulation
U.S. Atomic Energy Commission
Washington 25, D.C.

Dear Mr. Price:

Enclosed please find our Radiation Report for the month of June, 1960.

Very truly yours,

GUNNISON MINING COMPANY

Duffy Salinger
Duffy Salinger
Office Manager

DS:jam

Enclosure

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GUNNISON MINING COMPANY

GUNNISON, COLORADO

TO: J. L. Robison, Vice President & General Manager

FROM: R. E. Shreve, Mill Superintendent

SUBJECT: Progress report for June 1960: Protection against radiation,
Gunnison Mill.

During the month we continued with the work on dust collection at the crushing plant. Some progress has been made in this area, however, we still have more work to do.

The old by product filter press in the mill proper was removed and put in storage. This press although not in use, showed a consistantly high radiation reading. By removing the press we eliminated a high count area. Dust surveys and radiation surveys were made and we are continuing the film badge program. The results of these June surveys are attached.

GUNNISON MINING COMPANY
RADIATION MONITORING PROGRAM

<u>Plant Locations</u>	<u>June</u>
1. Foyer	.015
2. Conference room	.015
3. Lockers	.065
4. Maintenance Shop	.040
5. Warehouse	.040
6. Scale Room	.045
7. Sample Storage	.035
8. Sample preparation	.150
9. First Floor-Crusher	.40
10. Second Floor - Crusher	.50
11. Third Floor - Crusher	.35
12. Yellow Cake packaging area	1.00
13. Precipitation Tanks	1.50
14. Filter presses	.50
15. Classifiers	.050
16. Thickeners	.050
17. Leach Tanks	.050
18. Solvent extraction area	.40
19. Metallurgical Laboratory	.050
20. Lunch room	.025
21. Fine Ore Bins	.150
22. Stockpile area	.45
23. Parking Area	.025
24. Tailings pond	.350
25. Rod & Ball mill area	.065
26. Sump Below thickeners	.60
27. Laboratory	.015

GUNNISON MINING COMPANY

Date	Name	B - Ray		G - Ray		Period total Dosage	Total	
		1 1/2 day	13 week	1 1/2 day	13 week		13 week	year
5/14 - 5/28	J. Cozza	20	30	0	20	20	50	50
5/28 - 6/11		0	30	20	40	20	70	70
5/14 - 5/28	G. Biggs	30	240	0	40	30	280	850
5/28 - 6/11		50	290	20	60	70	350	920
5/14 - 5/28	F. Johnson	20	20	0	30	20	100	190
5/28 - 6/11		0	70	10	40	10	110	200
5/14 - 5/28	W. Roberts	20	90	0	40	20	130	410
5/28 - 6/11		30	110	10	50	40	170	450
5/14 - 5/28	J. Svaldi	0	0	0	30	0	30	130
5/28 - 6/11		20	20	0	30	20	50	150
5/14 - 5/28	G. Tucker	0	0	0	30	0	30	100
5/28 - 6/11		0	0	0	30	0	30	100
5/14 - 5/28	W. Bailey, Jr.	0	0	0	60	0	60	180
5/28 - 6/11		0	0	10	70	10	70	190
5/14 - 5/28	G. Latimer	0	0	0	30	0	30	160
5/28 - 6/11		0	0	10	40	10	40	170
5/14 - 5/28	R. Merrill	0	30	0	50	0	80	470
5/28 - 6/11		0	30	0	50	0	80	470
5/14 - 5/28	F. Jardine	0	0	0	50	0	50	180
5/28 - 6/11		0	0	10	60	10	60	190
5/14 - 5/28	C. Mendenhall	20	100	0	50	20	150	490
5/28 - 6/11		30	130	10	60	40	190	530
5/14 - 5/28	M. Hildreth	0	0	0	50	0	50	200
5/28 - 6/11		0	0	10	60	10	60	210
5/14 - 5/28	Yellow cake packaging	600	2800	70	350	670	3150	7260
5/28 - 6/11	area:	560	3360	60	410	620	3770	7880
5/14 - 5/28	Yellow cake dryer	320	2010	30	370	350	2360	5650
5/28 - 6/11	compartment:	230	2240	30	400	260	2640	5910
5/14 - 5/28	Fine ore bins	280	280	30	180	310	460	990
5/28 - 6/11		20	300	30	210	50	510	1040
5/14 - 5/28	Tailings Tank	0	0	0	60	0	60	210
5/28 - 6/11		0	0	20	80	20	80	230
5/14 - 5/28	Top floor crusher	0	0	0	60	0	60	250
5/28 - 6/11		0	0	20	80	20	80	270
5/14 - 5/28	Sample prep lab.	0	0	0	40	0	40	190
5/28 - 6/11		0	0	20	60	20	60	210

GUNNISON MINING COMPANY

DUST SURVEY FOR AIRBORNE RADIOACTIVITY

FOR THE WEEK ENDING JULY 2, 1960

<u>Sample Area and Conditions</u>	<u>Sample Number</u>	<u>liters of Air Sampled/minute</u>	<u>Length of Sample Period</u>	<u>Milligrams of U</u>	<u>of U per ml of Air</u>
Yellow Cake Sample Bench: normal operating conditions	1 A	15.0	30 min.	16,366	2.47×10^{-11}
Yellow Cake Drum Storage Area: normal operating conditions	2 A	15.0	30 min.	7,378	1.11×10^{-11}
Low Cake Packaging Area: normal operating conditions	3 A	17.5	30 min.	3,053	3.96×10^{-12}
Yellow Cake Drying Room: normal operating conditions	4 A	15.0	30 min.	177,147	2.68×10^{-10}
Precipitation Tank Area: normal operating conditions	5 A	15.0	30 min.	15,942	2.41×10^{-11}
Filter Press Area: Normal operating conditions	6 A	17.5	25 min.	20,352	3.16×10^{-11}
Stripping circuit area: normal operating conditions	7 A	17.5	30 min.	15,264	1.98×10^{-11}
Solvent Extraction Area: normal operating conditions	8 A	17.5	30 min.	7,802	1.01×10^{-11}
Mill Laboratory Area: normal operating conditions	9 A	17.5	30 min.	1,696	2.20×10^{-12}
P.H. Meter Bench Area: normal operating conditions	10 A	16.0	30 min.	3,562	4.49×10^{-12}
No. 1 Thickener Area: normal operating conditions	11 A	18.0	30 min.	8,819	1.11×10^{-11}
No. 2 Thickener Area: normal operating conditions	12 A	18.0	30 min.	5,088	6.41×10^{-12}
No. 3 Thickener Area: normal operating conditions	13 A	17.5	30 min.	1,761	2.31×10^{-12}

GUNNISON MINING COMPANY

DUST SURVEY FOR AIRBORNE RADIOACTIVITY

FOR THE WEEK ENDING JULY 2, 1960

<u>Sample Area and Conditions</u>	<u>Sample Number</u>	<u>Inters of Air Sampled/minute</u>	<u>Length of Sample Period</u>	<u>Milligrams of U</u>	<u>of U per ml of Air</u>
Tailings tank area: normal operating conditions	14 A	17.5	30 min.	1,866	2.42×10^{-11}
Leach Tank Area: normal, operating conditions	15 A	17.5	30 min.	1,611	2.09×10^{-11}
Rod Mill Area: normal operating conditions	16 A	17.5	30 min.	1,526	1.98×10^{-11}
Maintenance Shop Area: normal operating conditions	17 A	17.5	30 min.	3,477	4.51×10^{-11}
Fine Ore Bins: normal operating conditions	18 A	18.0	20 min.	2,374	4.49×10^{-11}
Crushing Plant First Floor: normal operating conditions	19 A	18.0	30 min.	81,408	1.03×10^{-10}
Crushing Plant 3rd. floor: normal operating conditions	20 A	18.0	30 min.	205,131	2.58×10^{-10}
Sample Prep Room: normal operating conditions	21 A	18.0	30 min.	2,883	3.63×10^{-11}
Sample Storage Room: normal operating conditions	22 A	18.0	30 min.	13,398	1.69×10^{-11}
Scale House Area: normal operating conditions	23 A	18.0	30 min.	3,138	3.95×10^{-11}

Gunnison Mining Company

GUNNISON, COLORADO

P. O. BOX 539

June 8, 1960

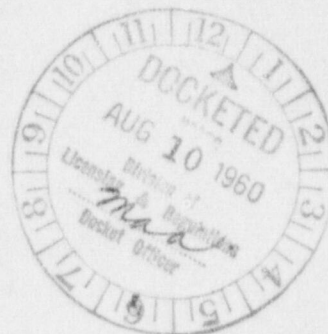
TELEPHONE 543

DOCKET

NO.

40-1366

File Copy



H. L. Price, Director
Division of Licensing and Regulation
U.S. Atomic Energy Commission
Washington 25, D.C.

Dear Mr. Price:

Enclosed please find our Radiation Report for the month of May, 1960.

Very truly yours,

GUNNISON MINING COMPANY

Duffy Salinger
Duffy Salinger
Office Manager

DS:jam

Encl/

8-11-60 7/12

GUNNISON MINING COMPANY

MAY - 1960

TO: J. L. Robison, Vice President & General Manager

FROM: R.E. Shreve, Mill Superintendent

SUBJECT: Progress report for May 1960: Protection against radiation,
Gunnison Mill:

During May we completed a dust survey for airborne radioactivity, a radiation survey, and continued with the film badge program. The high dust count in the yellow cake area is attributed to sampling during dryer repairs. Vent pipes to supply the burners and blowers with fresh air have been installed. This will prevent recirculation of any dust in the area.

Additional suction blowers are being installed in the crusher plant, also the water spray system is being overhauled. These projects should greatly reduce the dust in the crusher system. A new air sampler has been ordered, this will give us better accuracy on our dust surveys.

The results of the May surveys are attached.

GUNNISON MINING COMPANY
RADIATION MONITORING PROGRAM

	<u>PLANT LOCATIONS</u>	<u>MAY</u>
1.	Foyer	.010
2.	Conference room	.020
3.	Lockers	.015
4.	Maintenance Shop	.035
5.	Warehouse	.025
6.	Scale room	.050
7.	Sample Storage	.050
8.	Sample preparation	.150
9.	1st. Floor-crusher	.250
10.	2nd. Floor-crusher	.300
11.	3rd Floor-Crusher	.50
12.	Yellow cake packaging area	1.00
13.	Precipitation tanks	1.00
14.	Filter presses	.050
15.	Classifiers	.060
16.	Thickeners	.050
17.	Leach tanks	.750
18.	Solvent extraction area	.090
19.	Metallurgical Laboratory	.035
20.	Lunch room	.010
21.	Fine ore bins	.150
22.	Stockpile area	.350-
23.	Parking area	.010
24.	Tailings pond	.200
25.	Rod & ball mill area	.075
26.	Sump bellow thickener	.250
27.	Laboratory	.020

GUNNISON MINING COMPANY

DUST SURVEY FOR AIRBORNE RADIOACTIVITY

FOR WEEK ENDING - May 28, 1960

Area and Conditions	Sample Number	liters of Air Sampled/Minute	Length of Sample Period	Milligrams of U308	Milligrams of U	$\mu\text{C of U/ml of Air}$
Yellow cake sample bench: normal operating conditions	1A	15	20 min.	4,878	4,137	9.38×10^{-12}
Yellow cake drum storage area: normal operating conditions	2A	15	20 min.	2,924	2,480	5.62×10^{-12}
Yellow cake packaging area: drying yellow cake dryer:	3A	15	30 min.	164,700	139,666	2.11×10^{-10}
Yellow cake drying room area: normal operating conditions	4A	15	30 min.	1,970	1,671	2.53×10^{-12}
Precipitation tank area: normal operating conditions	5A	15	30 min.	2,105	1,705	2.70×10^{-12}
Filter Press Area: normal operating conditions	6A	15	25 min.	4,034	3,421	6.21×10^{-12}
Stripping circuit area: normal operating conditions	7A	15	30 min.	3,111	2,638	3.99×10^{-12}
Solvent Extraction Area: normal operating conditions	8A	15	30 min.	849	720	1.09×10^{-12}
Mo. Laboratory area: normal operating conditions	9A	15	30 min.	582	494	7.47×10^{-13}
Rh. Meter bench area: normal operating conditions	10A	15	30 min.	1,223	1,037	1.57×10^{-12}
No. 1 thickener area: normal operating conditions	11A	15	30 min.	858	728	1.10×10^{-12}
No. 2 Thickener area: normal operating conditions	12A	15	30 min.	982	833	1.26×10^{-12}
No. 3 Thickener area: normal operating conditions	13A	15	30 min.	600	509	7.69×10^{-13}

GUNNISON MINING COMPANY

DUST SURVEY FOR AIRBORNE RADIOACTIVITY

Area and Conditions =	Sample Number	FOR WEEK ENDING - MAY 28, 1960				
		Liters of Air Sampled/Minute	Length of Sample Period	Milligrammas of U3O8	Milligrammas of U	$\mu\text{C of U/ml of Air}$
Tailings tank area: normal operating conditions	14A	15	30 min.	1,226	1,040	1.57×10^{-12}
Leach tank area: normal operating conditions	15A	15	30 min.	579	491	7.42×10^{-13}
● Mill Area: normal operating conditions	16A	17.5	30 min.	563	477	6.18×10^{-13}
Maintenance Shop area: normal operating conditions	17A	15.0	20 min.	1,970	1,671	3.79×10^{-12}
Fine Ore Bins: normal operating conditions	18A	17.5	30 min.	2,358	2,000	2.59×10^{-12}
Crushing Plant 1st. floor: normal operating conditions	19A	15	20 min.	22,103	18,743	4.25×10^{-11}
Crushing Plant 3rd. floor: normal operating conditions	20A	15	20 min.	5,043	4,276	9.70×10^{-12}
Sample Prep. room: normal operating conditions	21A	15	30 min.	6,604	5,600	8.47×10^{-12}
● Sample Storage room; normal operating conditions	22A	15	20 min.	579	491	1.11×10^{-12}
Scale House area: normal operating conditions	23A	15	30 min.	623	528	7.98×10^{-13}

GUNNISON MINING COMPANY

Date	Name	B - Ray		C - Ray		Period Total Dosage	Total	
		14 Day	13 Week	14 Day	13 Week		13 Week	Total Year
4/16-4/30 4/30-5/14	J. Cozza	0 10	0 10	0 0	20 20	0 10	20 30	20 30
4/16-4/30 4/30-5/14	G. Biegs	90 70	140 210	0 0	40 40	90 70	180 250	750 820
4/16-4/30 4/30-5/14	F. Johnson	50 0	50 50	0 0	30 30	50 0	80 80	170 170
4/16-4/30 4/30-5/14	W. Roberts	20 10	60 70	0 0	40 40	20 10	100 110	380 390
4/16-4/30 4/30-5/14	J. Svaldi	0 0	0 0	0 0	30 30	0 0	30 30	130 130
4/16-4/30 4/30-5/14	G. Tucker	0 0	0 0	0 0	30 30	0 0	30 30	100 100
4/16-4/30 4/30-5/14	W. Bailey, Jr.	0 0	0 0	0 0	60 60	0 0	60 60	160 180
4/16-4/30 4/30-5/14	G. Latimer	0 0	0 0	30 0	30 30	30 0	30 30	160 160
4/16-4/30 4/30-5/14	R. Merrill	0 10	20 30	20 0	50 50	20 10	70 80	460 470
4/16-4/30 4/30-5/14	F. Jardine	0 0	0 0	20 0	50 50	20 0	50 50	160 180
4/16-4/30 4/30-5/14	G. Mendenhall	20 10	70 80	10 0	50 50	30 10	140 130	460 470
4/16-4/30 4/30-5/14	M. Hildreth	0 0	0 0	10 0	50 50	10 0	50 50	200 200
4/16-4/30 4/30-5/14	Yellow cake packaging area:	760 500	1700 2200	70 50	230 280	830 550	1930 2480	6040 6590
4/16-4/30 4/30-5/14	Yellow cake dryer compartment:	710 210	1400 1690	100 10	330 340	810 220	1610 2030	5080 5300

Gunnison Mining Company

Date	Name	B - Ray		G - Ray		Period Total Dosage	Total 13 Week	Total Year
		14 Day	13 Week	14 Day	13 Week			
4/16-4/30 4/30-5/14	Fine ore bins	0 0	0 0	30 20	130 150	30 20	130 150	660 680
4/16-4/30 4/30-5/14	Tailings Tank	0 0	0 0	20 0	60 60	20 0	60 60	210 210
4/16-4/30 4/30-5/14	Top Floor crusher	0 0	0 0	10 0	60 60	10 0	60 60	250 250
4/16-4/30 4/30-5/14	Sample prep lab.	0 0	0 0	0 0	40 40	0 0	40 40	190 190

Gunnison Mining Company

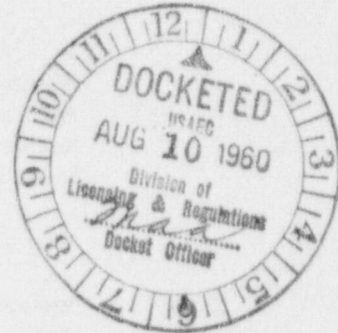
GUNNISON, COLORADO

P. O. BOX 539

May 9, 1960

TELEPHONE 543

DOCKET NO. 40-1366
File copy



H. L. Price, Director
Division of Licensing and Regulation
U.S. Atomic Energy Commission
Washington 25, D.C.

Dear Mr. Price:

Enclosed please find our Radiation Report for the
month of April, 1960.

Yours truly,

GUNNISON MINING COMPANY

Duffy Salinger
Duffy Salinger
Office Manager

DS:jam

Encl;

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GUNNISON MINING COMPANY

GUNNISON, COLORADO

TO: J. L. Robison, Vice President & General Manager
FROM: R. E. Shreve, Mill Superintendent
SUBJECT: Progress report for April, 1960: protection against
radiation, Gunnison Mill.

During April we completed a dust survey for airborne radioactivity, a radiation survey, and continued with the film badge program. We had our radiation counter repaired and re-calibrated, therefore, April's results should be quite accurate.

We also have changed the procedure for handling of the dust samples. In the past the exposed millipore filters were held in glassine envelopes and removed in the Laboratory for analysis. We now place these filters directly into a small stoppered flask, they are digested in these flasks, thus eliminating the possibility of dust loss thru handling.

A booklet describing our radiation problems and how we must cope with them was prepared and distributed to all employees. This has been well accepted by the employees and the general housekeeping has improved. Respirators are now being worn in the required sections voluntarily rather than grudgingly as in the past.

The results of the April surveys are attached.

GUNNISON MINING COMPANY

RADIATION MONITORING PROGRAM

<u>Plant Locations</u>		<u>March</u>	<u>April</u>
1.	Foyer	.015	.020
2.	Conference room	.010	.015
3.	Lockers	.015	.025
4.	Maintenance Shop	.030	.035
5.	Warehouse	.025	.035
6.	Scale Room	.025	.035
7.	Sample Storage	.045	.040
8.	Sample Preparation	.045	.060
9.	1st. Floor - crusher	.075	.100
10.	2nd. Floor - crusher	.065	.080
11.	3rd. Floor Crusher	.040	.070
12.	Yellow cake packaging area	.400	.500
13.	Precipitation Tanks	.450	.550
14.	Filter presses	.650	.450
15.	Classifiers	.040	.045
16.	Thickeners	.035	.040
17.	Leach tanks	.055	.035
18.	Solvent extraction area	.075	.125
19.	Metallurgical laboratory	.025	.020
20.	Lunch room	.015	.020
21.	Fine ore bins	.085	.100
22.	Stockpile area	.150	.175
23.	Parking area	.020	.015
24.	Tailings pond	.260	.350
25.	Rod & Ball mill area	.065	.050
26.	Sump Below thickeners	.150	.135
27.	Laboratory	.030	.025

GUNNISON MINING COMPANY

DUST SURVEY FOR AIRBORNE RADIOACTIVITY

FOR WEEK STARTING APRIL 24, 1960

Sample Area and Conditions	Sample Number	Liters of Air Sampled/Minute	Length of Sample Period	Milligrammas of U3O8	Milligrammas of U	μC of U/ml of Air
Yellow cake sample bench: normal operating conditions	1A	17.5	30 min.	4,602	3,902	5.06×10^{-12}
Yellow cake drum storage area: normal operating conditions;	2A	17.5	30 min.	2,694	2,285	2.96×10^{-12}
Yellow cake packaging area: normal operating conditions	3A	17.5	30 min.	3,772	3,199	4.15×10^{-12}
Yellow cake drying room area normal operating conditions	4A	17.5	30 min.	24,642	20,896	2.71×10^{-11}
Precipitation tank area: normal operating conditions	5A	17.5	30 min.	3,376	2,863	3.71×10^{-12}
Filter Press area: normal operating conditions	6A	17.5	30 min.	4,304	3,650	4.73×10^{-12}
Stripping circuit area: normal operating conditions	7A	17.5	30 min.	7,848	6,655	8.62×10^{-12}
Solvent Extraction Area: normal operating conditions	8A	17.5	30 min.	2,194	1,861	2.41×10^{-12}
Mill Laboratory area: normal operating conditions	9A	17.5	30 min.	3,376	2,863	3.71×10^{-12}
PH meter bench area: normal operating conditions	10A	17.5	30 min.	3,544	3,005	3.89×10^{-12}
No. 1 Thickener Area: normal operating conditions	11A	17.5	30 min.	2,700	2,290	2.97×10^{-12}
No. 2 Thickener Area: normal operating conditions	12A	17.5	30 min.	4,463	3,785	4.90×10^{-12}

GUNNISON MINING COMPANY

DUST SURVEY FOR AIRBORNE RADIOACTIVITY

FOR WEEK STARTING APRIL 24, 1960

<u>Sample Area and Conditions</u>	<u>Sample Number</u>	<u>Liters of Air Sampled/Minute</u>	<u>Length of Sample Period</u>	<u>Milligrammas of U3O8</u>	<u>Milligrammas of U</u>	<u>µC of U/ml of Air</u>
No. 3 Thickener area: normal operating conditions	13A	17.5	30 min.	2,575	2,184	2.83×10^{-12}
Tailings tank area: normal operating conditions	14A	17.5	30 min.	2,487	2,109	2.73×10^{-12}
Leach tank area: normal operating conditions	15A	17.5	30 min.	311	264	3.42×10^{-13}
Rod mill area: normal operating conditions	16A	17.5	30 min.	525	445	5.77×10^{-13}
Maintenance shop area: normal operating conditions	17A	17.5	30 min.	3,348	2,839	3.68×10^{-12}
Fine ore bins: normal operating conditions	18A	17.5	30 min.	3,443	2,920	3.78×10^{-12}
Crushing Plant 1st floor: normal operating conditions	19A	17.5	30 min.	5,409	4,587	6.93×10^{-12}
Crushing plant 3rd floor: normal operating conditions	20A	17.5	30 min.	7,869	6,673	1.01×10^{-11}
Sample Prep room normal operating conditions	21A	17.5	30 min.	4,180	3,545	5.36×10^{-12}
Sample Storage Room: normal operating conditions	22A	17.5	30 min.	443	376	5.68×10^{-12}
Scale House Area/ normal operating conditions	23A	17.5	30 min.	2,123	1,800	2.72×10^{-12}

GUININSON MINING COMPANY

Date	Name	B-Ray		G-Ray		Period		Total 13	Total for
		11 day	13 week	11 day	13 week	Total Dosage	Week	Year	
3/19-4/2 4/2-4/16	W. Derby J. Cozza	0 0	0 0	20 20	20 40	20 20	20 40	220 240	
3/19-4/2 4/2-4/16	G. Biggs-	20 30	20 50	20 20	20 40	40 50	40 90	610 660	
3/19-4/2 4/2-4/16	F. Johnson	0 0	0 0	10 20	10 30	10 20	10 30	100 120	
3/19-4/2 4/2-4/16	W. Roberts	20 20	20 40	20 20	20 40	40 40	40 80	320 360	
3/19-4/2 4/2-4/16	J. Svaldi	0 0	0 0	20 10	20 30	20 10	20 30	120 130	
3/19-4/2 4/2-4/16	G. Tucker	0 0	0 0	20 10	20 30	20 10	20 30	90 100	
3/19-4/2 4/2-4/16	W. Bailey, Jr.	0 0	0 0	40 20	40 60	40 20	40 60	160 180	
3/19-4/2 4/2-4/16	G. Latimer	0 0	0 0	0 0	0 0	0 0	0 0	130 130	
3/19-4/2 4/2-4/16	R. Merrill	0 20	0 20	10 20	10 30	10 40	10 30	400 440	
3/19-4/2 4/2-4/16	F. Jardine	0 0	0 0	10 20	10 30	10 20	10 30	40 160	
3/19-4/2 4/2-4/16	C. Mendenhall	20 30	20 50	20 20	20 40	40 50	40 90	380 430	
3/19-4/2 4/2-4/16	M. Hildreth	0 0	0 0	20 20	20 40	20 20	20 40	170 210	
3/19-4/2 4/2-4/16	Yellow cake packaging area:	340 600	340 940	70 90	70 160	410 690	410 1100	4520 5210	

GUINISON MINING COMPANY

Date	Name	B - Ray		G - Ray		Period	Total	Total for
		<u>14 day</u>	<u>13 week</u>	<u>14 day</u>	<u>13 week</u>	<u>Total dosage</u>	<u>13 week</u>	<u>Year</u>
3/19-4/2 4/2-4/16	Yellow cake dryer compartment	320 450	320 770	90 440	90 230	410 590	410 1000	3680 4680
3/19-4/2 4/2-4/16	Fine Ore Bins	0 0	0 0	40 60	40 100	40 60	40 100	570 630
3/19-4/2 4/2-4/16	Tailings Tank	0 0	0 0	20 20	20 40	20 20	20 40	170 190
3/19-4/2 4/2-4/16	Top floor Crusher	0 0	0 0	20 30	20 50	20 30	20 50	210 240
3/19-4/2 4/2-4/16	Sample Prep. Lab.	0 0	0 0	20 20	20 40	20 20	20 40	170 190

GUNNISON MINING COMPANY
DUST SURVEY FOR
AIRBORNE RADIOACTIVE PARTICLES
APRIL 1960

	<u>Area and Conditions</u>	<u>μC of U Per Ml of Air</u>
1 M	East Side of Change Room- during change of shift.	5.92×10^{-12}
2 M	West Side of Change Room- after change of shift.	4.74×10^{-12}
3 M	Change room being swept. Breathing zone sample. Respirator being worn.	1.57×10^{-11}
4 M	Office composite sample- while three rooms were swept. breathing zone sample. Respirator being worn.	4.70×10^{-11}

Radiation Monitoring for Mine

Mr/Hr

Change Room	High .100	Low .025	Average .050
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