

42-6659

PETROTOMICS COMPANY

TIDEWATER OIL COMPANY • MANAGING PARTNER
P. O. DRAWER 3450

~~XXXXXXXXXX~~ • CASPER WYOMING

June 14, 1963

Mr. R. Lowenstein, Director
Division of Licensing and Regulation
U. S. Atomic Energy Commission
Washington 25, D. C.



Dear Mr. Lowenstein:

Attached is the report covering the radiation
safety survey results which is due for this quarter.

Sincerely yours,

PETROTOMICS COMPANY

By D. S. Hutchinson
D. S. Hutchinson
Radiologist

DSH:afn

Enclosures

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June 14, 1963

PETROTOMICS COMPANY

Air-borne Radioactivity

A tabulation of the results of our air-borne radioactivity surveys for the quarter is included on an attached sheet. This shows a marked decrease in air-borne radioactivity at Petrotomics. This is a result of the increased time spent washing all equipment and painting throughout the mill, which makes clean-up easier.

During the months of March, April and May, there occurred one fourteen-day period (April 10-23) when one Packaging Operator and two Precipitation Operators worked 120 hours; their MPC's were lowered to 3.2×10^{-11} and 4.0×10^{-11} uc/ml respectively. The attached Job Exposure sheets show that none of these men were over-exposed during this fourteen-day period or any other period.

The two above-mentioned operators were the only operators working in areas where dust concentrations approached MPC levels.

Environmental dust samples taken this quarter show, in all cases at four stations, less than 4% MPC assuming 100% occupancy time.

EXTERNAL RADIOACTIVITY

Film badges worn by various mill personnel have shown no measurable Gamma or Beta radiation for the past thirteen weeks.

Water Survey

The analytical results have not yet been received from Tracerlab Company.

A complete report of our water survey will be submitted as soon as the results are received at this office.

GENERAL AIR SAMPLES
MARCH, APRIL, MAY, 1963

<u>Area</u>	<u>Building</u>	<u>Surveys</u>	<u>(uc/ml x 10⁻¹¹)</u>		
			<u>High</u>	<u>Low</u>	<u>Avg.</u>
Feeder floor	Primary	3	.21	.10	.15
Crusher floor	Primary	3	.73	.18	.35
Pit	Primary	3	1.09	.19	.49
Screen floor	Secondary	3	.32	.08	.16
Impactor floor	Secondary	3	.32	.07	.17
Ground floor	Secondary	3	.42	.13	.23
Tripper	Fine Ore	3	.11	.01	.05
Sample prep	Fine Ore	3	.04	.01	.03
Feeder	Fine Ore	3	.26	.04	.14
Grind	Mill	6	.05	.01	.03
Leach	Mill	6	.06	.01	.03
Precip	Mill (Mezzanine)	3	.27	.01	.12
Precip	Mill (Floor)	3	.07	.01	.03
Packaging room	Mill	3	.60	.04	.22
Drying room	Mill	6	.90	.04	.43
CCD Walk	Mill	6	.16	.01	.06
CCD tunnel	Mill	3	.05	.04	.04
Tails Pump House	Mill	3	.04	.02	.03
SX lab	SX	3	.03	.02	.03
SX deck	SX	3	.05	.02	.04

General Air Samples, Cont.

Shift office	Mill	3	.06	.03	.05
Change room	Mill	3	.02	Nil	.01
Supt. office	Mill	3	.08	.04	.06
Met. office	Mill	3	.06	.06	.06
Met. lab	Mill	3	.10	.04	.07

40-6659

PETROTOMICS COMPANY

JOB EXPOSURE EVALUATION

Survey Period March, 1963

BUILDING MILL PROCESS AREA PRECIPITATION

OPERATOR Precip. 1 men/shift 2 shift/day 2 men/day

Operation or Operating Area	Time Per Oper.	Oper. Per Shift	Time Per Shift (T)	Sample No.	Concentration d/m/m ³				TxC
					High	Low	Avg.	(C)	
Precip. Mezzanine			480	270			.09		43.20
Precip. Main Floor			112	269			.01		1.12
Dryer Room:									
By Temp Gauges			24	272			.28		67.20
Cleaning Grates			24	271			.04		1.00
Shift Office			30	279			.06		1.80
Change Room			30	283			Nil.		
SX Lab.			20	266			.02		.40

$\Sigma(T)$ 720

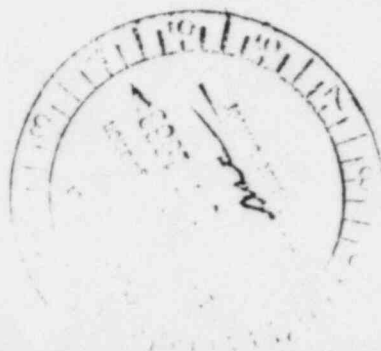
$\Sigma(TxC)$ 114.72

$$\frac{\Sigma(TxC)}{\Sigma(T)} = \frac{114.72}{720} = 0.16 \text{ } \frac{\text{uc/ml} \times 10^{-11}}{\text{XXXXXXX}}$$

0.03

MPC

$$\text{MPC} = 5.7 \text{ uc/ml} \times 10^{-11} \text{ (42 hrs.)}$$



40-6659

PETROTOMICS COMPANY

JOB EXPOSURE EVALUATION

Survey Period April, 1963

BUILDING MILL PROCESS AREA PRECIPITATION

OPERATOR Precip. 1 men/shift 2 shift/day 2 men/day

Operation or Operating Area	Time Per Oper.	Oper. Per Shift	Time Per Shift (T)	Sample No.	Concentration uc/mlx10⁻¹¹ uc/mlx10 ⁻¹¹				TxC
					High	Low	Avg	(C)	
Precip. Mezzanine			480	307			.010		4.80
Precip. Main Floor			112	306			.010		1.12
Dryer Room:									
By Temp Gauges			24	309			.56		13.40
Cleaning Grates			24	308			.23		5.50
Shift Office			30	316			.04		1.20
Change Room			30	320			Nil.		
SX Lab.			20	303			.03		0.60

$\Sigma (T) = 720$

$\Sigma (TxC) = 26.62$

$$\frac{\Sigma (TxC)}{\Sigma (T)} = \frac{0.04 \text{ uc/mlx10}^{-11}}{720} =$$

$< 0.01^*$

MPC

*0.01 MPC During Period April 10-17

MPC (Normal) = 5.7 uc/mlx10⁻¹¹ (42 hrs.)

MPC (April 10-17) = 4.0 uc/mlx10⁻¹¹ (120 hrs. Per 14 Days)

40-66-55

PETROTOMICS COMPANY

JOB EXPOSURE EVALUATION

Survey Period May, 1963

BUILDING MILL PROCESS AREA PRECIPITATION

OPERATOR Precip. 1 men/shift 2 shift/day 2 men/day

Operation or Operating Area	Time Per Oper.	Oper. Per Shift	Time Per Shift (T)	Sample No.	Concentration $\text{uc/ml} \times 10^{-11}$				TxC
					XXXXXX High	Low	Avg.	(C)	
Precip. Mezzanine			480	342			.27		129.6
Precip. Main Floor			112	341			.07		7.8
Dryer Room:									
By Temp. Gauges			24	343			.90		21.6
Cleaning Grates			24	344			.60		14.4
Shift Office			30	351			.03		0.9
SX Lab.			20	338			.03		0.6
Change Room			30	355			.02		0.6

$\Sigma (T) = 720$

$\Sigma (TxC) = 175.5$

$$\Sigma (TxC) = 0.244 \quad \frac{\text{uc/ml} \times 10^{-11}}{\Sigma (T)} =$$

0.04

MPC

MPC = $5.7 \text{ uc/ml} \times 10^{-11}$ (42 hrs./week)

40-66-55

PETROTOMICS COMPANY

JOB EXPOSURE EVALUATION

Survey Period - March, 1963

BUILDING MILL PROCESS AREA FINAL PRODUCT PACKAGING

OPERATOR Packaging 1 men/shift 1 shift/day 1 men/day

Operation or Operating Area	Time Per Oper.	Oper. Per Shift	Time Per Shift (T)	Sample No.	Concentration uc/mlx10⁻¹¹ uc/mlx10 ⁻¹¹			TxC
					High	Low	Avg. (C)	
Packaging Room:								
Painting & Labeling	10	3	30	276			.19	5.72
Shaking & Changing	9	3	27	273			.32	8.65
Weighing	5	6	30	275			.08	2.40
Sampling	6	3	18	278			.31	5.58
Sample Table			60	274			.08	4.80
Clean-up			60	277			.37	22.19
Mill Floor - Clean-up			140	269			.01	1.40
Shift Office			50	279			.06	3.00
SX Lab.			25	266			.02	.50
Change Room			40	283			Nil.	
Bucking Room			240	257			.01	2.40

$\Sigma (T)$ 720

$\Sigma (TxC)$ 56.64

$$\frac{\Sigma (TxC)}{\Sigma (T)} = \frac{56.64}{720} = 0.08 \text{ uc/mlx10}^{-11}$$

~~xxxxxx~~ =

< 0.02

MPC

MPC = 4.6 uc/mlx10⁻¹¹ (42 hrs.)

40-6455

PETROTOMICS COMPANY

JOB EXPOSURE EVALUATION

Survey Period April, 1963

BUILDING MILL PROCESS AREA FINAL PRODUCT PACKAGING

OPERATOR Packaging 1 men/shift 1 shift/day 1 men/day

Operation or Operating Area	Time Per Oper.	Oper. Per Shift	Time Per Shift (T)	Sample No.	Concentration XXXX $\text{uc/ml} \times 10^{-11}$				TNC
					High	Low	Avg.	(C)	
Packaging Room:									
Painting & Labeling	10	3	30	313			.16		4.80
Shaking & Changing	9	3	27	310			.69		18.50
Weighing	5	6	30	312			.79		23.70
Sampling	6	3	18	315			1.00		18.00
Sample Table			60	311			.19		12.00
Clean-up			60	314			.35		21.00
Mill Floor - Clean-up			140	306			.01		1.40
Shift Office			50	316			.04		2.00
SX Lab.			25	303			.03		.75
Change Room			40	320			Nil.		
Bucking Room			240	294			.04		9.60

$\Sigma(T)$ 720

$\Sigma(TNC)$ 111.75

$$\frac{\Sigma(TNC)}{\Sigma(T)} = \frac{0.16 \text{ } \text{uc/ml} \times 10^{-11}}{720} =$$

0.04*

MPC

*0.05 MPC During Period April 10-17

MPC (Normal) = $4.6 \text{ } \text{uc/ml} \times 10^{-11}$ (42 hrs.)
MPC (April 10-17) = $3.2 \text{ } \text{uc/ml} \times 10^{-11}$ (120 hrs. per 14 Days)

40-665

PETROTOMICS COMPANY

JOB EXPOSURE EVALUATION

Survey Period May, 1963

BUILDING MILL PROCESS AREA FINAL PRODUCT PACKAGING

OPERATOR Packaging 1 men/shift 1 shift/day 1 men/day

Operation or Operating Area	Time Per Oper.	Oper. Per Shift	Time Per Shift (T)	Sample No.	Concentration XXXXXX uc/mlx10 ⁻¹¹			TSC
					High	Low	Avg. (C)	
Packaging Room:								
Painting & Labeling	10	3	30	348			.57	17.1
Shaking & Changing	9	3	27	345			1.80	48.6
Weighing	5	6	30	347			.62	18.6
Sampling	6	3	18	350			2.85	51.3
Sample Table			60	346			.18	10.8
Clean-up			60	349			.60	36.0
Mill Floor - Clean-up			140	341			.07	9.8
Shift Office			50	352			.03	1.5
SX Lab			25	338			.03	.8
Change Room			40	355			.02	.8
Bucking Room			240	329			.04	9.6

$\Sigma (T)$ 720

$\Sigma (TSC)$ 204.9

$$\frac{\Sigma (TSC)}{\Sigma (T)} = \frac{.285 \text{ uc/mlx10}^{-11}}{720} =$$

0.06

MPC

MPC = 4.6 uc/mlx10⁻¹¹ (42 hrs./week)

40-6655

Atomics Company
Casper, Wyoming

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radiation safety survey results which
is due for this quarter.

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