

K/EM-119

SIX-MONTH 1984 AIR SUMMARY

(Deleted Version of H&S Box 5, Report 56, dated 1984)

Compiled by
S. G. Thornton
Environmental Management Division
OAK RIDGE K-25 SITE
for the Health Studies Agreement

April 6, 1995

Oak Ridge K-25 Site
Oak Ridge, Tennessee 37831-7101
managed by MARTIN MARIETTA ENERGY SYSTEMS, INC.
for the U.S. DEPARTMENT OF ENERGY
under Contract DE-AC05-84OR21400

This document has been approved for release
to the public by:

David S. Gilliland 4/10/95
Asst. Technical Information Officer Date
Oak Ridge K-25 Site

LOCATION:

K-1131 Tails Withdrawal

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1984				
February 1984				
March 1984				
April 1984				
May 1984	22	0.4	0.9	
June 1984	21	0.5	1.8	
July 1984				
August 1984				
September 1984				
October 1984				
November 1984				
December 1984				

$$0.45 \pm 0.07$$

This document has been reviewed and found to be UNCLASSIFIED.

J. C. Delfs
ADC Signature
4/4/95
Date

LOCATION:

K-1420 Pigtail Cleaning

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1983				
February 1983				
March 1983				
April 1983				
May 1983				
June 1983				
July 1983				
August 1983				
September 1983				
October 1983				
November 1983	3	2.4	9.9	
December 1983	19	0.8	3.9	

LOCATION:

K-1420 PIGTAIL

<u>Month</u>	No. Samples Taken	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1984	20	0.9	3.1	
February 1984	16	0.6	3.1	
March 1984	13	3.0	32.9	
April 1984	13	0.6	1.5	
May 1984	13	1.9	4.8	
June 1984	12	0.6	1.3	
July 1984				
August 1984				
September 1984				
October 1984				
November 1984				
December 1984				

1.35 0.95

LOCATION: K-1420 Spool Demolition

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1982	20	0.1	0.1	
February 1982	19	0.1	0.2	
March 1982	23	1.3	19.1	
April 1982	19	1.5	27.9	
May 1982	20	0.1	0.2	
June 1982	22	0.9	18.0	
July 1982	19	0.1	0.5	
August 1982	22	0.1	0.2	
September 1982	19	12.7	240.5	
October 1982	21	0.1	0.2	
November 1982	20	0.1	0.1	
December 1982	20	0.1	0.1	
Total	244	1.4	240.5	

LOCATION: K-1420 Spool Demolition

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m ³	Max. Alpha Activity d/m ³	Average Tc Activity d/m ³
January 1983	21	0.1	0.2	
February 1983	19	0.5	3.0	
March 1983	23	0.1	0.5	
April 1983	20	0.2	1.6	
May 1983	21	0.2	1.9	
June 1983	22	0.2	0.7	
July 1983	19	0.2	0.7	
August 1983	23	0.3	1.8	
September 1983	21	0.4	1.8	
October 1983	21	0.3	1.0	
November 1983	20	0.3	1.4	
December 1983	19	0.1	0.3	
Total-year 1983	249	0.2	3.0	

LOCATION:

K-1420 Spool Demolition

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1984	20	0.1	0.2	
February 1984	16	0.1	0.7	
March 1984	13	0.1	0.6	
April 1984	13	0.1	0.2	
May 1984	13	0.2	1.4	
June 1984	12	0.1	0.3	
July 1984				
August 1984				
September 1984				
October 1984				
November 1984				
December 1984				

Year 1984

0.69 2.29

0.12 0.041

LOCATION:

K-1420 "B" Recovery

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1982	20	1.1	7.3	
February 1982	19	1.0	5.1	
March 1982	22	0.7	2.7	
April 1982	21	0.4	0.9	
May 1982	20	0.3	1.1	
June 1982	22	0.4	1.2	
July 1982	20	0.3	1.1	
August 1982	22	0.4	1.3	
September 1982	21	0.5	2.6	
October 1982	20	0.1	0.2	
November 1982	19	0.1	0.2	
December 1982	20	0.1	0.2	
Total	246	0.4	7.3	

LOCATION: K-1420 "B" Recovery

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1983	21	0.1	0.4	
February 1983	19	0.4	1.6	
March 1983	23	0.2	0.3	
April 1983	20	0.1	0.3	
May 1983	18	0.3	1.3	
June 1983	22	0.3	1.7	
July 1983	19	0.2	0.7	
August 1983	23	0.5	3.3	
September 1983	21	0.4	1.9	
October 1983	21	0.4	1.5	
November 1983	20	0.4	2.2	
December 1983	19	0.4	3.1	
Total	246	0.3	3.3	

LOCATION:

K-1420 "B" Recovery

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1984	20	0.6	3.1	
February 1984	16	0.3	2.0	
March 1984	13	0.4	1.8	
April 1984	13	0.8	1.7	
May 1984	13	0.6	2.6	
June 1984	12	0.4	1.0	
July 1984				
August 1984				
September 1984				
October 1984				
November 1984				
December 1984				

0.41 0.25

LOCATION: K-1420 Conv. Disassembly

<u>Month</u>	No. Samples Taken	Average Alpha Activity d/m ³	Max. Alpha Activity d/m ³	Average Tc Activity d/m ³
January 1982	20	0.1	0.5	
February 1982	19	0.2	0.5	
March 1982	23	1.1	6.2	
April 1982	20	0.5	6.4	
May 1982	19	0.2	0.6	
June 1982	20	0.5	7.1	
July 1982	13	0.1	0.3	
August 1982	22	0.1	0.2	
September 1982	21	0.2	1.2	
October 1982	21	0.1	0.3	
November 1982	20	0.1	0.4	
December 1982	20	0.1	0.2	
Year 1982	238	0.3	7.1	

LOCATION:

K-1420 Conv. Disassembly

<u>Month</u>	No. Samples Taken	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1983	21	0.2	1.3	
February 1983	19	0.5	4.4	
March 1983	23	0.1	4.4	
April 1983	20	0.1	1.4	
May 1983	17	1.0	3.5	
June 1983	22	0.6	2.6	
July 1983	19	0.2	0.8	
August 1983	23	0.5	2.2	
September 1983	21	0.5	3.8	
October 1983	21	0.5	3.2	
November 1983	20	0.3	1.5	
December 1983	19	0.2	1.2	
Year 1983	245	0.4	4.4	

LOCATION:

K-1420Conv. Disassembly

<u>Month</u>	<u>No. Samples Taken</u>	<u>Average Alpha Activity d/m/m³</u>	<u>Max. Alpha Activity d/m/m³</u>	<u>Average Tc Activity d/m/m³</u>
January 1984	20	1.1	11.1	
February 1984	16	0.5	3.3	
March 1984	13	0.7	2.5	
April 1984	13	0.9	3.0	
May 1984	13	0.3	1.1	
June 1984	12	0.2	0.5	
July 1984				
August 1984				
September 1984				
October 1984				
November 1984				
December 1984				

0.39 0.31

LOCATION:

K-1420 Comp. Disassembly

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1982	20	0.1	0.5	
February 1982	19	0.2	0.5	
March 1982	23	4.1	29.8	
April 1982	19	0.5	3.9	
May 1982	20	0.7	3.9	
June 1982	22	0.4	4.7	
July 1982	20	0.1	0.4	
August 1982	22	0.2	3.1	
September 1982	21	0.2	0.9	
October 1982	21	0.1	0.4	
November 1982	20	0.3	2.2	
December 1982	20	0.2	1.3	
Year 1982	247	0.6	29.8	

LOCATION:

K-1420 Comp. Disassembly

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1983	21	0.8	7.2	
February 1983	19	0.8	7.4	
March 1983	23	0.3	1.2	
April 1983	20	0.2	1.4	
May 1983	18	0.5	3.9	
June 1983	22	1.3	5.9	
July 1983	19	0.4	1.4	
August 1983	23	0.8	4.8	
September 1983	21	0.6	2.1	
October 1983	21	1.0	3.3	
November 1983	20	0.4	2.1	
December 1983	19	0.5	5.2	
Year 1983	246	0.6	7.4	

LOCATION:

K-1420 Comp. Disassembly

<u>Month</u>	No. Samples Taken	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1984	20	0.8	5.7	
February 1984	16	0.7	5.1	
March 1984	13	1.2	4.2	
April 1984	13	1.4	3.8	
May 1984	13	0.4	1.0	
June 1984	12	0.2	0.7	
July 1984				
August 1984				
September 1984				
October 1984				
November 1984				
December 1984				

0.65 0.74

0.78 0.46

LOCATION: K-4029 NaF Traps

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1982	20	0.1	0.3	
February 1982	18	0.1	0.3	
March 1982	22	0.3	5.1	
April 1982	21	0.1	0.5	
May 1982	20	0.2	2.2	
June 1982	22	0.1	0.8	
July 1982	20	0.2	0.6	
August 1982	21	0.1	0.5	
September 1982	21	1.4	10.4	
October 1982	21	0.1	0.3	
November 1982	20	0.7	11.0	
December 1982	20	2.1	18.8	
Year 1982	246	0.5	18.8	

402-9

LOCATION: K-
NaF Traps

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1983	21	2.4	21.4	
February 1983	19	5.4	59.7	
March 1983	23	0.3	1.5	
April 1983	20	0.2	2.8	
May 1983	21	0.2	1.1	
June 1983	22	0.3	1.1	
July 1983	19	0.2	0.8	
August 1983	23	0.5	4.2	
September 1983	21	0.8	3.1	
October 1983	21	0.4	1.8	
November 1983	20	0.5	1.8	
December 1983	19	0.2	1.9	
Year 1983	249	1.0	59.7	

LOCATION: K-~~0000~~⁴⁰²⁹ NaF Traps

<u>Month</u>	<u>No. Samples Taken</u>	<u>Average Alpha Activity d/m/m³</u>	<u>Max. Alpha Activity d/m/m³</u>	<u>Average Tc Activity d/m/m³</u>
January 1984	20	0.4	1.6	
February 1984	19	6.2	106.0	
March 1984	21	0.7	2.8	
April 1984	20	0.6	1.6	
May 1984	22	0.4	3.4	
June 1984	21	0.5	2.6	
July 1984				
August 1984				
September 1984				
October 1984				
November 1984				
December 1984				

0.86 1.46

LOCATION:

K-413 Pumproom

<u>Month</u>	No. Samples Taken	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1982	20	2.2	10.8	
February 1982	19	1.6	7.3	
March 1982	23	1.7	11.1	
April 1982	21	0.4	1.8	
May 1982	20	2.4	33.8	
June 1982	22	1.0	9.4	
July 1982	19	3.7	33.2	
August 1982	22	0.8	7.3	
September 1982	21	4.3	30.6	
October 1982	21	11.6	111.3	
November 1982	21	0.9	4.2	
December 1982	20	0.8	2.5	
Year 1982	248	2.6	111.3	

LOCATION: K-413 Pumproom

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1983	21	0.9	10.6	
February 1983	19	8.3	29.0	
March 1983	23	4.1	27.5	
April 1983	20	1.8	13.2	
May 1983	21	3.4	35.6	
June 1983	22	1.9	10.2	
July 1983	19	5.1	64.1	
August 1983	23	2.4	25.8	
September 1983	21	2.2	23.9	
October 1983	21	1.1	8.3	
November 1983	20	3.6	36.9	
December 1983	19	17.3	160.1	
Year 1983	249	4.3	160.1	

LOCATION:

K-413Pumproom

<u>Month</u>	No. Samples Taken	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1984	20	2.0	10.6	
February 1984	19	15.8	210.4	
March 1984	21	4.1	13.2	
April 1984	20	2.8	20.6	
May 1984	22	1.2	15.2	
June 1984	21	5.3	20.1	
July 1984				
August 1984				
September 1984				
October 1984				
November 1984				
December 1984				
		\bar{x} 3.82	s 4.19	

LOCATION:

K-413 Scale Room

<u>Month</u>	<u>No. Samples Taken</u>	<u>Average Alpha Activity d/m/m³</u>	<u>Max. Alpha Activity d/m/m³</u>	<u>Average Tc Activity d/m/m³</u>
January 1984				
February 1984				
March 1984	16	8.4	21.1	
April 1984	20	9.3	51.9	
May 1984	22	1.6	21.9	
June 1984	21	9.0	63.9	
July 1984				
August 1984				
September 1984				
October 1984				
November 1984				
December 1984				

$$7.08 \pm 3.67$$

LOCATION:

K-1131 Pumproom

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1983				
February 1983	2	2.1	3.2	
March 1983	23	1.5	18.7	
April 1983	20	0.4	3.6	
May 1983	21	7.5	136.6	
June 1983	22	0.3	1.9	
July 1983	19	0.9	12.0	
August 1983	23	2.4	19.0	
September 1983	20	3.3	45.9	
October 1983	21	6.7	124.6	
November 1983	20	1.0	7.1	
December 1983	19	1.9	10.7	
Year 1983	210	2.6	136.6	

LOCATION:

K-1131 Pumproom

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m ³	Max. Alpha Activity d/m ³	Average Tc Activity d/m ³
January 1984	20	0.7	3.5	
February 1984	19	0.7	1.5	
March 1984	21	1.0	6.0	
April 1984	20	3.0	44.4	
May 1984	22	3.7	55.8	
June 1984	21	1.1	6.0	
July 1984				
August 1984				
September 1984				
October 1984				
November 1984				
December 1984				

$$2.25 \pm 2.09$$

LOCATION:

K-1423 N. Transfer

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1982	19	1.3	17.9	
February 1982	18	0.5	6.7	
March 1982	23	0.6	2.8	
April 1982	21	3.4	41.1	
May 1982	20	1.1	11.6	
June 1982	22	5.1	76.9	
July 1982	19	0.7	2.6	
August 1982	20	0.8	3.5	
September 1982	21	0.4	1.7	
October 1982	21	1.1	10.4	
November 1982	19	2.1	13.7	
December 1982	20	1.8	8.5	
Year 1982	245	1.6	76.9	

ORGDP HEALTH PHYSICS CONTINUOUS AIR SAMPLING PROGRAM

Bureau of Mines

Sent to [REDACTED]

Building	Starting Date	Flow Rate (lpm)	Time	Date	Time	Ending	Flow Rate (lpm)	Sample Duration (Min.)	Sample Volume (ml)	Alpha d/m ³	Beta d/pm	99Tc d/m/m ³	U d/m/m ³	Other	Location
11251	1-4-85	9.0/4	20	1-4-85	310	20	288	0.70	17.1	286					
11249	1-4-85	9.05/4	20	1-4-85	316	2	311	0.6	23.3	676					
11248	1-4-85	9.045	20	1-4-85	315	2	270	0.5	28.0	2280					

Remarks:

H. P. Technician _____

841228-001
3719-02573-1352

P1	54.0	██████████	Right Hand	4:15 → 6:30
1-2.85	P3	57.0	██████████	Left Hand
	PW-1	34.0	██████████	Bracelet
	↓ P2	53.0	██████████	Left Hand
1-3.85	P5	60.0	██████████	8:55 → 10:15 Right Hand
	P4	48.0	██████████	Ring - Left Hand
	P6-1	26.0	██████████	2:20 → 3:20
	✓ X-8	33.0	██████████	2:20 → 3:21
1-4.85	X-6	57.0	██████████	9:10 → 3:10 fm

850103-096-101 -7127

ORGDP HEALTH PHYSICS CONTINUOUS AIR SAMPLING PROGRAM

Personal Air Samples

Location

Sample No.	Starting Date	Starting Time	Flow Rate (1pm)	Ending Date	Ending Time	Flow Rate (1pm)	Sample Duration (Min.)	Sample Volume (m³)	Alpha d/m³	Beta dpm	99Tc d/m³	U d/m³	Other
11202	1-2-85	9:10 A	2	1-2-85	10:56 A	2	106	.21	<9.5				
11205		10:56 A	/		11:24 A	/	28	.06	<33.3				
11216		12:15 P	/		12:28 P	/	2.53	.51	3.9				
11219		12:30 P	↗		12:46 P	↗	190	.38	15.8				
<hr/>													
11201	1-2-85	9:48 A	2	1-2-85	10:55 A	2	67	.13	<15.4				
11204		10:08 A	/		11:22 A	/	27	.05	<40.0				
11214		12:15 P	/		12:15 P	/	240	.48	6.2				
11217		12:15 P	↗		12:30 P	↗	135	.27	7.4				
<hr/>													
11203	1-2-85	9:40 A	2	1-2-85	10:57 A	2	77	.15	<13.3				
11206		10:57 A	/		11:24 A	/	27	.05	<40.0				
11215		12:15 P	/		12:20 P	/	245	.49	6.1				
11218		12:20 P	↗		12:46 P	↗	170	.34	11.9				

Remarks:

H. P. Technician

SS 04 135136

ORGDP HEALTH PHYSICS CONTINUOUS AIR SAMPLING PROGRAM

Remarks:

LOCATION:

K-1423 N. Transfer

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1983	21	5.6	30.1	
February 1983	19	5.4	23.2	
March 1983	23	1.3	5.0	
April 1983	20	4.5	32.2	
May 1983	21	33.4	577.0	
June 1983	22	1.4	4.4	
July 1983	19	1.2	11.7	
August 1983	23	6.1	112.2	
September 1983	21	1.4	11.8	
October 1983	21	0.7	3.5	
November 1983	20	1.1	4.6	
December 1983	20	53.3	403.8	
Year 1983	250	9.6	577.0	

LOCATION:

K-1423 N. Transfer

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1984	20	1.3	7.4	
February 1984	18	0.9	4.4	
March 1984	21	1.1	4.3	
April 1984	20	1.2	4.8	
May 1984	22	2.1	15.7	
June 1984	21	1.0	5.7	
July 1984				
August 1984				
September 1984				
October 1984				
November 1984				
December 1984				

$$4.73 \pm 10.94$$

LOCATION: K-1423 Autoclave N.W.

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1982	20	0.8	4.4	
February 1982	19	0.7	1.7	
March 1982	23	1.0	3.6	
April 1982	21	0.6	1.6	
May 1982	20	0.5	1.8	
June 1982	22	1.0	5.8	
July 1982	19	0.5	2.6	
August 1982	22	0.9	8.9	
September 1982	21	1.2	6.2	
October 1982	21	1.7	9.9	
November 1982	20	3.6	24.3	
December 1982	20	6.6	40.4	
Year 1982	248	1.6	40.4	

LOCATION:

K-1423 Autoclave N.W.

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1983	21	5.9	26.3	
February 1983	19	20.2	202.4	
March 1983	22	1.8	8.1	
April 1983	20	2.2	9.8	
May 1983	21	1.4	10.3	
June 1983	22	0.9	5.5	
July 1983	19	0.4	2.1	
August 1983	23	2.5	31.1	
September 1983	21	0.4	1.8	
October 1983	21	0.6	3.4	
November 1983	19	3.1	22.3	
December 1983	20	6.4	50.7	
Year 1983	248	3.8	202.4	

LOCATION: K-1423 Autoclave N.W.

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1984	20	1.8	6.7	
February 1984	19	2.1	5.5	
March 1984	21	2.4	8.3	
April 1984	20	2.0	4.6	
May 1984	22	2.0	17.6	
June 1984	21	1.0	3.1	
July 1984				
August 1984				
September 1984				
October 1984				
November 1984				
December 1984				

$$2.54 \pm 3.74$$

LOCATION:

K-1423 Autoclave S. W.

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1982	20	0.6	2.0	
February 1982	19	0.6	1.6	
March 1982	23	0.9	3.0	
April 1982	21	1.1	9.1	
May 1982	20	0.7	3.6	
June 1982	20	0.5	0.9	
July 1982	20	0.4	4.5	
August 1982	22	1.0	4.9	
September 1982	21	0.8	3.7	
October 1982	21	0.7	3.8	
November 1982	20	4.2	28.1	
December 1982	20	3.4	19.5	
Year 1982	247	1.2	28.1	

LOCATION: K-1423 Autoclave S.w

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1983	21	8.7	58.8	
February 1983	19	8.1	45.0	
March 1983	23	2.0	8.6	
April 1983	20	2.1	11.6	
May 1983	21	1.7	11.5	
June 1983	22	2.4	21.9	
July 1983	19	0.4	2.2	
August 1983	23	1.6	5.4	
September 1983	21	0.6	2.7	
October 1983	21	0.8	3.9	
November 1983	20	2.8	6.4	
December 1983	20	3.8	13.2	
Year 1983	250	2.7	58.8	

LOCATION:

K-1423 Autoclave S.W

<u>Month</u>	No. Samples Taken	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1984	20	1.0	2.7	
February 1984	19	0.9	2.7	
March 1984	21	1.4	5.7	
April 1984	20	1.6	10.3	
May 1984	21	1.5	16.3	
June 1984	21	1.1	2.8	
July 1984				
August 1984				
September 1984				
October 1984				
November 1984				
December 1984				

$$1.91 \pm 2.03$$

LOCATION:

K-1401 Valve Shop

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1982	20	0.2	0.6	
February 1982	19	0.2	1.7	
March 1982	23	0.4	3.9	
April 1982	21	0.1	0.4	
May 1982	20	0.1	0.8	
June 1982	22	0.2	1.4	
July 1982	20	0.2	0.5	
August 1982	20	0.1	0.9	
September 1982	21	0.1	0.6	
October 1982	21	0.1	0.8	
November 1982	19	0.1	0.4	
December 1982	20	0.1	0.8	
Year 1982	246	0.1	3.9	

LOCATION:

K-1401 Valve Shop

<u>Month</u>	No. Samples Taken	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1983	21	0.1	0.3	
February 1983	19	0.3	2.3	
March 1983	23	0.1	0.7	
April 1983	20	0.1	0.3	
May 1983	21	0.1	0.4	
June 1983	22	0.2	0.7	
July 1983	19	0.2	1.0	
August 1983	23	1.0	9.3	
September 1983	21	0.3	1.4	
October 1983	21	0.4	3.0	
November 1983	20	0.2	0.9	
December 1983	20	0.2	0.6	
Year 1983	250	0.3	9.3	

LOCATION:

K-1401 Value Shop

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m ³	Max. Alpha Activity d/m ³	Average Tc Activity d/m ³
January 1984	20	0.2	0.4	
February 1984	19	0.1	0.4	
March 1984	19	0.1	0.4	
April 1984	13	0.1	0.2	
May 1984	13	0.1	0.2	
June 1984	12	0.1	0.4	
July 1984				
August 1984				
September 1984				
October 1984				
November 1984				
December 1984				

$$0.20 \pm 0.18$$

LOCATION:

K-1401 Compressor Shop

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1982	20	0.2	0.7	
February 1982	19	0.1	0.3	
March 1982	23	0.1	0.4	
April 1982	21	0.1	0.5	
May 1982	20	0.1	0.8	
June 1982	22	0.1	0.1	
July 1982	20	0.3	3.3	
August 1982	20	0.1	0.7	
September 1982	21	0.1	0.7	
October 1982	21	0.1	0.2	
November 1982	19	0.0	0.1	
December 1982	19	0.2	1.0	
Year 1982	245	0.1	3.3	

LOCATION:

K-1401 Compressor Shop

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1983	21	0.1	0.2	
February 1983	19	0.3	2.3	
March 1983	23	0.1	0.2	
April 1983	20	0.1	0.2	
May 1983	21	0.1	0.4	
June 1983	22	0.2	0.6	
July 1983	19	0.3	2.6	
August 1983	23	1.2	9.5	
September 1983	21	0.3	1.6	
October 1983	21	0.2	0.9	
November 1983	20	0.2	1.0	
December 1983	20	0.1	0.5	
Year 1983	250	0.3	9.5	

LOCATION:

K-1401 Compresso Shop

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m ³	Max. Alpha Activity d/m ³	Average Tc Activity d/m ³
January 1984	20	0.1	0.4	
February 1984	19	0.1	0.4	
March 1984	18	0.1	0.5	
April 1984	13	0.1	0.4	
May 1984	13	0.2	0.7	
June 1984	12	0.1	0.7	
July 1984				
August 1984				
September 1984				
October 1984				
November 1984				
December 1984				

$$0.18 \pm 0.21$$

LOCATION:

K-1004L Downstairs

<u>Month</u>	No. Samples Taken	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1982	20	0.7	2.7	
February 1982	19	4.0	35.7	
March 1982	23	2.8	24.9	
April 1982	21	1.5	9.1	
May 1982	20	0.4	6.4	
June 1982	22	0.1	0.9	
July 1982	20	0.1	0.2	
August 1982	22	0.1	1.2	
September 1982	21	0.4	4.8	
October 1982	21	0.1	0.2	
November 1982	20	0.2	1.0	
December 1982	20	0.2	1.1	
Year 1982	249	0.8	35.7	

LOCATION:

K-10046 Downstairs

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1983	21	0.8	12.1	
February 1983	19	0.6	2.0	
March 1983	23	0.1	0.2	
April 1983	20	0.8	8.2	
May 1983	21	0.1	0.4	
June 1983	22	0.2	0.7	
July 1983	19	0.2	0.6	
August 1983	22	1.4	19.0	
September 1983	21	1.8	14.9	
October 1983	21	0.7	6.8	
November 1983	20	0.3	1.6	
December 1983	19	0.2	0.6	
Year 1983	248	0.6	19.0	

LOCATION: K-1004L Downstairs

<u>Month</u>	<u>No. Samples Taken</u>	<u>Average Alpha Activity d/m³</u>	<u>Max. Alpha Activity d/m³</u>	<u>Average Tc Activity d/m³</u>
January 1984	20	0.2	1.2	
February 1984	19	0.2	0.5	
March 1984	15	0.1	0.3	
April 1984	13	0.2	0.4	
May 1984	12	0.1	0.6	
June 1984	10	0.1	0.3	
July 1984				
August 1984				
September 1984				
October 1984				
November 1984				
December 1984				

Aug 1984 0.15 ± 0.05

LOCATION:

K-1004L Upstairs

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1982	20	2.0	27.0	
February 1982	19	14.5	224.1	
March 1982	23	10.4	140.5	
April 1982	21	2.6	17.8	
May 1982	20	0.4	6.1	
June 1982	22	1.1	15.4	
July 1982	19	0.1	0.4	
August 1982	22	1.5	29.1	
September 1982	21	0.5	6.4	
October 1982	21	0.1	0.4	
November 1982	21	0.2	1.4	
December 1982	20	0.2	0.9	
	248	2.8	224.1	

LOCATION: K-1004L Upstairs

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1983	21	1.3	16.4	
February 1983	19	0.9	7.0	
March 1983	23	0.1	0.3	
April 1983	20	1.4	12.3	
May 1983	21	2.1	27.8	
June 1983	22	0.2	0.7	
July 1983	19	0.2	1.0	
August 1983	22	0.2	1.0	
September 1983	21	0.6	14.2	
October 1983	21	0.7	6.9	
November 1983	20	0.3	0.9	
December 1983	19	0.1	0.6	
Year 1983	248	0.7	27.8	

LOCATION:

K-1004L Upstairs

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1984	20	0.4	1.3	
February 1984	19	0.2	0.7	
March 1984	15	0.1	0.6	
April 1984	13	0.1	0.4	
May 1984	12	0.1	0.2	
June 1984	12	0.1	0.2	
July 1984				
August 1984				
September 1984				
October 1984				
November 1984				
December 1984				

$$1.42 \pm 3.12$$

ca⁸⁴ 0.12 ± 0.12

LOCATION:

K-1210 Transfer Room

<u>Month</u>	<u>No. Samples Taken</u>	<u>Average Alpha Activity d/m³</u>	<u>Max. Alpha Activity d/m³</u>	<u>Average Tc Activity d/m³</u>
January 1982				
February 1982				
March 1982				
April 1982				
May 1982				
June 1982	6	0.3	1.2	
July 1982	20	0.9	13.3	
August 1982	22	0.4	3.2	
September 1982	21	0.1	1.0	
October 1982	21	0.1	0.5	
November 1982	20	0.6	10.1	
December 1982	20	0.1	0.1	
Year 1982	130	0.4	13.3	

LOCATION: K-1210 Transfer Room

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m ³	Max. Alpha Activity d/m ³	Average Tc Activity d/m ³
January 1983	20	0.1	0.9	
February 1983	19	0.4	2.4	
March 1983	23	0.1	0.4	
April 1983	20	0.1	0.2	
May 1983	21	0.1	0.4	
June 1983	22	0.1	0.3	
July 1983	19	0.1	0.3	
August 1983	22	0.2	1.2	
September 1983	21	3.9	71.4	
October 1983	21	0.5	4.6	
November 1983	20	0.2	0.6	
December 1983	19	0.1	1.0	
Year 1983	247	0.5	71.4	

LOCATION: K-1210 Transfer Room

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1984	20	0.1	0.4	
February 1984	19	7.8	120.1	
March 1984	21	2.2	42.3	
April 1984	20	0.1	0.5	
May 1984	22	0.1	0.4	
June 1984	20	4.6	67.2	
July 1984				
August 1984				
September 1984				
October 1984				
November 1984				
December 1984				

$$\begin{array}{l} 1.16 + 2.15 \\ \hline 0.93 \pm 1.85 \end{array}$$

keep

LOCATION: K-1220 Tails Withdrawal

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1982				
February 1982				
March 1982				
April 1982	5	0.0	0.1	
May 1982	7	0.0	0.0	
June 1982	13	0.1	0.5	
July 1982	18	0.1	0.1	
August 1982	22	0.1	0.1	
September 1982	14	0.0	0.1	
October 1982	18	0.0	0.1	
November 1982	16	0.0	0.1	
December 1982	13	0.0	0.1	
Year 1982	128	0.0	0.5	

LOCATION:

K-1220 Tails Withdrawal

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1983	17	0.1	0.4	
February 1983	15	0.1	0.8	
March 1983	16	0.1	1.2	
April 1983	16	0.1	0.1	
May 1983	20	0.1	0.1	
June 1983	22	0.1	0.1	
July 1983	16	0.1	0.3	
August 1983	18	0.1	0.2	
September 1983	15	0.2	0.8	
October 1983	15	0.1	0.1	
November 1983	15	0.1	0.1	
December 1983	18	0.2	1.2	
Year 1983	203	0.1	1.2	

LOCATION: K 1220 Tails Withdrawal

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1984	17	0.1	0.6	
February 1984	11	0.0	0.1	
March 1984	19	0.3	5.2	
April 1984	17	0.0	0.1	
May 1984	12	0.0	0.2	
June 1984	12	0.0	0.2	
July 1984				
August 1984				
September 1984				
October 1984				
November 1984				
December 1984				

$$0.08 \pm 0.08$$

LOCATION:

K-1220 Product Withdrawal

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1982				
February 1982				
March 1982				
April 1982				
May 1982				
June 1982	7	0.1	0.1	
July 1982	20	0.1	0.2	
August 1982	21	0.1	0.1	
September 1982	16	0.0	0.1	
October 1982	18	0.0	0.1	
November 1982	16	0.0	0.1	
December 1982	13	0.0	0.1	
Year 1982	111	0.1	0.2	

LOCATION:

K-1220 Product Withdrawal

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1983	17	0.1	0.4	
February 1983	15	0.1	0.7	
March 1983	16	0.2	2.3	
April 1983	16	0.1	0.1	
May 1983	20	0.1	0.1	
June 1983	22	0.1	0.1	
July 1983	16	0.1	0.1	
August 1983	18	7.2	73.0	
September 1983	15	1.0	10.6	
October 1983	15	0.8	6.0	
November 1983	15	1.5	19.5	
December 1983	18	0.8	10.0	
Year 1983	203	1.0	73.0	

LOCATION: K-1220 Product Withdrawal

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1984	17	0.2	0.8	
February 1984	11	0.1	0.1	
March 1984	19	0.1	0.4	
April 1984	17	0.0	0.1	
May 1984	12	0.0	0.3	
June 1984	12	0.6	5.9	
July 1984				
August 1984				
September 1984				
October 1984				
November 1984				
December 1984				

$$0.55 \pm 1.47$$

LOCATION:

K-1015 East

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1983				
February 1983				
March 1983				
April 1983				
May 1983				
June 1983				
July 1983				
August 1983				
September 1983	1	0.5	0.5	
October 1983	21	2.2	11.2	
November 1983	20	2.4	9.9	
December 1983	18	1.1	3.3	

LOCATION: K-1015 East

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1984	19	1.9	8.9	
February 1984	19	2.0	9.9	
March 1984	21	1.5	5.7	
April 1984	20	1.0	3.4	
May 1984	22	0.5	2.2	
June 1984	17	0.3	0.8	
July 1984				
August 1984				
September 1984				
October 1984				
November 1984				
December 1984				

2.01 ± 3.55 standard deviation
1.34 ± 0.77

LOCATION:

K 402-9 AL Traps

<u>Month</u>	No. Samples Taken	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1982	20	0.1	0.4	
February 1982	18	0.1	0.4	
March 1982	22	0.1	0.4	
April 1982	21	0.1	0.5	
May 1982	20	0.1	0.4	43.9
June 1982	22	0.1	0.4	21.2
July 1982	20	0.3	2.8	10.4
August 1982	22	0.1	0.4	10.6
September 1982	21	0.2	1.8	12.7
October 1982	21	0.1	0.2	107.3
November 1982	20	0.1	0.2	9.0
December 1982	20	0.2	1.3	34.9
Year 1982	248	0.1	2.8	31.2

LOCATION: K-402-9 Al Traps

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1983	21	0.1	0.5	9.3
February 1983	19	0.4	2.7	9.0
March 1983	23	0.3	2.6	13.1
April 1983	20	0.2	2.2	9.9
May 1983	21	0.2	0.7	21.4
June 1983	22	0.3	1.4	9.2
July 1983	19	0.1	0.9	61.5
August 1983	23	0.4	1.8	46.7
September 1983	21	0.4	2.5	11.5
October 1983	21	0.6	2.1	9.7
November 1983	20	0.7	3.4	9.1
December 1983	19	0.3	2.5	8.2
Year 1983	249	0.3	3.4	18.2

LOCATION:

K-402-9 AI Traps

<u>Month</u>	No. Samples Taken	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1984	20	0.5	1.6	9.9
February 1984	19	6.7	121.1	12.3
March 1984	21	0.8	4.1	19.1
April 1984	20	1.6	7.4	9.0
May 1984	21	0.7	2.0	
June 1984	21	0.6	2.7	
July 1984				
August 1984				
September 1984				
October 1984				
November 1984				
December 1984				

0.55

1.20

LOCATION:

K-1420 Seal

<u>Month</u>	No. Samples Taken	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1982	20	2.1	16.6	
February 1982	19	3.7	47.2	
March 1982	23	1.1	10.7	
April 1982	21	1.0	10.9	
May 1982	19	0.7	8.0	
June 1982	19	1.6	14.6	
July 1982	20	0.7	11.4	
August 1982	21	0.1	0.3	
September 1982	21	0.6	1.2	
October 1982	21	0.1	1.1	
November 1982	20	0.1	0.5	
December 1982	20	0.1	0.6	
Year 1982	244	1.0	47.2	

LOCATION:

K-1420 Seal

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1983	21	0.3	2.3	8.8
February 1983	19	0.4	2.2	9.1
March 1983	23	0.5	2.5	9.3
April 1983	20	0.4	2.3	9.3
May 1983	21	1.1	5.1	10.1
June 1983	22	0.9	5.1	10.4
July 1983	15	0.4	2.1	40.2
August 1983	23	0.8	5.2	
September 1983	21	0.6	3.3	
October 1983	21	1.6	8.8	
November 1983	20	0.8	6.0	
December 1983	19	0.4	1.6	
Year 1983	245	0.7	8.8	

max 434

LOCATION:

K-1420 Seal

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1984	20	1.0	5.8	
February 1984	16	0.7	5.5	
March 1984	13	0.8	3.0	
April 1984	13	0.7	1.6	
May 1984	13	0.3	0.8	
June 1984	12	0.4	1.7	
July 1984				
August 1984				
September 1984				
October 1984				
November 1984				
December 1984				

0.80 0.72

LOCATION: K-1015 West

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m ³	Max. Alpha Activity d/m ³	Average Tc Activity d/m ³
January 1983				
February 1983				
March 1983				
April 1983				
May 1983				
June 1983				
July 1983				
August 1983				
September 1983	1	0.5	0.5	
October 1983	21	0.7	1.9	
November 1983	20	0.9	1.9	
December 1983	18	1.2	5.7	
Year 1983	60	0.9	5.7	

LOCATION:

K-1015West

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1984	19	1.8	5.8	
February 1984	19	0.6	1.4	
March 1984	21	0.8	3.4	
April 1984	20	0.5	1.0	
May 1984	22	0.4	1.7	
June 1984	17	0.3	1.0	
July 1984				
August 1984				
September 1984				
October 1984				
November 1984				
December 1984				

0.77 0.45

LOCATION: K-1037 Vessel Normal

<u>Month</u>	<u>No. Samples Taken</u>	Average Alpha Activity d/m/m ³	Max. Alpha Activity d/m/m ³	Average Tc Activity d/m/m ³
January 1984				
February 1984				
March 1984				
April 1984	16	2.3	14.2	
May 1984	22	4.4	25.3	
June 1984	24	22.1	210.0	
July 1984				
August 1984				
September 1984				
October 1984				
November 1984				
December 1984				
		9.6	10.88	

LOCATION: K-1037 Vessel Source

<u>Month</u>	<u>No. Samples Taken</u>	<u>Average Alpha Activity d/m/m³</u>	<u>Max. Alpha Activity d/m/m³</u>	<u>Average Tc Activity d/m/m³</u>
January 1984				
February 1984				
March 1984				
April 1984	16	1.6	12.5	
May 1984	22	4.7	37.2	
June 1984	24	3.2	27.2	
July 1984				
August 1984				
September 1984				
October 1984				
November 1984				
December 1984				

3.21 1.55

MARTIN MARIETTA ENERGY SYSTEMS, INC.

OAK RIDGE, TENN.-PADUCAH, KY

ENGINEERING TRANSMITTAL

RECEIVING INSPECTION REQUIRED

(1) Routine (2) Special

Refer Technical Questions

10

Phone:

* If company, list responsible group, e.g., Engineering Maintenance, others. Explain above.

Return originals to DA Bodey

Add disclaimer and substitute clause.

ORIGINATED BY

SECTION / GROUP B

DIVISION / DEPARTMENT

PRINCIPAL ENGINEER

~~PROSECUTOR~~ DA Bodey

Internal Correspondence

MARTIN MARIETTA ENERGY SYSTEMS, INC.

November 1, 1984

D. A. Bodey
S. E. Shipley

Cancellation of Assistance in Designing and Procuring MHDM Off-Gas Ventilation System

As you know, Health Physics has measured the levels airborne alpha activity in and around the MHDM vessel during its first months of operation, and the results of these measurements have indicated the desirability of reducing these levels during initial vessel and pod cleaning operation. Discussions between Mike Mahathy of ORGDP Health Physics and AVLIS personnel concluded that Engineering controls in the form of a commercially available, HEPA Filtered, portable, exhaust fan system would achieve the desired results.

A few weeks ago, I advised you of the above facts and asked you to proceed with the design of the hookup of a ventilation system to the MHDM vessel.

Since our discussions on this matter, the following has occurred:

1. Additional air monitoring data indicates that our switch to a graphite collector has significantly reduced airborne activities. This fact, coupled with improved waste handling practices and resulting additional reductions in alpha releases, has simplified the requirements for our proposed ventilation system.
2. The permanent ventilation design has incorporated features which increase cost and installation time.
3. Discussions with J. C. Bailey and J. M. Mahathy indicate that the best alternative of this time would involve our procuring the simple, commercially available system and operating it on an "as received" basis with no additional safety or operational features added on. Our doing this will allow the desired ventilation control to be in place within four to six weeks.

Given these facts, I therefore, request that you terminate your efforts on this matter.

J. P. Forester
J. P. Forester

JPF:das

cc: D. F. Craig
J. M. Mahathy
J. P. Moore
File - JPF - NoRC

Distribution

T. A. Bowers, K-303-7, MS 346, ORGDP
D. F. Craig, K-1037, MS 348, ORGDP
B. C. Duggins, 9105, MS 001, Y-12
C. E. Earlywine, K-1001, MS 163, ORGDP
*R. D. Foley, K-1020, MS 404, ORGDP
J. P. Forester, K-1037, MS 353, ORGDP
*R. D. Foskett, K-1037, MS 363, ORGDP
*A. C. Heitzman, K-1652, MS 351, ORGDP
J. D. Huggins, K-1550-C, MS 225, ORGDP
*G. A. Johnson, K-1037, MS 348, ORGDP
*E. L. Lamb, K-1001, MS 163, ORGDP
R. D. Lawson, K-1001, MS 196, ORGDP
*R. S. Lay, K-1020, MS 404, ORGDP
O. S. Messner, 9733-1, MS 001, Y-12
*D. Milan, K-1003, MS 420, ORGDP
B. K. Miles, K-1550-B, MS 231, ORGDP
W. Miller, K-1037, MS 353, ORGDP
J. P. Moore, K-1037, MS 353, ORGDP
*J. M. Morrison, 9733-1, MS 001, Y-12
J. S. Rayside, K-1037, MS 348, ORGDP
*S. E. Shipley, 9201-3, MS 008, Y-12
*J. E. Stone, K-303-7, MS 346, ORGDP
J. D. Stout, K-1580, MS 584, ORGDP
*P. J. Teague, K-303-7, MS 326, ORGDP
*D. S. SHUPE, K-1020, MS 401, ORGDP
D. N. GRAY, K-1037, MS 363, ORGDP

*Meeting Attendees

Internal Correspondence

MARTIN MARIETTA ENERGY SYSTEMS, INC.

October 16, 1984

Distribution (Attached)

Vessel Ventilation System

A meeting was held on Thursday, October 11, 1984, to discuss the scope of work required to design and install a MHDM vessel ventilation system. A system of this type has been requested by the AVLIS program to reduce the level of airborne contamination around the vessel when the vessel heads are opened. The following is a list of results or questions developed in the meeting. Attached is a general schematic of the system proposed.

1. Desire contamination level not to exceed threshold level outside of the vessel when heads are removed.
2. Provide just enough negative pressure to accomplish No. 1, but not suck particles into the vent system.
3. Operating procedure will be revised to reflect partial blanking off the vessel opening to achieve requirements of vent system.
4. HEPA filter system to be located outside, north of the K-1037 building, and be permanently mounted.
5. Basic requirements will be 50 feet per second face velocity at 2,000 cubic feet per minute with noise being a consideration.
6. Two 10-inch relief valve ports (now existing) would provide the best location for the vent system to enter the MHDM vessel.
7. The system will be similar to the attachment.
8. The vacuum valves, fan, and alarm system will be interlocked to the control room to alert operating personnel of any problems.
9. A halon fire suppression system in the ducting has been proposed and accepted by the Fire Protection Department. The amount of uranium particle build-up in the ducts is unknown at this time. Plant procedures require ducting of this type to be periodically inspected and cleaned.
10. An outside exhaust stack is required, thus requiring a construction permit from the state that takes 90 days to receive.

Distribution

2

October 16, 1984

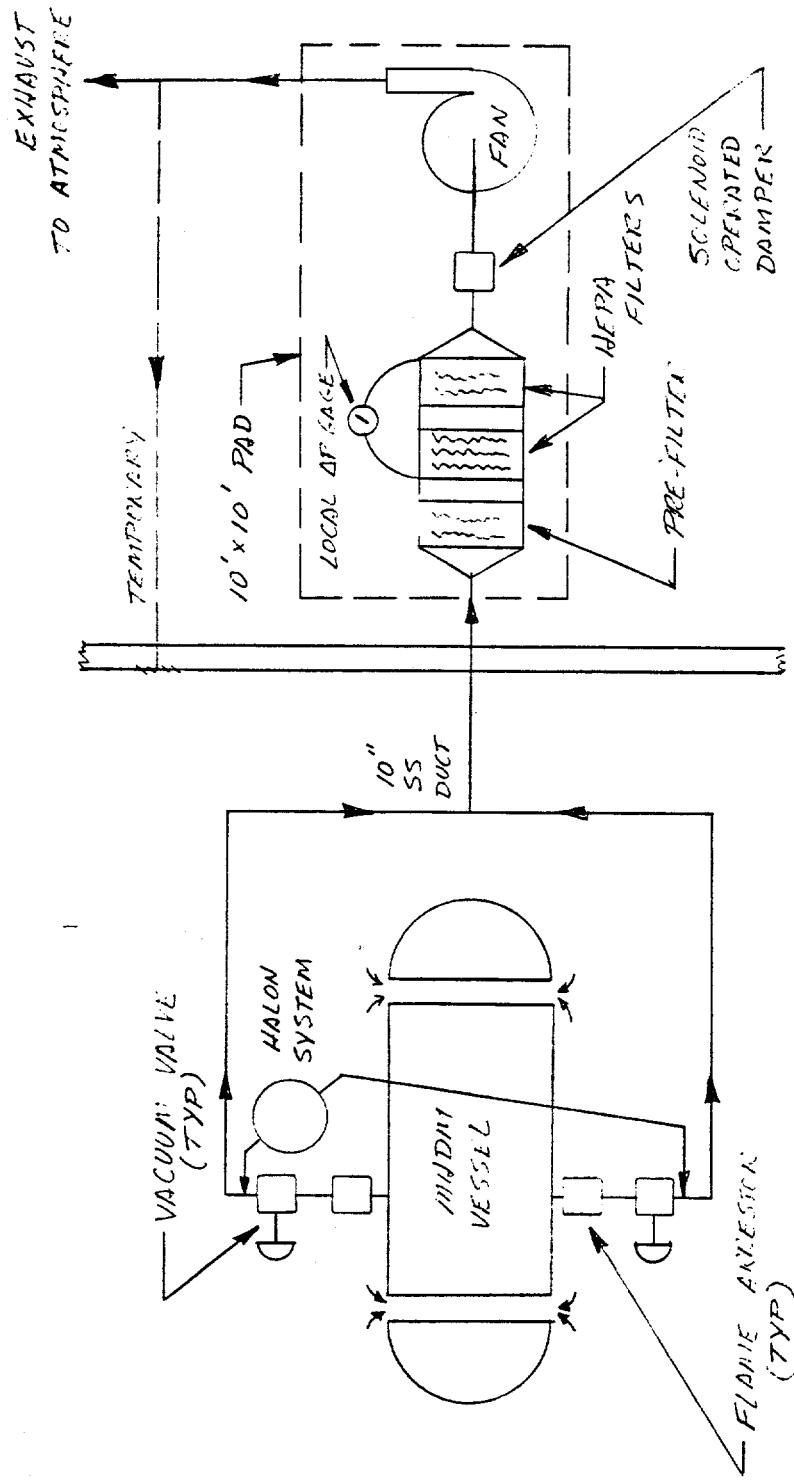
11. No. 10 will impede construction and will not allow us to meet the requested completion time frame of December/January. A time frame of March/April for completed construction is likely, depending on the estimated cost and method of construction (Martin Marietta field or FPSC).
12. A design team meeting will be held on Tuesday, October 16, 1984, to initiate the preliminary design work to acquire the cost estimate and engineering man-hour estimate.
13. The decision as to whether a safety assessment will require a revision is forthcoming.

If there are any further comments, please direct them to David Bodey, phone 6-1106, so they may be developed into our preliminary design. These comments should be ASAP due to the schedule.



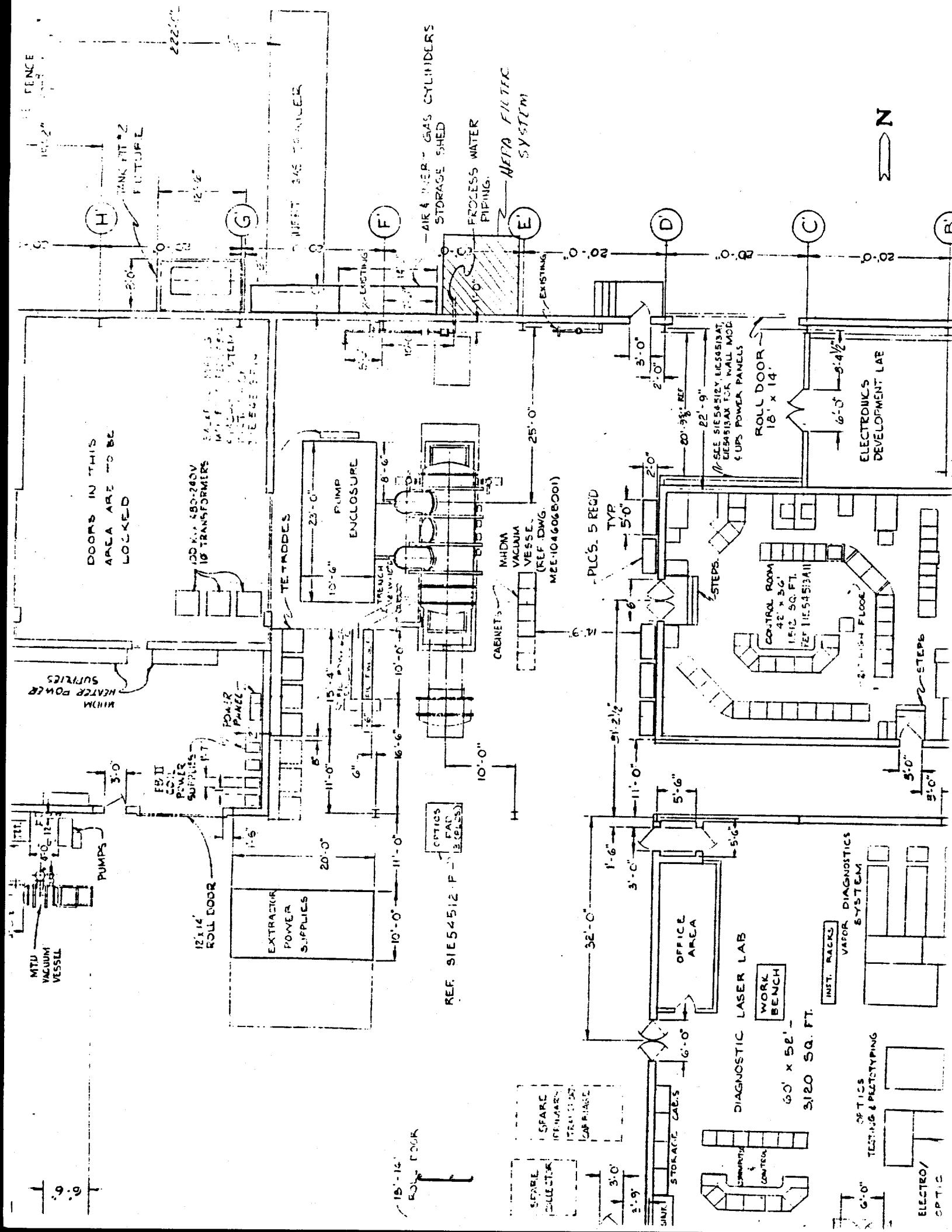
D. A. Bodey, X-1001, MS 196 (6-1106)

DAB:dt



K-1037 BLDG
ARMED GUARD

MUDIM VE SISTEMI İSTİMLİ YÖNETİM



Intro.

1984

In K/HS-1 published in October, ~~Health Physics reviewed air~~ ~~air~~ Health Physics reviewed the airborne ^{radioactive} activity levels near the MHD ~~Mo~~ on Jan 2 thru Jan 4, 1985. Health Physics again conducted intensive air sampling ^{recon} ~~done~~ during MHD cleaning and dismantling. The results of ~~the survey~~ the ~~revised~~ survey are summarized in this report. Also addressed are ~~operational surveys~~ ~~operational~~ Average ~~internal exposure~~ based results for Dept's employees ~~based~~ on the ORGDP Urinalysis Program during 1984, and ~~average~~ External exposures for employees monitored by the ORGDP ~~Personal exposure~~ (TLD) Thiodoluminometer Survey Program.

I. Air Sampling Results.

Results of the seven continuous air filters and high volume samplers are summarized in Table I.

The ~~Major frame~~ ~~and location of the sampler, and~~ ~~the associated operation~~

The results are significantly lower than for any past sampling studies. The maximum Alpha Activity ~~at these~~ sampling points was 6.6 dpm/m³. The Maximum Permissible Concentration of insoluble Uranium in air (for 40 hr. week, for 13 consecutive weeks) is 222 dpm/m³ based on ICRP 2, and MPC air for UO₂ is 46 dpm/m³ based on ICRP 30. The ~~other sampling results~~ indicate ~~insoluble~~ air activity during ~~work~~. The area air concentrations appear to be well within established guidelines.

~~Health Physics~~ had suggested keeping air concentrations around 5 dpm/m³ or less since area sampling is not always indicative of activity directly in the employees breathing zone.

Table II is a summary of monthly average alpha air concentrations for the seven continuous (24 hr) air filters. There has been a marked trend

down to low levels since. It is hoped these low air activity levels will be maintained.

~~Personal~~ ^{portable pumps} Personal Air Sampling Pumps (pulling a volume of 2 lpm) were designed for various employees involved with the dismantling and cleaning of the MHDm during the sampling survey of Jan 1-4. The results

Health

85-0103-045-7052

ORGDP HEALTH PHYSICS CONTINUOUS AIR SAMPLING PROGRAM
Building K1037 Location H7 V065

Sample No.	Date	Starting Time	Flow Rate (1pm)	Ending Date	Flow Rate (1pm) ³	Sample Duration (Min.)	Sample Volume (m ³)	Alpha d/m/m ³	⁹⁹ Tc d/m/m ³	U d/m/m ³	Other
<u>Solvent of Vessel</u>											
11258	1-2-85	1103/4	.44	1-2-85	1.2.25	.44	82	36.1	0.6	23	
11259	1-2-85	1225/p	.44	1-2-85	3.32/p	.44	197	86.7	0.7	64	
11260	1-2-85	332/p	.44	1-2-85	7.47/p	.44	255	112.2	0.2	21	
<u>N. Vessel</u>											
11261	1-2-85	1103/4	.44	1-2-85	12.26/p	.44	83	36.5	①.6	21	
11262	1-2-85	1226/p	.44	1-2-85	3.32/p	.44	197	86.7	1.3	10	
11263	1-2-85	332/p	.44	1-2-85	7.47/p	.44	254	111.8	100	<5	
<u>Dresser</u>											
11264	1-2-85	1300	.44	1-2-85	3.35/p	.44	125	55.0	0.3	18	
11265	1-2-85	3:35	.44	1-2-85	7.35/p	.44	240	105.6	0.2	18	

Remarks:

H. P. Technician _____

11272 - 850108-007, 009

NUCOS AIR SAMPLING PROGRAM
Location St. Louis

Building	Location	Starting Sample No.	Date	Flow Rate (1pm)	Date	Time	Ending Flow Rate (1pm)	Time	Flow Rate (1pm)	Sample Duration (Min.)	Sample Volume (m³)	Alpha d/m³	Beta dpm	^{99}Tc d/m³	U d/m³	Other
		16945 E	20/07/	500 ml					.43							
		11266	1-3-85	9:20/A	.44	1-3-85	11:09	.44	1.09	48.0	0.1					6
		11267	1-3-85	11:09	.44	1-3-85	3:28	.44	255	11.0	0.5					1.01
		11273	1-4-85	8:35	.44	1-4-85	3:02/p	.44	367	17.0	<0					39
																5
		16954	10/07/	9:20/A	.44	1-3-85	11:10	.44	110	48.4	0.1					
		11268	1-3-85	9:20/A	.44	1-3-85	3:30	.44	260	114.4	0.9					
		11269	1-3-85	11:10	.44	1-3-85	3:30	.44	391	172.0	0.2					
		11274	1-4-85	8:36/A	.44	1-4-85	3:07/p	.44								
		16946	10/07/	9:20/A	.44	1-3-85	11:10/A	.44	130	57.2	0.8					1.02
		11270	1-3-85	9:00	.44	1-3-85	11:10/A	.44	144	262	15.2	0.8				95
		11271	1-3-85	11:10	.44	1-3-85	3:32/p	.44	386	169.8	0.1					16
		11272	1-4-85	8:40	.44	1-4-85	3:06/p	.44	386	169.8	0.1					

Remarks:

H. P. Technician

Time Frame 1/3/85 9:30 → 11:30

Vessel North	< MDA	Extractor Tabs, plates, &
Vessel South	10.4	Removed spudger baffle
EAST of Vessel (EC)	1.1	Cleaning inside of
N. DOOR	< MDA	Vessel
EAST WALL	1.7	
COL F-27	0.8	
EXIT	1.2	
Hi Vol S. of Vessel	0.1	
" " N.E of Vessel	0.1	
Hi Vol W. of Vessel	0.8	
<u>Time Frame</u>	1/3/85 → 11:30 - 3:50	

Vessel North	3.3	Remove side.
Vessel South	6.6	heated. Scraping
East of Vessel	0.8	of tabs & plates
N. DOOR	0.6	Removed the graphite
EAST WALL DIS	0.9	box
COL F-27	0.6	
EXIT TO SB	1.3	
Hi Vol South	0.5	water leak onto heater
" VOL N.E	0.9	onto plates - reading
Hi Vol West	0.8	from that
<u>Time Frame</u>	1/3/85 → 3:50 - 1/4/85 → 9:20 am	— moved roofing plate close to sampler

Vessel North	0.1	
Vessel South	< MDA	
East of Vessel	< MDA	
N DOOR	< MDA	
EAST WALL	0.1	
COL F27	< MDA	
EXIT to COVEN	0.1	No Activity

86 m. rev

Time Frame 1/4/85 9:30^{AM} - 2:40 pm

N. Vessel

< mDA

Scraping the melt
working on side
panes

S. Vessel

< mDA

Vessel East
Door

0.3

EAST WALL

< mDA

Co/F-27

0.4

EXIT TO OVEN

0.6

left of oven

2.3

Hi VOL NE

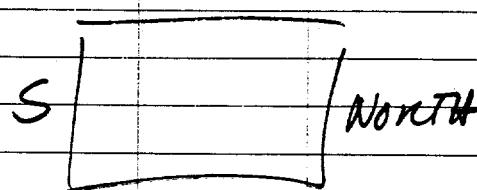
0.2

Hi South

< mDA

Hi West

0.1

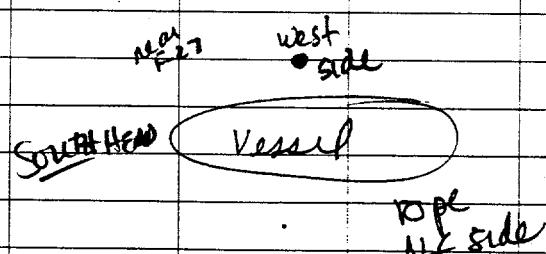


Hi Vol

E

Hi Vol

I



1/3/85 1230 to 3:30 pm
[REDACTED] Emp 1 8.3
[REDACTED] 2 9.3

Major disassembly
(graphite box, scrap,
tabs)

1/4/85 9:15 am - 3:45 pm

[REDACTED] Emp 1 17.1
[REDACTED] 2 23.3
[REDACTED] 3 28.0

Working in melt

EQUIPMENT-RADIOACTIVE CONTAMINATION SURVEY

07485

LOCATION			DIVISION			DATE
K-1037			AVLIS			2 Jan 85
ALPHA INSTRUMENT TYPE	PROPERTY NUMBER	CAL. CHECK EMPLOYEE NO.	BETA-GAMMA INSTRUMENT TYPE	CAL. CHECK EMPLOYEE NO.	PROPERTY NUMBER	CAL. CHECK EMPLOYEE NO.
Ludlum	G219	21092	Ebuline Cutie PTE	21092	A2251316	21092
EQUIPMENT ITEM	IDENTIFICA- TION NUMBERS	NO. OF READ- INGS	MAXIMUM READING ALPHA d/min/100 cm ²	SURFACE	TRANSFERABLE	MAXIMUM READING BETA & GAMMA mR/hr
1) MHD M Vessel (North End)			50,000	-	8	(Head)
1) MHD M Vessel Interior			80,000		110	20
						- 10 mR/hr Chest Level
1) Vessel (Melt Area)			30,000	-	410	200
2) Heater Pots	NW POT		70,000	-	20	
1) Collector Plate Carriage	S. End		10,000	-	20 ← LASER Beam Slot Hole	
1) Diagnostic Fixture			1,800	-	.2	
1) Roof Plate			30,000		380.0	2000
						110.0
1) Accumulator Heat Frame	West		70,000		.4	
1) Accumulator Heat Frame	EAST		1,100		.1	
1) Accumulator Heat Frame	West		30,000		110.0	70.0
	Reading TAKEN From Film					20.0
1) Accumulator Heat Frame	EAST		9,000		30.0	15.0
	Reading TAKEN From Film					4.0
1) Accumulator Pots Inside West			30,000		850.0	310.0
1) Accumulator Pots Inside EAST			29,000		480.0	160.0
						180.0
1) EXTRACTOR			30,000		200.0	110.0
						100.0
18) EXTRACTOR TABS			300,000		1200	40.0
						60.0

Remarks:

P.I.C. - Possible Internal Contamination; U - Unshielded

Neoprene Shield - 1/32 inch thick (or equivalent)
Copper Shield - 1/16 inch thick (or equivalent)

HP TECHNICIAN OR MONITOR

PHONE

OPERATING SUPERVISOR

PHONE

P. Bryant / Oliver 574-9624

White Copy (original) - Health Physics - RC

Green Copy - Requester

Pink Copy - Other

UCR-15635
(1 L-92)

EQUIPMENT-RADIOACTIVE CONTAMINATION SURVEY

07485

LOCATION	DIVISION			DATE					
ALPHA INSTRUMENT TYPE	PROPERTY NUMBER	CAL. CHECK EMPLOYEE NO.	BETA-GAMMA INSTRUMENT TYPE	PROPERTY NUMBER	CAL. CHECK EMPLOYEE NO.				
EQUIPMENT ITEM	IDENTIFICATION NUMBERS	NO. OF READINGS	MAXIMUM READING ALPHA d/min/100 cm ²	SURFACE	TRANSFERABLE	U	Neoprene	Copper	U at 1 ft.
1) Diagnostic RACK w/ heater Assembly			9,000	-	30.0				
1) Cabinet - used for Storing Samples					310.0		70.0		
							~ 2.0 outside reading		
1) Melt And Film inside Vessel (Side Panels)			250,000	-	2R		800		
							~ 400 at 2 FT		
1) Melt And Film inside Vessel - Reading After Cleaning.			110,000	-	750.0		400.0		
							~ 290 at 2 FT		
1) Container of Film					1R		360.0		
2) Bulkheads			280,000		110.0		50.0		
Remarks:									

P.I.C. - Possible Internal Contamination; U - Unshielded

Neoprene Shield - 1/32 inch thick (or equivalent)

Copper Shield - 1/16 inch thick (or equivalent)

HP TECHNICIAN OR MONITOR

PHONE

OPERATING SUPERVISOR

PHONE

574-9624

White Copy (original) - Health Physics - RC

Green Copy - Requester

Pink Copy - Other

UCN-11635
(1 8-82)

EQUIPMENT-RADIOACTIVE CONTAMINATION SURVEY

07485

— 1 —

P.I.C. - Possible Internal Contamination; U - Unshielded

Neoprene Shield - 1/32 inch thick (or equivalent)
Copper Shield - 1/16 inch thick (or equivalent)

HP TECHNICIAN OR MONITOR

PHONE

OPERATING SUPERVISOR

第11章

White Copy (original) : Health Physics - BC

Green Copy : Rochester

Pink Copy - Other

UCN-11633
(1 E-82)

85 DIVISION 066, 063

K1037

ORGDP HEALTH PHYSICS CONTINUOUS AIR SAMPLING PROGRAM

Building

Location

Sample No.	Starting			Ending			Flow Rate (lpm)	Time	Date	Sample Duration (Min.)	Sample Volume (m³)	^{99}Tc d/m³	Beta dpm	Alpha d/m³	^{99}Tc d/m³	U d/m³	Other
	Date	Time	Time	Flow Rate (lpm)	Time	Flow Rate (lpm)											
10126	12-31-84	8:30 A	20	1-2-85	8:30 A	20	2880	57.4	0.0	<250	sat						
11209	1-2-85	8:38 A	20	1-2-85	2:35 P	20	357	7.1	<0.3	✓	sat						
11257	1-2-85	2:35 P	20	1-2-85	? (not working)				<	✓	✓	✓					
10154	1-3-85	Not working		1-3-85	10:00 A	20				<?	✓	✓					
11225	1-3-85	10:00 A	20	1-3-85	11:29 A	20		88	1.8	1.1	✓	✓					
11233	1-3-85	11:29 A	20	1-3-85	3:47 P	20		259	5.2	0.8	✓						
10173	1-3-85	3:47 P	20	1-4-85	9:17 A	20		1050	21.0	<0.1	✓						
11245	1-4-85	9:17 A	20	1-4-85	2:45 P	20		328	6.4	0.3	✓	✓					
<u>Month Work</u>																	
10127	12-31-84	8:37 A	20	1-2-85	8:37 A	20	2880	57.6	0.1	<250							
11207	1-2-85	8:37 A	20	1-2-85	8:30 P	20	353	7.1	0.8	✓							
11253	1-2-85	2:30 P	20	1-2-85	7:50 P	20	320	6.4	0.5	✓							
10155	1-2-85	7:50 P	20	1-3-85	9:30 A	20	1541	30.8	0.1	✓							
11223	1-3-85	9:30 A	20	1-3-85	11:30 A	20		119	2.4	<0.8	✓						
11235	1-3-85	11:30 A	20	1-3-85	3:44 P	20		254	5.1	0.6	✓						
10174	1-3-85	3:44 P	20	1-4-85	9:21 A	20		1057	21.1	<0.1	✓						
11247	1-4-85	9:21 A	20	1-4-85	2:48 P	20	327	6.5	<0.3	✓							
<u>Remarks:</u>																	

121.2 / 8.610.8 - 0.446 → 5.2

110 →
1.89

K-1037

ORGDP HEALTH PHYSICS CONTINUOUS AIR SAMPLING PROGRAM

Location Softhair air Sampling

Building

Sample No.	Date	Starting		Ending		Flow Rate (lpm)	Time	Flow Rate (1pm)	Sample Duration (Min.)	Sample Volume (m³)	Alpha d/m³	Beta dpm	99Tc d/m³	U d/m³	Other
		Time	Date	Time	Date										
10125	12-31-84	8:39/A	20	1-2-85	9:40/A	20	2867	57.3	0.1	<250					
11208	1-2-85	8:40/A	20	1-2-85	2:32/p	20	352	7.0	0.4	Vessel open at ~ 11					
11252	1-2-85	2:32/p	20	1-2-85	7:50/p	20	318	6.4	0.5	/					
10153	1-2-85	7:50/p	20	1-3-85	9:33/A	20	823	16.5	0.2	/					
11224	1-3-85	9:33/A	20	1-3-85	11:29/A	20	116	2.3	<0.8	/					
11234	1-3-85	11:29/A	20	1-3-85	3:45/p	20	256	5.1	3.3	/					
10172	1-3-85	3:45/p	20	1-4-85	9:20/A	20	1055	21.1	0.1	/					
11246	1-4-85	9:20/A	20	1-4-85	2:46/p	20	326	6.5	<0.3	↓					
<u>Vessel 2nd flr</u>															
10124	12-31-84	8:39/A	20	1-2-85	8:41/A	20	2882	57.6	0.1	<250	South closed				
11210	1-2-85	8:41/A	20	1-2-85	2:39/p	20	358	7.2	1.0	/	at ~ 12:40				
10152	1-2-85	2:39/p	20	1-3-85	9:35/A	20	1134	22.7	0.2	/					
11222	1-3-85	9:35/A	20	1-3-85	1:28/A	20	113	2.3	10.4	/					
11231	1-3-85	1:28/A	20	1-3-85	3:45/p	20	211	5.4	0.6	/					
10171	1-3-85	3:45/p	20	1-4-85	9:19/A	20	1050	21.0	<0.1	/					
11244	1-4-85	9:19/A	20	1-4-85	2:44/p	20	325	6.5	<0.3	↓					
<u>8-63</u>															
Remarks:															

K112 ORGDP HEALTH PHYSICS CONTINUOUS AIR SAMPLING PROGRAM

Building

Remarks:

ORGDP HEALTH PHYSICS CONTINUOUS AIR SAMPLING PROGRAM

Building 651037

Location									
Sample No.	Starting			Ending			Sample Duration (Min.)	Sample Volume (m³)	99Tc d/m³
	Date	Time	Flow Rate (1pm)	Date	Time	Flow Rate (1pm)			
10128	12-31-84	8:40 AM	20	1-2-85	8:41 AM	20	2881	57.6	0.1
11213	1-2-85	8:41 AM	20	1-2-85	2:43 PM	20	362	7.2	0.7
11255	1-2-85	2:43 PM	20	1-2-85	7:40 PM	20	297	5.9	0.8
10156	1-2-85	7:40 PM	20	1-3-85	9:28 PM	20	828	16.6	0.2
11226	1-3-85	9:28 PM	20	1-3-85	11:24 PM	20	116	2.3	1.7
11232	-3-85	11:24 AM	20	1-3-85	3:53 PM	20	269	5.4	0.9
10175	1-3-85	3:53 PM	20	1-4-85	9:11 AM	20	1068	21.4	0.1
11243	1-4-85	9:11 AM	20	1-4-85	2:43 PM	20	332	6.6	0.4
 Exit 70 6.6.									
10130	12-31-84	8:42 AM	20	1-2-85	8:43 AM	20	2881	57.6	0.1
11211	1-2-85	8:43 AM	20	1-2-85	2:40 PM	20	357	7.1	0.7
11256	1-2-85	2:40 PM	20	1-2-85	7:38 PM	20	298	6.0	1.0
10158	1-2-85	7:38 PM	20	1-3-85	9:23 PM	20	949	19.0	0.1
11221	1-3-85	9:23 PM	20	1-3-85	1:26 AM	20	119	2.4	1.2
11236	1-3-85	1:26 AM	20	1-3-85	3:51 AM	20	245	5.3	1.3
10177	1-3-85	3:51 AM	20	1-4-85	9:14 AM	20	1043	20.9	0.1
11242	1-4-85	9:14 AM	20	1-4-85	2:41	20	327	6.5	0.6

Remarks:

Analytical Chemistry Department
Results of Analyses
9-JAN-1985

1/10
85

Customer: HEALTH PHYSICS

Material Description: MILLIPORE FILTERS

Sample Number	Customer Number	Alpha Act DPM	Beta Act DPM
850108-046	10171	<2	<250
850108-047	10172	<2	<250
850108-048	10173	<2	<250
850108-049	10174	<2	<250
850108-050	10175	<2	<250
850108-051	10176	<2	<250
850108-052	10177	<2	<250
850108-053	11240	15	311
850108-054	11241	<2	<250
850108-055	11242	4	<250
850108-056	11243	3	<250
850108-057	11244	<2	<250
850108-058	11245	2	<250
850108-059	11246	<2	<250
850108-060	11247	<2	<250
850108-061	11248	14	<250
850108-062	11249	14	676
850108-063	11251	12	286

W.T. Mullins

Analytical Chemistry Department
Results of Analyses
8-JAN-1985

Customer: HEALTH PHYSICS

Material Description: MILLIPORE FILTER

Sample Number	Customer Number	Alpha Act DPM	Beta Act DPM
850104-110	10152	4	<250
850104-111	10153	3	<250
850104-112	10154	<2	<250
850104-113	10155	4	<250
850104-114	10156	3	<250
850104-115	10157	4	<250
850104-116	10158	2	<250
850104-117	11220	2	<250
850104-118	11221	3	<250
850104-119	11222	24	<250
850104-120	11223	<2	<250
850104-121	11224	<2	<250
850104-122	11225	2	<250
850104-123	11226	4	<250
850104-124	11227	9	344
850104-125	11228	3	<250
850104-126	11229	13	<250
850104-127	11230	4	<250
850104-128	11231	36	<250
850104-129	11232	5	<250
850104-130	11233	4	<250
850104-131	11234	17	<250
850104-132	11235	3	<250
850104-133	11236	2	<250
850104-134	11237	3	<250
850104-135	11238	3	<250
850104-136	11239	5	<250

W.T. Mullins

LA

Analytical Chemistry Department
Results of Analyses
4-JAN-1985

Customer: HEALTH PHYSICS

Material Description: MILLIPORE FILTER

Sample Number	Customer Number	Alpha Act DPM	Beta Act DPM
850108-096	11201	<2	<250
850108-097	11202	<2	<250
850108-098	11203	<2	<250
850108-099	11204	<2	<250
850108-100	11205	<2	<250
850108-101	11206	<2	<250
850108-102	11214	0	<250
850108-103	11215	0	<250
850108-104	11216	0	<250
850108-105	11217	0	<250
850108-106	11218	4	<250
850108-107	11219	6	<250
850108-108	10124	6	<250
850108-109	10125	6	<250
850108-110	10126	6	<250
850108-111	10127	6	<250
850108-112	10128	6	<250
850108-113	10129	4	<250
850108-114	10130	7	<250
850108-115	11207	6	<250
850108-116	11208	4	<250
850108-117	11209	2	<250
850108-118	11210	2	<250
850108-119	11211	6	<250
850108-120	11212	4	<250
850108-121	11213	6	<250
850108-122	11252	6	<250
850108-123	11253	6	<250
850108-124	11254	6	<250
850108-125	11255	6	<250
850108-126	11256	6	<250
850108-127	11257	6	<250

W.T. Mullins

Analytical Chemistry Department
Results of Analyses
8-JAN-1985

Customer: HEALTH PHYSICS

Material Description: MILLIPORE FILTER WHATMAN

Sample Number	Customer Number	Alpha Act DPM
850108-007	11272	16
850108-008	11273	<5
850108-009	11274	39

W.T. Mallin

Analytical Chemistry Department
Results of Analyses
4-JAN-1985

17-85

Customer: HEALTH PHYSICS

Material Description: WHATMAN-41 FILTER PAPER

Sample Number	Customer Number	Alpha Act DPM
850104-098	11266	6
850104-099	11267	60
850104-100	11268	6
850104-101	11269	101
850104-102	11270	43
850104-103	11271	95

R.T. Mullis

Analytical Chemistry Department
Results of Analyses
8-JAN-1965

1-4

Customer: HEALTH PHYSICS

Material Description: WHATMAN 41 FILTER PAPER

Sample Number	Customer Number	Alpha Act DPM
850108-045	11258	28
850108-046	11259	64
850108-047	11260	21
850108-048	11261	21
850108-049	11262	10
850108-050	11263	<5
850108-051	11264	18
850108-052	11265	18

M. T. Mullis

ORGDP HEALTH PHYSICS CONTINUOUS AIR SAMPLING PROGRAM

ORGDP HEALTH PHYSICS
Personal Samples

Location

Sample No.	Starting		Ending		Flow Rate (1pm)	Date	Time	Flow Rate (1pm)	Sample Duration (Min.)	Sample Volume (m³)	Alpha d/m³	Beta dpm	99Tc d/m³	U d/m³	Other
	Date	Time	Date	Time											
11251	1-4-85	9:02A	1-4-85	3:10P	20	288	0.70	17.1	286						
11249	1-4-85	9:05A	1-4-85	3:16P	20	1485	2	311	0.6	23.3	676				
11248	1-4-85	9:045A	1-4-85	2:10P	2	270	0.5	28.0	2250						

Remarks:

H. P. Technician

841228-001
3719-02573-1352

P1 54.0 [REDACTED] Right Hand 4:15 → 6:30
1-2-85

P3 57.0 [REDACTED] Left Hand [REDACTED]

{ PW-1 34.0 [REDACTED] ↓ Bracelet [REDACTED]

↓ P2 53.0 [REDACTED] Left Hand 4:25 → 7:45

1-3-85 P5 60.0 [REDACTED] 8:55 → 10:15 Right Hand

P4 48.0 [REDACTED] Ring - Left Hand 9:02 → 3:20

✓ PB-1 26.0 [REDACTED] 2:20 → 3:20

✓ X-8 33.0 [REDACTED] 2:20 → 3:21

1-4-85 X-6 57.0 [REDACTED] 9:10 → 3:10 pm

K1037 Personal Air Sample

ORGDP HEALTH PHYSICS CONTINUOUS AIR SAMPLING PROGRAM

Building	Location	Personnel	Sample	Starting	Ending	Flow Rate (1pm)	Date	Time	Time	Flow Rate (1pm)	Sample Duration (Min.)	Sample Volume (m³)	Alpha d/m³	Beta dpm	^{99}Tc d/m³	U d/m³	Other
11202	1-2-85	9:10 A	2	1-2-85	10:56 A	2				106	.21	<9.5					
11205		10:56 A	/		11:24 A	/				28	.06	<33.3					
11216		12:15 P	/		12:28 P	/				253	.51	3.9					
11219		4:30 P	/		2:40 P	/				190	.38	15.8					
11201	1-2-85	9:05 A	2	1-2-85	10:55 A	2				67	.13	<15.4					
11204		10:55 A	/		11:22 A	/				27	.05	<40.0					
11214		12:15 P	/		4:15 P	/				240	.48	6.2					
11217		4:30 P	/		6:30 P	/				135	.27	7.4					
11203	1-2-85	9:40 A	2	1-2-85	10:57 A	2				77	.15	<13.3					
11206		10:57 A	/		11:24 A	/				27	.05	<40.0					
11215		12:15 P	/		4:20 P	/				245	.49	6.1					
11218		4:30 P	/		7:16 P	/				170	.34	11.7					

Remarks:

H. P. Technician _____

Intro MHDm Radiological Assessment

① Air sampling following 80 hour Run

② Monthly Air Results for 1984

→ { IA - start & final summary
 { IB - equipment survey
 { IC - Extremity monit. results

③ EXTERNAL Exposure Summary 1352 ε 1353
INTERNAL - Urine Summary for 1984

Conclusions

SS-04/ 135126

ORGDP HEALTH PHYSICS CONTINUOUS AIR SAMPLING PROGRAM

ORGDP HEALTH PHYSICS CON
Chairman Dr. Seng Gee

Location

Remarks:

**UNION
CARBIDE**

NUCLEAR DIVISION

March 6, 1984

Jack Bailey, K-1570-B, MS 250

Radioactivity on Millipore Filter Paper and in Urine

Thursday, March 1, 1984, I received a millipore filter paper from H.P., numbered 5446 for alpha and beta spectroscopy, gross alpha, and gross beta. All the measurements were made on the day the sample was received.

The results are as follows:

<u>Date</u>	<u>Time</u>	<u>Gross Alpha dpm/filter</u>	<u>Gross Beta dpm/filter</u>	<u>Alpha Spec</u>	<u>Gamma</u>
3/1/84	1338	5354	10445	^{212}Bi	^{212}Pb 1.1×10^{-4}
				^{212}Po	^{212}Bi 6.48×10^{-5}
					^{208}Tl 3.56×10^{-5}
3/2/84	0.746				^{212}Pb 1.64×10^{-5}
					^{212}Bi 8.34×10^{-6}
					^{208}Tl 5.83×10^{-6}

There are no units associated with the alpha and gamma scan since our spectrometers are not calibrated for millipore filter papers. However, the difference in the gamma scan counts do represent the decay of the radionuclides. The radionuclides are decaying with a half-life between 6 and 7 hours. This is surprising because it appears that ^{212}Pb is the parent with a half-life of 10.6 hours. The difference could be statistical because the count on 3/2/84 was 1177 counts for 4000 seconds. If the square root of 1177 is used as the standard deviation, the error could be as large as 34% which could account for the difference.

The urine sample, #57, that counted 25.6 dpm/100 ml at 1340 on 3/1/84, counted 1.3 dpm/100 ml at 0840 on 3/2/84. Both measurements were made on a gas proportional alpha and beta counter. This same plate was counted on parallel plate counter on 3/1/84 which counted only background, but I have nothing to compare it with.

W.T. Mullins

W. T. Mullins, K-1004-C, MS 458 (4-9616)

WTM:gkd

cc: D. W. Frazier/R. W. Morrow, K-1004-C, MS 440
File - WTM - NoRC

Radiochemical Chemistry Department
Results of Analyses
4-JUN-1984

Customer: HEALTH PHYSICS

Material Description: MILLIPORE FILTER

Sample Number	Customer Number	Technetium DPM/FIL	Uranium DPM/FIL	Alpha $\frac{\text{dpm}}{\text{cm}^3}$	Beta Gross
640517-107	6684 P A ¹	*	20	0.2	<250
640517-108	6685 P NaF	*	5	0.1	<250
640517-109	6685	<300	<2		
640517-110	6686	*	128	1.4	375
640517-111	6705	*	135		
640517-112	6710 P A ¹	*	16	0.8	<250
640517-113	6711 P NaF	<300	3	0.3	<250

Approved by:

W.T. Mallins

* These samples had a less than value for gross beta on the Tennelec counter where there is no chemistry involved, just a non-destructive analysis.

However, when analyzing them for Tc, the filter is dissolved, and a dilution made. Tc is chemically separated and counted on a liquid scintillation counter. These samples, instead of counting background corrected between 6×10^4 and 3×10^5 dpm/filter. We counted them several times and they all decayed with a $t_{1/2}$ of 3.6 days. I'm not sure if this is due to chemiluminescence or phosphorescence, but whatever it is, it is not Tc or uranium.

Tom Mallins

6/4/84

ORGDP HEALTH PHYSICS CONTINUOUS AIR SAMPLING PROGRAM

~~Building~~

K-1420

Location

Sample No.	Starting Date	Starting Time	Flow Rate (lpm)	Ending Date	Ending Time	Flow Rate (lpm)	Sample Duration (Min.)	Sample Volume (m³)	Alpha d/m³	Beta dpm	⁹⁹ Tc d/m³	U d/m³	Other
5446	2-28-84	8:53A	15	3-1-84	12:10P	15	3077	46.2	116.0	10445	26.0	0.5	

Remarks:

H. P. Technician _____

*To Alpha
Analyst*

Analytical Chemistry Department
Results of Analyses
7-MAR-1984

Customer: HEALTH PHYSICS

Material Description: MILLIPORE FILTER

Sample Number	Customer Number	Technetium DPM/FIL	Uranium DPM/FIL
840305-058	5446	1203	23

Approved by: *M. T. Fullins*

4-9616

Analytical Chemistry Department
Results of Analyses
5-MAR-1984

Customer: HEALTH PHYSICS

Material Description: MILLIPORE FILTER

Sample Number	Customer Number	Alpha Act DPM	Beta Act DPM	Bi-212	Pb-212	Tl-208
840301-045	5446	5354	10445	X	X	X

Approved by:

W.T. Mullins

* See letter to Jack Bailey