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OAK RIDGE Y-12 PLANT INFORMATION CONTROL FORM

2987

DOCUMENT DESCRIPTION (Completed By Requesting Division)

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Unclassified Title: STACK SAMPLING, DAFFODIL AREA, BUILDING 9212; SAMPLE RESULTS AND INTERNAL CORRESPONDENCE

Author(s) Requestor: Steve Wiley (# 2090-1H-4/2)

TYPE: ☐ Formal Report ☐ Informal Report ☐ Progress/Status Report ☐ Co-Op Report ☐ Thesis/Term Paper

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☐ Journal Article (Identify Journal):

☒ Other (Specify): To Be Released to ChemRisk, Phase II

Document will be published in proceedings ☑ No ☐ Yes

Document will be distributed at meeting ☑ No ☐ Yes

Document has patent or invention significance ☐ No ☐ Yes (Identify)

Document has been previously released ☑ No ☐ Yes (Reference)

DIVISION REVIEW AND APPROVAL (Completed By Requesting Division)

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DOCUMENT REQUEST APPROVED (Division or Department)

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THE REMAINDER OF THIS FORM TO BE COMPLETED BY THE TECHNICAL INFORMATION OFFICE

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APPROVAL AND RELEASE

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Conditions/Remarks:

DIVISION	DEPARTMENT	SECTION	BUILDING	ROOM
Industrial Relations	Medical Department	Industrial Hygiene	Bldg. 9706-2	34

DESCRIPTION OF RECORDS	FROM	THROUGH	CODE NUMBER
Meetings, Procedures, Solvent, Exposures, Stack Sampling, Uranium, etc. Listing of all folders included in this box enclosed. M through Z	1951	1957	~~XXXXXXXX~~ Y-12 ~~2090-IH-4~~

APPROVED FOR PUBLIC RELEASE

m. d. Bond 3/2/95

Technical Information Office Date

BOX NUMBER 2 OF 5

LOCATION IN RECORDS CENTER	SECTION	TIER	DR.
Indef.	20	9	16

CLASS OF FILE

RECORD [X] NON-RECORD [ ]

RECORDS VERIFIED BY: Bill Everett

DATE 2/14/58

T-2078

TRANSFER OF RECORDS

Stack Sampling
Daffodil Area
Bldg. 9212

To: Bill Baumann

8-19-52 2987

Samples received 8-6-52 Alpha counts/min

Hi Vol #3 - Enriched 1,993

Hi Vol #4 - Enriched 21

M. B. Long -

1# Tararzine #5 Yellow Food Coloring
1# Wesco Disinge
16# Lard Oil Brand Swift - Larrex
25# Tri sod. Phosphate
½# Insta Item X
80# Stand. Oil Co. Paraffin Oil Emulsifier
40# Thomson Hayworth #775 Pine Oil
240# S. Oil Co. Superla Sol. Oil.
37# Water distilled
1560# Tap Water.
2000# ½ oz.

OK

6½' x 4' inlet

36" 2119

2042

Hi-Vol. #3

Start - 9:08 Rate - 55 cfm

10:45

1 47

Hi-Vol. #4

Start - 9:31 Rate - 70 cfm

10:46

1046

931

115

6.6

1.5

7.5

To: Bill Baumann.

Filter Thimbles

8-22-52

Sample No	Date Received	Uranium Total micrograms
1	8-19	49.0
2	8-19	30.8
3	8-20	41.0
4	8-20	143.

OK

M. B. Long -

ter Thimble Samples

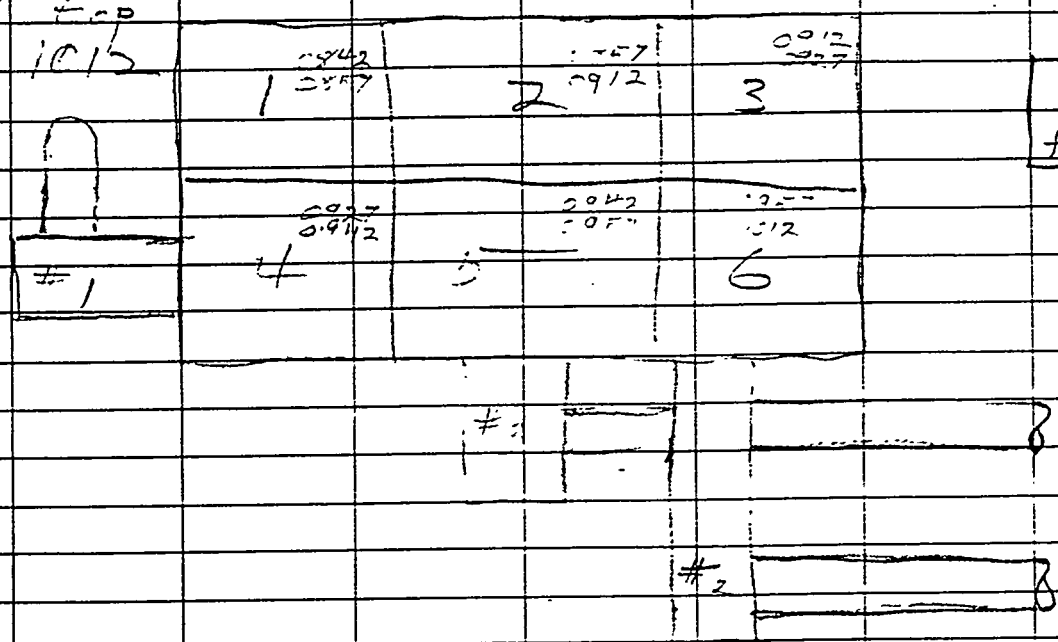
Sample No	Date Taken	Uranium Total Milligrams
11	8-26-52	1.45
12	8-26-52	3.73
13	8-28-52	0.58
14	8-28-52	1.25
15	8-29-52	0.50
16	8-29-52	0.26

OK

8-8-52

[illegible] pleated filter [illegible] #4 effluent Systems 1, 2, &

Start	Stop
0842	1012



1020-0945
fan #3 stopped

Bill Baumann 8-26-52

Filter thimble samples.

Sample #	Date Taken	Uranium Total milligrams
5	8-21-52	1.01
6	8-21-52	0.51
7	8-22-52	9.7
8	8-22-52	89.7
18	5-13-52	1.12
19	5-16-52	1.50
5	7-15-52	0.51

M. B. Long

Date - 8/19/52
Sampler #1
Sample #2

V_c = 2797 fpm

Start. Time - 2:11
Finish Time - 2:37
ΔT - 26 h = 0.58"

Machine - #423
Part #148
#4 Set up
Heavy Cut - 180 rpm
1 Heavy Cut
Fire

8-20-52 Sample #2 Machine #423

Sample #4 on .0015 cut
Date - 8/20/52 feed - .0037
Speed - 180

$V_{\mathbb{C}}$ = 3050 - 2997

h = 0.7

time 0923 start

1038 ~~[illegible]~~ stop

1218 Start

1. 0923 0934 .0015 cut
2. mike & adj.
3. 0939 0948 .0015 cut
4. 0948 0949 file edges
5. 0951 stop-mach
6. 0955 1005 .0015 cut
7. 1006 1016 stopped
8. 1016 1023 .0015 cut
9. 1030 file edges
10. 1035 stop-mach.
11. 1218 236 rpm .002 feed
1237 .005 cut
12. 1245 polishing 1:03

V_{m_o} - 0.0 T_m - 72 P_m - 0.75
V_{m_i} - 114 T_M = 72 P_m = 0.75

	wet	dry
room temp.	66	76
dest	66.5	75.3

MEMO

AVOID ORAL INSTRUCTIONS

To

Date

Signed

WCX-48 (7-50)

Sampler #2

V_o = 2997

h = .67

rm. temp wet 61 dry 72

duct temp 61 72

	time cutting	amt. cut	diam.
start 1.	0755 0716	.015	21
2.	0820 0830	.015	19
3.	0845 0854	.015	9
4.	0957 0907	.015	10
5.	0911 0921	.008	10

Sample #5

Machine #427

Part #148

spindle speed 165

Vol = 79 cfm

59

20 5

60

21

86

Sampler #2

V_o = 2997

h = .67

room temp wet 61 dry 72

duct temp. 61 72

cut No.	time cutting	amt. cut	Volume
start 1.	1019 1040	.015	0
2.	1041 1103	.015	
3.	1104 1116 stop	.015	
4.	1222 start 1244	.015	
5.	1247 1257	.015	
start	1300	.005	69 cfm

Sample #6

Machine #427

Part # 148

spindle speed 165

h = 3153

with Machining on.

wbts 63.5

dbts 74

OM 15 M

8-6-52

Hi-Vol Sampler #1 in basement — Watman 41 — Sample #3

Gauge reading	Temp Wet	Temp dry	Start	Stop	Time
17.5 cfm	64	77	0914	1014	1 hr
16 cfm					

filter torn when removed

Hi-Vol Sampler #2 — Watman 41 outside — Sample #4 — 8-6-52

Gauge	Temp Wet	Temp dry	Start	Stop	Time
0	64	78	0914	1014	1 hr
0					

filter torn when removed

Hi Vol Sampler #1 - basement — Watman 41 — Sample #5 — 8-7-52

Gauge	Wet Temp	dry	Start	Stop	Time
2.3 cfm	65	77	0908	1008	1 hr
2.3 cfm					

Hi Vol Sampler #2 - outside — Watman 41 — Sample #6 — 8-7-52

Gauge	Wet Temp	dry	Start	Stop	Time
3.5 cfm	64	75	0908	1008	1 hr
3.5 cfm					

Alpha disintegrations per minute per cubic meter

		1440 min/day	
		35.32 cf/m3	

Sampler #1 Sample #9

Machine #423 8/25/52

Part #148

Set up #4

Vm	Tm	Pm	Time	h	Vs
0.00	70	1.00	7.27	0.58	3050
4	70	1.00	7.54	0.58	3050
117	73	1.00	9.36	.59	3050
170	74	1.00	10.37	.59	3050
210	75	1.00	11.15	.59	3050
289	76	1.05	13.41	.59	3050
294	77	1.05	14.29	.59	3240

1247 completed operation

Note From 0727 to 0754 26 cu.ft. sampled

0825 — 0925 [illegible]

Sampler #1 Sample #9

Machine #423 8/25/52

Part #148

Set up #4

V_m	T_m	P_m	Time	h_o	V_s
0.00	70	1.00	7.27	0.58	3050
4	70	1.00	7.54	0.58	3050
117	73	1.00	9.36	.59	3050
170	74	1.00	10.37	.59	3050
210	75	1.00	11.15	.59	3050
289	76	1.05	13.41	.59	3050
294	77	1.05	14.29	.59	3240

1247 completed operation

Note From 0727 to 0754 26 cu ft sampled

0825 – 0925 [illegible]

Sampler #1 Sample #9

Machine #423 8/25/52

Part #148

Set up #4

V_m	T_m	P_m	Time	h	V_s
0.00	70	1.00	7.27	0.58	3050
4	70	1.00	7.54	0.58	3050
117	73	1.00	9.36	.59	3050
170	74	1.00	10.37	.59	3050
210	75	1.00	11.15	.59	3050
289	76	1.05	13.41	.59	3050
294	77	1.05	14.29	.59	3240

1247 completed operation

Note: From 0727 to 0754 - 26 cu.ft. sampled

0825 - 0925 [illegible]

Sampler #2 Sample #10

Machine # 427 8/25/52

Part # 148

Set up #4

V_m	P_m	T_m	Time	h	V_s
0.00	0.60	70	7.44	0.67	3050
1.06	0.45	73	9.39	0.67	3050
1.54	.45	73	10.32	0.67	3050
1.96	.45	74	11.17	0.67	3050
2.65	.45	75	13.39	0.67	3050
3.12	0.45	75	14.28	0.67	3500

1025 Completed full operation

7 heavy cuts, 2 fine cuts & polish

1120 Stop

1225 Start

Sampled

Sample #11

Date 8/26/52

Machine #4-7

Part #148

4th Set up

	T_m	P_m	T_{max}	h	V_{spec}
00	72°	1.00	0726	0.98	3884
91	72	1.00	0836	0.98	
36	72	1.00	0935	0.98	
43	73	1.00	1036	0.98	
86	73	1.00	1110	0.98	
	73	1.00	12:20	0.98	
52	75	1.00	1313	0.98	
06	75	1.0	1355	.98	
436	75	1.0	1419	0.98	4300

Stopped for Lunch Resumed Sampling

dbts 75.4

wbts 63.2

0

MEMO

AVOID ORAL INSTRUCTIONS

To

Date

Signed

WCX-48 (7-50)

Sampler #2

V_a = 2997

h = .67

	wet	dry
rm. temp	61	72
duct temp	61	72

	time cutting	amt. cut	diam.
start 1.	0755 / 0816	.015	21
2.	0820 / 0839	.015	19
3.	0845 / 0854	.015	9
4.	0857 / 0907	.015	10
5.	0911 / 0921	.008	10

Sample #5

Machine #427

Part #148

spindle speed 165

Vol = 79 cfm

59

20 5

60

21

86

Sampler #2

V_a = 2997

h = .67

	wet	dry
room temp	61	72
duct temp.	61	72

cut No.	time cutting	amt. cut	Volume
start 1.	1019 / 1040	.015	0
2.	1041 / 1103	.015	
3.	1104 / 1116 stop	.015	
4.	1222 start / 1244	.015	
5.	1247 / 1257	.015	
start	1300	.005	69 cfm

Sample #6

Machine #427

Part # 148

Spindle speed 165

h = 3153

with Machining on.

wbt_s 63.5

dbt_s 74

19 M

Sampler #1 Machine #427

Sample #13 Part #148

Date - 8/28/52 Set up #4

V_m	T_m	P_m	Time	V_s	h
0.00	73	2.65	7:33	2119	0.62
1.39	71	2.60	8:18		0.60
2.77	72	2.75	9:04		0.65
3.81	72	2.75	9:37		0.65
4.547	72	2.75	10:30		0.65
6.87	71	2.75	11:15		0.65
7.19	71	2.75	11:26		0.62
0	71	2.90	12:25		0.63
10.7	74	2.75	12:59		0.61
2.06	74	2.75	13:29		0.61
3.02	74	2.80	14:00		0.61
3.75	74	2.75	14:24		0.61

Stop

Little hole 2119 →

Big hole 1962

Sampler #2 Machine #[illegible]

Sample #14 Part #1[illegible]

8/28/52 Set up 4

Vm	Tm	Pm	h	Time	Vs
0.00	71	1.60"	0.73	8.22	2119
132	71	1.60	0.74	9.06	
221	71	1.75 ~~1.60~~	0.73	9.36	
375	72	1.75	0.73	10.28	
522	72	1.75	0.72	11.17	
542	72	1.75	0.72	11.24	
0	72	1.75	0.73	12.20	
117	74	1.75	0.73	13.00	
202	75	1.75	0.73	13.27	
297	76	1.75	0.73	13.57	
365	76	1.75	.73	14.22	Stop
					2119

Sampler #2 Machine #420

Sample #12 Part #128

Date - 8/26/72 Set up #9

V_m	T_m	P_m	Time	h	V_s	
0.00	72	1.00	07 39	1.17	3884	
79	72	1.00	08 39	1.17		
155	73	1.00	09 38	1.17		
231	74	1.00	10 38	1.17		
290	74	1.00	11 25	1.17		Stopped for lunch
—	74	1.00	12 21	1.17		Resumed sampling
354	76	1.00	13 12	1.17		
407	76	1.00	13 53	1.17		
461	76	1.00	14 36	1.17	3965	

$h_s = 5.5$" WG

422

240
14
226
135
361

180
46
226
135
361

wbt$_s$ 75.5

dbt$_s$ 65.5

ϕ

120
105

Sampler #1 Machine 4-7

Sample #16 Part 148

8/24/52 Set up 4

V_m	T_m	P_m	Time	V_s	h	
0.00	72	0.60	8:08	3550	0.13	3/16 orifice
60.0	72	0.60	9:00		0.13	
133.0	73	0.60	10:04		0.13	
214.0	74	0.60	11:16	3491	0.13	
0.00	73	0.75	12:20		0.13	
68	74	0.60	13:31		.13	
151	74	0.65	14:23	3445	0.12	

2 Parts - H.C. & F.C.

No Polishing

$3 \times 60 = 180$

$2 \times 60 = 120$

h_s 2.5

74

60.7

214

151

63

1

187

123

310

Sampler #2 Machine #[illegible]

Sample #[illegible] Part [illegible]

8/29/52 Set up #4

V_m	P_m	T_m	Time	V_s	h
0.00	3.25	70	7:36	3882	1.00
93	1.00	71	8:01		0.22
	0.90				0.14
170	1.00	74	8:58		0.14
272	1.00	73	10:05		0.14
378	1.00	74	11:17		0.13
0.00	1.10	75	12:18		0.14
115	1.10	75	13:38		0.14
188	1.10	75	14:25	3562	.14

3/8 Orifice

60.5

73

h_s = 5.3

OK

378
188
566
5