#1273

Ret Dulos C.

45-1-214

A-670

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Date 1/15/45

Those Eligible To Read The Attached

Subject Settling Pond and White Oak Dam Water Survey - Week of 1/6 -13/45

Copy #8 J. S. Choka

By J. S. Choka

To K. Z. Morgan

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K. Z. Morgan — Health-Physics

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SETTLING POND AND WHITE OAK DAM WATER

SURVEY - Week of 1/8 - 13/45

During this period routine water surveys were made at White Oak Dam and the inlet and outlet waters of the settling pond. In these surveys a thin-walled glass GM tube in a 3" brass container immersed in the sample was used to check gamma activity.

The results, corrected for background are listed below -

Date	Source	c/m small Container	mr/hr$_2$*	c/m large Container	mr/hr$_3$**
1/8/45	Dam	45	0.045	62	0.0372
1/10/45	Dam	46	0.046	33	0.0198
1/12/45	Dam	20	0.020	83	0.0500
1/9/45	Inlet	2450	2.450	4933	2.960
1/9/45	Outlet	725	0.725	1461	0.877
1/11/45	Inlet	561	0.561	1195	0.717
1/11/45	Outlet	499	0.499	1005	0.603
1/13/45	Inlet	2495	2.495	5030	3.018
1/13/45	Outlet	332	0.332	1068	0.641

* mr/hr$_2$ = 10^{-3} S

** mr/hr$_3$ = 6×10^{-4} L

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David R Hamrin 7/30/95
Technical Information Officer Date
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1/14/46

K. Z. Morgan — Health Physics

H. R. Craft — Health Physics

CLINTON LABORATORIES
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46-1-183
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WHITE OAK DAM & SETTLING BASIN SURVEY
WEEK OF 1/2/46 - 1/5/46

The following table shows the results of routine water surveys of the White Oak Dam and the Outlet Waters of the Settling Basin. In these surveys a thin-walled GM tube in a 1" brass container, immersed in the sample, was used to measure gamma activity.

Date	Source	c/m (Small)	mr/hr_2*	c/m (Large)	mr/hr_2**
1/2/46	Dam	382	.079	685	.097
1/4/46	Dam	568	.117	1191	.163
1/3/46	Outlet	52	.010	36	.004
1/5/46	Outlet	2793	.576	5319	.726

* $mr/hr_2 = 6.2 \times 10^{-4}$ S/3 (S = c/m small container).

** $mr/hr_3 = 4.1 \times 10^{-4}$ L/3 (L = c/m large container).

H. R. Craft

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Date 10/11/45

Those Eligible To Read The Attached

Subject White Oak Dam and Settling Basin Survey Week of 10/1/45 -10/6/45

By H. R. Craft

Copy # 2

To K. Z. Morgan

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10/11/45

K. Z. Morgan — Health Physics

H. R. Craft — Health Physics

WHITE OAK DAM AND SETTLING BASIN SURVEY
WEEK OF 10/1/45 - 10/6/45

The following table shows the results of routine water surveys at the White Oak Dam and the Outlet waters of the Settling Basin. In these surveys a thin-walled GM tube in a 1" brass container, immersed in the sample, was used to measure gamma activity.

Date	Source	c/m (Small)	mr/hr$_2$*	c/m (Large)	mr/hr$_3$**
10/1/45	Outlet	1612	.334	2619	.397
10/3/45	"	618	.128	1243	.169
10/5/45	"	1219	.273	2011	.274
10/2/45	Dam	248	.051	695	.095
10/4/45	"	735	.152	267	.036
10/6/45	"	179	.037	267	.036

* mr/hr$_2$ = 6.2×10^{-4} S/3 (S = c/m small container)

** mr/hr$_3$ = 4.1×10^{-4} L/3 (L = c/m large container)

H. R. Craft

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44-8-376

A-670

#1273

File

Date 8/23/44

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Subject Activity of Mud and Water From White Oak Dam

for 7/76

Copy 2 A.E. with

By J. D. Randall

To K. Z. Morgan

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Name	Date	Name	Date
J Everett	8.28.44		

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August 25, 1944

K. Z. Morgan

D. J. Rendell

Activity of Mud and Water From White Oak Dam

On July 26, 1944, P. L. Eisenacher and C. G. Lewis collected mud and water samples at various locations along White Oak Creek, into which the hold-up ponds are discharged, and at White Oak Dam. Sample locations are shown on the attached sketch.

Summary of Mud Data

Sample	μc/gm
#1	4.2×10^{-5}
2	3.3×10^{-5}
3	1.2×10^{-5}
4	64.0×10^{-5}
5	90.5×10^{-4}
6	2.5×10^{-2}
7	5.9×10^{-2}
8	2.6×10^{-2}

Water samples were obtained at the same locations as the mud samples.

Summary of Water Data

Sample	c/ml/min
#1	3.0
2	3.4
3	2.0
4	2.2
5	8.0
6	4.2
7	25.0
8	69.4

DJR/er
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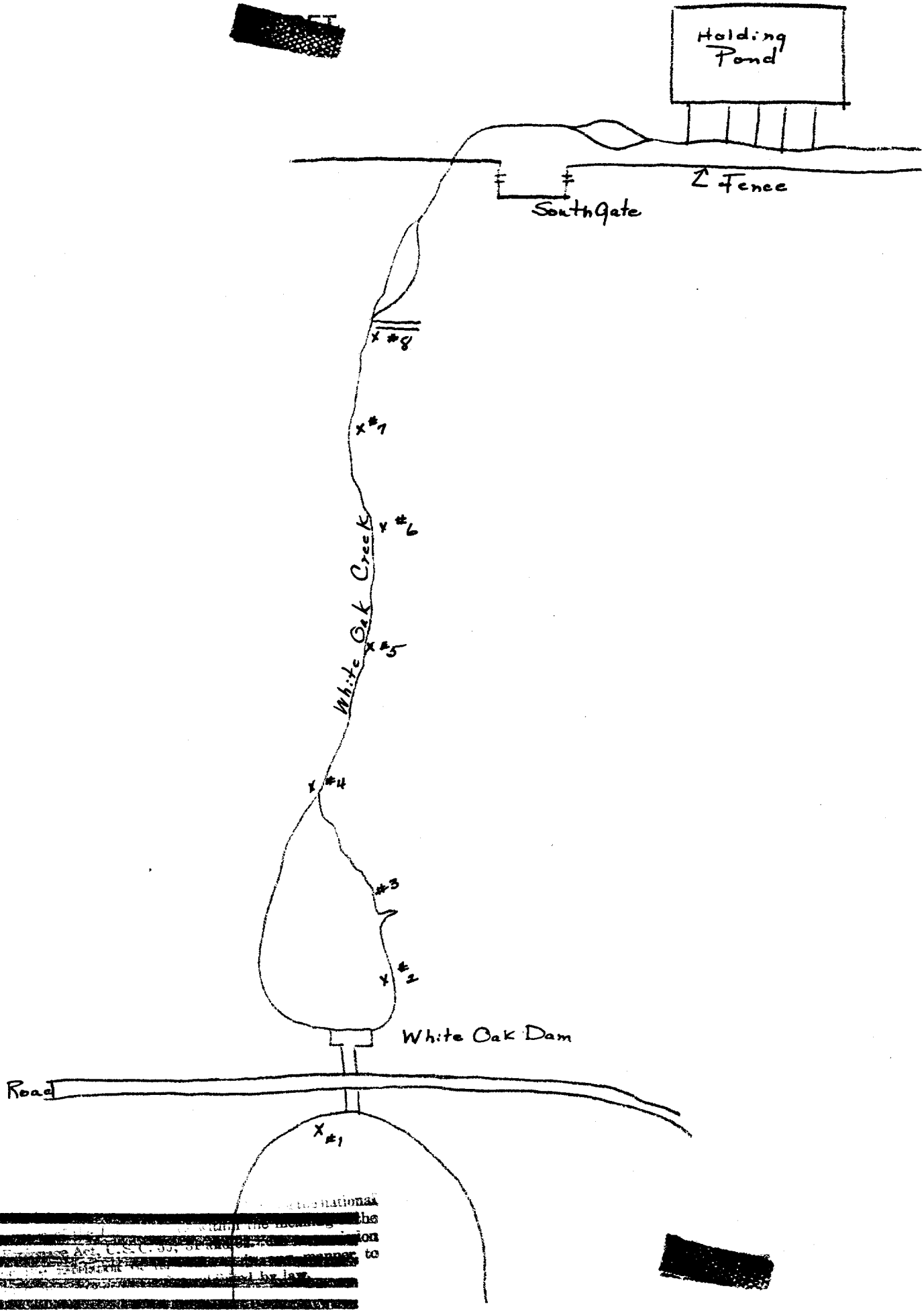

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October 2, 194

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To: R.H. Firminhac

From: T.H.J. Burnett

In Re: White Oak Dam and Settling Basin 9/4-30/47

The following tables show the results of routine water surveys of the White Oak Dam outflow and the outlet waters of the Settling Basin. In these surveys, a thin-walled GM tube in a 1" brass container was used to measure gamma activity by immersion.

Date	Source	Small Net c/m	mr/hr*	(large) net c/m	mr/hr**
9/4/47	Dam	31	.006	98	.013
9/10/47	Dam	54	.011	174	.023
9/12/47	Dam	21	.004	49	.006
9/17/47	Dam	16	.003	145	.019
9/19/47	Dam	50	.011	205	.028
9/23/47	Dam	60	.012	95	.013
9/25/47	Dam	27	.005	25	.003
9/29/47	Dam	69	.014	163	.022
9/30/47	Dam	83	.016	61	.008
9/5/47	S. Basin	1680	.347	2339	.320
9/9/47	S. Basin	138	.028	287	.039
9/11/47	S. Basin	458	.095	646	.088
9/15/47	S. Basin	595	.122	1019	.139
9/17/47	S. Basin	518	.107	779	.107
9/22/47	S. Basin	525	.108	770	.104
9/24/47	S. Basin	228	.047	392	.053
9/26/47	S. Basin	609	.125	812	.110
9/30/47	S. Basin	105	.021	1334	.182

* mr/hr = 6.2 x 10 x S/3 (S = c/m small cylinder)

** mr/hr = 4.1 x 10 x L/3 (L = c/m large cylinder)

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An improvement in the consistency of the foregoing results is noted, which may be due to improvement in technique, or simply coincidental factors. The validity on theoretical grounds is uncertain as well, but the results are valuable for trend indications and comparison.

T.H.J. Burnett

T.H.J. Burnett

THJB:rr

cc: R.H. Firminhac
K.Z. Morgan
C.E. Haynes
J.S. Felton
W.H. Ray
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By [redacted]

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10/10/44

K. Z. Morgan — Health-Physics

D. J. Rundell — Health-Physics

SEWERLINE POND AND WHITE OAK DAM WATER SURVEY
PERIOD FROM October 2 - October 8, 1944

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During the week the activity of the water from the inlet pipe and a composite sample of the outlet pipes were checked daily and the results are summarized below.

On October 4, 1944 a sample of the water at White Oak Dam was collected and checked for activity. The result is included in the table below.

SUMMARY OF DATA

c/m corrected for background

Date	Source	Small Container	Large Container	mr/hr*	mr/hr**
10/2/44	Inlet	656	1262	0.656	0.757
	Outlet (composite)	268	505	0.268	0.303
10/3/44	Inlet	1019	1455	1.019	0.873
	Outlet (composite)	293	425	0.293	0.255
10/4/44	Inlet	2132	3742	2.132	2.240
	Outlet (composite)	338	552	0.338	0.331
10/5/44	Inlet	4334	7246	4.334	4.348
	Outlet (composite)	486	806	0.486	0.4836
10/6/44	Inlet	3894	7263	3.894	4.358
	Outlet (composite)	475	788	0.475	0.4728
10/7/44	Inlet	8795	15,944	8.795	9.560
	Outlet (composite)	841	1255	0.841	0.740
10/8/44	Inlet	7988	14,263	7.988	8.530
	Outlet (composite	983	1680	0.983	1.008
10/4	White Oak Dam	17	25	0.017	0.015

* mr/hr = 10^{-3} s

** mr/hr = 556 c/m

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Chief, Declassification Branch

D. J. Rundell

DJR/w

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FEB 4 1948

CLINTON LABORATORIES
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48-2-29

XT #1273

Date January 30, 1948

To J.H. Roberson

From T.H.J. Burnett

Subject White Oak Dam and Settling Basin, January 1948

Distribution

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January 30, 1948

To: J.H. Roberson

From: T.H.J. Burnett

Subject: White Oak Dam and Settling Basin, January 1948

The following table shows the results of routine water surveys of the White Oak Dam outflow and the outlet waters of the Settling basin. In these surveys, a thin walled GM tube in a 1" brass container was used to measure gamma activity by immersion.

In addition to the tabulated gamma radiation values, there are shown for comparison, the approximate amounts of radiation which would be received from β emitters in the Settling Basin effluent on the same days surveyed.

[redacted]

[redacted]

[redacted]

Date January 1948	Settling Basin β mrep/hr * 206 analyses	Settling Basin γ mr/hr ** Aver. Small & Large	White Oak Dam γ mr/hr ** Aver. Small & Large
2	0.19	.041	.006
3	0.11	.026	.004
5	0.12	.016	.003
6	0.13	.027	.003
7	0.08	.019	.003
8	0.15	.048	.007
9	0.22	.044	.005
12	0.09	.031	.002
13	0.22	.066	.003
14	0.34	.089	.002
15	0.32	.103	.004
16	0.14	.046	.002
19	0.07	.027	.005
20	0.05	.013	.002
21	0.03	.008	.001
22	0.07	.018	.002
23	0.04	.014	.005
27	0.19	.051	.007
28	0.34	.068	.004
29	0.18	.031	.011
30	0.14	.025	.010
Average	0.15	.039	.004

* mrep/hr = 2.8×10^{-3} N (N = c/m/ml per shift analyses)
** mr/hr = $6.2 \times 10^{-4} \times S/3$ (S = c/m Small Cylinder)
** mr/hr = $4.1 \times 10^{-4} \times L/3$ (L = c/m Large Cylinder)

The above values represent radiation intensities on the basis of immersion in infinite volume assuming an average gamma ray energy of 0.7 mev. The results tabulated are the averages of two determinations using the single vessel method with a large and samll vessel.

Agreement between the γ determinations made at the laundry continues mediocre. The situation of larger net counts for the small vessel than for the large vessel has increased to 24% of the determinations made, suggesting imperfect or inadequate cleaning of the two vessels between usage for Settling Basin and for dam

[redacted]

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water. Continuous monitoring equipment is seen as increasingly desirable and it is hoped that satisfactory instruments for this can be developed in the near future.

The degree of correspondence between beta and gamma radiation values as they vary during the month may be regarded as an index of the uniformity of isotopic constituency of the discharge. Calculations are by the methods outlined in CH-2565 and based on an average maximum β energy of approximately 0.75 mev obtained from a study of the results of the analysis of a composite sample accumulated during November 1947. This gives 0.3 mev for the average β energy value.

T.H.J. Burnett

T.H.J. Burnett

THJB:rr

[redacted]