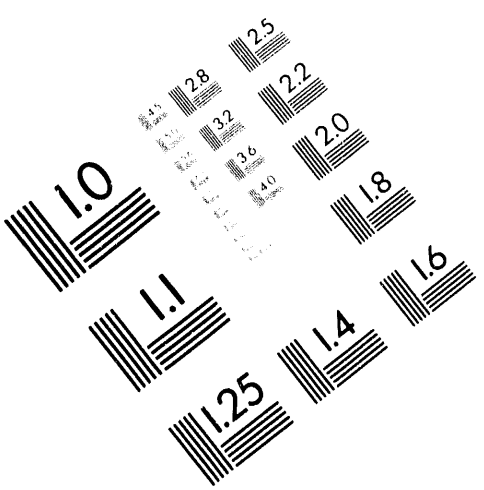

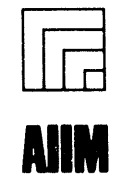

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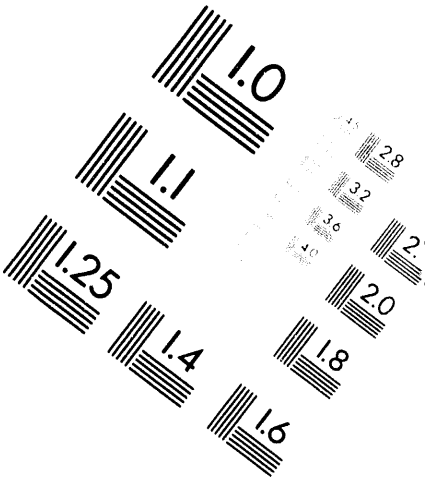

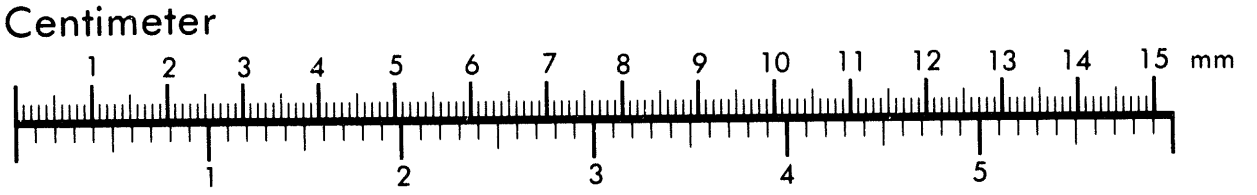

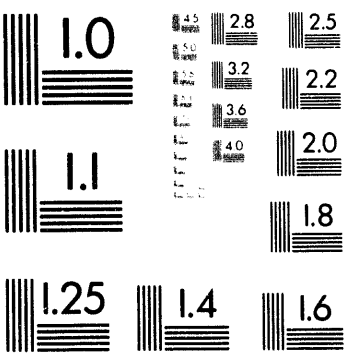

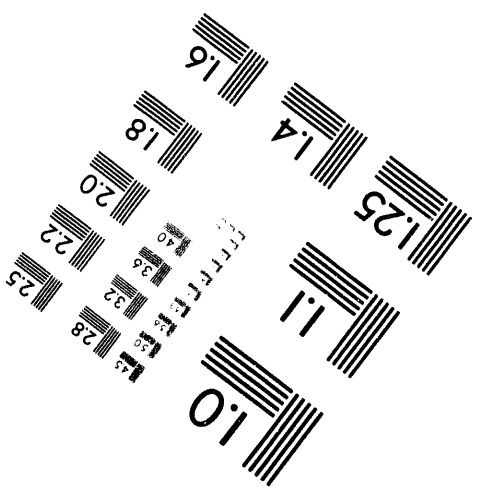

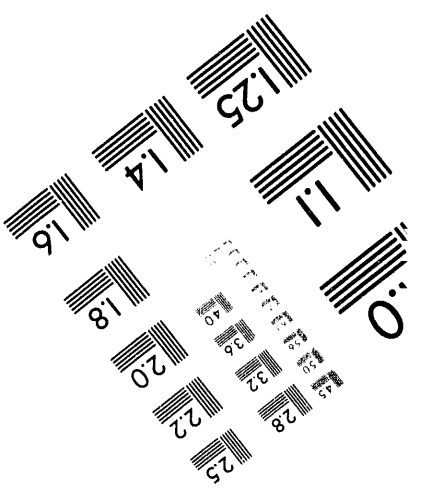

1 of 1

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DUH-10017

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HW-7.159

duH-10,017

300

310

FILE IV

Route List

1. ~~[illegible]~~
2.
3. ~~W. E. [illegible]~~
4.
5.

DATE 1-27-43

SUBJECT Quality of Columbia River Water

Classification Cancelled and Changed To
DECLASSIFIED
By Authority of Doc May 1973
By PM Eck 6-8-94
Verified By JH Wells 6-9-94

TO C. H. Greenewalt

FROM M. F. Acken

COPY NO. ~~1-A (MM)~~ 1-EHW

BEFORE READING THIS DOCUMENT, SIGN AND DATE BELOW:

COPY 1 OF 1. SERIES MA

[illegible] 5-9-51
~~[illegible]~~

SPECIAL RE-REVIEW
FINAL DETERMINATION
DECLASSIFICATION CONFIRMED
BY ____ DATE ____
BY AE Barber DATE 2-4-82

INVENTORIED
OCT 11 1950
DOCUMENT AUDIT AND INVENTORY UNIT

MASTER

INVENTORIED
JUL 27 1951
DOCUMENT AUDIT AND INVENTORY UNIT

[redacted]

DECLASSIFIED

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January 27, 1943

M E M O R A N D U M

TO: C. H. Greenewalt

FROM: M. F. Acken

~~QUALITY OF COLUMBIA RIVER WATER~~

Ref.: My memorandum of January 23

Attached is a copy of a letter from Lt. Col. Matthias of the U. S. Army Engineers dated January 25 giving further information regarding the quality of Columbia River water.

You will note that the pH range is 7.7 to 8.3. Under these conditions we should not expect corrosion of the equipment, neither should scale deposition be excessive. If these figures are representative of pH data at the Plant site, it appears that no treatment of the water to adjust the pH will be necessary.

No data are given concerning the quantity of dissolved oxygen or nitrogen but the amount of dissolved CO_2 is sufficiently low to prevent undue corrosion. If the decision is made to adopt the water-cooled pile it will be necessary to obtain further data on the quantity of dissolved oxygen and nitrogen present.

You will note that the maximum water temperature based on monthly averages is 60°. If these data are correct, it is quite possible that the maximum for any one day might well be as high as 70°F. These figures are somewhat higher than previous data had indicated and we believe they should be checked by further measurements at the plant site.

No algae have been observed in the river at Wenatchee and none in Coulee Lake. The type of algae observed on the face of Coulee Dam would not cause us concern in cooling the columns in the pile since only floating-type algae would be expected to create a problem. Despite the observations reported in Col. Matthias' letter, we believe a further check concerning the presence of algae should be made, possibly with the State public health officials.

The hardness figures reported are not excessive and we are still of the opinion that Calgon treatment would prevent difficulties due to scale formation.

We are at a loss to understand the statement that the ground water is about 500 ft. below the surface in view of the fact that numberous shallow wells are reported in the area which are of the order of 30 ft. deep.

MFA:NRS
5

copied 2/13/45
pd

C O P Y

DECLASSIFIED

[redacted]

WAR DEPARTMENT
Address reply to Office of the Chief of Engineers
Chief of Engineers, Washington, D. C.
U. S. Army
Washington, D. C.

January 25, 1943

E. I. du Pont de Nemours & company, Inc.
Wilmington, Delaware

Dear Mr. Acken: Attention: Mr. Acken, Tel. Ext. 387

The following information is in accordance with your telephone request for information on water. Test data is from samples taken at Wenatchee, Washington.

1. P. H. Value

Date	Value
1-15-43	7.9
12-1-42	8.0
10-1-42	8.3
8-29-42	8.1
7-26-42	7.8
6-20-42	7.7
5-15-42	7.7
4-19-42	7.9
3-26-42	7.8
2-28-42	7.7

2. Dissolved Gases CO_2 (no record of other gases)

Date	Parts per million
1-11-41	2.7
12-31-42	8.8 to 11.4 (series of tests)
Feb. '42	7.5 monthly average
Mar. '42	2.5 " "
Apr. '42	6.0 " "
May '42	5.0 " "
June '42	1.8 " "
July '42	2.5 " "
Aug. '42	1.4 " "
Sept. '42	1.5 " "
Oct. '42	1.1 " "
Nov. '42	1.2 " "
Dec. '42	1.6 " "

You will note a disproportionately high value of CO_2 from the test of December 31. No explanation is available, although the first test was questioned and check samples taken.

[redacted]

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[redacted]

3. River Water Temperature - Monthly Average

Date	Temperature °F.
1-31-42	37
2-28-42	39
3-31-42	39
4-30-42	45
5-1-42	52
6-30-42	55
7-31-42	61
8-31-42	66
9-30-42	64
10-31-42	61
11-30-42	48
12-31-42	41

4. Algae - No appearance at Wenatchee. Some occurs on down stream face of Coulee Dam, where seepage comes through. None in Coulee Lake.

5. Scale - Wenatchee Laundry finds it necessary to treat boiler feed water, using a compound principally of hypochlorite and soda ash. Hardness occurs as 96% calcium carbonate and about 4% of other compounds of calcium, magnesium and chlorine. Complete qualitative or quantitative analyses are not available.

Date	Hardness - parts per million
2-28-42	76
3-31-42	76
4-22-42	104
4-30-42	104
5-31-42	62
6-28-42	66
7-31-42	66
8-31-42	70
9-30-42	70
10-31-42	80
11-30-42	81
12-31-42	84

Prior to filling Grand Coulee, the average hardness was 40. The increase is due to additional flooded land from which slightly soluble salts are being leached out. This indicates that progressive slow reduction in hardness will probably be evident in the future.

Please inform Mr. Gilbert P. Church that the preliminary reconnaissance indicates ground water generally at about 300 feet below the surface.

[redacted]

Yours truly,

(s) F. A. Matthias
Lt. Col., Corps of Engineers

NRS -5e
1/27/43

DATE

FILMED

9/7/94

END