

STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

DANIEL J. EVANS
GOVERNOR

JOHN A. BICCO
DIREC

Publication No. 72-e39

April 6, 1972

WA-18-0020

MEMORANDUM

TO: Jim Knudson

FROM: Ron Pine 

SUBJECT: Crown Zellerbach, Port Angeles Outfall Study

The subject study was conducted on February 23, 1972 to evaluate the effectiveness of the Crown Zellerbach outfall and diffuser. Samples were collected during a 7.0 foot tide and a -0.6 foot tide. Station locations are shown on the attached figure and were sampled at surface, mid-depth and bottom. A composite sample and two grab samples were collected during the study period from the mill effluent prior to discharge. The composite was collected between 8 AM and 4 PM, and the grab samples were collected at 8 AM and 4 PM.

Results

Analysis results for the composite sample was:

PBI - 5700 mg/l TNVS - 157 mg/l
 Zinc - 10.0 ±0.2 mg/l TVS - 280 mg/l
 Total Solids - 437 mg/l

Grab samples - zinc analysis only

8 AM - 10.8 ±0.02 mg/l
 4 PM - 10.5 ±0.02 mg/l

The total flow during the sample period was 3.75 M.G.D.

Summary results of samples collected over the diffuser in the Strait of Juan de Fuca were as follows:

	High Tide			Low Tide		
	Max.	Min.	Ave.	Max.	Min.	Ave.
Turbidity JTU	4.0	1.0	1.7	2.0	1.0	1.3
PBI mg/l	27	0	5	50	0	9
Zinc mg/l	0.05	<0.02	0.03	0.08	<0.02	0.04

Dissolved oxygen; pH and temperature were well within the Class AA standard and were not considered to be a factor in this study.

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Memo to Jim Knudson

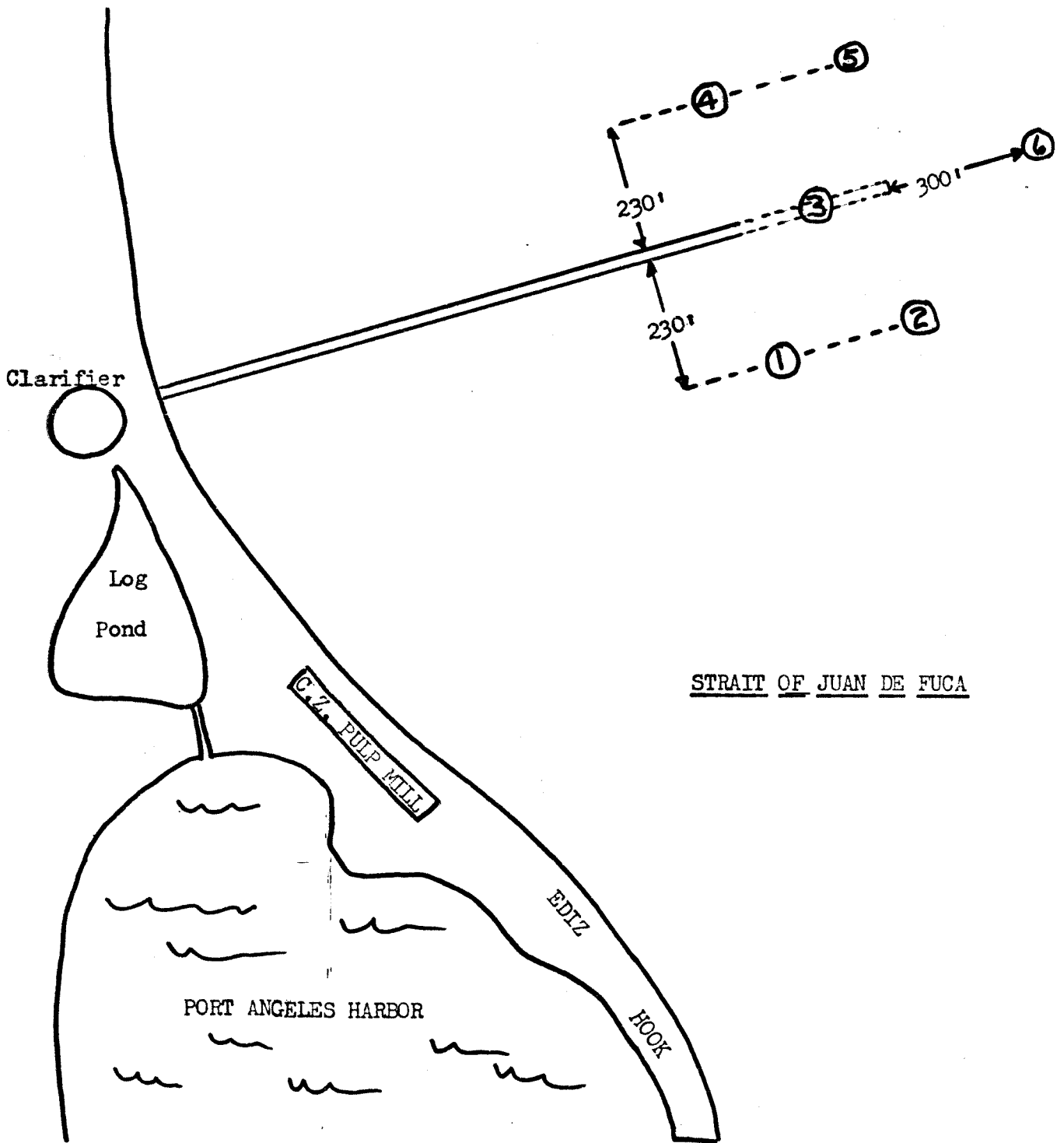
April 6, 1972

Maximum depth in the sampling area at high tide was 40 feet and at low tide 34 feet.

Discussion

The results indicate that, during the survey period and except for PBI, the mill waste is adequately diffused and is within the prescribed dilution zone. Mid-depth PBI values, however, at stations 3, 4 and 5 exceed the suggested maximum of 10 mg/l.

REP:bj



STRAIT OF JUAN DE FUCA

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
DANIEL J. EVANS
GOVERNOR
JOHN A. BIGGS
DIRECTOR

April 19, 1972

Mr. Don Nadig, Resident Manager
Crown Zellerbach Corporation
P. O. Box 271
Port Angeles, Washington 98362

Dear Mr. Nadig:

I am enclosing a copy of our outfall study conducted on February 23, 1972, for your mill's effluent. The results show that your outfall meets Class AA standards as well as zinc standards of 0.10 mg/l at dilution boundaries, during critical periods of high and low tides.

If you have any questions about the conduct of this study, please contact Ron Pine (754-2826).

Sincerely,

James C. Knudson

James C. Knudson
Central Operations Division

JCK:dn

cc: ~~✓~~ Ron Pine

enclosure

ANALYTICAL REPORT SHEET

Original to LABORATORY

Copies to: Ron Pine

Merley McCall

To: Ron Pine

The following are the analytical results from survey conducted at:

Crown Zellerbach

03-02.21

Collected 2/22/73

LAB. NO.	STATION NO.	J.T.U. ppm.			Lab No.	Station No.	J.T.U. ppm.		
		Turbidity	PBT ±5	Zinc ±.02			Turbidity	PBT ±5	Zinc ±.02
42 432	1B1	1	5	.05	52	751	2	5	4.02
33	2B1	2	0	.02	53	1B2	1	5	.03
34	3B1	2	5	.05	54	2B2	1	0	.03
35	4B1	2	5	.03	55	3B2	1	5	.05
36	5B1	1	0	.02	56	4B2	1	0	.05
37	6B1	1	5	4.02	57	5B2	1	9	.03
39	7B1	1	5	.02	58	6B2	1	9	4.02
39	1M1	1	0	.02	59	7B2	2	5	.03
40	2M1	1	0	4.02	60	1M2	2	55	4.02
41	3M1	2	27	.05	61	2M2	1	5	.02
42	4M1	2	0	.02	62	3M2	2	50.	.03
43	5M1	(4)	9	4.02	63	4M2	1	18	.07
44	6M1	2	5	4.02	64	5M2	2	50.	.08
45	7M1	1	5	.02	65	6M2	1	5	.02
46	1S1	2	5	.04	66	7M2	2	5.	.03
47	2S1	2	9	4.02	67	1S2	1	0	.02
48	3S1	1	5	4.02	68	2S2	2	5	.04
49	4S1	1	5	.02	69	3S2	1	0	.02
50	5S1	2	5	4.02	70	4S2	1	0	.04
51	6S1	2	89	4.02	71	5S2	1	5.	.03

Notes: 72-472
473

Sta No	Turb	PBT	Zinc
652	1	5	4.02
752	1	5	4.02

Summarized by [Signature]

Date 3/13/73

ANALYTICAL REPORT SHEET

Copies to: _____

Ron Pine

To: Ron Pine

Merley McCall

The following are the analytical results from survey conducted at:

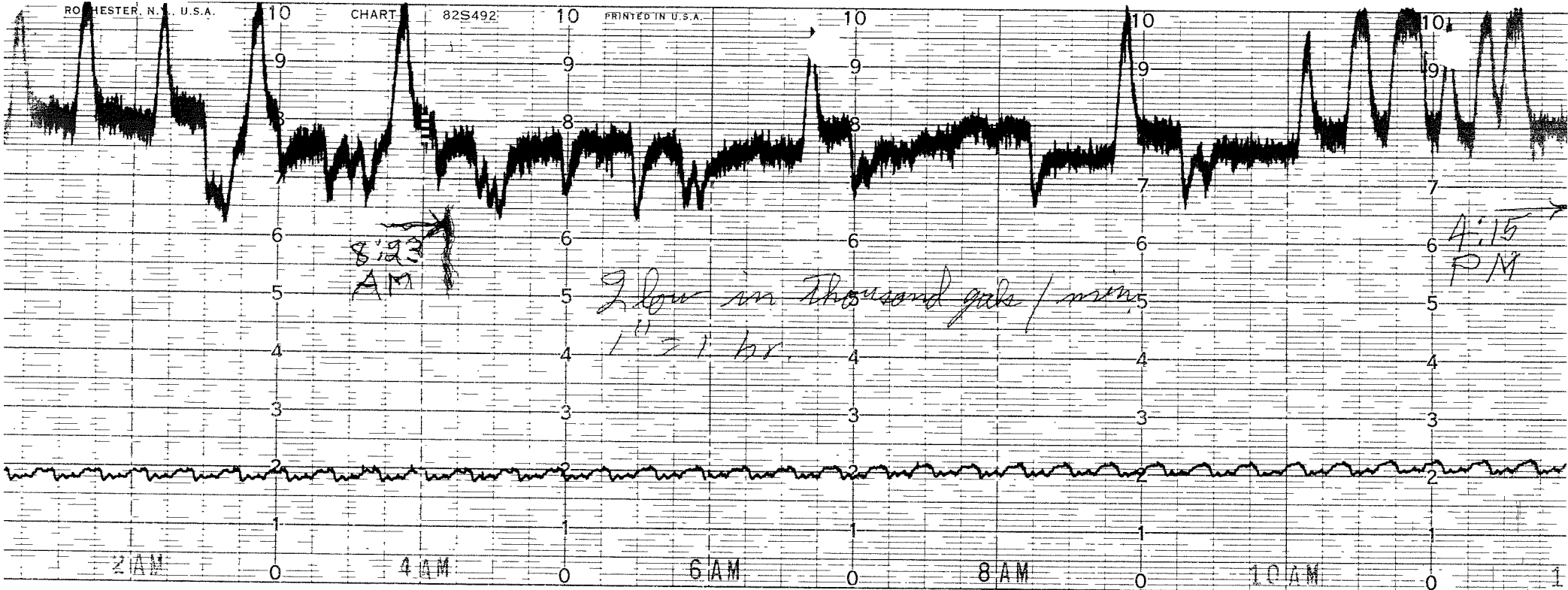
Crown Zellerbach

03-02.23

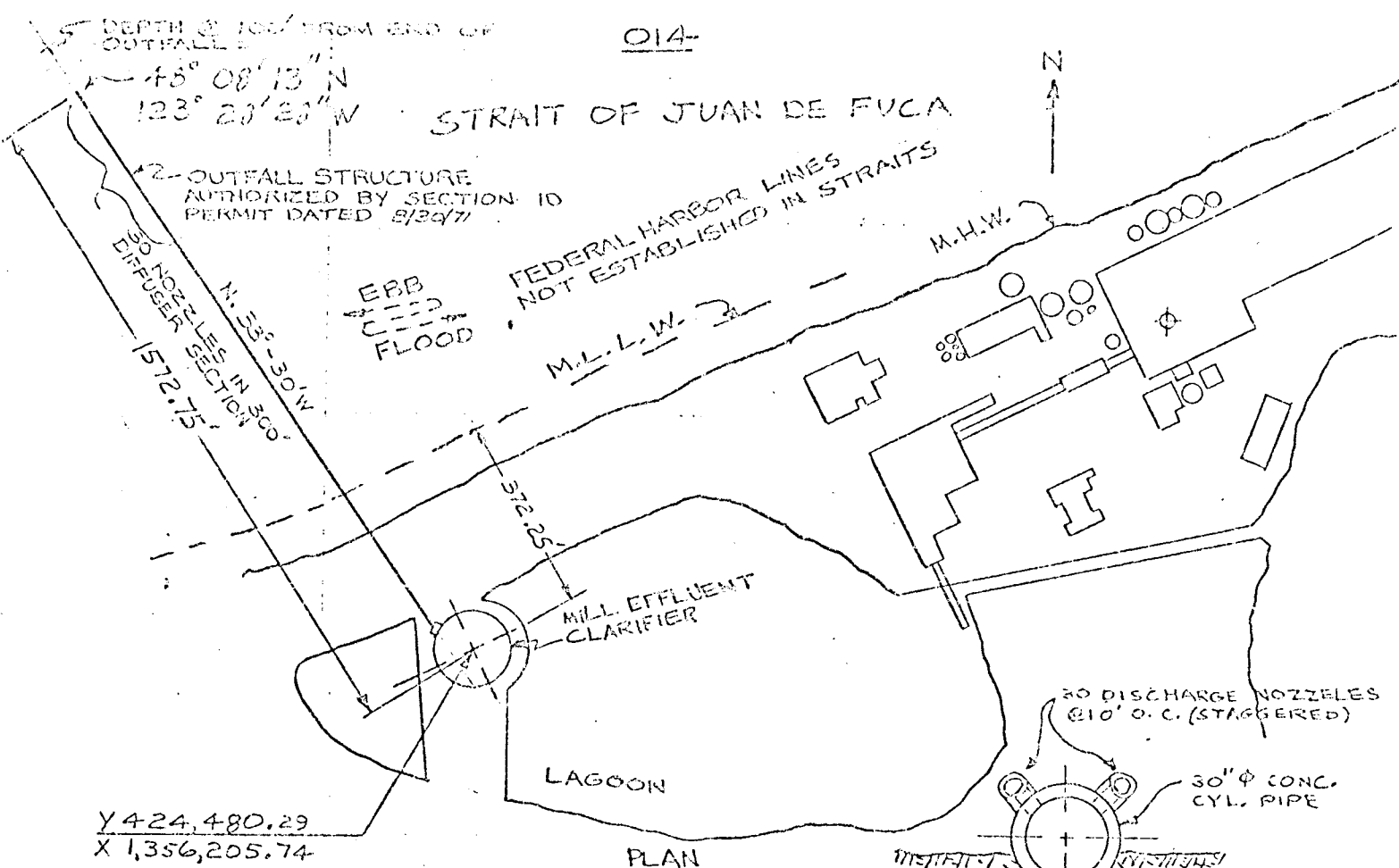
Collected 2/23/72

LAB. NO.	STATION NO.	ppm Zinc $\pm .2$	ppm PBI	ppm T.S.	ppm T.N.U.S.	ppm T.V.S.		
72- 429	EFFluent	10.0	5700.	437.	157.	280.		
430	Grab 8:00	10.8						
431	Grab 4:00	10.5						

Notes: Summarized by Fat Lee
Date 3/13/72



014-

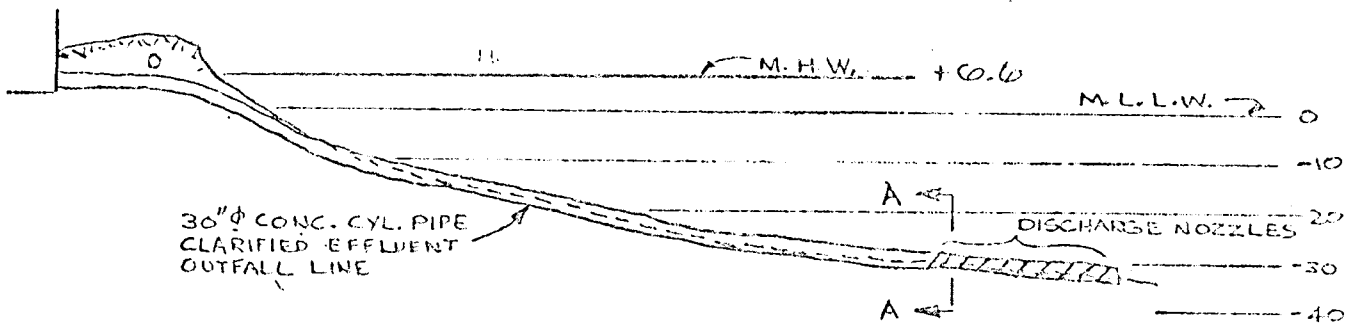


Y 424,480.29
 X 1,356,205.74

PLAN
 SCALE IN FEET
 0 200 400

SECTION A-A

SCALE OF FEET
 0 3 6



SECTION

SCALE OF FEET
 HORIZONTAL
 0 300 600 900
 VERTICAL
 0 10 20 30 40

EFFLUENT OUTFALL 014 IN STRAIT OF JUAN DE FUCA AT FORT ANGELES, CLALLAM COUNTY, WASHINGTON
 APPLICATION BY: CROWN ZELLERBACH
 DATE - JUNE 14, 1971

A-2860 REV. A 9-21-71

SHEET 13 OF 25

3.2.21

REQUEST FOR ANALYSIS

Date FEB 16, 1972

REQUESTED BY ROW PINE

RECEIVING WATER STRAIT OF JUAN DE FUCA

COLLECTED BY

PROCESS WATER

DATE ~~WILL BE~~ (WILL BE) COLLECTED 2/22 & 23/72

OTHER

PRIORITY: REASONABLY SOON AS SOON AS POSSIBLE X EMERGENCY

SAMPLES WILL ARRIVE: DATE 2/24/72 APPROXIMATE TIME 0800 CARRIER SUEVEY C&E

ROUTE DATA SUMMARY TO: ROW PINE

ADDITIONAL INFORMATION (PROBLEM, BACKGROUND, INTERFERENCES, PATTERNS, ETC.)
EVALUATION OF CROWN ZELESRBACH OUTFALL DIFFUSER AT PORT ANGELES.

For Lab Use Only

Table with 8 columns: Type of Analyses Required, Number of Samples, Approx. Range, Preservative Type - Vol., Laboratory Number, Analyst, Date, Notes. Includes handwritten entries for ZINC, TURBIDITY, and PBI.

Fill out as completely as possible. Some Analyses (bacteriological, biological, BOD, etc.) and large numbers of samples should be scheduled ahead of time. Specific questions should be directed to the Analyst supervising the particular analysis desired. Lab. phone: 206-753-2362.

MEMORANDUM
Department of Ecology
P. O. Box 829
OLYMPIA, WASHINGTON
98504

Information
For Action
Permit
Other

Check

TO: Ron Pine

DATE: February 15, 1972

FROM: Jim Knudson *JK*

SUBJECT: Arrangements for Port Angeles Survey
February 22 - 23, 1972

Contacts and arrangements for your survey are as follows:

1. Crown Zellerbach, Port Townsend

Suggest you talk to Tom Aspitarte of Crown Zellerbach Central Research as he has just completed a zinc survey of their outfall and may have some experiences that may prove useful. Joyce Kendall, Utilities Supervisor at the Port Angeles mill (457-4474), indicates a tide schedule for 23 February 1972 as follows:

2:37 a.m.	Sub-high tide	6+'
7:59	High tide	6+'
16:18	Low tide	-6'

(You should have the schedule I forwarded from Joyce at the time of our January survey.)

He will also arrange to have the composite sample started at 8 a.m. or any other time you begin the survey and also offered to take grab samples for instantaneous high values. A boat launching facility is available near Fibreboard's old mill according to Joyce.

2. ITT Rayonier, Port Angeles

Arrangements for a composite sample have been made with Mr. Frank Hawks, Supt. for Environmental Protection (457-3391) with pickup tentatively set for Tuesday afternoon 22 February 1972.

If I can help in any other way, please let me know.

JCK:dn