



REPORT FILED ~~SILVER BAY~~ file
HERRING COVE
ROWAN BAY

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October 31, 1994

Mr. Earl Hubbard
State of Alaska
Department of Environmental Conservation
Division of Environmental Quality
410 Willoughby Avenue, Suite 105
Juneau, AK 99801-1795

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DEPARTMENT OF
ENVIRONMENTAL CONSERVATION

Re: Proposed Water Quality Limited-Segment (303(d)) List for the State of Alaska
Comments on Silver Bay (Sitka, Alaska), Herring Cove (Sitka, Alaska), and Rowan Bay
(Kuiu Island, Alaska)

Dear Mr. Hubbard:

On behalf of Alaska Pulp Corporation (APC), ENSR Consulting and Engineering is submitting supplemental comments on the proposed inclusion of the above referenced water bodies on the 1994 impaired waterbody listing (303(d)) for the State of Alaska. Since submitting our original comments in September, we have had an opportunity to review additional information regarding water quality in these waterbodies and wish to comment on the new material. Our comments are presented below. Each waterbody has been addressed separately.

SILVER BAY

In September of 1994, APC retained Marine Taxonomic Services, Ltd. of Corvallis, Oregon, to conduct a survey of benthic organisms in the area near the APC outfall. Six survey locations were selected along the length of the log boom within the pulp boom area. Two additional locations were sampled outside the boom. Sediment samples were collected and examined to determine the type and number of benthic organisms present. Figure 1 shows the sampling locations for the survey. The results of the survey are presented in Table 1. Two of the organisms observed in the sediments, the *Capitella capitata* 'complex' and the *Nemertinea*, are commonly associated with reduced oxygen environments. However, many of the other organisms identified are normally associated with well-oxygenated, sandy sediments. The presence of *Dorvillea rudolphi* and *Microphthalmus* species is interpreted to mean that the benthic community in Silver Bay is recovering from the effects of historical low dissolved oxygen levels in the water and sediments. Some of the aerobic species present are omnivores and may be feeding on bacteria degrading the wood fiber mat, thus continuing the chain of biodegradative processes. Improvements in water quality will continue to facilitate growth and diversification of the benthic community and enhance the beneficial uses of Silver Bay.



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These supplemental water quality data reinforce our earlier conclusion that the data used to originally place the waterbody on the 303(d) impaired waterbody listing are no longer valid. The benthic organism survey data should be added to other new study data which are representative of existing conditions. Because Silver Bay (Sawmill Cove) appears to have recovered and now exhibits improved water quality, additional controls are not necessary including listing the waterbody on the 303(d) list.

HERRING COVE

ENSR has previously submitted comments regarding the existing water quality in Herring Cove. Since that time we have had an opportunity to review USDA Technical Report PNW-22, which is cited on the 303(d) nomination form for Herring Cove. At the time of the USDA (Forest Service) study in 1973, Herring Cove was an active log storage and sorting area. The report states that "High leachate concentration and low DO are probably permanent conditions in Herring Cove..." This report further states the visibility in Herring Cove at the time of the study was too limited to lay a transect line for the purpose of examining benthic organisms; that "...the bottom (of Herring Cove) is covered with logs that sank after unbanding of log bundles."; and, "It is also possible that some sulfide waste liquor from the pulp mill enters Herring Cove."

The observations and conclusions made in this report are not consistent with recently observed conditions in Herring Cove. Alaska Pulp Corporation divers recently laid two transect lines across Herring Cove and were able to make clear observations of subsurface conditions. These observations were described in more detail in ENSR's first submittal to ADEC; however, it should be restated here that only a few sunken logs were seen by the divers and very little organic deposition (bark) was noted on the bottom of the cove. In addition, the statement that the high leachate concentration in the Cove is probably a permanent condition is questionable. Since log transfer operations at the cove have ceased, the water color has returned to a blue-green shade indicating that residual leachate has been flushed from the cove. The small amount of organic debris on the bottom of Herring Cove would not be expected to cause significant increases in BOD within the cove or corresponding decreases in dissolved oxygen. If sulfite waste was previously entering Herring Cove as a result of pulp mill operations, cessation of effluent discharge from the mill has eliminated the potential source.

Our review of the data in the USDA report cited on the 303(d) nomination form revealed that the data are outdated and not applicable to current conditions in Herring Cove. The cove should not be placed on the impaired waterbody listing based upon information in this

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report. Recent observations in the cove provide the most accurate assessment of water quality.

ROWAN BAY

Wood debris has been deposited in Rowan Bay near areas used for log transfer operations. ADEC files indicate that the debris is impacting marine life (shellfish) in the bay. This conclusion is based upon research conducted in the early 1980s by the National Marine Fisheries Laboratory in Auke Bay, Alaska. ENSR recently obtained and reviewed copies of research material cited on numerous 303(d) listing nomination forms for Rowan Bay. The material was contained in several papers produced by National Marine Fisheries Service in 1988. Data for the papers were collected in the early 1980s at Rowan Bay and several other locations in southeast Alaska. Copies of the papers are contained in Appendix A.

While the research material reviewed indicates that there is some evidence that shellfish may be adversely impacted by wood fiber material deposited over bottom sediments at log transfer facilities, the scientific papers reviewed all concluded that the work done in 1982 was not conclusive and additional evidence would be necessary to definitively establish a link between organic deposition at log transfer facilities and disease and reproductive problems in shellfish. In one paper titled Reproductive Conditions of Dungeness Crabs, *Cancer magister*, at or near Log Transfer Facilities in Southeast Alaska, the authors state "We present here for the first time evidence that crabs in contact with organic deposits can show reproductive changes indicative of reduced reproductive success. Our evidence is correlative; further studies are needed to conclusively demonstrate that the reproductive abnormalities, such as those exhibited by the Rowan Bay crabs, consistently result from long-term exposure to bark deposits." A second publication titled A Preliminary Study of Idiopathic Lesions in the Dungeness Crab, *Cancer magister*, from Rowan Bay, Alaska states that "It is important to point out that the data in this study are limited in time and scope, and consist of discontinuous collections. However, this report indicates that a more critical evaluation of lesions and how they are reported may be necessary when investigating environmental disturbances of any type and their possible effects on native organisms."

It is clear that while this research raises important questions regarding the environmental conditions at log transfer facilities, the data available are insufficient to definitively establish that water quality alterations associated with these facilities can be directly correlated with disease and reproductive problems in marine organisms inhabiting the facilities. In addition, the studies do address sediment entering the waterbody in stormwater runoff from the land-based facilities at Rowan Bay. Since operations at the Rowan Bay Logging Camp have ceased and stormwater runoff is now directed into detention ponds for treatment, the data



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in the 1980 studies are outdated and incomplete. These data should not be used to nominate Rowan Bay for the 303(d) impaired waterbody listing. More current and complete data are needed to justify a decision that the waterbody is impaired.

It is our opinion after reviewing the supplemental data on Silver Bay, Herring Cove, and Rowan Bay that much of the data used in the original listing nominations were either inconclusive or have become invalid due to new studies and observations. We believe that new data should be obtained and reviewed by ADEC prior to placing these Waterbodies on the 303(d) impaired waterbody listing.

If you have any questions regarding the new data or ENSR's interpretation of existing data, please do not hesitate to contact Mr. Rick Della.

Sincerely,

Carol A. Hutley
Project Engineer

Rick Della
Program Manager

CAH/jb (CH1/L-EARL)

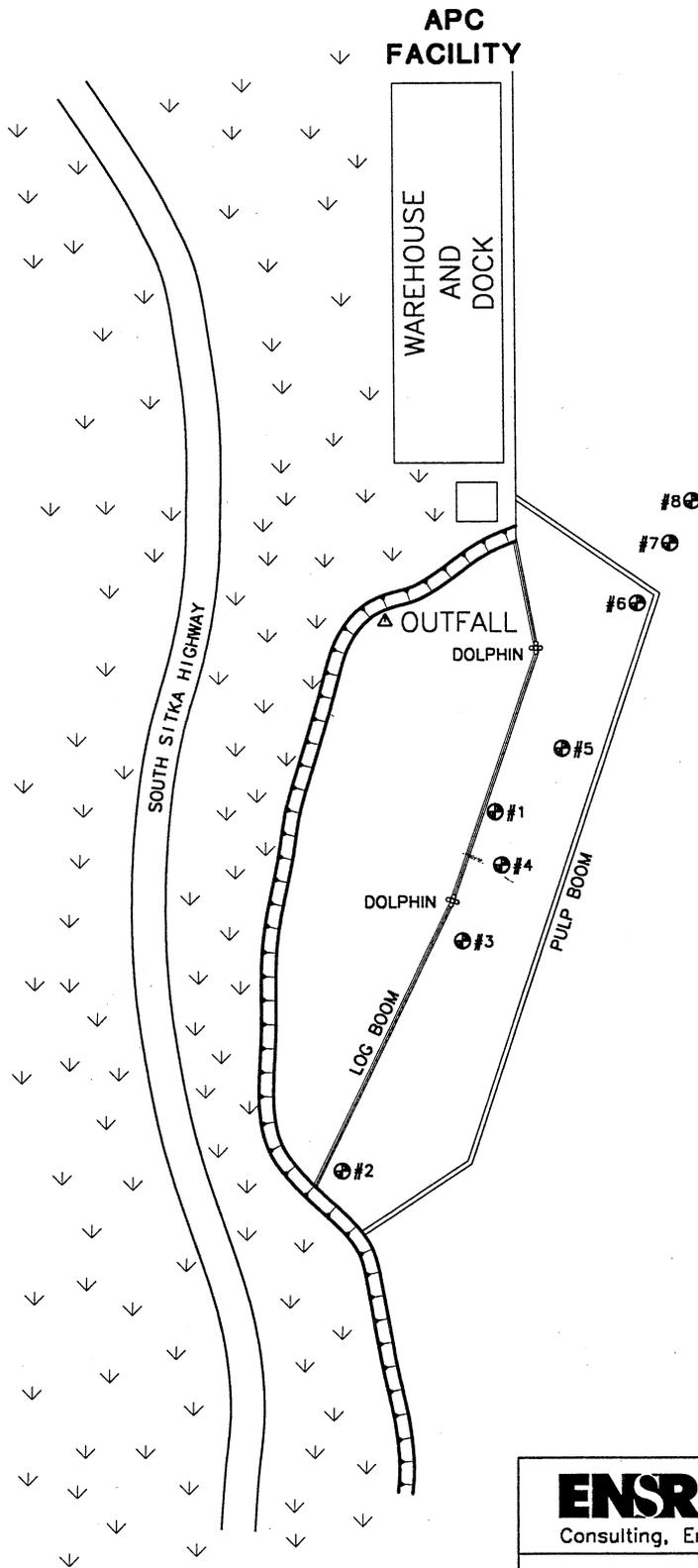
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Enclosure

TABLE 1

Summary of Benthic Organism Study

Station Number	Organisms Identified	Number of Organisms	Comments
1	Capiteela capitata 'complex' Nemertinea	6 1	Tubes with eggs
2	Nemertinea Capitella capitata 'complex' Eteone sp. Indet. Microphthalmus sp. Indet.	18 4 1 1	Tubes with eggs
3	Capitella capitata 'complex' Nemertinea	37 1	
4	Capitella capitata 'complex'	2	
5	Capitella capitata 'complex' Dorvillea rudolphi	18 1	
6	Capitella capitata 'complex'	23	
7	Capitella capitata 'complex' Nemertinea Dorvillea rudolphi Nehalia pugettensis	151 2 37 1	
8	Dorvillea rudolphi Capitella capitata 'complex' Microphthalmus sp. Indet. Nematoda	9 6 1 2	



⊕ = SAMPLE LOCATIONS

ENSR

Consulting, Engineering and Remediation

FIGURE 1
BENTHIC SURVEY SAMPLE LOCATIONS

Alaska Pulp company

Sitka, Alaska

DRAWN: K. Mongar

DATE: October 31, 1994

PROJECT NO:

FILE NO: 0089015A

CHECKED: C. Hutley

0089-015