



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

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M E M O R A N D U M
June 4, 1982

To: Jim Krull
Through: Dick Cunningham
From: Art Johnson *aj*
Subject: Phenolics in Sitcum Waterway, Tacoma

In an earlier memorandum I called your attention to a concentration of 13 mg/L total phenolics (as phenol) measured in a July 28, 1981 grab sample of water from the storm drain in the east corner of Sitcum Waterway. Priority pollutant analysis of a separate sample (4-hour composite) collected on the same day has now been completed. No phenolics were detected. Detection limits ranged from 10 to 80 µg/L depending on the compound in question. However, two of eight Sitcum sediment samples collected between July 31 and August 3, 1981 by WDOE and EPA contained toxic phenolic compounds in the concentrations shown below (see attached figure for sample locations).

<u>Sample Description</u>	<u>Intertidal Sedi- ment at Storm Drain in East Cor- ner of Sitcum WW</u>	<u>Main Channel Sediment, Sitcum WW</u>
Collection Date	July 31, 1981	August 3, 1981
EPA Sample Number	J0135	J0317
p-chloro-m-cresol (µg/Kg, wet)	N.D.	400
2-chlorophenol (µg/Kg, wet)	N.D.	330
4-nitrophenol (µg/Kg, wet)	N.D.	2300
pentachlorophenol (µg/Kg, wet)	<500	500m
phenol (µg/Kg, wet)	270	380

N.D. = Not detected.

m = Value below level of quantification, but above level of detection.

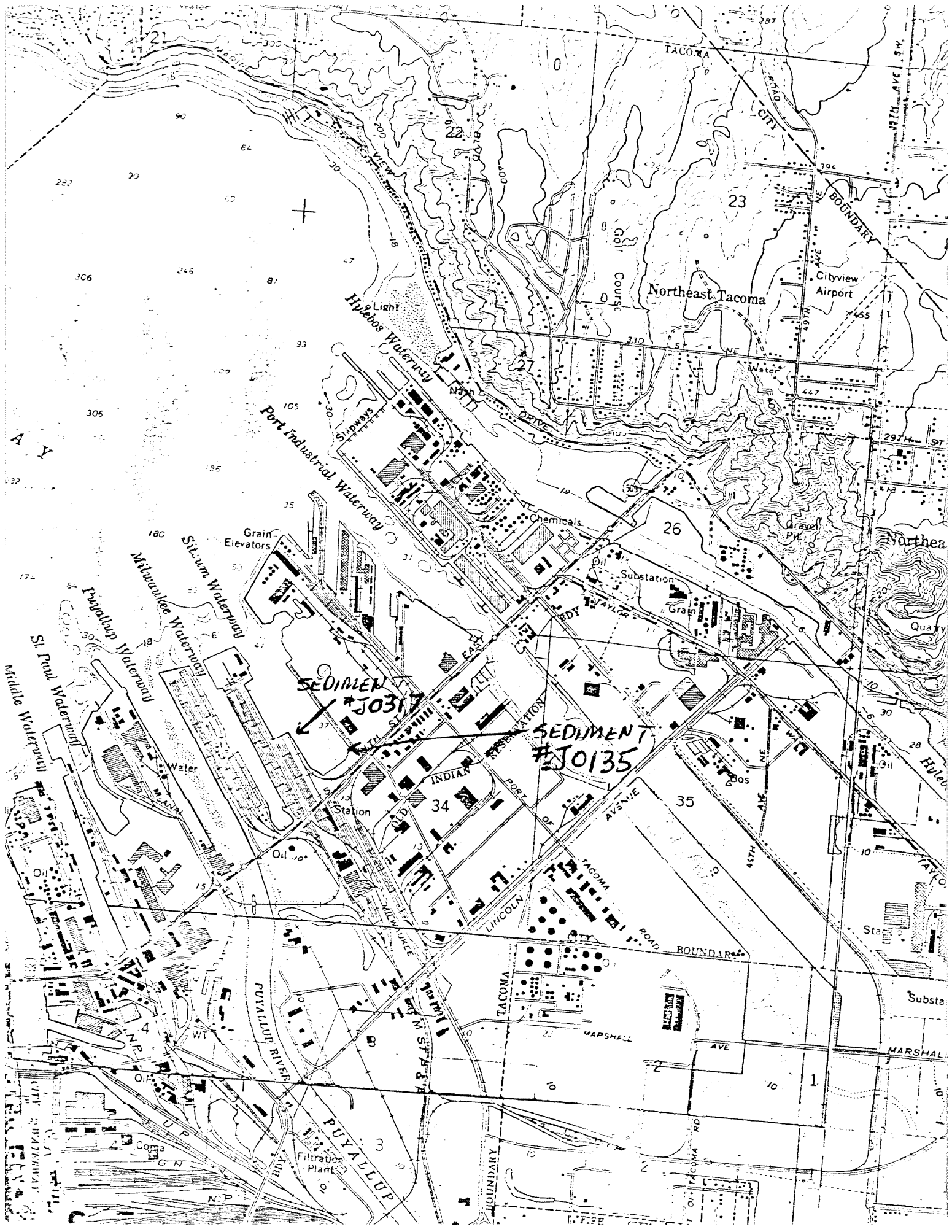
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Prior to receipt of this data, the highest concentrations of phenolics we had seen in our marine samples from Commencement Bay were 440 - 1200 $\mu\text{g}/\text{Kg}$ (wet) of phenol in the sediments adjacent to the St. Regis facility (report in preparation). This may come from microbial degradation of lignin. The Sitcum main-channel sediment sample reported above is the first of our marine samples in which p-chloro-m-cresol, 2-chlorophenol, and 4-nitrophenol have been detected. 4-nitrophenol was present in large amounts. One other phenolic compound, 2,6-bis(1,1-dimethylethyl)-4-methylmethyl carbamate phenol, was tentatively identified in this sample. I could find no information on this chemical.

AJ:cp

cc: Section Files

Attachment



SEDIMENT #J0131

SEDIMENT #J0135