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M E M O R A N D U M
August 20, 1984

To: Bill Yake
From: Joe Joy *JJ*
Subject: Eagle Harbor Facilities Tours and Historical Review - Part III:
Diesel (Standard) Oil Sales

INTRODUCTION

A series of environmental investigations by the Washington State Department of Ecology (WDOE) and the U.S. Environmental Protection Agency (EPA) has been undertaken to discern the extent and source(s) of polynuclear aromatic hydrocarbon (PNA) and phenolics contamination of Eagle Harbor sediments (Joy, 1984). As part of this effort, three commercial facilities were toured by WDOE personnel.

Three commercial facilities were selected by WDOE and EPA staff during an April 2 meeting (Cunningham, 1984). These facilities were thought to be potential sources of PNAs and/or phenolics. The three facilities chosen were (Figure 1):

- The Wyckoff Company - a pole and piling preserving plant
- The Washington State Ferries - a ferry maintenance and repair yard
- Diesel Oil Sales - a diesel storage facility

This memorandum is the third and final in a series discussing the findings from the tour and historical review for each facility. The Diesel (Standard) Oil Sales storage facility is covered in this memorandum. Findings for Wyckoff Company and the Washington State Ferries Maintenance Facility were reported in memoranda dated August 9 and August 15, respectively.

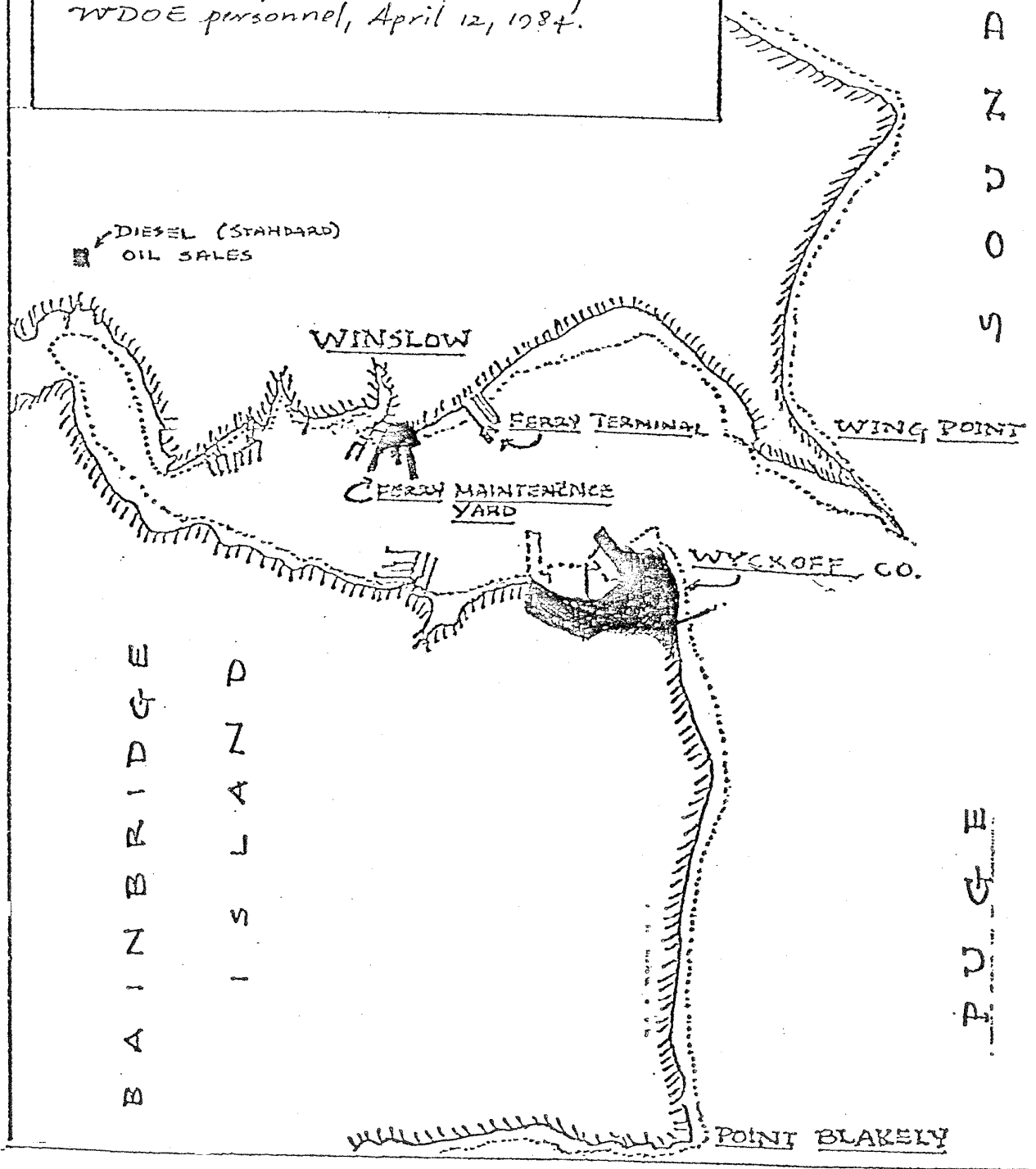
On April 12, Art Johnson and I accompanied Dave Wright and Craig Baker of the Northwest Regional Office (NWRO) on tours through these three facilities. The purpose of the visits was to review existing and historical operations and waste-disposal practices with facility managers, and to identify any practices which might be contributing to the PNA and phenolics problems in Eagle Harbor.

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EAGLE HARBOR/WINSLOW & VICINITY



FIGURE 1. The location of three commercial facilities toured by WDOE personnel, April 12, 1984.



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In addition to the on-site tours, I have reviewed NWRO files and other materials pertaining to the facility sites and Eagle Harbor in general. The purpose of this review was to identify any past events that may have contributed to the current contamination problem in the harbor.

FINDINGS

The Diesel Oil Sales storage and transfer site was visited by WDOE personnel listed above. Observations of this relatively small site were made from outside a high enclosing fence. Messrs. Wright and Baker reviewed the history of this facility with Art Johnson and me.

Layout and Operations

The Diesel Oil Sales storage facility occupies approximately 0.3 acre west of the town of Winslow (Figure 2). On the western border of the site lies a ravine that leads 500 feet south to Eagle Harbor.

The facility is used as a fuel (heating) oil storage and transfer station. Included are:

- four storage tanks
- tanker truck transfer dock
- ditch and catch basin

A high fence with a locking gate encloses the facility. The tanks and loading areas stand upon natural substrate--no containment walls are present. The ditch runs from the transfer dock/tank area to the catch basin.

Historical Review

The fuel storage site was the scene of an oil spill in February 1975. The incident brought about the construction of the ditch and catch basin. The basin is designed to contain an accidental spill.

Aldis (1984) reported the Diesel (Standard) Oil Sales Company transferred oil from barges to storage tanks at the foot of Madison Street from 1940 to 1977. The Winslow Wharf Marina now occupies that dock site (Figure 2). Recent EPA (1984) aerial photographs suggest the presence of other storage tanks at the Diesel Oil Sales office on Madison Street; these were not inspected.

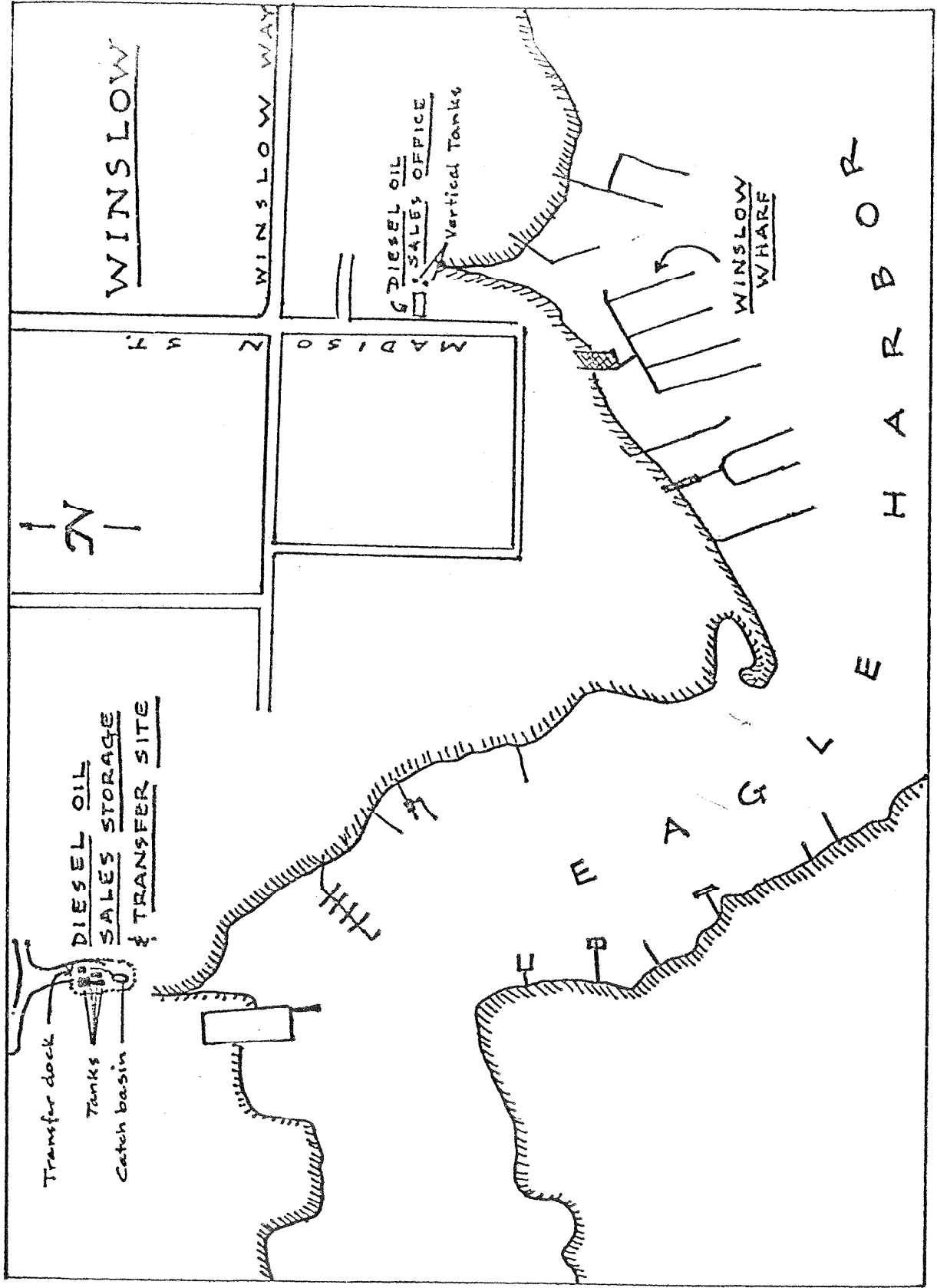


FIGURE 2. The location of the Diesel Oil Sales Storage site and office site in relation to Eagle Harbor and vicinity.

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Discussion and Conclusions

Other than the single oil spill incident in 1975, little is known of any past problems with the Diesel Oil Sales facility. The current facility we visited was probably constructed in the late 1960s or early 1970s.

Also, WDOE has no record of spills emanating from the older site at the foot of Madison Street. The old barge unloading dock has been torn down and a marina (Winslow Wharf) has been built at the site. However, the City of Winslow sewage treatment plant outfall was located in the same vicinity from 1950 - 1973 (Aldis, 1984).

Results from subtidal sediment samples collected by EPA in April 1984 may be able to show if PNAs are present in the area. However, if PNAs are present, it will be difficult to discern their major source(s). Heating oil, diesel, and gasoline have similar PNA concentrations (Table 1). Also, used motor oil, often found in municipal effluents, has several PNAs. However, these sources of PNAs are minor compared to creosote oil (Table 1).

Further investigations should use the sediment sample results for direction and scope.

JJ:cp

cc: Dave Wright, NWRO
John Littler, WDOE
Dave Tetta, USEPA

Table 1. Polynuclear aromatic hydrocarbon concentrations (ppm) in various petroleum products and creosote.¹

	Heating Oil	Diesel Oil	Gasoline	High-octane Gasoline	Used Motor Oil	Creosote
Anthracene	1-6.7	2.9	--	--	--	1,500
Phenanthrene	ND	ND	--	--	--	10,700
Benzo(a)anthracene	0.02-0.06	0.13	<0.5-1.0	11.5	2.2	--
Pyrene	<0.45-3.0	0.37	0.15-5.1	10.6	11.6	2,200
Fluoranthene	<0.47-3.6	0.57	0.06-3.2	10.8	--	3,400
Chrysene	0.37-0.81	0.45	<0.54-0.57	4.9	--	3,100
Benzo(a)pyrene	0.01-0.05	0.07	0.03-0.55	6.2	2.4	200
Benzo(e)pyrene	<0.01-0.02	0.18	0.03-0.85	2	2.7	--
Benzo(g,h,i) ^{perylene} pyrene	0.01-0.07	0.03	0.04-1.4	6.4	1.8	--

¹Petroleum data summarized from Table 2.5, page 50 of Health Impacts of Polynuclear Aromatic Hydrocarbons, 1981 A.W. Pucknat, ed., Noyes Data Corp. Park Ridge, NJ. Creosote data summarized from Characteristics of Wood-Preserving Creosote by Physical and Chemical Methods of Analysis, 1974. USDA Forest Service Research Paper FPL 195, Madison, WI, pg. 31; and Table 2.17, page 69 of Pucknat, 1981.

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