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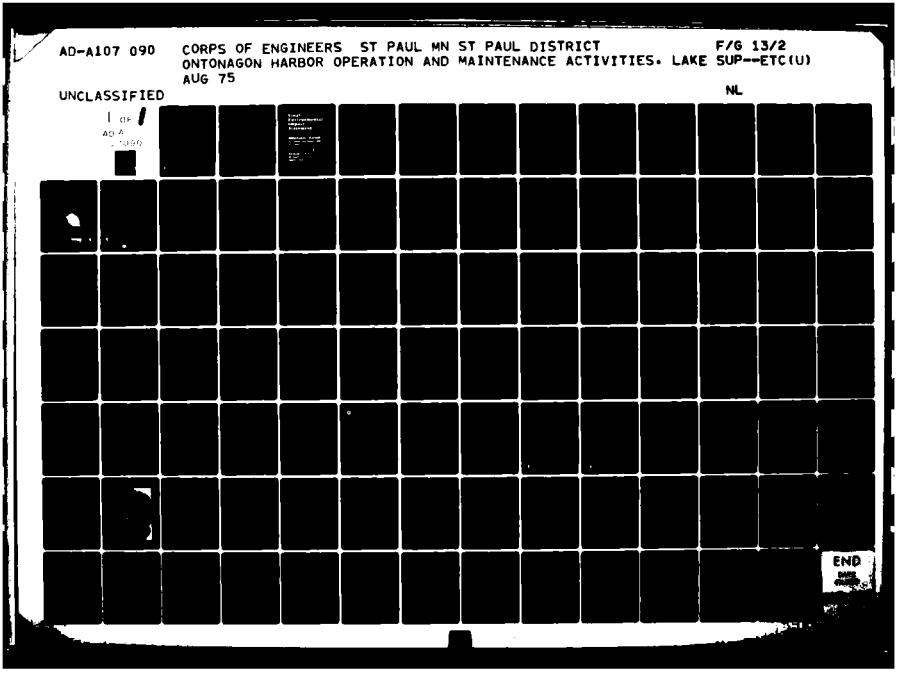

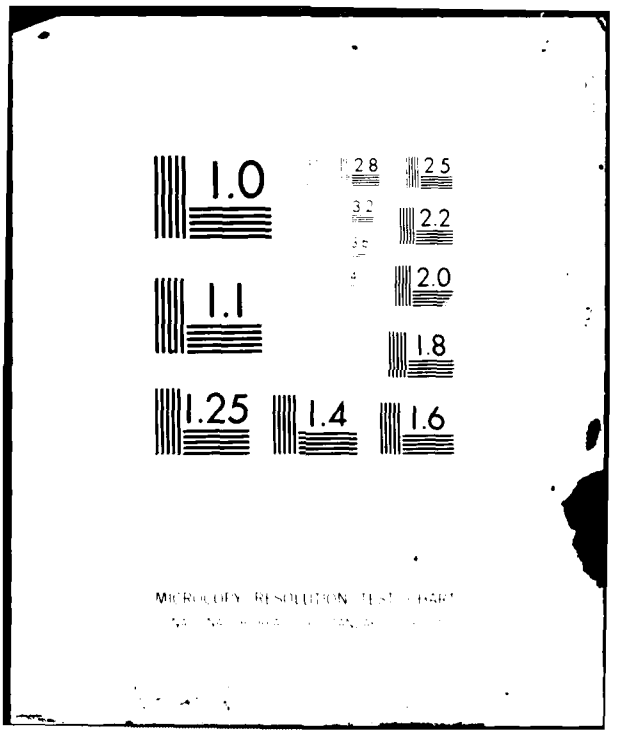
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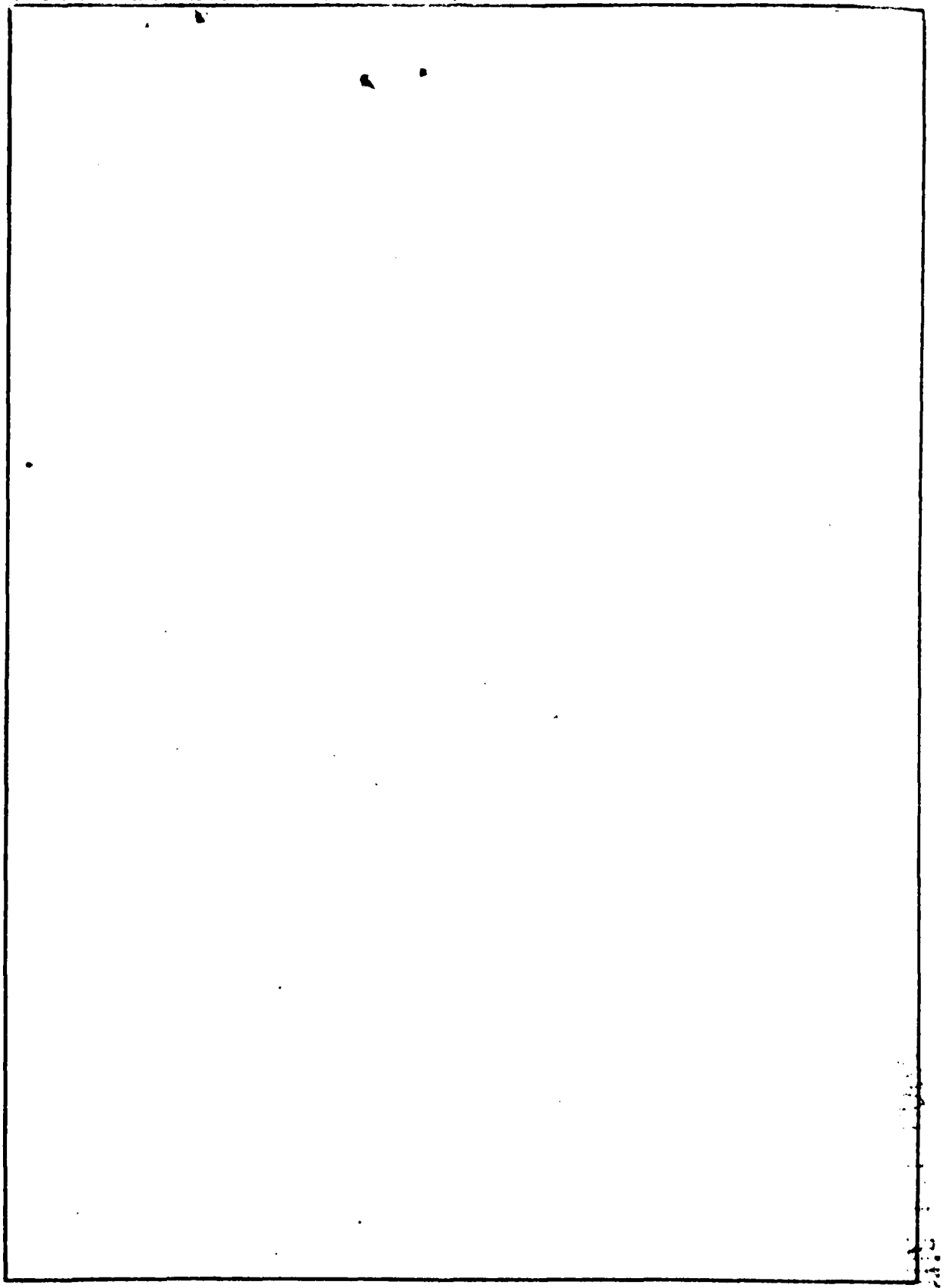

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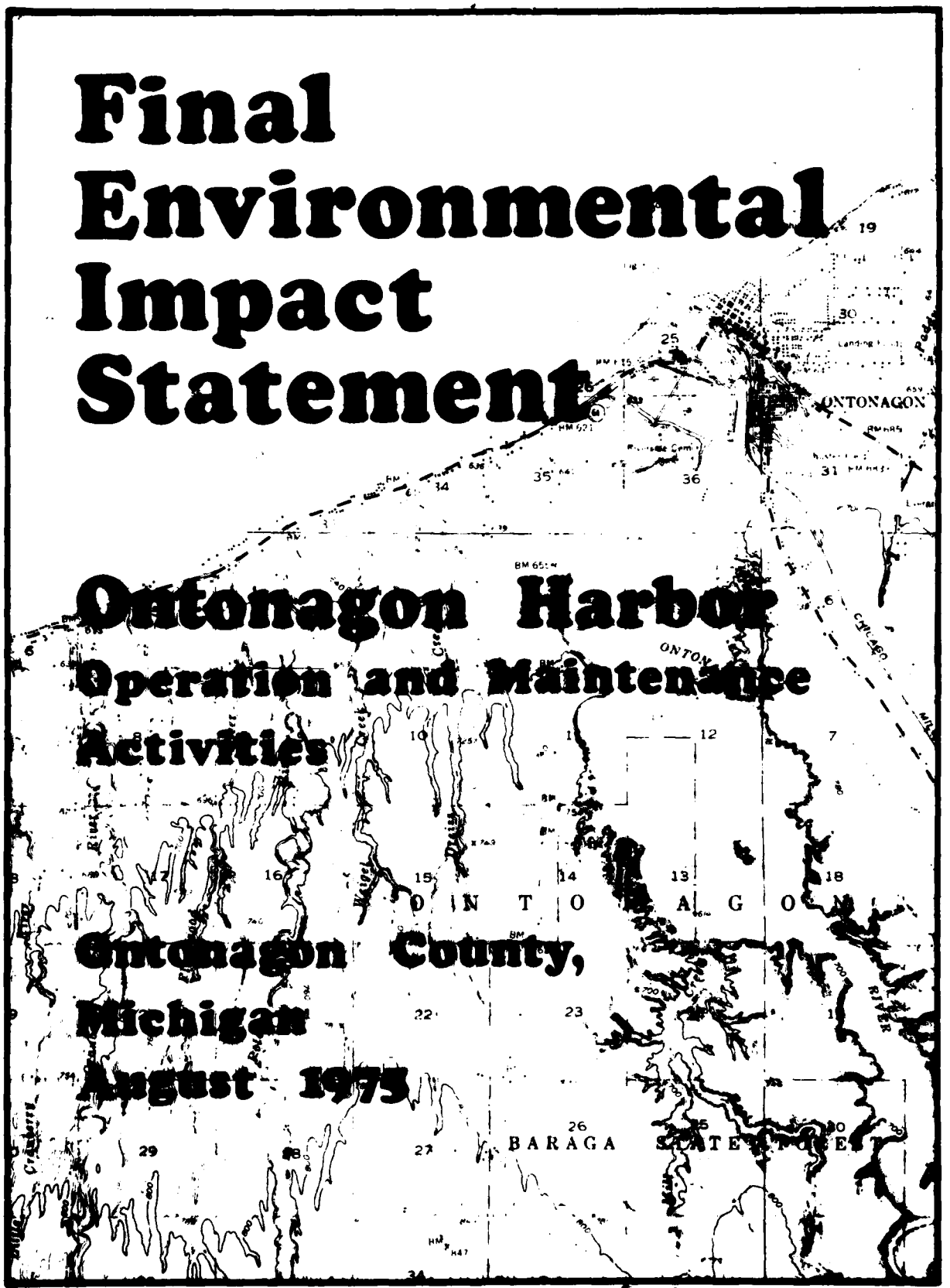


Ontonagon Harbor Operation and Maintenance Activities

Ontonagon County, Michigan

August 1975

FINAL
ENVIRONMENTAL IMPACT STATEMENT

OPERATION AND MAINTENANCE ACTIVITIES
ONTONAGON HARBOR, MICHIGAN
LAKE SUPERIOR

DEPARTMENT OF THE ARMY
St. Paul District, Corps of Engineers
St. Paul, Minnesota 55101

August 1975

SUMMARY

FINAL
ENVIRONMENTAL IMPACT STATEMENT
OPERATION AND MAINTENANCE ACTIVITIES
ONTONAGON HARBOR, MICHIGAN
LAKE SUPERIOR

Responsible Office: St. Paul District, Corps of Engineers, 1135 U.S. Post Office and Custom House, St. Paul, Minnesota 55101 Telephone Number 612-725-7505

1. Name of Action: (X) Administrative ( ) Legislative

2. Description of Action: The action involves operation and maintenance of Ontonagon Harbor, Michigan. Principal activities include breakwater repair, dredging, and dredge material disposal.

3. a. Beneficial Environmental Impacts: The operation and maintenance of Ontonagon Harbor provides for safe use of the harbor by recreational craft. The use of polluted dredge material in the construction of a waste treatment facility and as fill on biologically sterile lands adjacent to the lagoons, provides advantageous use for the dredge material. The use of non-polluted dredge material as beach nourishment retards the erosion of the shoreline in the area.

b. Adverse Environmental Effects: Adverse effects of the Corps of Engineers operation and maintenance activities in Ontonagon Harbor include increased turbidity and associated biological effects due to dredging, increased noise and congestion in the harbor, and land use alterations due to on-land placement of dredge material.

4. Alternatives:

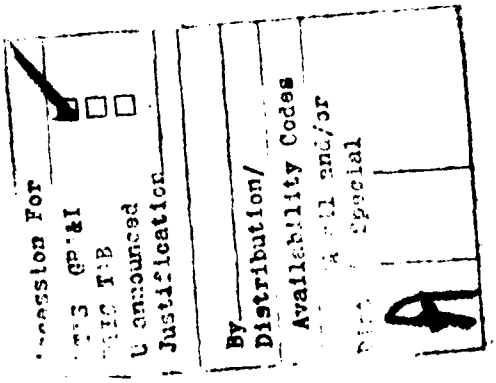
a. No project.

b. Continued operation and maintenance activities.

5. Comments Requested: For a list of those who were sent a copy of the draft environmental statement and from whom comments were received, see section 9.

6. Draft Statement noted in the Federal Register: 23 December 1974.

Final Statement to CEQ:



FINAL
ENVIRONMENTAL IMPACT STATEMENT

OPERATION AND MAINTENANCE ACTIVITIES
ONTONAGON HARBOR, MICHIGAN
LAKE SUPERIOR

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ENVIRONMENTAL IMPACT STATEMENT
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LAKE SUPERIOR

INTRODUCTION

The purpose of this statement is to discuss the environmental effects associated with the St. Paul District Corps of Engineers harbor maintenance activities in Ontonagon Harbor. This impact statement is based in part on an environmental report prepared by National Biocentric, Inc., under contract with the Corps of Engineers. National Biocentric's report is on file in the St. Paul District Office.

1.000 PROJECT DESCRIPTION

1.010 Introduction. - The Corps of Engineers proposes the continued operation and maintenance of Ontonagon Harbor, Michigan. Principal activities include breakwater repair, dredging, and dredge material disposal. Two methods of disposal will continue to be utilized. Dredge material from the portion of the harbor classified as polluted will be used in the construction of a waste treatment plant and as fill. Sediments from the portion of the harbor classified as unpolluted will be used for beach nourishment, with that material dredged between River Mile 0 and 1/8 being used as beach nourishment or disposed of on-land.

1.100 Project Location. - Ontonagon Harbor is located in Ontonagon County, Michigan, on the south shore of Lake Superior and the Michigan Upper Peninsula at 46°50' North latitude and 89°20' West longitude (exhibit 1). It is 136 navigation miles east of Duluth-Superior, and 54 miles southwest of Houghton-Hancock, Michigan and the Keweenaw Waterway.

1.200 Project Purposes. - In the past, the basic function of the Corps of Engineers structures in Ontonagon Harbor was to provide a navigational safeguard for commercial ships. Recreational craft also benefitted from the project. Authorized project depths are now maintained at 17 feet in the lake approach channel, and 12 feet in the entrance channel. Although there is presently no commercial traffic in the harbor, these depths are maintained to provide easy access for recreational crafts.

1.300 Project Authorization. - The Corps of Engineers project at Ontonagon Harbor was initiated in 1867 by the River and Harbor Act of 2 March 1867 and updated by the River and Harbor Act of 25 June 1910 (H. Doc. 602, 61st Congress, 2d Session) and of 26 August 1937 (Senate Committee print 74th Congress, 2d Session). In compliance with these authorizations, the Corps of Engineers constructed parallel breakwaters at Ontonagon Harbor and dredged an entrance channel and harbor basin. Since that time, extensive breakwater repairs and maintenance dredging activities have been conducted on the harbor. The project was further modified by the 1962 River and Harbor Act to provide for further dredging and new work on the breakwaters. No construction was performed on the modification and the project was reclassified as "inactive" in 1966.

1.400 Existing Project. - The project consists of two parallel breakwaters 250 feet apart extending from the mouth of the Ontonagon River into Lake Superior in a generally northwest-southeast direction (exhibits 1 and 2). The two piers define and in some instances protect the approach channel, entrance channel and inner harbor basin that comprise the main portion of Ontonagon Harbor. The approach is 850 feet long, 17 feet deep, and projects into Lake Superior from the outer ends of the harbor piers. It has a flared lake approach end 400 feet wide which tapers to a 100-foot width as it reaches the outer ends of the pier. Here, the approach channel leads into the entrance channel. This channel is 2,450 feet long, 100 feet wide and projects from Lake Superior into the Ontonagon River mouth. The outer 250 feet of this entrance channel has a project depth of 17 feet and the inner 2,200 feet of the channel has a project depth of 12 feet. The entire channel is situated between and protected by the harbor piers. In 1974, dredging limits were reduced from 150 feet wide to 100 feet wide and 15 feet deep to 12 feet deep in the inner harbor due to the absence of commercial traffic.

1.401 Ontonagon's inner harbor basin is located at the inner ends of the entrance channel and piers. It is 900 feet long and has a maximum width of 285 feet, a minimum of 100 feet, and a project depth of 12 feet.

1.402 Presently, the primary structures in Ontonagon Harbor consist of two parallel breakwater piers 250 feet apart, extending from the mouth of the Ontonagon River into Lake Superior (exhibit 2). The piers are oriented in a landward southeast to lakeward northwest manner and bear 325°15'. The east pier, 2,315 feet long, projects about 1,500 feet beyond the lake shoreline; and the west pier, 2,563 feet long, projects approximately 1,300 feet beyond the lake shoreline and about 190 feet beyond the east pier. Both piers have rockfilled crib substructures, topped by large-stone superstructures on the footage extending into Lake Superior, and by concrete and sand superstructures on the footage extending into the river mouth (concrete facing channel side). The west pierhead, 96 feet in length, has been inclosed by steel sheet piling and topped with 5-ton minimum cover stone. Both piers have approximate 20-foot widths and project 4 to 6 feet above the mean lake level. Both piers have navigational lights on their outer ends.

1.403 The Corps of Engineers has conducted extensive dredging activities in the harbor during its construction and maintenance phases. New dredging depths have been maintained as explained in paragraph 1.400. Exhibit 3 summarizes the Corps activity and the costs associated with the activity at Ontonagon Harbor from 1910 until 1973.

1.500 Future Structures. - The original placement and construction of the breakwaters was for stabilizing the harbor entry channel providing navigational safeguards for commercial ships moving into and out of the harbor. The existing structures still provide adequately for harbor navigation and there are no plans for future breakwater construction.

1.600 Operation and Maintenance. - The purpose of the Corps of Engineers structures in Ontonagon Harbor is to maintain the harbor entry and to provide navigational safeguards. The principal operation and maintenance activities involved are breakwater repair, dredging, and dredge material disposal. The requirement for maintaining the harbor and related structures dates back to 1867.

1.610 Breakwater Maintenance. - The Derrick Barge COLEMAN attended by the Tug LAKE SUPERIOR and the Tender BAYFIELD are the usual complement of equipment used to repair the breakwaters and the revetments. The COLEMAN can be used to transport repair equipment and supplies, and can be equipped with a mechanical rock grapple for hoisting, moving and placing 5- to 20-ton stone at the repair site. Maintenance consists primarily of replacing rock torn from the breakwaters during Lake Superior storms.

1.620 Dredging. - The Corps of Engineers maintenance dredging in Ontonagon Harbor is normally performed by the Dipper Dredge GAILLARD in conjunction with tugs and bottom dump scows. To date, maintenance dredging has been conducted for about one month each year. Currently, the Corps removes an average annual amount of 40-50,000 cubic yards of bottom sediments, of which approximately 50 percent is dredged from the area classified polluted by the Environmental Protection Agency (EPA). This amount is variable depending upon the sediment load of the Ontonagon River. Dredging is done to maintain the current project depths of 17 feet in the approach channel and 12 feet between the piers and in the basin.

1.630 Dredge Material Disposal.- Between 1910 and 1970, dredge material from the harbor was disposed of at a lake site 1 mile north-northeast of the harbor in an area with a clean sweep depth of 50 feet. In 1970, the Environmental Protection Agency classified the inner harbor polluted and from that time until the present, material dredged from the inner harbor has been deposited on land adjacent to the west pier. The polluted material has been utilized in a waste treatment facility and other construction activities by Hoerner Waldorf Corporation in and near their pulp mill adjacent to the harbor. A more detailed discussion of uses of dredge material is contained in paragraph 1.651.

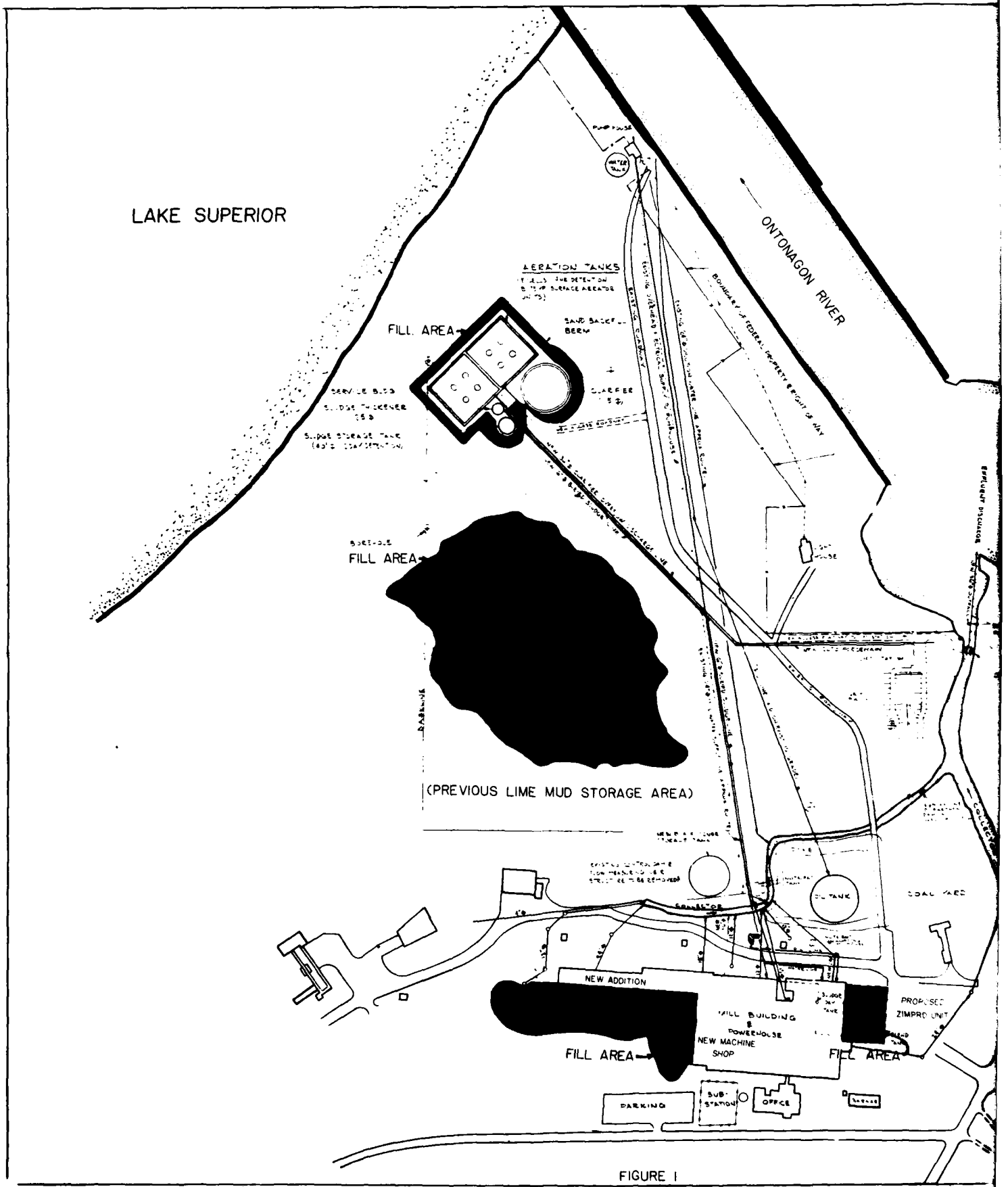
1.631 Since 1970, the unpolluted dredge material, from the lakeward portion of the entrance channel and approach channel, has been deposited just offshore from the village park, approximately 1 mile east of the harbor entrance. Wave action tends to carry the material landward, thereby replenishing the eroding beach at this point. Material suitable for open-lake disposal will continue to be disposed of in this manner. If wave action is too rough, precluding deposition of dredge material along the beach, the material would then be deposited in the open lake at the site mentioned above.

1.640 Dredge Disposal Program in Ontonagon Harbor. - Traditional dredge material methods have involved both open water and on-land (unconfined) disposal of the material. However, with the realization that 50 percent of the sediment dredged annually from Ontonagon Harbor was of a polluted nature, alternative measures of disposal were taken under consideration.

1.641 The harbor was classified polluted south of a line from mile point 1/8 to the Highway 64 bridge by the Environmental Protection Agency in 1973. Therefore, dredge material from that area normally will not be disposed of in Lake Superior. The harbor is not considered polluted lakeward from project mile 1/8. Material dredged from this area will continue to be used mainly for beach nourishment.

1.650 Ontonagon Harbor Dredge Material Disposal Area. - Polluted dredge material is being placed along the west pier in accordance with an agreement between the Federal Government and Hoerner Waldorf Corporation in which the Federal lands immediately to the west of the harbor are leased to Hoerner Waldorf for use in the operation of their waste treatment facility, an activated sludge treatment facility utilizing lagoons (exhibit 1).

1.651 The material dredged from the portion of the harbor classified as polluted by the Environmental Protection Agency is deposited in the area immediately adjacent to the pier and removed by Hoerner Waldorf for construction and fill purposes. The dredge material has been used by Hoerner Waldorf for construction of dikes or retaining structures associated with their waste treatment facility, as back fill in and around the foundation for their paper machine, under the concrete slabbing in the warehouse area, at the end of the paper machine, and as fill material for the relocation and elevation of the rail spurs and other building areas. In addition to the main construction area, there are a number of low areas where old lime mud was dumped from a prior mill operation; the dredge material has also been placed in these areas (figure 1). Future dredge material not used for construction purposes will continue to be placed in this lime mud area. Hoerner Waldorf has indicated that the uses of dredge material in the construction area have been coordinated with the Environmental Protection Agency and the Michigan Department of Natural Resources. These coordination efforts will continue in future disposal operations.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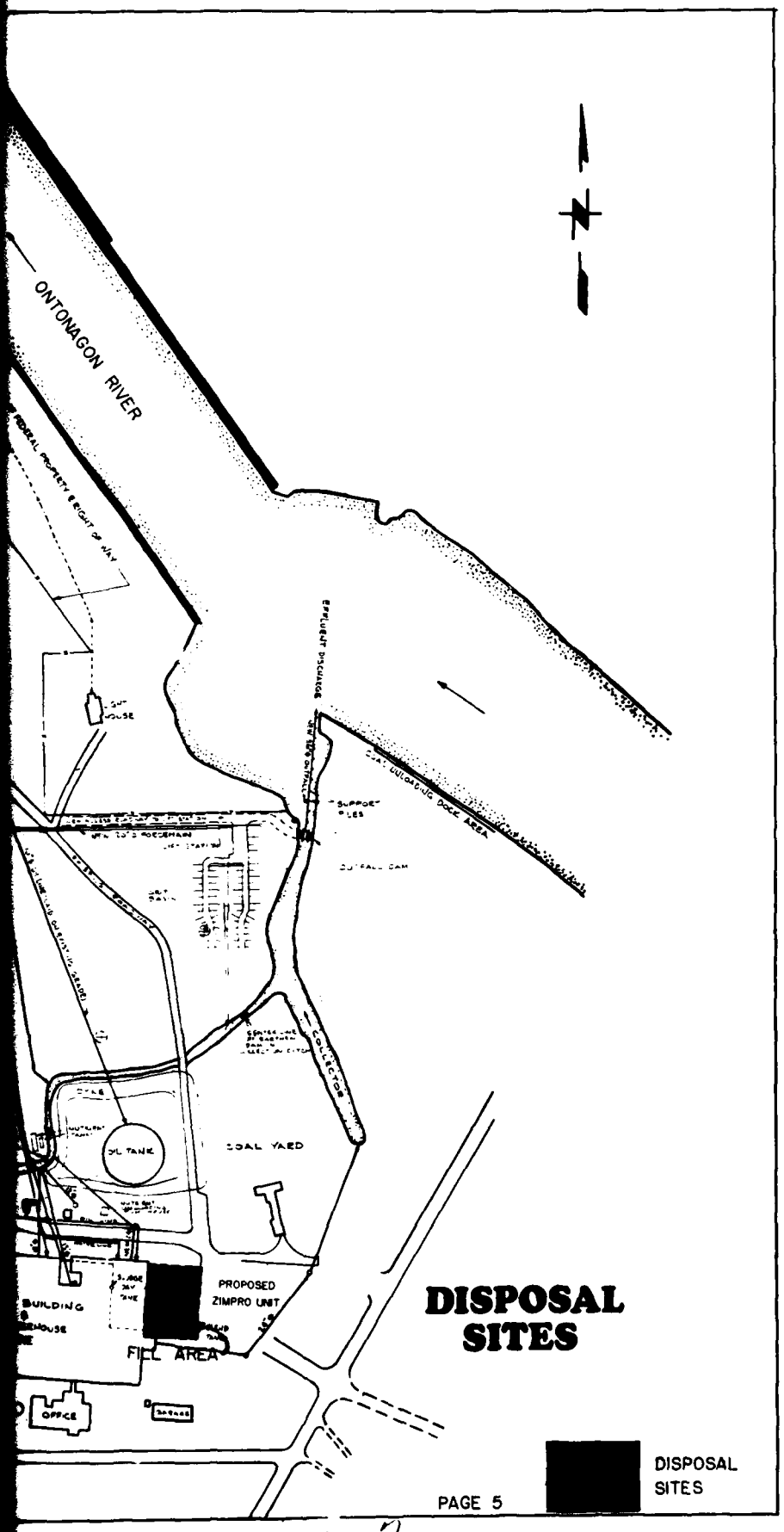
ONTONAGON RIVER
AERATION TANKS
FILL AREA
SAND BACKFILL BERM
CLARIFIER
SERVICE BLDG
SLUDGE THICKENER
SLUDGE STORAGE TANK
BOREHOLE
FILL AREA
(PREVIOUS LIME MUD STORAGE AREA)
EFFLUENT DISCHARGE
COAL YARD
NEW ADDITION
MILL BUILDING & POWERHOUSE
NEW MACHINE SHOP
PROPOSED ZIMPRO UNIT
FILL AREA
FILL AREA
PARKING
SUB-STATION
OFFICE

FIGURE 1


ONTONAGON RIVER
FEDERAL PROPERTY & RIGHT OF WAY
EFFLUENT DISCHARGE
COAL UNLOADING DOCK AREA
COAL YARD
OIL TANK
PROPOSED
ZIMPRO UNIT
BUILDING
FILL AREA
OFFICE
DISPOSAL
SITES

1.652 The village of Ontonagon will be connected with Hoerner Waldorf's waste treatment facility, thereby gaining secondary treatment for their waste material. The new facility will meet Michigan water quality standards and is scheduled for completion in late fall 1975. Consideration is being given on the part of EPA to reevaluating the state of pollution in the Ontonagon River and Harbor as a result of the installation of this effluent treatment facility. There may be a sufficient improvement in both water quality and harbor bottom characteristics so that additional areas of the harbor might be classified as unpolluted, thereby either reducing or eliminating the amount of dredge material which would have to be stored on the on-land site.

2.000 ENVIRONMENTAL SETTING

2.100 Physical Environment.

2.110 Climate. - Ontonagon Harbor is subject to the humid continental climate of the Lake Superior Basin which is characterized by cold, dry winters and warm, humid summers with the lake exerting strong micro-climatic influences on the immediate shoreline, resulting in cooler summer temperatures and warmer winter temperatures. The mean annual temperature is approximately 40° F. with mean winter and summer temperatures of 15° F. and 65° F., respectively.

2.111 Mean annual precipitation is about 32 inches with little precipitation occurring at any one time. The area does, however, experience high humidity which averages from 70 to 80 percent. The prevailing winds are westerly, with an average velocity of 9 miles per hour. Wind velocity exceeds 30 miles per hour an average of 30 days out of each summer's 5-month (May to September) small craft boating season.

2.120 Geology. - The area around Ontonagon Harbor was shaped during the Pleistocene glaciation. During this period, successive ice sheets advanced and retreated across the area, filling and creating valleys, eroding hills, and depositing glacial till. The terrain is relatively flat but elevations of 1,000 feet (400 feet above sea level) are reached 10 to 15 miles inland.

2.121 There is a break between the Gogebic Range (to the southwest) and the Copper Range (to the northeast) almost due south of Ontonagon Harbor resulting in the Ontonagon River watershed being larger than for most other streams in the area. The other streams are confined to a narrow strip along the lakeshore.

2.122 The surface geology of the area consists primarily of the Freda sandstone and the Nonesuch shale, both of which are upper Precambrian formations. The former is a red sandstone with some conglomerate and arkose. The Nonesuch shale is a finer siltstone containing recoverable copper deposits. Active mining is present at White Pine, 12 air miles southwest of Ontonagon Harbor.

2.130 Topography. - The area's topography is directly related to the glacial lake deposits and is controlled by bedrock wherever the glacial drift is absent or thin. As previously stated, the terrain is relatively flat with 1,000-foot elevations 10 to 15 miles inland. Twenty miles west of the harbor are the Porcupine Mountains with elevations of over 2,000 feet.

2.140 Soils. - Almost all soils in the Upper Peninsula and in the vicinity of Ontonagon Harbor have developed from glacial drift and/or glacial lake deposits and range from a few inches to several hundred feet in thickness.

2.141 A narrow strip (1 mile) of the Rubicon Association is located along the lakeshore at Ontonagon Harbor. It has a moderate slope and is quite sandy with poor water availability and high permeability. Due to these factors, it is not conducive to agriculture and poses a pollution hazard for shallow groundwater. Inland, for 5 miles along the Ontonagon River, is the Michigamme-Champion-Rockland Association, a shallow, stoney, poorly drained, loamy soil. With these characteristics and its steep slope, it is poor for agriculture and only fair for forestry. The remaining area around the harbor consists primarily of the Ontonagon-Rudyard-Pickford Association, a deep, well drained to poorly drained clay-type soil having a very fine texture, high natural fertility, water capacity, and water availability. Thus, the soil is well suited for farming and forestry except where locally wet.

2.200 Hydrologic Environment.

2.210 Surface Water. - Ontonagon Harbor is located in the Lake Superior Watershed Unit. All waters within this watershed unit flow into Lake Superior, through the Great Lakes and the St. Lawrence River and eventually into the Atlantic Ocean. Most of the streams in the area are relatively short and have steep gradients. The Ontonagon River empties into Ontonagon Harbor and has a larger watershed than most other streams in the area.

2.220 Groundwater. - Soils in the area do not possess good water supplies. Due to extreme soil permeability in some areas, pollution of shallow groundwater is a hazard. The village of Ontonagon has a public water system which draws from Lake Superior.

2.230 Water Quality. - The eutrophication process in Lake Superior is apparently progressing at an extremely slow rate as dictated by nature, with little or no alteration by the activity of man. Therefore, the measured changes in water quality are misleading when viewed from the eutrophication standpoint alone. The effect of the activity of man on Lake Superior can be more readily seen in the examination of other chemical and physical parameters.

2.231 The introduction of halogenated hydrocarbons are recent and a function of the activities of man. Recent reporting of a pesticide monitoring program by the Wisconsin Department of Natural Resources involving Lake Superior fish showed average concentrations of total DDT (DDT, DDD, and DDE) of greater than 1 ppm. Tests conducted by the Fish and Wildlife Service showed a range of .22 to 7.4 ppm. Measurement of these parameters is important because of the deleterious effects of the parent or breakdown products. The presence of heavy metals, taconite tailing dumping, and asbestos-like materials are acknowledged although their effects are still undetermined.

2.232 Lake Superior, the dominating body of surface water in the area, is characterized by soft water. Hardness is approximately 44 ppm CaCo3. The pH is approximately 7.5. Water temperatures in Lake Superior fluctuate slightly, ranging in the 40's most of the year.

2.233 Shipping has been responsible for some water quality degradation in the open waters and harbor areas of Lake Superior. Oil discharges, bilge wastes and garbage from commercial vessels plying the lake have created occasional problems. Enforcement programs have become more stringent in recent years.

2.234 The water quality generalizations for the open lake are appropriate for most of the inshore waters. The widespread indications of change and deterioration observable in the inshore waters of the other Great Lakes are, for the most part, not apparent in Lake Superior.

2.240 Harbor Water Quality. - The quality of the water in Ontonagon Harbor varies with location. The upstream limit of the project is influenced by the Hoerner Waldorf Corporation which, until its treatment plant is finished, discharges process water there. Several coal wharves, oil storage tanks, and the village of Ontonagon, all located on the shore area, also have an impact on this area. A marina and the village of Ontonagon sewage treatment facility outfall are located upstream of the project area. This area is not dredged, but it undoubtedly has an effect on the dredged area downstream.

2.241 The Environmental Protection Agency in 1973 sampled Ontonagon Harbor sediments for chemical constituents and concluded that it is polluted from the Highway 64 bridge to project mile point 1/8 (exhibits 4 and 5). Values for total nitrogen, volatile solids, chemical oxygen demand, and oil and grease exceeded EPA guidelines for dredge sediments (exhibits 6 and 7).

2.242 Michigan Technical University (MTU) also took water samples from the harbor in 1973. Bacteriological analysis of the water samples are shown in exhibit 8. In general, values were lowest for fecal coliforms at the uppermost station (just below the railroad bridge), increased downstream, and then decreased near the harbor mouth. There may not be fecal coliforms in the sense of being of fecal origin but, instead are fecal representatives which grow and reproduce in part of the neutral sulfite pulping operation at Hoerner Waldorf and do not indicate sanitary sewage contamination. Characteristics found in the sampling by EPA and MTU are determined by the flow of the river, disposal of dredged material, and byproducts or discharge from land based industrial or municipal facilities. As a result of the findings, EPA concluded that dredge material from the unpolluted area is suitable for open water disposal in approved dump areas. Material taken from other areas should be disposed of on land.

2.300 Biological Environment.

2.310 General. - The shoreline of Lake Superior is a composite of beaches, boggy areas, and upland forests. These areas provide habitat for a variety of fish and wildlife species. The aquatic environment and adjacent lands provide food and shelter for more than 100 species of waterfowl, shorebirds, songbirds, upland gamebirds, and birds of prey.

2.320 Terrestrial Vegetation. - Inland from Ontonagon Harbor, the forest on the better-drained land is primarily northern hardwoods of the sugar maple, elm, yellow birch, and hemlock variety. Aspen, fir, spruce, and white pine are also abundant in these areas. In the wetter upland areas, red maple, ash, alder, and willow are found. On the lowland areas the dominant tree species are fir, spruce, hemlock, white cedar, and white pine with lesser occurrence of elm, ash, red maple, and other associated mixed hardwoods. High occurrence of aspen and white birch are found throughout the area on cut over and abandoned farmlands. There are several species of mosses, lichen, and vascular plants growing near the lake on the Keweenaw Peninsula that have not been found in adjacent areas. They may also be present in the Ontonagon area.

2.330 Wildlife. - The wildlife resources in the area provide many hunters, photographers, and wildlife observers with recreation. A wide variety of game is available, most importantly the whitetail deer. The lakes and streams in the area are bordered by vast forests which support populations of other big game such as moose and black bear.

2.331 The area's virgin forests of presettlement times supported small numbers of game, in comparison with present numbers. Drastic changes followed settlement. Logging operations and agricultural activities resulted in numerous openings in the forest canopy and increased supply of food and habitat for many forms of wildlife.

2.332 Numerous other wildlife species include grouse, bear, snowshoe hare, woodcock, and several species of ducks which are hunted in the area. Beaver, mink, muskrats, and weasels are fairly common and important fur animals.

2.333 Waterfowl in the area consist primarily of diving ducks. Greater scaup, lesser scaup, ringnecks, American goldeneyes, and American and redbreasted merganser are abundant. Large numbers of diving ducks raft on Lake Superior. Occasionally, other diving ducks concentrate in Lake Superior's bays and some larger lakes in the area. These include the bufflehead and old-squaw.

2.334 In addition to the diving ducks, puddle ducks, or dabblers, use the area's rivers, lakes, and marshes during their breeding and migration seasons. These species include mallards, black ducks, wood ducks, bluewinged teal and shovelers.

2.340 Fish. - Lake trout, northern pike and walleyes predominate in the deep, northern, cold-water lakes. The warm-water lakes farther south support healthy populations of rock-bass, largemouth and smallmouth bass, crappies, bluegills, sunfish, walleyes and northern pike as well as many other species. Many of the tributary streams have rainbow, brook and brown trout.

2.341 Lake Superior is dominated by salmonids including lake trout, rainbows, brook trout, brown trout and, more recently, the coho and chinook salmon. Overall, the lake trout has been, and continues to be, the most important sport fish caught in Lake Superior. Lake-run brown trout and rainbows are important and receive heavy fishing pressure during the early spring and fall.

2.342 Northern pike, walleye and yellow perch are other sport fish found in Lake Superior, its tributaries and inland lakes. Smelting is another popular fishing resource found along the shoreline and in the tributary streams.

2.350 Plankton. - The plankton of Lake Superior is sparse and dominated by forms characteristic of cold, deep lakes. Recent studies show that diatoms are the most abundant plankton groups.

2.351 The most abundant forms of phytoplankton include: Asterionella formosa, Dinobryon sp., Synedra acus, Cyclotella sp., Tabellaria fenestrata, and Melosira granulata.*

2.352 The following zooplankton have been listed as common in Lake Superior:*

Rotifers - Keratella cochlearis and Keblicottia longispina.
Cladocerans - Daphnia longispina and Bosmina longirostris.
Copepods - Diaptomus minutus, D. silcilis, Epischura lacustris, Limnocalanus macrurus and Cyclops bicuspidatus.

2.360 Benthos. - The benthic (bottom dwelling) communities of Lake Superior are composed of a relatively recent fauna, as Pleistocene glaciation removed much of the preglacial components of the region. As the ice retreated, the newly formed lakes were populated both by remaining species of the preglacial lakes and by those species that migrated in the wake of the melting ice. This occurred as recently as 4,000 to 8,000 years ago. Lake productivity is also correlated with lake size, geographic location, and nutrient inflow based on past geologic history.

2.361 The amphipod (Pontoporeia affinis), the opposum shrimp (Mysis relicta) and the midge-fly genus (Hydrobaenus) are listed as the dominant members of the Lake Superior bottom fauna.*

2.370 Threatened and Endangered Species. - There are no known threatened or endangered species in the harbor or disposal area. Both the Michigan Department of Natural Resources and the U.S. Fish and Wildlife Service have been consulted concerning this matter.

*Sampling by Michigan Technological University, 1973

2.400 Socioeconomic Environment.

2.410 Archaeological and Historical Investigations. - A former Coast Guard lighthouse, built about 1886 and located on Government land to the west of the channel, is quite close to the realigned disposal area (exhibit 1). The structure has been nominated to the Michigan State Register of Historic Places and is considered by the Ontonagon County Historical Society to have significant historical value because it is one of the last remaining landmarks from the oldest village on Lake Superior. Agreements have been made with Hoerner Waldorf to provide access to the site and land has been set aside as a buffer zone and for parking purposes. The lighthouse will not be affected by Hoerner Waldorf construction or Corps dredge disposal practices.

2.411 Letters requesting comments concerning the existence of any historical, archaeological and paleontological resources which may be affected by operation and maintenance activities in Ontonagon are presented as exhibit 9.

2.412 The draft environmental impact statement, released in December 1974, stated that no other historical or archaeological features are located in Ontonagon Harbor in the Corps project area. This statement was predicated on a letter received from the Michigan Department of Natural Resources in 1972 which indicated that any archaeological sites once existing in the vicinity of the lighthouse had long since been obliterated (exhibit 10). In 1972, an agreement with Hoerner Waldorf Corporation for utilization of the area for construction of their waste treatment facility was finalized and construction begun. In December 1974, the Corps received a letter from the Michigan State Archaeologist citing a survey by the Michigan History Division, conducted in the summer of 1973, which visited an archaeological site, designated "Copper Village" located directly beneath the proposed disposal site. The letter recommended postponement of the work until an archaeological testing program was conducted at the site (exhibit 11). Letters concerning this situation are presented in exhibits 12 to 18. The suggested archaeological field survey was accomplished in June 1975 by a professional archaeologist under contract with the Corps of Engineers. This investigation failed to yield any evidence of prehistoric occupation. Test excavations did not uncover any prehistoric materials.

2.420 Historic Background. - The village of Ontonagon was founded in 1838. At this time, Boston investments began exploiting the copper deposits which were determined to be present. With the onset of the copper boom, commercial shipping began in Ontonagon Harbor and outbound cargoes for many years consisted of ore, fish, and lumber products; inbound ships carried coal, food, and finished products. In 1880, Ontonagon County was estimated to have 4 billion board feet of white and red pine. Without regard to future timber, the pine resource in the county was nearly exhausted by 1900. Logging operations turned to hemlock

and hardwoods, virtually exhausting the resource by the 1940's. With the decline of the mining, fishing, and lumber industries and the advent of surface transport, commercial shipping diminished to the point that no commercial shipping has been recorded in Ontonagon Harbor since 1971.

2.430 Social Characteristics. - The population of Ontonagon County has remained stable in the past decade (1960 pop. 10,584; 1970 pop. 10,548). The 1970 census showed a population of 3,928 for the village of Ontonagon and the township.

2.431 The 1970 unemployment rate for Ontonagon village and township was 3.8 percent. Approximately 12.0 percent of those employed worked in manufacturing industries. Median family income in 1970 was $9,000 with 5.9 percent of the families having incomes below the poverty level and 9.0 percent of the families having incomes of $15,000 or more.

2.432 Of the 4,375 people employed in Ontonagon County, 47.4 percent are employed by the mining industry. Manufacturing employs 500 people (11.4 percent). Due to soil conditions, agriculture is relatively unimportant in the county. In regard to mining, many individuals commute from the towns of Houghton, Hancock, Calumet, Laurium, Lake Linden, Hubbe, and Gogebic County. Although employed in the county, they may not reside or make a majority of expenditures there.

2.440 Transportation. - The village of Ontonagon does not have any bus service, or rail passenger service. The County airport is located nearby. Two highways, U.S. 45 and Michigan 64, pass through Ontonagon. Vessel traffic in the mid-60's included light-draft cargo vessels having a loaded draft of about 12-feet. Traffic is now limited to small fishing and recreation craft berthed above the State Highway M-64 bridge. Future vessel traffic is expected to be limited to recreation craft.

2.450 Use of the Harbor as a Commercial Port - Commercial statistics for Ontonagon Harbor are available from 1866, but for recent years receipts of coal, oil, fish and miscellaneous products have varied from about 15 tons of fish in 1957 to a maximum of about 39,000 tons, primarily of coal and oil in 1967. Thereafter, receipts declined each year with 0 reported in 1971 and 1973 and only 15 tons in 1972. No shipments are made from the harbor. During the 14-year period from 1960-1973, only 231,000 tons of commodities moved through the harbor. Data presently available indicates little prospect of significant commercial use of the harbor in the foreseeable future.

2.460 Natural Areas. - The largest State park in the Western Upper Peninsula, Popcupine Mountains State Park, is located in Ontonagon County west of Ontonagon. There is a ski resort in the Porcupine Mountains. These factors combined with the numerous lakes and streams make the area an important resource for site-seeing, outdoor recreation, fishing, and wildlife habitat.

2.500 Future Environmental Setting Without the Project. - Without a maintained project, eroded materials would be carried to the harbor by the river where wind-generated waves and currents would redistribute them. Sand bars and shoals would develop in the harbor. The breakwaters would deteriorate to the point where they would no longer serve their function of channel protection and aids to safe navigation. Sediment blocking the channel would prevent access to the upstream marina.

2.501 Without dredging, toxic elements (heavy metals and some persistent organics) built up in the sedimentary deposits, may continue for a long time to act as a "source" of toxic material to harbor and lake waters. However, if water and sediment quality improve due to implementation of pollution control measures in the vicinity, these old polluted sediments may become sealed off by new unpolluted sediments, in areas where no dredging is done. As sedimentations build up, terrestrial vegetation would eventually develop at various silted areas in portions of the harbor.

3.000 RELATIONSHIP OF THE HARBOR TO FUTURE LAND USE

3.001 The population of Ontonagon (approximately 4,000) is relatively stable. Although commercial shipping and fishing previously occurred in the harbor, there is currently none. Commercial fishing may occur again as water quality improves.

3.002 The Porcupine Mountains State Park, located in the western portions of Ontonagon County, offers a variety of recreation for tourists (hiking, skiing, camping) which may bring visitors to Ontonagon. During the first year of operation of the Ontonagon recreation marina there were an estimated 3,400 recreational crafts that moved in and out of the harbor. This estimate has increased since then and will undoubtedly increase more as tourist volumes grow.

4.000 PROABLE IMPACT OF THE PROPOSED ACTION

4.100 General. The equipment used for operation and maintenance of Ontonagon Harbor, as described in paragraphs 1.610 and 1.620, employ 35 men and use approximately 348,000 gallons of fuel per year, with only a portion of this amount being used at Ontonagon. Certain amounts of engine and moving parts lubricating oil and grease may reach the water directly as a result of equipment submersion. Reasonable care is maintained to prevent oil and grease from entering the water. However, temporary oil slicks may occur in the vicinity of operating equipment. Short-term impacts to air quality may result as diesel exhaust from motors aboard the GAILLARD, tug and tenders must be vented into open air.

4.200 Impacts of Breakwater Maintenance.

4.210 Noise. - A certain amount of noise is associated with the operation of the various boilers, motors, pistons, winches, etc., involved in those pieces of equipment performing breakwater and pier repair. Little of the noise associated with the equipment is audible beyond several hundred feet. This, combined with the fact that structure repair takes place during normal "working" hours, results in relatively insignificant short-term effects on the residential area, situated over 500 feet away from the harbor.

4.220 Activity Related Congestion. - The repair barge, its tug, tender and associated equipment may cause a minimal amount of channel blockage as it moves to and from repair sites within the harbor. While at the repair site at the breakwater, the equipment is usually moored to the breakwater out of navigation channels.

4.230 Biological Impacts. - Breakwaters along a relatively unsheltered coastline provide calm and sheltered habitat for species which would normally not be found in this area. Increases in macrophytes, plankton, and benthic species can be expected in areas of reduced wave force. As the habitat and nutrient levels increase, increases may also occur in the numbers of fish present.

4.240 Chemical Impacts. - Although the potential for long-term leaching of inorganic constituents from the rock structure exists, it is considered minimal. It is anticipated that this impact will be similar to the normal erosion and leaching of native rock shorelines at other points along Lake Superior. As previously stated, caution is exercised to prevent accidental spillage of chemicals or oils and grease. However, a certain amount does enter the water through rock handling equipment submersion.

4.300 Impacts of Dredging.

4.301 Dredging in the harbor involves the use of the Dipper Dredge GAILLARD, together with tug boats and bottom dump scows. Sediments are scooped from the bottom and placed in barges which are moved by tugs to dump sites. The Corps of Engineers removes an average of 40-50,000 cubic yards of bottom sediments each year to maintain an average 17-foot depth in the approach channel, and 12 feet between the piers and in the basin.

4.310 Turbidity. - The dredge operates by forcing its steam shovel bucket into the bottom and scooping out bottom sediments. This creates a certain amount of turbidity (muddied or sediment clouded water). Lifting a load of sediments out of the water also results in turbidity as "mud" washes out of the dredge bucket.

4.311 Dredging redistributes and resuspends the finer sediment material found at the sediment-water interface. This fine material settles out and redeposits in adjacent areas after dredging has ceased. The layer of fine, easily disturbed sediments may, therefore, be greater in the adjacent undredged areas.

4.312 The amount of turbidity is related in part to the nature of the bottom sediments being dredged. Sand and gravel create relatively little turbidity, while clay and light organic "muck" will create more turbidity. Generally, however, the "plume" of dredge-induced turbidity is of relatively small extent and short duration.

4.313 Turbidity affects the amount of light penetrating into the water. Reduction in light penetration of relatively short duration (in the nature of minutes) will have relatively little effect upon the light requirements of sensitive organisms.

4.314 More subtle and, therefore, more difficult to accurately determine effects are those produced upon aquatic life and water quality in the area of the operating equipment. Turbidity clouds and associated release of oxygen consuming nutrients, especially where dredging of organic sediments is being conducted, can be expected to reduce the dissolved oxygen level of the surrounding water.

4.315 Dredging directly affects resuspension and redistribution and indirectly affects oxidation or reduction of various chemicals. Many of these substances are toxic to life forms, although it is as yet not fully known to what extent turbidity caused by dredging influences toxicity concentrations.

4.320 Water Contamination. - The Dredge GAILLARD is equipped with sanitary holding tanks for containment of onboard generated wastes. A certain amount of water quality impairment exists as a result of dredging induced turbidity, discussed above.

4.330 Noise. - Noise associated with the operating dredge is not substantial. The use of large mechanical equipment results in noises associated with the motors, the winches, and the raising and lowering of the dredge bucket. This noise impact is relatively short-lived, being associated only with the act of dredging during normal working hours.

4.340 Activity Related Congestion. - Dredging results in the location of the dredge, scow, barges and other large pieces of equipment directly in the entry or channel. As such, it presents a navigational obstacle by the mere presence of large stationary vessels. In larger harbors such as Cntonagon the presence of dredging equipment is not a serious problem.

4.350 Chemical Impacts. - Sediments in Ontonagon Harbor from the Highway 64 bridge to project mile 1/8 are classified polluted by EPA. Dredging, with its concommitant disturbance of bottom sediments, causes a temporary resuspension of some of the fine particles as discussed in paragraph 4.315.

4.351 In addition to resuspending physical particles, dredging-induced turbulence also brings soluble chemicals from the sediments into solution in the water. In warmer and more eutrophic waters this additon of nutrients and chemicals may have a direct impact in causing temporary algae bloom. In the colder Lake Superior waters, however, blooms have not been observed. The increased concentration of available nutrients would be expected to support large plankton populations, but not to the extent that nuisance blooms would occur.

4.360 Biological Impacts. - Dredging removes not only the accumulation of sediments, organic matter, nutrients, and other materials associated with the sediment surface layer, but also removes the benthic organisms associated with this layer. The new exposed layer of sediments after dredging would have a reduced amount of organic matter and fine materials, and fewer benthic organisms. The impact of disrupting the benthic community is poorly understood. Many organisms are quite sensitive to such disruption and may require a considerable period of time to recolonize while other organisms may be able to reproduce to recolonize and establish the benthic community within months.

4.361 There are currently no aquatic plants in Ontonagon Harbor due to the turbidity and sandy substrate. Little is known concerning the fish which inhabit the harbor but fishing is described as average.

4.370 Habitat Alteration. - Only if a totally new environment (habitat) were exposed by the dredging operation would one expect to encounter a totally different benthic community. This might occur particularly in the areas of new dredging where large cuts of sediment were being removed and the surface layer had represented extensive accumulations of organic material and fine sediments that were in relatively close proximity to the surface of the water. By dredging such an area to a depth of 17 feet or more, a totally different sediment may be exposed which will have different characteristics, and as such would be expected to establish and sustain a different benthic community.

4.380 Organic Matter Removal. - The material at the sediment-water interface is frequently high in both organic and chemical components. Removal of the organic material by dredging is expected to reduce the oxygen demand on the water at the interface. The waters of Lake Superior, however, are normally high in dissolved oxygen throughout the year; it is therefore unlikely that changes in the oxygen demand of areas in Ontonagon Harbor would have a significant impact on fish habitat in the lake.

4.400 Probable Impacts of Open Lake Dumping.

4.401 Open water disposal is presently permitted for material dredged lakeward of project mile 0.

4.410 Turbidity. - Dredged sediments are placed by the dredge into bottom dump scows which are moved by tug boat to the disposal site where they are dumped. A small amount of fine material leaks from the barge as it is being moved to the disposal site, causing a turbidity wake. A large amount of turbidity is created at the disposal site as the large bottom dump doors are opened releasing the load of sediments to the open water. Past practice has been to dump while moving over the dump zone, resulting in an extensive turbidity plume or wake behind the moving equipment. The amount of turbidity caused during disposal is related to the nature of the sediments.

4.420 Currents and Sediment Movements. - Past practice has been to dispose of dredged sediments in an open lake zone about a mile in diameter, 50 feet or more in depth, and away from navigation channels, public beaches and similar areas. The practice of dumping while moving tends to maximize the exposure of dumped sediments to the influence of wind (wave), current, and thermal plane transport with resultant wide areal distribution.

4.421 The larger particles tend to settle out over a larger area due to the movement of the barge while the material is released. Large piles of material on the lake bottom are in this way avoided. The result is a shallower depth of material spread over a greater area. Severe local impacts, such as the total burial of benthic organisms in the immediate dumping area, may be lessened and recovery capabilities may be improved.

4.430 Activity Related Impacts. - The activity related contaminant effects on air, water, turbidity and resource consumption by maintenance vessels are similar to those experienced during normal dredging operations.

4.440 Water Quality Impacts. - Open lake disposal brings potentially detrimental materials, presently isolated within the sediments of the harbor, temporarily into intimate contact with the high quality water of the open lake. The degree of impact on water quality depends on the amount of detrimental material in the dredged sediment. Short-term localized sediment clouds in the water may have a temporary effect upon fish in the area.

4.441 Disposal of highly organic dredge material in an open water dump zone can result in a localized short-term decrease in dissolved oxygen as the sediments begin aerobic decay in the highly oxygenated open lake water. This situation may result in a short-term repelling of fish until the turbidity has cleared.

4.442 Turbidity clouds may disperse heavy metals and nutrients, which had been bound with the sediments, throughout the disposal area. At present it is known that heavy metals are toxic to life forms in varying ways and degrees. But it is not known in each case how heavy metals in dredged material may affect harbor or open lake ecology. The heavy metals may be picked up by plankton and subsequently passed from organism to organism in a "food chain". Since the levels, concentrations, and effects of metals within organisms increase along the food chain, the adverse impact likewise increases in severity as the metals move up the chain.

4.500 Probable Impact of On-Land Disposal.

4.501 On-land disposal of dredge sediment is in use for Ontonagon Harbor from the Highway 64 bridge to project mile 1/8 as a result of the polluted classification of the bottom sediments. Exhibit 1 denotes the disposal site. Material dredged from the project mile 0 lakeward is not considered polluted and can be disposed in the open lake or used for beach nourishment. Material dredged between project miles 0 and 1/8 can be either disposed of on-land or used as beach nourishment.

4.510 Land Use. - The on-land disposal of polluted dredge material involves the utilization of space sufficient to accomodate dredge material, classified as polluted. On the operational site, the space utilized is for fill and for the construction of a waste treatment plant by the Hoerner Waldorf Corporation.

4.520 Noise. - A certain amount of noise associated with disposal equipment and activity takes place. However, such motor related noise is short-lived and does not pose any serious environmental impacts.

4.530 Biological Impacts. - The disposal site is a rather sterile fill area which formerly contained wetland areas. Land fill included lime mud wastes from a prior mill operation.

4.531 On-land placement of various organic and nutrient elements contained in harbor bottom sediments is a means of delaying naturally and culturally induced eutrophication of the open waters of Lake Superior. Construction and use of the waste treatment facilities results in a certain amount of habitat loss in the affected areas; however, long-term gain through waste treatment facilities at the disposal site appears to be a mitigating factor. The disposal site represents a relatively marginal area for wildlife and the use of the area as a disposal site would have little influence on wildlife species.

4.540 Chemical Impacts. - Short-term storage of the dredged material on the shoreline would allow leaching of certain chemicals back into the harbor. Hoerner Waldorf has included an impervious layer in their dike and lagoon thereby confining pollutants (organics, nutrients, and/or contaminated water).

4.600 Socioeconomic Impacts Related to Operation and Maintenance Activities. - The major socioeconomic impacts of Corps activities in Ontonagon Harbor are that continued operation and maintenance enables recreational craft safe use of the harbor. Maintenance cost activity is summarized in exhibit 19.

5.000 PROBABLE UNAVOIDABLE ADVERSE EFFECTS

5.100 Dredging. Dredging causes several unavoidable effects, the most obvious of which is turbidity (sediment clouds in the water). Turbidity also results from overflowing and leaking dredge buckets, clam-shells, and dump scows. Additional turbidity results when equipment and scows are cleaned by flushing sand, mud, silt and organic material off decks and operating equipment with high-pressure water hoses. This is not conducted in the harbor area, however.

5.101 Although the full effects of turbidity are unknown in each instance it occurs, generic effects of turbidity are known, and depending upon the duration and extent of the turbidity produced, the effects may vary considerably. The most obvious effect is a reduction of light penetration into the water. In most cases this is of relatively short duration (minutes) and could be presumed to have no long-term effect upon the ecosystem.

5.102 More subtle and hence more difficult to assess are the effects of the operating equipment on aquatic life and on water quality in the area being dredged. Turbidity clouds and the associated release of oxygen consuming nutrients, especially where organic sediments are being dredged, can be expected to reduce dissolved oxygen in the surrounding water and thus discourage the presence of some fish. On the other hand, the same nutrient releases may, over a period of time, actually result in an increased biomass and perhaps greater species diversity, and ultimately it may be expected that the area would return to an ecological equilibrium.

5.103 Dredging also affects resuspension, redistribution, related solubility, and accelerated oxidation or reduction of various oils and grease and of heavy metals such as lead, zinc, mercury, and copper. All of these substances are toxic to life forms, although it is as yet not fully known to what extent dredging-induced turbidity influences the toxicity concentrations of these substances.

5.104 The sedimentation of the turbidity causing materials may also result in increased mortality and/or reduced growth rates to developing aquatic organisms (fish and insects) by "smothering" eggs and reducing gas transport across semi-permeable membranes. Membrane irritation could also provide sites for bacterial growth which would increase stress on the organism and could eventually cause its death. The extent of these effects would depend to a large extent on concentrations of suspended materials and dispersion by currents.

5.105 Removal and disruption of benthic habitat must be considered an unavoidable consequence of the dredging operation. Relatively immobile benthic organisms are subject to being dredged up along with their habitat. Ketchum* has noted that in an infrequent dredging operation "disruption of the biological community is usually temporary and is frequently followed by recovery of the system." Waters** has noted that recolonization of a denuded stream bottom can occur within two weeks through excess upstream production. Frequent (yearly) dredging in the harbor would result in an unstable benthic environment and recolonization would probably be slow. The organisms available for recolonization would represent excess production from undisturbed areas. These organisms could either be produced in the river and drift into the area or move in from adjacent areas in the harbor. Because of the low density of benthic organisms within the harbor and because stream organisms would probably find the harbor unsuitable for colonization, repopulation of dredged areas would probably require long periods of time and might not attain pre-dredging levels by the time the next years operation started. Even with no recolonization, production losses from dredged areas should not be significant to the system as a whole because of the present low invertebrate production.

5.200 Disposal.

5.210 On-land Disposal. - On-land disposal has been recommended for the portion of the harbor classified as polluted by EPA.

5.211 Land Use. - An obvious result of on-land facilities for containing polluted dredge material involves questionable utilization of space involved in the project. On-land disposal facilities tend to be large and to occupy an extensive physical area in order to hold the polluted dredge material.

5.212 Resource Use. - In Ontonagon Harbor the polluted sediments are primarily sand, gravel, and rocks. Disposal of the sediments represents a wasted natural resource. As used by the Hoerner Waldorf Corporation for fill and construction purposes, it is a productive use of a natural resource.

5.220 Open Lake Disposal. - Sampling and analysis of the harbor has indicated that various contaminants found in the bottom sediments are in excess of the EPA criteria. Thus, the harbor is classified polluted from the Highway 64 bridge to project mile point 1/8. However, open lake disposal is an alternative disposal method.

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* Ketchum, Bostovick H., 1972. The Water's Edge: Critical Problems of the Coastal Zone. MIT Press. Cambridge, Massachusetts and London, England.

** Waters, T.F., 1964. Recolonization of denuded stream bottom areas by drift. Trans. Am. Fish. Soc. 93(3): 311-315.

5.221 Open lake disposal of polluted sediments would bring the toxic materials into intimate contact with the high quality water of the open lake. Such intimate contact between the contaminants and the Lake Superior water could result in a certain degree of water quality impairment as well as an adverse effect upon the aquatic ecosystem.

5.222 An unavoidable effect of the open water type of disposal is the burial, en masse, of benthic organisms by suddenly unloading sediments from a barge. The available evidence suggests that where sediment is disposed of in an area characterized by a bottom deposit which is similar or comparable to the dredged material, recolonization will occur with relative rapidity.

5.230 Beach Nourishment. - This method utilizes the sand, gravel, and stone from the harbor. Material used as such is taken only from the unpolluted area of the project to prevent redistribution of polluted materials in the harbor and lake waters. This method would save and utilize a valuable nonrenewable resource. If dumped in the open lake in deep water it would be a lost resource.

6.000 ALTERNATIVES TO THE PROPOSED ACTION

6.100 No Project. - Without a maintained project, the breakwaters and piers at the harbor would fall into disrepair. They would eventually deteriorate to the point where they would no longer serve their function of channel protection and aids to safe navigation for recreational craft. Sediment blocking the channel would prevent access to the upstream marina.

6.101 Without further dredging, toxic elements in the sedimentary deposits could act as a "source" of toxic material to harbor and lake waters. Removal of the polluted sediments would prove beneficial in terms of improved water quality. No dredging would cause sediment build-up in shallows, shoals, and sand bars. In turn, terrestrial vegetation could eventually develop at various silted areas in portions of the harbor. However, if pollution control measures are effective in the vicinity, the old polluted sediments may become sealed off by new unpolluted sediments.

7.000 RELATIONSHIP BETWEEN SHORT-TERM USES OF NATURAL ENVIRONMENT AND MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

7.001 The propriety of Corps of Engineers maintenance activities in Ontonagon Harbor must be weighed against the potential damage incurred to any or all of man's life support system thereby guarding against the short-sighted foreclosure of future options or needs. Past, present and proposed actions and their associated detrimental and beneficial impacts must be considered not only in relation to the specific harbor area affected but also the greater area and public served by the project.

7.002 Corps of Engineers maintenance activities in Ontonagon Harbor are conducted by Congressional authority in response to expressed and implied public need for continued small craft navigation and safety requirements within the project area. Breakwater repair and inner basin dredging is performed on a periodic basis as needed, in response to changing harbor use patterns and in response to storm-generated breakwater damage and basin shoaling.

7.003 In pursuit of the requirements for harbor maintenance, localized short-term expenditures of funds, manpower, and natural resources have occurred. Localized disruptions of the biological community may have occurred; however, no apparent long-term damage to any ecosystem has resulted from past Corps dredging or structure maintenance within the harbor. Future maintenance dredging and structure repair, if conducted essentially as in the past, should not constitute a long-term detrimental effect upon life styles, land use patterns or ecosystems in the Ontonagon Harbor area.

7.004 Some localized short-term releases of potential contaminants to the open waters of Lake Superior have occurred in the past during disposal of material dredged from the harbor, however, no apparent long-term damage to any ecosystem has resulted from past on-land or open lake dredged material disposal methods. Future dredged material disposal methods, if adhering to the present use of the material as a construction resource, should not detrimentally affect the natural environment or associated harbor ecosystems. Use of the material for the construction of waste treatment lagoons can in fact be considered as beneficially affecting Ontonagon River and Lake Superior water quality both in that its use removes some contaminants from the river while indirectly preventing others from entering the river and lake.

7.005 Corps maintenance activity and the periodic expenditure of funds, manpower and natural resources associated with the activity has permitted the continued use of Ontonagon Harbor by those individuals who have relied on the harbor in the past for their livelihood, for their recreation and for their safety.

7.006 Continued Corps maintenance of Ontonagon Harbor, while resulting in irretrievable uses and commitments of resources and temporary disruption within the project area, will allow the existence of harbor-related land use and life style options for present and future generations in the Ontonagon community and surrounding South Shore area.

8.000 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

8.100 Breakwater Maintenance. - Breakwaters, docks, and revetments at Ontonagon are constructed of pilings, rock and concrete. All of the materials that go into either the construction or maintenance of any Corps of Engineers structures may be considered as premanently and irretrievably committed. All fuels and lubricating oils used by construction and maintenance machinery also constitute irretrievable commitments of natural resources.

8.200 Maintenance Dredging - The operation of dredging equipment, tugboats, tenders and other maintenance craft results in consumption of thousands of gallons of petroleum products each year, but only a portion of these are used at Ontonagon. Maintenance dredging entails an irreversible commitment of biological resources throughout much of the harbor as a result of alteration and disturbance of bottom sediments.

8.300 Dredge Material Disposal.

8.310 Open Lake Disposal. - Past operations have disposed of about 3,300,000 cubic yards of sand, silt, clay, and organic material in Lake Superior. Of that material, only the sand, which makes up the predominant character of the material, could be considered as a valuable natural resource which has for the most part been irretrievably lost. Material has also been used for beach nourishment.

8.320 On-land Disposal. - Present disposal of sand and associated sediments dredged from portions of Ontonagon Harbor are disposed on-land due to their polluted nature. Although sediments dredged from the harbor are polluted, the nature of the material remains the same -- sand, silt, clay, and organics. The sand portion of the sediments represents a natural resource which is being used for fill and in the construction of waste treatment facilities.

8.321 The waste treatment facilities have irreversibly altered the shoreline and related areas. Although the site does not have significant value as fish and wildlife habitat at present, filling it may preclude its return to a "natural" biological condition. Certain features of the natural environment would be irreversibly lost, while some benefits would accrue. For instance, several acres of marginal wildlife habitat would be lost, but benefits from the waste treatment should out-weigh the losses from the standpoint of the harbor as a whole.

9.000 COORDINATION

9.001 This report was drawn in part from an environmental impact assessment prepared by National Biocentric, Inc., under contract with the Corps of Engineers. Several meetings were held with National Biocentric and the subcontracting agencies: University of Minnesota; University of Wisconsin, Superior; and Michigan Technological University, Houghton.

9.002 During the weeks 9-13 and 16-19 of July 1973, representatives of National Biocentric, Inc.; the Corps of Engineers, St. Paul District; the Environmental Protection Agency; the Fish and Wildlife Service; the Minnesota Pollution Control Agency; the Minnesota, Wisconsin and Michigan Department of Natural Resources; as well as local administrative officials and interested parties, conducted a tour of all St. Paul District, Corps of Engineers harbors on Lake Superior. The purpose of conducting the tour was to familiarize and coordinate interested Federal, State, local and contracting parties with the harbors, with problems involved in disposal of polluted dredge material and with general harbor maintenance activity problems and assessment parameters.

9.003 Copies of the draft environmental impact statement were furnished to the following agencies and interest groups for comment. Those who returned comments on the draft statement are noted with an asterisk and their letters are presented in the Letters of Comment section as noted below.

9.004 In addition, copies of the draft statement were furnished to the following libraries for public review:

Hancock Public Library
Houghton Public Library
Michigan State Library
Michigan Technological University, Library
Ontonagon Public Library
University of Minnesota - Duluth, Library
University of Wisconsin - Superior, Library

9.100 Discussion of Comments Received:

U.S. ENVIRONMENTAL PROTECTION AGENCY

We have completed our review of the draft environmental impact statement (EIS) for the Operation and Maintenance of Ontonagon Harbor, Ontonagon County, Michigan as requested in your letter of December 6, 1974. We have classified our comments as Category LO-2. Specifically, this means that we have no major objections to the proposed actions but additional information is required to fully assess the environmental impact of the proposal. The classification and the date of our comments will be published in the Federal Register in accordance with our responsibility to inform the public of our views on proposed Federal actions under Section 309 of the Clean Air Act.

1. Comment: The continued utilization of reduced maintenance depths as compared to the greater authorized depths is desirable and should be encouraged in the future. Maintenance of the existing project as authorized should be thoroughly discussed in the EIS with a more detailed description of past and anticipated commercial traffic using Ontonagon Harbor.

1. Response: The existing project is described in the revised paragraph 1.400. Paragraph 2.450 describes the past and predicted use of the harbor by commercial traffic.

2. Comment: We note that the portion of the project as modified by the 1962 River and Harbor Act was classified to an "inactive" status on February 24, 1966 because (1) "local interests indicated they could not provide the lands for harbor development" and (2) "studies indicated that changes occurred in initial and prospective commerce and that the project was no longer economically feasible". These project modifications as authorized by the 1962 River and Harbor are a part of the current List of Projects Proposed for Deauthorization (pursuant to PL 93-251) for the reasons stated above.

2. Response: No maintenance has been performed on the deauthorized portions of the harbor since the "inactive" classification.

3. Comment: Additional information is required on the size and design of the temporary holding area adjacent to the west pier and on its integrity to temporarily confine polluted spoil and prevent reentry of pollutants into surface waters. Information on the retention time, the quality of return drainage and the effects of factors such as wind and water erosion should be included.

U.S. ENVIRONMENTAL PROTECTION AGENCY (Continued)

3. Response: The temporary holding area has no facilities to confine the material. The dredged material is utilized for construction within approximately 6 months after placement on the pier. No material is left on the pier to be subject to erosion and it is expected that very little material is eroded between original placement onshore and its removal by Hoerner Waldorf.

4. Comment: The EIS should include a copy of the attached report on EPA's October 18, 1973 bottom sediment survey at Ontonagon Harbor. The results of this survey reveal that bottom sediments from the Highway 64 bridge to project mile point zero are polluted, indicating a continuation of conditions found in past surveys.

4. Response: The survey results have been included as exhibit 5.

5. Comment: The statement in Section 2.343 of the draft EIS requires correction. The phrase "and IV may be disposed of without causing polluted problems" should be deleted and replaced with "is suitable for open lake disposal in approved dump areas."

5. Response: See paragraph 2.242 of the final EIS for correction.

6. Comment: Additional information is required on the past history of flood damages at Ontonagon, the major factors responsible for flood damages, current levels of flood protection, and existing measures responsible for flood protection and their individual contribution.

6. Response: A study completed by the Corps of Engineers in 1970, Flood Plain Information - Ontonagon River, Ontonagon, Michigan, disclosed that sediment build-up in Ontonagon Harbor has little, if anything, to do with the flooding of the Ontonagon River. For this reason, all references to the influence of dredging on flooding have been deleted from the impact statement. See the aforementioned report for flood information.

7. Comment: We have attached a copy of our March 5, 1973 letter to Mr. Jim Challas, Vice President of the Mill Division, Hoerner Waldorf Corporation that offers guidance in minimizing the potential adverse environmental effects of using polluted spoil for construction purposes. Provided our recommendations are conditioned upon the Hoerner Waldorf Corporation, we would not object to their use of polluted spoil in constructing aeration ponds.

7. Response: Environmental Protection Agency guidance was incorporated in the Hoerner Waldorf Corporation lease.

U.S. ENVIRONMENTAL PROTECTION AGENCY (Continued)

8. Comment: The status of the U.S. Coast Guard Light Station being nominated to the National Historical Register because of its historical significance should be mentioned. The effect that this nomination will have upon the temporary holding area and Hoerner Waldorf's use of the material for construction purposes should be thoroughly addressed.

8. Response: See paragraph 2.410 for further information on the status of the U.S. Coast Guard Light House Station.

9. Comment: Inasmuch as the harbor no longer supports commercial traffic and is utilized only by recreational craft, we believe consideration should be given to the further reduction of project depths and/or reclassification of the project to an "inactive" status. In addition, the alternative of deauthorizing the established project should also be considered since the project purpose of providing "a navigational safeguard for commercial ships" is not being realized. While the benefits of recreation, small craft refuge and to some degree flood protection are being achieved, these benefits do not appear to be the required project purposes sufficient to maintain the harbor in its present authorized category.

9. Response: Since project purposes are to provide navigation and a harbor-of-refuge for all craft, no consideration is being given to deauthorization at this time. The project limits have been reduced due to the lack of commercial traffic. The present dredging limits are detailed in paragraph 1.400 and exhibit 1.

U.S. DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE

The draft environmental impact statement for Operation and Maintenance Activities for Ontonagon Harbor, Ontonagon County, Michigan, was reviewed by the USDA Soil Conservation Service in Michigan and we have no comments regarding the statement.

U.S. DEPARTMENT OF COMMERCE

10. Comment: A horizontal geodetic control survey monument (triangulation station) is located in the immediate area of the proposed dredging and dredge material disposal.

A water level gaging station is located near the south end of Zone II on the northeast side of the channel together with bench marks (Gitche Gumee Oil Co. Dock No. 1). Care should be taken during proposed dredging operations that disturbed sediment does not block the intake to the water level gage sump.

U.S. DEPARTMENT OF COMMERCE (Continued)

If there is any planned activity which will disturb or destroy these monuments, the Department of Commerce, National Ocean Survey of which the National Geodetic Survey is a part, requires not less than 90 days notification in advance of such activity in order to plan for their relocation. This Department also recommends that funding for this project include the cost of any relocation required for these monuments.

10. Response: Since the dredging limits have been reduced, it is felt that the approximately 75-foot clearance to each pier is sufficient to protect the water level gage sump. The southern limit of the disposal area is at least 150 feet north of the survey monument according to the location described in the Department of Commerce letter. This distance is felt to be sufficient.

11. Comment: Since commercial shipping in the harbor has ceased it appears that harbor maintenance needs could be adjusted to satisfy only recreation traffic requirements.

Therefore, it is recommended that an additional alternate to the proposed action - decreasing the frequency of maintenance activity - be evaluated. This would reduce the adverse effects of dredging: turbidity clouds, release of oxygen consuming nutrients and toxic substances, and reduction in bentnic productivity. Decreased costs of less frequent dredging could also occur.

11. Response: As of 1974, the project dimensions have been reduced to 12 feet deep in the entrance channel. The final impact statement includes the correct dimensions. Harbor maintenance is necessary annually because of sediment buildup from the Ontonagon River.

12. Comment: Implementation of the water quality improvement plans as discussed in section I b2 of the draft statement could result in a change in the classification of dredge spoils from polluted to non-polluted. An expanded discussion of this occurrence and its resultant change on alternates for total dredge solids disposal should be included.

12. Response: A revision of the dredge material classification by the Environmental Protection Agency would probably not drastically change the methods of disposal. Since open lake dumping is not currently practiced except during severe weather conditions, the amount of material used for beach nourishment would increase.

U.S. DEPARTMENT OF THE INTERIOR

13. Comment: The environmental statement should indicate the volume of polluted sediment to be dredged and should clearly specify the conditions of disposal. At present, the statement mentions legislative authority for disposal of polluted spoil in confined land areas (paragraph 1.641) and implies that confined onland disposal "has been recommended for the inner part of Ontonagon Harbor" (paragraph 4.500). However, the actual disposal under consideration for polluted sand, pending an agreement with the Hoerner Waldorf Corporation, is apparently unconfined use for dikes and fill (paragraph 1.651). Disposal of other (non-sand) components of the polluted spoil is not specified.

13. Response: The limits of the dredging conducted by the Corps of Engineers are shown in exhibit 1. The exact volume of material is difficult to quantify because it changes from year to year according to deposition rates from the Ontonagon River and Lake Superior. The amount of material dredged each year averages 40,000-50,000 cubic yards. In 1973, the Corps dredged approximately 85,000 cubic yards of material, with 50 percent of this amount coming from the area classified as polluted in the harbor (Highway 64 bridge to mile point 1/8) and disposed of onland for use as fill and in construction of the waste treatment facilities.

The polluted material has, in fact, been used in a confined manner in that the conditions of the agreement with Hoerner Waldorf Corporation specify the inclusion of an impervious layer in the dikes and lagoon bottom to prevent the leaching or escape of pollutants. Separation of the individual components (i.e., sand, organics, nutrients) of the dredge material is not normally done. Differentiation is made only between the areas of the harbor classified by EPA as polluted or non-polluted. The methods of disposal for each are described in the main body of the statement. All disposal activities have been and will continue to be coordinated with the Environmental Protection Agency and the Michigan Department of Natural Resources.

14. Comment: Other statements indicate that "Confinement. . . is proposed . . ." (paragraph 4.531) and, in the same paragraph, that "Construction and use of the confinement facilities resulted. . ." as if confined disposal is already underway. Later, we read that "Stipulations should be part of any agreement, however, which should prevent use of polluted sand, gravel, or rock in areas in which containments would be returned to Lake Superior on the water table" (paragraph 5.212). Presumably "containments" was intended to be "contaminants" and "on the water table" meant to be "or the water table." In any event, the environmental statement lacks a clear exposition of the volume of polluted spoil and the method of its disposal in current practice and that planned for the future.

14. Response: Paragraph 5.212 has been altered in the final EIS. The polluted material (that amount dredged from the bridge to mile point 1/8) is presently placed on the west bank of the harbor where it is then utilized as fill and for the construction of the waste treatment lagoon by Hoerner Waldorf Corporation. See paragraphs 1.620, 1.630, 1.650-2, and 4.510.

U.S. DEPARTMENT OF THE INTERIOR (Continued)

15. Comment: The Project Description section should specify the estimated volumes of polluted and nonpolluted spoil. Will the shore disposal plan described in paragraphs 1.650 and 1.651 accommodate all polluted spoil?

It is important to consider impacts on the spoil disposal site, so this section also should locate exactly the proposed lake disposal area.

15. Response: The limits of the polluted area of the harbor are described in paragraph 1.641 and shown in exhibit 1. See paragraph 1.620 for estimated volumes of dredge material. It is anticipated that, if needed, the disposal site will hold at least a 10-year supply of polluted dredge material. Paragraph 1.631 indicates the location of the open lake dumping site.

16. Comment: Paragraphs 2.200 and 2.400 of the draft EIS would be improved if physical and biological descriptions of the proposed upland and lake disposal sites were provided to warn of possible damage to environmentally important areas, such as lake trout spawning habitat.

16. Response: The on-land site, adjacent to the harbor as shown in exhibit 1, is at best, a marginal wildlife habitat. The lake disposal site is generally described in section 2.300. Funding limitations preclude a full-scale study of the lake environment. It is felt that the information in the statement presents an accurate description of the results of open lake dumping of dredged material.

17. Comment: 2.510 Archaeological and Historical Investigations - This paragraph related that comments have been requested from archaeological and historical interests. If the response received from the State Historic Preservation Officer indicates the former Coast Guard lighthouse is being considered for nomination to the National Register of Historic Places, appropriate Section 106 review procedures as described in 36 C.F.R. 800 should be initiated.

17. Response: Nomination of the lighthouse to the National Register was initiated by the Corps of Engineers, St. Paul District on 5 April 1972. Review of the nomination is being conducted by the National Park Service.

18. Comment: It also has come to our attention that the proposed disposal area is located directly atop an archaeological site, a village referred to as "copper village." Collections were made from this area in a 1973 survey conducted by the Michigan Historic Division and published as "An Evaluation of the Archaeological Resources of the Western Upper Peninsula: by J. Franzen and D. Weston, Michigan Historic Division, Archaeological Survey Report No. 2."

U.S. DEPARTMENT OF THE INTERIOR (Continued)

There is no reference in the EIS to this survey or to the site as having archaeological or historic significance. Documentation of coordination regarding this site with the State Historic Preservation Officer should be included in the final EIS, which should also demonstrate compliance with Advisory Council on Historic Preservation procedures in 36 C.F.R. 800.

18. Response: Paragraphs 2.410 and 2.412 have been revised to describe the status of the historical investigation. Also, see exhibits 10-18 and comment/response 26.

19. Comment: Paragraph 2.601 of the draft EIS states "Without dredging, toxic elements (heavy metals and some persistent organics) built up in the sedimentary deposits may continue for a long time to act as a "source" of toxic material to harbor and lake waters." It also should note that, if water sediment quality improves due to implementation of pollution control measures in the vicinity, these old polluted sediments may become sealed off by new unpolluted sediments, in areas where no dredging is done.

19. Response: Concur. This change has been made in paragraph 2.501 of the final statement.

20. Comment: 4.400 Probable Impact of Open Lake Dumping - states only that lake dumping is permitted for material dredged outside the "project mile zero limit." Probable impacts on the habitat and fish resources of the spoil site should be presented. This information should be specific to the proposed site.

20. Response: See section 4.400 of the final EIS.

21. Comment: Statements in paragraphs 4.410 and 4.420 indicate that the past practice of dumping dredged materials while in motion has tended to maximize the problems of turbidity. Is this method of disposal still being practiced? If so, is there a reason why it should continue? The EIS should clarify this point.

21. Response: Dumping while in motion is still being practiced, although not at Ontonagon where the unpolluted material is used for beach nourishment at the village park and is dumped while the barge is stationary (see paragraph 1.631). Moving while dumping in the open lake tends to maximize turbidity but it minimizes the piling of the material on the larger area, rather than creating a series of large piles. A severe local impact is avoided and the effect is distributed throughout the dumping zone and thereby lessened at each point.

U.S. DEPARTMENT OF THE INTERIOR (Continued)

22. Comment: The optimism expressed in the last sentence on page 18 of the draft EIS is not consistent with the results of harbor bottom sampling given in paragraph 4.360, Biological Impacts, which indicate fewer benthic organisms in dredged areas of the harbor compared with areas that had not been dredged.

22. Response: Comment noted. Corrections to the text have been made.

23. Comment: Paragraph 6.220 of the draft EIS presents beach nourishment as an alternative to open lake disposal of nonpolluted spoil. We understand that some shore areas in the vicinity of the project would provide improved public recreation if their beaches had more sand. It could be environmentally preferable to put sandy dredge spoil on an existing beach (provided this material is clean and of a good quality) rather than to dump the spoil on lake bottom of unevaluated productivity and habitat. For these reasons, we suggest that prior to preparation of the final EIS, the Michigan Department of Natural Resources be contacted to identify suitable beaches requiring sand. If such sites are available, we suggest that this alternative be closely evaluated and that the EIS indicate any beach replenishment plans that are developed.

23. Response: Beach nourishment with unpolluted material has been done in Ontonagon since 1970. The material is dumped just offshore of the Ontonagon village park and wave action tends to carry the material in to replenish the eroding shoreline (see paragraph 1.631).

U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION

24. Comment: The dredging limits at the highway bridge carrying M-64 over the Ontonagon River are incomplete or unclear. Our concern is for the possibility of the dredging undermining the structure footings and creating or contributing to severe scour. If the proposed work does not extend to the bridge or if procedures to prevent scour are proposed, these should be discussed.

24. Response: Exhibit 1 of the Technical Appendix shows the limits of the proposed dredging as a dashed line. The upstream limit of the project is 50 feet from any part of the bridge structure. Dredging should have no effect on the bridge.

25. Comment: There should be discussion of the procedures for handling and hauling polluted materials to insure proper disposal. Paragraph 1.651 indicates polluted sand will be stockpiled on shore and hauled as needed for fill to the construction site of the proposed water treatment facility. The statement should discuss the precautions that will be taken to insure the confinement of polluted material in the stockpile and during the hauling operations.

U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION (Cont.)

25. Response: See Response 3.

U.S. DEPARTMENT OF TRANSPORTATION, U.S. COAST GUARD

The draft environmental impact statement has been reviewed by this office and at this time we have no comments to offer.

ADVISORY COUNCIL ON HISTORIC PRESERVATION

26. Comment: This is in response to your request of December 6, 1974, for comments on the draft environmental statement for Operation and Maintenance, Ontonagon Harbor, Lake Superior, Michigan. The Advisory Council has reviewed the statement and notes that the undertaking will affect the Ontonagon Lighthouse, Ontonagon County, Michigan, a property nominated by the Michigan State Historic Preservation Officer for inclusion in the National Register of Historic Places.

On the basis of this information, the Council requests that the Corps of Engineers, U.S. Department of the Army investigate this matter to determine whether Section 1 (3) or Section 2(b) of Executive Order 11593 is applicable. Steps to determine this applicability are set forth in Section 800.4 of the Council's "Procedures for the Protection of Historic and Cultural Properties" (36 C.F.R. Part 800). A copy of the Council's procedures is attached for your convenience.

Until the requirements of 36 C.F.R. Part 800 are met, the Council considers the draft environmental statement to be incomplete in its treatment of historical, archaeological, architectural and cultural resources. To remedy this deficiency, the Council will provide substantive comments on the undertaking's effect on the previously mentioned historic property through the compliance process.

26. Response: The lighthouse has been recognized as a cultural resource and its nomination to the National Register of Historic Places is being studied by the National Park Service. The Michigan State Archaeologist and the State Historic Preservation Officer have established that operation and maintenance may have an adverse effect on the site. The Corps of Engineers accepts this determination and on-site inspection and testing by a professional Archaeologist was done in the spring of 1975 to determine the actual effects of operation and maintenance. Further determination will be made once the final study document is received by this office. Also, see paragraphs 2.410 and 2.412 and exhibits 10-18.

MICHIGAN DEPARTMENT OF NATURAL RESOURCES - Letter of 20 January 1975

The project as described in the EIS corresponds with our previous knowledge of the activities. The statement itself portrays a rather good analysis of the environmental impacts.

MICHIGAN DEPARTMENT OF NATURAL RESOURCES - Letter of 29 January 1975

27. Comment: There is no definite plan to use the unpolluted spoil for beach nourishment. In view of the erosion problems in the area and the decision to maintain Lake Superior at a higher level, this section should be expanded and a definite plan for beach nourishment should be presented.

27. Response: The unpolluted material has been used for beach nourishment at the Ontonagon village park for several years. See paragraph 1.631.

28. Comment: There is no alternative for dredging on a lesser scale. Since there is no commercial traffic in and out of the harbor, is such a large scale project needed? Could the area dredged be reduced in size or depth?

Economic impact of the project is not fully assessed. Costs/benefits of these types of public works projects should be part of the impact statement. From 1967-1973 over $1 million was spent to maintain the harbor. Could these expenditures be reduced in part by reducing the scale of the project.

28. Response: In 1974, the dredging limits in Ontonagon Harbor were reduced due to the absence of commercial traffic. The approach channel depth was held at 17 feet to accommodate sailboats. The harbor width was reduced to 100 feet and the depth was reduced to 12 feet. No analysis of savings has been made.

29. Comment: The statement indicates that dredging would reduce upstream flooding (4.600- Page 17). Flood Plain Information - Ontonagon, Michigan, Corps of Engineers (1970), indicates that ice pile-up behind the M-64 Highway Bridge and the railroad bridge, both upstream from the project area, is the major cause of flooding. Project dredging would have little effect on flood levels.

29. Response: The 1970 report is correct. Since that time the major justification for dredging has been maintenance of the harbor for recreation traffic. The prevention of some amount of flooding may be an adjunct benefit of the dredging program.

30. Comment: Page 7, paragraph 2.330: Observations appear to be in error. Re: Taconite and green waters interstate.

30. Response: It is assumed that this comment was intended to stress the fact that man has had more than "little or no" effect on the eutrophication of Lake Superior. We concur; however, as compared to the other Great Lakes,

man's effect on Lake Superior could be considered minimal at this time. Hopefully, controls on man's activities will help to preserve the lake in an "as good or better than it is now" condition.

31. Comment: Page 7, paragraph 2.333: This paragraph contradicts itself by talking about water quality degradation in open waters and harbors, and then stating the problem is not yet acute.

31. Response: The statement, paragraph 2.233 of the final EIS, has been revised to indicate that enforcement programs have become more stringent in recent years, and it is hoped that the problems will decrease.

32. Comment: Page 10, paragraph 2.460: We are unable to grasp the relevancy of trying to identify the fauna as young. Also, what are we talking about in benthos - types, typical species, etc?

32. Response: The word "recent" has been substituted for "young" in paragraph 2.360 of the final EIS. "Benthos" refers to the types (i.e. species) that have inhabited the region since the last glacial age.

33. Comment: Page 10, paragraph 2.470: Further contact with the Michigan Department of Natural Resources, Fisheries Division, also would be helpful in the future.

33. Response: The draft EIS was in error. The Michigan Department of Natural Resources has been contacted (paragraph 2.370).

34. Comment: Page 10, paragraph 2.480: What does a ski resort have to do with maintenance of a harbor:

34. Response: The ski resort has nothing to do with harbor maintenance, but knowing of its existence is helpful in establishing and understanding the regional environmental setting. The information was out of place in the draft EIS and is now found as paragraph 2.460.

35. Comment: Page 12, paragraph 2.600: Regarding loosened sediments, are we talking about erosion? If so, how much, from where, and what type?

35. Response: The paragraph refers to eroded material. No investigation has been conducted to determine the origin of the sediment. The Corps annually removes about 40,000 - 50,000 cubic yards of material to maintain the described limits of navigation.

36. Comment: Page 12, paragraph 3.001: Water quality in Lake Superior has little to do with commercial fishing.

36. Response: The quality of the water in any lake is an important factor in the production of fish in that lake. The production of fish (amount and type of fish) forms the basis for the commercial fishing industry. Therefore water quality does influence commercial fishing.

MICHIGAN DEPARTMENT OF NATURAL RESOURCES - Letter of 29 January 1975 (Continued)

37. Comment: Page 16, paragraph 4.370: We note a lack of data in this paragraph describing depths, types of bottom and what will or will not inhabitat the subject bottom types. As an example, dredging may reduce food or benthos, etc.

37. Response: The paragraph is intended to describe the effects of habitat alteration. A description of the sediments and organisms encountered is provided in exhibit 5 and paragraphs 2.350-2.361. Upon completion of the sewage treatment lagoons by Hoerner Waldorf Corporation, the quality of the habitat in Ontonagon Harbor may be expected to change from a pollution-restricted environment to a cleaner, more diverse [illegible] system.

38. Comment: Page 16, paragraph 4.400: We suggest that the impact has not really been described here and should be detailed.

38. Response: The impact is discussed in paragraphs 4.401 through 4.442 of the final EIS.

39. Comment: Page 17, paragraph 4.500: Again, as previously, what is the impact?

39. Response: The impact is discussed in paragraphs 4.500 through 4.540 of the final EIS.

40. Comment: Page 17, paragraph 4.530: This is a rather shocking paragraph to read that wetlands are a sterile fill area. Perhaps the writer did not mean this.

40. Response: The paragraph is correct as stated.

41. Comment: Page 18, paragraph 5.101: This paragraph ignores the long range effects of settling out of materials.

41. Response: The impacts of turbidity are discussed in paragraphs 5.100 through 5.105 of the final EIS.

42. Comment: Page 18, paragraph 5.102: What about effects on benthos and zooplankton.

42. Response: See paragraphs 4.360 through 4.370 and paragraph 5.105 of the final EIS.

43. Comment: Page 18, paragraph 5.103: Are the listed materials and elements present? If so, to what extent?

43. Response: Exhibits 5 and 7 show the materials and quantities of each present in the sediment at Ontonagon Harbor.

MICHIGAN DEPARTMENT OF NATURAL RESOURCES - Letter of 29 January 1975 (Continued)

44. Comment: Page 18, paragraph 5.104; The paragraph ignores certain important considerations, e.g. fish spawning, eggs and larvae. The paragraph also relates to investigations that indicate rapid benthic recolonization after dredging. Previous paragraphs indicated that no such data is available. Is there data?

44. Response: Revision of the text has been made concerning spawning runs. It is highly unlikely that any species would spawn in the project area of the harbor but would instead migrate up the river to spawn in shallow reaches or marshes. Fish counts by the Michigan DNR have encountered gravid walleye and perch in the harbor, but they probably spawn in the undredged areas where the water is shallower and the bottom is more conducive to spawning. The references used are footnoted in the text of the final impact statement (paragraphs 5.104-5.105).

45. Comment: Page 19, paragraph 6.101: Dredging may uncover toxic materials and result in water pollution, whereas, a no dredging policy, in cases where toxic materials are already covered and stabilized, would leave the area undisturbed and would not be a polluting situation.

45. Response: Concur. The final EIS has taken this into account.

46. Comment: Page 21, paragraph 7.005: How (in the last sentence) is the pollution prevention accomplished?

46. Response: The lagoons being built by Hoerner Waldorf Corporation are part of their sewage treatment facility. In addition to handling the waste from the pulp mill, the facility will process the waste from the village's sewage treatment plant, thereby providing secondary treatment for that waste material.

Letters of Comment

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V
230 SOUTH DEARBORN STREET
CHICAGO, ILLINOIS 60604

Colonel Max W. Noah
District Engineer
U. S. Army Engineer District, St. Paul
1210 U.S. Post Office & Customhouse
St. Paul, Minnesota 55101

FEB [illegible]

Dear Colonel Noah:

We have completed our review of the Draft Environmental Impact Statement (EIS) for the Operation and Maintenance of Ontonagon Harbor, Ontonagon County, Michigan as requested in your letter of December 6, 1974. We have classified our comments as Category LO-2. Specifically, this means that we have no major objections to the proposed actions but additional information is required to fully assess the environmental impact of the proposal. The classification and the date of our comments will be published in the Federal Register in accordance with our responsibility to inform the public of our views on proposed Federal actions under Section 309 of the Clean Air Act.

As you know, we have had considerable involvement with this project through our classification of harbor bottom sediments and our attached March 3, 1972 review of the Draft EIS for the Diked Disposal Project in Ontonagon Harbor. A Final EIS was not prepared on this project. We offer the following comments:

PROJECT DESCRIPTION

The continued utilization of reduced maintenance depths as compared to the greater authorized depths is desirable and should be encouraged in the future. Maintenance of the existing project as authorized should be thoroughly discussed in the EIS with a more detailed description of past and anticipated commercial traffic using Ontonagon Harbor.

We note that the portion of the project as modified by the 1962 River and Harbor Act was classified to an "inactive" status on February 24, 1966 because (1) "local interests indicated they could not provide the lands for harbor development" and (2) "studies indicated that changes occurred in initial and prospective commerce and that the project was no longer economically feasible". These project modifications as authorized by the 1962 River and Harbor are a part of the current List of Projects Proposed for Deauthorization

(pursuant to PL 93-251) for the reasons stated above.

Additional information is required on the size and design of the temporary holding area adjacent to the west pier and on its integrity to temporarily confine polluted spoil and prevent reentry of pollutants into surface waters. Information on the retention time, the quality of return drainage and the effects of factors such as wind and water erosion should be included.

ENVIRONMENTAL SETTING

The EIS should include a copy of the attached report on EPA's October 18, 1973 bottom sediment survey at Ontonagon Harbor. The results of this survey reveal that bottom sediments from the Highway 64 bridge to project mile point 0 are polluted, indicating a continuation of conditions found in past surveys. The statement in Section 2.343 of the EIS requires correction. The phrase "and IV may be disposed of without causing polluted problems" should be deleted and replaced with "is suitable for open lake disposal in approved dump areas."

Additional information is required on the past history of flood damages at Ontonagon, the major factors responsible for flood damages, current levels of flood protection, and existing measures responsible for flood protection and their individual contribution.

PROBABLE IMPACT OF THE PROPOSED ACTION

We have attached a copy of our March 5, 1973 letter to Mr. Jim Challas, Vice President of the Mill Division, Hoerner Waldorf Corporation that offers guidance in minimizing the potential adverse environmental effects of using polluted spoil for contruction purposes. Provided our recommendations are conditioned upon the Hoerner Waldorf Corporation, we would not object to their use of polluted spoil in constructing aeration ponds.

The status of the U.S. Coast Guard Light Station being nominated to the National Historical Register because of its historical significance should be mentioned. The effect that this nomination will have upon the temporary holding area and Hoerner Waldorf's use of the material for construction purposes should be thoroughly addressed.

ALTERNATIVES TO THE PROPOSED ACTION

Inasmuch as the harbor no longer supports commercial traffic and is utilized only by recreational craft, we believe consideration should be given to the further reduction of project depths and/or reclassification of the project to an "inactive" status. In addition, the alternative of deauthorizing the established project should also be considered since the project purpose of providing "a navigational safeguard for commercial ships" is not being realized. While the benefits of recreation, small craft refuge and to some degree flood protection are being achieved, these benefits do not appear to be the required project purposes sufficient to maintain the harbor in its present authorized category.

We appreciate the opportunity to review this Draft EIS.

Sincerely yours,

Donald A. Wallgren
Chief,
Federal Activities Branch

Attachments
As Stated

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE Room 101, 1405 South Harrison Road
East Lansing, Michigan 48823

December 30, 1974

Colonel Max W. Noah
District Engineer
St. Paul District
Corps of Engineers
1210 U.S. Post Office and
Custom House
St. Paul, Minnesota 55101

Dear Colonel Noah:

The draft environmental impact statement for Operation and Maintenance Activities for Ontonagon Harbor, Ontonagon County, Michigan, was reviewed by the USDA Soil Conservation Service in Michigan and we have no comments regarding the statement.

Thank you for the opportunity to review this proposed project.

Sincerely yours,

Arthur H. Cratty
State Conservationist

cc: Kenneth E. Grant
SCS, Washington, D.C.

UNITED STATES DEPARTMENT OF COMMERCE
The Assistant Secretary for Science and Technology
Washington, D.C. 20230

February 7, 1975

Colonel Max W. Noah
District Engineer - St. Paul District
Corps of Engineers
U. S. Department of the Army
1210 U. S. Post Office & Custom House
St. Paul, Minnesota 55101

Dear Colonel Noah:

The draft environmental impact statement "Ontonagon Harbor, Operation and Maintenance Activities, Ontonagon County, Michigan," which accompanied your letter of December 6, 1974, has been received by the Department of Commerce for review and comment.

The statement has been reviewed and the following comments are offered for your consideration.

GENERAL COMMENTS

A horizontal geodetic control survey monument (triangulation station) is located in the immediate area of the proposed dredging and dredge material disposal. The attached sheet describes this station.

A water level gaging station is located near the south end of Zone II on the northeast side of the channel together with bench marks (Gitche Gumee Oil Co. Dock No. 1). Care should be taken during proposed dredging operations that disturbed sediment does not block the intake to the water level gage sump.

If there is any planned activity which will disturb or destroy these monuments, the Department of Commerce, National Ocean Survey of which the National Geodetic Survey is a part, requires not less than 90 days notification in advance of such activity in order to plan for their relocation. This Department also recommends that funding for this project include the cost of any relocation required for these monuments. We request that this advance notification be given to: Captain L. S. Baker, Director, National Geodetic Survey, National Ocean Survey, NOAA, U. S. Department of Commerce, Room 304A - WSC # 1, 6010 Executive Blvd., Rockville, Maryland 20952.

6.000 ALTERNATIVES TO THE PROPOSED ACTION

Since commercial shipping in the harbor has ceased it appears that harbor maintenance needs could be adjusted to satisfy only recreation traffic requirements.

Therefore, it is recommended that an additional alternate to the proposed action-decreasing the frequency of maintenance activity-be evaluated. This would reduce the adverse effects of dredging: turbidity clouds, release of oxygen consuming nutrients and toxic substances, and reduction in benthic productivity. Decreased costs of less frequent dredging could also occur.

6.200 DISPOSAL ALTERNATES

6.210 OPEN LAKE DISPOSAL

Implementation of the water quality improvement plans as discussed in Section 1.652 could result in a change in the classification of dredge spoils from polluted to non-polluted. An expanded discussion of this occurrence and its resultant change on alternates for total dredge solids disposal should be included.

Thank you for giving us an opportunity to provide these comments, which we hope will be of assistance to you. We would appreciate receiving a copy of the final statement.

Sincerely,

Sidney R. Galler
Deputy Assistant Secretary
for Environmental Affairs

United States Department of the Interior

OFFICE OF THE SECRETARY
NORTH CENTRAL REGION
[illegible] S DEARBORN STREET [illegible] FLOOR
CHICAGO, ILLINOIS [illegible]

ER 74/1509 January 17, 1975

Colonel Max W. Noah
District Engineer
U. S. Army Engineer District
St. Paul
1210 U. S. Post Office & Custom House
St. Paul, Minnesota 551[illegible]

Dear Colonel Noah:

The Department of the Interior has reviewed the Draft Environmental Statement for Ontonagon Harbor, Operation and Maintenance Activities, Ontonagon County, Michigan, as requested in your transmittal letter of December 6, 1974, to our Assistant Secretary--Program Policy. Our comments which are of both a general and specific nature relate to areas of our jurisdiction and expertise and have been prepared in accordance with the National Environmental Policy Act of 1969.

General:

The environmental statement should indicate the volume of polluted sediment to be dredged and should clearly specify the conditions of disposal. At present, the statement mentions legislative authority for disposal of polluted spoil in confined land areas (paragraph 1.641) and implies that confined onland disposal "has been recommended" for the inner part of Ontonagon Harbor (paragraph 4.500). However, the actual disposal under consideration for polluted sand, pending an agreement with the Hoerner Waldorf Corporation, is apparently unconfined use for dikes and fill (paragraph 1.651). Disposal of other (non-sand) components of the polluted spoil is not specified.

Other statements indicate that "Confinement . . . is proposed . . . ." (paragraph 4.531) and, in the same paragraph, that "Construction and use of the confinement facilities resulted . . . .", as if confined disposal is already underway. Later, we read that "Stipulations should be part of anyagreement, however, which should prevent use of polluted sand, gravel, or rock in areas in which containments would be returned to Lake Superior on the water table" (paragraph 5.212). Presumably "containments" was intended to be "contaminants" and "on the water table" meant to be "or the water table." In any event, the environmental statement lacks a clear exposition of the volume of polluted spoil and the method of its disposal in current practice and that

planned for the future.

Because there is a boat marina available in this harbor for use by the general public, we believe that the continued operation and maintenance of the harbor will be helpful in providing for the safety and convenience of the users. Monies from the Land and Water Conservation Fund were approved in 1972 to supplement grants from the Michigan Waterways Commission and the Great Lakes Commission to develop this marina.

Specific:

1.000 PROJECT DESCRIPTION

This section should specify the estimated volumes of polluted and nonpolluted spoil. Will the shore disposal plan described in paragraphs 1.650 and 1.651 accommodate all polluted spoil?

It is important to consider impacts on the spoil disposal site, so this section also should locate exactly the proposed lake disposal area.

2.000 ENVIRONMENTAL SETTING

Paragraphs 2.200 and 2.400 would be improved if physical and biological descriptions of the proposed upland and lake disposal sites were provided to warn of possible damage to environmentally important areas, such as lake trout spawning habitat.

2.480 Natural Areas - It is our understanding that the Ontonagon River is proposed for study under Michigan's Natural Rivers Program. Considering the location of the dredging and maintenance work at the mouth of the river, we foresee no conflict with the possible inclusion of this river in the Michigan Natural Rivers System. However, the Michigan Department of Natural Resources would be better able to assess any possible conflict.

2.510 Archeological and Historical Investigations - This paragraph relates that comments have been requested from archeological and historical interests. If the response received from the State Historic Preservation Officer indicates that the former Coast Guard lighthouse is being considered for nomination to the National Register of Historic Places, appropriate Section 106 review procedures as described in 36 C.F.R. 800 should be initiated.

It also has come to our attention that the proposed disposal area is located directly atop an archeological site, a village referred to as "copper village." Collections were made from this area in a 1973 survey conducted by the Michigan Historic Division and

published as "An Evaluation of the Archeological Resources of the Western Upper Peninsula" by J. Franzen and D. Weston, Michigan Historic Division, Archeological Survey Report No. 2.

There is no reference in the EIS to this survey or to the site as having archeological or historic significance. Documentation of coordination regarding this site with the State Historic Preservation Officer should be included in the final EIS, which should also demonstrate compliance with Advisory Council on Historic Preservation procedures in 36 C.F.R. 800.

Paragraph 2.601 states "Without dredging, toxic elements (heavy metals and some persistent organics) built up in the sedimentary deposits may continue for a long time to act as a "source" of toxic meterial to harbor and lake waters." It also should note that, if water and sediment quality improve due to implementation of pollution control measures in the vicinity, these old polluted sediments may become sealed off by new unpolluted sediments, in areas where no dredging is done.

4.000 PROBABLE IMPACT OF THE PROPOSED ACTION

4.400 Probable Impact of Open Lake Dumping - states only that lake dumping is permitted for material dredged outside the "project mile zero limit." Probable impacts on the habitat and fish resources of the spoil site should be presented. This information should be specific to the proposed site.

Statements in paragraphs 4.410 and 4.420 indicate that the past practice of dumping dredged materials while in motion has tended to maximize the problems of turbidity. Is this method of disposal still being practiced? If so, is there a reason why it should continue? The EIS should clarify this point.

5.000 PROBABLE UNAVOIDABLE ADVERSE EFFECTS

The optimism expressed in the last sentence on page 18 is not consistent with the results of harbor bottom sampling given in paragraph 4.360, Biological Impacts, which indicate fewer benthic organisms in dredged areas of the harbor compared with areas that had not been dredged.

6.000 ALTERNATIVES TO THE PROPOSED ACTION

Paragraph 6.220 presents beach nourishment as an alternative to open lake disposal of nonpolluted spoil. We understand that some shore areas in the vicinity of the project would provide improved

public recreation if their beaches had more sand. It could be environmentally preferable to put sandy dredge spoil on an existing beach (provided this material is clean and of a good quality) rather than to dump the spoil on lake bottom of unevaluated productivity and habitat. For these reasons, we suggest that prior to preparation of the final EIS, the Michigan Department of Natural Resources be contacted to identify suitable beaches requiring sand. If such sites are available, we suggest that this alternative be closely evaluated and that the EIS indicate any beach replenishment plans that are developed.

Sincerely yours,

Madonna F. McGrath
Acting Special Assistant
to the Secretary

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
REGION 5
18209 DIXIE HIGHWAY
HOMEWOOD ILLINOIS 60430

December 26, 1974

IN REPLY REFER TO 5-00.5

Colonel Max W. Noah
District Engineer
St. Paul District
Corps of Engineers
1210 U. S. Post Office and Custom House
St. Paul, Minnesota 55101

Dear Colonel Noah:

As requested, we have reviewed the draft environmental statement for the Operation and Maintenance of Ontonagon Harbor, Ontonagon County, Michigan and offer the following comments.

The dredging limits at the highway bridge carrying M-64 over the Ontonagon River are incomplete or unclear. Our concern is for the possibility of the dredging undermining the structure footings and creating or contributing to severe scour. If the proposed work does not extend to the bridge or if procedures to prevent scour are proposed, these should be discussed.

There should be discussion of the procedures for handling and hauling polluted materials to insure proper disposal. Paragraph 1.651 indicates polluted sand will be stockpiled on shore and hauled as needed for fill to the construction site of the proposed water treatment facility. The statement should discuss the precautions that will be taken to insure the confinement of polluted material in the stockpile and during the hauling operations.

The opportunity to review and comment on the draft environmental statement is appreciated.

Sincerely yours,

H. L. Anderson
Regional Administrator

By:

W. G. Emrich, Director
Office of Environment and Design

DEPARTMENT OF TRANSPORTATION
UNITED STATES COAST GUARD

Address reply to:
COMMANDER (mep)
Ninth Coast Guard District
1240 East 9th St.
Cleveland, Ohio 44199
Phone: 216-522-3918

5922
20 January 1975

Department of the Army
St. Paul District, Corps of Engineers
1210 U.S. Post Office & Custom House
St. Paul, Minnesota 55101

Re: NCSED-ER

Dear Sir:

The Draft Environmental Impact Statement listed below has been reviewed by this office and at this time we have no comments to offer.

Draft Environmental Statement entitled:

Ontonagon Harbor Operation and Maintenance Activities

Sincerely,

for

W.C. OCHMAN
Captain, U.S. Coast Guard
Chief, Marine Safety Division
By direction of the Commander,
Ninth Coast Guard District

Advisory Council
On Historic Preservation
[illegible]
[illegible]

February 11, 1975

Col. Max W. Noah
District Engineer
St. Paul District
Corps of Engineers
U.S. Department of the Army
1210 U.S. Post Office & Custom House
St. Paul, Minnesota 55101

Dear Colonel Noah:

This is in response to your request of December 6, 1974, for comments on the draft environmental statement for Operation and Maintenance, Ontonagon Harbor, Lake Superior, Michigan. The Advisory Council has reviewed the statement and notes that the undertaking will affect the Ontonagon Lighthouse, Ontonagon County, Michigan, a property nominated by the Michigan State Historic Preservation Officer for inclusion in the National Register of Historic Places.

On the basis of this information, the Council requests that the Corps of Engineers, U.S. Department of the Army investigate this matter to determine whether Section 1(3) or Section 2(b) of Executive Order 11593 is applicable. Steps to determine this applicability are set forth in Section 800.4 of the Council's "Procedures for the Protection of Historic and Cultural Properties" (36 C.F.R. Part 800). A copy of the Council's procedures is attached for your convenience.

Until the requirements of 36 C.F.R. Part 800 are met, the Council considers the draft environmental statement to be incomplete in its treatment of historical, archeological, architectural and cultural resources. To remedy this deficiency, the Council will provide substantive comments on the undertaking's effect on the previously mentioned historic property through the compliance process. Please contact Jordan Tannenbaum at 202-254-3380 of the Advisory Council staff to assist you in completing this process as expeditiously as possible.

Sincerely yours,

John D. McDermott
Director, Office of Review and
Compliance

Enclosure

STATE OF MICHIGAN

WILLIAM G. MILLIKEN, Governor

DEPARTMENT OF NATURAL RESOURCES

STEVENS T. MASON BUILDING, LANSING, MICHIGAN 48926

~~XXGENE GAZLAY, Director~~

Howard A. Tanner, Director

January 20, 1975

Colonel Max W. Noah
District Corps of Engineers
St. Paul District
St. Paul, Minnesota 55101

Dear Colonel Noah:

We have reviewed the Draft Environmental Impact Statement for Ontonagon Harbor, Operation and Maintenance.

The project as described in the EIS corresponds with our previous knowledge of the activities. The statement itself portrays a rather good analysis of the environmental impacts.

Sincerely,

H. A. Tanner

Howard A. Tanner
Director

MICHIGAN
THE GREAT LAKE STATE

5/74

STATE OF MICHIGAN

WILLIAM G. MILLIKEN, Governor

DEPARTMENT OF NATURAL RESOURCES

STEVENS T. MASON BUILDING, LANSING, MICHIGAN 48926

Howard A. Tanner, Director

January 29, 1975

Colonel Max W. Noah
District Corps of Engineers
St. Paul District
St. Paul, Minnesota 55101

Re: NCSED-ER

Dear Colonel Noah:

Further review by the Department of Natural Resources has produced the following comments regarding the Draft Environmental Impact Statement for Operation and Maintenance, Ontonagon Harbor. These comments in no way change our acceptance of the project per our letter of January 20, 1975 but the EIS would benefit from their inclusion.

There is no definite plan to use the unpolluted spoil for beach nourishment. In view of the erosion problems in the area and the decision to maintain Lake Superior at a higher level, this section should be expanded and a definite plan for beach nourishment should be presented.

There is no alternative for dredging on a lesser scale. Since there is no commercial traffic in and out of the harbor, is such a large scale project needed? Could the area dredged be reduced in size or depth?

Economic impact of the project is not fully assessed. Costs/benefits of these types of public works projects should be part of the impact statement. From 1967-1973 over $1 million was spent to maintain the harbor. Could these expenditures be reduced in part by reducing the scale of the project.

The statement indicates that dredging would reduce upstream flooding (4,600 - Page 17). Flood Plain Information - Ontonagon River, Ontonagon, Michigan

MICHIGAN
THE GREAT LAKE STATE
4/74

Corps of Engineers (1970), indicates that ice pile-up behind the M-64 Highway bridge and the railroad bridge, both upstream from the project area, is the major cause of flooding. Project dredging would have little eff on flood levels.

In addition to the above, the following comments are listed by page and paragraph.

Page 7, paragraph 2.330: Observations appear to be in error. Re: Taconite and green waters interstate.

Page 7, paragraph 2.333: This paragraph contradicts itself by talking about water quality degradation in open waters and harbors, and then stating the problem is not yet acute.

Page 10, paragraph 2.460: We are unable to grasp the relevancy of trying to identify the fauna as young. Also, what are we talking about in benthos - types, typical species, etc.?

Page 10, paragraph 2.470: Further contact with the Michigan Department of Natural Resources, Fisheries Division also would be helpful in the future.

Page 10, paragraph 2.480: What does a ski resort have to do with maintenance of a harbor?

Page 12, paragraph 2.600: Regarding loosened sediments, are we talking about erosion? If so, how much, from where, and what type?

Page 12, paragraph 2.601: It is unlikely that toxic materials will continue from the sedimentary deposits for any length of time. Usually such sources are bound up by some manner--i.e., covered over so as to seal in any toxic action.

Page 12, paragraph 3.001: Water quality in Lake Superior has little to do with commercial fishing.

Page 15, paragraph 4.362: It is suggested that Fisheries data are available--that fishes common to most of the surrounding area are likewise common to Ontonagon.

Page 16, paragraph 4.370: We note a lack of data in this paragraph describing depths, types of bottom and what will or will not inhabitat the subject bottom types. As an example, dredging may reduce food or benthos, etc.

Page 16, paragraph 4.400: We suggest that the impact has not really been described here and should be detailed.

Page 17, paragraph 4.500: Again, as previously, what is the impact?

Page 17, paragraph 4.520: This is a rather shocking paragraph to read that wetlands are a sterile fill area. Perhaps the writer did not mean this.

Page 18, paragraph 5.101: This paragraph ignores the long range effects of settling out of materials.

Page 18, paragraph 5.102: What about effects on benthos and zooplankton.

Page 18, paragraph 5.103: Are the listed materials and elements present? If so, to what extent?

Page 18, paragraph 5.104: The paragraph ignores certain important considerations, e.g. fish spawning, eggs and larvae. The paragraph also relates to investigations that indicate rapid benthic recolonization after dredging. Previous paragraphs indicated that no such data is available. Is there data?

Page 19, paragraph 5.220: Where is supporting data for statement on recolonization?

Page 19, paragraph 6.101: Dredging may uncover toxic materials and result in water pollution, whereas, a no dredging policy, in cases where toxic materials are already covered and stabilized, would leave the area undisturbed and would not be a polluting situation.

Page 21, paragraph 7.005: How (in the last sentence) is the pollution prevention accomplished?

Thank you for considering our further comments.

Sincerely,

Howard A. Tanner

Howard A. Tanner
Director

TECHNICAL

APPENDIX

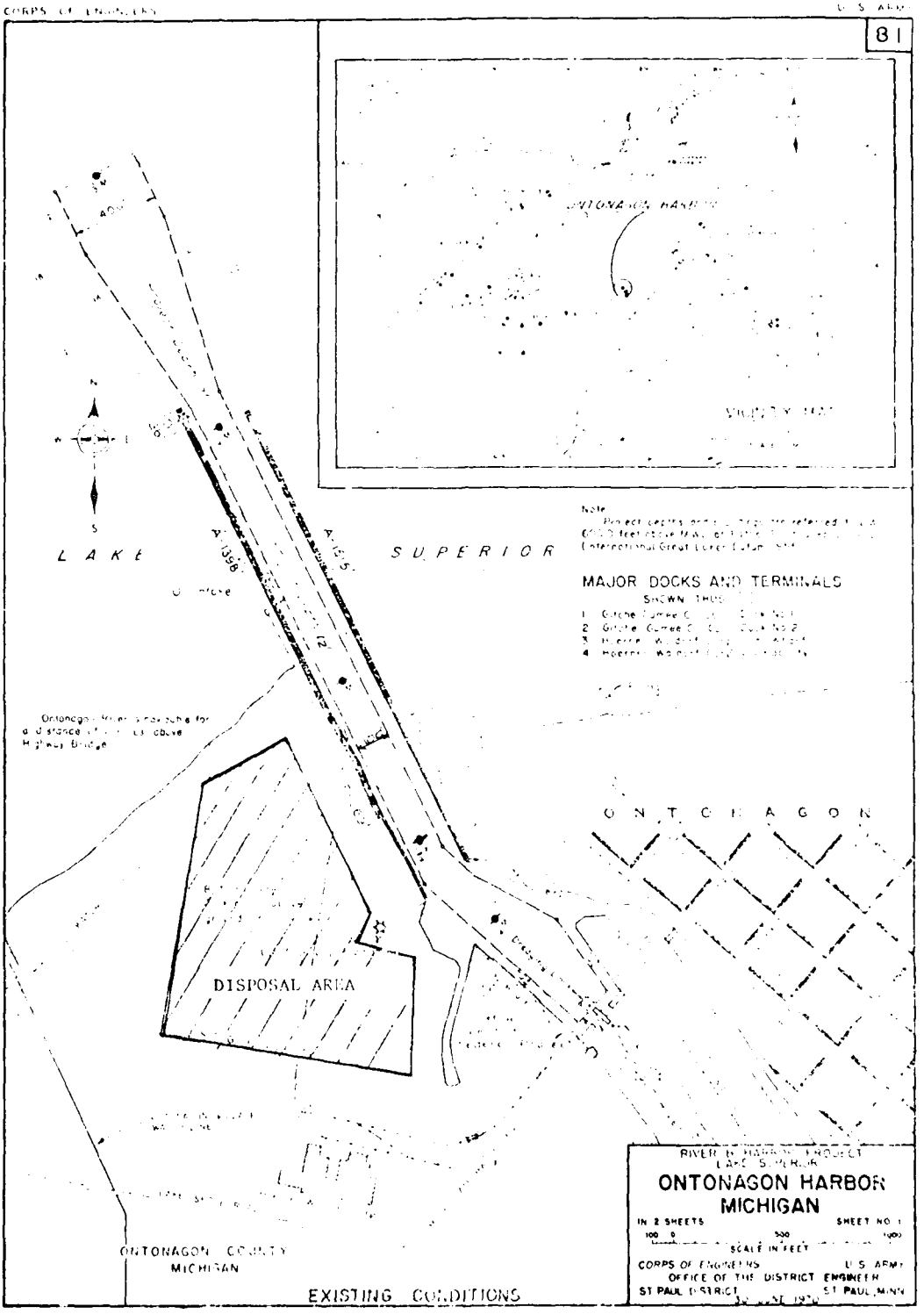
ST. PAUL DISTRICT, CORPS OF ENGINEERS
DEPARTMENT OF THE ARMY

FINAL
ENVIRONMENTAL IMPACT STATEMENT

OPERATION AND MAINTENANCE ACTIVITIES
ONTONAGON HARBOR, MICHIGAN
LAKE SUPERIOR

TECHNICAL APPENDIX

TABLE OF CONTENTS


CORPS OF ENGINEERS
U. S. ARMY
81
LAKE
SUPERIOR
MAJOR DOCKS AND TERMINALS
SHOWN THUS
DISPOSAL AREA
ONTONAGON
ONTONAGON COUNTY
MICHIGAN
EXISTING CONDITIONS
RIVER AND HARBOR PROJECT
LAKE SUPERIOR
ONTONAGON HARBOR
MICHIGAN
IN 2 SHEETS
SHEET NO. 1
SCALE IN FEET
CORPS OF ENGINEERS
U.S. ARMY
OFFICE OF THE DISTRICT ENGINEER
ST PAUL DISTRICT
ST. PAUL, MINN.

Ontonagon Harbor Operations History *

The following is a summary of Corps of Engineers activity at Ontonagon Harbor from 1910 until 1973:

Year	Event Description	Cu. Yds. Removed	Costs $ New	Costs $ Maint.
1910-50	Work in harbor	1,996,173	304,420	909,595
1950-59	Maintenance dredging, pier repair, inspections and condition surveys.	197,180		170,883
1960-64	Maintenance dredging, rock placed or breakwaters, condition surveys.	303,655		294,234
1965-66	Modification design, maintenance dredging, condition surveys.	303,026	27,482	179,094
1967-70	Maintenance dredging, pier repair, timber fender replacement, condition surveys.	321,120		481,158
1971-73	Maintenance dredging, breakwater repairs, condition surveys, environmental studies and engineering.	140,120		561,814
	Total cubic yards removed through 1972	3,261,274	331,903	2,603,467
	Total expenditures through 1972		$ 2,935,370	

* SOURCE: DAILY COMPUTATION SHEETS DREDGING OPERATIONS, USACE to 1950

ANNUAL REPORTS PUBLISHED BY THE USACE SINCE 1950

ONTONAGON HARBOR, MICHIGAN

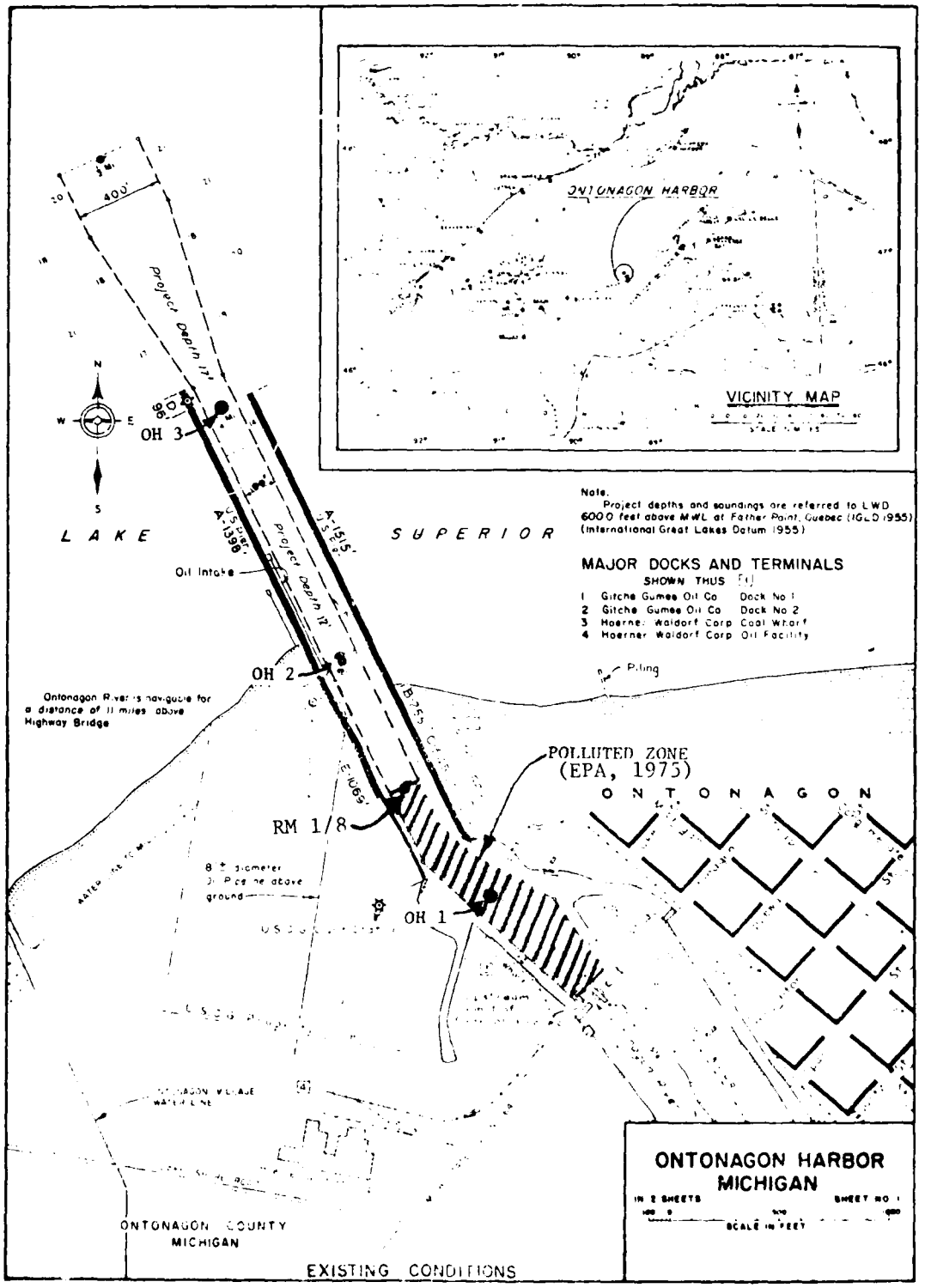


EXHIBIT 4

ONTONAGON HARBOR
POLLUTED ZONE
A-4

SEDIMENT POLLUTION EVALUATION

Harbor : Ontonagon
State : Michigan
Sampled: October 18, 1973

I.

Evaluation Parameters	Max. Accept. Values (%)	Values at Each Station (%)		
		OH 1	OH 2	OH 3
Volatile Solids	6.0	17.5	3.79	0.30
Chem. Oxy. Demand	5.0	20.0	4.5	0.2
T. Kjel. Nitrogen	0.10	0.17	0.064	0.013
Oil-Grease	0.15	0.16	0.063	0.071
Mercury	0.0001	--	--	--
Lead	0.005	0.0042	0.0019	<0.0003
Zinc	0.005	0.0056	0.0023	0.0003
Supplementary:				
Phosphorus	0.10	0.043	0.023	0.014
Total Solids		26.15	62.88	82.33
Arsenic		0.00031	0.00016	0.00008
Cadmium		<0.0004	0.0003	0.0004
Chromium		0.0049	0.0015	<0.0003
Copper		0.0023	0.0010	<0.0002
Nickel		0.0037	0.0034	0.0018
Total PCB's		0.0000140	0.0000010	<0.000000001

II.

Other Considerations:

Present Classification (1970) - Inner harbor polluted from mile point 0 to Hwy. 64 bridge.
Dredging Frequency - Each year
Prior Disposal Area - Inner harbor on land - entrance channel to Lake Superior in open waters.
Water Effected by Disposal - Lake Superior
Present Quality of Waters - Pristine
Present Use Classification of Waters - All uses (domestic consumption, fisheries, recreation)
Other

FIELD REPORT

Harbor : Ontonagon
State : Michigan
Sampled: October 18, 1973
[redacted].

Sample or Station No.	Location	Observations
OH 1	280' S.E. of end of pier, mid-channel, and at Ontonagon River Mile .25. Latitude - 46°52'26" Longitude - 89°19'21"	Reddish-brown sand and silt sample with woodchips and fibers. Had a slight septic odor. No organisms were observed.
OH 2	Midchannel at Ontonagon River Mile 0.0. Latitude - 46°52'35" Longitude - 89°19'35"	Reddish-brown sand and silt sample with small amount of wood fibers. Had a slight septic odor. No organisms were observed.
OH 3	Midchannel at pier entry at mile .25 (Lake Superior). Latitude - 46°52'45" Longitude - 89°19'47"	Reddish-brown sand sample with no organic material. No odor or biological organisms were observed.

Station No. OH 1
Location On Ontonagon
River Mile .25.
Collection Date 10/18/73
Sample Depth 20'
Type Sample Petersen Dredge
IV.

ONTONAGON HARBOR, MICHIGAN
(Study Area)
FIELD INVESTIGATION SECTION
BENTHIC INVERTEBRATE FAUNA
DATA SHEET

Total Number of:
Organism 163/ft²
Kinds 5
Intolerant Kinds 1
Facultative Kinds 2
Tolerant Kinds 2

	No/ft²		No/ft²
ANNELIDA			
Oligochaeta			
Stylaria sp.	3		
Tubificidae	12		
DIPTERA			
Chironomidae			
Chironomus sp.	53		
Tribelos sp.	74		
Procladius sp.	21		
NOTE: Sample consisted mostly of			
pulp fibers, detritus, sludge-like			
material.			

V. Conclusions (biological)

This station has a low macroinvertebrate taxa-diversity of 5, with only one tolerant kind of organism present. The density is made up of 45% intolerant organisms and 40% tolerant organisms. This station appears to have a degraded benthic fauna.

VI.

Conclusions:

Station OH 1 is considered polluted with five out of the eight evaluation parameters in excess of the acceptable values. In addition, wood chips, fibers and a slight septic odor were reported. Stations OH 2 and OH 3 do not have any evaluation parameters in excess of acceptable values and are considered unpolluted. However, station OH 2 has most of the evaluation parameter values approaching the maximum acceptable values and it also contained wood fibers and had a slight septic odor and should be considered as a nearly polluted station.

VII.

Recommendations:

All Ontonagon Harbor dredging spoils south of a line from mile point 1/8 to Michigan State Highway 64 bridge should be disposed of in diked enclosures on land.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V
230 SOUTH DEARBORN STREET
CHICAGO, ILLINOIS 60604

JUL 15 1975

Colonel Max W. Noah
District Engineer
Department of the Army
St. Paul District, Corps of Engineers
1210 U.S. Post Office and Custom House
St. Paul, Minnesota 55101

Dear Colonel Noah:

The purpose of this letter is to clarify the classification of harbor sediments at Ontonagon, Michigan. This classification is based upon the survey performed October 18, 1973.

Samples at stations OH-2 and OH-3 are unpolluted. Sample OH-1 is heavily polluted containing high concentrations of volatile solids and COD, and moderately high concentrations of TKN, oil and grease, and lead.

Sediments lakeward of station OH-2 (RM 0) are suitable for unrestricted disposal.

The extent of the polluted material represented by station OH-1 is not clear. However, from the geography of the harbor, it is probable that it is limited to the wider part of the harbor upstream from RM 0.125. Sediments upstream from RM 0.125 are not suitable for open lake disposal and should be disposed of in dike enclosures or on land.

The material between RM 0 and RM 0.125 may be used for beach nourishment but should not be placed in the open lake. If it is not used for beach nourishment, it should be disposed of in diked enclosures or on land.

Sincerely yours,

Christopher M. Timm, Director
Surveillance and Analysis Division

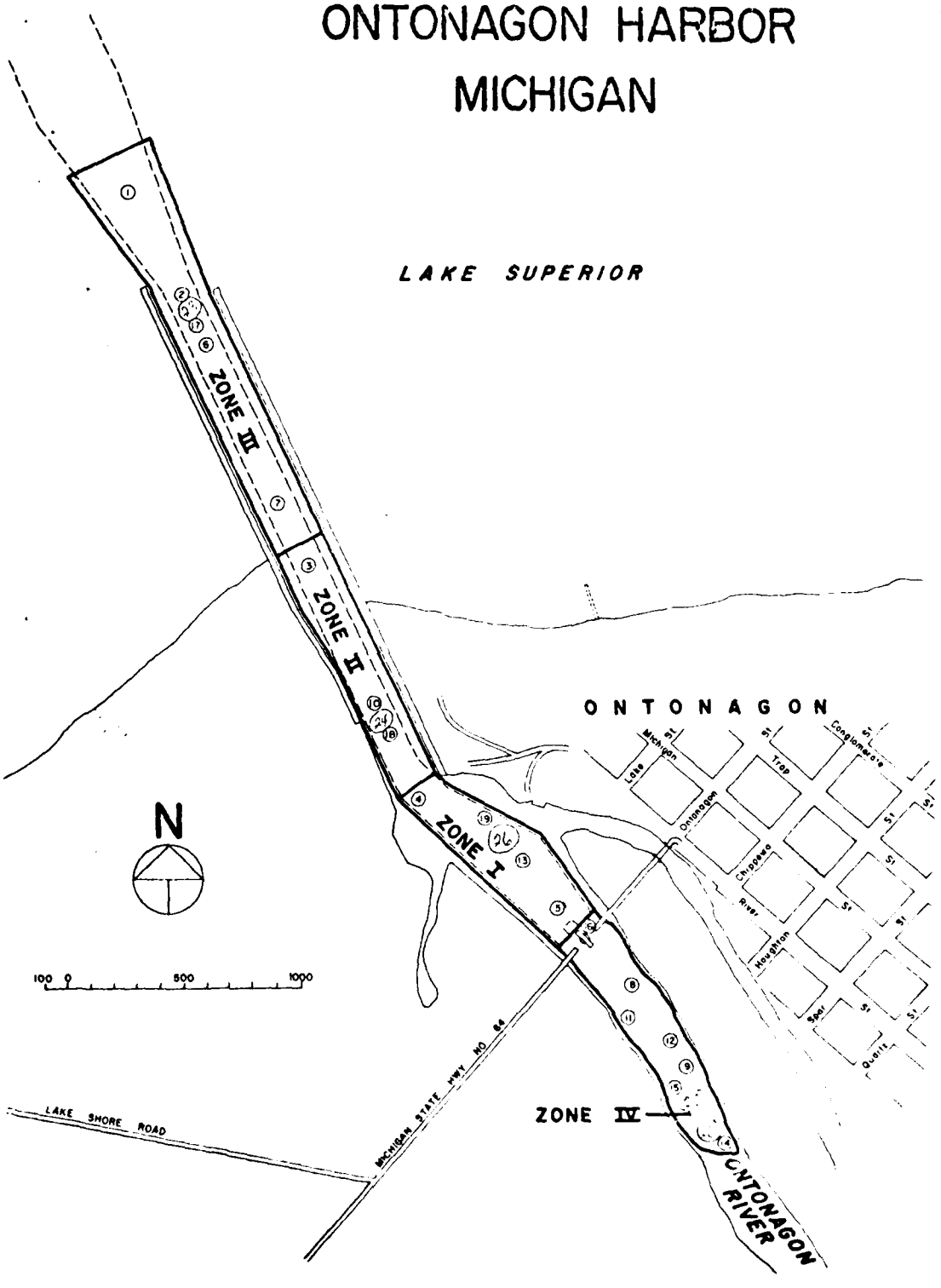


EXHIBIT 6

ONTONAGON HARBOR
HARBOR ZONES

Summary of sediment data obtained by MTU, NBI and EPA from Ontonagon Harbor

Zone		TVS %	O+G mg/Kg	COD mg/Kg	TN mg/Kg	TP mg/Kg	pH	As mg/Kg
I	x̄	2.7	1841	22855	287	377	6.7	0.7
	Range Hi	4.3	5183	60290	360	712	7.3	1.3
	Lo	0.4	400	3270	214	164	6.2	0.4
	Std. Dev.	2.0	1981	22855	103	278	0.6	0.5
	n	5	5	5	2	5	3	3
II	x̄	2.0	793	29359	466	300	6.6	0.6
	Range Hi	3.1	840	69918	562	530	7.1	0.9
	Lo	0.9	708	770	358	113	6.0	0.3
	Std. Dev.	1.0	74	29070	103	183	0.6	0.3
	n	4	3	4	3	4	3	3
III	x̄	1.8	384	8538	1422	609	6.8	0.3
	Range Hi	6.4	830	20665	5800	1720	7.2	0.4
	Lo	0.2	13	2004	178	81	6.3	0.3
	Std. Dev.	2.4	301	9396	2161	610	0.6	0.0
	n	6	6	6	6	6	2	2
IV	x̄	0.5	791	5407	307	239	7.0	0.3
	Range Hi	0.8	1620	14428	404	824	7.3	0.6
	Lo	0.2	0	330	173	107	6.6	0.1
	Std. Dev.	0.2	543	4462	69	211	0.4	0.1
	n	10	9	9	10	10	8	8

Summary of sediment data obtained by MTU, NBI and EPA from Ontonagon Harbor

Zone		Cd mg/Kg	Cu mg/Kg	Pb mg/Kg	Hg mg/Kg	Zn mg/Kg
I	$\bar{x}$	3.83	16.73	5.42	0.48	17.94
	Range Hi	7.40	24.90	9.20	2.10	39.70
	Lo	0.25	10.30	1.60	0.05	7.30
	Std. Dev.	5.06	7.45	3.34	.91	12.84
	n	2	3	5	5	5
II	$\bar{x}$	3.58	103.50	5.22	0.15	23.75
	Range Hi	6.90	278.70	10.50	0.30	40.90
	Lo	0.25	13.80	1.40	0.05	11.00
	Std. Dev.	4.70	151.74	3.83	.12	14.21
	n	2	3	4	4	4
III	$\bar{x}$	0.09	21.10	11.70	0.29	57.54
	Range Hi	0.25	42.30	27.90	1.30	234.00
	Lo	0.01	6.50	4.00	0.05	6.20
	Std. Dev.	0.14	15.54	9.94	.50	89.74
	n	3	4	5	6	6
IV	$\bar{x}$	2.76	22.40	6.96	0.11	226.17
	Range Hi	9.10	38.21	13.50	0.20	1839.70
	Lo	0.01	10.50	0.80	0.05	6.80
	Std. Dev.	4.21	11.08	4.24	0.07	605.50
	n	7	9	9	9	9

Bacteriological analysis of water samples from Ontonagan Harbor, collected by MTU in the summer of 1973. Surface samples (S) and bottom samples (B) were collected one meter below the surface and one meter above the bottom.

Sample	Zone	Date	Total Coliforms	Fecal Coliforms
19S	1	6/73	21	240
19B	1	6/73	36	43
25S	1	8/73	290	1400
25B	1	8/73	1100	460
18S	2	6/73	290	210
18B	2	6/73	28	43
24S	2	8/73	1400	1400
24B	2	8/73	1100	1100
17S	3	6/73	4200	1100
17B	3	6/73	93	15
23S	3	8/73	1100	1400
23B	3	8/73	1100	1100
14S	4	6/73	460	9
14B	4	6/73	28	39
20S	4	8/73	290	1100
20B	4	8/73	1400	1100
15S	4	6/73	210	23
15B	4	6/73	93	43
21S	4	8/73	160	1100
21B	4	8/73	210	23
16S	4	6/73	240	23
16B	4	6/73	460	43
22S	4	8/73	1100	1400
22B	4	8/73	1100	1400

EXHIBIT 8 BACTERIOLOGICAL ANALYSIS OF WATER SAMPLES

DEPARTMENT OF THE ARMY
ST. PAUL DISTRICT, CORPS OF ENGINEERS
1210 U. S. POST OFFICE & CUSTOM HOUSE
ST. PAUL, MINNESOTA 55101

IN REPLY REFER TO
NCSED-ER

15 November 1974

Mr. James I. Ryan
Acting Regional [illegible]
Midwest Region, [illegible] Service
U.S. Department [illegible] the Interior
1709 Jackson [illegible]
Omaha, Nebraska [illegible]

Dear Mr. Ryan:

We are now in the [illegible] statement on operation and maintenance activities [illegible] Harbor, [illegible] Lake Superior.

In general, the statement will discuss the environmental impact [illegible] Corps of Engineers [illegible]. Currently, the [illegible] sediments [illegible]. No new areas will be affected [illegible] dredged from the harbor will be placed [illegible] disposal site. The proposed site and project [illegible] are shown [illegible] the inclosed plate. Breakwater maintenance is conducted as necessary.

In compliance with section 106 of the National Historic Preservation Act of 1966 and Executive Order 11[illegible], we are requesting your comments concerning the existence of any historical, archeological and paleontological resources which [illegible] may be affected by operation and maintenance activities. These include: 1) the existence of any sites or properties listed in the National Register of Historic Places which are on the proposed project site or which [illegible] affected by the proposed action, 2) the existence of any sites which may be potential nominees to the National Register of Historic Places and [illegible] the existence of any archeological or historical surveys of the area which have been conducted and the dates and findings of these surveys.

The draft environmental impact statement for Ontonagon Harbor is scheduled for completion this fall, 1974, and a copy will be furnished you at that time.

If we can be of any further assistance, please do not hesitate to contact us.

Sincerely yours,

MAX W. NOAH
Colonel, Corps of Engineers
District Engineer

1 Incl
As stated

Identical letter to:

Ms. Martha M. Bigelow
Division of Michigan History
Michigan Department of Natural Resources
208 North Capitol Avenue, [illegible]
Lansing, Michigan 489[illegible]

Mr. James Fitting
State Archeologist
Michigan Department of Natural Resources
Stevens T. [illegible] Building
Lansing, Michigan 48926

ARCHAEOLOGICAL/HISTORICAL
LETTERS OF COORDINATION

EXHIBIT 9

STATE OF MICHIGAN

WILLIAM G. MILLIKEN, Governor

DEPARTMENT OF NATURAL RESOURCES

STEVENS T. MASON BUILDING, LANSING, MICHIGAN 48926

A. GENE GAZLAY, Director

December 1, 1972

Colonel Rodney Cox, District Engineer
Corps of Engineers - Department of the Army
1217 U.S.P.O. Custom House
St. Paul, Minnesota 55101

Dear Colonel Cox:

To confirm a recent conversation between Mr. Jim Bryant of this Department and Mr. Henry Langer of your office concerning the Ontonagon Lighthouse, we understand the situation to be as follows.

Mr. Bryant has been in contact with the Ontonagon Historical Society people, and finds that a strong local movement to take over the lighthouse has not come into being. The resources to operate the building as a local historical museum do not appear to be present at this time. There is substantial interest in having the building preserved, but the ability to do it locally does not now exist.

The lighthouse was approved for recommendation to the National Register of Historic Places at the last meeting of the Advisory Council on Historic Preservation, and I will soon forward it to the National Park Service where a final decision will be made. We will keep you informed as to these developments. There would seem to be little doubt that it will be entered in the Register.

The archaeological investigation last summer strongly indicated that any archaeological sites once existing in the vicinity of the lighthouse have long since been obliterated.

It is my understanding that if the lighthouse is entered in the Register, the Corps of Engineers will maintain the structure at least in its present condition, but will probably continue to utilize the surrounding area as a waste disposal site. We feel there is sufficient land area available there so that the spoil need not reach a height which will overwhelm and dominate the lighthouse. It is also understood that the Corps still hopes that sufficient local interest can be generated to some time take over the building for utilization as a historic structure, either as a museum or some adaptive use.

MICHIGAN

EXHIBIT 10

ARCHAEOLOGICAL/HISTORICAL COORDINATION
MICHIGAN DNR LETTER OF 1 DECEMBER 1972

Colonel Rodney Cox
December 1, 1972
Page 2

The interest of the Corps of Engineers in maintaining this significant historic structure is very much appreciated, and we hope to continue to cooperate on this and other projects.

Sincerely,

Samuel A. Milstein
Deputy Director - Recreation
and
State Liaison Officer for
Historic Preservation

cc: C. Cleland
M. Bigelow
M. Buckmaster
H. Miller
D. Granger
T. Black

MICHIGAN DEPARTMENT OF STATE
RICHARD H. AUSTIN SECRETARY OF STATE

LANSING
MICHIGAN 48918
(517) 373-0510
MICHIGAN HISTORY DIVISION
ADMINISTRATION PUBLICATIONS
RESEARCH AND HISTORIC SITES
[illegible] Capitol Avenue
STATE ARCHIVES
[illegible] Michigan Avenue
STATE MUSEUM
[illegible] Michigan Avenue

December 3, 1974

Colonel Max W. Noah
Department of the Army
St. Paul District, Corps of Engineers
1210 S. Post Office and Custom House
St. Paul, Minnesota 55101

Dear Colonel Noah:

I thank you for the opportunity to comment on the proposed disposal of materials at the mouth of the Ontonagon River. The proposed disposal area is located directly on top of an archaeological site, a village, shown on Map 15 of W. B. Hinsdale's Archaeological Atlas of Michigan (University of Michigan Press, 1932). [illegible] site, referred to as "Copper Village," was revisited and collections made from it in a 1973 survey carried out by the Michigan History Division ("An Evaluation of the Archaeological Resources of the Western Upper Peninsula" by J. Fenzen and D. Weston, Michigan History Division, Archaeological Survey Report No. 2, copy enclosed). I would recommend an archaeological salvage project at this site before any additional dumping is done (I understand that some disposal has already taken place).

I would also like to call your attention to the fact that the Ontonagon Lighthouse is on the state register of historic sites and has been nominated to the National Register.

Sincerely,

James E. Fitting
State Archaeologist
Michigan History Division

cc: Martha Bigelow
Mike Washo
Kathryn Eckert
Charles Cleland

United States Department of the Interior

NATIONAL PARK SERVICE
MIDWEST REGION
1709 JACKSON STREET
OMAHA, NEBRASKA 68102

IN REPLY REFER TO

L7619 MWR CE

NOV 21 1974

Mr. Max W. Noah
Colonel, Corps of Engineers
District Engineer
1210 U.S. Post Office
St. Paul, Minnesota 55101

Dear Colonel Noah:

We are in receipt of your letter of November 15 requesting our comments concerning the existence of any historical, archeological, and paleontological resources which may exist in the vicinity of Ontonagon, Michigan, and which might be affected by your operation and maintenance activities in Ontonagon Harbor.

The records available to us do not indicate the presence of any such resources in the area you have described. However, the National Park Service does not maintain complete listings of archeological site records for the several states, so we suggest that you contact the state office responsible for archeological resources. In the State of Michigan, the responsible office is the Michigan History Division, Michigan Department of State, 208 North Capitol Avenue, Lansing, Michigan 48918. All onshore spoil sites should be selected in consultation with a professional archeologist.

Sincerely yours,

Merrill D. Beal

Merrill D. Beal
Acting Regional Director

JOHNNY HORIZON '76

Let's Clean Up America For Our 200th Birthday

MICHIGAN DEPARTMENT OF STATE
RICHARD H AUSTIN SECRETARY OF STATE

LANSING
MICHIGAN 48918
(517) 373-0510
MICHIGAN HISTORY DIVISION
ADMINISTRATION, PUBLICATIONS
RESEARCH, AND HISTORIC SITES
208 N. Capitol Avenue
STATE ARCHIVES
3405 N. Logan Street
STATE MUSEUM
505 N. Washington Avenue

December 17, 1974

Colonel Max W. Noah
Army Corps of Engineers
1210 U.S. Post Office and Customs Building
St. Paul, Minnesota 55101

Dear Colonel Noah:

It is unfortunate that my response to your letter of November 15 was not included in the Draft Environmental Impact Statement on the Ontonagon Harbor Operation and Maintenance Activities. I wish to again state that there is a significant archaeological site located on the Federal property just to the west of the harbor entrance. This has been reported in the literature at least twice (Hinsdale 1931, Franzen and Weston 1973). Furthermore, Dr. Charles Cleland, Curator of Anthropology at the Michigan State University Museum, communicated his concern for this site to the Corps of Engineers in a letter in 1972. Therefore, the statement on archaeological resources on page II is untrue and you have had information to this effect in your files for over two years now.

Past dredging and dumping on this site has made excavation difficult and further dumping would make it impossible. I am even more disturbed by the statement on page 4 that there has been ". . . an agreement between the federal government and the Boerner Waldorf Corporation in which the Federal lands immediately to the west of the harbor will be leased to Boerner Waldorf for the operation of their waste treatment facilities. . ." This is exactly where the archaeological site is located.

EXHIBIT 13

MICHIGAN STATE ARCHAEOLOGIST
LETTER OF 17 DECEMBER 1974

Colonel Max W. Noah (2)

At this point, I am obligated to call your action to the attention of the State Historic Preservation Officer, the National Advisory Council on Historic Preservation and the Archaeological Community.

Sincerely,

James E. Fitting
State Archaeologist
Michigan History Division

JEF, ew

cc: M. Bigelow, State Historic Preservation Officer
J. Tannenbaum, Advisory Council on Historic Preservation
C. Cleland, [illegible] on Michigan Archaeology
T. Yonker, Michigan Intergovernmental Environmental Review Committee

DEPARTMENT OF THE ARMY
ST. PAUL DISTRICT, CORPS OF ENGINEERS
1210 U.S. POST OFFICE & CUSTOM HOUSE
ST. PAUL, MINN. 55101

IN REPLY REFER TO
NCSED-LR

5 February 1975

Dr. J[illegible] Fitting
State Archaeologist
Michigan History Division
208 North Capitol Avenue
Lansing, Michigan 48918

Dear Dr. Fitting:

We regret the apparent misunderstanding, regarding the archaeological site located under the dredge disposal area at Oates, on Harbor, Michigan. Hopefully this letter will clarify the situation.

We based our past actions on a letter from Mr. Samuel Milstein, State Historic Preservation Officer, dated 1 December 1972 which stated: "The archaeological investigation last summer strongly indicated that any archaeological sites [illegible] the vicinity of the dikes have long since been obliterated."

It was not until we received your letter of 3 December 1974 indicating the site was still in existence that we were aware that our activity might be having any adverse effects on the area. Unfortunately, your letter was not received until after the draft EIS went to press and thus your letter was not included in the draft. The letter and any subsequent correspondence will be included in the final EIS.

Discussions were already underway to find a solution to the problem when your second letter dated 17 December 1974 arrived and indicated that you were concerned that your first letter had been ignored, that Boerner-Waldorf was to have a lease with us, and that you were informing the Advisory Council of our actions. We subsequently received a letter from Mr. Nebinett of the Advisory Council calling us to comply with Section 800.4(c) of the Council's "Procedures for the Protection of Historic and Cultural Properties."

Based on Mr. Milstein's 1 December 1972 letter we entered into a lease agreement with Boerner-Waldorf in July 1973 with the understanding that the archaeological site had already been destroyed and would not be further affected. Although Boerner-Waldorf has already begun construction we have recently met with them to explain the situation. They have indicated a willingness to allow you to conduct whatever testing is necessary to determine the extent and nature of the archaeological site. Should you wish to contact

EXHIBIT 14

LETTER TO MICHIGAN
STATE ARCHAEOLOGIST

NCSED-ER 5 February 1975
Dr. James Fitting

Hoerner-Waldorf directly to make arrangements for a crew to visit the area, you may contact John Hoeft, Vice President and Resident Manager of Hoerner-Waldorf at Ontonagon at 906-884-4121. You may, however, contact us and we will make the arrangements. Please inform us of your decision.

We are scheduled to dredge Ontonagon Harbor again in May, 1975. Should you feel you would like to test the dredge spoil deposit area we would suggest a testing program be undertaken before then.

We are inclosing maps of the area which show the current construction by Hoerner-Waldorf so that you may better plan your survey. Again I regret the apparent misunderstanding and trust that the above adequately explains our position with respect to the situation. If you have any questions please do not hesitate to contact us.

1 Incl
As stated

MAX W. NOAH
Colonel, Corps of Engineers
District Engineer

Copy furnished:
Ms. Bigelow
Michigan History Division

Mr. C. Cleland
Michigan State University

Mr. T. Yonker
Michigan History Division

Mr. John C. McDermott
Advisory Council on Historic
Preservation

Advisory Council
On Historic Preservation
[illegible]
Washington, D.C. 20004

December 18, 1974

Colonel Rodney F. Cox
District Engineer
Corps of Engineers
U.S. Department of the Army
1210 U.S. Post Office and Custom House
St. Paul, Minnesota 55101

Dear Colonel Cox:

The Advisory Council has been informed by James Fitting, Michigan State Archeolgist of an undertaking by the Corps of Engineers, U.S. Department of the Army, which may have an effect on the Copper Village Archeological Site and Ontonagon Lighthouse, Ontonagon County, Michigan, a properties that appear to possess archeological and historical significance and therefore may be eligible for inclusion in the National Register of Historic Places. This project is the proposed Ontonagon Harbor Operations and Maintenance activities, Michigan.

Section 800.4 (a) of the Council's "Procedures for the Protection of Historic and Cultural Properties" (36 C.F.R. Part 800) specifies the method of evaluating the historical significance of such properties. A copy of those procedures is enclosed for your convenience. If this evaluation results in a determination by the Secretary of the Interior that the property is eligible for inclusion in the National Register, then the Corps of Engineers should follow the remaining steps in Section 800.4 to evaluate the effect of the undertaking on the property.

The Council requests that the Corps of Engineers undertake the evaluation of the historical significance of the Copper Village Site and Ontonagon Lighthouse and inform us of the findings. If we may be of any assistance, please contact Jordan Tannenbaum of the Advisory Council staff (202-254-3974). Your cooperation in this matter is appreciated.

Sincerely yours,

John D. McDermott
Director, Office of Review
and Compliance

[illegible]

EXHIBIT 15 ADVISORY COUNCIL ON HISTORIC PRESERVATION
LETTER OF 18 DECEMBER 1974

DEPARTMENT OF THE ARMY
ST. PAUL DISTRICT, CORPS OF ENGINEERS
1210 U. S. POST OFFICE & CUSTOM HOUSE
ST. PAUL, MINNESOTA 55101

IN REPLY REFER TO
NCSED-ER

5 February 1975

Mr. John D. McDermott
Director, Office of Review and
Compliance
Advisory Council on Historic
Preservation
1522 K Street N.W., Suite 430
Washington, D.C. 20005

Dear Mr. McDermott:

In response to your letter of 18 December 1974 regarding Ontonagon Harbor operation and maintenance activities and the Copper Village archaeological site, we would like to inform you of the progress being made to resolve the conflict.

The inclosed copy of our letter to Dr. James Fitting, Michigan State Archaeologist, explains the basis for our past actions and expresses our present concern to clarify any misunderstandings and determine the historical significance of the archaeological site.

We have also met with Hoerner-Waldorf, which holds a lease on the Federal land in question. An archaeological field crew will be permitted to examine the site any time Dr. Fitting is able to make such arrangements.

I would like to assure you that the Ontonagon Lighthouse is not in danger of being disturbed. In April 1972 we began the necessary steps to have the lighthouse included in the National Register of Historic Places, and therefore preserved. Further action to insure its inclusion in the National Register rests with the National Park Service.

I trust the above adequately explains our position regarding the archaeological site. We will keep you informed of further developments on this matter.

Sincerely yours,

1 Incl.
As stated

MAX W. NOAH
Colonel, Corps of Engineers
District Engineer

LETTER TO THE COUNCIL
ON HISTORIC PRESERVATION

EXHIBIT 16

STATE OF MICHIGAN

WILLIAM G. MILLIKEN, Governor

DEPARTMENT OF NATURAL RESOURCES

David H. Jenkins, Acting Director

January 7, 1975

Colonel Rodney Cox, District Engineer
Corps of Engineers - Department of the Army
1217 U.S.P.O. Custom House
St. Paul, Minnesota 55101

Dear Colonel Cox:

This is in response to Mr. Henry Langer's call of January 6, 1975 expressing concern that the Environmental Impact Statement for the dredge disposal area in the vicinity of the Ontonagon Lighthouse had been criticized by Dr. Fitting of the History Division, Michigan Department of State because of its statement on archaeological sites.

As Mr. Langer pointed out, the statement was based on a paragraph in a letter from Mr. Samuel Milstein, then State Historic Preservation Officer, to you dated December 1, 1972, which read "The archaeological investigation last summer strongly indicated that any archaeological sites once existing in the vicinity of the lighthouse have long since been obliterated." That remark was based on a letter dated August 18, 1972 we had received from Dr. Charles E. Cleland in which he commented in part as follows "In late July, I spent several days in the Ontonagon area and particularly in the proposed dredge disposal area at the mouth of the Ontonagon River. Our results were negative. I have several comments on the matter. (1) the Indian Village in question is (and was) undoubtedly on the Hoerner-Waldorf property or government property on the west side of the river; (2) earth-moving activities which have been in this area for the last 100 years have probably destroyed the site;". He further pointed out that the Corp of Engineers had already covered a large area [illegible] to the lighthouse with river dredge creating conditions which are impossible for archaeological survey. Copies of Mr. Milstein's letter of December 1, 1972 went to Dr. Cleland and to Dr. Martha Bigelow, Chief, History Division, Michigan Department of State.

We have the utmost confidence in Dr. Cleland as an archaeologist and feel that you received dependable information. A copy of this letter is going to Dr. Fitting and I am sure he will wish to further explain his position and help resolve the problems you now face.

MICHIGAN
The Great Lake State

EXHIBIT 17

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
LETTER OF 7 JANUARY 1975

Coloney Rodney Cox
Page 2
January 7, 1975

Your past vigorous efforts to make sure this significant lighthouse is preserved have always been appreciated, particularly the agreement you worked out with the Hoerner-Waldorf Company.

Sincerely,

James A. Bryant, Planner
Office of Planning Services

JAB:jg

cc: C. Cleland
J. Fitting
S. Milstein
T. Black

DEPARTMENT OF THE ARMY
ST PAUL DISTRICT CORPS OF ENGINEERS
1135 U S POST OFFICE & CUSTOM HOUSE
ST PAUL MINNESOTA 55101

NCSED-ES

Mr. John D. McDermott
Director, Office of Review and
Compliance
Advisory Council on Historic
Preservation
1522 K Street N.W., Suite 430
Washington, D.C. 20005

Dear Mr. McDermott:

This letter is to inform you of further developments concerning the status of archaeological investigations at Ontonagon Harbor, Ontonagon County, Michigan.

An archaeological survey of the west bank of Ontonagon Harbor near the Ontonagon Lighthouse was conducted between 5 and 10 June 1975 to test for the presence of the reported site on the "Old Copper Village". The survey was done by Mr. Edward Lurenbaal (doctoral candidate in anthropology-archaeology at the University of Wisconsin-Madison) under contract with the Corps of Engineers. The preliminary report on this investigation indicates that no evidence of prehistoric occupation was found in the project area. Test excavations failed to uncover any prehistoric materials. It appears doubtful that the reported "Old Copper Village" ever existed in the area of dredge material deposition.

The final report on this archaeological survey should be available in November 1975 and a copy will be furnished you at this time.

If you have any questions, do not hesitate to contact this office.

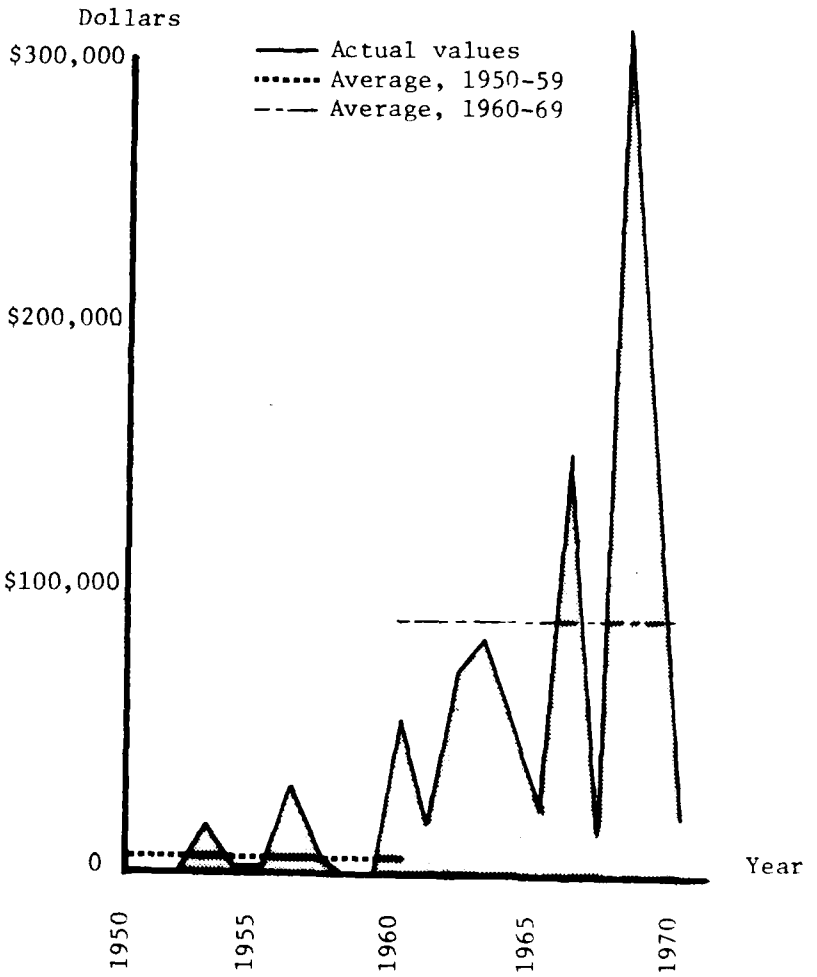
Sincerely yours,

MAX W. NOAH
Colonel, Corps of Engineers
District Engineer

C.F.
Dr. Martha M. Bigelow
State Historic Preservation Officer
Michigan History Division
208 North Capitol Avenue
Lansing, Michigan 48918

EXHIBIT 18 LETTER TO ADVISORY COUNCIL ON HISTORIC PRESERVATION

ONTONAGON HARBOR, MICHIGAN
Maintenance Costs, 1950 - 1970



MAINTENANCE COSTS, 1950-1970 EXHIBIT 19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FILM