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EXPLANATION OF SIGNIFICANT DIFFERENCE

**PEERLESS PLATING SUPERFUND SITE
MUSKEGON TOWNSHIP, MICHIGAN**

I. Introduction

The Peerless Plating Site ("Site") is an abandoned electroplating facility located at 2554 Getty Avenue, Muskegon Township, Muskegon, Michigan. The property covers approximately 1 acre in the southwest 1/4 of Section 33, T.10 N., R.16 W., Muskegon Township. The vicinity of the Site is urban, light industrial and residential. The Site was placed on the National Priorities List ("NPL") for site clean-up in August 1990.

The U.S. Environmental Protection Agency ("U.S. EPA") is undertaking remedial actions at this Site under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended ("CERCLA"), 42 U.S.C. §9601, et seq. The U.S. EPA is implementing the remedy selected (with Michigan Department of Environmental Quality's ("MDEQ") concurrence) in a September 21, 1992, Record of Decision ("ROD"). As required by the National Oil and Hazardous Substances Contingency Plan (NCP), U.S. EPA and MDEQ have entered into a State Superfund Contract (SSC) for purposes of implementing the final remedy for the Site. The SSC was signed by U.S. EPA and MDEQ in August 1996. The SSC provides the appropriate CERCLA assurances from the MDEQ for the remedy being implemented at the Site pursuant to 104(c)(3), 104(c)(9), and 104(j) of CERCLA.

The U.S. EPA has completed the design portion of the ROD for this Site. As part of the design phase, newly developed information has persuaded U.S. EPA and MDEQ that certain modifications to the selected remedy are appropriate. Section 117(c) of CERCLA and Section 300.435(c)(2)(I) of the NCP establish procedures for explaining, documenting, and informing the public of significant changes to the remedy that occur after the ROD is signed. An Explanation of Significant Differences (ESD) is required when the remedial action to be taken differs significantly from the remedy selected in the ROD but does not fundamentally alter that remedy with respect to scope, performance or cost. This ESD and supporting documentation shall become part of the administrative record file which is available for viewing at the Muskegon County Library, Norton Shores Branch, 705 Seminole, Muskegon, Michigan, and at the U.S. EPA regional offices in Chicago, Illinois (77 W. Jackson Blvd. 7th floor), during normal business hours. U.S. EPA will also publish a public notice of this ESD in a major local newspaper of general circulation. The public notice will state that if any member of the public requests it, U.S. EPA will provide a public comment period.

II. Background

A. Site History

The Site is an abandoned electroplating operation that was in business from 1937 to 1983. Site operations and processes conducted at Peerless Plating included copper, nickel, chromium,

cadmium, and zinc electroplating. Operations at the Site also included activities such as, burnishing, polishing, pickling, oiling, passivating, stress relieving, and dichromate dipping. These processes required the use of toxic, reactive, corrosive, and flammable chemicals. Throughout the facility's history, process wastes with low and high pH levels and with high heavy metal concentrations were discharged without treatment to two seepage lagoons located east of the Peerless Building.

In 1983, the MDEQ conducted an investigation into the operating practices at the Site. The MDEQ found that treatment facilities had not been upgraded adequately and discharge limitations were being exceeded. The MDEQ determined that manholes inside the building did not connect to the sanitary sewer or plant treatment system, so wastes were being discharged directly to the ground.

In 1984, the U.S. EPA conducted a Preliminary Assessment and reported that groundwater was contaminated with tetrachloroethane (TCE), perchloroethylene (PCE), and chloroform. The U.S. EPA also found that surface water and sediment in Little Black Creek were contaminated with heavy metals. In 1985, a hydrogeological study was conducted and 7 monitoring wells were installed. In 1986, the Site was scored according to the Hazard Ranking System for inclusion on the NPL. In June 1992 an RI/FS was completed for the Site that identified the environmental problems associated with the Site as well as providing a remedial alternative for addressing these issues. In September 1992, the ROD for the Site was issued that documented the selected remedy and clean-up standards for the Site.

The ROD required demolition of the superstructure of the building on-site. The U.S. EPA hired a contractor to complete this activity and properly dispose of the debris at an off-site landfill. In August 1993, the U.S. EPA contractor conducted an investigation to collect additional data for the remedial design. Soil and groundwater were sampled and analyzed to determine the extent of contamination under the Peerless building, and off-site, adjacent to the Peerless property boundaries. The results of the sampling indicated that heavy metals are above the clean-up standard as indicated in the ROD. It also indicated that Site constituents exist outside of the facility property boundaries.

The ROD provided for sampling as part of a pre-design phase. The purpose of this sampling was to more clearly define the nature and extent of contamination under the building and around the perimeter of the Site. The pre-design sampling also allowed for the collection of Site specific background samples that could be used to determine the ambient levels of inorganics in soils in the vicinity of the Site. In June 1996, the U.S. EPA contractor collected soil samples to fulfill the pre-design sampling phase.

II. Significant Differences

A ROD was issued by U.S. EPA on September 21, 1992, selecting a remedy for the Site. That ROD provided for demolition and disposal of the Peerless Plating building in order to

facilitate additional soil sampling, air stripping and treatment of the volatile organic compounds in the groundwater, in-situ vapor extraction of the organic compounds and stabilization of the inorganic compound in the soils. The ROD also provided for a pre-design phase to more clearly define the nature and extent of contamination under the building and around the perimeter of the Site, as well as to determine Site specific background concentrations of inorganic compounds.

The background sampling data obtained during the pre-design phase provided the EPA with ambient concentrations of inorganics (metals and cyanide) in the residential/light industrial area where the Site is located. Ambient concentrations of metals and cyanide had not previously been determined for the area near the Site. The cleanup standards calculated in the ROD were based on background concentrations from a single sample collected at another Superfund Site in the Muskegon area (the Bofors Superfund Site). The ambient soil concentrations in the area of the Site, were different than those concentrations found at the Bofors Site. Because the Agency now has site specific background soil data the Agency is proposing to recalculate the cleanup standards presented in the ROD and implement cleanup standards that are more appropriate for this Site.

Since the ROD was signed for the Site, the State of Michigan has also promulgated a new environmental cleanup Act, the Natural Resource and Environmental Protection Act, 1994 PA 451, as amended (PA 451). Part 201 of PA 451 establishes land use-based remediation standards and does not require that soil be remediated to ambient concentrations. Instead, MDEQ Interim Environmental Response Division Operational Memoranda No.8, Revision 4, and No. 14, Revision 2, present generic clean-up standards for two land uses, residential and industrial scenarios, respectively. The generic soil cleanup standards are based on direct human exposure to contaminants through dermal contact with and incidental ingestion of contaminated soil. A subsequent technical guidance document has been prepared by MDEQ to develop generic residential and industrial soil cleanup levels based on the inhalation exposure pathway. This guidance presents cleanup standards based on inhalation of contaminants in ambient air. Based on the new site specific sampling information and the MDEQ Part 201 (residential standards) and related technical memoranda, the U.S EPA calculated new clean-up standards for the Site. Although the revised clean-up standards as calculated are higher than those presented in the ROD, they remain protective of human health. These new standards do not change the selected remedial approach for the Site, but better define the amount of soil requiring excavation and disposal for both the on-site soils and off-site soils. The revision to the clean-up standards will significantly reduce the amount of contaminated soil that will have to be stabilized and removed (from an estimated 6,600 cubic yards to an estimated 1,200 cubic yards). It is estimated that this reduction in volume could save approximately \$1.9 million in stabilization and disposal costs.

As a result of the new information developed, U.S. EPA (in consultation with MDEQ) has made some significant changes to the Peerless Plating ROD dated September 21, 1992.

1. Revised Clean-up Standards:

The clean up standards for soil in the ROD are based on remediating soil to ambient concentrations for inorganics and to health based levels for organics and non-naturally occurring inorganics such as hexavalent chromium. The table below lists the soil cleanup standards identified in the ROD as compared to the cleanup standards generated based on site specific data and MDEQ's Part 201 residential land use standards.

| Contaminant of Concern | ROD numbers (mg/kg) | Proposed New Levels in the ESD (mg/kg) |
|------------------------|---------------------|--|
| INORGANIC | | |
| Aluminum | 3,770.0 | ID |
| Antimony | 7.0 | 150 |
| Arsenic | 1.7 | 10.7 |
| Barium | 40.0 | 30,000 |
| Cadmium | 0.8 | 210 |
| Chromium III | 100.0 | 69,000 |
| Chromium VI | 0.04 | 180 |
| Lead | 5.0 | 400 |
| Mercury | 0.04 | 130 |
| Nickel | 1.8 | 960 |
| Silver | 1.2 | 350 |
| Thallium | 0.43 | 28 |
| Cyanide | 0.08 | 9,300 |

| ORGANIC CONTAMINANTS | | |
|-----------------------|-------|---------|
| Benzene | 0.02 | 78 |
| Chloroform | 0.1 | 270 |
| 1,1-dichloroethane | 10.0 | 13,000 |
| 1,2-dichloroethane | .008 | 25 |
| Ethyl benzene | 0.6 | 6,700 |
| Toluene | 2.0 | 11,000 |
| 1,1,1-trichloroethane | 2.0 | 3,100 |
| TCE | 0.06 | 160 |
| Vinyl Chloride | .0004 | 1.2 |
| Xylene | 1.0 | 130,000 |

***ID = Inadequate data to develop criterion**

2. Institutional Controls

Institutional controls involve placing restrictions on access or use of a site. Institutional controls typically consist of access or deed restrictions and are necessary at a site if contaminants remain on site at concentrations exceeding cleanup standards. Access restrictions such as fencing are generally required to protect the general public from direct contact with or inhalation of contaminants in surface soil at a site. Deed restrictions are generally required to limit the use of a site to ensure the residents or workers at the site are not exposed to unacceptable levels of contaminants in surface soil, subsurface soil, or groundwater.

Institutional Controls may be a part of the Remedial Action (RA) for the Site. These controls may be required because soils and groundwater on site will exceed the cleanup criteria referenced for the Site. The U.S. EPA has identified three situations that may result in cleanup standards being exceeded after or during RA.

1. Soil on the south side of the Site near the Hardware Distributors, Inc. (HDI) building, contains cadmium at concentrations exceeding cleanup standards to a depth of at least 5 feet below ground surface. Excavation of soil in the immediate area closest to the building, may damage the foundation of the HDI building by causing it to settle and crack. Therefore, excavation in this area will be limited because of the building. Excavation in this area will

remove soils as close to the building as possible so as not to damage the building foundation. Following the completion of excavation, confirmation samples will be collected from excavation sidewalls to determine the need for deed restrictions of residential or industrial activities at the Site. If those samples demonstrate contamination above cleanup criteria for the Site, deed restrictions will be imposed to prevent exposure to contaminants in soil in this area.

2. Saturated soil at the former lagoon areas contains cadmium at concentrations exceeding its cleanup standard. Because of the difficulties and expense of excavating soil below the water table, saturated soil will be excavated to approximately 3 to 4 feet below the water table and no further. It is anticipated that levels of contaminants found in the floor of the excavation will exceed clean up levels. If they do, deed restrictions will be required to limit potential exposure to contaminants in soil below the excavation floor depth.

3. Deed restrictions may also be necessary to limit residential or worker exposure to contaminants in groundwater at the Site. Deed restrictions may be necessary to limit direct contact with groundwater at the Site until the RA is complete. In addition, contaminant concentrations in groundwater may exceed the TCE and vinyl chloride generic residential cleanup standards developed for the groundwater to indoor air exposure pathway. Therefore, deed restrictions may be necessary to limit residential use of the property until TCE and vinyl chloride concentrations are less than the generic residential cleanup standards developed for the groundwater to indoor air exposure pathway.

III. State Comment

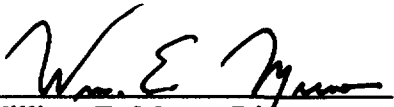
The Michigan Department of Environmental Quality has provided the U.S. EPA with a letter of concurrence on the proposed ESD, dated July 24, 1997. A copy of this letter is attached.

IV. Affirmation of Statutory Determinations

Considering the new information that has been developed and the changes that have been made to the selected remedy, U.S. EPA believes (and MDEQ concurs) that the remedy as modified in this ESD remains protective of human health and the environment, complies with Federal and State requirements that are applicable or relevant and appropriate to this remedial action, and is cost-effective.

V. **Public Participation Activities**

U.S. EPA will publish a public notice of this ESD in a major local newspaper, informing interested persons that a copy of the ESD is available at the Norton Shores Branch Library (705 Seminole Road, Muskegon, MI) and at the U.S. EPA Regional Offices in Chicago, Illinois (77 W. Jackson Blvd. 7th floor), during normal business hours. If any member of the public request it, U.S. EPA will provide a public comment period.



William E. Muno, Director
Superfund Division

8/7/97
Date