

**EPA Superfund  
Explanation of Significant Differences:**

**PEERLESS PLATING CO.  
EPA ID: MID006031348  
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MUSKEGON, MI  
04/05/2001**

## 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 cleanup in August 1990.

The United States 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 amended by the August 7, 1997, Explanation of Significant Difference ("ESD"). 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, and amended in September 2000. 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 is in the process of implementing the selected remedy. During construction of the groundwater treatment building, previously unidentified soil contamination was discovered. The MDEQ and the U.S. EPA conducted investigations to determine the extent of this soil contamination. It was found that the contamination was wide spread both vertically and horizontally in the subsurface soils on-site, and off-site to the north, east and southeast. The contamination is present primarily in thin, highly contaminated layers.

Based on this new information, the U.S. EPA and MDEQ determined that certain modifications to the selected remedy were necessary and 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 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.

## 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 soil and groundwater below the building.

In 1984, the U.S. EPA conducted a Preliminary Assessment and reported that groundwater was contaminated with trichloroethylene, tetrachloroethylene, 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, a remedial investigation/feasibility study ("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 cleanup standards for the Site.

The U.S. EPA acquired a contractor to implement the selected remedy. As required by the ROD, the contractor demolished the superstructure of the building on-site, and properly disposed of the debris at an off-site landfill.

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. In August 1993, the U.S. EPA contractor began the pre-design investigation. 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 this investigation indicated that heavy metals concentrations in both the soil and the groundwater were above the cleanup standards as indicated in the ROD, and demonstrated that Site related contaminants above cleanup levels existed outside of the facility property boundaries. In June 1996, the contractor collected background soil samples in the vicinity of the Site. The background sampling data provided the U.S. EPA with ambient concentrations of inorganics (metals and cyanide) in the residential/light industrial area where the Site is located.

On August 7, 1997, U.S. EPA issued an ESD. This ESD documented the following changes to the ROD: 1) revised soil cleanup standards to incorporate the residential land use standards of Part 201 of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and the site specific background levels; and 2) identified three situations that could result in cleanup standards being exceeded after or during the Remedial Action ("RA") which would require the use of institutional controls.

The U.S. EPA's contractor conducted soil remediation field activities at the Site from August 1997 to January 1999. These activities included installation of the soil vapor extraction system and soil excavation and disposal. Approximately 7,500 tons of contaminated soil were excavated, treated off-site, and disposed of in a RCRA permitted Subtitle C hazardous waste landfill. During the soil excavation, a 6,500 gallon underground storage tank was discovered and removed.

Construction of the groundwater treatment system began in 1999 and will be completed in early 2001. Start up of the system is scheduled to begin in April 2001. Effluent generated during the start up will only be discharged to Little Black Creek when

compliance with the conditions of the National Pollution Discharge Elimination System Substantive Requirements Document is demonstrated. The extraction system has been designed to address contaminated groundwater that exceeds the groundwater cleanup standards specified in the 1992 ROD. Thereafter, there should be no further discharge of contaminated groundwater to Little Black Creek. Verification that the groundwater extraction and treatment system performs according to design and meets all requirements of the ROD, with amendments, will be achieved by the monitoring network. A system of piezometers will be placed to evaluate whether the groundwater extraction system is adequately containing the groundwater contamination plume. In addition, a system of monitoring wells will be used to monitor the quality of the groundwater. If the monitoring network fails to demonstrate capture, or indicates that contaminated groundwater continues to vent to the creek after start up of the extraction system, modifications to the extraction system, the monitoring network, or the ROD may be necessary.

In November 1999, during the construction of the groundwater treatment building, previously unidentified soil contamination was discovered. Additional soil investigation, excavation, characterization, and disposal activities began in 2000. Approximately 9,500 tons of additional contaminated soil has been excavated and transported off-site for appropriate treatment and disposal. All necessary soil remediation activities will be completed in 2001.

The 1997 ESD, identified soil contamination on the south side of the Site near the Hardware Distributors, Inc. ("HDI") building that contains cadmium at concentrations exceeding cleanup standards. The 2000 soil activities confirmed that saturated and unsaturated contaminated soils, with cadmium concentrations exceeding the cleanup standard, remain under the southern most portion of the HDI building. Soil excavation in this area has been limited because of its proximity to the building. As discussed in the 1997 ESD, excavation in this area has removed soils as close to the building as possible so as not to damage the building foundation. Confirmation samples collected from the excavation sidewalls indicates that contaminated soils likely extend under the southern portion of the HDI building.

### III. Significant Differences

A ROD was issued by U.S. EPA on September 21, 1992, selecting a remedy for the Site. One component of the selected remedy specified in the ROD was that soil contaminated with inorganics

above the cleanup levels would be excavated, stabilized on-site and disposed off-site in a licensed RCRA Subtitle C facility. U.S. EPA has identified two additional changes to the ROD, as amended by the 1997 ESD, which now need to be made to the remedial action at this Site. These differences involve the on-site stabilization of the excavated materials and the extent of the excavation of soils contaminated above Site cleanup levels.

The on-site stabilization process would involve mixing the contaminated soils with treatment reagents that combine physically and/or chemically with the inorganic contaminants to decrease their mobility. The stabilized soil would be tested to ensure that alternate treatment standards under a treatability variance for soil and debris from the land disposal restriction ("LDR") treatment standards are met prior to disposal. At the start of the soil remediation, it was determined that on-site stabilization would be too difficult to implement primarily due to space limitations on-site. Therefore, excavated soils were sent off-site for appropriate treatment and disposal.

In the August 7, 1997, ESD, the U.S. EPA identified three situations that may result in cleanup standards being exceeded after or during the RA which would require the use of institutional controls. These situations are:

1. Soil on the south side of the Site near the 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 could damage the foundation of the HDI building by causing it to settle and crack.
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.
3. Deed restrictions may also be necessary to limit residential or worker exposure to contaminants in groundwater at the Site.

In 1999, during the construction of the groundwater treatment building, previously unidentified soil contamination was discovered. The MDEQ and the U.S. EPA conducted sampling investigations to determine the extent of the soil contamination. It was found that the contamination was wide spread in the

subsurface, both vertically and horizontally, over a large portion of the Site. Cadmium concentrations above the cleanup level were found within the saturated soils on the Site and adjoining properties. Although the 1997 ESD required excavation 3 to 4 feet below the water table, it was determined to be inadvisable to excavate to this depth so as to avoid mobilization of contaminants in the saturated zone. In addition, sampling data indicates that contaminants are present in the saturated zone below this depth. Since institutional controls would be necessary under this circumstance, and the fact that additional data found cadmium present throughout the Site, U.S. EPA does not believe that it remains cost-effective to excavate 3 to 4 feet below the water table. U.S. EPA instead excavated only to the water table.

In addition, cadmium and lead concentrations above the clean up levels were also recently found southeast of the Site and extending to the banks of Little Black Creek. In order to maintain the integrity of the stream bank, excavation will extend to within 2 feet of the bank, leaving the bank as a berm. The two foot area adjacent to the bank of the stream contains cadmium and lead concentrations above clean up levels. This area will be lined with a geotextile membrane and covered with 6" diameter stone to prevent excessive erosion. Excavated areas will be restored to their original grade, and the entire make up of the flood plain will be restored in kind.

As a result of this information, U.S. EPA (in consultation with MDEQ) has made significant changes to the Peerless Plating ROD dated September 21, 1992, as modified by the August 7, 1997, ESD.

A. Off-Site Treatment and Disposal:

The selected remedy in the ROD specified that all soils above cleanup standards would be stabilized on-site and then disposed off-site at a hazardous waste facility. It was later determined that on-site stabilization would be too difficult to implement at the Site. Therefore, soils above cleanup standards were excavated, characterized, transported off-site to a treatment facility, and treated to meet applicable LDR treatment standards. The treated soils were then properly disposed in a licensed disposal facility.

B. Institutional Controls:

Institutional Controls are part of the RA for the Site. These controls are required because soils and groundwater concentrations remaining on Site will exceed the cleanup criteria

for the Site. Since the 1997 ESD, the U.S. EPA has identified two additional situations which will result in cleanup standards being exceeded after or during the RA which would require the use of institutional controls. These situations are:

1. Saturated soil at the Site contains cadmium at concentrations exceeding the cleanup standard. Because of the difficulties and expense of excavating soil below the water table, contaminated soils which contain constituent concentrations greater than the cleanup levels specified in the 1997 ESD will be excavated approximately to the depth of the water table (as opposed to approximately 3 to 4 feet below the water table).

2. Soils southeast of the Site and immediately adjacent to Little Black Creek contain cadmium and lead concentrations exceeding the cleanup standards. Excavation of the contaminated soils in this area to within 2 feet of the stream channel in order to maintain the integrity of the stream bank. The remaining soils were covered with a geotextile membrane and 6" diameter rock.

As a result, deed restrictions will be required to limit potential exposure to contaminants remaining in the soil and groundwater.

#### IV. State Comment

The MDEQ has provided the U.S. EPA with comments on the proposed ESD and believes that the site remedy will be protective of human health and the environment.

#### V. 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.

VI. 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, Michigan) and at the U.S. EPA Regional Offices in Chicago, Illinois (77 W. Jackson Blvd. 7th floor), during normal business hours.