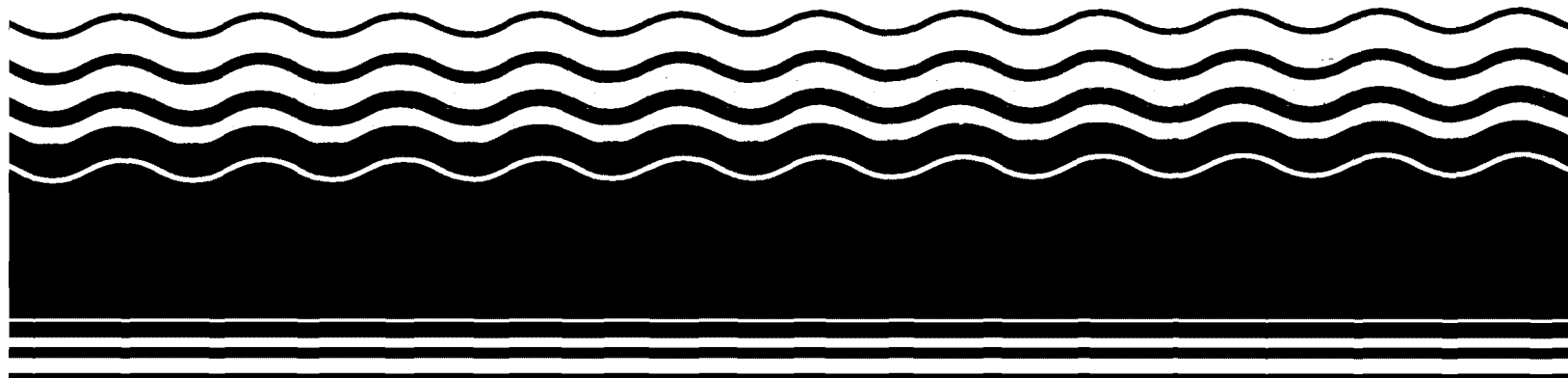


**PB95-963135**  
**EPA/ESD/R07-92/079**  
**April 1995**

**EPA Superfund**  
**Explanation of Significant Difference**  
**for the Record of Decision:**

**E.I. du Pont de Nemours,**  
**County Road X23, Lee County, IA**  
**12/27/1991**



## Explanation of Significant Differences

### I. Introduction

On May 28, 1991, a Record of Decision (ROD) was issued for the E.I. du Pont de Nemours County Road X23 Site in Lee County, Iowa. The ROD presented the remedy selected by the U.S. Environmental Protection Agency (EPA) for this site, which called for stabilization/solidification of contaminated soil at each of the two subsites. As a result of information which has been developed since the issuance of the ROD, EPA has determined that significant changes to the remedy are necessary. This Explanation of Significant Differences (ESD) describes and summarizes the basis for these changes.

The EPA serves as the lead agency for site activities, with support from the Iowa Department of Natural Resources (IDNR). This ESD is issued in accordance with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA). CERCLA provides that after the adoption of a final remedial action plan, if any settlement or consent decree under section 106 and section 122 is entered into and differs in any significant respects from such final

plan, the lead agency shall publish an explanation of the significant differences and the reason such changes were made.

This ESD will explain these changes and the reason for them. In accordance with the National Contingency Plan, 40 C.F.R. § 300.435 (c)(2)(i)(A), this ESD and the information supporting it are part of the administrative record file and are available for public comment.

## **II. Site History and Contamination Problems**

The County Road X23 site is in rural Lee County, Iowa, approximately 3.5 miles south from West Point, Iowa. The site consists of two subsites, the McCarl subsite and the Baier subsite. The McCarl subsite is located in the South East quarter of the South West quarter of Section 22, Township 68 North, Range 5 West. The Baier subsite is located in the North East quarter of the South West quarter of section 28, Township 68 North, Range 5 West. The two subsites are located approximately three-fourths of a mile apart. The land adjacent to the sites is used for agricultural or residential purposes. Other adjacent land is undeveloped and wooded. The nearest residences are approximately 500 feet from the McCarl subsite.

During the period of 1949 to 1953, a contractor hired by DuPont deposited paint wastes at both the Baier and McCarl

subsites. The Baier subsite was the primary disposal subsite, while the McCarl subsite was used in inclement weather when the Baier subsite was inaccessible. An estimated 48,000 to 72,000 55-gallon (equivalent volume) drums of waste were disposed at the two subsites. The paint waste was placed into trenches and reportedly burned, and an estimated 4,000 to 7,000 tons of ash may still remain on the subsites.

The Baier subsite was listed as a potentially uncontrolled hazardous waste site in the Eckhardt Subcommittee Report in November 1979.

A hazard ranking system (HRS) package for the site documented a score of 46.01. The site was proposed for the National Priorities List (NPL) in the June 1988, 7th update and became final on the NPL in August of 1990.

The selected response action of stabilization/solidification addressed soil contamination as the principal threat to human health and the environment. Based on investigations of the site during 1989 and conclusions found in the Remedial Investigation (RI), the source of contamination at the site was identified as paint waste disposed at the site by DuPont. Of particular concern was the effect of heavy metal contaminants in soil if the site were to be used for residential or agricultural purposes. Because the RI concluded that no completed exposure pathway

existed for the groundwater, the "no action" alternative was selected for the groundwater. This conclusion was based on the low permeability of the groundwater unit and the presence of a confining unit below the water-bearing unit. Monitoring of the groundwater is being continued as a precaution.

The nature and extent of contamination of groundwater and soil at both subsites is summarized below. This summary is based primarily on data generated by the work performed by DuPont in May through August of 1989 and in data discussed by the RI. Detailed information regarding the nature and extent of contamination can be found in the Final RI Report (January 16, 1991).

#### Baier Subsite

The approximate areal and vertical extent of disposed waste material was estimated by probing with a hand auger during the May 1989 investigation. Depths to the contact between the waste and native soil ranged from approximately two inches below grade to greater than 36 inches below grade. Samples collected from the waste material showed high levels of lead, cadmium, chromium, selenium, and zinc. Concentrations of metals contaminants were highest in the waste material itself, with lesser, but still elevated, concentrations limited to the upper two to three feet below the interface between the waste and native soil. Elevated

concentrations of several volatile organic compounds were also detected in the waste material. Evidence of migration of volatile and semi-volatile organic contamination was noted as deep as 18 feet below the waste/native soil contact. In general, the vertical extent of contamination at the Baier subsite is much deeper than the contamination found at the McCarl subsite. The RI focused on characterizing the horizontal and vertical extent of contamination outside of the waste disposal areas. Generally, this investigation showed that contamination is limited to within 50 feet of the waste disposal areas. Contamination in these areas is generally restricted to the upper four feet of soil. Sample analyses indicated elevated concentrations of metals (only) in several drainage ditches leading from the subsite. Contamination is limited to within 50 feet of the ditch heads. Heavy metals contamination in the soil represents the principal threat at the Baier subsite based on the risk to sensitive populations, the risk posed through possible ingestion of vegetables grown in contaminated soil, and the risk to possible future residents.

Analytical results for groundwater samples collected to date indicates that contamination is limited to the upper-most water-bearing zone and has not migrated to the deeper water-bearing unit. Due to extremely low yield and low permeability of the upper water-bearing unit, and the confining layer separating the water-bearing units, it was determined that a completed exposure

pathway for groundwater did not exist at the site for humans or environmentally sensitive receptors. Therefore, no action was selected as the appropriate remedial alternative to address groundwater contamination.

The Baier subsite is located on an upland adjacent to several ravines that are areas of high erosion and slope instability. A portion of the waste or contaminated soil at the subsite is on or at the top of these slopes.

#### McCarl Subsite

Visual observations made during auguring and test pit excavations at the McCarl subsite in May 1989 showed that the amounts of disposed paint wastes are much smaller than at the Baier subsite. While some paint cans, ash-like material, and sludge castings were observed at the subsite, there did not appear to be concentrated, significant areas of waste disposal as were observed at the Baier subsite. Soil samples collected during pre-remedial and RI field investigations indicated concentrations of cadmium, chromium, selenium, lead, and zinc above naturally occurring background ranges. Generally, elevated concentrations are limited to the upper four feet of soil. Sampling of drainage paths leading from the subsite indicated that elevated concentrations of heavy metals were not migrating off of the site in significant concentrations. Sampling also

indicated very limited volatile and semi-volatile organic contamination of soil at the subsite. The volatile organic contamination is generally limited to the upper six feet of soil. Since the contamination is so shallow, this would allow the material to be easily excavated. Similar to the Baier subsite, heavy metals contamination in the soil represented the principal threat at the McCarl subsite based on the risk to sensitive populations, the risk posed through possible ingestion of vegetables grown in contaminated soil, and the risk to possible future residents. The McCarl subsite encompasses approximately three acres and would provide no room to mobilize equipment without removing vegetation and grading adjacent areas.

The hydrogeology at the McCarl subsite is similar to that described for the Baier subsite. As at the Baier subsite, elevated levels of contaminants do not appear to be present in the lower water-bearing zone. Due to the extremely low yield and low permeability of the upper water-bearing unit and the confining layer separating the water-bearing units, a completed exposure pathway for groundwater also did not exist at this subsite. Therefore, no action was selected as the appropriate remedial alternative to address groundwater contamination.



### **III. Selected Remedy**

In the ROD dated May 28, 1991, EPA selected a final remedy for remediation of soil and groundwater contamination at the site. The major components of the selected remedy include:

- o Removal of surface debris not amenable to solidification, to be disposed of in an EPA-approved hazardous waste landfill;
- o Stabilization/solidification of contaminated soil at each of the two subsites;
- o Construction of soil covers at each subsite to prevent human or environmental contact;
- o Introduction of vegetation to prevent erosion of the soil cover;
- o Inspection and evaluation of the site every 5 years;
- o No action for the groundwater;
- o Long-term groundwater monitoring to insure that no unacceptable conditions occur in the future.

#### **IV. Significant Difference and Basis for the Difference**

As previously indicated, EPA proposes to make certain changes to the selected remedy. The proposed changes will serve to facilitate the long-term management of the remedial action, provide more protection of human health and the environment as well as improve the cost-effectiveness of the remedial action. The changes are not fundamental in that the selected remedy and the changes to such remedy both utilize stabilization/solidification. The changes are merely process related in that, while the selected remedy provided for in situ mixing using devices such as vertical augers the proposed changes would require excavation of the contaminated soil, mixing in an above ground mixer, such as a pug mill, and replacement of the stabilized material. The significant modifications to the selected remedy include the following:

- (1) The excavation and removal of soil from the McCarl subsite that is contaminated at concentrations above the action levels specified in the ROD. Instead of being solidified at the McCarl subsite, the soil would be moved to the Baier subsite for consolidation and subsequent solidification and stabilization. The operation of removing contaminated soil from the McCarl subsite and transporting it to the Baier subsite will be considered part of the surficial removal process, which will take place prior to any construction of

the stabilization/solidification remedy. There are many advantages to transferring the soil to the Baier subsite. The McCarl subsite will be completely available for unrestricted future use. A source for potential groundwater degradation will be eliminated. Long term operation and management of the DuPont County Road X23 Site will be improved by consolidating soils at one subsite for subsequent stabilization/solidification. Also, reduction in remedial costs due to lower mobilization costs associated with the stabilization/solidification equipment will be achieved. Finally, excavating and removing the soil from the McCarl subsite will have substantially less impact on the vegetation and land surface around the McCarl subsite given the larger equipment necessary to implement the in-situ stabilization/solidification, which would require more space, is no longer required.

- (2) The use of an above ground mixing operation, such as a pug mill, to perform the selected remedy, as opposed to in-situ technology as prescribed by the ROD. This type of operation has several advantages over in-situ technology. It would provide better protection of human health and the environment through more homogeneous mixing to improve the durability of the matrix. The mixing process produces a more homogenous matrix, because the material is being mixed inside a closed system as opposed to loosely around a

vertical auger as would be done in the in-situ remedy. Also, material from across the site is being mixed which results in blending that will allow the stabilizing agents to function more efficiently. Further, this process reduces erosion and slope instability; the stabilized material from the mixing operation is placed into excavated areas of lower slope than the high slope areas along the ravines adjacent to the subsite where the contaminated material is located currently. The above-ground technology is also more cost-effective in areas of shallow soil contamination because of less need for moving of necessary equipment. The use of above-ground mixers is considered more efficient than augers for depths less than about five feet.

**V. Affirmation of the Statutory Determinations**

Considering the new information that has been developed and the changes that have been made to the selected remedy, EPA and IDNR believe that the remedy 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. In addition, the remedy, as revised, utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable for this site. Information has been developed since the ROD which indicates that the revised remedy will increase protectiveness of human health

and environment, both short term and long term, and decrease costs compared to the original remedy.

**VI. Role of Community in the Process**

The EPA solicits input from the community on the cleanup methods proposed for the response action. This ESD, along with other documents which formed the basis for the changes in the remedy, can be found in the administrative record file. The EPA encourages the public to review these documents to gain a more comprehensive understanding of the Site and ongoing activities at the Site. The administrative record file is available at the Idol Rashid Memorial Public Library.

Please submit written comments on this ESD to:

Hattie Thomas  
Office of Public Affairs  
U.S. Environmental Protection Agency  
Region VII  
726 Minnesota Avenue  
Kansas City, Kansas 66101

If you have any questions or need additional information on the Site, please contact:

Paul Roemerman  
U.S. Environmental Protection Agency  
Region VII  
Waste Management Division  
Superfund Branch  
726 Minnesota Avenue  
Kansas City, Kansas 66101  
(913) 551-7694



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VII  
726 MINNESOTA AVENUE  
KANSAS CITY, KANSAS 66101

**MEMORANDUM**

**SUBJECT:** Explanation of Significant Differences for the  
DuPont County Road X23 Superfund Site, Lee County, Iowa

**FROM:** Robert Morby  
Chief, Superfund Branch

**TO:** David Wagoner  
Director, Waste Management Division

This Explanation of Significant Differences notifies the public of the decision to implement onsite, above ground stabilization/solidification of contaminated soil instead of in-situ stabilization/solidification.

The major components of this remedy include consolidation of the contaminated soil into one location, mixing of the contaminated soil with a stabilization/solidification reagent, placing the treated soil into a monolith, and covering the monolith with a low permeability cover.

This Explanation of Significant Differences has been coordinated with the Office of Regional Counsel, the Office of Public Affairs, the Congressional and Intergovernmental Liaison, the Agency for Toxic Substances and Disease Registry and the Iowa Department of Natural Resources.

On December 27, 1991, the remedy selection authority for the DuPont County Road X23 Site was delegated to the Regional Administrator by Don R. Clay, Assistant Administrator. I recommend approval.

Attachment

Agree

Carl W. Longren Acting Division Director

Disagree \_\_\_\_\_