

FINAL DECISION

***Dana Corporation
Antwerp, Ohio
OHD 005 039 730***

Introduction

The U. S. Environmental Protection Agency issues this Final Decision and Response to Comments for the Dana Corporation (Dana) facility¹ located in Antwerp, Ohio. The Final Decision includes this decision document and the following attachments: Cleanup Level Tables (Attachment I); Map of the Proposed In-Situ Chemical Oxidation (ISCO) locations at the TCE Storage Area (Attachment II); EPA Response to Comments (Attachment III); Index to Administrative Record (Attachment IV); and Statement of Basis (Attachment V).

The Final Decision selects the final remedy to be implemented to address contaminated lacustrine clay groundwater, bedrock groundwater, lacustrine clay soil, and indoor air at and from the Dana facility pursuant to the Resource Conservation and Recovery Act of 1976 (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984. The Final Decision is based on the Administrative Record and public comments. The Statement of Basis provides EPA's proposed remedy which was available for public review and comment from October 25, 2007 to November 26, 2007. EPA's Response to Comments addresses substantive comments received on the Statement of Basis during the 30 day public comment period.

Assessment of the Facility

The response action documented in this Final Decision is necessary to protect human health and the environment.

Public Comments on the Proposed Remedy

Dana provided comments on EPA's proposed remedy in two letters. These were the only public comments received by EPA. Dana's comments involved: 1) clarifying distinctions in the cleanup of lacustrine clay soil versus lacustrine clay groundwater; 2) remedial goals for constituents of concern; 3) the use of a "hybrid" cleanup approach using ISCO and monitored natural attenuation (MNA); 4) timeframes for cleanup; and 5) monitoring program requirements.

¹ Facility shall mean all contiguous property under the control of the owner and/or operator as of the date of the Administrative Order on Consent, Docket No. RCRA-05-2003-009 (AOC).

Dana's comments provided information that allowed EPA to clarify the remedy. EPA modified the remedy proposed in the Statement of Basis in four ways to address Dana's comments:

- As explained in EPA's Response to Comments, EPA eliminated the proposed requirement to operate the HVAC system. The current indoor air monitoring program will be supplemented to protect workers from the potential release of volatile organic compounds (VOCs) to indoor air during the performance of the corrective measures required by this Final Decision;
- EPA clarified that storm water monitoring would be required only during the ISCO treatment period;
- EPA clarified the application of ISCO treatment in lacustrine clay soil and lacustrine clay groundwater; and
- EPA clarified the time-frame for achieving cleanup levels.

The final remedy also takes into consideration new information provided by Dana related to bedrock groundwater monitoring data for VOCs in the vicinity of the former East Production Well.

Final Remedy

EPA selects the following remedial components as the final remedy to address contaminated soil, groundwater, and indoor air at the Dana facility.

Corrective Measures for Lacustrine Clay Soil and Lacustrine Clay Groundwater at All Areas Where VOCs Exceed Site-Specific Derived Soil Saturation Limits. These Areas Include the Former Plating Area, Former Clarifier Area, Empty Drum Storage Area, and AOC A.

- Within each of these source areas, delineate where the ISCO treatment will be implemented. The ISCO treatment must be implemented in such a manner that: (1) cleanup levels for lacustrine clay soils will be achieved within two years of this Final Decision; and (2) when followed by MNA, lacustrine clay groundwater cleanup levels will be achieved within 15 years of this Final Decision. Provide the delineation of ISCO treatment areas in the corrective measures implementation (CMI) Workplan due within 60 days of this Final Decision.
- For the Former Plating Area, the delineation of the ISCO treatment area must also ensure the reduction of constituents of concern (COCs) in indoor air to cleanup levels established for indoor air to protect workers (see Table 4 of Attachment I). Conduct an indoor air monitoring program to ensure that indoor air contaminant concentrations do not exceed applicable cleanup levels in occupied portions of the on-site building. If, subsequent to implementation of the ISCO treatment in the Former Plating Area, indoor

air monitoring demonstrates an exceedance of the indoor air cleanup levels (Table 4 of Attachment I) in an occupied portion of the on-site building, additional corrective measures will be implemented.

- Perform a field pilot test for ISCO in accordance with the EPA-approved CMI Workplan, to determine ISCO's effectiveness and to properly design an ISCO remediation program for the lacustrine clay unit in all areas.
- If EPA determines that the field test demonstrates that ISCO is unreliable and/or ineffective to achieve lacustrine clay soil cleanup levels and address lacustrine clay groundwater, implement *in situ* thermal desorption (ISTD).
- If EPA determines that the field test demonstrates that ISCO is reliable and effective, apply ISCO in accordance with the EPA-approved CMI Workplan and CMI Design. The ISCO must: (1) achieve cleanup levels for lacustrine clay soil presented in Table 1 of Attachment I within two years of this Final Decision; and (2) when followed by MNA, achieve lacustrine clay groundwater cleanup levels presented in Table 2 of Attachment I of this Final Decision within 15 years of this Final Decision. Cleanup levels in lacustrine clay soil and lacustrine clay groundwater are derived to protect workers via direct contact/inhalation of COCs and protect the bedrock aquifer.
- Additionally, ISCO remediation of lacustrine clay soil must result in a post-treatment exposure point concentration (EPC) for trichloroethene (TCE) of 87 ppm in soil.
- Subsequent to completion of the ISCO treatment, implement an MNA program for the lacustrine clay groundwater at all areas to achieve the cleanup levels within 15 years of this Final Decision. As part of this corrective measure, assessment reports must be provided to EPA at 5 and 10 years after this Final Decision, documenting the effectiveness of MNA as provided for in the CMI Workplan. At the 5 year review period, enhanced bioremediation may be implemented in these areas, as approved by EPA, to achieve the groundwater cleanup levels. At the 10 year review period, if EPA determines that MNA or enhanced bioremediation will not achieve the groundwater cleanup levels within the subsequent 5 years, ISCO or ISTD (or an alternative technology approved by EPA) must be implemented immediately to ensure compliance with the 15 year time-frame for achieving cleanup levels in lacustrine clay groundwater.
- Small areas of lacustrine clay soil contaminated with TPH (diesel range) exceeding the cleanup level of 8,000 mg/kg may be excavated and disposed of off-site.

Corrective Measures for Lacustrine Clay Groundwater at and in the Vicinity of the TCE Storage Area.

- Apply ISCO to a depth approved by EPA to achieve the cleanup levels for lacustrine clay groundwater presented in Table 2 of Attachment I of this Final Decision in the areas

depicted in Attachment II (see Figure 1). Cleanup levels in lacustrine clay groundwater are derived to protect workers via direct contact/inhalation of COCs. Achieving these cleanup levels is also expected to minimize the migration of contaminated groundwater from the lacustrine clay to the bedrock aquifer. The ISCO treatment must be implemented in such a manner that, when followed by MNA, lacustrine clay groundwater cleanup levels will be achieved within 15 years after this Final Decision.

- Install, develop, and initiate sampling of a lacustrine monitoring well 25-feet east of soil CA-SB-14 within 30 days of this Final Decision. Perform additional groundwater sampling and analysis for VOCs monthly thereafter for a total of three samples. If VOC concentrations in groundwater exceed cleanup levels found in Table 2 of Attachment I of this Final Decision, and are comparable to concentrations detected in the quarterly groundwater monitoring at nearby monitoring wells MW-24A, MW-25A, MW-26A, and MW-37A, the central roadway portion must be included in the area where ISCO will be implemented (*see* Figure 1 of Attachment II).
- Implement MNA to the lacustrine clay groundwater at and in the vicinity of the TCE Storage Area, after ISCO remediation, to ensure that cleanup levels are achieved within 15 years of this Final Decision. As part of this corrective measure, assessment reports must be provided to EPA at 5 and 10 years after this Final Decision, documenting the effectiveness of MNA as provided for in the CMI Workplan due within 60 days of this Final Decision. At the 5 year review period, enhanced bioremediation may be implemented in this area, as approved by EPA, to achieve the groundwater cleanup levels. At the 10 year review period, if EPA determines that MNA or enhanced bioremediation will not achieve the cleanup levels within the subsequent 5 years, ISCO or ISTD (or an alternative technology approved by EPA) must be implemented immediately to ensure compliance with the 15 year time-frame for achieving cleanup levels in lacustrine clay groundwater.

Corrective Measures for Bedrock Groundwater at and in the Vicinity of the Former East Production Well.

- Apply ISCO or enhanced bioremediation at and in the vicinity of the former East Production Well in accordance with the EPA-approved CMI Workplan and CMI Design to achieve cleanup levels for bedrock groundwater presented in Table 3 of Attachment I of this Final Decision. Cleanup levels in bedrock groundwater are derived to allow potable use of the aquifer and protect human health. Cleanup levels for bedrock groundwater on-site and off-site must be achieved within three years of this Final Decision.
- Use best efforts to implement institutional controls on all properties in this area to ensure that bedrock groundwater is not used until groundwater cleanup levels are achieved. Such institutional controls may include, but are not limited to, environmental covenants

and deed restrictions, local groundwater use ordinances, or other effective and enforceable groundwater use restrictions.

Other Certification, Monitoring, Reporting, Institutional Control, and Financial Assurance Requirements.

- Provide certification by a responsible corporate officer or duly authorized representative of all documents submitted pursuant to this Final Decision, as required in Section XIV of the Administrative Order on Consent (AOC).
- Submit a groundwater performance monitoring program to EPA for review and approval as part of the operation and maintenance plan for the CMI Design, in accordance with the EPA-approved schedule in the CMI Workplan. The groundwater monitoring program must be capable of evaluating the effectiveness of ISCO, MNA, and enhanced bioremediation for achieving cleanup levels in lacustrine clay groundwater and bedrock groundwater within the time-frames required in this Final Decision.
- Implement the approved groundwater performance monitoring program, incorporating EPA comments.
- Submit a storm water and indoor air monitoring program to EPA for review and approval as part of the operation and maintenance plan for the CMI Design. The storm water and indoor air monitoring program must be capable of assessing whether unacceptable concentrations of COCs are released to the environment during ISCO remediation. Indoor air monitoring must be performed continuously during ISCO remediation at the Former Plating Area located beneath the building.
- Implement the approved storm water and indoor air monitoring program, incorporating EPA comments.
- Conduct title searches of (1) the Dana facility; and (2) any off-site properties where groundwater contaminated as a result of historical operations at the facility has come to be located, and submit a report detailing the results of the title search to EPA within 60 days of this Final Decision.
- Implement institutional controls for the land, soil, and groundwater portions of the Dana facility that are the subject of this Final Decision. The institutional controls shall ensure that Dana property use remains industrial; the soil and groundwater at the facility are not disturbed in a manner that poses a risk to workers or interferes with the implementation of the final remedy; groundwater monitoring wells are maintained until cleanup levels are achieved and the wells are approved for abandonment by EPA; and on-site bedrock groundwater exceeding cleanup levels is not used for potable purposes until groundwater cleanup levels are achieved.

- Implement an Ohio environmental covenant pursuant to Ohio Revised Code (ORC) §§ 5301.80 to 5301.92 to implement the institutional controls required above for those portions of the Dana facility that are the subject of this Final Decision. A draft environmental covenant must be submitted to EPA for review and approval within 60 days of this Final Decision. The EPA-approved environmental covenant must be recorded on all facility deeds in accordance with ORC § 317.08 within 120 days of this Final Decision. Within 15 days thereafter, EPA shall be provided with a certified copy of the original recorded environmental covenant, certified by the County Clerk/Register Office, showing the clerk's recording stamps.
- Obtain financial assurance for completion of the final remedy, including operation and maintenance (O&M), within 90 days of the Final Decision. The current estimated cost of the selected remedy is \$4,071,159 over the expected lifetime of 30 years. Provide an updated detailed estimate of capital costs for implementing ISCO to treat lacustrine clay soil and address lacustrine clay groundwater at the four areas where VOC concentrations exceed the site-specific derived soil saturation limits, and for treating lacustrine clay groundwater at and in the vicinity of the TCE Storage Area. Provide costs for implementation of ISCO and/or enhanced bioremediation to treat the bedrock groundwater. All costs must be submitted to EPA for review and approval within 45 days of this Final Decision. Updated capital costs must consider that the ISCO treatment required by this Final Decision must be implemented in such a manner that, when followed by MNA, lacustrine clay groundwater cleanup levels will be achieved within 15 years of this Final Decision. Provide financial assurance of \$4,071,159 plus updated capital costs for implementing ISCO, and ISCO and/or enhanced bioremediation in bedrock groundwater, in one of the forms permitted under 40 C.F.R. § 264.145 (modified to replace the terms "post-closure" and "closure" with "corrective action" and referencing the AOC, as approved by EPA).
- Provide at each five year period after this Final Decision (coinciding with each MNA assessment report), an updated cost estimate to EPA for review and approval. Upon EPA approval of the updated cost estimate, Dana may modify the financial assurance if the updated cost estimate is less than the financial assurance provided within 90 days of the Final Decision (the initial financial assurance). Dana must modify and obtain additional financial assurance within 30 days of EPA approval if the updated cost estimate is greater than the initial financial assurance.
- Submit CMI monthly progress reports to EPA during the design and construction phases detailing work performed to date, data collected, problems encountered, project schedule, and percent project completed. Progress reports are due by the 10th day of each month following the Final Decision. Submit CMI progress reports semiannually for O&M activities upon approval of the Construction Completion Report.

The final remedy selected by EPA meets the threshold criteria that reflect the performance standards that must be achieved, including:

- Protect Human Health and the Environment.
- Attain Media Cleanup Standards Set by EPA.
- Control the Sources of Releases.
- Comply with Any Applicable Standards for Management of Wastes.

The final remedy also considers balancing criteria that represent a combination of technical measures and management controls that helped identify the best remedy, including:

- Long-term Reliability and Effectiveness.
- Short-term Effectiveness;
- Reduction in the Toxicity, Mobility, or Volume of Wastes.
- Implementability.
- Cost.

The use of reliable and effective technologies such as ISCO and MNA to achieve cleanup levels and their moderate costs compared to other technologies were the principal factors in determining the final remedy.

Public Participation Activities and Comments

A public comment period was held from October 25, 2007 to November 26, 2007. Written comments were submitted by only one party, Dana Corporation. EPA extracted a total of 38 substantive comments from Dana's submittal. They are presented and responded to in Attachment III.

Administrative Record

The Administrative Record for the final remedy is available at the Antwerp Branch Library, 205 N. Madison St., Antwerp, Ohio and the 7th Floor Records Center at EPA Region 5, 77 W. Jackson Blvd., Chicago, IL. Attachment IV identifies the documents contained in the Administrative Record.

Future Actions

The AOC requires Dana to implement the final remedy in a manner consistent with the CMI Scope of Work, which is Attachment IV of the AOC. EPA will update the Administrative Record with new information (e.g., correspondence, plans, reports) during implementation of the final remedy.

Declarations

Based on the Administrative Record compiled for this corrective action, EPA has determined that the final remedy selected for the Dana facility is appropriate and protective of human health and the environment.

Margaret M. Guerriero
Director
Land and Chemicals Division
Attachments (5)

Date

IN THE MATTER OF:

Dana Corporation
Antwerp, Ohio
EPA I.D. No. OHD 005 039 730