ATTACHMENT III

EPA RESPONSE TO COMMENTS

Overview

The Statement of Basis, containing the proposed remedy for the Dana facility, was made available for public review and comment from October 25 to November 26, 2007.

This Response to Comments documents EPA's response to substantive public comments, and the effects of those comments, if any, on the selection of the final remedy. All comments received by EPA were reviewed and are found in the Administrative Record. Substantive comments and EPA responses are provided below.

Community Involvement and Concerns

Comments received on the proposed remedy were considered and addressed in the final remedy. As a result, the proposed remedy was modified by EPA to: 1) eliminate the need to operate the HVAC system to protect workers from potentially unacceptable levels of TCE in indoor air; 2) reduce the time period for conducting a storm water and indoor air monitoring program; 3) clarify the application of ISCO treatment in lacustrine clay soil and lacustrine clay groundwater; and 4) clarify the time-frame for achieving remedial goals (RGs).

Response to Comments

The following narrative summarizes written comments on the proposed remedy and EPA's response to each comment. Each comment is numbered and presented in italicized capital type. The only comments received were provided by Dana.

1. *THERE IS A GENERIC REFERENCE TO LACUSTRINE CLAY WITHOUT DISTINGUISHING BETWEEN LACUSTRINE GROUNDWATER AND SOIL. A DISTINCTION SHOULD BE MADE BECAUSE OF THE DIFFERENCE IN POTENTIAL RISK BETWEEN THE TWO MEDIA.*

The lacustrine clay soil and lacustrine clay groundwater are discussed separately in the Statement of Basis (SB), both in the presentation of RFI results and summary of facility risks. The Final Decision is clear in its distinction between soil and groundwater media in the lacustrine clay.

2. *INCLUDE FIGURE 3 FROM THE CMS REPORT IN THE SB TO SHOW THE AREAS OF AFFECTED SOIL AND GROUNDWATER THAT REQUIRE CORRECTIVE MEASURES.*

Figure 3 from the draft CMS Report is included in the Administrative Record (Dana-136) for the SB.

3. *DO NOT INCLUDE REMEDIAL GOALS FOR ACETONE, 1,1-DCE, AND 1,1,2-TCA IN BEDROCK GROUNDWATER IN THE TABLE ON PAGE 7 OF THE SB. ACETONE WAS IDENTIFIED AS A LABORATORY CONTAMINANT, AND 1,1-DCE AND 1,1,2-TCA WERE NOT DETECTED IN BEDROCK GROUNDWATER.*

The human health risk assessment (HHRA), Appendix L of the RFI Report (Dana-093) identifies acetone, 1,1-DCE, and 1,1,2-TCA as constituents of potential concern (COPCs) and provides their carcinogenic and noncarcinogenic toxicity values. 1,1,-DCE and 1,1,2-TCA are subsequently identified as constituents of concern (COCs) with remedial goal options. Although acetone contributes significantly to the hazard index for groundwater, Dana did not determine acetone to be a COC because it stated that its detection is associated with laboratory contamination rather than site-related sources; however, EPA could not identify any specific support in the HHRA that acetone is associated with laboratory contamination given the significant concentrations as noted below.

Although significant concentrations of these COCs were not detected in bedrock groundwater, significant concentrations were quantified in the overlying lacustrine clay groundwater at monitoring wells MW-17A, 18A, 24A, 25A, 26A, 27A, and 37A. Acetone concentrations were as high as 22,000 μg/l. At these concentrations, acetone does not appear to be a laboratory contaminant.

Because of their high concentrations in the overlying lacustrine groundwater, it is necessary to retain and monitor for acetone, 1,1-DCE, and 1,1,2-TCA in the bedrock groundwater to verify that their concentrations remain below RGs. Cleanup levels for these COCs in bedrock groundwater are provided in the Final Decision and these COCs must be monitored for in the groundwater performance monitoring program.

4. *THE SB SHOULD STATE THAT ONLY VOC CONCENTRATIONS IN LACUSTRINE SOIL GREATER THAN THEIR SOIL SATURATION LIMIT MUST BE ADDRESSED TO PROTECT BEDROCK GROUNDWATER.*

Areas to be remediated are not limited to areas where only site-specific derived soil saturation limits are exceeded. As shown in Table 1 of the draft CMS Report (Dana-136), other RGs are required to be achieved for TPH (direct contact), TCE (exposure point concentration), and VOCs in lacustrine groundwater (to protect bedrock groundwater).

5. *REVISE THE SB TO STATE THAT ISCO IS THE PROPOSED REMEDY FOR LACUSTRINE SOIL AND GROUNDWATER IN AREAS WHERE VOC CONCENTRATIONS EXCEED THEIR APPLICABLE SOIL SATURATION LEVEL (i.e., FORMER PLATING AREA, FORMER CLARIFIER AREA, EMPTY DRUM STORAGE AREA, AND AOC A). FOR GROUNDWATER OUTSIDE THESE REMEDIATION AREAS, MNA SHOULD BE THE PROPOSED REMEDY.*

The Final Decision clarifies the ISCO application areas. In the four areas where VOC concentrations exceed their applicable soil saturation level, ISCO is required to remediate lacustrine clay soil, and ISCO followed by monitored natural attenuation (MNA) is required to remediate lacustrine clay groundwater. ISCO remediation is also required to achieve a post treatment soil exposure point concentration (EPC) of 87 mg/kg for TCE, and to address indoor vapor intrusion.

At and in the vicinity of the TCE Storage Area, ISCO followed by MNA is the required remedy for lacustrine clay groundwater to protect the bedrock aquifer where vinyl chloride has been detected in groundwater (see Dana-194) and to address VOC concentrations exceeding their applicable groundwater cleanup level for the protection of workers.

At and in the vicinity of the East Production Well, ISCO or enhanced bioremediation is the required remedy where vinyl chloride exceeds its applicable bedrock groundwater cleanup level to protect human health.

For all other areas, MNA is the selected remedy to achieve the cleanup levels for lacustrine groundwater.

6. *THE PHRASE "A REASONABLE TIME-FRAME" TO ACHIEVE REMEDIAL GOALS FOR BEDROCK AND LACUSTRINE GROUNDWATER VIA MNA IS UNDERSTOOD TO REPRESENT A 30-YEAR OR LESS PERIOD OF TIME.*

The Final Decision clarifies the phrase "a reasonable time-frame" to achieve RGs for bedrock and lacustrine groundwater. A reasonable time-frame to achieve RGs for bedrock is within three years after issuance of the Final Decision using ISCO or enhanced bioremediation. A reasonable time-frame to achieve RGs for lacustrine groundwater is 15 years after issuance of the Final Decision using ISCO and MNA (or other alternative technologies, as approved by EPA).

7. *THERE IS NO EVIDENCE OR BASIS FOR ASSUMING FREE-PHASE TCE DNAPL IS CURRENTLY PRESENT IN THE LACUSTRINE CLAY SOIL OR GROUNDWATER.*

Free-phase TCE has not been detected in borings or monitoring wells. However, concentrations of TCE in soil and groundwater suggest the potential presence of DNAPL. ISCO treatment will be used to bring lacustrine clay unit concentrations of COCs in treatment areas down below site-specific derived soil saturation limits and site-specific target soil leachate concentrations, meet the post-treatment soil exposure point concentration of 87 mg/kg for TCE, assist in the timely attainment of cleanup levels protective of workers, and protect the bedrock aquifer.

8. *REMEDIAL GOALS IN SOIL ARE NOT EXCEEDED AT THE FORMER TCE DEGREASER #1, FORMER TCE STORAGE AREA, AND FORMER DRUM STORAGE AREA. THEREFORE, ISCO REMEDIATION IS NOT WARRANTED IN THESE AREAS.*

The proposed remedy does not limit potential ISCO remediation to the four areas where soil saturation limits are exceeded (i.e., Former Plating Area, Former Clarifier Area, Empty Drum Storage Area, and AOC A).

As discussed in the response to item 5 above, the Final Decision requires ISCO remediation at and in the vicinity of the TCE Storage Area to protect bedrock groundwater and assist in the timely attainment of cleanup levels that are exceeded in lacustrine groundwater at and in the vicinity of monitoring wells MW-24A, MW-25A, MW-26A, and MW-37A.

9. *REVISE THE SB TO STATE THAT TARGET INDOOR AIR CONCENTRATIONS IN THE OCCUPIED PORTION OF THE BUILDING ARE NOT EXCEEDED AND CORRECTIVE MEASURES SUCH AS OPERATION OF THE HVAC SYSTEM WILL BE IMPLEMENTED IF INDOOR AIR MONITORING SHOWS THAT TARGET INDOOR AIR CONCENTRATIONS ARE EXCEEDED IN AN OCCUPIED PORTION OF THE BUILDING. AT THIS TIME, OPERATION OF THE HVAC SYSTEM AS A CORRECTIVE MEASURE IS NOT NECESSARY.*

Target indoor air concentrations have recently been exceeded (see Dana-184) but may be the result of improper use of the restricted area in the building by the current owner. Therefore, at this time the final remedy does not require operation of the HVAC system as a corrective measure. However, Dana will be required to propose a corrective measure for EPA approval if indoor air monitoring shows that target indoor air concentrations are exceeded in the occupied portion of the building as a result of historical VOC contamination from Dana operations.

10. *FOLLOWING ISCO TREATMENT OF SOIL, MNA IS THE APPROPRIATE CORRECTIVE MEASURE FOR GROUNDWATER IN THE LACUSTRINE CLAY*

EXCEEDING REMEDIAL GOALS AT THE FORMER PLATING AREA, FORMER CLARIFIER, EMPTY DRUM STORAGE AREA, AND AOC A.

Following ISCO treatment of affected soil and lacustrine groundwater in the Former Plating Area, Former Clarifier, Empty Drum Storage Area, and AOC A that achieves the cleanup levels provided for lacustrine clay soil in the Final Decision, MNA is an appropriate corrective measure to achieve cleanup levels for lacustrine clay groundwater. The Final Decision requires that Dana achieve cleanup levels for lacustrine clay groundwater within 15 years after issuance of the Final Decision. MNA may need to be supplemented with a contingent remedy to achieve cleanup levels for lacustrine clay groundwater within this time-frame.

11. *PROVIDE THE BASIS FOR REQUIRING A STORM WATER MONITORING PROGRAM WHEN SURFACE WATER EXPOSURE WAS SHOWN NOT TO POSE AN UNACCEPTABLE RISK TO HUMAN HEALTH.*

Monitoring shows that COCs have historically been present in storm water that eventually discharges to the Maumee Cemetery Ditch. It is important to monitor storm water during ISCO treatment to ensure that unacceptable concentrations of COCs are not discharged to surface water as a result of ISCO treatment. The final remedy has been modified to require storm water monitoring only during ISCO treatment.

12. *PRIVATE WELLS AT RESIDENCES ALONG SOUTH HARMANN ROAD ARE LOCATED APPROXIMATELY 1800-FEET, NOT 1000-FEET FROM THE DANA FACILITY. THE NEAREST RESIDENTIAL BEDROCK GROUNDWATER RECEPTOR IS LOCATED APPROXIMATELY 1400-FEET TO THE SOUTH ALONG ROUTE 180.*

The residential area cited in the SB is along Harmann Street north of U.S. 24. EPA estimated this residential area to be 1,400-feet west of the Dana facility and observed private wells serving this area. EPA does not know the aquifer used by these private wells.

13. *A TOTAL OF 900 POUNDS OF VOCs WERE REMOVED BY THE VEP TREATMENT SYSTEM AT THE TIME IT WAS SHUTDOWN.*

The statement on page 3 of the SB should read that an estimated 783 pounds of VOCs in the vapor phase were removed by the VEP system from the lacustrine clay unit in the treatment area.

14. *THE FORMER PLATING AREA DID NOT REQUIRE AN INTERIM MEASURE AND THE VOC MASS ESTIMATE FOR THE AREA SHOULD BE REMOVED FROM THE SB.*

The objective of an interim measure is in the short-term to stabilize the contaminated area and in the long-term to reduce VOC concentrations to acceptable levels (see Dana-051). Dana initiated VEP technology as an interim measure at the Empty Drum Storage Area to determine its effectiveness in treating contaminated soil and potential to expand this measure to other areas, including the Former Plating Area.

Therefore, the reference to VOC mass estimate for the Former Plating Area should not be removed because it was relevant for assessing the effectiveness of VEP in attaining cleanup levels within a reasonable time-frame based on the pilot test performed at the Empty Drum Storage Area.

15. *ANY DISCUSSION OF VOC MASS ESTIMATES AND RATES OF RECOVERY ARE IRRELEVANT SINCE REMEDIAL GOALS DRIVE THE CLEANUP, NOT AN ARBITRARY MASS REMOVAL RATE.*

EPA disagrees that it is irrelevant to discuss VOC mass estimates and rates of recovery. Reference to VOC mass estimate and rates of recovery were relevant when assessing the ability of VEP technology to attain cleanup levels at the facility within a reasonable time-frame and to determine whether to choose VEP technology as a final corrective measure.

16. *THE GOAL OF THE VEP PILOT TEST WAS TO STABILIZE THE AREA, NOT TO REDUCE CONTAMINANT CONCENTRATIONS TO A PERFORMANCE MEASURE STANDARD WITHIN THE PILOT TEST EVALUATION PERIOD. THE VEP SYSTEM DID ACHIEVE ITS PRIMARY PURPOSE OF STABILIZATION.*

Along with stabilization of the Empty Drum Storage Area, the goal of the VEP pilot test was to determine its effectiveness to reduce COC concentrations to acceptable levels (see Dana-051). If the VEP system had been demonstrated to be more effective in reducing COC concentrations, it likely would have received higher consideration in the corrective measures evaluation.

17. *ISCO TECHNOLOGY IN THE PROPOSED TREATMENT AREAS WILL REMEDIATE BOTH LACUSTRINE SOIL AND GROUNDWATER.*

The final remedy selects ISCO technology to remediate lacustrine soil and lacustrine groundwater to achieve cleanup levels protective of bedrock groundwater and workers in the proposed treatment areas.

18. *VOC CONCENTRATIONS IN SEDIMENT IN MAUMEE CEMETERY DITCH EXCEED SCREENING LEVELS DESIGNED TO PROTECT THE*

ENVIRONMENT (i.e., REGION 5 ESLs). THE VOC CONCENTRATIONS DID NOT POSE AN UNACCEPTABLE RISK TO HUMAN HEALTH.

Project remedial goals for affected sediment in Maumee Cemetery Ditch were based on preliminary remediation goals, soil screening levels, and ecological screening levels (see Dana-081). Conservative preliminary remediation goals to protect human health were not exceeded in the Maumee Cemetery Ditch for affected sediment but were exceeded in on-site storm sewer manholes which were cleaned out.

19. *THE NATURE AND EXTENT OF VOCS IN LACUSTRINE CLAY SHOULD BE DIFFERENTIATED BETWEEN SOIL AND GROUNDWATER MEDIA.*

Bullet 1 on page 4 of the SB discusses VOCs in lacustrine soil only. VOCs in lacustrine groundwater are separately discussed in bullet 3 on page 5. Soil and groundwater media are differentiated in the discussion of RFI results.

20. *VOCs DETECTED IN LACUSTRINE CLAY GROUNDWATER SHOULD INCLUDE CHLOROMETHANE, WITH A FUTURE USE REMEDIAL GOAL OF 1,500 µg/l.*

Table 1 of the draft CMS Report (Dana-136) does include an RG for chloromethane in lacustrine groundwater. This RG is incorporated as a cleanup level in the Final Decision.

21. *CITE THE PRECEDENCE FOR GROUNDWATER CLEANUP OBJECTIVES (i.e., GROUNDWATER CLEANUP LEVELS, POINT OF COMPLIANCE, AND REMEDIATION TIME-FRAMES).*

The *Handbook of Groundwater Protection and Cleanup Policies for RCRA Corrective Action* (EPA/530/R-01/015, September 2001) provides a rationale for these three components of the groundwater cleanup objective. Together they provide clear numerical targets to be achieved in a specified area within an estimated period of time.

22. *IT IS INAPPROPRIATE TO REFER TO THE LACUSTRINE GROUNDWATER AS AN AQUIFER.*

We agree that only bedrock groundwater is considered an "aquifer" or drinking water source at the Dana facility. The final remedy does require remediation of lacustrine groundwater to protect the bedrock aquifer and workers.

23. *THE PROPERTY BOUNDARY IS THE APPROPRIATE POINT OF COMPLIANCE FOR ACHIEVING GROUNDWATER CLEANUP GOALS SINCE RESTRICTIVE COVENANTS WILL BE DEVELOPED WITHIN THE FACILITY PROPERTY BOUNDARIES.*

As described in the *Handbook of Groundwater Protection and Cleanup Policies for RCRA Corrective Action* (EPA/530/R-01/015, September 2001), a point of compliance must be set throughout the area of contaminated groundwater both on-site and off-site to return groundwater to its maximum beneficial use. The intermediate goal of the groundwater cleanup is to minimize risks posed to workers through exposure to the lacustrine clay groundwater and associated soil vapors. The short-term goal of the groundwater remedy is to return the bedrock aquifer to its maximum beneficial use.

24. *IT SHOULD BE STATED THAT VINYL CHLORIDE IS PRESENT IN BEDROCK GROUNDWATER, NOT BEDROCK ON PAGE 7 OF THE SB.*

This section in the SB summarizing facility risks is titled "Groundwater" and discusses only the groundwater media.

25. *IT SHOULD BE STATED THAT VOCs ARE PRESENT IN LACUSTRINE CLAY GROUNDWATER, NOT LACUSTRINE CLAY ON PAGE 7 OF THE SB.*

This section in the SB summarizing facility risks is titled "Groundwater" and discusses only the groundwater media.

26. *THE GROUNDWATER CLEANUP LEVELS FOR LACUSTRINE GROUNDWATER SHOULD BE NOTED AS "FOR FUTURE LAND USE".*

We agree that cleanup levels for lacustrine groundwater are for future land use for the construction/redevelopment worker. Cleanup levels for future land use are more stringent than for current land use (see Table 1 of draft CMS Report, Dana-136).

27. *CONTAMINANTS IDENTIFIED IN THE TABLE ON PAGE 7 AS "nd" SHOULD BE IDENTIFIED AS "na" SINCE THEY WERE NOT IDENTIFIED AS CONSTITUENTS OF CONCERN IN THE HUMAN HEALTH RISK ASSESSMENT.*

The HHRA, Appendix L of the RFI Report (Dana-093) identifies acetone, 1,1-DCE, methylene chloride, and 1,1,2-TCA as constituents of potential concern (COPC) and provides their carcinogenic and noncarcinogenic toxicity values. 1,1,-DCE, methylene chloride, and 1,1,2-TCA are subsequently identified as constituents of concern (COC) with remedial goal options. Although acetone contributes significantly to the hazard index for groundwater, Dana did not determine acetone to be a COC because it stated that its detection is associated with laboratory contamination rather than site-related sources; however, EPA could not identify any specific support in the HHRA that acetone is associated with laboratory contamination given the significant concentrations as noted below.

Significant concentrations of these COCs were quantified in lacustrine monitoring wells MW-17A, 18A, 24A, 25A, 26A, 27A, and 37A. Acetone concentrations were as high as 22,000 µg/l. At these concentrations, acetone does not appear to be a laboratory contaminant.

Since other VOCs such as cis-1,2-DCE, TCE, and VC appear to be the main constituents driving the lacustrine clay groundwater cleanup, it is not clear whether cleanup levels are necessary for acetone, 1,1-DCE, methylene chloride, and 1,1,2-TCA. This issue should be clarified in the CMI Work Plan.

28. *THE SB SHOULD INCLUDE CLEANUP GOALS FOR LACUSTRINE AND BEDROCK GROUNDWATER SEPARATELY SINCE THERE ARE DIFFERENT CONSTITUENTS ADDRESSED IN EACH AQUIFER.*

The cleanup goals for bedrock groundwater and lacustrine clay groundwater are presented in two separate columns in the table on page 7 of the SB. Cleanup goals for lacustrine groundwater as it applies to acetone, 1,1-DCE, methylene chloride, and 1,1,2-TCA should be clarified in the CMI Work Plan (see response to comment #27).

29. *THE SB INCORRECTLY STATES THAT VOCs IN LACUSTRINE CLAY SOIL MAY POSE AN UNACCEPTABLE RISK TO WORKERS FROM INCIDENTAL CONTACT/INHALATION. THE HUMAN HEALTH RISK ASSESSMENT DETERMINED THAT WORKER EXPOSURE WAS BELOW INDUSTRIAL RISK STANDARDS.*

The HHRA calculated the total carcinogenic risk for the facility worker and utility/maintenance worker for inhalation of volatile emissions from subsurface soil to be 2.9E-05 based on the exposure point concentration (EPC) for TCE and VC (see Appendix L, Tables E-5 and E-10, Dana-093). Further, the carcinogenic risk summary in Table 5-4 and discussion on page 5-10 of Appendix L describe and highlight these unacceptable risks. These unacceptable risks provide the basis for the required post-treatment EPC of 87 mg/kg for TCE to protect workers.

30. *ISCO APPLICATION IN THE FORMER PLATING AREA IS EXPECTED TO REDUCE VOC CONCENTRATIONS IN SOIL AND WILL SERVE TO REDUCE VOC CONCENTRATIONS IN INDOOR AIR.*

EPA agrees with this statement.

31. *THE SB SHOULD SPECIFICALLY NOTE THAT THE REMEDIAL GOAL FOR TCE IS BASED ON A SITE-WIDE AVERAGE CONCENTRATION.*

EPA agrees that the RG for TCE of 87 mg/kg is based on a site-wide average concentration for the post-treatment soil EPC. The original pre-treatment site-wide EPC for TCE was 171 mg/kg which resulted in an unacceptable carcinogenic risk level of 1.96E-05 (see Dana-093).

32. *ONLY VOCs AT CONCENTRATIONS THAT EXCEED THE SOIL SATURATION LIMIT IN THE LACUSTRINE CLAY CAN POTENTIALLY MIGRATE TO THE BEDROCK AQUIFER.*

Based on the site-specific geologic conditions and historical data at the Dana facility, it appears that VOCs are mostly contained within the lacustrine clay unit. However, VOCs have also migrated to the bedrock at and in the vicinity of the TCE Storage Area. As a result, EPA requires in the final remedy that Dana treat the lacustrine clay unit in this area using ISCO.

33. *POTENTIAL REMEDIES FOR LACUSTRINE AND BEDROCK GROUNDWATER ARE COMBINED. EVALUATIONS OF POTENTIAL REMEDIES FOR THE TWO UNITS SHOULD BE MADE INDEPENDENTLY.*

As provided on page 10 of the SB, the potential remedy alternatives for lacustrine groundwater were VEP, ISTD, ISCO, and in situ/enhanced bioremediation. The potential remedy alternative evaluated for bedrock groundwater was in situ/enhanced bioremediation and MNA. This discussion is consistent with Tables 7-3 and 7-4 of the draft CMS Report (Dana-136). Institutional controls are also a remedial component for both lacustrine groundwater and bedrock groundwater.

34. *EXPLAIN WHY GROUNDWATER PUMP AND TREAT, AND IN SITU PHYTOREMEDIATION ARE NOT DISCUSSED IN THE SB.*

These potential corrective measures are not discussed because they did not meet the threshold criteria presented in the draft CMS Report (Dana-136).

35. *ISCO APPLICATION AT THE FORMER PLATING AREA IS EXPECTED TO ADDRESS INDOOR AIR AND SHOULD BE LISTED AS A PROPOSED REMEDY.*

EPA agrees that ISCO treatment of lacustrine clay at the Former Plating Area is expected to address indoor air. The final remedy does not require operation of the HVAC system as a corrective measure unless warranted by indoor air monitoring results (see response to comment #9).

36. *EXCAVATION AND DISPOSAL OF SOIL IMPACTED BY TPH FROM A RELATIVELY SMALL AREA MAY BE WARRANTED. THE PREFERRED CORRECTIVE MEASURE FOR LARGER AREAS IMPACTED BY TPH IS ISCO.*

EPA agrees with this statement. The final remedy allows for soil contaminated with TPH to be remediated by excavation and disposal, or by ISCO treatment.

37. *IF GROUNDWATER CLEANUP LEVELS ARE NOT ACHIEVED WITHIN A REASONABLE TIME-FRAME, CONTINGENT REMEDIES SUCH AS ENHANCED BIOREMEDIATION MAY BE CONSIDERED. CLARIFY IF THIS APPLIES TO BEDROCK GROUNDWATER, LACUSTRINE GROUNDWATER, OR BOTH.*

EPA requires that Dana achieve cleanup levels for bedrock and lacustrine groundwater within 3 and 15 years respectively, after issuance of the Final Decision as discussed in the response to item 6 above. For bedrock groundwater, Dana must employ an ISCO or enhanced bioremediation remedy to meet the 3 year time-frame. For lacustrine groundwater, Dana must employ a contingent remedy, if needed, by year 10 to achieve the cleanup levels within a 15 year time-frame.

38. *THE ESTIMATED CAPITAL COSTS APPLY ONLY TO AREAS OF SOIL WITH VOC CONCENTRATIONS THAT EXCEED SOIL SATURATION LIMITS. COSTS ARE NOT INCLUDED FOR APPLYING ISCO OUTSIDE THESE AREAS.*

In Dana's response to EPA comments on the draft CMS Report (Dana-152), Dana anticipates the need for multiple ISCO injection events and the ISCO cost estimate is based on six treatment applications during a single mobilization. Capital costs for implementation are provided by area in Table 8 (Dana-136). Costs appear to be related to the size of each area. A specific breakdown of cost was not provided to indicate whether treatment areas are based solely on those portions where soil saturation limits are exceeded. Based on the draft CMS Report (Dana-136), EPA estimates average costs for ISCO in the lacustrine soil source areas to be $209 per square foot at AOC A, $122 per square foot at the Former Empty Drum Storage Area, $105 per square foot at the Former Plating Area, and $107 per square foot at the Former Clarifier Area.

As part of the final remedy, EPA requires that Dana provide updated costs and financial assurance to account for ISCO treatment that is extensive and vigorous enough to: 1) achieve soil cleanup levels in the four soil source areas; 2) achieve a successful MNA strategy for lacustrine groundwater at the four soil source areas as well as at and in the vicinity of the TCE Storage Area that minimizes the need for a contingent remedy and achieves cleanup levels in lacustrine groundwater within the required time-frame; and 3) achieve cleanup levels in bedrock groundwater within the required time-frame.