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UNITED STATES DISTRICT COURT
DISTRICT OF MASSACHUSETTS

UNITED STATES OF AMERICA, Plaintiff, v. MTD PRODUCTS, INC. and COLUMBIA MANUFACTURING COMPANY, INC., Defendants.	CIVIL ACTION NO. 91-30044-F

CONSENT DECREE

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WHEREAS, Plaintiff, the United States of America, on behalf of the Administrator of the United States Environmental Protection Agency (hereinafter "EPA") filed the original Complaint in this action on February 22, 1991, against MTD Products, Inc. and Columbia Manufacturing Company, Inc. (hereinafter "Defendants"), and filed the First Amended Complaint in this action on November 12, 1991 against Defendants, pursuant to Sections 3005(e)(2), 3008(a), 3008(h) and 7003(a) of the Solid Waste Disposal Act, as amended, 42 U.S.C. §§ 6901 et seq. (also referred to as the Resource Conservation and Recovery Act, hereinafter "RCRA"), and Section 309(b) of the Clean Water Act, 33 U.S.C. § 1319(b); and

WHEREAS, by their respective undersigned representatives, and having recognized that settlement of this matter is in the public interest, Plaintiff and Defendants have agreed to the entry of this Consent Decree; and

WHEREAS, there has been no trial, adjudication, or admission by the parties of any issue of fact or law relating to this action, and the parties are entering into this Consent Decree solely for the purposes of settlement.

NOW, THEREFORE, IT IS ORDERED, ADJUDGED AND DECREED AS FOLLOWS:

JURISDICTION AND VENUE

1. This Court has jurisdiction over the subject matter of this action pursuant to 42 U.S.C. §§ 6928(a) and (h), 33 U.S.C. § 1319(b), and 28 U.S.C. §§ 1331, 1345 and 1355. Venue is proper in this district because the subject facility (defined below as

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the "Columbia Property") is located in this district and because the alleged violations occurred here.

2. The First Amended Complaint states claims upon which the Court can grant relief against the Defendants.

3. The Court has personal jurisdiction over the Defendants.

DEFINITIONS

4. All terms used in this Consent Decree are as defined in RCRA, 40 C.F.R. §§ 260.10 and 264.141, and the CWA, unless otherwise defined below:

A. "Alternate Concentration Limit" or "ACL" means Constituent-specific, media-specific, and site-specific concentration limits for contaminants. ACLs are established based on a determination that such alternate levels, if not exceeded, will not pose a substantial present or potential hazard to human health or the environment.

B. "Appendix IX" means Appendix IX to 40 C.F.R. Part 264, as amended. See 52 Fed. Reg. 25942 (July 9, 1987) (Final Rule).

C. "Area of Concern" or "AOC" means an area at which solid or hazardous waste or hazardous constituents may have been managed or may have come to be located and from which releases of hazardous waste or hazardous constituents have or may have occurred or may occur in the future. Examples include, without limitation: landfills, surface impoundments, waste piles, storage tanks, incinerators, injection wells, tanks (including 90-day accumulation tanks), container storage areas, transfer stations, wastewater treatment units, and waste recycling operations.

D. "Background" for any particular media (groundwater, soil, surface water and sediments, and/or air) shall mean the concentration or level of specific pollutants or contaminants in that media both upgradient of any zone(s) of contamination of the Facility and unaffected by the Facility.

E. "Corrective Measures" are measures Defendants must implement to achieve Media Protection Standards, established pursuant to paragraph 26 of this Consent Decree, for each Area of Concern at the Facility.

F. "CWA" means the Clean Water Act, 33 U.S.C. §§ 1251 et seq.

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G. "Day" means a calendar day unless otherwise stated.

H. "Director" means the Director of the Waste Management Division, EPA Region I, or his designee.

I. "Facility" or "Site" includes all contiguous land currently owned by Columbia Manufacturing Company, Inc. at One Cycle Street in Westfield, Massachusetts, and structures, other appurtenances and improvements on the land, not limited to solid or hazardous waste management areas used for treating, storing, or disposing of hazardous waste.

J. "Groundwater" means water below the land surface in the subsurface zone below which all pore space is filled with water.

K. "Hazardous Constituents" include those constituents listed in Appendix VIII to 40 C.F.R. Part 261.

L. "Health Based Criteria" shall refer to those health based standards that, in order of preference, have been either promulgated by EPA in regulation form, adopted by EPA in guidance form, or deemed acceptable by the Director.

M. "Institutional Controls" shall mean deed restrictions and other requirements and controls developed for one or more of the following purposes: 1) to restrict the use of groundwater at the Site prior to the attainment of Performance Standards; 2) to limit human or animal exposure to hazardous waste and hazardous constituents; 3) to ensure non-interference with the performance of the Work; and 4) to ensure the integrity and effectiveness of the Work.

N. "Interim Measures" are measures Defendants must implement pursuant to paragraphs 36 and 37 of this Consent Decree to stabilize releases of hazardous wastes or hazardous constituents which pose a threat or may pose a threat to human health or the environment.

O. "Monitoring Well" means a well capable of producing groundwater samples that, upon laboratory analysis, can provide a reliable indication of groundwater quality.

P. "Operation and Maintenance" or "O & M" shall mean all activities required to maintain the effectiveness of the Work required by this Consent Decree.

Q. "Piezometer" means a small diameter, non-pumping well used to measure hydraulic head at some depth below the water table.

R. "Point of Exposure" means the point at which it is

assumed a potential receptor can come into contact, either now or in the future, with hazardous waste and/or hazardous constituents.

S. "RCRA" means the Resource Conservation and Recovery Act, as amended by the Hazardous and Solid Waste Amendments of 1984, 42 U.S.C. §§ 6901 et seq.

T. "Release" includes any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment, as defined in RCRA.

U. "Stabilization" means a management strategy to control or abate threats to human health and the environment from releases of hazardous wastes or hazardous constituents at RCRA facilities, or prevent or minimize the further spread of contamination while long term remedies are pursued.

V. "Uppermost Aquifer" means the geological formation nearest the natural ground surface that is an aquifer, as well as lower aquifers that are hydraulically interconnected with this aquifer.

W. "Water Quality Standards" are provisions of State or Federal law that consist of a designated use or uses for the waters of the United States and water quality criteria for such waters based upon such uses. Water quality standards are established to protect the public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act (CWA).

X. "Work" shall mean all activities Defendants are required to perform under this Consent Decree, including, but not limited to, completion of tasks required by the RCRA Facility Investigation Proposal, completion of the corrective measures reports, implementation of Interim Measures and Corrective Measures, Operation and Maintenance, and any additional response actions; provided however that "Work" shall not include those activities required by Paragraph 46 (Retention of Records).

Y. "Work Plan" and "Program Plan" mean plans and other documents and requirements under this Consent Decree which require the completion of Work and other activities to achieve the objectives of this Consent Decree.

Z. "Zone of Contamination" means the three dimensional extent of contamination that was produced or is being produced from a release of hazardous wastes or hazardous constituents from an Area or Areas of Concern. This zone includes Areas of Concern and their associated contamination.

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OBJECTIVES

5. This Consent Decree is intended to require Defendants to perform the following: thoroughly evaluate the nature and extent of any releases and threatened releases of hazardous waste or hazardous constituents at or from the Facility; implement Stabilization/Interim Measures to control or abate imminent threats to human health and the environment from releases and threatened releases of hazardous waste or hazardous constituents at or from the Facility, and to prevent or minimize the further spread of contamination while long-term corrective action remedies at the Facility are pursued; gather data necessary to support a Corrective Measures Study; develop and conduct a Corrective Measures Study; implement and complete Corrective Measures identified pursuant to this Consent Decree; pay a civil penalty; and ensure that Defendants have addressed any problems contributing to violations of the Clean Water Act and RCRA.

STIPULATIONS

Solely for the purposes of this Consent Decree, the parties stipulate as follows:

6. Defendant MTD Products, Inc. ("MTD") is a corporation organized under the laws of the State of Ohio. From 1967 through 1987, at the Facility, as an owner and/or operator of the Facility, MTD generated, treated, stored or disposed of "hazardous waste" at the Facility within the meaning of Section 1004(5) of RCRA, and owned or operated treatment, storage or disposal units ("Regulated Units") at the Facility that had been

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eligible for interim status under Section 3005(e)(1) of RCRA. Pursuant to Section 3005(e)(2) of RCRA, 42 U.S.C. § 6925(e)(2), the Regulated Units at the Facility lost their interim status on November 8, 1985.

7. Defendant Columbia Manufacturing Company, Inc. ("Columbia") is a corporation organized under the laws of the Commonwealth of Massachusetts. From 1987 through the date of entry of this Consent Decree, at the Facility, Columbia has generated, treated, stored or disposed of "hazardous waste" at the Facility within the meaning of Section 1004(5) of RCRA, and has owned or operated Regulated Units at the Facility that had interim status under Section 3005(e)(1) of RCRA. Pursuant to Section 3005(e)(2) of RCRA, 42 U.S.C. § 6925(e)(2), the Regulated Units at the facility lost their interim status on November 8, 1985.

8. There is or has been a release of hazardous waste and/or hazardous constituents into the environment at the Facility. In a determination issued on August 8, 1991, the Regional Administrator of EPA, Region I, pursuant to properly delegated authority, found that the past or present handling, storage, treatment, transportation or disposal of solid waste or hazardous waste by Defendants at the Facility may present an imminent and substantial endangerment to health or the environment and that corrective action is necessary to protect human health and the environment.

9. On February 15, 1981, pursuant to Section 3006(b)(1) of

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RCRA, 42 U.S.C. § 6926(b)(1), and 40 C.F.R. Part 123 (now Part 271, Subpart B), EPA granted to the Commonwealth of Massachusetts Phase I Interim Authorization, to administer aspects of a hazardous waste program in lieu of certain parts of the Federal program in the Commonwealth of Massachusetts, subject to various limitations. On June 15, 1984, EPA granted Phase II authorization to the Commonwealth. Pursuant to Section 3006(b) of RCRA, 42 U.S.C. § 6926(b), the Commonwealth was granted final authorization on February 7, 1985. As a result, facilities in Massachusetts which qualify or did qualify for interim status under Section 3005(e)(1) of RCRA, 42 U.S.C. § 6925(e)(1), are now regulated under the authorized Massachusetts provisions found at 310 C.M.R. 30.00 et seq. of the Regulations of the Massachusetts Department of Environmental Quality Engineering (now known as the Department of Environmental Protection.) The federally-approved State program is enforceable, in lieu of the Federal regulations, by the State or by the United States pursuant to Section 3008(a) of RCRA, 42 U.S.C. § 6928(a).

10. From July 1, 1985 to 1987, MTD discharged wastewater containing pollutants within the meaning of Section 502(6) of the CWA, 33 U.S.C. §1362(6), from a point source within the meaning of Section 502(14) of the CWA, 33 U.S.C. §1362(14), to: i) the Little River, a navigable water within the meaning of Section 502(7) of the CWA, 33 U.S.C. §1362(7); and ii) the Westfield, Massachusetts sewer system, a publicly owned treatment works ("POTW") within the meaning of 40 C.F.R. 403.3(o). From 1987 to

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the present, Columbia discharged wastewater containing pollutants within the meaning of Section 502(6) of the CWA, 33 U.S.C. §1362(6), from a point source within the meaning of Section 502(14) of the CWA, 33 U.S.C. §1362(14), to i) the Little River, a navigable water within the meaning of Section 502(7) of the CWA, 33 U.S.C. §1362(7); and ii) the Westfield, Massachusetts sewer system, a POTW within the meaning of 40 C.F.R. 403.3(o). Columbia continues to discharge wastewater containing pollutants from its Metal Finishing operations, which are subject to the Pretreatment Standards for Existing Sources set forth at 40 C.F.R. § 433.15, to the Westfield POTW and continues to discharge wastewater containing pollutants to the Little River.

PARTIES BOUND

11. The injunctive provisions of this Consent Decree shall be binding upon the Defendants, their successors and all other persons or entities as provided by Fed. R. Civ. P. 65(d). In all other respects, as specified herein, this Consent Decree shall apply to and be binding upon the Defendants, their successors and assigns, and upon the United States of America on behalf of EPA.

12. No change in ownership or corporate or partnership status relating to any or all of the Facility shall in any way alter Defendants' responsibilities under this Consent Decree.

13. Within ten (10) days of entry of this Consent Decree, Defendants shall provide a copy of this Consent Decree to all contractors, subcontractors, laboratories, and consultants retained to conduct or monitor any portion of the Work to be

performed pursuant to this Consent Decree. For any such persons or entities retained thereafter, Defendants shall provide a copy of this Consent Decree upon the date of such retention.

14. Defendants shall give notice of the terms of this Consent Decree to any successor in interest prior to transfer of ownership or operation of any portion of the Facility. Defendants shall notify EPA in writing within ten (10) business days of such transfer and shall properly record such transfer. This paragraph does not relieve the Defendants of their obligation to comply with any applicable notice requirements of 40 C.F.R. § 270.72.

15. The undersigned representatives of Defendants certify that they are fully authorized to enter into the terms and conditions of this Consent Decree and to execute and legally bind each Defendant to this Consent Decree.

COMPLIANCE REQUIREMENTS

16. Defendants shall not treat, store or dispose of hazardous waste at the Facility except in accordance with RCRA, its implementing regulations, or applicable state regulations.

17. All Work undertaken pursuant to this Consent Decree shall be performed in a manner consistent with, at a minimum, the RCRA Facility Investigation Proposal attached to this Consent Decree, (Attached hereto as Attachment 1, and hereinafter referred to as the "RFIP"), the Corrective Measures Study, the Corrective Measures Study Report, and other Work Plans developed by Defendants and approved hereunder by the Director.

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18. Defendants shall comply with the Clean Water Act, any NPDES permits authorizing discharges from the Facility, any permits authorizing discharges to the Westfield, Massachusetts POTW, the General Pretreatment Regulations, set forth at 40 C.F.R. Part 403, and any applicable categorical standards under 40 C.F.R. chapter I, subchapter N.

FACILITY DESIGN REPORT

19. Within ninety (90) days of entry of this Consent Decree, to EPA's Water Management Division at the address set forth in Paragraph 63, Defendants shall submit a report describing in detail each source of process and non-process wastewater at the Facility ("Facility Design Report"). The Facility Design Report shall provide a description of flows and wastewater constituents from each source including monthly average and maximum daily volumes and concentrations of pollutants discharged. The Facility Design Report shall also provide a description of each method of wastewater treatment used at the Facility and an assessment of the adequacy of that treatment in meeting applicable requirements under the Clean Water Act. If Defendants intend to modify any source of wastewater or increase production within the next five years or anticipate that such modifications will be made within that time, the Facility Design Report shall describe such modifications and increase in production and any impacts that such modifications or increase in production may have on the composition and volume of the wastewater as well as any upgrades to the treatment systems

which become necessary. The Facility Design Report shall contain an "as built" line-drawing of the facility, identifying each source of wastewater and each treatment system at the Facility.

RCRA FACILITY INVESTIGATION

20. Upon entry of this Consent Decree, Defendants shall begin or have begun implementing the RFIP. Defendants shall notify EPA's Waste Management Division of the completion of the Remedial Facility Investigation ("RFI") within ten (10) days of such completion, and shall submit preliminary and final RFI Reports to EPA's Waste Management Division in accordance with the schedule set forth in the RFIP.

PHASE I INTERIM REPORT AND PHASE II PROPOSAL

21. Within thirty (30) days of the completion of the Phase I tasks set forth in the RFIP, Defendants shall submit to EPA's Waste Management Division a Phase I Interim Report and Phase II Proposal. At a minimum, the Phase I Interim Report and the Phase II Proposal shall include the following:

A. A summary of the results of Phase I;

B. A proposal for any additional Work which should be included in Phase II;

C. A proposed schedule for each of the Phase II tasks, including those established pursuant to Paragraph 21.B, above;

D. A statement as to whether any additional media of concern have been identified for the AOCs listed in Table 5-2 of the RFIP after the submittal of the RFIP. If so, the Phase I Interim Report and Phase II Proposal shall also include a proposed modification to Table 5-2 of the RFIP, as appropriate, indicating that additional media of concern have been identified and that they shall be investigated for the specified AOCs. Additionally, the Phase I Interim Report and Phase II Proposal shall contain a proposed schedule showing how investigation of

the newly identified media of concern shall be integrated into the ongoing investigation. Defendants must demonstrate to EPA's satisfaction that the proposed schedule is as expeditious as possible. If Defendants conclude that the newly identified media of concern cannot be investigated within the timeframe set forth in Figure 6-2 of the RFIP, Defendants shall submit a recommendation as to whether the newly proposed investigations are so central to the RFI that more time should be allotted for Phase II or, alternatively, whether such investigations should proceed on a separate track without delaying implementation of the subsequent steps in the corrective action process;

E. A statement as to whether any additional AOCs have been identified since the submittal of the RFIP. If so, the Phase I Interim Report and Phase II Proposal shall also include a proposed modification to Table 5-2 of the RFIP, as appropriate, indicating that one or more additional AOCs have been identified and that they shall be investigated for the specified media of concern. Additionally, the Phase I Interim Report and Phase II Proposal shall contain a proposed schedule showing how investigation of the newly identified AOCs shall be integrated into the ongoing investigation. Defendants must demonstrate to EPA's satisfaction that the proposed schedule is as expeditious as possible. If Defendants conclude that the newly identified AOCs cannot be investigated within the timeframe set forth in Figure 6-2 of the RFIP, Defendants shall submit a recommendation as to whether the newly proposed investigations are so central to the RFI that more time should be allotted for Phase II or, alternatively, whether such investigations should proceed on a separate track without delaying implementation of the subsequent steps in the corrective action process; and

F. A statement as to whether any of the releases identified in Table 5-2 of the RFIP, or any of the media or AOCs identified pursuant to Paragraphs 21.D or 21.E, above, merit immediate attention through the implementation of stabilization or interim measures. If such releases pose a threat to human health or the environment, or may present a potential threat if not stabilized, the Defendants shall submit an Interim Measures/Stabilization Proposal pursuant to Paragraph 36. The Interim Measures/Stabilization Proposal shall allow for review and possible modification by the Director in accordance with Paragraphs 40 through 45, below. Defendants shall submit an Interim Measures/Stabilization Report within thirty (30) days after the completion of the final field task of the interim measure(s) or stabilization in question.

REVIEW OF THE PHASE I INTERIM REPORT AND PHASE II PROPOSAL

22. After Defendants submit the Phase I Interim Report and

Phase II Proposal, the Director will either approve, conditionally approve, modify, or disapprove the report/proposal in accordance with Paragraphs 40 through 45, below. If the Director approves, conditionally approves or modifies the document, Defendants shall commence implementation of the Phase II tasks, and any additional requirements included in the approved Phase I Interim Report and Phase II Proposal, according to the schedule contained therein.

RFI REPORT

23. Within sixty (60) days after the completion of the final Phase II field task, Defendants shall submit to EPA's Waste Management Division an RFI Report which, at a minimum, shall contain the following information:

A. ENVIRONMENTAL SETTING

(1) Hydrogeology. The RFI Report shall evaluate the hydrogeologic conditions at the Facility. At a minimum, the RFI Report shall meet the requirements of Attachment 2 and include the following:

(a) A description of the regional and Facility-specific geologic and hydrogeologic characteristics affecting groundwater flow beneath the Facility, including without limitation:

i) regional and Facility-specific stratigraphy (soil and unconsolidated sediment cover, bedrock, strike and dip, and formation origins), illustrated by geologic maps and cross sections with supporting geophysical data and boring logs;

ii) regional and local structural features (e.g., folding, faulting, tilting, jointing, etc.), including all supporting data;

iii) depositional history, if available, of unconsolidated and consolidated units;

iv) regional and Facility-specific

hydrogeologic flow patterns, including an analysis of the interrelationship between the bedrock and surficial aquifers;

v) an analysis of the potential influence(s) of geologic, topographic, and geomorphic features on the groundwater flow system; and

vi) identification and characterization of areas and amounts of groundwater recharge and discharge, including, but not limited to, the Little River;

(b) A classification and description of the hydrogeologic properties of the Facility-specific geologic units in Paragraph 23.A.(1)(a)i), above, including;

i) hydraulic conductivity and porosity (total and effective), collected at ten foot intervals or as changes in stratigraphy occur;

ii) lithology, grain size distribution, texture, and uniformity; and

iii) an interpretation of hydraulic interconnections between saturated zones and consolidated and unconsolidated geologic units.

(c) A description of groundwater quality and flow beneath the Facility, based upon a review of existing data and the results of soil borings, geophysical investigations, and groundwater monitoring. At a minimum, this description shall include the following:

i) water levels during high and low flow season; and

ii) vertical and horizontal flow directions during high and low flow seasons, noting any changes in the hydraulic gradients;

iii) water level contour maps, vertical gradient sections, and well or piezometer hydrographs.

(d) A description of man-made influences that may affect the hydrogeology of the Site, including, but not limited to, identifying:

i) local water supply and production wells with approximate schedules of pumping;

ii) hydraulic structures (pipelines, french drains, ditches); and

iii) groundwater mounding.

(2) Soils. The RFI Report shall include an evaluation of all surface and subsurface soils in the vicinity of the AOCs as listed in Table 5-2 of the RFIP. Those features and properties of the soils that may cause or influence the migration, transformation, or attenuation of contaminants shall be characterized. The RFI Report also shall include an areal distribution and a cross-sectional profile of the soils. At a minimum, the Report shall meet the requirements of Attachment 3 and include the following for each stratigraphic unit identified:

(a) Soil Conservation Service soil classification;

(b) Surface soil distribution;

(c) Soil profile;

(d) Hydraulic conductivity (saturated and unsaturated);

(e) Bulk density;

(f) Particle size distribution;

(g) Depth of water table;

(h) Soil Ph;

(i) Infiltration rate;

(j) Storage capacity; and

(k) Vertical flow rate.

(3) Surface Water and Sediments. The RFI Report shall include an evaluation of the surface waters and sediments upstream, downstream, and in the vicinity of the Facility. At a minimum, Defendants shall provide the following information:

(a) A description of the temporal and permanent surface-water bodies including:

i) for ponds, lakes or impoundments: location, elevation, surface area, depth, volume, and freeboard and purpose of impoundment;

ii) for streams, ditches and channels: location, elevation, flow rates, depth, width, seasonal fluctuation, flood potential (i.e., 100 year storm event), and state stream classification (for streams only); and

iii) drainage patterns.

(b) A description of the chemistries of the surface water and sediments. This includes determining the pH, total dissolved solids, total suspended solids, biochemical oxygen demand, alkalinity, conductivity, dissolved oxygen profiles, nutrients NH_3, NO_3^- / NO_2^-, PO_4^{-3}, chemical oxygen demand, total organic carbon, and specific contaminant concentrations as applicable.

(c) A description of sediment characteristics, including without limitation:

i) deposition area(s);

ii) thickness profile(s);

iii) physical and chemical parameters (e.g., grain size distribution, density, total organic carbon content, ion exchange capacity, pH); and

iv) seasonal variations in sediment transport.

(4) Air. The RFI Report shall include an evaluation of the climatic conditions in the vicinity of the Facility that may cause or influence the transport of hazardous waste and/or hazardous constituents released from AOCs as listed in Table 5-2 of the RFIP into the atmosphere. The Defendants shall, at a minimum, provide the following information as well as other relevant information:

(a) A description of the following parameters:

i) annual and monthly rainfall averages for the preceding thirty years;

ii) monthly temperature averages and extremes for the preceding thirty years;

iii) a wind rose for monthly and annual wind direction for the preceding five years; and

iv) climate extremes that have been known to occur in the area.

(b) A description of any topographic and/or man-made features that may affect airflow and emission patterns.

B. SOURCE AND WASTE CHARACTERIZATION. The RFI Report shall contain analytical data to completely characterize the

wastes and areas where they have been placed, collected or removed, including a description and map(s) of the AOCs listed in Table 5-2 of the RFIP. At a minimum, Defendants shall provide the following information as applicable:

(1) AOC Characteristics:

(a) Location of AOC;

(b) Type of AOC area (e.g., tank, waste pile, etc.);

(c) Design features;

(d) Operating practices (past and present as applicable);

(e) Period of operation;

(f) Age of AOC;

(g) General physical conditions;

(h) Method used to close the AOC; and

(i) Information source(s) for the above AOC characteristics.

(2) Waste Characteristics:

(a) Type of waste placed in the AOC, including:

i) hazardous classification (i.e., whether it is a non-hazardous or a listed or characteristic hazardous waste and, if it is a characteristic hazardous waste, what the characteristic is that renders it hazardous);

ii) quantity;

iii) chemical composition; and

iv) toxicity.

(b) Physical and chemical characteristics of identified non-hazardous wastes, hazardous wastes, and hazardous constituents (pure component values), as applicable, including:

i) physical form (solid, liquid, gas);

ii) physical description (e.g., powder, oily sludge);

iii) pH;

iv) general chemical class (e.g., acid, base, solvent);

v) molecular weight;

vi) density;

vii) boiling point;

viii) viscosity;

ix) solubility in water;

x) cohesiveness of the waste; and

xi) vapor pressure.

(c) Migration and dispersal characteristics of the waste and waste constituents, as applicable, including:

i) sorption;

ii) biodegradability, bioaccumulation, biotransformation;

iii) photodegradation rates;

iv) hydrolysis rates;

v) volatilization rates, and

vi) chemical transformations.

C. CONTAMINATION CHARACTERIZATION. The RFI Report shall include documentation of the rate, concentration, direction, and extent of releases of hazardous waste and/or hazardous constituents from the AOCs listed in Table 5-2 of the RFIP into the groundwater, soils, surface water, sediments, and air. The RFI Report must include a characterization of the media contaminated at each AOC as specified in Table 5-2 of the RFIP. At a minimum, Defendants shall provide the following information:

(1) Groundwater Contamination. In the RFI Report, Defendants shall characterize all groundwater contamination resulting from releases from the AOCs as listed in Table 5-2 of the RFIP for groundwater. At a minimum, Defendants shall provide the following information:

(a) A discussion of any deviation(s) from the approved sampling and analysis plan;

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(b) A description of the horizontal and vertical extent of any immiscible or dissolved contaminants in the groundwater and originating at the Facility;

(c) The horizontal and vertical directions of contaminant movement;

(d) The velocity of contaminant movement;

(e) The horizontal and vertical concentration profiles of Appendix IX constituents in the groundwater;

(f) An evaluation of factors, including physical, biological and chemical factors, influencing the contaminant movement, including the combined effect of all constituents detected; and

(g) An extrapolation of future contaminant movement, including a discussion of degradation, attenuation, and diffusion.

(2) Soil Contamination. In the RFI Report, Defendants shall characterize the contamination of the surface and subsurface soils in the vicinity of any contaminant releases from the AOCs identified in Table 5-2 of the RFIP for soil. At a minimum, Defendants shall provide the following information:

(a) A discussion of any deviation(s) from the approved sampling and analysis plan;

(b) A description of the vertical and horizontal extent of contamination, including estimated volumes of contaminated soil associated with a range of concentrations;

(c) A description of contaminant and soil chemical properties within the saturated and unsaturated contaminated area(s). At a minimum, the described properties shall include contaminant solubility, speciation, adsorption, leachability, exchange capacity, biodegradability, hydrolysis, photolysis, oxidation, and any other factors that might affect contaminant migration and transformation;

(d) Specific contaminant concentrations;

(e) The velocity and direction of contaminant movement;

(f) An evaluation of factors, including physical, biological and chemical factors, influencing the contaminant movement, including the combined effect of all constituents detected; and

(g) An extrapolation of future contaminant movement, including a discussion of degradation, attenuation, and diffusion.

(3) Surface Water and Sediment Contamination. In the RFI Report, Defendants shall characterize all surface water body and sediment contamination resulting from releases from the AOCs as listed in Table 5-2 of the RFIP for surface water and sediments. At a minimum, Defendants shall provide the following information:

(a) A discussion of any deviation(s) from the approved sampling and analysis plan;

(b) A description of the volume of the contaminated sediments, including the horizontal and vertical extent of any immiscible and/or dissolved contaminants in surface water and sediments originating from the Facility, and the extent of contamination in underlying sediments;

(c) A description of the horizontal and vertical direction of contaminant movement;

(d) The velocity of the contaminant;

(e) An evaluation of factors, including physical, biological and chemical factors, influencing the contaminant movement, including the combined effect of all constituents detected;

(f) An extrapolation of future contaminant movement, including a discussion of degradation, attenuation, and diffusion; and

(g) A description of the chemistries of the natural surface water and sediments. This includes the pH, total dissolved solids, total suspended solids, biological oxygen demand, alkalinity, conductivity, dissolved oxygen profiles, nutrients NH_3, NO_3^-/NO_2^-, PO_4^{-3}, chemical oxygen demand, total organic carbon, and specific contaminant concentrations as applicable.

(4) Air Contamination. In the RFI Report, Defendants shall assess maximum ambient concentrations of air contaminants at the Facility resulting from releases from the AOCs as listed in Table 5-2 of the RFIP for air. Defendants shall provide, at a minimum, the following information as well as other relevant information:

(a) A discussion of any deviation(s) from the approved sampling and analysis plan;

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(b) Results of air monitoring at each of the AOCs listed in Table 5-2 of the RFIP for which air monitoring is required, including:

i) chemical composition of air contaminants;

ii) rate and density of air contaminants;

iii) concentration of the emitted air contaminants; and

iv) horizontal and vertical extent of air contamination.

(5) Subsurface Gas. In the RFI Report, the Defendants shall report the findings of the subsurface gas investigations. At a minimum, the Report shall include the following information:

a) All raw data collected during the investigations, all calculations performed, and an interpretation of the data;

b) A description of the methods used by the Permittee to gather and interpret data;

c) A description of the subsurface gas contamination from the AOCs;

d) Specific contaminant concentrations; and

e) A description of the direction, rate of migration and extent of contaminant movement away from the AOCs.

D. Health and Environmental Risk Assessment. The RFI Report shall include the completed Health and Environmental Risk Assessment as detailed in Section 5.4 of the RFIP in accordance with Attachment 4 to this Consent Decree.

E. Interim Measures Report. The RFI Report shall include a summary of all interim measures or stabilization measures implemented, including an evaluation of post remedial action sampling/monitoring, an evaluation of the effectiveness of the interim measures or stabilization measures, and whether these measures have been implemented according to the approved schedules contained in Interim Measure Proposals submitted pursuant to paragraph 36 of this Consent Decree.

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F. Identification of Additional Tasks.

(1) The RFI Report shall include a statement as to whether any additional media of concern have been identified for the AOCs listed in Table 5-2 of the RFIP, after the submittal of the Phase I Interim Report and Phase II Proposal and, if so, a supplemental Phase II Proposal indicating that these media shall be investigated for the specified AOCs. If additional media of concern have been identified, the RFI Report shall include a proposed scope of investigation, together with appropriate protocol and schedules. Additionally, if further investigation is to be conducted, Defendants shall propose the submission of a supplemental RFI Report within thirty (30) days after the completion of the final field task of the supplemental investigation. This supplemental Report shall follow the general outline of Paragraph 23 of this Consent Decree. In such event, the proposal shall also provide for review and possible modification of the supplemental Report by the Director as provided under Paragraphs 40 through 45, below.

(2) The RFI Report shall include a statement as to whether any additional AOCs have been identified after the submittal of the Phase I Interim Report and Phase II Proposal and, if so, a proposed modification to Table 5-2 of the RFIP, indicating that these AOCs shall be investigated for the appropriate media of concern. If additional AOCs have been identified, the RFI Report shall include a proposed scope of investigation, together with appropriate protocol and schedules. Additionally, if further investigation is to be conducted, Defendants shall propose the submission of a supplemental RFI Report within thirty (30) days after the completion of the final field task of the supplemental investigation. This supplemental Report shall follow the general outline of Paragraph 23 of this Consent Decree. In such event, the proposal shall also provide for review and possible modification of the supplemental Report by the Director as provided under Paragraphs 40 through 45, below.

(3) The RFI Report shall include a proposal as to whether, based on current information, any of the releases identified in Table 5-2 of the RFIP, or any of the releases identified pursuant to Paragraphs 23.F.(1) or 23.F.(2), above, merit immediate attention through the implementation of stabilization or interim measures. If any stabilization or interim measures are deemed to be necessary, Defendants shall propose specific interim measures, together with appropriate protocol and schedules. In such event, Defendants shall also propose the submission of an Interim Measures Report within thirty (30) days after the completion of the final field task of the stabilization or interim measure(s) in question. The proposal shall also allow for review and possible modification of the report by the Director as provided under Paragraphs 40

through 45, below.

REVIEW OF THE RFI REPORT

24. After Defendants submit the RFI Report, the Director will either approve, conditionally approve, modify, or disapprove the report in accordance with Paragraphs 40 through 45, below. If the Director approves, conditionally approves or modifies the RFI Report, Defendants shall perform all Work the RFI Report requires, including supplemental tasks identified pursuant to paragraphs 23.F.(1) through 23.F.(3), above.

MEDIA PROTECTION STANDARDS (MPS) PROPOSAL

25. On the same date that Defendants submit the RFI Report pursuant to Paragraph 23 of this Consent Decree, Defendants shall submit to EPA's Waste Management Division a Media Protection Standards Proposal which shall include proposed Media Protection Standards (MPS) for each hazardous waste and/or hazardous constituent released from any of the AOCs as listed in Table 5-2 of the RFIP or for which a threatened release exists. The Media Protection Standards established pursuant to this Consent Decree will be used as guidelines for measuring the necessity for and/or the degree of protection afforded by the corrective measures contemplated under Paragraphs 27 through 35, below. Defendants shall propose MPSs for releases into each of the following media: groundwater, soils, surface water, sediments, and air. For each proposed standard, Defendants shall include data justifying and supporting the limits specified, locations at which the limits shall be met, and timeframes for achieving these limits.

Defendants shall have the obligation to show that the proposed timeframes for achieving these limits are as expeditious as possible and shall comply with the following media specific parameters:

A. Groundwater Protection Standards.

(1) Defendants shall propose protection standards for each hazardous waste and/or hazardous constituent released into the groundwater from each AOC as listed in Table 5-2 of the RFIP or for which a threatened release exists. Defendants shall use one or more of the following methods to set these standards:

(a) The proposed groundwater protection standard for any hazardous waste and/or hazardous constituent shall not exceed the background level for such hazardous waste and/or constituent in the groundwater at the time Defendants submit their proposal; or

(b) For any hazardous constituent listed in 40 C.F.R. §§ 141.60 to 141.63, the proposed groundwater protection standard may not exceed those limits specified in 40 C.F.R. §§ 141.60 to 141.63; or

(c) Defendants may propose an Alternate Concentration Limit (ACL) for each hazardous waste and/or hazardous constituent released or being released into the groundwater from the AOCs as listed in Table 5-2 of the RFIP or for which a threatened release exits. If Defendants choose to propose a groundwater ACL, Defendants must demonstrate to EPA's satisfaction that the proposed ACL will not pose a substantial present or potential hazard to human health or the environment as long as the ACL is not exceeded; or

(d) The proposed groundwater protection standard may be a combination of any of the methods described above.

(2) If Defendants choose to propose background groundwater protection standards pursuant to Paragraph 25.A.(1)(a), above, Defendants shall determine background as follows:

(a) The groundwater monitoring system must consist of a sufficient number of wells installed at appropriate locations and depths to yield groundwater samples from the uppermost aquifer that represent the quality of background groundwater.

(b) Each groundwater monitoring well must be cased in a manner that maintains the integrity of the monitoring well bore hole. The casing must be screened and packed with gravel or sand, where necessary, to enable Defendants to collect representative groundwater samples and minimize well siltation. The space between the bore hole and the well casing which projects above the sampling depth must be sealed to prevent contamination of samples and the groundwater. The well stick-up must be protected from damage by traffic or other potential harm.

(c) At least two sampling rounds shall be conducted in accordance with the approved RFIP.

(3) If Defendants choose to propose groundwater ACLs pursuant to Paragraph 25.A.(1)(c), above, they shall submit to EPA support for the proposed ACLs in accordance with EPA guidance. For any proposed ACLs, the Defendants shall include a justification including, at a minimum, a detailed analysis of the following issues:

(a) potential adverse effects on groundwater quality, considering:

i) the volume and physical and chemical characteristics of the hazardous waste and/or hazardous constituents released from any AOC, including their potential for migration;

ii) the hydrogeologic characteristics of the Facility and surrounding land;

iii) the volume of groundwater and the direction of groundwater flow;

iv) the location and withdrawal rates of groundwater users, including, but not limited to, neighboring farmers;

v) the current and expected future uses of groundwater in the area;

vi) the existing quality of groundwater, including other sources of contamination and their cumulative impact on groundwater quality;

vii) the potential for health risks caused by human exposure to hazardous waste and hazardous constituents detected in groundwater from the Facility;

viii) the potential damage to wildlife, crops, vegetation and physical structures caused by exposure to hazardous waste and hazardous constituents detected in

groundwater from the Facility; and

ix) the persistence and permanence of the potential adverse effects.

(b) Potential adverse effects on hydraulically-connected surface water quality, which includes, at a minimum, consideration of:

i) the volume and physical and chemical characteristics of the hazardous waste and/or hazardous constituents released from any AOCs;

ii) the hydrogeologic characteristics of the Facility and surrounding land;

iii) the volume and quality of groundwater and the direction of groundwater flow;

iv) the patterns of rainfall in the region;

v) the proximity of the AOCs to surface waters, including, but not limited to, the Little River;

vi) the current and future uses of surface waters in the area and any water quality standards established for those surface waters;

vii) the existing quality of surface water, including effects of other sources of contamination and the cumulative impact on surface water quality;

viii) the potential for health risks caused by human exposure to hazardous waste and hazardous constituents discharged to surface water from groundwater from the Facility;

ix) the potential damage to wildlife, crops, vegetation and physical structures caused by exposure to hazardous waste and hazardous constituents; and

x) the persistence and permanence of the potential adverse effects.

B. Soil Protection Standards.

(1) Defendants shall propose protection standards for each hazardous waste and/or hazardous constituent released into the soil from an AOC listed in Table 5-2 of the RFIP or threatened to be released. Defendants shall use one or more of the following methods to set the standards:

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(a) The proposed soil protection standard for any hazardous waste or hazardous constituent shall not exceed the background concentrations for that hazardous waste or hazardous constituent at the time Defendants submit their proposal; or

(b) Defendants may propose an ACL for each hazardous waste or hazardous constituent associated with a release to soil. If Defendants choose to propose a soil ACL, Defendants must demonstrate to EPA's satisfaction that the proposed ACL will not pose a substantial present or potential hazard to human health or the environment as long as the ACL is not exceeded; or

(c) The proposed soil protection standards may be a combination of any of the methods described above.

(2) If Defendants choose to propose a background soil protection standard pursuant to Paragraph 25.B.(1)(a), above, Defendants shall establish and justify a soil sampling program consisting of a sufficient number of soil borings located at the appropriate locations and depths to represent background soil quality at or near the Facility.

(3) If Defendants choose to propose a soil ACL pursuant to Paragraph 25.B.(1)(b), above, they shall submit to EPA support for the proposed ACLs in accordance with EPA guidance. For any proposed ACLs, the Defendants shall include a justification including, at a minimum, a detailed analysis of the following issues:

(a) Assumptions for soil intake at all points of exposure, together with the basis therefor;

(b) Calculation of any contaminant exposures based on assumptions noted in Paragraph 25.B.(3)(a), above. The total exposure to soil (ingestion, direct contact, etc.) shall be used in calculating the soil contaminant levels at the point(s) of exposure that will not result in exceedance of health based criteria for systemic toxicants or carcinogens for the most sensitive human population or critical environmental receptors, whichever is more sensitive (EPA shall determine which is more sensitive if it disagrees with Defendants' proposal);

(c) Soil protection levels at least as stringent as those levels necessary to attain groundwater MPS considering the soils potential contribution to groundwater contamination; and

(d) In the absence of specific criteria, Defendants shall apply results from relevant and accepted human epidemiological studies or animal studies.

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C. Surface Water and Sediment Protection Standards.

(1) Defendants shall propose protection standards for each hazardous waste and/or hazardous constituent released into the surface waters and/or sediments from an AOC listed in Table 5-2 of the RFIP. Defendants shall use one or more of the following methods to set the standards:

(a) The proposed surface water and sediment protection standard for any hazardous waste or hazardous constituent shall not exceed the background concentration for that hazardous waste or hazardous constituent in the particular media at the time Defendants submit their proposal; or

(b) Defendants may propose an ACL for each hazardous waste or hazardous constituent associated with a release to surface waters and/or sediments or a threatened release. If Defendants choose to propose a surface water and/or sediment ACL, Defendants must demonstrate to EPA's satisfaction that the proposed ACL will not exceed the federally approved state water quality standards and will not pose a substantial present or potential hazard to human health or the environment provided the concentration limit is not exceeded; or

(c) The proposed surface water and sediment protection standards may be a combination of any of the methods described above.

(2) If Defendants choose to propose a background surface water and sediment protection standard pursuant to Paragraph 25.C.(1)(a), above, Defendants shall locate surface water transects up-gradient of all potential release sources to surface waters from the Facility. A sufficient number of surface water and sediment samples shall be collected at appropriate depths to represent the quality of background surface water and sediments. Defendants shall justify their proposal on the number of samples to be collected.

(3) If Defendants choose to propose a surface water and/or sediment ACL pursuant to Paragraph 25.C.(1)(b), above, their support and justification for the ACL shall include, at a minimum, the following:

(a) Intake assumptions for surface water and sediments at all points of exposure, together with the basis therefore.

(b) Validation of the above assumptions by direct measurements. This validation should indicate the contaminant levels at the point of compliance, as determined by the Director, that will result in surface water and/or sediment contaminant levels at all points of exposure that do not exceed

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health based criteria for systemic toxicants or carcinogens for the most sensitive human population or critical environmental receptors, whichever is more sensitive (EPA shall determine which is more sensitive if it disagrees with Defendants' proposal).

(c) In the absence of specific criteria, Defendants shall apply results from relevant and accepted human epidemiological studies or animal studies.

D. Air Protection Standards.

(1) Defendants shall propose protection standards for each hazardous waste and/or hazardous constituent released into the atmosphere from an AOC listed in Table 5-2 of the RFIP or threatened to be released. Defendants shall use one or more of the following methods to set the standards:

(a) The proposed air protection standard for any detected hazardous waste or hazardous constituent shall not exceed the background concentration for that hazardous waste or hazardous constituent at the time Defendants submit their proposal; or

(b) Defendants may propose an ACL for each hazardous constituent associated with a release to air. If Defendants choose to propose an air ACL, Defendants must demonstrate to EPA's satisfaction that the proposed ACL will not pose a substantial present or potential hazard to human health or the environment provided the ACL is not exceeded; or

(c) The proposed air protection standards may be a combination of any of the methods described above.

(2) If Defendants choose to propose a background air protection standard pursuant to Paragraph 25.D.(1)(a), above, background shall be determined as follows:

(a) Wind direction at the time of air monitoring is to be used to determine the direction of background air quality. The monitoring zone immediately upwind of the area affected by the Facility is the background zone; and

(b) Background air quality shall take into consideration primary daytime air flow path(s), primary nighttime airflow path(s), prevailing seasonal air flow path(s), and emissions from neighboring facilities and sites.

(3) If Defendants choose to propose an air ACL pursuant to Paragraph 25.D.(1)(b), above, their support and justification for the ACL shall include, at a minimum, the following:

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(a) Intake assumptions for air intake at all identified potential points of exposure, together with the basis thereof;

(b) Calculation of any contaminant exposures based on assumptions noted in Paragraph 25.D.(3)(a), above. The total exposure to air (inhalation, direct contact, etc.) shall be used in calculating the air contaminant levels at all identified potential points(s) of exposure that will not result in exceeding the health based criteria for systemic toxicants or carcinogens for the most sensitive human receptors or critical environmental receptors, whichever is more sensitive (EPA shall determine which is more sensitive if it disagrees with Defendants' proposal);

(c) Validation of the above assumptions by direct measurements in combination with modeling calculations. This validation shall indicate the air contaminant levels at the point of compliance, as determined by the Director, that will result in air contaminant levels at all identified potential points of exposure that do not exceed health based criteria for systemic toxicants or carcinogens for the most sensitive human receptor or critical environmental receptors, whichever is more sensitive (EPA shall determine which is more sensitive if it disagrees with Defendants' proposal); and

(d) In the absence of specific criteria, Defendants shall apply results from relevant and accepted human epidemiological studies or animal studies.

ESTABLISHMENT OF THE MEDIA PROTECTION STANDARDS

26. After Defendants submit the proposed media protection standards pursuant to Paragraph 25, above, the Director will set preliminary media protection standards to be used by Defendants to develop corrective measures as required below in Paragraphs 27 through 35.

CORRECTIVE MEASURES STUDY PROPOSAL (Phase III)

27. Within sixty (60) days after Defendants receive a written notice from the Director which sets the preliminary media protection standards as specified in Paragraph 26 above, Defendants shall submit to EPA's Waste Management Division a Corrective Measures Study (CMS) Proposal. In the CMS Proposal,

Defendants shall identify the corrective measures they propose to study in order to achieve the media protection standards in the appropriate media.

A. CMS Schedule. Defendants shall submit in the CMS Proposal, a proposed schedule, not to exceed one hundred twenty (120) days, for the completion of the CMS and submittal of the Draft Corrective Measures Study Report (Draft CMS Report). Upon approval of the CMS Proposal by the Director, Defendants shall perform all the Work contained therein and submit a Draft CMS Report for EPA review and approval, pursuant to the schedule in the approved Proposal.

B. Changes to Preliminary Investigation of Final Corrective Measures. The CMS Proposal shall indicate any changes to the findings and/or data needs outlined in Section 4.0 of the RFIP, including, but not limited to all additional corrective measures that may be appropriate for consideration in Facility cleanup.

C. Documentation. The CMS Proposal shall include documentation supporting the appropriateness of each measure for clean-up of contaminated media (e.g., manufacturers' tests, specific references of successful use of the technology for clean-up at other facilities).

D. Corrective Measures to be Included in CMS. The CMS proposal shall indicate which Corrective Measures will undergo further study. Defendants shall justify the choice of the Corrective Measures they intend to study by discussing:

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(1) For each proposed Corrective Measure, their ability to achieve the Media Protection Standards; and

(2) For each Corrective Measure identified in Section 4.0 of the RFIP or Paragraph 27.B, above, that is not included for further study, why they would be unable to meet the Media Protection Standards or why such inclusion would be inappropriate for the Facility conditions.

REVIEW OF CORRECTIVE MEASURES STUDY PROPOSAL

28. After Defendants submit the CMS Proposal, the Director will either approve, conditionally approve, modify, or disapprove the Proposal, in accordance with Paragraphs 40 through 45, below, to ensure that the media protection standards will be met. Defendants shall conduct the CMS and develop the Draft CMS Report (see Paragraph 29 below) in accordance with the approved, conditionally approved, or modified Proposal.

CORRECTIVE MEASURES STUDY REPORT (Phase IV)

29. Within one hundred twenty (120) days after Defendants receive the Director's approval of the Corrective Measures Study Proposal pursuant to Paragraph 28, above, Defendants shall submit to EPA's Waste Management Division a Draft Corrective Measures Study Report (Draft CMS Report).

A. General. The Draft CMS Report must include the following:

(1) A description of the remedial objectives for each medium and AOC.

(2) A description of the general approach used to investigate and evaluate potential remedies.

(3) A list of all technologies considered alone or as a component of a remedy and the technical or physical criteria used to screen technologies from further evaluation. Cost or compatibility with existing structures, utilities, or other facilities on the Facility shall not be used to screen technologies from further evaluation.

(4) A detailed description of each of the remedies assessed including a no action remedy and remedies which attain all MPS in a timely manner at each AOC. Each detailed description shall include the relevant institutional requirements for each corrective measure.

(5) A detailed evaluation of each remedy based, in content and format, on each of the nine criteria presented in Paragraph 29.B, below.

(6) A summary assessment comparing in text and tables each remedy's ability to attain the MPS and each remedy's ability to achieve the other criteria listed in Paragraph 29.B, below.

(7) A recommendation as to which corrective measure remedies, in Defendants' opinion, are best suited to meet the MPS in light of the criteria listed in Paragraph 29.B, below.

B. Criteria for Evaluation. The Draft CMS Report shall contain a detailed evaluation of each remedy proposed for further study by the CMS Proposal, based on the following nine criteria. Following each criterion listed below are minimum requirements to be fulfilled in the CMS for each remedy undergoing a detailed evaluation.

(1) Overall Protectiveness of Human Health and the Environment.

(a) Assess whether the remedy can adequately protect human health and the environment, in both the short-and long-term, from unacceptable risks posed by hazardous wastes and/or hazardous constituents released or threatened to be released from the Facility or by any residual contamination remaining after completion of the corrective measure. This shall be accomplished by eliminating, reducing or controlling exposures to levels established during development of remediation objectives.

(b) Provide an assessment of measures that prevent exposure and/or direct contact with contamination.

(c) Compare the anticipated post-remediation contaminant concentrations with the Health and Environmental Risk Assessment ("HERA") levels identified pursuant to Section 5.4 of the RFIP in accordance with Attachment 4 to this Consent Decree for carcinogens and Reference Dose ratios calculated in the HERA for non-carcinogens for the worst-case, residential scenario and other scenarios in accordance with the Region I Risk Assessment Guidance noted in Attachment 4 to this Consent Decree.

(d) Provide text and tables which compare

pre-remedy risk levels and ratios to anticipated post-remedy contaminant concentrations.

(e) Provide qualitative and quantitative descriptions of how each remedy is or is not protective of environmental receptors with reference to the ecological assessment in the HERA.

(f) For remedies which rely in part on limiting exposures to contaminated media, describe what institutional controls or limitations on future uses and future exposures are necessary for the remedy to be protective and how these controls and limitations will be ensured, maintained, and enforced.

(g) Determine the exposure to contaminants of humans and the environment and the reduction of the exposure over time, if any.

(2) Attainment of the Media Protection Standards.

(a) Provide text and tables which directly compare anticipated post remedy contaminant concentration with the relevant MPS.

(b) State if any MPS is not achieved in the remedy because it is technically infeasible to attain the MPS and support this determination.

(3) Control of Source Releases.

(a) Estimate the degree to which the sources of releases and threatened releases are controlled and state whether the sources of releases and threatened releases are being controlled so as to reduce or eliminate, to the extent practicable, further releases of hazardous waste and/or hazardous constituents to the environment.

(b) Provide an estimate of the volume of materials to be removed from the Facility with the remedy.

(c) Provide the maximum contamination concentrations that will remain following the remedy and plans to confirm these concentrations.

(d) Provide a quantitative comparison of the release rate of contaminants (e.g. kg/day) prior to and after application of the remedy over the life expectancy of the remedy based on mass balance analyses. For remedies directed at soil media these comparisons shall compare pre-remedial and post-remedial releases of contamination to the groundwater, surface water, sediments, and air.

(e) Explain the fate of any remaining releases.

(4) Compliance with Waste Management Standards. Provide in text and tables an evaluation of whether the remedy complies with applicable federal, state, and local requirements.

(5) Long-term Reliability and Effectiveness.

(a) Evaluate effectiveness in terms of the ability to perform intended functions, such as protection by containment, diversion, removal, destruction, and/or treatment. Determine the effectiveness of each corrective measure either through design specifications or by performance evaluation. Also, assess the reliability of controls such as containment systems that are necessary to manage treatment residuals and untreated wastes.

(b) Identify any specific waste or site characteristics which could potentially impede effectiveness.

(c) Compare the projected service lives of the component technologies against the length of time before compliance with the media protection standards can be maintained. Provide an estimated life expectancy of the remedy.

(d) Evaluate the reliability of each corrective measure including its operation and maintenance requirements and its demonstrated reliability. Evaluate demonstrated and expected reliability based on whether the technologies have been used effectively under analogous conditions; whether the combination of technologies have been used together effectively; whether failure of any one technology has an immediate impact on receptors; and whether the corrective measure has the flexibility to deal with uncontrollable changes at the Site. Additionally, evaluate whether a pilot study would be advantageous.

(e) Evaluate operation and maintenance requirements, including long term management, in terms of the frequency and complexity of necessary operation and maintenance. Technologies requiring frequent or complex operation and maintenance activities shall be regarded as less reliable than technologies requiring little or straightforward operation and maintenance.

(f) Provide an evaluation of the long-term reliability of institutional controls to manage treatment residuals and untreated waste.

(g) Estimate the amount and concentration of waste remaining following implementation of the remedy

considering the persistence, toxicity, mobility, and propensity to bioaccumulate of such hazardous wastes and/or hazardous constituents.

(h) Assess the potential need for replacement of the remedy and what such a replacement would require.

(i) Provide an analysis of the sensitivity of these time estimates to key assumptions or input parameters.

(6) Reduction of Toxicity, Mobility, and/or Volume through Treatment.

(a) State and assess the degree to which the remedy employs treatment that reduces toxicity, mobility or volume of hazardous wastes and/or hazardous constituents.

(b) Identify the treatment processes the remedy employs and the material it would treat.

(c) Estimate the amount of hazardous wastes and hazardous constituents that would be destroyed or treated.

(d) State the degree to which the treatment is irreversible.

(e) Identify the nature, extent, and fate of residuals that will remain following treatment considering the persistence, toxicity, mobility, and propensity to bioaccumulate of any hazardous waste or hazardous constituent.

(f) Provide an estimated mass balance of each treatment process including any residuals, by-products, and releases.

(7) Implementability.

(a) Evaluate the ease or difficulty of installation and implementation through a discussion of conditions both internal and external to the Facility, such as location of underground utilities, depth to water table, heterogeneity of subsurface materials, and location of the Facility (e.g., remote location vs. a congested area). Evaluate what measures can be taken to facilitate construction under these conditions. External factors which affect implementation include the need for special permits or agreements, and the location of suitable off-site treatment or disposal facilities.

(b) Estimate the time required for the corrective measure to comply with the media protection standards in terms of the time it takes to install the corrective measure

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and the time it takes for the corrective measure to achieve compliance with the media protection standards. Provide graphs of contaminant levels in groundwater vs. time required to achieve the groundwater MPSs highlighted.

(c) Assess the degree of difficulty associated with constructing the technology.

(d) Assess the ease or difficulty of undertaking additional corrective measures.

(e) Assess the ease or difficulty of monitoring the effectiveness of the remedy and explain how this would be done.

(f) Evaluate the need to coordinate with and obtain necessary approvals and permits and the estimated time required.

(g) Assess the availability of necessary equipment and specialists.

(h) Assess the availability of capacity and location of needed treatment, storage and disposal services.

(i) Assess relevant institutional requirements for each corrective measure. This assessment shall include a discussion of the effects of any relevant federal, state or local environmental or public health standards, regulations, and/or ordinances on the design, operation, and timing of each corrective measure remedy.

(8) Short-term Effectiveness.

(a) Evaluate each corrective measure remedy with regard to safety (e.g. associated with excavation, transportation, and redisposal or containment). This evaluation shall include a discussion of threats to the safety of nearby communities, workers, and environment. Factors that shall be considered include the probability of fire, explosion, volatilization during materials handling and exposure to hazardous substances.

(b) Assess the environmental impacts of each corrective measure. The assessment shall focus on Facility condition and pathways of contamination actually addressed by each corrective measure. For each corrective measure, the short- and long-term beneficial and adverse effects shall be assessed, including impacts caused by the corrective measure.

(c) Analyze any potentially adverse effects on environmentally sensitive areas, and of any measures that may

be employed to mitigate such adverse effects. The assessment shall address potential cross-media impacts (e.g., whether the remedy removes groundwater contamination, but creates air problems, or requires off-site disposal, etc.).

(d) Provide the estimated duration of each short-term impact.

(9) Cost.

(a) Estimate the cost of each corrective measure remedy (and for each phase or segment of the remedy). The cost estimate shall include both capital and annual operation and maintenance costs.

(b) Provide Cost Estimate Summary tables for each remedy carried through a detailed evaluation for the entire time that remediation will be required to achieve the MPS. For each major cost item, provide a summary of:

i) quantity, if relevant (e.g. cubic yards, acres, linear feet, number of samples, etc.);

ii) capital cost;

iii) annual O&M;

iv) present worth of O&M and replacement costs;

v) total capital cost; and

vi) total present worth cost.

(c) Provide a summary table which compares the total capital cost and total present value for each remedy.

(d) Provide cost estimates to a level of accuracy of +50% and -30%. For example, if a remedy's cost is estimated at $1,000,000, this shall represent a level of accuracy between $700,000 and $1,500,000.

REVIEW OF THE DRAFT CORRECTIVE MEASURES STUDY REPORT

30. After Defendants submit the Draft CMS Report, the Director will either approve, conditionally approve, modify, or disapprove the Draft Report in accordance with Paragraphs 40 through 45, below, and subject to the Dispute Resolution

provisions of this Consent Decree. If the Director approves, conditionally approves, or modifies the Draft Report, he/she shall, based on, but not limited to, the information contained therein, select the corrective measures to be implemented.

PUBLIC COMMENT AND PARTICIPATION

31. After the Director approves a Draft Corrective Measures Study Report, EPA shall make it available to the public for review and comment for at least forty-five (45) days along with a summary of the Director's proposed corrective measure(s) and the Director's justification for selecting the proposed corrective measure(s).

32. Following the public review and comment period, the Director shall notify the Defendants of the corrective measure(s) selected by the Director. If the Director, after consideration of public comments, selects corrective measure(s) other than those recommended in the Draft Corrective Measures Study Report, the Director shall inform the Defendants in writing of the reasons for rejecting the corrective measures recommended in the Draft CMS Report. Defendants shall submit a Corrective Measures Study Final Report based upon public comment within the period of time the Director orders.

33. In the event that further corrective measures are deemed necessary to protect human health or the environment by the Director, the Agency may, in the future, issue one or more subsequent orders or take other actions requiring such corrective measures. In issuing such order(s) or taking such actions, EPA

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is in no way bound by the corrective measure(s) recommended by Defendants pursuant to this Consent Decree.

CORRECTIVE MEASURES IMPLEMENTATION

34. At the time the Director selects the corrective measure(s) to be implemented, he/she also shall evaluate the measure(s) the Defendants contend they have already implemented, including a review of quality assurance and quality control. Subject to requisite public notice and comment as provided for in Paragraph 31 of this Decree, the Director shall then notify the Defendants, in writing, of the selected corrective measure(s), including notification of whether Work claimed to have been previously performed by Defendants is accepted or whether additional Work must be performed.

35. No later than sixty (60) days after receiving the written notification under Paragraph 34, above, Defendants shall submit to EPA's Waste Management Division a Corrective Measures Implementation Program Plan (CMI Program Plan). The CMI Program Plan shall be developed in accordance with, at a minimum, the applicable corrective action provisions of RCRA, its implementing regulations, and appropriate provisions of applicable EPA guidance documents. The CMI Program Plan shall be designed to facilitate the design, construction, operation, maintenance and monitoring of the corrective measure(s). The CMI Program Plan shall also include: (1) a Program Management Plan; (2) a Community Relations Plan; (3) Design Plans and Specifications; (4) an Operation and Maintenance Plan; (5) a cost estimate; (6) a

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schedule for implementation of the CMI Program Plan, including preparation and submission of preliminary and final reports to EPA; (7) a Health and Safety Plan; and (8) a Construction Quality Assurance Plan. Defendants shall further set forth in the CMI Program Plan any Tasks, Sub-Tasks, or other requirements in the CMS Report that they assert have been completed, or partially completed, or that they assert are not relevant to corrective measures concerning hazardous waste or hazardous constituents at or from the Facility. The Director will review the CMI Program Plan in accordance with Paragraphs 40 through 45 of this Consent Decree.

A. Within ten (10) days of receiving the Director's approval, conditional approval, or modification of the CMI Program Plan, Defendants shall begin implementation of the corrective measure(s) approved by EPA (except those corrective measures the Director has determined to have been completed pursuant to 34, above) in accordance with the schedule for submission of plans and specifications and for construction approved by the Director.

B. Within thirty (30) days after Defendants have completed implementation of the selected corrective measures, Defendants shall submit a CMI Report to EPA's Waste Management Division. The Director will review the CMI Report in accordance with Paragraphs 40 through 45 of this Consent Decree.

INTERIM MEASURES

36. If at any time after entry of this Consent Decree,

Defendants become aware of any information concerning a release of hazardous waste or hazardous constituents at the Facility other than those releases previously identified and addressed pursuant to this Consent Decree which poses a threat to human health or the environment, or may present a potential threat if not stabilized, including past releases that have not been reported to EPA, in addition to complying with all other statutory and regulatory requirements, the Defendants shall submit an Interim Measures/Stabilization Proposal within fourteen (14) days to EPA's Waste Management Division. The following information shall be provided in the Interim Measures/Stabilization Proposal:

A. type of release;

B. topographic map identifying location of release;

C. dimensions of the release;

D. descriptions of hazardous wastes or hazardous constituents that were released;

E. estimated quantity of each hazardous waste or hazardous constituent released and a description of how the quantity was calculated;

F. for spills, the boundaries of the area containing released wastes or constituents;

G. proposed actions to clean up, mitigate, or stabilize the effects of the release, including a schedule for such actions; and

H. potential receptors and their distance from the release.

37. Defendants shall implement the interim measures contained in any Interim Measures Proposal submitted pursuant to Paragraph 36 upon the Director's approval, conditional approval

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or modification of the proposal in accordance with Paragraphs 40 through 45 of this Consent Decree.

SAMPLING

38. Defendants shall provide the results of all sampling and/or tests or other data generated by Defendants, or on Defendants' behalf, with respect to the implementation of this Consent Decree, to EPA's Waste Management Division, and shall submit these results in monthly progress reports as described in Paragraph 54 of this Consent Decree.

39. At the request of EPA, the Defendants shall provide to EPA's Waste Management Division, or allow EPA or its authorized representative to take, samples (or to take split or duplicate samples of any samples), collected by or on behalf of the Defendants pursuant to the implementation of this Consent Decree. Defendants shall notify EPA's Waste Management Division not less than fourteen (14) working days in advance of any sample collection activity. However, such notice is not required for sample collection necessitated by newly identified or changed circumstances or a sudden event such as a spill or new release.

EPA REVIEW AND APPROVAL PROCESS

40. After review of any plan, report or other item which is required to be submitted for approval pursuant to this Consent Decree, the Director, shall in writing:

A. approve, in whole or in part, the submission;

B. approve the submission upon specified conditions;

C. modify the submission to cure the deficiencies;

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D. disapprove, in whole or in part, the submission, directing that the Defendants modify the submission;

E. disapprove, in whole or in part, the submission, notifying Defendants of deficiencies and of the Director's decision that EPA will modify the submission; or

F. any combination of the above.

41. In the event of approval, approval upon conditions, or modification by the Director, pursuant to Paragraph 40.A, 40.B, 40.C or 40.E, Defendants shall, in accordance with the approved schedule, proceed to take any action required by the plan, report, or other item, as approved or modified by the Director subject only to their right to invoke the Dispute Resolution procedures set forth in Paragraph 77 with respect to the modifications or conditions made by the Director. In the event that the Director modifies the submission to cure the deficiencies pursuant to Paragraph 40.C or 40.E and the submission has a material defect as determined by EPA, EPA retains its right to seek stipulated penalties, as provided in Paragraph 72 through 75.

42. A. Upon receipt of a written notice of disapproval pursuant to Paragraph 40.D, Defendants shall, within 14 days or such other time as specified by the Director in such notice, correct the deficiencies and resubmit the plan, report, or other item for approval. Any stipulated penalties applicable to the submission, as provided in Paragraph 72 through 75, shall accrue during the 14-day period or otherwise specified period but shall

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not be payable unless the resubmission is disapproved or modified due to a material defect, as determined by EPA, in accordance with Paragraph 40.

B. Notwithstanding the receipt of a written notice of disapproval pursuant to Paragraph 40.D or 40.E, Defendants shall proceed, at the direction of the Director, to take any action required by any non-deficient portion of the submission. Implementation of any non-deficient portion of a submission shall not relieve Defendants of any liability for stipulated penalties under Paragraphs 72 through 75.

43. In the event that a resubmitted plan, report or other item, or portion thereof, is disapproved by the Director, the Director may again require the Defendants to correct the deficiencies, in accordance with the preceding Paragraphs. The Director also retains the right to amend or develop the plan, report or other item. Defendants shall implement any such plan, report, or item as amended or developed by the Director, subject only to their right to invoke the procedures set forth in Paragraph 77.

44. If upon resubmission, a plan, report, or item is disapproved or modified by the Director due to a material defect, Defendants shall be deemed to have failed to submit such plan, report, or item timely and adequately unless the Defendants invoke the dispute resolution procedures set forth in Paragraph 77 (Dispute Resolution) and EPA's action is overturned pursuant to that Paragraph. The provisions of Paragraph 77 (Dispute

Resolution) and Paragraphs 72 through 75 (Stipulated Penalties), shall govern the implementation of the Work and accrual and payment of any stipulated penalties during Dispute Resolution. If the Director's disapproval or modification is upheld, stipulated penalties shall accrue for such violation from the date on which the initial submission was originally required, as provided in Paragraphs 72 through 75.

45. All plans, reports, and other items required to be submitted to the Director under this Consent Decree shall, upon approval or modification by the Director, be enforceable under this Consent Decree. In the event the Director approves or modifies a portion of a plan, report, or other item required to be submitted to EPA under this Consent Decree, the approved or modified portion shall be enforceable under this Consent Decree.

RETENTION AND AVAILABILITY OF INFORMATION

46. Defendants shall preserve at the Facility and make available to EPA during the pendency of this Consent Decree, and for a minimum of six (6) years after its termination, all records, documents and information maintained in any form by them or by their contractors, subcontractors, or anyone else acting on their behalf, which have been generated concerning implementation of this Decree, or relate to solid waste management, treatment, storage or disposal at the Facility. The records referred to in this Paragraph include, but are not limited to, sampling, analyses, chain-of-custody records, manifests, trucking logs, receipts, reports, computer disks, correspondence, and any other

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documents and draft documents produced pursuant to or in furtherance of the provisions of this Consent Decree.

47. After the record retention period referred to in paragraph 46 has run, Defendants shall notify EPA's Waste Management Division not less than sixty (60) days prior to the destruction of any of the documents. Upon request by EPA, Defendants shall provide EPA's Waste Management Division with the records.

48. Upon request by EPA, Defendants and/or their contractors shall promptly make available all records and information relating to the required activities. Defendants may assert a confidentiality claim, if appropriate, covering all or part of any information submitted to EPA pursuant to this Consent Decree. Such an assertion shall be made pursuant to 40 C.F.R. § 2.203(b), and shall be adequately substantiated when made. Information determined to be confidential by the Director shall be afforded the protection specified at 40 C.F.R. Part 2, Subpart B. If no such claim accompanies any information submitted to EPA's Waste Management Division, such information may be made available to the public without further notice to Defendants. Defendants shall not assert a confidentiality claim regarding any hydrogeological or analytical data generated pursuant to this Consent Decree.

FINANCIAL ASSURANCE

49. Within thirty (30) days of Entry of this Decree, Defendants shall provide financial assurance for the performance

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of the Work required under this Consent Decree, to the satisfaction of EPA, using one or more of the mechanisms allowable under 40 C.F.R. § 265.143(c), (d) or (e). If Defendants fail to perform any of the terms or conditions of this Consent Decree, the financial assurance shall be available to EPA to perform such terms or conditions of this Consent Decree provided that, prior to drawing upon any financial assurance instrument, the Director shall notify Defendants in writing of the alleged failure to perform and provide Defendants with a reasonable period of not less than fifteen (15) days in which to remedy the alleged non-performance.

50. Each year, on the anniversary of the provision of financial assurance, Defendants shall adjust the amount of financial assurance to reflect the approved completion of construction items and/or any other factors that may bear on the cost of the yet-to-be-completed Work that is required under this Consent Decree. Defendants shall annually certify to EPA's Waste Management Division that they have provided sufficient financial assurance. Defendants shall inform EPA's Waste Management Division of any such adjustments within ten (10) days after making them.

INCORPORATION AND ENFORCEABILITY OF DOCUMENTS

51. All attachments and appendices to this Consent Decree shall be deemed incorporated into, and made an enforceable part of, this Consent Decree.

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SURVIVABILITY/PERMIT INTEGRATION

52. Subsequent to entry of this Consent Decree, a RCRA permit may be issued to the Facility incorporating the requirements of this Consent Decree by reference into the permit.

53. The requirements of this Consent Decree shall not terminate upon the issuance of a RCRA permit unless the requirements are expressly replaced by the requirements in the permit.

REPORTING

54. The Defendants shall provide monthly written reports to EPA's Waste Management Division on the implementation of the RFI, and written reports every two months to EPA's Waste Management Division on the implementation of the CMS and CMI. Each report is to be submitted to EPA no later than fifteen (15) days after the end of each monthly or bimonthly reporting period beginning with the end of the first full month following entry of this Consent Decree. At a minimum, these reports shall contain the following:

A. a description of the actions taken toward achieving compliance with the terms of this Consent Decree;

B. a detailed summary of all results of sampling data and other tests conducted or received by the Defendants related to Work required by the Consent Decree since the submittal of the last report that pertained to the Facility and its vicinity;

C. a discussion of all tasks and actions conducted pursuant to this Consent Decree completed during the past monthly or bimonthly period, and all such actions and tasks that are scheduled for the next monthly or bimonthly period; and

D. identification of any elements not completed as required and any problems or anticipated problems, including the scheduled completion date, the new anticipated completion date,

the reason(s) for the delay and the actions taken to minimize the delay.

E. In addition to the foregoing written progress reports, the Defendants shall provide draft and final plans or reports to EPA in accordance with the terms of this Consent Decree.

55. In their progress reports, Defendants shall describe the field activities to occur (e.g., well drilling, installation of equipment, or sampling) and the scheduled date for initiating and completing those activities. Defendants shall notify EPA's Waste Management Division at least fourteen (14) days prior to engaging in any field activities that are not covered in the progress reports or of any change in the schedule for such activities.

56. Upon the occurrence of any event during performance of the requirements of this Consent Decree that Defendants are required to report pursuant to Section 103 of CERCLA, 42 U.S.C. § 9603, and/or Section 304 of the Emergency Planning and Community Right-to-know Act (EPCRA),42 U.S.C. § 11004, Defendants shall within 24 hours of the on-set of such event orally notify the EPA Project Coordinator, or, in the event that the EPA Project Coordinator is unavailable, the Emergency Response Unit, Region I, United States Environmental Protection Agency. These reporting requirements are in addition to the reporting required by CERCLA Section 103 or EPCRA Section 304.

57. Within twenty (20) days of the onset of such an event, Defendants shall furnish to EPA's Waste Management Division a written report, signed by the Defendant's Project Coordinator,

setting forth the events which occurred and the measures taken, and to be taken, in response thereto. Within 30 days of the conclusion of such an event, Defendants shall submit a report to EPA's Waste Management Division setting forth all actions taken in response thereto.

CERTIFICATION

58. All submittals made under this Decree by Defendants shall be signed by a duly authorized agent of the Defendants and shall include the following certification:

> I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SUPERVISING PROFESSIONAL ENGINEER AND PROJECT COORDINATORS

59. All Work performed pursuant to this Consent Decree shall be under the direction and supervision of a professional engineer, geologist, or environmental scientist with expertise in hazardous waste site investigations and remediation. Defendants shall notify EPA's Waste Management Division in writing within seven (7) days after retaining an engineer, geologist, or environmental scientist other than the engineers and geologists currently hired by the Defendants to carry out the Work in

accordance with the Consent Decree. This notification shall include the name, title, and qualifications of the engineer or geologist, and of any contractors or subcontractors and their personnel to be used in carrying out the terms of this Consent Decree.

60. Within seven (7) days of entry of this Consent Decree, EPA and the Defendants shall designate their respective Project Coordinators, and shall notify each other in writing of the name of the Project Coordinator they have selected. Each Project Coordinator shall be responsible for overseeing the implementation of this Consent Decree. The EPA Project Coordinator will be EPA's representative with regard to the Facility. Unless otherwise provided, all communications between the Defendants and EPA, and all documents, reports, approvals and other correspondence concerning the activities performed pursuant to the terms and conditions of this Consent Decree, shall be directed through the Project Coordinators. EPA and the Defendants each have the right to change their respective Project Coordinator. Such a change shall be accomplished by notifying the other parties in writing at least seven (7) days prior to the change, if possible, but in any event no later than two business days after the change. The absence of an EPA project coordinator assigned to the Facility shall not be cause for the stoppage of Work pursuant to this Consent Decree.

61. The EPA Project Coordinator shall have the authority to halt any Work undertaken pursuant to this Consent Decree if, in

his or her opinion, the Work has caused or may cause a release of hazardous waste, hazardous constituent, hazardous substance or a pollutant, or if the EPA Project Coordinator believes that the Work poses an unacceptable threat to human health or the environment, or if the Work being done is not in accordance with the terms of this Consent Decree or an approved Work Plan or Program Plan. This stoppage of Work shall continue until any condition described above has been abated and/or any action which the EPA Project Coordinator believes is necessary to abate such condition has been undertaken.

SAMPLE AND DOCUMENT AVAILABILITY AND QUALITY

62. Throughout all sample collections and analysis activities, Defendants shall use EPA-approved Quality Assurance, Quality Control test methods, and chain-of-custody procedures as specified in the Work Plans and Program Plan approved by the Director. In addition, Defendants shall:

A. Require that laboratories used by Defendants for analysis perform such analyses according to the EPA methods included in "Test Methods for Evaluating Solid Waste" (SW-846, November 1986, or any updated version) or other methods deemed satisfactory to EPA. If other methods are to be used, Defendants shall submit all protocols to be used for analysis to EPA's Waste Management Division for approval a minimum of 21 days prior to the commencement of analyses.

B. Require that the quality assurance/quality control ("QA/QC") program in laboratories used by Defendants is

equivalent to the QA/QC program which EPA follows. Such laboratories shall provide EPA reasonable access to their facilities and documentation related to Defendants' compliance with this Consent Decree. Upon request by EPA, such laboratories shall demonstrate their standard QA/QC program by analyzing samples to demonstrate the quality of the analysis data. At its discretion, EPA may provide a reasonable number of samples for analysis and require the QA/QC demonstration without providing prior notice.

SUBMITTALS

63. Documents, including reports, approvals, disapprovals and other items to be submitted pursuant to this Consent Decree, shall be sent to the following addresses, or any other address that the Defendants or EPA, respectively, hereafter designates in writing:

A. Four (4) copies of all documents submitted to EPA's Waste Management Division should be sent to:

U.S. Environmental Protection Agency - Region I
RCRA Enforcement Branch, HRR-CAN3
John Kennedy Building
Boston, Massachusetts 02203
Attn: Columbia Manufacturing Company Inc. Project Coordinator

B. All documents submitted to EPA's Water Management Division should be sent to:

Brian Pitt
Environmental Engineer
Water Compliance Branch, WCC
U.S. Environmental Protection Agency - Region I
Boston, Massachusetts 02203

C. All documents submitted to EPA's Office of

Regional Counsel should be submitted to:

Michael Wagner
Assistant Regional Counsel
Office of Regional Counsel, RCW
U.S. Environmental Protection Agency - Region I
Boston, Massachusetts 02203

D. One (1) copy of all documents submitted to EPA should be sent to:

Massachusetts Department of Environmental Protection
Western Regional Office
436 Dwight Street, Suite 402
Springfield, Massachusetts 01103
Attn: Chief, Bureau of Waste Prevention, Division of Hazardous Waste

E. Documents submitted to the U.S. Attorney for the District of Massachusetts should be sent to:

United States Attorney
District of Massachusetts
1107 J.W. McCormack Building
Boston, Massachusetts 02109

F. Documents submitted to the Department of Justice should be sent to:

Chief, Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611
Ben Franklin Station
Washington, D.C. 20044
DOJ No. 90-5-1-1-3592

ACCESS

64. EPA and/or any EPA authorized representative shall have the authority to enter and freely move about all property at the Facility at all reasonable times for the purposes of, inter alia: determining Defendants' compliance with RCRA and the CWA; interviewing site personnel and contractors; inspecting records,

operating logs, and contracts related to the Facility; reviewing Defendants' progress in carrying out the terms of this Consent Decree; conducting such tests as EPA and/or its Project Coordinator deem necessary using a camera, sound recording, or other documentary type equipment; and verifying the reports and data submitted by Defendants to EPA. Defendants shall permit such persons to inspect and copy all records, files, photographs, documents, and other writings, including all sampling and monitoring data, in any way pertaining to Work undertaken pursuant to this Consent Decree.

65. To the extent that the Work required under this Consent Decree requires access to or use of property presently owned or under the control of persons other than Defendants, Defendants shall use their best efforts to obtain whatever access agreements, easements, rights-of-way, or other rights of entry that are necessary to carry out the terms of this Consent Decree. Such access agreements shall provide for reasonable access by EPA and/or any authorized EPA representative to the property for the purpose of observing Defendants' activities undertaken pursuant to this Consent Decree.

66. For purposes of Paragraph 65, above, "best efforts" shall include the offering of reasonable compensation for the requisite access agreements, easements, rights-of-way, or other rights of entry.

67. In the event that any access agreement required in Paragraph 65, above, cannot be obtained at least thirty (30) days

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prior to the date that access is necessary, Defendants shall immediately notify EPA's Waste Management Division of its failure to obtain such access agreement.

68. Nothing in this Consent Decree shall be construed to limit EPA's authority to exercise its rights pursuant to Section 3007 of RCRA, 42 U.S.C. § 6927, or to affect any right of entry possessed by EPA pursuant to any applicable laws, regulations, or permits.

CIVIL PENALTY

69. Within ten (10) days after entry of this Consent Decree, Defendants shall pay a civil penalty of one hundred thousand dollars ($100,000) to the United States in settlement of the claims set forth in the Complaint, plus interest, calculated in accordance with 28 U.S.C. § 1961, accruing from the date Defendants sign this Consent Decree.

70. Payment shall be made by electronic funds transfer, in accordance with written instructions to be provided by the United States Attorney's Office, Financial Litigation Unit, Boston, Massachusetts, after lodging of this Consent Decree. The costs of such electronic funds transfer shall be the responsibility of Defendants. Defendants shall send a copy of the electronic funds transfer authorization form, the electronic funds transfer transaction record, and the transmittal letter to the Department of Justice and EPA's Office of Regional Counsel as specified in Paragraph 63.

71. No payment made under Paragraph 69 shall be deductible

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for federal tax purposes.

STIPULATED PENALTIES

72. Unless otherwise provided in this Paragraph, Defendants shall pay the following stipulated penalties for violations of this Consent Decree:

A. For each day the Defendants fail to comply with or complete any of the following requirements or activities in the manner or within the time set forth in this Consent Decree, including any document incorporated by reference herein:

(1) submit any Work Plan or Program Plan; preliminary report; final report; or progress report, in the manner or within the time required by the terms of this Consent Decree;

(2) commence and implement Work pursuant to each approved Work Plan or Program Plan (exclusive of the reports due thereunder, for which stipulated penalties shall be paid as set forth in subparagraph 72.B, below);

(3) provide the financial assurances and certification(s) required under this Consent Decree;

(4) provide the financial liability coverage and certifications required under this Consent Decree; or

(5) comply with paragraphs 38 and 39,

the Defendants shall pay the United States the following stipulated penalty for each such failure:

Period of Noncompliance	Penalty Per Day Per Noncompliance
1st through 10th day	$2,000 per day
11th through 21st day	$3,000 per day
22nd through 60th day	$5,000 per day
61st day and each day thereafter	$10,000 per day

B. For each day the Defendants fail to comply with any requirement of this Decree, including but not limited to paragraphs 13, 14, 16, 18, 19, and 46 through 48, the attachments hereto, any Work Plans or the Program Plans, not referred to in subparagraph 72.A, 77.A, above, Defendants shall pay the United

States the following stipulated penalties for each such violation:

Period of Noncompliance	Penalty Per Day Per Noncompliance
1st through 20th day	$1,500 per day
21st through 40th day	$2,500 per day
41st day and each day thereafter	$4,000 per day

C. For each day of noncompliance commencing on the tenth day following receipt of written notice from the United States or EPA of noncompliance with the terms of this Consent Decree including any document incorporated by reference herein, Defendants shall also pay the United States the following stipulated penalties which shall be in addition to any stipulated penalties provided for in Paragraphs 72.A, 77.A and 72.B, above:

Period of Noncompliance	Penalty Per Day of Noncompliance
1st through 7th day	$2,500 per day
8th through 14th day	$5,000 per day
15th day and each day thereafter	$10,000 per day.

D. For each day Defendants are late in submitting civil penalties pursuant to paragraph 69, Defendants shall pay a stipulated penalty of $1,500 per day.

73. All stipulated penalties as provided by Paragraph 72, above, shall begin to accrue on the date that the complete performance is due or a noncompliance occurs, whichever is earlier, and shall continue to accrue through the day such noncompliance is corrected. Defendants shall pay any such penalty without demand within twenty (20) days of learning of the noncompliance. Nothing herein shall prevent the simultaneous accrual of penalties for separate violations of this Decree. Interest and handling charges as provided in Paragraph 76 below

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shall begin to accrue on the date the noncompliance occurred and shall be due and payable on any amount not paid within the twenty-day period for payment of the stipulated penalty.

74. All stipulated penalties which accrue pursuant to the requirements of this Decree shall be paid by check made payable to the "Treasurer of the United States of America," and shall be forwarded to U.S. Attorney for the District of Massachusetts at the address in Paragraph 63. A copy of the check and transmittal letter shall be sent to EPA's Office of Regional Counsel and the Department of Justice at the addresses provided in Paragraph 63. The transmittal document shall identify this action, each requirement of this Consent Decree not complied with which was the basis for the stipulated penalty(ies), the date(s) of noncompliance for which payment is being made, the amount of stipulated penalties being paid and, if any, the amount of interest, handling charges, and late payment penalty charges being paid.

75. The provision for payment of stipulated penalties set forth in this paragraph does not preclude the United States from also pursuing any other injunctive remedy or sanction which may be available by reason of Defendants' failure to comply with any requirement of this Consent Decree, including contempt sanctions.

LATE PAYMENT CHARGE

76. The Defendants shall pay interest, at the rate established by the Secretary of the Treasury, pursuant to 31 U.S.C. § 3717, for any delinquent payment of a civil or

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stipulated penalty. In addition, after the first thirty (30) days that any amount of a penalty is overdue, the Defendants shall pay a late payment handling charge of $15.00, and an additional charge of $15.00 for each and every subsequent thirty (30) day period for which any monies are overdue. A 6% per annum penalty will apply to any principal amount not paid within 90 days of the due date. Late payment charges which accrue pursuant to this paragraph shall accrue in addition to any stipulated penalties which accrue pursuant to paragraph 72.

DISPUTE RESOLUTION

77. A. EPA and Defendants shall use their best efforts informally and in good faith to resolve expeditiously all disputes or differences of opinion relating to the conduct of all activities under this Consent Decree. If, in the opinion of any party, there is a dispute concerning the interpretation of this Consent Decree, or any document referenced herein or attached hereto, that party shall send written notice to the other party outlining the nature of the dispute and requesting negotiations to resolve the dispute. If the parties cannot resolve a dispute with respect to any aspect of this Consent Decree informally, including documents referred to herein and schedules concerning such documents, then the interpretation advanced by EPA shall be considered binding unless Defendants invoke and succeed in dispute resolution under this Paragraph. The dispute resolution mechanism described herein pertains to all disputes arising under any and all provisions of this Consent Decree, including but not

limited to the Director's approval, disapproval or approval with modification of any investigation, Work Plan, Program Plan or Report; the implementation of any such Plan or Report; the implementation of any corrective measure required pursuant to this Consent Decree; and any request by EPA for the performance of additional Work. If Defendants object to any or all of an EPA approval with modification, they must invoke their rights under Paragraph 77 or their rights to contest such modification are waived.

B. If, within fourteen (14) days of receipt of notice of a dispute, the parties are unable informally to resolve their differences in accordance with Paragraph 72.A, 77.A, Defendants shall within five days thereafter, present a written statement of position as to such dispute to EPA. The written statement of position shall set forth the specific points of dispute, the position of Defendants and the bases therefore, and any actions which the Defendants consider necessary to resolve the dispute.

C. If the Director concurs with Defendants' position as set forth in Defendants' written statement of position, the Director shall provide written notice of such concurrence to Defendants.

D. If the Director does not concur with Defendants' statement of position, EPA shall informally notify Defendants and the parties and their representatives shall meet face to face within 10 days of such notice in a good faith effort to resolve their differences. If the parties are still unable to resolve

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their differences, Defendants shall then have an additional fourteen (14) days after such meeting(s) to provide additional information for the Director's consideration.

E. If after considering Defendants' statement of position and any additional information and submissions, the Director still does not concur with Defendants' position, the Director shall notify Defendants in writing. The Director's decision shall control unless, within 15 days of receipt of the Director's written determination, Defendants file a petition with this Court that sets forth the specific points of dispute, the position of Defendants, the bases therefore, and any actions that Defendants consider necessary to resolve the dispute. The United States shall have thirty (30) days to file a response which may include an alternative proposal for resolution. In any dispute, Defendants shall have the burden of proving that the United States' decision should be overturned. The parties recognize and agree that this Court's review of any action, inaction or decision taken or made by EPA with regard to this Consent Decree is limited to a determination of whether EPA's action or position is arbitrary and capricious.

78. The existence of a dispute as described herein, and EPA's or this Court's consideration of such matters as are placed into dispute, shall not excuse, toll or suspend any other compliance obligation or deadline required pursuant to this Consent Decree, apart from the matter(s) in dispute, and shall not toll the accrual of stipulated penalties, during the pendency

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of the dispute resolution process.

79. Upon the resolution of any dispute, whether informally or using the procedures described in Paragraph 77, Defendants shall within five (5) days incorporate the resolution into the amended Work Plan or procedure and proceed with the Work according to the amended Work Plan or procedures and/or as appropriate, pay any stipulated penalty that is due and owing.

INDEMNIFICATION OF THE UNITED STATES GOVERNMENT

80. By agreement to this Consent Decree, the United States and EPA assume no liability for injuries or damages to persons or property resulting from acts or omissions by the Defendants, their officers, employees, agents, representatives, successors, assigns, contractors, or consultants in carrying out activities pursuant to this Consent Decree. Neither the United States nor EPA shall be held as a party to any contract entered into by the Defendants or their directors, officers, employees, agents, representatives, successors, assigns, contractors, or consultants in carrying out activities pursuant to this Consent Decree.

81. The Defendants agree to indemnify, save, and hold harmless the United States Government, its agencies, departments, agents, and employees from any and all claims or causes of action arising from or on account of acts or omissions of the Defendants, their officers, employees, receivers, trustees, consultants, agents, or assignees, in carrying out the activities pursuant to this Consent Decree.

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COMPLIANCE WITH OTHER LAWS

82. All Work undertaken by the Defendants pursuant to this Consent Decree shall be performed in compliance with all applicable Federal, State and local laws and regulations, including all Occupational Safety and Health Act and Department of Transportation regulations, subject to Defendants' right to challenge the validity or application of such laws and regulations in accordance with applicable law. The Defendants shall file a timely and complete application for all State and local permits which are necessary for the performance of the Work. This Consent Decree is neither a permit nor a modification of a permit.

FORCE MAJEURE

83. A force majeure event is defined as any event caused by circumstances beyond the control of the Defendants, or any entity that is subject to any Defendant's control, including a contractor, subcontractor, or consultant, which could not have been foreseen or prevented, and which delays or prevents performance of an obligation under this Consent Decree. Such events do not include increased costs of complying with this Consent Decree or changed economic circumstances.

84. When circumstances are occurring or have occurred that can reasonably be anticipated to delay or prevent the performance of an obligation under this Consent Degree, or under any plan developed hereunder within the time allowed, Defendants shall notify EPA's Waste Management Division by telephone within two

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(2) business days after the occurrence of such circumstances. In addition, within fourteen (14) days after the occurrence of such circumstances, Defendants shall give EPA's Waste Management Division written notice of the delay. Such notice shall include an estimate of the anticipated length of delay, including necessary demobilization and remobilization, its cause, measures taken or to be taken to minimize the delay, and an estimated timetable for implementation of these measures. In addition, the written notice shall contain a statement as to whether Defendants are claiming that any delay was caused by a "force majeure" event and the bases for any such claim. Defendants shall adopt all reasonable measures to avoid or minimize any such delay. Failure to comply with the notice provisions of this paragraph shall constitute a waiver of Defendants' right to assert that a force majeure event occurred. Notification of any delay, in and of itself, shall not extend the time allowed for meeting any requirement or excuse the delay or payment of stipulated penalties.

85. If EPA agrees that a delay in required performance is attributable to a force majeure event, the time for performance of that requirement may be extended by written agreement of EPA for a period not greater than the delay resulting from such circumstances. Such an extension does not alter the schedule for performance or completion of other tasks required under this Consent Decree, unless otherwise agreed. In the event that EPA and Defendants cannot agree as to whether a delay was caused by a

force majeure event, or the length of the extension of time, the dispute shall be resolved in accordance with the Dispute Resolution provisions of this Consent Decree. Defendants shall have the burden of demonstrating that the event was a "force majeure" event, that the duration of the delay caused by such event is or was warranted under the circumstances, and that, as a result of the delay, a particular extension of time is appropriate.

PRECLUSION OF CLAIMS AGAINST THE HAZARDOUS SUBSTANCE TRUST FUND

86. Defendants hereby covenant not to sue and agree not to assert any claims or causes of action against the United States with respect to the Site or this Consent Decree, including, but not limited to, any direct or indirect claim for reimbursement from the Hazardous Substance Superfund (established pursuant to the Internal Revenue Code, 26 U.S.C. § 9507) pursuant to CERCLA Sections 106(b)(2), 111, 112, 113, or any other provision of law; or any claims arising out of response activities at the Site. Nothing in this Consent Decree shall be deemed to constitute preauthorization of a claim within the meaning of Section 111 of CERCLA, 42 U.S.C. § 9611, or 40 C.F.R. § 300.700(d).

RETENTION OF RIGHTS

87. Nothing contained in this Consent Decree shall be construed to prevent EPA or the United States from seeking legal or equitable relief to enforce RCRA, the CWA, or the terms of this Consent Decree, or from taking other actions they deem necessary or appropriate to protect human health and the

environment. These actions include, but are not limited to, seeking further enforcement in Federal District Court pursuant to applicable provisions of Sections 3005, 3008(h)(2), and 7003 of RCRA, 42 U.S.C. §§ 6925, 6928(h)(2), and 6973, and Section 309(b) of the CWA, 33 U.S.C. §1319(b), if Defendants fail to comply with the requirements of this Consent Decree within the time frames specified. EPA or the United States may seek penalties of up to $25,000 per violation for each day Defendants fail to comply with either RCRA or the CWA.

88. EPA and the United States expressly reserve the right: (a) to expend and to recover funds under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. § 9401 et seq.; (b) to bring further "imminent and substantial endangerment" actions under RCRA Section 7003 and/or CERCLA Section 106, 42 U.S.C. §§ 6973 and 9606; (c) to address releases other than those identified in this Consent Decree; (d) to require further study or action under Section 3008(h) of RCRA, as necessary, to respond to any releases from the Facility, including those addressed in this Consent Decree; (e) and to bring actions as appropriate under any of the other statutory or regulatory authorities administered by EPA.

89. EPA and the United States reserve the right to halt Work undertaken to fulfill obligations of this Consent Decree and/or perform any portion of such Work consented to herein or any additional site characterization, feasibility study, and response or corrective actions as it deems necessary to protect

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human health or the environment. EPA and the United States reserve the right to seek reimbursement from Defendants for all costs incurred by the United States related to halting or performing any Work at the Facility, subject to dispute resolution procedures under Paragraph 77 above. Notwithstanding compliance with the terms of this Consent Decree, Defendants are not released from liability, if any, for the costs of any actions taken by EPA or the United States in connection with the Facility or this Consent Decree.

90. This Consent Decree shall not be construed as a covenant not to sue, release, waiver or limitation of any rights, remedies, powers and/or authorities, civil or criminal, which EPA or the United States has under RCRA, CERCLA, CWA, or any other statutory, regulatory or common law enforcement authority, or under this Consent Decree.

91. Nothing in this Consent Decree shall constitute or be construed as a release from any claim, cause of action or demand in law or equity against any person, firm, partnership, or corporation not a signatory to this Consent Decree for any liability it may have arising out of or relating in any way to the generation, storage, treatment, handling, transportation, release, or disposal of any hazardous constituents, hazardous substances, hazardous wastes, pollutants, or contaminants found at, taken to, or taken from the Facility.

92. This Consent Decree is not intended to be nor shall it be construed as a permit or permit modification. This Consent

Decree does not relieve Defendants of any obli

and comply with any local, state or federal la

permits, and the United States reserves the ri

permit requirement in accordance with applicab

SUBMITTAL SUMMARY

93. The following is a summary of the major submission deadlines imposed by this Consent Decree. To the extent that this section is inconsistent with any other paragraph of this Consent Decree, such other paragraph and not this paragraph shall control.

Paragraph	Action	Due Date
19	Submit Facility Design Report	Within ninety (90) after entry of Consent Decree.
20	Notify EPA of completion of RFI	Within ten (10) days after completion of RFI.
21	Submit Phase I Interim Report and Phase II Proposal	Within thirty (30) days after completion of Phase I tasks.
23	Submit RFI Report	Within sixty (60) days after completion of Phase II tasks.
25	Submit MPS Proposal	Same date as submission of RFI Report.
27	Submit CMS Proposal	Within sixty (60) days after Defendants receive written notice setting MPS.
29	Submit Draft CMS Report	Within 120 days after Defendants receive approval of CMS Proposal.
32	Submit CMS Final Report	Within period of time Director specifies.
35	Submit CMI Program Plan	Within sixty (60) days after notice of selected Corrective Measures.

35.B	Submit CMI Report	Within thirty (30) days after completing implementation of Corrective Measures.
49	Provide Financial Assurance	Within thirty (30) days after Entry of Consent Decree.
50	Certify sufficiency of Financial Assurance	Annually on anniversary of provision of Financial Assurance.
50	Provide notice of adjustments to Financial Assurance	Within ten (10) days after making adjustments.
54	Submit Progress Reports	Monthly for RFI and Bi-monthly for CMS and CMI.
60	Designate Project Coordinator	Within seven (7) days after entry of Consent Decree.
69	Pay Civil Penalty	Within ten (10) days after entry of Consent Decree.

SATISFACTION

94. Entry of this Consent Decree shall constitute full settlement of the claims expressly set forth in the Complaint.

95. This Consent Decree in no way relieves Defendants (or their employees) of any criminal liability.

MODIFICATION

96. Except as provided herein there shall be no material modification of this Consent Decree without written agreement of the parties and subsequent order of this Court. The parties may make minor modifications to this Consent Decree without further Order of this Court by filing a joint stipulation of modification.

RETENTION OF JURISDICTION

97. This Court shall retain jurisdiction over this Consent

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Decree for purposes of ensuring compliance with its terms and conditions.

98. EPA and the Defendants each retain the right to seek to enforce the terms of this Consent Decree and take any action authorized by federal or state law not inconsistent with the terms of this Decree.

COSTS

99. Each party to this action shall bear its own costs and attorney's fees.

NOTICE REQUIREMENTS

100. The parties acknowledge that final approval by the United States and the entry of this Decree are subject to the Public Notice and Comment requirements of 28 C.F.R. § 50.7.

TERMINATION

101. Within thirty (30) days after the Defendants have fully complied with all the terms of this Consent Decree, including all plans and studies implemented hereunder, they shall so notify the Department of Justice and EPA's Waste Management Division and Office of Regional Counsel. EPA shall inform Defendants whether in EPA's judgment the terms of this Consent Decree have been fully satisfied. If EPA agrees with the Defendants, the parties shall file a joint motion with the Court to terminate this Consent Decree except for provisions in Paragraph 46 regarding retention of documents and Operation and Maintenance of Corrective Measures implemented. If EPA disagrees with Defendants as to their full compliance with this Consent Decree,

then Paragraph 77 (Dispute Resolution) shall be utilized and Defendants shall bear the burden of proving that the conditions for termination have been satisfied.

FINAL JUDGEMENT

Upon approval and entry of this Consent Decree by the Court, the Consent Decree shall constitute a final judgment in this action.

It is so ordered.

Date: August 11, 1993

Frank H. Freedman
United States District Judge

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THE PARTIES AGREE AND CONSENT HERETO:

FOR THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, REGION I

BY: Paul G. Keough Date: June 11, 1993

Paul G. Keough
Acting Regional Administrator
Region I
United States Environmental
Protection Agency

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DEFENDANT MTD PRODUCTS, INC.

BY: _____ Date: MAY 27, 1993

David R. Campbell, President
MTD Products Inc
P.O. Box 368022
Cleveland, OH 44136-9722

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DEFENDANT COLUMBIA MANUFACTURING COMPANY INCORPORATED

BY: Kenneth M. Howard Date: May 26, 1993

Kenneth M. Howard
President
Columbia Manufacturing Company Inc.
One Cycle Street
Westfield, Massachusetts 01085