

IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF OHIO
WESTERN DIVISION

THE UNITED STATES OF AMERICA,
THE STATE OF OHIO,
THE SIERRA CLUB and NATURAL
RESOURCES DEFENSE COUNCIL,

Plaintiffs,

v.

AK STEEL CORPORATION,

Defendant.

CIVIL ACTION NO. C-1-00530

SENIOR JUDGE HERMAN J. WEBER

**CONSENT DECREE IN PARTIAL
RESOLUTION OF PENDING CLAIMS**

ECA/369

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List of Acronyms

AOC	Area of Concern
ASR	Alternatives Summary Report
BH	Bore Hole
CAP	Corrective Action Plan
CCR	Current Conditions Report
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFO	Chief Financial Officer
CFR	Code of Federal Regulations
CMI	Corrective Measures Implementation
CMO	Corrective Measures Objectives
CMS	Corrective Measures Study
COCs	Contaminants of Concern
CQA	Construction Quality Assurance
DMR	Discharge Monitoring Report
DOCC	Description of Current Conditions
DQO	Data Quality Objective
EFT	Electronic Funds Transfer
EPA	United States Environmental Protection Agency
HWMU	Hazardous Waste Management Unit
IM	Interim Measures
MCL	Maximum Contaminant Level

MCS	Media Cleanup Standards
mg/kg	milligram per kilogram
mg/l	milligram per liter
NPDES	National Pollutant Discharge Elimination System
O.A.C.	Ohio Administrative Code
O&M	Operations and Maintenance
ODP	Ozone Depleting Potential
OEPA	Ohio Environmental Protection Agency
OMS	Olympic Mill Services
OSWER	Office of Solid Waste and Emergency Response
NAPL	Non-Aqueous Phase Liquids
NIOSH	National Institute of Occupational Safety and Health
PA	Preliminary Assessment
PCB	polychlorinated biphenyl
PMP	Project Management Plan
ppm	parts per million
ppb	parts per billion
PPE	Personal Protective Equipment
PRG	Preliminary Remediation Goals
PTI	Permit To Install
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance/Quality Control

RAAR	Risk Assessment Assumptions Report
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
SCS	Soil Conservation Service
SEP	Supplemental Environmental Project
SOW	Scope of Work
SS	Soil Sample
SWMU(s)	Solid Waste Management Unit(s)
TCE	trichloroethylene
TSCA	Toxic Substances Control Act
µg/kg	micrograms per kilogram
µg/l	micrograms per liter
UIC	Underground Injection Control
USACE	United States Army Corps of Engineers
U.S.C.	United States Code
USDA	United States Department of Agriculture
VSI	Visual Site Inspection

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Plaintiffs,))	CIVIL ACTION NO. C-1-00530
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v.))	SENIOR JUDGE HERMAN J. WEBER
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AK STEEL CORPORATION,))	
)	
Defendant.))	
_____)		

**CONSENT DECREE IN PARTIAL
 RESOLUTION OF PENDING CLAIMS**

WHEREAS, the United States of America, on behalf of the United States Environmental Protection Agency ("EPA"), filed an Amended Complaint ("U.S. Complaint") against Defendant, AK Steel Corporation ("Defendant" or "AK Steel"), in this matter on October 18, 2001, seeking injunctive relief and civil penalties for alleged violations of the Clean Air Act ("CAA"), 42 U.S.C. § 7401 *et seq.*, the Clean Water Act ("CWA"), 33 U.S.C. § 1251 *et seq.*, regulations implementing those statutes, and the Ohio State Implementation Plan ("Ohio SIP") at AK Steel's Middletown, Ohio steel production facility (the "Facility"), as well as an order for AK Steel to perform corrective action pursuant to Section 3008(h) of the Resource Conservation Recovery

Act ("RCRA"), 42 U.S.C. § 6928(h). In addition, the U.S. Complaint sought enforcement of an administrative order issued by EPA pursuant to Section 7003(a) of RCRA, 42 U.S.C. § 6973(a) ("§ 7003 Order");

WHEREAS, EPA withdrew the § 7003 Order on January 17, 2003, and on or about March 28, 2003, this Court entered an Agreed Order dismissing the United States' claim relating to the § 7003 Order;

WHEREAS, Plaintiff State of Ohio, on behalf of the Ohio Environmental Protection Agency ("OEPA"), filed a First Amended Complaint ("Ohio Complaint") against AK Steel in this matter on April 5, 2001, for injunctive relief and/or the assessment of civil penalties for violations of Ohio Revised Code ("R.C.") Chapters 3704, 3734, 6111, and the rules implementing those chapters, the CAA, 42 U.S.C. § 7401 *et seq.*, the CWA, 33 U.S.C. § 1251 *et seq.*, regulations implementing those statutes, and the Ohio SIP at the Facility. Ohio brought its Complaint pursuant to Section 505(b)(1)(B) of the CWA, 33 U.S.C. § 1365(b)(1)(B), R.C. Chapter 6111, Section 304(b)(1)(B) of the CAA, 42 U.S.C. § 7604(b)(1)(B), R.C. Chapter 3704, and R.C. Chapter 3734;

WHEREAS, by Order entered January 3, 2003, the Court dismissed certain claims contained in the Ohio Complaint, specifically Claims 2-7, relating to violations of the CAA and Ohio air pollution laws, and subsequently dismissed Claim 1 by Order entered April 21, 2003;

WHEREAS, Plaintiffs Sierra Club and Natural Resources Defense Council ("Intervenors") filed a Complaint in Intervention ("Intervenors' Complaint") pursuant to Section 505(b)(1)(B) of the CWA, 33 U.S.C. § 1365(b)(1)(B), Section 304(b)(1)(B) of the CAA, 42 U.S.C. S§ 7604(b)(1)(B), and Section 7002(b)(1) of RCRA, 42 U.S.C. § 6972(b)(1), against AK

Steel in this matter on January 3, 2003, seeking injunctive relief and civil penalties for alleged violations of the CAA, the CWA, regulations implementing those statutes, and the Ohio SIP at the Facility, as well as an order for AK Steel to perform corrective action pursuant to Section 3008(h) of RCRA, 42 U.S.C. § 6928(h). In addition, the Intervenor's Complaint sought enforcement of the § 7003 Order;

WHEREAS, on or about March 28, 2003, this Court entered an Agreed Order dismissing the Intervenor's claim relating to the § 7003 Order;

WHEREAS, prior to entering into this Consent Decree, AK Steel collected soil samples from specified areas of the Dicks Creek floodplain ("Floodplain"), in accordance with a Floodplain Soil Sampling and Analysis Plan approved by EPA after consultation with OEPA and Intervenor, and AK Steel has agreed to provide the results of the analysis of these samples to Plaintiffs;

WHEREAS, in furtherance of both judicial efficiency and the public interest, the Parties hereto have agreed to enter into a Consent Decree to resolve Plaintiffs' pending claims for relief under the CWA, CAA, the Ohio SIP, and R.C. Chapters 3734 and 6111, and to provide for AK Steel to implement specified Interim Measures and to perform various corrective action investigations to develop more detailed information about any releases of hazardous waste or hazardous constituents at or from the Facility, the possible impact of such releases on human health and the environment and an evaluation of a range of possible corrective measures that might be used to mitigate risks from such releases, pursuant to Section 3008(h) of RCRA, 42 U.S.C. § 6928(h);

WHEREAS, except with respect to the "Interim Measures" or as otherwise provided in this Consent Decree, the Parties have agreed to defer resolution of issues relating to alleged liability of AK Steel under Section 3008(h) of RCRA, 42 U.S.C. § 6928(h), to implement any corrective measures that may be selected following completion of the corrective action investigations required under this Consent Decree;

WHEREAS, the Parties recognize, and the Court by entering this Consent Decree finds, that this Consent Decree has been negotiated by the Parties in good faith and at arms length and will avoid prolonged and complicated litigation among the Parties; and that this Consent Decree is fair, reasonable, and in the public interest.

NOW, THEREFORE, before taking any testimony; upon the pleadings; without adjudication of any issue of fact or law, except as provided in Section I, below; without this Consent Decree constituting any evidence, waiver or admission of fact, violation or liability by any party; and with the consent of the parties, it is hereby DECREED, and Defendant is ENJOINED and ORDERED as follows:

I. JURISDICTION AND VENUE

1. This Court has jurisdiction over the claims asserted herein under the CWA, CAA and RCRA pursuant to Sections 309(b) and (d), and 505(a) of the CWA, 33 U.S.C. §§ 1319(b), (d), and 1365(a); Section 3008(h) of RCRA, 42 U.S.C. § 6928(h); Section 113(b) of the CAA, 42 U.S.C. § 7413(b); and 28 U.S.C. §§ 1331, 1345, and 1355. This Court has supplemental jurisdiction over the state law claims asserted by the State of Ohio pursuant to 28 U.S.C. § 1367. This Court also has jurisdiction over the parties to this Consent Decree.

2. Venue is proper in this judicial district pursuant to Section 309(b) of the CWA, 33 U.S.C. § 1319(b); Section 3008(h) of RCRA, 42 U.S.C. § 6928(h); Section 113(b) of the CAA, 42 U.S.C. § 7413(b); and 28 U.S.C. §§ 1355 and 1391(b) and (c).

II. PARTIES BOUND

3. The provisions of this Consent Decree shall apply to and be binding upon Plaintiffs and upon Defendant, including Defendant's officers, directors, employees, agents, servants, and successors and assigns, and all persons, firms, entities and corporations acting under, through or for it or in active concert or participation with it. Defendant shall be responsible for the acts of any of its officers, directors, employees, agents, servants, successors, assigns, contractors, and consultants, which violate or cause Defendant to violate the terms hereof.

4. Defendant agrees to undertake all actions required by the terms and conditions of this Consent Decree.

5. Defendant waives any rights to request a hearing on this matter pursuant to §3008(b) of RCRA and 40 C.F.R. Part 24, and consents to entry of this Consent Decree by the Court as set forth in Section XXIV (Public Comment) and without a hearing pursuant to §3008(b) of RCRA as a consent order issued pursuant to §3008(h) of RCRA.

6. The undersigned representative(s) of Defendant, the Assistant Attorney General for the Environment and Natural Resources Division of the United States Department of Justice, the Ohio Assistant Attorney General signing this Consent Decree, and the undersigned representative(s) of the Intervenor(s), each certifies that he or she is fully authorized to execute this Consent Decree and to legally bind the party whom he or she represents to this Consent Decree.

7. No change in ownership or corporate status shall in any way alter Defendant's responsibilities under this Consent Decree. In the event of any conveyance of title, easement, or other interest in the Facility (as defined in Section III of this Consent Decree), all of Defendant's obligations under this Consent Decree shall continue to be met by Defendant, except as provided in Paragraphs 9 and 10.

8. In the event that Defendant proposes to sell or transfer the real property or operations subject to this Consent Decree, Defendant shall give written notification to the Plaintiffs in accordance with Section VIII (Notices and Submissions) of this Consent Decree, identifying such purchaser or transferee in interest at least thirty (30) days prior to the sale or transfer. At least thirty (30) days prior to any such conveyance, Defendant shall also provide a copy of this Consent Decree to any person or entity to whom Defendant intends to make such conveyance, and shall condition such sale or transfer upon the purchaser or transferee submitting to the jurisdiction of this Court, becoming a party to this Consent Decree and being subject to the obligations of Defendant under this Consent Decree as provided in Paragraph 9.

9. This Consent Decree shall not be construed to impede the transfer of any real property or operations between Defendant and any purchaser as long as the requirements of this Consent Decree are met. Any such purchaser shall: (1) provide Defendant, Government Plaintiffs, and their representatives, including agencies, employees, authorized agents, contractors and subcontractors of Defendant and Government Plaintiffs with access to the purchased property or operations for purposes of implementing any Work required under this Consent Decree and for any other purpose specified in Section XIV (Site Access); (2) cooperate with implementation of the Work and refrain from any action that would interfere with or hinder the effectiveness or

timely completion of the Work; and (3) agree to implement any institutional controls necessary to assure effectiveness of the Work. This Consent Decree shall not be construed to prohibit a contractual allocation – as between Defendant and any purchaser – of the burdens of compliance with this Consent Decree, provided that Defendant shall remain liable to the Plaintiffs for the obligations of the Consent Decree applicable to the transferred or purchased ownership interests, except as provided in Paragraph 10.

10. If EPA, OEPA and Intervenors in their unreviewable discretion agree, Defendant and any purchaser that has become a party defendant to this Consent Decree pursuant to Paragraph 8, above, may seek modification of the Consent Decree pursuant to Paragraph 119, below, to relieve Defendant of its liability for specified obligations and liabilities under this Consent Decree, and to subject the purchaser to specified obligations, liabilities and rights of Defendant under this Consent Decree, as identified in the motion to modify. Notwithstanding the foregoing, Defendant may not assign, and may not be released from, any obligation under this Consent Decree that is not specific to the purchased or transferred real estate, including the obligations set forth in Sections VI (Supplemental Environmental Project) and VII (Civil Penalty).

11. Defendant shall be required to notify each Contractor retained to perform Work pursuant to Section V (Corrective Action) and the Supplemental Environmental Project (“SEP”) pursuant to Section VI (Supplemental Environmental Project) of this Consent Decree of each of the requirements of this Consent Decree relevant to the activities to be performed by the Contractor, including all schedules and reporting deadlines relevant to the Work to be performed by the Contractor. Defendant shall further require that each such Contractor above notify each of its

subcontractors retained to perform Work pursuant to Section V (Corrective Action) and the SEP pursuant to Section VI (Supplemental Environmental Project) of each of the requirements of this Consent Decree applicable to the Work or SEP, as relevant to the activities to be performed by such subcontractor. In any action or proceeding to enforce this Consent Decree, Defendant shall not raise as a defense the failure by any of its agents, servants, contractors, subcontractors or employees to take actions necessary to comply with the Consent Decree, except where such failure is the result of circumstances that meet the criteria of Section XI (Force Majeure Between the United States, Intervenors and Defendant) or Section XII (Potential Force Majeure Between Ohio and Defendant) of this Consent Decree.

III. DEFINITIONS

12. Unless otherwise stated, terms used in this Consent Decree shall have the meaning given to those terms in the CWA, RCRA, and CAA and their implementing regulations as of the lodging of this Consent Decree.

13. The following terms used in this Consent Decree or the attachments hereto shall be defined as follows:

a. "Additional Areas" shall mean (1) any areas of Dicks Creek Floodplain adjacent to Reach 1 or Reach 2 not owned by AK Steel; (2) areas where Hazardous Waste or Hazardous Constituents have migrated from the Facility; and (3) areas identified on Exhibit C to Attachment 2.

b. "Area of Concern" means any area of the Facility under the control of the owner or operator where a release to the environment of Hazardous Waste(s) or Hazardous Constituents has occurred, is suspected to have occurred, or may occur, regardless of the frequency or duration of the release.

c. "Consent Decree" means this Consent Decree in Partial Resolution of Pending Claims and all attachments hereto, as well as plans, reports, schedules, and other items and deliverables approved by EPA pursuant to this Consent Decree. In the event of a conflict between this Consent Decree and any attachment hereto, or plan, report, item or deliverable approved by EPA pursuant to this Consent Decree, this Consent Decree shall govern.

d. "Contaminants" and/or "Contamination" shall mean any "hazardous waste" as defined in Section 1004(5) of RCRA, 42 U.S.C. § 6903(5), or 40 C.F.R. § 260.10; any "hazardous constituent" listed in Appendix VIII to 40 C.F.R. Part 261 or any constituent identified in Appendix IX to 40 C.F.R. Part 264; any "hazardous waste" as defined in R.C. 3734.01(J); and any "industrial waste" or "other waste" as defined in R.C. 6111.01, as each of these provisions is codified at the date of lodging, provided, however, that only "industrial waste" or "other waste" that impairs or has the potential to impair water quality in a water of the State of Ohio is included in this definition.

e. "Contractor" means any contractor, subcontractor, consultant, or laboratory retained to conduct or monitor any portion of the Work or SEP performed pursuant to this Consent Decree.

f. "Corrective Measures Study" or "CMS" means that portion of the RCRA corrective action process that provides for identification and evaluation of potential remedial alternatives for the releases that have been identified at and/or from the Facility as part of the RFI.

g. "Data Quality Objectives" means the qualitative or quantitative statements expressing acceptable levels of uncertainty. The Data Quality Objectives process is designed to

collect data that are scientifically valid, defensible and of known precision and accuracy relative to the use(s) for which the data are obtained.

h. "Day" as used in this Consent Decree shall mean calendar day. In computing any period of time under this Consent Decree, where the last day would fall on a Saturday, Sunday, or Federal holiday, the period shall run until the close of business of the next working day.

Working day means a day other than a Saturday, Sunday, or Federal holiday.

i. "Defendant" means AK Steel Corporation.

j. "Dicks Creek" means the perennial stream which flows generally from east to west adjacent to Defendant's Facility, and which is a tributary of the Great Miami River. Relevant portions of Dicks Creek are shown on the map attached hereto as Attachment 5.

k. "EPA" means the United States Environmental Protection Agency and any successor agencies or departments.

l. "Existing Contamination" means (1) with respect to Reach 1 and Reach 2 of Dicks Creek, the Outfall 002 channel, and Monroe Ditch, any Contaminants present in such areas as of the date of lodging of this Consent Decree; and (2) with respect to the Floodplain, any Contaminants present in the Floodplain as of the date of entry of this Consent Decree.

m. "Facility" means the steel production facility owned and/or operated by Defendant and located at 1801 Crawford Street in Middletown, Butler County, Ohio and all contiguous property owned by Defendant, including the slag processing area. The Facility is shown on Attachment 5.

n. "Floodplain" means the area within the Floodplain boundaries designated on Attachment 6.

o. "Government Plaintiffs" means the United States and the State of Ohio.

p. "Hazardous Constituents" shall mean those constituents listed in Appendix VIII to 40 C.F.R. Part 261 as codified at the date of lodging, or any constituent identified in Appendix IX to 40 C.F.R. Part 264 as codified at the date of lodging.

q. "Hazardous Waste" shall mean hazardous wastes as defined in Section 1004(5) of RCRA, 42 U.S.C. § 6903(5), or 40 C.F.R. § 260.10, as codified at the date of lodging, and shall include Hazardous Constituents as defined above.

r. "Hazardous Waste Management Unit" or "HWMU" shall mean a contiguous area of land on or in which hazardous waste is placed, or the largest area in which there is significant likelihood of mixing hazardous waste constituents in the same area. Examples of such units include a surface impoundment, a waste pile, a land treatment area, a landfill cell, a tank and its associated piping and containment system, and a container storage area, including the containers and the land or pad upon which they are placed.

s. "Interceptor Trench" means the sump, piping and other appurtenances, and activated carbon treatment system, which was installed in January 1998, and subsequently extended, designed to capture and treat seeps containing polychlorinated biphenyls ("PCBs") emanating from the slag processing area at the Facility.

t. "Interim Measures" mean the actions required to be initiated by the Defendant under this Consent Decree prior to completion of the Corrective Measures Study to control or abate potential threats to human health and the environment and/or to prevent or minimize the release or potential release of Hazardous Wastes, Hazardous Constituents or Contaminants at or from the Facility or Additional Areas. Interim Measures include each of the measures identified

in Section II (Scope) of Attachment 1 to this Consent Decree, as well as any additional Interim Measures that are proposed by Defendant pursuant to Subparagraph 22.c and subsequently approved by EPA.

u. "Interim Measures SOW" means the Scope of Work for performing the Interim Measures under this Consent Decree, which is attached hereto as Attachment 1.

v. "Intervenors" means the Sierra Club and Natural Resources Defense Council.

w. "Monroe Ditch" means the stream which is a tributary of Dicks Creek and flowing generally from south to north adjacent to Defendant's closed landfills at the west end of the slag processing area of the Facility, and is also known as the landfill tributary. Relevant portions of Monroe Ditch are shown on the map attached hereto as Attachment 5.

x. "OEPA" means the Ohio Environmental Protection Agency and any successor agencies or departments.

y. "Ohio" means the State of Ohio, on behalf of OEPA.

z. "Plaintiffs" shall mean the United States, Ohio, and the Intervenors collectively.

aa. "RCRA Facility Investigation" or "RFI" means that portion of the RCRA corrective action process under this Consent Decree with the purpose of determining the nature, impact and extent of releases of Hazardous Waste, Hazardous Constituents or Contaminants from regulated units, solid waste management units, areas of concern, and other source areas at and from the Facility and to gather all necessary data to support a Corrective Measures Study, which includes the activities described in the RFI/CMS SOW that is attached hereto as Attachment 2.

bb. "Reach 1" means the stretch of Dicks Creek extending from approximately 50 feet upstream of Defendant's Outfall 002 to approximately 50 feet downstream of the former United States Geological Service ("USGS") gauging station downstream of Yankee Road in Middletown, Ohio.

cc. "Reach 2" means the stretch of Dicks Creek extending from the terminus of Reach 1 to approximately three hundred (300) feet downstream of the Main Street Bridge in Middletown, Ohio.

dd. "Release" shall mean any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, seeping, leaching, dumping, or disposing of Hazardous Waste, Hazardous Constituents or Contaminants into the environment.

ee. "RFI/CMS SOW" means the Scope of Work for performing a RCRA Facility Investigation and a Corrective Measures Study at the Facility under this Consent Decree, which is attached hereto as Attachment 2.

ff. "SEP SOW" means the Scope of Work for performing the Supplemental Environmental Project described in Paragraph 25 of this Consent Decree that is attached hereto as Attachment 3.

gg. "Solid Waste Management Unit or SWMU" shall mean any discernable unit a which solid wastes have been placed at any time regardless or whether the unit was intended the management of solid or hazardous wastes. Such units include any area at the Facility wh solid wastes have been routinely or systematically placed or released.

hh. "Stabilization" shall mean, solely for purposes of this Consent Decree, any corrective action activity required to be initiated pursuant to Paragraph 22 at any time prior to completion of the CMS in order to:

"
"
"
"
"

- 1) prevent or minimize any significant further spread of previously-released Contaminants in a near to mid-term (5-10 year) time frame;
- 2) prevent new contamination from occurring; or
- 3) control or reduce actual or imminent exposure threats to humans or ecological receptors at and/or near the Facility and Additional Areas;

based on a determination that one or more of the foregoing conditions may present a significant risk to human health and the environment. For purposes of this Consent Decree, Stabilization shall not include Interim Measures identified in Section II (Scope) of Attachment 1 or any additional Interim Measures that are proposed by Defendant pursuant to Subparagraph 22.c and subsequently approved by EPA.

ii. "Submission or Submittal" shall mean any Workplan, report, progress report, or any other written document Defendant is required by this Consent Decree to send to EPA.

jj. "United States" means the United States of America, on behalf of EPA.

kk. "Work" means all activities to be performed pursuant to Section V (Corrective Action) and the SOWs attached as Attachments 1 and 2 of this Consent Decree.

ll. "Workplan" shall mean a detailed plan prepared by Defendant to satisfy the requirements of this Consent Decree or any corresponding scope of work specified in Attachments 1 and 2.

IV. COMPLIANCE OBLIGATIONS

14. Compliance.

a. Defendant shall achieve and maintain compliance with Defendant's current NPDES Permit No. 1ID00001*ID and any renewal or modification of such permit ("NPDES

Permit"), the provisions of the CWA, 33 U.S.C. § 1281 *et seq.* and regulations promulgated thereunder, R.C. Chapter 6111, and rules promulgated thereunder. Defendant shall maintain compliance at the coke by-product recovery plant with the leak detection and repair requirements of 40 C.F.R. Part 61, Subpart L, Sections 61.132(b) and (c), and 61.135(a) and (d).

b. Defendant shall not recommence operations of the Sinter Plant Windbox Stack unless and until it provides written notification to Plaintiffs of its intent to start up the Sinter Plant at least sixty (60) days prior to the startup. Within ninety (90) days after startup of the Sinter Plant, Defendant shall conduct a particulate emissions test at the outlet of the windbox stack. Defendant shall provide a copy of the test report to Plaintiffs within thirty (30) days following completion of the test.

c. If Defendant recommences operation of the Sinter Plant pursuant to Subparagraph 14.b, Defendant shall, upon startup of the Sinter Plant, comply with all applicable state and federal regulations, including but not limited to, Ohio Administrative Code ("O.A.C.") 3745-17-11.

d. Within sixty (60) days of the entry of this Consent Decree, Defendant shall submit to OEPA an after-the-fact permit-to-install ("PTI") application pursuant to O.A.C. Chapter 3745-42, for the as-built PCB interceptor trench and treatment system located at the OMS site.

e. Within thirty (30) days after entry of this Consent Decree, Defendant is enjoined and ordered to submit to OEPA an updated RCRA Part A Permit Application in order to attain compliance with the Permit by Rule requirements of O.A.C. 3745-50-46(B).

15. Compliance Reporting.

a. Defendant shall submit to EPA, on a monthly basis, effluent Discharge Monitoring Reports ("DMRs") either in electronic format or hard copy format on the OEPA 4500 report form preprinted by OEPA for each individual sampling station. Such DMRs are to be submitted no later than the 15th day of the month following the reporting period.

b. Defendant shall submit to EPA and Intervenors a copy of each report that Defendant is required to submit to OEPA pursuant to Section III, Paragraphs 11.B, 11.D or 12.C of NPDES permit no. IID00001*ID or any modification or renewal thereof.

c. Defendant shall submit to EPA, OEPA and Intervenors on a semiannual basis, a report that details instances where the repair requirements of 40 C.F.R. §§61.132(b)(3) and (4) and 61.135(a) and (d) were not met.

d. For purposes of submission to EPA, all reports and submissions required pursuant to Subparagraphs 15.a and 15.b of this Paragraph shall be submitted to the following individual in lieu of the United States' contacts listed in Paragraph 39:

Branch Secretary
U.S. Environmental Protection Agency, Region 5
Water Division
Water Enforcement and Compliance Assurance Branch
Mail Code: WC-15J
77 West Jackson Blvd.
Chicago, IL 60604

e. Nothing in this Consent Decree alters or affects in any way any reporting requirements established by the NPDES Permit.

V. CORRECTIVE ACTION

16. All Work undertaken by Defendant pursuant to this Consent Decree shall be performed in accordance with the attached Scopes of Work ("SOW"); all EPA-approved Workplans; RCRA

and other applicable Federal laws and their implementing regulations; any applicable Ohio laws and their implementing regulations; and in a manner consistent with relevant federal and Ohio guidance documents (hereinafter "guidance documents"), including guidance documents issued or revised following entry of this Consent Decree, as specified in Subparagraphs 16.a through 16.f, below. Attachment 4 identifies guidance documents relevant to the Work required pursuant to the Consent Decree; however, it is not intended to identify all guidance documents that may be relevant to every activity that may be undertaken pursuant to the Consent Decree.

a. If, prior to Defendant's submission of any plan or other submittal required pursuant to this Consent Decree, any Party believes that any additional or revised guidance documents not listed in Attachment 4 are relevant to Work to be performed pursuant to such plan or submittal, such Party shall, as early as possible, provide to the other Parties written notice identifying such additional or revised guidance documents and describing in detail how such guidance would be applied to the Work to be performed. Any Party may request a conference to exchange views regarding the relevance and/or application of any such additional or revised guidance documents. Following any conference or if no conference is held, within 30 days, EPA shall issue a written determination concerning the relevance and application of any identified additional or revised guidance documents. Any Party that does not agree with EPA's determination may invoke the procedures of Section XIII (Dispute Resolution) of the Consent Decree.

b. If, following Defendant's submission of any plan or other submittal required pursuant to the Consent Decree, any Party believes that any additional or revised guidance documents not listed in Attachment 4 are relevant to Work to be performed pursuant to such plan

or submittal, such Party shall, as early as possible, provide to the other Parties written notice identifying such additional or revised guidance documents and describing in detail how the guidance would be applied to the Work to be performed. EPA's determination concerning the relevance of any additional or revised guidance document identified by any party shall be included in EPA's approval, disapproval or modification of the plan or other submittal, and shall be subject to the provisions of Sections IX (Submissions and Approvals) and XIII (Dispute Resolution) of the Consent Decree.

c. Following approval of any plan or other submittal required pursuant to the Consent Decree, any Party may provide to the other Parties written notice identifying additional or revised guidance documents that it believes need to be applied to any activities remaining to be undertaken pursuant to such plan or submittal and describing in detail how such guidance would be applied to the Work to be performed. Any Party may request a conference to exchange views regarding the relevance and/or application of any such additional or revised guidance documents. Following any conference or if no conference is held, within 30 days, EPA shall issue a written determination concerning the relevance and application of any identified additional or revised guidance documents. Any Party that does not agree with EPA's determination may invoke the procedures of Section XIII (Dispute Resolution) of the Consent Decree. In accordance with EPA's written determination, Defendant shall apply such additional or revised guidance documents prospectively, to the Work remaining to be undertaken pursuant to such plan or submittal, without prejudice to the existing Work and subject to the provisions of Section XIII (Dispute Resolution) of the Consent Decree. Nothing in this Paragraph shall be construed to limit application of the provisions of Paragraph 22 of this Consent Decree.

d. Prior to Defendant's submission of any plan or other submittal required pursuant to the Consent Decree, or any proposed modification of such plans or other submittals, any Party may identify in writing and as early as possible any conflict or inconsistency between guidance documents relevant to the Work covered by such plan or submittal. Any Party may request a conference to exchange views regarding any identified conflicts or inconsistencies. As soon as possible following any such conference or if no conference is held, within 30 days, EPA shall issue a written determination regarding any identified conflicts or inconsistencies and how they should be resolved. Any Party that does not agree with EPA's determination may invoke the procedures of Section XIII (Dispute Resolution) of the Consent Decree.

e. Following Defendant's submission of any plan or other submittal required pursuant to the Consent Decree, or any proposed modification of such plans or other submittals, any Party may identify any conflict or inconsistency between guidance documents relevant to the Work covered by such plan or submittal. Following identification of any conflict or inconsistency between guidance documents, any Party may request a conference to exchange views regarding the identified conflicts or inconsistencies. EPA's approval or disapproval of the plan or other submittal, or modification thereof, if applicable, shall specify how, and to what extent, any identified conflicting or inconsistent guidance documents shall apply to the Work covered by the plan or other submittal, or modification thereof, subject to the provisions of Section IX (Submissions and Approvals) and Section XIII (Dispute Resolution) of the Consent Decree.

f. If any conflict or inconsistency between guidance documents relevant to any Work required pursuant to the Consent Decree is identified by any Party following approval of

any plan or submittal covering such Work, any Party may request a conference to exchange views regarding the identified conflicts or inconsistencies. Following any such conference or if no conference is held, within 30 days, EPA shall issue a written determination as soon as possible specifying how, and to what extent such conflicting or inconsistent guidance documents shall apply to Work required pursuant to the Consent Decree. Any Party that does not agree with EPA's determination may invoke the procedures of Section XIII (Dispute Resolution).

17. Pursuant to Section 3008(h) of RCRA, 42 U.S.C. § 6928(h), Defendant shall perform Interim Measures in accordance with all provisions, terms, and schedules set forth in this Consent Decree, including any attachments hereto. The Interim Measures to be performed by Defendant are more fully described in the Interim Measures SOW attached hereto as Attachment 1.

18. Pursuant to Section 3008(h) of RCRA, 42 U.S.C. § 6928(h), Defendant shall perform a RCRA Facility Investigation or RFI in accordance with all provisions, terms, and schedules set forth in this Consent Decree, including any attachments hereto. The RFI to be performed by Defendant is more fully described in the RFI/CMS SOW attached hereto as Attachment 2, including Exhibit A (Preliminary List of HWMUs, SWMUs and AOCs, Spills and Additional Areas), Exhibit B (Map of SWMUs and AOCs), Exhibit C (Map of Additional Areas for Evaluation During the RFI) and Exhibit D (Scope of Work for Intrusive Investigation of OMS Area Landfills).

19. Pursuant to Section 3008(h) of RCRA, 42 U.S.C. § 6928(h), Defendant shall perform a Corrective Measures Study or CMS in accordance with all provisions, terms, and schedules set

forth in this Consent Decree, including any attachments hereto. The CMS to be performed by Defendant is more fully described in the RFI/CMS SOW attached hereto as Attachment 2.

20. Pursuant to Section IX (Submissions and Approvals) of this Consent Decree, copies of each of the plans, reports, schedules, and other items and deliverables required under this Consent Decree or either of Attachments 1 and 2 must be submitted to EPA for approval. Copies shall be provided to Plaintiffs in accordance with the requirements of Section VIII (Notices and Submissions).

21. If, prior to Defendant's Request for an Acknowledgment of Completion pursuant to Section XVI (Completion of the Work) of this Consent Decree, EPA, after reasonable opportunity for review and comment from OEPA and Intervenors, determines that Defendant's performance of the Work is inadequate or incomplete, EPA will notify Defendant in writing of the activities that must be undertaken to complete the Work, and will set forth in the notice a reasonable period for Defendant to complete the Work. Defendant shall perform all activities described in the notice in accordance with the specifications and schedules established therein, subject to any right provided in this Consent Decree to invoke the dispute resolution procedures set forth in Section XIII (Dispute Resolution).

22. Additional Work.

a. "Additional Work" shall mean any activity or requirement, including investigatory work, engineering evaluations, Stabilization activities or procedure/methodology modifications, not otherwise required under this Consent Decree or any EPA-approved Workplan, and which is approved by EPA pursuant to this Paragraph 22.

- b. After reasonable opportunity for review and comment by OEPA and the Intervenor, EPA may determine that Additional Work is necessary:
- i. to assure that the RFI and CMS implemented pursuant to this Consent Decree adequately provide:
- (1) an identification and evaluation of the nature, and extent of any releases of Hazardous Waste or Hazardous Constituents at or from the Facility, and the impact of any such releases on human health and the environment,
 - (2) an identification and evaluation of appropriate corrective measures alternatives necessary to prevent, mitigate and/or remediate any releases of Hazardous Waste or Hazardous Constituents at or from the Facility, and
 - (3) a basis for EPA's subsequent determinations concerning the need for and nature of any corrective measures that may be appropriate to address any releases of Hazardous Waste or Hazardous Constituents at or from the Facility; or
- ii. for Stabilization.
- c. In addition, Defendant may submit for approval by EPA, after reasonable opportunity for review and comment by OEPA and the Intervenor, a workplan describing Additional Work that AK Steel proposes to implement in addition to the tasks described in Section II of Attachment 1 and included in any EPA-approved Workplan.
- d. After reasonable opportunity for review and comment by OEPA and Intervenor as provided in Subparagraphs 22.b and 22.c above, EPA will notify Defendant in writing of its determination that Additional Work is necessary or (in the case of Additional Work proposed by Defendant) appropriate. The notice shall specify a deadline for submission of a workplan for

such Additional Work, if required, and specify the contents of such workplan. In the case of any determination to require Additional Work pursuant to Subparagraph 22.b, the notice shall also identify the provision(s) of Subparagraph 22.b that provide the basis for EPA's determination that Additional Work is necessary.

e. Within twenty (20) days after receipt of any notice referred to in Subparagraph 22.d or such longer time as may be agreed to by the Parties in writing, Defendant shall have the opportunity to meet or confer with EPA, as well as OEPA and the Intervenors, to discuss and reach agreement concerning the Additional Work.

f. If Defendant does not exercise the opportunity to meet or confer with EPA in accordance with Subparagraph 22.e, Defendant shall proceed to take any action required by the notice, including submission of a Workplan for Additional Work, if applicable, in accordance with the schedule established pursuant to Subparagraph 22.d.

g. Based on any meeting or conference pursuant to Subparagraph 22.e, EPA may, after reasonable opportunity for review and comment by OEPA and Intervenors, agree to withdraw or modify any notice pursuant to Subparagraph 22.d or determine that the originally proposed modifications or conditions are appropriate. Any such decision shall be in writing.

h. Unless EPA withdraws the notice issued to Defendant in accordance with Subparagraph 22.g, following any meeting or conference pursuant to Subparagraph 22.e, Defendant shall proceed to take any action required by the notice issued pursuant to Subparagraph 22.d, or any modification of the notice pursuant to Subparagraph 22.g, including the submission of a Workplan for Additional Work, if applicable, subject only to formal dispute resolution pursuant to Paragraph 75.

i. Upon approval of a Workplan by EPA, Defendant shall implement it in accordance with the schedule and provisions contained therein. Provided, however, that the schedule may be revised to the extent that 1) Defendant has notified Plaintiffs of the need to revise the schedule for submittal and the reasons for the revisions of the schedule at least twenty-one (21) days in advance of the original deadline, and 2) the Parties have agreed upon a revised schedule in advance of the original deadline.

23. Project Coordinator.

a. Within fifteen (15) days of the effective date of this Consent Decree, EPA, OEPA and Defendant shall each designate a Project Coordinator. Each Project Coordinator shall be responsible for overseeing the implementation of this Consent Decree and for designating a person to act in their absence. The EPA Project Coordinator will be EPA's designated representative for the Facility. To the maximum extent practicable, all communications between Defendant, EPA, and OEPA and all documents, reports, approvals, and other correspondence concerning the activities performed pursuant to this Consent Decree shall be directed through the Project Coordinators, except as provided in Section VIII (Notices and Submissions) and Paragraph 15.d. EPA, OEPA, and Defendant shall each notify each Party in writing of the Project Coordinator it has selected.

b. Within fifteen (15) days of the effective date of this Consent Decree, Intervenors shall designate a single Project Representative, who shall be responsible for (i) providing EPA with any comments of Intervenors on any plan, report, schedule, or other item or deliverable that Defendant submits for approval pursuant to this Consent Decree; and (ii) presenting any positions of Intervenors with respect to any issues that arise during informal dispute resolution

pursuant to Paragraph 72 or during any meeting or conference among the parties pursuant to Paragraph 22 or Sections IX (Submissions and Approvals) or XVI (Completion of the Work) of this Consent Decree. Intervenors shall notify each party in writing of the Project Representative that it has selected.

c. Defendant, EPA and OEPA may change their Project Coordinators, and Intervenors may change their Project Representative, but agree to provide at least fourteen (14) days written notice prior to any such change, where practicable.

d. The absence of the EPA Project Coordinator from the Facility shall not be cause for the stoppage of Work.

24. Assurances of Financial Responsibility for Completing the Work

a. Cost Estimates Within sixty (60) days after the effective date of this Consent Decree Defendant shall submit to EPA and OEPA, for approval by EPA after consultation with OEPA, a detailed written initial estimate, in current dollars, of the cost of hiring a third party to perform the Work. The initial cost estimate must account for the total costs of the Work for the entire period of this Consent Decree, including any necessary long term costs, such as operation and maintenance costs and monitoring costs. A third party is a party who (1) is neither a parent nor a subsidiary of Defendant, (2) does not share a common parent or subsidiary with Defendant, and (3) is in no way affiliated with Defendant. The cost estimate must not incorporate any salvage value that may be realized from the sale of wastes, facility structures or equipment, land or other assets associated with the Facility.

i. Concurrent with the submission of a Workplan for Additional Work required under Paragraph 22, Defendant shall submit revised detailed written estimate(s),

in current dollars, of the cost of hiring a third party to perform the Additional Work.

ii. Until the Work required by this Consent Decree is completed, Defendant must annually adjust the cost estimate(s) for inflation and submit the adjusted cost estimate(s) to Plaintiffs by March 31 after the close of Defendant's previous fiscal year. In addition, Defendant must adjust the cost estimate(s) and submit the adjusted cost estimate(s) to Plaintiffs if any Additional Work is required, pursuant to Paragraph 22, or if any other condition increases the cost of the Work to be performed under this Consent Decree.

b. Assurances of Financial Responsibility for Completing the Work

i. In order to secure the completion of the Work in accordance with this Consent Decree, Defendant shall establish financial assurance for the benefit of EPA. Within sixty (60) days after the effective date of this Consent Decree, concurrently with Defendant's submission of the initial cost estimate required by Subparagraph 24.a.i, Defendant shall submit draft financial assurance instruments to EPA and OEPA, for approval by EPA after consultation with OEPA. Within thirty (30) days after approval of both the initial cost estimate and the draft financial assurance instruments, whichever date is later, Defendant shall establish financial assurance in an amount at least equal to the approved initial cost estimate.

ii. Defendant may use any of the instruments or mechanisms generally described in Subparagraphs 24.b.ii.(1)-(6). Any and all financial assurance instruments or mechanisms provided pursuant to this Consent Decree shall be consistent with 40

C.F.R. § 264.151, to the extent appropriate to the Work required under this Consent Decree, and shall be subject to approval by EPA after consultation with OEPA.

(1) A trust fund established for the benefit of EPA, administered by a trustee who has the authority to act as a trustee under Federal or State law and whose trust operations are regulated and examined by a Federal or State agency. The trust agreement shall provide that the trustee shall make payments from the fund as the EPA shall direct in writing: (A) to reimburse Defendant from the fund for expenditures made by Defendant for Work performed in accordance with this Consent Decree, or (B) to pay any other person whom the EPA determines has performed or will perform the Work in accordance with this Consent Decree. The trust agreement shall further provide that the trustee shall not refund to the grantor any amounts from the fund unless and until EPA has advised the trustee that (A) EPA has agreed to reduce the amount of financial assurance required pursuant to Subparagraph 24.b.xvi or (B) EPA has issued an Acknowledgment of Final Completion of the Work pursuant to Section XVI (Completion of the Work) of the Consent Decree.

(2) A surety bond guaranteeing performance of the Work in accordance with this Consent Decree or payment at the direction of EPA into a standby trust fund that meets the requirements of the trust fund in Subparagraph 24.b.ii.(1) above. The surety company issuing the bond must be an independent, third-party, in no way affiliated with Defendant, and be among those listed as

acceptable sureties on Federal Bonds as set forth in Circular 570 of the U.S. Department of the Treasury.

(3) One or more irrevocable letters of credit, payable at the direction of EPA, into a standby trust fund that meets the requirements of the trust fund in Subparagraph 24.b.ii.(1) above. The letter(s) of credit must be issued by one or more financial institution(s): (A) with the authority to issue letters of credit, and (B) whose letter-of-credit operations are regulated and examined by a Federal or State agency.

(4) A policy of insurance that: (A) provides EPA with acceptable rights as a beneficiary thereof; and (B) is issued by an insurance carrier with the authority to issue insurance policies in the applicable jurisdiction(s), who is independent, a third-party as defined in Subparagraph 24.a, and whose insurance operations are regulated and examined by a Federal or State agency. The insurance policy must be issued for a face amount at least equal to the current cost estimate for the Work to be performed under this Consent Decree, except where costs not covered by the insurance policy are covered by another instrument, as permitted in Subparagraph 24.b.viii of this Paragraph. The Policy must provide that the insurer shall make payments as the EPA shall direct in writing: (A) to reimburse Defendant for expenditures made by Defendant for Work performed in accordance with this Consent Decree, or (B) to pay any other person whom the EPA determines has performed or will perform the Work in accordance with this Consent Decree, up to an amount equal to the face amount of the policy.

(5) A written corporate guarantee, executed in favor of the EPA by one or more of the following: (A) a direct or indirect parent company, or (B) a company that has a "substantial business relationship" with Defendant (as defined in 40 C.F.R. § 264.141(h)), to perform the Work in accordance with this Consent Decree or to establish a trust fund as permitted by Subparagraph 24.b.ii.(1); provided, however, that any company providing such a guarantee must demonstrate that it satisfies the financial test requirements of 40 C.F.R. § 264.143(f) with respect to the estimated cost of the Work that it proposes to guarantee; or

(6) A written financial test; provided, however, that Defendant must demonstrate that it satisfies the financial test requirements of 40 C.F.R. § 264.143(f) with respect to the estimated cost of the Work that it proposes to guarantee.

iii. The financial assurance instruments or mechanisms authorized by Subparagraph 24.b.ii shall be issued for a face amount at least equal to the current cost estimate for the Work to be performed under this Consent Decree, except where costs not covered by the instrument or mechanism are covered by another instrument or mechanism, as permitted in Subparagraph 24.b.viii.

iv. If Defendant seeks to establish financial assurance by using any surety bond or letter of credit, Defendant shall also establish and maintain a standby trust fund into which funds from the other financial assurance instrument can be deposited, if the financial assurance provider is directed to do so by EPA, pursuant to Subparagraph 24.b.xiii.

v. If Defendant seeks to establish financial assurance by providing a corporate guarantee or financial test pursuant to Subparagraph 24.b.ii.(5) or (6), Defendant shall also comply with the other relevant requirements of 40 C.F.R. § 264.143(f), 40 C.F.R. § 264.151(f), and 40 C.F.R. § 264.151(h)(1) relating to these methods, unless otherwise provided in this Consent Decree, including: (A) initial submission of required financial reports and statements from the chief financial officer and independent certified public accountant of Defendant or its corporate guarantor, as applicable; (B) annual re-submission of such reports and statements within ninety (90) days after the close of each fiscal year of Defendant or its corporate guarantor, as applicable; and (C) notification that Defendant or, if applicable, its corporate guarantor no longer satisfies the financial test requirements set forth at 40 C.F.R. § 264.143(f)(1), which notice shall be provided to EPA within ninety (90) days after the close of Defendant's fiscal year (in the case of any instance in which Defendant no longer satisfies such financial test requirements) or within ninety (90) days after the close of any corporate guarantor's fiscal year (in the case of each instance in which the corporate guarantor no longer satisfies such financial test requirements). EPA reserves the right to request additional information (including financial statements and accountant's reports) from the Defendant or corporate guarantor at any time.

vi. For purposes of the corporate guarantee and financial test described in Subparagraphs 24.b.ii.(5) and (6) above, references in 40 C.F.R. § 264.143(f) to "the sum of current closure and post-closure costs and the current plugging and abandonment cost estimates" shall mean "the sum of all environmental remediation obligations" (including

obligations under CERCLA, RCRA, UIC, TSCA and any other state or tribal environmental obligation) for which the Defendant or corporate guarantor is demonstrating assurance through the financial test in accordance with 40 C.F.R. § 264.143(f), including the cost of the Work to be performed in accordance with this Consent Decree.

vii. For purposes of the corporate guarantee and financial test described in Subparagraphs 24.b.ii.(5) and (6) above, references in 40 C.F.R. § 264.143(f) to a "special report from the owner's or operator's certified public accountant to the owner or operator" shall mean a "report of procedures and findings from Defendant's (or, if applicable, Defendant's corporate guarantor's) certified public accountant resulting from an agreed-upon procedures engagement that describes the procedures performed and related findings, including whether or not discrepancies were found in the comparison of information included in the letter from Defendant's (or Defendant's corporate guarantor's) Chief Financial Officer (CFO) and Defendant's (or Defendant's corporate guarantor's) independently audited, year-end financial statements for the latest fiscal year, including all notes and attachments. Where discrepancies exist between Defendant's (or Defendant's corporate guarantor's) CFO letter and Defendant's (or Defendant's corporate guarantor's) independently audited, year-end financial statements, the report of procedures and findings will provide a line-by-line reconciliation of each discrepancy."

viii. Defendant may combine more than one mechanism to demonstrate financial assurance for the Work to be performed in accordance with this Consent

Decree, except that mechanisms guaranteeing performance rather than payment may not be combined with other instruments.

ix. The form and substance of any and all financial assurance instrument(s) provided pursuant to this Consent Decree (including, but not limited to, the initial trust fund, irrevocable letter of credit, surety bond, insurance policy, or corporate guarantee and financial documentation required pursuant to 40 C.F.R. § 264.143(f)(3)) shall be consistent with the requirements of such forms contained in 40 C.F.R. § 264.151, to the extent appropriate to the Work required under this Consent Decree and shall have been pre-approved by EPA after consultation with OEPA. The initial financial assurance instruments, including all required documentation, shall be submitted by Defendant to the EPA Project Coordinator.

x. Except as provided in Subparagraph 24.b.xii below, in the event that:

(1) EPA, after consultation with OEPA, determines at any time that a financial assurance instrument provided pursuant to this Paragraph is inadequate, or otherwise no longer satisfies the requirements set forth or incorporated by reference in this Paragraph, whether such determination is based on an increase in the estimated cost of completing the Work, any financial reports or statements required pursuant to Subparagraph 24.b.v, or any other information relevant to the financial condition of AK Steel or any of its financial assurance providers, or

(2) Defendant becomes aware at any time of information indicating that any financial assurance instrument provided pursuant to this Paragraph is inadequate or otherwise no longer satisfies the requirements set forth or

incorporated by reference in this Paragraph, whether due to an increase in the estimated cost of completing the Work, information in any reports or statements required pursuant to Subparagraph 24.b.v, or any other information relevant to the financial condition of AK Steel or any of its financial assurance providers, Defendant, within thirty (30) days of receipt of notice of EPA's determination or, as the case may be, within thirty (30) days of becoming aware of such information, shall obtain and submit for approval a revised or alternative form of financial assurance that satisfies all requirements set forth or incorporated by reference in this Paragraph. Such revised or alternative form of financial assurance shall be submitted by Defendant to the EPA Project Coordinator.

xi. Defendant's inability to post financial assurance for completion of the Work shall in no way excuse performance of any other requirements of this Consent Decree, including, without limitation, the obligation of Defendant to complete the Work in strict accordance with the terms of this Consent Decree.

xii. Any and all financial assurance instruments provided pursuant to Subparagraphs 24.b.ii.(2), (3), (4) or (5) shall be automatically renewed at the time of their expiration unless the financial assurance provider has notified both the Defendant and the EPA Project Coordinator at least one hundred and twenty (120) days prior to expiration, cancellation or termination of the instrument of a decision to cancel, terminate, or not renew a financial assurance instrument. Under the terms of the financial assurance instrument, the 120 days will begin to run with the date of receipt of the notice by both the EPA Project Coordinator and Defendant. If the EPA Project

Coordinator and Defendant receive notice on different dates, the 120 day period will begin to run from the latter date of receipt. Furthermore, if Defendant has failed to provide alternate financial assurance and obtain written approval for such alternate financial assurance following receipt of such notice by both Defendant and the EPA Project Coordinator, then the EPA Project Coordinator shall have the authority to access the financial assurance mechanism in accordance with the following:

(1) for surety bonds addressed in Subparagraph 24.b.ii.(2), if Defendant does not obtain written approval for such alternative financial assurance within 90 days following receipt of such notice by both Defendant and the EPA Project Coordinator, the surety shall place funds in the amount guaranteed in the standby trust fund as directed by the EPA Project Coordinator;

(2) for a letter of credit addressed in Subparagraph 24.b.ii.(3), if Defendant does not obtain written approval for such alternate financial assurance within ninety (90) days following receipt of such notice by both Defendant and the EPA Project Coordinator, then the EPA Project Coordinator may draw upon the letter of credit;

(3) for insurance policies addressed under Subparagraph 24.b.ii.(4), the policy will remain in full force and effect;

(4) for written corporate guarantees addressed under Subparagraph 24.b.ii.(5), pursuant to the terms of the guarantee, which pursuant to Subparagraph 24.b.ii.(5) must satisfy the requirements of 40 C.F.R. § 264.143(f)(10).

The EPA Project Coordinator may delay accessing the financial assurance instrument, if the financial assurance provider grants an extension of the financial assurance instrument. During the last thirty (30) days of any extension, the EPA Project Coordinator may access the financial assurance instrument as set forth above.

xiii. Any and all financial assurance instruments provided pursuant to this Consent Decree shall provide for timely payment, as directed by EPA, or performance of the Work in accordance with this Consent Decree, or a combination of payment and Work, in the event that EPA determines that Defendant: (A) has ceased implementation of any portion of the Work, (B) is significantly or repeatedly deficient or late in its performance of the Work, or (C) is implementing the Work in a manner that may cause an endangerment to human health or the environment. In the event that EPA, after consultation with OEPA, determines that any of the circumstances described in Clauses (A), (B), or (C) of this Subparagraph 24.b.xiii has occurred, Defendant hereby acknowledges that EPA shall have the right to access without undue delay any and all financial assurance instruments provided pursuant to this Paragraph. The EPA Project Coordinator shall notify in writing both Defendant and the financial assurance provider of such a determination, and shall direct the financial assurance provider to, as expeditiously as practicable, (1) arrange for performance of the Work or (2) deposit into the standby trust fund, or a newly created trust fund meeting the requirements of Subparagraph 24.b.ii.(1) approved by EPA, the remaining funds obligated under the financial assurance instrument for the performance of the Work in accordance with this Consent Decree.

xiv. Defendant may invoke the procedures set forth in Section XIII (Dispute Resolution) of this Consent Decree to dispute EPA's determination that any of the circumstances described in Clauses (A), (B), or (C) of Subparagraph 24.b.xiii have occurred. Invoking the dispute resolution provisions shall not excuse, toll or suspend the obligation of the financial assurance provider, under Subparagraph 24.b.xiii, to fund the trust fund, but if Defendant disputes EPA's determination under Subparagraph 24.b.xiii, EPA will not direct the trustee to make any payments from the trust fund, pending resolution of the dispute. If Defendant prevails in dispute resolution, all funds in the trust fund, including any interest that accrued on the funds, shall be returned to the financial assurance provider to the extent that (A) the financial assurance provider is the Defendant, or (B) the financial assurance provider is a third party who has agreed to continue providing financial assurance to the Defendant as it had prior to EPA's direction to deposit funds in a trust fund pursuant to Subparagraph 24.b.xiii.

xv. If EPA has determined that any of the circumstances described in Clauses (A), (B), or (C) of Subparagraph 24.b.xiii have occurred, and if EPA is nevertheless unable after reasonable efforts to secure the payment of funds or performance of the Work in accordance with this Consent Decree from the financial assurance provider pursuant to this Consent Decree, then, upon receiving written notice from EPA, Defendant shall within ten (10) days thereafter deposit into the standby trust fund, or a newly created trust fund approved by EPA, in immediately available funds and without setoff, counterclaim, or condition of any kind, a cash amount equal to the estimated cost of the remaining Work to be performed in accordance with this Consent Decree as of

such date, as determined by EPA.

xvi. If Defendant believes that the estimated cost to complete the remaining Work has diminished below the amount covered by the existing financial assurance provided under this Consent Decree, Defendant may, on any anniversary date of the effective date of this Consent Decree, sixty (60) days prior to the close of the fiscal year, or at any other time agreed to by EPA after consultation with OEPA, submit a written proposal to EPA and OEPA for approval by EPA after consultation with OEPA to reduce the amount of the financial assurance provided under this Paragraph to the estimated cost of the remaining Work to be performed. The written proposal shall specify the cost of the remaining Work to be performed and the basis upon which such cost was calculated. EPA shall notify Defendant of its decision regarding such a proposal in writing within ninety (90) days of receipt of the proposal. Defendant may reduce the amount of the financial assurance only after receiving EPA's written decision and only in accordance with and to the extent permitted by such written decision.

xvii. If Defendant desires to change the form of financial assurance, Defendant may, no more than once per fiscal year, submit a written proposal to EPA and OEPA, for approval by EPA after consultation with OEPA, to change the form of financial assurance. Such a proposal shall specify, at a minimum, the cost of the remaining Work to be performed, the basis upon which such cost was calculated, and a detailed description of the proposed revised form of financial assurance. After reasonable opportunity for review and comment by OEPA, EPA shall notify the Defendant of its decision regarding such a proposal in writing. After receiving EPA's written acceptance,

Defendant may change the form of financial assurance in accordance with and to the extent permitted by such written acceptance.

xviii. At such time as EPA and Defendant have submitted for the Court's approval a joint stipulation providing for termination of the Defendant's obligations pursuant to Paragraph 124.b of this Consent Decree, Defendant may submit to the EPA Project Coordinator a written request that EPA release Defendant from the requirement to maintain financial assurance under this Paragraph 24, except with respect to the financial assurance requirement referred to in Subparagraph 124.c.ii. The EPA Project Coordinator shall notify both the Defendant and the provider(s) of the financial assurance that Defendant is released from such financial assurance obligations under this Consent Decree. Upon completion of all operation and maintenance activities required pursuant to this Consent Decree, Defendant may submit to the EPA Project Coordinator a written request that EPA release Defendant from all remaining financial assurance requirements under this Paragraph 24. In all cases, the provider of the financial assurance may be released from its obligations under the instrument only upon a written release from the EPA Project Coordinator.

c. Defendant shall provide copies of the financial assurance documents, instruments and information submitted to EPA and OEPA pursuant to Subparagraphs 24.a. and 24.b to Intervenors for their review. To the extent that such documents contain information which Defendant identifies as confidential business information protected from disclosure under federal and Ohio law, Defendant will provide Intervenors with such confidential business information following entry into a confidentiality agreement. This confidentiality agreement will be

provided to Intervenors simultaneously with the submission of the confidential business information to EPA and OEPA. Nothing in this Paragraph 24 constitutes a waiver of a claim of confidentiality under federal or state law. Additionally, nothing in this Paragraph 24 is intended to restrict Intervenors' right to comment to EPA and OEPA concerning the financial assurance information submitted by Defendant. So long as Defendant has timely submitted to EPA financial assurance documents required under Paragraph 24, the process shall not be delayed in any way due to Intervenors' review of financial assurances documents, instruments or information.

VI. SUPPLEMENTAL ENVIRONMENTAL PROJECT

25. Defendant shall implement the Refrigerant Conversion Supplemental Environmental Project ("SEP"), as more fully described in the SEP SOW, attached hereto as Attachment 3 and incorporated herein by reference, in accordance with EPA's May 1, 1998, EPA Supplemental Environmental Projects Policy (the "SEP Policy"). The Parties agree that the SEP is intended to secure significant environmental or public health protection and improvements.

26. Performance of the SEP shall not be construed as prohibiting, altering or in any way limiting EPA's or OEPA's authority to enforce any applicable environmental requirements at Defendant's facilities, or Defendant's duty to comply with such requirements.

27. The total expenditure for the SEP shall be in accordance with the specifications set forth in the SEP SOW and shall be not less than the following: \$750,000. Defendant shall include documentation of the expenditures made in connection with the SEP as part of the SEP Completion Report.

28. Defendant hereby certifies that, as of the date of its execution of this Consent Decree, Defendant is not required to perform or develop the SEP by any federal, state or local law or regulation; nor is Defendant required to perform or develop the SEP by any other agreement, grant or as injunctive relief in this or any other case. Defendant further certifies that it has not received, and is not presently negotiating to receive, credit in any other enforcement action for the SEP. In addition, Defendant certifies that the SEP had not been started by Defendant, or funds committed thereto by Defendant, prior to the commencement of settlement discussions in this matter, and that the SEP is being performed in settlement of this litigation. If, prior to entry of this Consent Decree, any change of circumstance affects the continued accuracy of any certification referred to in this Paragraph, Defendant shall expeditiously as practicable, but in no event later than ten (10) working days after the change in circumstance, describing the changed circumstance and identifying each certification that is no longer accurate.

29. SEP Reports.

a. Completion Report. Defendant shall submit a SEP Completion Report to Plaintiffs within sixty (60) days after the SEP described in Paragraph 25 has been completed.

The SEP Completion Report shall contain the following information:

i. A detailed description of the SEP as implemented, including a description of any deviations from the SEP SOW for the SEP, and, if deviations were necessary, a description of any operating problems encountered and the solutions thereto;

ii. Itemized costs for the SEP;

iii. Certification that the SEP has been fully implemented pursuant to the provisions of this Consent Decree;

- iv. A description of the environmental and public health benefits resulting from implementation of the SEP; and
 - v. A quantification of the direct and indirect benefits of pollutant reductions of the SEP.
- b. Periodic Reports. Defendant shall submit any additional reports required by the SEP SOW to Plaintiffs in accordance with the schedule and requirements recited therein.
- c. Defendant agrees that failure to submit the SEP Completion Report or any Periodic Report required pursuant to the SEP SOW above shall be deemed a violation of this Consent Decree and Defendant shall become liable for stipulated penalties pursuant to Section X (Stipulated Penalties).
- d. Defendant shall submit all notices and reports required by this Section VI (Supplemental Environmental Project) of this Consent Decree in accordance with Section VIII (Notices and Submissions).
- e. In itemizing its costs in the SEP Completion Report, Defendant shall clearly identify and provide acceptable documentation for all eligible SEP costs. Where the SEP Completion Report includes costs not eligible for SEP credit under the SEP Policy, those costs must be clearly identified as such. Eligible SEP costs include the costs of planning, designing, engineering, constructing and implementing the SEP, such as costs for engineering, purchasing and installing equipment, increased utility costs, and increased maintenance costs, but do not include overhead, additional employee time and salary not primarily attributable to maintaining the SEP, administrative expenses, legal fees, and oversight of a Contractor. For purposes of this Paragraph, "acceptable documentation" includes invoices, purchase orders, or other

documentation that specifically identifies and itemizes the individual costs of the goods and/or services for which payment is being made. Cancelled drafts do not constitute acceptable documentation unless such drafts specifically identify and itemize the individual costs of the goods and/or services for which payment is being made.

30. In all reports that are to be submitted by Defendant under Paragraph 29, Defendant shall have a responsible corporate officer or, if specifically designated by Defendant for this purpose, the plant manager of the Facility, certify under penalty of law that the information contained in such document or report is true, accurate, and not misleading by signing the following statement:

I certify under penalty of law that the information contained in and accompanying this document is true, accurate, and complete. With respect to any portions of this document and its attachments for which I cannot personally verify truth and accuracy, I certify that such portions were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information

submitted. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: _____

Name: _____

Title: _____

For purposes of this Consent Decree, "responsible corporate officer" shall mean a president, secretary, treasurer, or vice-president of the corporation in charge of the principal business function, or any other person who performs similar policy-making or decision-making functions for the corporation.

31. EPA Review of SEP Completion Report.

a. After receipt of the SEP Completion Report pursuant to Paragraph 29 above, and reasonable opportunity for review and comment from OEPA and Intervenors, EPA, within sixty (60) days, shall provide Defendant with one of the following: i) a written Notice of SEP Completion in which EPA concludes that the SEP has been completed satisfactorily; ii) a written Notice of Deficiency specifying any deficiencies in the SEP Completion Report and a grant of sixty (60) days, or such other period as may be agreed by the Parties, in which Defendant may correct such deficiencies and resubmit the revised SEP Completion Report; or iii) a written Notice of SEP Noncompletion in which EPA concludes that the SEP has not been completed in accordance with the requirements of this Consent Decree.

b. If EPA elects to exercise either option ii) or iii) above, EPA shall permit Defendant the opportunity to object in writing to the notice given pursuant to Subparagraph 31.a. within twenty (20) days of receipt of such notice. EPA and Defendant shall then have an additional thirty (30) days from the receipt by EPA of the objection to reach agreement on changes necessary. If agreement cannot be reached on any such issue within this thirty (30) day period, EPA, after consultation with OEPA and Intervenors, shall provide a written statement of its decision on adequacy of the completion of the SEP to Defendant, which decision shall be final and binding upon Defendant unless Defendant invokes Dispute Resolution in accordance with Section XIII (Dispute Resolution).

32. Any public statement, oral or written, made by Defendant making reference to the SEP shall include the following language: "This project was undertaken in connection with the settlement of an enforcement action taken on behalf of the U.S. Environmental Protection

Agency, Ohio Environmental Protection Agency, Sierra Club and Natural Resources Defense Council under the Clean Water Act, the Resource Conservation and Recovery Act, and the Clean Air Act."

33. Defendant agrees that it will not seek or take any tax deduction for any expenditure it makes in implementing the SEP, notwithstanding whether such expenditure may otherwise be deductible under federal, state, or local law, nor will Defendant either seek or take any other tax advantage for SEP expenditures that may otherwise be available under federal, state, or local law.

VII. CIVIL PENALTY

34. Within thirty (30) calendar days after the entry of this Consent Decree, Defendant shall pay a total civil penalty of \$460,000 to the United States and Ohio as required by Paragraphs 35 and 36.

35. Defendant shall pay to the United States a civil penalty of \$230,000 by Electronic Funds Transfer ("EFT") to the United States Department of Justice lockbox bank, referencing the civil action number, and DOJ case number (90-5-2-1-2189). Payment shall be made in accordance with the EFT instructions available from the U.S. Attorney's Office. Any EFT received at the United States Department of Justice lockbox after 3:00 p.m. (Eastern Time) will be credited on the next working day. Defendant shall simultaneously deliver copies of its EFT transmittal notice to "Section Secretary, Multimedia Branch 1, Office of Regional Counsel (C-14J), Region 5, U.S. Environmental Protection Agency, 77 W. Jackson Blvd., Chicago, IL 60604-3590"; and to "Chief, Environmental Enforcement Section, U.S. Department of Justice, P.O. Box 7611, Ben Franklin Station, Washington, D.C. 20044, Attn: DOJ No. 90-5-2-1-2189."

36. Defendant shall pay to Ohio a civil penalty of \$230,000 by cashier's check or certified funds, payable to "Treasurer, State of Ohio," and shall be sent to:

Mark Lemmon (or a person subsequently designated by the State of Ohio) at:

Office of the Attorney General
Environmental Enforcement Section
30 East Broad Street, 25th Floor
Columbus, Ohio 43215-3400

37. In addition to any other remedies, if Defendant fails to make timely payment of the Civil Penalty in accordance with Paragraphs 35 and 36 above, it shall be liable for interest and penalties for late payment as follows: (1) interest on any delinquent penalty amount at the percentage rate established by the Department of Treasury pursuant to 28 U.S.C. § 1961 (as of the due date), for any period after the due date; and (2) administrative costs of collecting the penalty calculated in accordance with 40 C.F.R. § 13.11(b) and assessed monthly throughout the period the penalty is overdue.

38. Any payment made pursuant to Section VII (Civil Penalty) of this Consent Decree is a penalty within the meaning of Section 162(f) of the Internal Revenue Code, 26 U.S.C. § 162(f), and is not a tax deductible expenditure for purposes of federal, state, or local law. Neither Defendant nor any of its parent or affiliated corporations shall deduct Defendant's payment of the Civil Penalty provided for herein for any tax purpose or otherwise obtain favorable tax treatment of such Civil Penalty payment.

VIII. NOTICES AND SUBMISSIONS

39. Unless and until written notice to the contrary is provided to Defendant, all notifications, reports and information required by this Consent Decree to be submitted shall be submitted to:

For the United States:

Two copies to:

Gary Cygan
Waste, Pesticide & Toxics Division
U.S. Environmental Protection Agency
Region 5, Mail Code DE-9J
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

with copies submitted simultaneously to:

Robert Guenther, Esq.
Associate Regional Counsel
U.S. Environmental Protection Agency
Region 5, Mail Code C-14J
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

Compliance Tracker
U.S. Environmental Protection Agency
Region 5, Mail Code AE-17J
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

and

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 # 90-5-2-1-2189

For the State of Ohio:

Two copies to :

Ohio EPA Southwest District Office
ATTN: Assistant District Chief
401 East Fifth Street
Dayton, Ohio 45402-2911

and one copy to:

Chief, Environmental Enforcement Section
Ohio Attorney General's Office, 25th floor
30 E. Broad Street
Columbus, Ohio 43215-3428

For Intervenors:

Marilyn Wall
Sierra Club
515 Wyoming Avenue
Cincinnati, Ohio 45215

Coordinating Attorney
Sierra Club
85 Second Street
San Francisco, CA 94105-3441

and

Ex Kano S. Sams II, Esq.
Lerach Coughlin Stoia Geller Rudman & Robbins LLP
100 Pine Street, Suite 2600
San Francisco, California 94111

40. Unless and until written notice to the contrary is provided to Plaintiffs, any and all notifications, reports, and information required by this Consent Decree to be submitted, as to Defendant, shall be submitted to:

Carl H. Batliner
AK Steel Corporation
703 Curtis Street
Middletown, OH 45043

Steven Francis
AK Steel Corporation
1801 Crawford Street
Middletown, OH 45043

and

David C. Horn, Esq.
AK Steel Corporation
703 Curtis Street
Middletown, OH 45043

41. Notifications, reports or other documents submitted by Defendant to the Plaintiffs shall be deemed submitted on the date they are either: (1) postmarked and sent by certified mail, return receipt requested; (2) sent by facsimile transmission, with confirmation of receipt; (3) sent by overnight delivery service; or (4) sent by electronic mail with confirmation of receipt.

IX. SUBMISSIONS AND APPROVALS

42. Except as set forth in Paragraph 24, all documents submitted for approval pursuant to this Consent Decree shall be submitted to EPA, OEPA, and the Intervenors. After review of any plan, report, schedule, or other item or deliverable that is required to be submitted to EPA for approval pursuant to this Consent Decree (other than SEP Completion Reports governed by Paragraph 31), EPA shall, after reasonable opportunity for review and comment by OEPA and the Intervenors, in writing: (a) approve, in whole or in part, the submission; (b) approve the submission with specified modifications; (c) approve the submission upon specified conditions; (d) disapprove, in whole or in part, the submission, directing that the Defendant modify the submission; or (e) any combination of the above.

43. In the event of approval pursuant to Subparagraph 42(a), Defendant shall proceed to take any action required by the plan, report, schedule or other item, as approved by EPA under Subparagraph 42(a).

44. In the event EPA approves any plan, report, schedule or other item or deliverable pursuant to Subparagraph 42(b) or (c), Defendant shall have the opportunity to meet or confer with EPA within twenty (20) days, or such longer time as may be agreed to by the Parties in

writing, to discuss and reach agreement concerning the modifications or conditions identified by EPA. OEPA and the Intervenors may participate in any such meeting or conference. If Defendant does not exercise the opportunity to meet or confer with EPA in accordance with the preceding sentence, Defendant shall proceed to take any action required by the plan, report, schedule or other item, in accordance with the modifications and/or conditions specified by EPA.

a. Based on the meeting or conference pursuant to this Paragraph, EPA may, after reasonable opportunity for review and comment by OEPA and Intervenors, either decide to revise any modifications or conditions identified in its approval under Subparagraph 42(b) or (c) or decide that its originally proposed modifications or conditions are appropriate. EPA shall provide written notice of any such decision to the Parties in accordance with Section VIII (Notices and Submissions).

b. Following any meeting or conference conducted pursuant to this Paragraph, Defendant shall proceed to take any action required by the plan, report, schedule or other deliverable as approved by EPA pursuant to Subparagraph 42(b) or (c), or as agreed to pursuant to Subparagraph 44.a, subject only to formal dispute resolution in accordance with Paragraph 75.

45. In the event EPA disapproves any plan, report, schedule or other item or deliverable pursuant to Subparagraph 42(d), Defendant shall have the opportunity to meet or confer with EPA within twenty (20) days, or such longer time as may be agreed to by the Parties in writing, to discuss and reach agreement on any identified deficiencies or modifications required by EPA. OEPA and the Intervenors may participate in any such meeting or conference. If Defendant does not exercise the opportunity to meet or confer with EPA in accordance with the preceding

sentence, Defendant shall proceed to take any action required by the plan, report, schedule or other item, in accordance with the modifications and/or conditions specified by EPA.

a. Based on the meeting or conference pursuant to this Paragraph, EPA may, after reasonable opportunity for review and comment by OEPA and Intervenors, decide to revise any disapproval or modifications required pursuant to Subparagraph 42(d), decide to withdraw its disapproval and approve, in whole or in part, the plan, report, schedule or other item or deliverable as originally submitted, or decide that the originally proposed disapproval and any required modifications are appropriate. EPA shall provide written notice of any such decision to the Parties in accordance with Section VIII (Notices and Submissions).

b. Following any meeting or conference conducted pursuant to this Paragraph, Defendant shall, subject only to formal dispute resolution in accordance with Paragraph 75:

i. within fifteen (15) working days or such other time as specified by EPA, correct the deficiencies consistent with EPA's decision pursuant to Subparagraph 45.a and resubmit plan, report, schedule, or other item or deliverable for approval; or

ii. if applicable, Defendant shall proceed to take any action required by the plan, report, schedule or other deliverable as approved by EPA pursuant to Subparagraph 45.a.

c. If a plan, report, schedule or other item or deliverable that is resubmitted for approval pursuant to Subparagraph 45.b.i is approved by EPA, after reasonable opportunity for review and comment by OEPA and the Intervenors, Defendant shall proceed to take any action required by the resubmitted plan, report, schedule or other item, as approved by EPA.

d. In the event that a resubmitted plan, report, schedule, or other item or deliverable is disapproved in whole or in part by EPA, after reasonable opportunity for review and comment by OEPA and Intervenors, EPA may again require the Defendant to correct the deficiencies, in accordance with the preceding Paragraphs. EPA also retains the right to modify or develop the plan, report, schedule, or other item or deliverable. If EPA disapproves or modifies the resubmitted plan, report, schedule or other item or deliverable pursuant to this Subparagraph, Defendant shall have the opportunity to meet or confer with EPA, as provided above in this Paragraph, to discuss and reach agreement on the deficiencies or modifications specified by EPA. OEPA and Intervenors may participate in any such meeting or conference. If Defendant does not exercise the opportunity to meet or confer with EPA in accordance with the preceding sentence, Defendant shall proceed to take any action required by the plan, report, schedule or other item, in accordance with the modifications and/or conditions specified by EPA. Following any meeting or conference, EPA shall provide the Parties with written notification of its decision either to withdraw, revise or reaffirm its disapproval or modification of the submission, and Defendant shall, subject only to formal dispute resolution pursuant to Paragraph 75:

i. correct the deficiencies, consistent with EPA's decision pursuant to Subparagraph 45.d, within fifteen (15) days or such other time as agreed to by EPA and Defendant; or

ii. proceed to take any action required by the resubmitted plan, report, schedule or other deliverable as modified by EPA pursuant to Subparagraph 45.d of this Paragraph.

46. Notwithstanding the receipt of a notice of disapproval pursuant to Subparagraph 42(d) or Subparagraph 45.d, Defendant shall proceed, if EPA so directs, 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 Defendant of any liability for stipulated penalties under Section X (Stipulated Penalties).

47. Subject only to formal dispute resolution procedures under Paragraph 75, and except as provided in Paragraph 77, upon disapproval of any plan, report, schedule or other item or deliverable under Subparagraph 42(d), Defendant shall be liable for stipulated penalties as provided in Section X (Stipulated Penalties). Stipulated penalties for disapproved plans, reports, schedules or other items or deliverables shall accrue beginning on the day after the initial plan, report, schedule or other item or deliverable was due under this Consent Decree (rather than the date of any resubmission authorized pursuant to this Section); provided, however, that such stipulated penalties shall be payable only if Defendant fails to resubmit the plan, report, schedule or other item or deliverable as required in Subparagraph 45.b.i, or if the resubmitted document is disapproved due to a material deficiency.

48. All plans, reports, schedules, and other items and deliverables required to be submitted to EPA for approval under this Consent Decree shall, upon written approval or modification by EPA, be enforceable under this Consent Decree, subject to applicable provisions of Section XIII (Dispute Resolution). In the event EPA approves, modifies, or conditions a portion of a plan, report, schedule, or other item or deliverable required to be submitted to EPA under this Consent Decree, such approval shall be in writing, and the approved, modified or conditioned portion shall be enforceable under this Consent Decree, subject to applicable provisions of Section XIII (Dispute Resolution).

X. STIPULATED PENALTIES

49. Defendant shall be liable for stipulated penalties to the United States and to Ohio, as specified below in this Section X (Stipulated Penalties), for failure to comply with the requirements of this Consent Decree, unless excused under Section XI (Force Majeure Between the United States, Intervenors and Defendant) or Section XII (Potential Force Majeure Between Ohio and Defendant). "Compliance" by Defendant shall include timely completion of the activities required by this Consent Decree, including Attachments 1, 2, and 3 of this Consent Decree, or any workplan, report, schedule, document, or other item or deliverable approved by EPA pursuant to this Consent Decree. The United States, or the State, or both may seek Stipulated Penalties under this Section. Either sovereign may waive Stipulated Penalties, or reduce the amount of Stipulated Penalties it seeks, in the exercise of its unreviewable discretion, and in accordance with this Paragraph. Where both sovereigns seek Stipulated Penalties for the same violation of this Consent Decree, Defendant shall pay fifty (50) percent of the Stipulated Penalty to the United States and fifty (50) percent to the State. Where only one sovereign demands Stipulated Penalties for a violation, and the other sovereign does not join in the demand within fifteen (15) days of receiving the demand, or timely joins in the demand but subsequently elects to waive or reduce Stipulated Penalties for that violation, Defendant shall pay the Stipulated Penalties due for the violation to the sovereign making the initial demand, less any amount paid to the other sovereign. The determination by one sovereign not to seek Stipulated Penalties, or subsequently to waive or reduce the amount sought, shall not reduce Defendant's liability to the other sovereign for Stipulated Penalties, except as provided above in this Paragraph.

50. Stipulated Penalties Relating to Corrective Action

a. For failure to complete the Interim Measures described in Section II, Paragraph 6 of Attachment 1 in accordance with the schedule approved by EPA pursuant to the Interim Measures SOW, the Defendant shall pay a stipulated penalty in the amount of \$12,000 per day; provided, however, that stipulated penalties shall not accrue under this provision during the period between the original deadline for completion of such cleanup and any revised deadline approved by EPA for completion of such cleanup, to the extent that 1) Defendant has notified Plaintiffs of the need to revise the schedule for completion of this cleanup and the reasons for the revisions of the schedule at least thirty (30) days in advance of the original completion date, and 2) the Parties have agreed upon a revised schedule in advance of the original completion date.

b. For failure to meet any deadline for completion of any other Interim Measures identified in the Interim Measures SOW, the Defendant shall pay stipulated penalties in the following amounts for each day during which each violation continues:

<u>Period of Failure To Comply</u>	<u>Penalty Per Violation Per Day</u>
1st through 30th day	\$1500
31st through 60th day	\$2500
61st day and beyond	\$5000

Provided, however, that stipulated penalties shall not accrue under this provision during the period between the original deadline for completion of an Interim Measure and any revised deadline approved by EPA for such Interim Measure, to the extent that 1) Defendant has notified Plaintiffs of the need to revise the schedule for completion of the Interim Measure and the reasons for the revisions of the schedule at least twenty-one (21) days in advance of the original completion date, and 2) the Parties have agreed upon a revised schedule in advance of the original completion date.

c. For failure to meet any document submittal deadline established in the Interim Measures SOW, or to comply with the notice requirements of Section XV (Emergency Response) of this Consent Decree, the Defendant shall pay stipulated penalties in the following amounts for each day during which each violation continues:

<u>Period of Failure To Comply</u>	<u>Penalty Per Violation Per Day</u>
1st through 30th day	\$500
31st through 60th day	\$1000
61st day and beyond	\$2500

Provided, however, that stipulated penalties shall not accrue under this provision during the period between the original deadline proposed date for submittal of a document and any revised deadline approved by EPA for submittal of such document, to the extent that 1) Defendant has notified Plaintiffs of the need to revise the schedule for submittal and the reasons for the revisions of the schedule at least twenty-one (21) days in advance of the original submittal and 2) the Parties have agreed upon a revised schedule in advance of the original submittal date.

d. For failure to meet any deadline established pursuant to the RFI/CMS SOW of this Consent Decree, the Defendant shall pay stipulated penalties in the following amounts for each day during which each violation continues:

<u>Period of Failure To Comply</u>	<u>Penalty Per Violation Per Day</u>
1st through 30th day	\$500
31st through 60th day	\$1000
61st day and beyond	\$2500

Provided, however, that stipulated penalties shall not accrue under this provision during the period between the original deadline for a particular milestone and any revised deadline

approved by EPA for such milestone, to the extent that 1) Defendant has notified Plaintiffs of the need to revise the deadline and the reasons for the revision of the deadline at least twenty-one (21) days in advance of the original deadline, and 2) the Parties have agreed upon a revised schedule in advance of the original deadline.

51. Stipulated Penalties Relating to Compliance Obligations

a. If Defendant fails to comply with any daily maximum effluent limitations, or thirty (30)-day average (monthly average) effluent limitations, unauthorized discharge, unauthorized bypass or any monitoring requirements of its current NPDES permit or any renewal or modification of such permit, Defendant shall pay the following stipulated penalties per violation per day as applicable:

<u>Failure To Comply</u>	<u>Penalty Per Violation Per Day</u>
Any daily maximum effluent limitation violation or monitoring violation	\$600
Any monthly average violation	\$1000
Any unauthorized discharge or bypass	\$1000

b. For failure to comply with the requirements of Section XXI (Record Retention) of this Consent Decree, the Defendant shall pay stipulated penalties in the following amounts for each day during which each violation continues:

<u>Period of Failure To Comply</u>	<u>Penalty Per Violation Per Day</u>
1st through 30th day	\$500
31st through 60th day	\$1000
61st day and beyond	\$2500

52. Stipulated Penalties Relating to SEP.

a. In the event that Defendant fails to comply with any of the terms or provisions of this Consent Decree relating to the performance of the SEP described in Attachment 3 hereto and/or to the extent that actual expenditures for the SEP do not equal or exceed the costs for the SEP described herein and Paragraph 27 above, Defendant shall be liable for stipulated penalties according to the provisions set forth below:

i. If AK Steel fails to perform the Refrigerant Conversion SEP pursuant to this Consent Decree, Defendant shall pay a stipulated penalty in the following amount: \$750,000.

ii. If the SEP is completed in accordance with this Consent Decree, but Defendant spends less than the \$750,000 required to be spent for the project, Defendant shall pay a stipulated penalty equal to the difference between \$750,000 and the amount actually spent.

iii. If Defendant commences implementation of the SEP but does not complete the SEP in accordance with the schedule set forth in Attachment 3, Defendant shall pay a stipulated penalty in the following amounts for each day after the SEP completion deadline in Attachment 3: for days one (1) through thirty (30) a penalty of \$250 per day, and for every day thereafter a penalty of \$500 per day. Provided, however, that following Plaintiffs' receipt of written notification that Defendant no longer intends to complete implementation of the SEP, no additional stipulated penalties shall accrue under this Subparagraph 52.a.iii, and Defendant shall be subject to stipulated penalties pursuant to Subparagraph 52.a.iv, below.

iv. Except for violations governed by Subparagraph 52.a.iii, above, if Defendant does not complete the Refrigerant Conversion SEP in accordance with this Consent Decree, Defendant shall pay the difference between \$750,000 and the amount spent on portions of the SEP, if any, that were completed in accordance with this Consent Decree.

v. For failure to submit the SEP Completion Report in accordance with Paragraph 29.a. above, Defendant shall pay a stipulated penalty for each day after the report was originally due until the report is submitted: for days one (1) through five (5), a penalty of \$500 per day, and for every day thereafter a penalty of \$1,000 each to the United States and Ohio.

vi. For failure to submit any other report required by Subparagraph 29.b. above, Defendant shall pay stipulated penalty in the amount for each day after the report was originally due until the report is submitted: for days one (1) through five (5), a penalty of \$500 per day, and for every day thereafter a penalty of \$1,000.

c. Stipulated penalties for Subparagraphs 52.a.iii, 52.a.v and 52.a.vi, above shall begin to accrue on the day after performance is due, and shall continue to accrue through the final day of the completion of the activity, except as provided in Subparagraph 52.a.iii. Provided, however, that stipulated penalties shall not accrue under this provision during the period between the original deadline for completion of the SEP and/or submittal of a report and any revised deadline approved by EPA for completion of the SEP or submittal of such report, to the extent that 1) Defendant has notified Plaintiffs of the need to revise the schedule for completion of the SEP and/or the submittal of any report required by Paragraph 29, as

applicable, and the reasons for the revisions of the schedule at least thirty (30) days in advance of the original completion date, and 2) the Parties have agreed to a revised schedule in advance of the original completion date.

53. Stipulated Penalties Related to Payment of Civil Penalty.

a. For failure to make timely payment of the civil penalty to the United States required by Paragraph 35, Defendant shall pay to the United States a stipulated penalty in the amount of \$5,000 for each day after the payment was due until complete payment is submitted.

b. For failure to make timely payment of the civil penalty to Ohio required by Paragraph 36, Defendant shall pay a stipulated penalty to Ohio in the amount of \$5,000 for each day after the payment was due until complete payment is submitted.

54. Stipulated penalties shall be paid to the United States and Ohio as provided for in Section X (Stipulated Penalties) of this Consent Decree, within forty-five (45) days after the receipt of a written demand from the United States and/or Ohio, subject to the dispute resolution procedures of Section XIII (Dispute Resolution) of this Consent Decree. To the extent that Defendant invokes dispute resolution regarding the stipulated penalties and does not prevail, it shall pay accrued penalties, including those accruing during the dispute resolution, plus interest calculated in accordance with Paragraph 59 of this Consent Decree within thirty (30) days after resolution of the dispute. In the event Defendant fails to pay stipulated penalties when due, it shall be liable for interest and penalties for late payment in accordance with the provisions of Paragraph 59.

55. Any dispute with respect to liability for a stipulated penalty shall be resolved in accordance with Section XIII (Dispute Resolution) of this Consent Decree. Defendant shall bear the burden of proving that it is not subject to stipulated penalties.

56. Stipulated penalties shall not be the exclusive civil remedy of the United States or Ohio for Defendant's violations of this Consent Decree, and the United States and Ohio reserve the right to seek any remedies to which they are entitled, including, but not limited to, civil penalties, injunctive relief and contempt for Defendant's failure to comply with any provisions of this Consent Decree or other provisions of law, except that for any violation of applicable law or regulation for which this Consent Decree also provides for payment of a stipulated penalty, Defendant shall be allowed a credit for stipulated penalties paid against any statutory penalties imposed for such violation.

57. Except as provided in Section XVIII (Covenant Not To Sue of United States and of Intervenor) in Section XIX (Covenant Not To Sue of Ohio), nothing in this Consent Decree shall be construed as prohibiting, altering, or in any way limiting the rights of the United States or Ohio to seek additional remedies or sanctions, pursuant to other provisions of this Consent Decree or of any applicable statutes and regulations, except that for any violation of applicable law or regulation for which this Consent Decree also provides for payment of a stipulated penalty, Defendant shall be allowed a credit for stipulated penalties paid against any statutory penalties imposed for such violation.

58. Neither any stipulated penalty nor any interest or penalties for late payments of a stipulated penalty shall be deducted or otherwise relied upon by Defendant for a tax benefit for federal, state or local tax purposes.

59. If Defendant fails to make timely payment of a stipulated penalty set forth in this Section X (Stipulated Penalties), it shall be liable for interest and penalties for late payment. Such late payment charges shall include: (a) interest at the percentage rate established by the Department

of Treasury pursuant to 28 U.S.C. § 1961 (as of the due date), for any period after the due date; (b) a six percent per annum penalty charge assessed monthly on any portion of the penalty, including interest, which is more than ninety (90) days delinquent, and (c) administrative costs of collecting the penalty calculated in accordance with 40 C.F.R. § 13.11(b) and assessed monthly throughout the period the penalty is overdue.

60. The payment of penalties shall not alter in any way Defendant's obligation to complete the performance of the Work or the SEP SOW required under this Consent Decree.

61. The United States may, in its sole unreviewable discretion, waive the assessment of any stipulated penalty due to it under this Section X (Stipulated Penalties) of this Consent Decree.

62. Ohio may, in its sole unreviewable discretion, waive the assessment of any stipulated penalty due to it under this Section X (Stipulated Penalties) of this Consent Decree.

XI. FORCE MAJEURE BETWEEN THE UNITED STATES, INTERVENORS AND DEFENDANT

63. If any event occurs which causes the Defendant to violate any provision of this Consent Decree, Defendant shall notify the United States and the Intervenors in writing within ten (10) working days of when Defendant knew, or in the exercise of reasonable diligence under the circumstances should have known, of the event. The notice shall describe in detail the anticipated length of the delay, the precise cause or causes of the delay, the measures taken and to be taken by Defendant to prevent or minimize the delay, and the timetable pursuant to which those measures shall be implemented, and whether Defendant believes that the event which caused or may cause the delay constitutes a force majeure. Defendant shall make all reasonable efforts to identify events that cause or may cause a violation of this Consent Decree. Defendant shall adopt all reasonable measures to avoid or minimize any such delay.

64. Failure by Defendant to comply with the notice requirements of this Section shall constitute a waiver of Defendant's right to invoke the provisions of this force majeure Section as a basis for delay of performance under this Consent Decree.

65. For the purposes of this Consent Decree, a "force majeure" is defined as any unforeseen event arising from circumstances beyond the control of Defendant that could not have been prevented by due diligence and that delays or may delay the performance of any obligation under this Consent Decree. If EPA determines, after reasonable opportunity for review and comment by OEPA and Intervenors, that the delay or anticipated delay in compliance with the Consent Decree has been or shall be caused by a force majeure, the time for performance hereunder shall be extended for a period no longer than the delay necessarily resulting from such circumstances. In such event, the Parties shall stipulate to such extension of time. Neither unanticipated nor increased costs of achieving and maintaining compliance with any provision of this Consent Decree nor changed financial circumstances of Defendant shall be deemed a force majeure, except that Defendant shall not be denied force majeure due to its refusal to pay an unreasonable amount in compensation for access to a third party's property pursuant to Section XIV (Site Access). Failure to obtain any necessary permit or approval shall not be deemed a force majeure; provided, however, that depending upon the circumstances and Defendant's response to such circumstances, failure of a permitting authority to issue a necessary permit in a timely fashion may constitute a force majeure where the failure of the permitting authority to act is beyond the control of Defendant and Defendant has taken all steps available to it to obtain the necessary permit, including, but not limited to, submitting a complete permit application, responding in a timely fashion to requests for additional information by the permitting authority,

accepting lawful permit terms and conditions, and prosecuting in an expeditious fashion appeals of any allegedly unlawful terms and conditions imposed by the permitting authority.

66. If the EPA determines that the delay was not or will not be caused by a force majeure, or if the Parties are unable to agree on a stipulated extension of time, the United States will inform the Defendant of its position in writing. The United States' position shall control unless Defendant petitions the Court for relief pursuant to the dispute resolution procedures of Section XIII (Dispute Resolution) of this Consent Decree. In submitting the matter to the Court, Defendant shall have the burden of proving that the delay was attributable to a force majeure event and that, as a result of the event, a particular extension period is appropriate.

67. Compliance with any requirement of this Consent Decree, by itself, shall not constitute compliance with any other requirement. An extension of one compliance date based on a particular incident shall not result in an extension of a subsequent compliance date or dates unless specifically agreed to by the United States. Defendant must make a separate showing of proof regarding each delayed incremental step or other requirement for which an extension is sought.

XII. POTENTIAL FORCE MAJEURE BETWEEN OHIO AND DEFENDANT

68. If any event occurs that causes or may cause the Defendant to violate any provision of this Consent Decree, Defendant shall notify the OEPA in writing within ten (10) working days from when Defendant knew, or in the exercise of reasonable diligence under the circumstances should have known, that compliance with the Consent Decree would be prevented or delayed, describing in detail the precise cause or causes of the delay or violation, the anticipated length of the delay if applicable, the measures taken by Defendant to prevent or minimize the delay and

the timetable by which those measures will be implemented. Defendant shall adopt all reasonable measures to avoid or minimize any such violation. Defendant shall make all reasonable efforts to identify events that cause or may cause a violation of this Consent Decree.

69. In any action by the State of Ohio to enforce any of the provisions of this Consent Decree, Defendant may raise at that time the question of whether it is entitled to a defense that its conduct was caused by circumstances beyond its control such as, by way of example and not limitation, acts of God, strikes, acts of war or civil disturbances. While the State of Ohio does not agree that such a defense exists, it is, however, hereby agreed by Defendant and the State of Ohio that it is premature at this time to raise and adjudicate the existence of such a defense and that the appropriate point at which to adjudicate the existence of such a defense is at the time, if ever, that the proceeding to enforce this Consent Decree is commenced by the State. At that time the burden of proving that any delay was or will be caused by circumstances beyond the control of Defendants shall rest with Defendant. Failure by Defendant to timely comply with the notice requirements of Paragraph 68, shall at the option of Ohio constitute a waiver by Defendant of any right it may have to raise such a defense. Changed financial circumstances or increased costs associated with the implementation of any action required by this Consent Decree shall not in any event constitute circumstances entirely beyond the control of Defendant or serve as a basis for an extension of time under this Consent Decree.

XIII. DISPUTE RESOLUTION

70. Unless otherwise expressly provided for in this Consent Decree, the dispute resolution procedures of this Section XIII (Dispute Resolution) shall be the exclusive mechanism for resolution of disputes between the Parties regarding matters arising under this Consent Decree.

However, the procedures set forth in this Section shall not apply to:

- a. Actions by the Plaintiffs, or any one of them, to enforce obligations of Defendant that have not been disputed in accordance with this Section; or
- b. Any disputes concerning the issuance, modification, revocation, or reissuance of any permit(s).

In addition, nothing in this Consent Decree shall be construed to authorize Intervenors to dispute determinations by EPA concerning the adequacy of financial assurance established by Defendant pursuant to Subparagraph 24.b, above.

71. The Parties shall make reasonable efforts to informally and in good faith resolve all disputes or differences of opinion regarding the meaning or implementation of this Consent Decree; provided, however, that if Defendant requests a meeting or conference pursuant to:

- (i) Subparagraphs 16.a, 16.c, 16.d or 16.f concerning any determination of EPA regarding guidance documents,
- (ii) Subparagraph 22.e concerning any determination of EPA regarding Additional Work, Subparagraph 88.b concerning any determination of EPA regarding completion of Work, or
- (iii) Section IX (Submissions and Approvals) of this Consent Decree concerning EPA's determination regarding any plan, report, schedule or other item or deliverable submitted for approval pursuant to this Consent Decree,

the meeting or conference pursuant to Subparagraphs 16.a, 16.c, 16.d or 16.f, Subparagraph 22.e, Subparagraph 88.b, or Section IX (Submissions and Approvals) shall constitute informal

negotiations within the meaning of this Section and shall satisfy any requirement under this Section to attempt to resolve informally a dispute concerning such determination.

72. If, in the opinion of Defendant, the United States, Ohio, or Intervenors, there is a dispute between the Parties with respect to the meaning or implementation of this Consent Decree, the party that believes a dispute has arisen shall send to the other Parties a written Notice of Dispute which outlines the nature of the dispute and requests informal negotiations to resolve the dispute; provided, however, that any request for a meeting or conference pursuant to Subparagraphs 16.a, 16.c, 16.d or 16.f, Subparagraph 22.e, Subparagraph 88.b, or Section IX (Submissions and Approvals) of this Consent Decree shall be deemed to be a Notice of Dispute. The Notice of Dispute shall be sent in accordance with Section VIII (Notices and Submissions) of this Consent Decree. The period of informal negotiations pursuant to this Paragraph shall not extend beyond twenty (20) days from the date when the Notice of Dispute was received unless the period is extended by written agreement of the parties to the dispute.

73. If informal negotiations fail to resolve any dispute, the United States' position shall be binding unless another party invokes formal dispute resolution pursuant to Paragraph 74 of this Consent Decree.

74. A party shall commence formal dispute resolution pursuant to Paragraph 75 or 76 by serving on the other parties, within twenty-one (21) days after conclusion of informal negotiations, a Statement of Position on the matter in dispute, providing a description of the nature of the dispute, any relief requested, and any supporting information or documentation, including, without limitation, all factual data, non-privileged analysis and/or opinion relevant to the disputed matter. Within twenty-one (21) days after receipt of the initial Statement of

Position, other parties to the dispute may submit Statements of Position and any supporting information or documentation, including, without limitation, all non-privileged factual data, analysis and/or opinion relevant to the disputed matter.

75. The provisions of this Paragraph shall govern formal dispute resolution for disputes pertaining to the selection or adequacy of any Work or SEP required pursuant to Paragraphs 17, 18, 19, 22, 24.b.xiii(A) - (C) or 25, 88, and 89 or pursuant to Attachments 1-3 of this Consent Decree, including any dispute concerning approval of plans, reports (other than progress reports), schedules, or other items or deliverables required for such Work or SEP.

a. EPA shall maintain an administrative record of all disputes governed by this Paragraph. The administrative record shall include all Statements of Position, including accompanying supporting information and documentation. Where appropriate, EPA may allow submission of supplemental Statements of Position and supporting information, which shall also be part of the administrative record of the dispute.

b. Based on a review of the administrative record, the Director of the Waste, Pesticides and Toxics Division at EPA Region 5 will issue a final administrative decision resolving any dispute subject to this Paragraph. Such decision shall be binding upon all parties to the dispute, unless, within ten (10) working days after receipt of the decision or such longer time may be agreed to by the parties in writing, any party files with the Court a petition for judicial dispute resolution. Any petition for judicial dispute resolution shall describe the nature of the dispute, the efforts made by the Parties to resolve it, the relief requested, and the schedule, if any, within which the dispute must be resolved to ensure orderly implementation of this

Consent Decree, and include a proposal for its resolution. Other parties to the dispute may file a response to the petition for judicial dispute resolution within ten (10) working days.

c. In any dispute governed by this Paragraph, this Court shall uphold the decision of EPA, unless this Court determines, based on review of the administrative record, that EPA's decision was arbitrary and capricious, an abuse of discretion or otherwise not in accordance with applicable law.

76. The provisions of this Paragraph shall govern all disputes that are not governed by Paragraph 75.

a. EPA shall issue a final administrative decision resolving the dispute, based on a review of the Statements of Position and supporting information and documentation submitted pursuant to Paragraph 74.

b. Decisions of EPA pursuant to Subparagraph 76.a shall be binding upon all parties to the dispute, unless, within ten working (10) days after receipt of the decision or such longer time as may be agreed to by the parties in writing, any party files with the Court a petition for judicial dispute resolution. Any petition for judicial dispute resolution shall describe the nature of the dispute, the efforts made by the Parties to resolve it, the relief requested, and the schedule if any, within which the dispute must be resolved to ensure orderly implementation of this Consent Decree. Other parties to the dispute may file a response to the petition for judicial dispute resolution within ten (10) working days.

c. Judicial resolution of any dispute governed by this Paragraph shall be governed by applicable principles of law.

77. The invocation of formal dispute resolution procedures under this Section shall not extend, postpone or affect in any way any obligation of Defendant under this Consent Decree, unless the United States, after reasonable opportunity for comment by Ohio and the Intervenors, so agrees or the Court so orders. Stipulated penalties with respect to the disputed matter shall continue to accrue, but payment shall be stayed pending resolution of the dispute; provided, however, that

a. during informal dispute resolution pursuant to Paragraph 71 or 72, stipulated penalties shall not accrue during any period beginning on the twenty-first (21st) day after Defendant submits its Notice of Dispute or requests a meeting or conference pursuant to Subparagraphs 16.a, 16.c, 16.d or 16.f, Subparagraph 22.e, Subparagraph 88.b, or Section IX (Submissions and Approvals) and ending upon expiration of the period for informal negotiations;

b. during formal dispute resolution pursuant to Subparagraph 75.a and 75.b or pursuant to Paragraph 76.a, stipulated penalties shall not accrue during any period beginning on the thirty-first (31st) day after EPA's receipt of the final Statement of Position submitted pursuant to Paragraph 74, and ending on the date of EPA's final administrative decision; and

c. during judicial dispute resolution pursuant to Subparagraph 75.c or pursuant to Subparagraph 76.b and 76.c, stipulated penalties shall not accrue during the period, if any, beginning on the thirty-first (31st) day after the Court's receipt of the final submission regarding the dispute until the date that the Court issues a final decision regarding such dispute.

Notwithstanding the stay of payment, stipulated penalties shall accrue from the first day of noncompliance with any applicable provision of this Consent Decree. To the extent that

Defendant does not prevail on the disputed issue, stipulated penalties shall be assessed and paid as provided in Section X (Stipulated Penalties).

XIV. SITE ACCESS

78. a. Commencing upon the date of lodging of this Consent Decree, Defendant agrees to provide the Government Plaintiffs and their representatives, including their agencies, employees and authorized agents (including contractors and subcontractors), access at all reasonable times to the Facility, and any other property owned or controlled by Defendant or accessible to the Defendant by the terms of the contract or agreement between the Defendant and the property owner pursuant to Paragraph 82, to which access is required for the implementation of this Consent Decree, for the purposes of conducting any activity related to this Consent Decree including, but not limited to:

- i. Monitoring the Work and/or SEP;
- ii. Verifying any data or information submitted to the Plaintiffs, including inspecting, reviewing, and copying all documents, operating logs, and contracts that relate to activities pertaining to the Work and/or SEP required by this Consent Decree following reasonable notification to Defendant's Project Coordinator (or other person designated to act in the Project Coordinator's absence) and an opportunity to be present;
- iii. Conducting investigations relating to the Work and/or SEP;
- iv. Obtaining samples relating to the Work and/or SEP;
- v. Interviewing and obtaining oral, written, or recorded statements from personnel involved in activities pertaining to the Work and/or SEP required by this Consent Decree, whether such personnel are employed by the Defendant or by its

contractors or subcontractors, following notification to the Defendant and an opportunity for a representative of the Defendant to be present;

vi. Observing, photographing, videotaping, taking a sound recording or otherwise documenting the performance or completion of activities pertaining to the Work and/or SEP required by this Consent Decree; provided that Defendant shall be provided with a copy of any such photographs, videotapes, or recordings, upon request;

vii. Inspecting and copying all records, files, photographs, documents, including all sampling and monitoring data, that pertain to Work undertaken pursuant to this Consent Decree and that are within the possession or under the control of Defendant or its Contractors, following reasonable notification to Defendant's Project Coordinator (or other person designated to act in the Project Coordinator's absence) and an opportunity to be present.

viii. Conducting such other monitoring and investigative activities as the Government Plaintiffs deem necessary to monitor activities pertaining to the Work and/or SEP required by this Consent Decree; and

ix. Assessing Defendant's compliance with this Consent Decree.

b. Defendant may assert that any written statement, photograph, videotape, sound recording, record, file, or other document obtained by Government Plaintiffs pursuant to this Consent Decree contains confidential business information entitled to protection from public disclosure subject to the requirements of 40 C.F.R. Part 2 and O.A.C. 3745-49-03 and 3745-49-031; provided, however, that no claim of confidentiality shall be made with respect to any data, including, but not limited to, all sampling, analytical, monitoring, hydrogeologic,

scientific, chemical, or engineering data, or any information evidencing conditions at or around the Facility and Additional Areas. No documents, reports or other information created or generated pursuant to the requirements of the Consent Decree shall be withheld on the grounds that they are privileged.

c. In addition to providing the Government Plaintiffs and their representatives access as provided in Paragraph 78.a, above, Defendant agrees to provide Intervenor's technical expert with access to the Facility for the purpose of observing and monitoring the Work undertaken pursuant to the Consent Decree. Intervenor's technical expert may discuss matters related to the Work and/or SEP required by this Consent Decree solely with Defendant's Project Coordinator and the Government Plaintiffs as long as such discussions do not constitute formal interviews, and the discussions are not used in any manner except to assess compliance with this Consent Decree. Access to the Facility by Intervenor's technical expert shall be made in conjunction with access to the Facility provided to the Government Plaintiffs. Access by Intervenor's technical expert shall also be made in accordance with the terms of the Site Access and Confidentiality Agreement, attached hereto as Attachment 8.

d. Intervenor, upon request at the time of sampling, may obtain splits of any samples taken by the Government Plaintiffs, or their representatives. Upon request, Intervenor shall be provided with copies of the results of sampling, analysis, tests, or other raw data generated as a result of activities authorized under this Paragraph 78 of this Consent Decree, subject to the provisions of Subparagraph 78.b and Paragraph 79 of this Consent Decree. In the event that Government Plaintiffs take any pictures, video or sound recordings; conduct any tests, sampling, or laboratory analysis; or generate any other raw data in connection with their

oversight of Work required under the Consent Decree, and the Government Plaintiffs are or become aware that Intervenor have not received such information, the Government Plaintiffs shall provide Intervenor with a notice identifying the information collected. Upon request, Government Plaintiffs shall use their best efforts to make such information available to Intervenor on a timely basis, subject to the provisions of Subparagraph 78.b and Paragraph 79.

e. Whenever Defendant provides the Government Plaintiffs raw data pursuant to this Consent Decree, Defendant shall also provide such raw data to Intervenor's technical expert subject to the following provisions: (1) Intervenor's technical expert shall not share such raw data with anyone who does not already have access to such data, including, but not limited to, members or attorneys of the Sierra Club or Natural Resources Defense Council, members of the public, or the media; and (2) Intervenor's technical expert may communicate with EPA and/or OEPA regarding such raw data if Intervenor's designated representative(s) believe that the data may demonstrate a substantial risk to the public health, safety, or welfare or the environment. If Intervenor's technical expert elects to communicate with EPA and/or OEPA about raw data which may demonstrate a substantial risk to public health, safety, or welfare or the environment, Intervenor's technical expert shall not share such raw data with anyone who does not already have access to such data, including, but not limited to, members or attorneys of the Sierra Club or Natural Resources Defense Council, members of the public or the media, and shall otherwise protect and preserve the confidentiality of such data.

79. At the time of entering the Facility, or another property subject to this Section XIV (Site Access), Government Plaintiffs' employees and representatives shall present valid credentials or other official authorization. The Defendant shall have the right to accompany Government

Plaintiffs' representatives throughout their presence at the Facility or another property, and to monitor and record the investigative activities conducted by Government Plaintiffs, so long as such monitoring or recording does not unreasonably delay or impede the investigative activities of the Government Plaintiffs. If any recording of Government Plaintiffs' investigatory activities is made by Defendant, a copy of the recording shall be provided to the other Parties; provided, however, that Defendant may designate any such recording or portion thereof as containing confidential business information subject to the requirements of 40 C.F.R. Part 2 and O.A.C. 3745-49-03 and 3745-49-031 and Defendant shall not be required to release to Intervenors any recording that contains confidential business information that is not subject to the provisions of a confidentiality agreement.

80. Defendant, upon request at the time of sampling, may obtain splits of any samples taken by the Government Plaintiffs, or their representatives, and, upon request, shall be provided with copies of the results of sampling, analysis, tests, or other raw data generated as a result of activities authorized under Paragraph 78 of this Consent Decree.

81. Notwithstanding the foregoing Paragraph or any other provision of this Consent Decree, Government Plaintiffs hereby retain all of their information gathering and inspection authorities and rights, including enforcement actions related thereto, under the CAA, CWA, RCRA and any other applicable federal or state statutes, regulations or permits.

82. To the extent that Work being performed pursuant to this Consent Decree must be done beyond the Facility property boundary, Defendant shall use its best efforts to obtain:

a. An agreement to provide access thereto for Defendant, the United States on behalf of EPA, and Ohio on behalf of OEPA, and their representatives (including contractors) necessary

for conducting any activity related to the Consent Decree, including those activities listed in Paragraph 78 above, from the present owner(s) of such property within forty-five (45) days of the date of approval of any Workplan for which access is required or, if later, within forty-five (45) days of the date that the need for access becomes known to Defendant. Within forty-five (45) days of the date of approval of any Workplan for which access is required or, if later, within forty-five (45) days of the date that the need for access becomes known to Defendant, Defendant shall either provide the Plaintiffs with a copy of all access agreements referred to above in this Subparagraph or a report outlining the steps that it has taken to obtain access to the property, the status of its efforts to obtain access and a projected date by which terms of an access agreement will be reached.

b. An agreement, enforceable by the Defendant, the United States, and Ohio, to refrain from using the Facility, or such other property, in any manner that would interfere with or adversely affect the implementation, integrity, or protectiveness of the Work to be performed pursuant to this Consent Decree.

The agreements referenced in Subparagraphs 82.a. and 82.b. above shall contain reasonable terms and conditions relating to access, and the payment of reasonable compensation in consideration of granting access. For purposes of this Paragraph, "reasonable terms and conditions relating to access" do not include terms and conditions that will significantly impair Defendant's ability to perform Work in compliance with any requirements of this Consent Decree. Defendant shall ensure that EPA's and OEPA's Project Coordinator have copies of any access agreement(s).

c. Best efforts as used in this Paragraph shall include a certified letter from Defendant to the present owner(s) of such property requesting access agreement(s) consistent with Subparagraphs 82.a and 82.b above, and the payment of reasonable compensation in consideration of granting access.

83. If Defendant is unable to obtain agreements for access in accordance with Paragraph 82, EPA may, at its discretion, assist Defendant in obtaining access. In the event EPA obtains access, Defendant shall undertake EPA-approved Work on such property.

84. Notwithstanding any provision of this Consent Decree, the United States and Ohio retain all of their access authorities and rights, including enforcement authorities related thereto, under CERCLA, RCRA and any other applicable statutes or regulations.

85. Nothing in this Section shall be construed to limit or otherwise affect Defendant's liability and obligation to perform corrective action including corrective action beyond the Facility boundary. However, to the extent that Defendant is unable, despite its best efforts, to obtain access to property needed to perform Work required pursuant to this Consent Decree, Defendant may seek relief in accordance to Sections XI (Force Majeure Between the United States, Intervenors and Defendant) and XII (Potential Force Majeure Between Ohio and Defendant) of this Consent Decree.

XV. EMERGENCY RESPONSE

86. In the event of any action or occurrence during the performance of the Work that causes or threatens a release of Hazardous Waste or Hazardous Constituents that constitutes an emergency situation, or that may present an immediate threat to public health or welfare or the environment, Defendant shall, in addition to complying with any applicable notice requirement

specified by law or regulation, provide oral notice within one (1) day to the Chief, Emergency Response Branch, EPA, Region 5, and to OEPA's Emergency Phone Number, 800-282-9378, and Defendant shall notify EPA, OEPA, and the Intervenor(s) in writing within seven (7) days (or sooner if applicable law so requires), summarizing the nature, immediacy, and magnitude of the actual or potential threats to human health or the environment. The written notice requirement may be satisfied by sending to the addresses specified in Section VIII (Notices and Submissions) of this Consent Decree a copy of any notice that includes the required information and that is generated pursuant to a requirement of CERCLA, or pursuant to a state statute or tribal regulation, together with a cover letter specifying that the notice is being provided pursuant to this Consent Decree, and including the docket number of this case.

XVI. COMPLETION OF THE WORK

87. Defendant shall document completion of all Work required pursuant to Attachments 1 and 2 to this Consent Decree by submitting to Plaintiffs one or more Completion Reports and accompanying Request(s) for Acknowledgment of Completion, as provided below in this Section XVI (Completion of the Work). Defendant may submit a separate Completion Report and Request for Acknowledgment of Completion for each of the following components of Work required under this Consent Decree: (1) the Interim Measures; (2) the RFI; and (3) the CMS. Alternatively, Defendant may submit separate Completion Reports and Requests for Acknowledgment of Completion after any two or more of such Work components have been completed.

a. Each Completion Report and Request for Acknowledgment of Completion required pursuant to this Section XVI (Completion of the Work) shall be submitted no later than

ninety (90) days after Defendant determines that it has completed all Work (other than operation and maintenance obligations) required under Attachments 1 and/or 2 to the Consent Decree, as applicable.

b. Each Completion Report and Request for Acknowledgment of Completion shall include one or more written reports by registered professional engineers in the relevant technical fields, certifying that all Work required by Attachments 1 and/or 2, as applicable, has been completed in accordance with the applicable SOW(s).

c. Each Completion Report submitted pursuant to this Paragraph shall indicate the case name and civil action number, and shall contain the following statement, signed by a responsible corporate officer or, if specifically designated by Defendant for this purpose, the plant manager of the Facility:

To the best of my knowledge, after thorough investigation in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted, I certify, based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, that AK Steel has completed in accordance with the Consent Decree the Work set forth in the [specify Interim Measures SOW or RFI/CMS SOW, as applicable] attached to the Consent Decree, and that the information contained in or accompanying this submission is 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.

Signature: _____
Name: _____
Title: _____

d. If EPA so requests, Defendant shall schedule and conduct an inspection, to be attended by Defendant and EPA, and by OEPA and Intervenors at their option, to review the certified portion of the Work.

88. If, after review of any Completion Report and certifications submitted pursuant to this Section XVI (Completion of the Work) and any inspection, and after reasonable opportunity for review and comment from OEPA and Intervenors, EPA determines that the Work has been completed in accordance with the Consent Decree, it shall issue an Acknowledgment of Completion for the Work completed.

a. If EPA, after reasonable opportunity for review and comment from OEPA and the Intervenors, determines that any portion of the certified Work has not been completed in accordance with this Consent Decree and the applicable SOWs attached hereto, EPA will notify Defendant in writing of the activities that must be undertaken to complete this portion of the Work. EPA will set forth in the notice a schedule for performance of such activities consistent with the Consent Decree and relevant SOW, or will require Defendant to submit a schedule to EPA for approval with copies to OEPA and Intervenors pursuant to Section VIII (Notices and Submissions).

b. Defendant shall have the opportunity to meet or confer with EPA within twenty (20) days after receipt of the notice referred to above in this Paragraph, or such longer time as may be agreed to by the Parties in writing, to discuss and reach agreement concerning any determinations, schedules or activities set forth in the notice issued by EPA pursuant to this Paragraph. OEPA and the Intervenors may participate in any such meeting or conference.

c. Based on any meeting or conference pursuant to Subparagraph 88.b, EPA may, after reasonable opportunity for review and comment by OEPA and Intervenors, decide to revise any determinations, schedules or activities set forth in the notice issued by EPA pursuant to this

Paragraph or EPA may decide that the originally proposed determinations, schedules or activities set forth in the notice are appropriate. Any such decision shall be in writing.

d. Except as provided in Subparagraph 88.c, following any meeting or conference pursuant to Subparagraph 88.b, Defendant shall perform all activities necessary to complete the work as determined by EPA in accordance with the specifications and schedules established pursuant to Subparagraph 88.a or 88.c, as applicable, subject only to its right, to invoke the formal dispute resolution procedures set forth in Paragraph 75. Upon completion of these activities, Defendant shall submit revised written reports and certifications for the completed portion of the Work.

89. Within ninety (90) days of Defendant's completion of all Work required under this Consent Decree, Defendant shall submit to Plaintiffs a Request for Acknowledgment of Final Completion, referencing all final written reports and certifications submitted pursuant to Paragraph 87 and/or Subparagraph 88.d. Following its receipt of the Request, EPA may request an inspection, provide notice of activities that must be undertaken to complete the Work, or approve the request as provided below. If EPA concludes, after a reasonable opportunity for review and comment by OEPA and Intervenors, that all Work (other than operation and maintenance obligations) required under this Consent Decree has been performed in accordance with this Consent Decree, EPA will so notify the Defendant in writing, which notice shall constitute the Acknowledgment of Final Completion.

XVII. ENFORCEMENT COSTS

90. Except as provided below in this Section, the parties to this Consent Decree shall bear their own costs of litigation in this civil action, including, but not limited to, attorney and expert

witness fees through the date of entry of this Consent Decree. In any subsequent proceeding by Plaintiffs to enforce this Consent Decree, if Defendant is determined to have violated this Consent Decree, Defendant shall be liable to Plaintiffs for all costs and attorneys fees incurred by Plaintiffs in connection with such proceeding.

91. Fees and Costs of Intervenors. Within thirty (30) calendar days after entry of this Consent Decree, Defendant shall pay Intervenors \$450,000, which represents the fees and costs incurred by Intervenors in this matter. This amount includes all fees and costs for which Intervenors will seek payment, including all attorney fees, expenses, court costs and all costs associated with Intervenors' participation in the implementation of this Consent Decree and the Work undertaken pursuant to the Consent Decree. Intervenors shall not seek reimbursement for any additional fees or costs of any kind associated with this Consent Decree. Payment shall be made by corporate check, payable to Lerach Coughlin Stoia Geller Rudman & Robbins LLP, and shall be sent to:

Ex Kano S. Sams II
Lerach Coughlin Stoia Geller Rudman & Robbins LLP
100 Pine Street, Suite 2600
San Francisco, CA 94111

Defendant has consented to the payment of Intervenors' fees and costs in order to resolve this matter without further litigation. Payment by Defendant of Intervenors' fees and costs does not, and is not intended to, constitute an admission of liability to any claims asserted by Plaintiffs, an admission that Intervenors were a prevailing party in this matter, or an admission that Intervenors were otherwise entitled to receive reimbursement of any attorney fees and costs under applicable law. Payment of Intervenors' fees and costs may not be used in this litigation or in subsequent litigation involving Defendant to demonstrate liability of Defendant for any

claims asserted in this matter, the status of Intervenors as prevailing parties or Intervenors' entitlement to fees and costs under applicable law.

92. This Consent Decree shall be considered an enforceable judgment for purposes of post-judgment collection in accordance with Federal Rule of Civil Procedure 69 and the Federal Debt Collection Procedures Act, 28 U.S.C. §§ 3001-3308.

XVIII. COVENANT NOT TO SUE OF UNITED STATES AND INTERVENORS

93. In consideration of the Work and the SEP that will be performed and the penalties that will be paid by the Defendant under the terms of the Consent Decree, and except as specifically provided in Paragraphs 94, 95, 98 and 99, Intervenors covenant not to file a lawsuit and the United States covenants not to take civil judicial or administrative action against Defendant (1) pursuant to Section 309(b) of the CWA, 33 U.S.C. § 1319(b), and Section 113 of the CAA, 42 U.S.C. § 7413, for the violations alleged in the U.S. Complaint and Intervenors' Complaint through the date of lodging; (2) pursuant to Section 3008(h) of RCRA, 42 U.S.C. § 6928(h), for the performance of the Interim Measures described in Attachment 1, the RFI and the CMS described in Attachment 2 to this Consent Decree, and any Additional Work implemented by Defendant pursuant to Paragraph 22; and (3) pursuant to Section 3008(h) of RCRA, 42 U.S.C. § 6928(h), for Existing Contamination in Reach 1 and Reach 2 of Dicks Creek, the Outfall 002 channel, and Monroe Ditch, and (4) pursuant to Section 3008(h) of RCRA, 42 U.S.C. § 6928(h), for Existing Contamination in the Floodplain. This covenant not to sue is expressly conditioned upon the performance by Defendant of all of its obligations under this Consent Decree, including the Attachments hereto, and may be voided if Defendant fails to comply with any of the requirements of this Consent Decree. This covenant becomes effective upon the issuance of the

Acknowledgment of Final Completion, and is conditioned upon the veracity of Defendant's certifications and written reports as required in Section XVI (Completion of Work). This covenant not to sue extends only to the Defendant and does not extend to any other person, except to the extent provided in a modification of this Consent Decree agreed to by the Parties in accordance with Paragraph 10 and approved by the Court.

94. General Reservations of rights. The United States and the Intervenors reserve, and this Consent Decree is without prejudice to, all rights against Defendant with respect to all matters not expressly included within the United States' and Intervenors' covenant not to sue.

Notwithstanding any other provision of this Consent Decree, the United States and, to the extent applicable, Intervenors, reserve all rights against Defendant with respect to:

- a. claims based on a failure by Defendant to meet a requirement of this Consent Decree;
- b. liability to implement any corrective action selected by EPA and/or OEPA following completion of the Corrective Measures Study required pursuant to this Consent Decree;
- c. liability for contamination in Dicks Creek, Monroe Ditch or the Floodplain that is not Existing Contamination;
- d. liability arising from the past, present, or future disposal, release, or threat of release of solid waste or Hazardous Waste outside of the Facility and the Additional Areas identified in Attachment 2;
- e. liability arising from: (1) Defendant's ownership or operation of the Facility after signature of this Consent Decree by the Defendant; or (2) Defendant's transportation, treatment,

storage, or disposal, or arranging for the transportation, treatment, storage, or disposal, of solid waste or Hazardous Waste at or in connection with the Facility after signature of this Consent Decree by the Defendant (other than as provided in the Work, or otherwise ordered by EPA pursuant to this Consent Decree);

f. liability for damages for injury to, destruction of, or loss of natural resources, and for the costs of any natural resource damage assessments;

g. criminal liability; and

h. liability for violations of federal or state law which occur during or after implementation of the Work.

95. Notwithstanding any other provision of this Consent Decree, the United States also reserves, and this Consent Decree is without prejudice to, the right to institute proceedings in this action or in a new action, or to issue an administrative order seeking to compel Defendant to perform additional corrective measures to address contamination in Reach 1 and Reach 2 of Dicks Creek, Monroe Ditch or the Floodplain if:

a. Conditions in Reach 1 or Reach 2 of Dicks Creek, Monroe Ditch or the Floodplain, previously unknown to EPA, are discovered; or

b. Information, previously unknown to EPA, is received in whole or in part, and these previously unknown conditions or information, together with any other relevant information, indicate that the Interim Measures required in Reach 1 and 2 of Dicks Creek, Monroe Ditch, and/or the Floodplain are not protective of human health or the environment.

96. For purposes of Paragraph 95 above, the information and the conditions known to EPA shall include only that information and those conditions set forth in the documents listed in Attachment 7.

97. Nothing in this Consent Decree is intended either to create any rights in or grant any cause of action to any person not a party to this Consent Decree, or to release or waive any claim, cause of action, demand, or defense in law or equity that any party to this Consent Decree may have against any person(s) or entity not a party to this Consent Decree.

98. Notwithstanding any other provision of this Consent Decree, the United States retains all authority and reserves all rights to take any and all actions authorized by law to protect human health and the environment.

99. The rights reserved to the United States includes the right to disapprove of Work performed by the Defendant pursuant to this Consent Decree, and to order that Defendant perform Additional Work in accordance with Paragraph 22.

XIX. COVENANT NOT TO SUE OF OHIO

100. In consideration of the Work and the SEP that will be performed, the penalties and the costs that will be paid by the Defendant under the terms of the Consent Decree, and except as specifically provided in Paragraphs 101, 102, and 105, Ohio covenants not to take civil judicial or administrative action against Defendant (1) pursuant to Section 505 of the CWA, 33 U.S.C. § 1365, R.C. Chapters 3734 and 6111, and the rules promulgated under those chapters in the O.A.C., for the violations alleged in the Ohio Complaint through the date of lodging; (2) pursuant to Section 3008(h) of RCRA, 42 U.S.C. § 6928(h), for the performance of the Interim Measures described in Attachment 1, the RFI and the CMS described in Attachment 2 to this Consent Decree and any Additional Work implemented by Defendant pursuant to Paragraph 22; and (3) pursuant to Section 3008(h) of RCRA, 42 U.S.C. § 6928(h), for Existing Contamination in Reach 1 and Reach 2 of Dicks Creek, the Outfall 002 channel, and Monroe

Ditch, and (4) pursuant to Section 3008(h) of RCRA, 42 U.S.C. § 6928(h), for Existing Contamination in the Floodplain. This covenant not to sue is expressly conditioned upon the performance by Defendant of all its obligations under this Consent Decree, including the Attachments hereto, and may be voided if Defendant fails to comply with any of the requirements of this Consent Decree. This covenant becomes effective upon the issuance of the Acknowledgment of Final Completion, and is conditioned upon the veracity of Defendant's certifications and written reports as required in Section XVI (Completion of Work). This covenant not to sue extends only to the Defendant and does not extend to any other person, except to the extent provided in a modification of this Consent Decree agreed to by the Parties in accordance with Paragraphs 10 and approved by the Court.

101. General Reservations of rights. Ohio reserves, and this Consent Decree is without prejudice to, all rights against Defendant with respect to all matters not expressly included within Ohio's covenant not to sue. Notwithstanding any other provision of this Consent Decree, Ohio reserves all rights against Defendant with respect to:

- a. claims based on a failure by Defendant to meet a requirement of this Consent Decree;
- b. liability to implement any corrective action selected by EPA and/or OEPA following completion of the Corrective Measures Study required pursuant to this Consent Decree;
- c. liability for contamination in Dicks Creek, Monroe Ditch or the Floodplain that is not Existing Contamination;
- d. liability arising from the past, present, or future disposal, release, or threat of release of solid waste or Hazardous Waste outside of the Facility and the Additional Areas;

e. liability arising from: (1) Defendant's ownership or operation of the Facility after signature of this Consent Decree by the Defendant; or (2) Defendant's transportation, treatment, storage, or disposal, or arranging for the transportation, treatment, storage, or disposal, of solid waste or Hazardous Waste at or in connection with the Facility after signature of this Consent Decree by the Defendant (other than as provided in the Work, or otherwise ordered by EPA pursuant to this Consent Decree);

f. liability for damages for injury to, destruction of, or loss of natural resources, and for the costs of any natural resource damage assessments;

g. criminal liability; and

h. liability for violations of federal or state law which occur during or after implementation of the Work.

102. Notwithstanding any other provision of this Consent Decree, Ohio also reserves, and this Consent Decree is without prejudice to, the right to institute proceedings in this action or in a new action, or to issue an administrative order seeking to compel Defendant to perform additional corrective measures to address contamination in Reach 1 and Reach 2 of Dicks Creek, Monroe Ditch or the Floodplain if:

a. Conditions in Reach 1 or Reach 2 of Dicks Creek, Monroe Ditch or the Floodplain, previously unknown to OEPA, are discovered; or

b. Information, previously unknown to OEPA, is received in whole or in part, and these previously unknown conditions or information, together with any other relevant information, indicate that the Interim Measures required in Reach 1 and 2 of Dicks Creek, Monroe Ditch, and/or the Floodplain are not protective of human health or the environment.

103. For purposes of Paragraph 102 above, the information and the conditions known to OEPA shall include only that information and those conditions identified in documents listed in Attachment 7.

104. Nothing in this Consent Decree is intended either to create any rights in or grant any cause of action to any person not a party to this Consent Decree, or to release or waive any claim, cause of action, demand, or defense in law or equity that any party to this Consent Decree may have against any person(s) or entity not a party to this Consent Decree.

105. Notwithstanding any other provision of this Consent Decree, Ohio retains all authority and reserves all rights to take any and all actions authorized by law to protect human health and the environment.

XX. COVENANT NOT TO SUE OF DEFENDANT

106. Except as set forth in Attachment 8 with respect to the Intervenor, Defendant covenants not to sue and agrees not to assert any claims or causes of action against the United States, Ohio, and/or the Intervenor, their agencies, departments, officials, employees, contractors, or agents, for matters arising under or related to this Consent Decree, including but not limited to

a. any direct or indirect claim for reimbursement from the Hazardous Substance Superfund (established pursuant to the Internal Revenue Code, 26 U.S.C. § 9507) through CERCLA Sections 106(b)(2), 107, 111, 112, 113 or any other provision of law;

b. any claims against the United States, including any department, agency or instrumentality of the United States under CERCLA Sections 107 or 113 related to the Facility;

or

c. Except as provided in Paragraph 107, any claims arising out of Work at or in connection with the Facility, including any claim under the United States Constitution, the Ohio Constitution, the Tucker Act, 28 U.S.C. § 1491, the Equal Access to Justice Act, 28 U.S.C. § 2412, as amended, or at common law.

In the event that the United States, Intervenor or Ohio brings a cause of action or issues an order pursuant to the reservations set forth in Paragraphs 94, 95, 98, 99, 101, 102, and 105, Defendant reserves, and this Paragraph is without prejudice to, any defenses and any claims, whether by counterclaim or otherwise, regarding and limited to the subject matter of and in response to the cause of action brought by, or order issued by, the United States, Intervenor or Ohio, except as provided in Paragraph 110 (Waiver of Claim-Splitting Defenses).

107. The Defendant reserves, and this Consent Decree is without prejudice to, claims against the United States, subject to the provisions of Chapter 171 of Title 28 of the United States Code, for money damages for injury or loss of property or personal injury or death caused by the negligent or wrongful act or omission of any employee of the United States while acting within the scope of his office or employment under circumstances where the United States, if a private person, would be liable to the claimant in accordance with the law of the place where the act or omission occurred. No such claim shall include a claim based on EPA's selection of response actions, or the approval of the Defendant's plans or activities. The provisions of this Paragraph shall apply only to claims which are brought pursuant to any statute other than CERCLA and/or which the waiver of sovereign immunity is found in a statute other than CERCLA.

108. 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).

109. Except as set forth in Attachment 8 with respect to the Intervenor, Defendant shall not seek indemnification from the United States, Ohio, Intervenor, their agencies, departments, officials, employees, contractors, or agents relating to any of Plaintiffs' pending claims for relief; provided, however, that if Plaintiffs seek additional relief with respect to any rights reserved under Sections XVIII (Covenant Not to Sue of United States and Intervenor) and XIX (Covenant Not to Sue of Ohio), Defendant reserves any right it may have to seek indemnification with respect to the subject matter of such claims for additional relief.

110. In any subsequent administrative or judicial proceeding initiated by the United States or Ohio for injunctive relief, recovery of response costs, or other appropriate relief relating to the Facility, Defendant shall not assert, and may not maintain, any defense or claim based upon the principles of waiver, res judicata, collateral estoppel, issue preclusion, claim-splitting, or other defenses based upon any contention that the claims raised by the United States or Ohio in the subsequent proceeding were or should have been brought in the instant case; provided, however, that nothing in this Paragraph affects the enforceability of the covenants not to sue set forth in Section XVIII (Covenant Not to Sue of United States and Intervenor) and Section XIX (Covenant Not to Sue of Ohio).

XXI. RECORD RETENTION

111. Defendant shall preserve and maintain, during the pendency of this Consent Decree, and for a minimum of five (5) years after termination of this Consent Decree, at least one legible copy of all reports required to be generated by Defendant under this Consent Decree, together with documentation, in either electronic or hard copy form, of the research and data used to generate such reports or which otherwise demonstrate the performance of Defendant's

obligations under this Consent Decree. In addition, all memoranda, written or electronic communications, meeting minutes, and drafts prepared in connection with each report required to be generated by Defendant under this Consent Decree, and relevant to the issue of the adequacy of Defendant's performance of its obligations under this Consent Decree, shall be maintained until one (1) year following EPA's written approval of each final report, regardless of any corporate document retention policy to the contrary.

112. Notwithstanding the provisions of Paragraph 111, Defendant may request in writing permission from EPA to not preserve, to not maintain, or to destroy certain specified categories of documents. Defendant's obligations under Paragraph 111 will remain unchanged, however, unless and until EPA, after consultation with OEPA and the Intervenors, in its discretion issues written approval of the request.

113. Upon the expiration of any obligation under Paragraph 111, Defendant shall provide no less than 90 days notice to the Plaintiffs that no further preservation or maintenance of records is planned, or that destruction of records is planned, and shall make such non-privileged records available to EPA and OEPA for inspection, copying or retention. This notification will identify the nature of the records and their storage location or locations.

114. Defendant further agrees that within thirty (30) days of retaining or employing any agent, consultant or Contractor for the purpose of carrying out the terms of this Consent Decree, Defendant will enter into an agreement, with any such agents, consultants or Contractors whereby such agents, consultants and/or Contractors will be required to provide a copy to Defendant for subsequent retention by Defendant in accordance with Paragraph 111, of all documents produced pursuant to this Consent Decree. Such agreement shall require said agents,

consultants and/or Contractors upon completion of their work to furnish Defendant a copy or originals of all documents, data, analyses, and all other materials created or obtained during their performance of Work specified in this Consent Decree.

115. Nothing in this Consent Decree in any way limits Defendant's obligations under any federal or state law, regulation or permit to preserve any record, log or document for more than five (5) years from the date of creation or receipt by Defendant of such record, log, or document.

XXII. GENERAL PROVISIONS

116. This Consent Decree shall not be construed as a ruling or determination of any issue related to any federal, state, tribal, or local permit required in order to implement this Consent Decree or to continue or alter operations of the Facility (including but not limited to construction, operation, or closure permits required under RCRA), and Defendant shall remain subject to all such permitting requirements. Defendant shall be responsible for obtaining any federal, state, or local permit(s) for any activity at the Facility, including those necessary for the performance of the Work required by this Consent Decree.

117. Nothing in this Consent Decree shall relieve Defendant of its obligation to comply with all applicable provisions of federal, state or local law, nor shall anything in this Consent Decree be construed to be a ruling on, or determination of, any issue related to any federal, state or local permit, nor shall it be construed to constitute EPA approval of the equipment or technology installed by Defendant in connection with the SEP under the terms of this Consent Decree. After exercising due diligence and conducting appropriate inquiries, Defendant certifies that, to its knowledge, as of the date of lodging of this Consent Decree, the Facility is in compliance with

each of the specific requirements that is the basis of Plaintiff's pending claims for relief under the CWA and CAA.

118. Non-Waiver. Plaintiffs do not, by their consent to the entry of this Consent Decree, warrant or aver in any manner that Defendant's complete compliance with this Consent Decree will constitute or result in compliance with the provisions of the CWA, RCRA, and/or CAA nor shall EPA's approval of any submission made by Defendant under this Consent Decree constitute a warranty that implementation by Defendant of the approved submission will result in compliance with the provisions of the CWA, RCRA, and/or CAA. Except as expressly provided in Paragraphs 93 and 100 of this Consent Decree (Covenant Not To Sue of United States and Intervenors, and Covenant Not to Sue of Ohio), the parties agree that compliance with this Consent Decree shall not be a defense to any actions commenced pursuant to such laws or regulations.

119. Modifications. Except as specifically provided for herein, no modifications shall be made to this Consent Decree without written agreement of all parties and written approval of the Court. Changes to the technical and schedule provisions set forth in the Attachments hereto may be made without approval by the Court under the terms set forth in the respective Attachments, or upon written agreement between Defendant and EPA, after reasonable opportunity for review and comment by OEPA and Intervenors. Nothing in this Section XXII (General Provisions) shall be deemed to alter the Court's power to supervise or modify this Consent Decree.

120. Retention of Jurisdiction. The Court shall retain jurisdiction of this matter. Plaintiffs retain the right to seek to enforce the terms of this Consent Decree and take any other action

authorized by federal, state or local law to achieve or maintain compliance with this Consent Decree.

121. Indemnification. Defendant agrees to indemnify and save and hold harmless the United States and Ohio, their agencies, departments, agents and employees, from any and all claims or causes of action arising from or on account of the acts or omissions of Defendant or its agents, representatives, employees, Contractors, and subcontractors in carrying out the SEP and Work required by this Consent Decree.

122. Entire Agreement. This Consent Decree, including the attached Attachments, represents the entire agreement among the parties. Attached hereto are the following: Attachment 1 is the Interim Measures Scope of Work; Attachment 2 is the RCRA Facility Investigation/Corrective Measures Study Scope of Work; Attachment 3 is the Supplemental Environmental Project Scope of Work; Attachment 4 is the References list; Attachment 5 is a Map of Facility, Showing Relationship to Dicks Creek and Monroe Ditch; Attachments 6a - 6d are maps showing the boundaries of the Floodplain; Attachment 7 is a list of documents describing information and conditions known to Plaintiffs; and Attachment 8 is a Site Access and Confidentiality Agreement. Prior drafts of this Consent Decree shall not be used in any action involving the interpretation or enforcement of this Consent Decree.

123. Survivability/Permit Integration. This Consent Decree shall survive the issuance or denial of a RCRA permit for the Facility, and this Consent Decree shall continue in full force and effect after either the issuance or denial of such permit. Accordingly, Defendant shall continue to be liable for the performance of obligations under this Consent Decree notwithstanding the issuance or denial of such permit.

124. Termination.

a. After Defendant has maintained compliance with Subparagraphs 14.a-14.d and 15.a-15.c of this Consent Decree for a period of one (1) year after the Effective Date of this Consent Decree, Defendant may serve upon the Plaintiffs a request to terminate its obligations under such provisions. Any such request shall include a certification that Defendant has satisfied the requirements of such provisions and shall provide all necessary supporting documentation.

i. If the United States, after consultation with Ohio and the Intervenors, agrees that Defendant has satisfied the requirements of Subparagraph 124.a, above, the Parties shall submit for the Court's approval a joint stipulation providing for termination of the Defendant's obligations under Subparagraphs 14.a-14.d and 15.a-15.c.

ii. If the United States, after consultation with Ohio and the Intervenors, does not agree that Defendant has satisfied the requirements of Subparagraph 124.a above, the United States shall notify Defendant of its determination, and Defendant may seek Dispute Resolution under Section XIII of this Consent Decree.

b. After Defendant has (1) received a Acknowledgment of Final Completion pursuant to Paragraph 89 of this Consent Decree, (2) paid all penalties, interest, and other amounts due pursuant to this Consent Decree and (3) complied with all other requirements of this Consent Decree (including those relating to the SEP required by Section VI of this Consent Decree) except for requirements relating to continuing operation and maintenance of any Interim Measures or Stabilization measures required pursuant to Attachment 1 or Paragraph 22 or to continuing Financial Assurance for such operation and maintenance obligations, Defendant may

serve upon the Plaintiffs a request to terminate its remaining obligations under this Consent Decree, subject to the provisions of Subparagraph 124.c. Any such request shall include a certification that Defendant has satisfied the requirements identified in this Subparagraph 124.b and shall provide all necessary supporting documentation.

i. If the United States, after consultation with Ohio and the Intervenors, agrees that Defendant has satisfied the requirements of Subparagraph 124.b, above, the Parties shall submit, for the Court's approval, a joint stipulation providing for termination of the Defendant's remaining obligations under this Consent Decree, subject to the provisions of Subparagraph 124.c.

ii. If the United States, after consultation with Ohio and the Intervenors, does not agree that Defendant has satisfied the requirements of Subparagraph 124.b above, the United States shall notify Defendant of its determination, and Defendant may seek Dispute Resolution under Section XIII of this Consent Decree.

c. Notwithstanding termination of any obligations of Defendant pursuant to Subparagraphs 124.a or 124.b of this Paragraph,

i. any obligation of Defendant under this Consent Decree for operation and maintenance of any Interim Measure or stabilization measure required pursuant to Attachment 1 or Paragraph 22 of this Consent Decree shall remain in effect and enforceable under this Consent Decree except as otherwise provided by the terms of an approved operation and maintenance plan or as otherwise agreed in writing by Parties to this Consent Decree;

ii. any Financial Assurance obligations relating to such operation and maintenance activities, shall remain in effect and enforceable under this Consent Decree, except as provided in Subparagraph 24.b.xviii.

XXIII. EFFECTIVE DATE

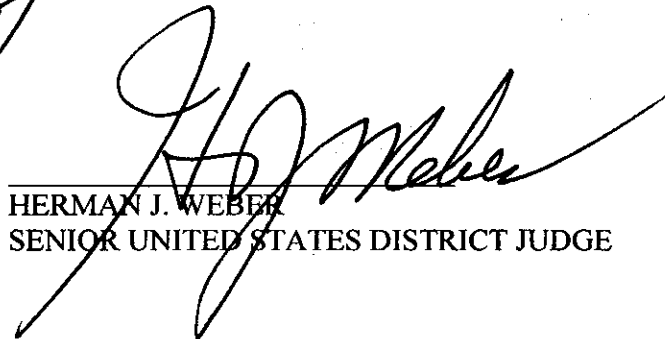
125. This Consent Decree shall be effective upon the date of its entry by the Court.

XXIV. PUBLIC COMMENT

126. Final approval of this Consent Decree by the United States is subject to the public notice and comment requirements of 28 C.F.R. § 50.7. The United States reserves the right to withdraw or withhold its consent if the public comments establish that entry of this Consent Decree would be inappropriate, improper or inadequate. After reviewing public comments, if any, the United States shall advise the Court and Defendant by motion whether it seeks entry of this Consent Decree. Defendant agrees to the entry of this Consent Decree without further notice.

Judgment is hereby entered in accordance with the foregoing Consent Decree this 12th day of May 2006. *There is no just reason for delay.*


SO ORDERED.


HERMAN J. WEBER
SENIOR UNITED STATES DISTRICT JUDGE

Consent Decree: *United States, et al. v. AK Steel Corporation*, Civil Action No. C-1-00530

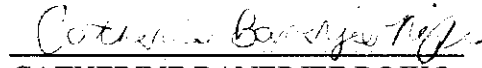
FOR THE UNITED STATES OF AMERICA:

Date: _____


SUE ELLEN WOOLDRIDGE
Assistant Attorney General
Environment and Natural Resources
Division

Date: 3/28/06

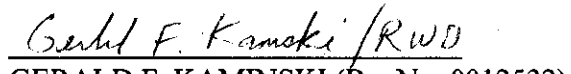
By:


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GREGORY G. LOCKHART
United States Attorney
Southern District of Ohio


Date: 3/28/06

By:


GERALD F. KAMINSKI (Bar No. 0012532)
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Cincinnati Ohio, 45202
(513) 684-3711

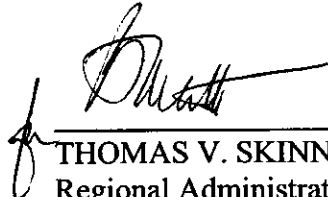
Consent Decree: *United States, et al. v. AK Steel Corporation*, Civil Action No. C-1-00530

Date: March 30, 2006


GRANTA Y. NAKAYAMA
Assistant Administrator for Enforcement
and Compliance Assurance
U.S. Environmental Protection Agency
1200 Pennsylvania Ave., N.W.
Washington, D.C. 20004


Consent Decree: *United States, et al. v. AK Steel Corporation*, Civil Action No. C-1-00530

Date: March 16, 2006



THOMAS V. SKINNER
Regional Administrator, Region 5
U.S. Environmental Protection Agency
77 W. Jackson Boulevard
Chicago, Illinois 60604-3590

Date: March 15, 2006




ROBERT GUENTHER
Associate Regional Counsel, Region 5
U.S. Environmental Protection Agency
77 W. Jackson Boulevard
Chicago, Illinois 60604-3590

Consent Decree: *United States, et al. v. AK Steel Corporation*, Civil Action No. C-1-00530

FOR THE STATE OF OHIO:

JIM PETRO
ATTORNEY GENERAL

Date: March 20, 2006



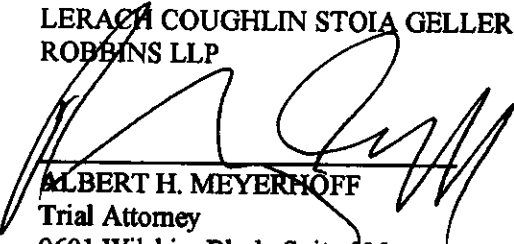
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Consent Decree: *United States, et al. v. AK Steel Corporation*, Civil Action No. C-1-00530
FOR SIERRA CLUB AND NATURAL RESOURCES DEFENSE COUNCIL:

Date:

3/22/06

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FOR NATURAL RESOURCES DEFENSE COUNCIL:

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(212) 727-1773 (fax)

Consent Decree: *United States, et al. v. AK Steel Corporation*, Civil Action No. C-1-00530

FOR AK STEEL CORPORATION:

Date: 3/30/06



DAVID C. HORN
Senior Vice President,
General Counsel and
Secretary
AK Steel Corporation

ATTACHMENT 1

**Interim Measures
Scope of Work**

I. Purpose

The purpose of the Interim Measures (IMs) described in this Scope of Work (SOW) is to control or abate potential threats to human health and the environment and/or to prevent or minimize the release or potential release of hazardous wastes or hazardous constituents at or from the Facility prior to completion of the RCRA Facility Investigation (RFI) and the Corrective Measures Study (CMS) required by the Consent Decree. AK Steel shall implement the Interim Measures described herein in accordance with the requirements of the Consent Decree, this SOW, the approved Interim Measures Workplan(s), and any other plans approved by EPA pursuant to this SOW. AK Steel shall furnish all personnel, materials and services necessary for, or incidental to, performing the IMs.

II. Scope

AK Steel shall implement all Interim Measures described in this SOW in accordance with the Interim Measures Workplan(s) required in Section III, Part 1, below; the Health and Safety Plan required in Section III, Part 2, below; the Interim Measures Design Program required in Section III, Part 3, below; the Interim Measures reporting requirements set forth in Section III, Part 4, below; and the Schedule set forth in Section III, Part 5, below.

The Interim Measures to be implemented by AK Steel pursuant to this SOW shall include the following:

1. Dicks Creek floodplain soil sampling and analysis. AK Steel shall collect and analyze soil samples from the Dicks Creek floodplain in accordance with the Floodplain Soil Sampling and Analysis Plan approved with conditions by EPA on March 21, 2005.
2. Excavation and proper disposal of any Dicks Creek floodplain soils containing more than 5 mg/kg of polychlorinated biphenyls (PCBs), as demonstrated during implementation of the approved Floodplain Soil Sampling and Analysis Plan, approved with conditions by EPA on March 21, 2005. Excavation of floodplain soil may require pre-construction notification of the United States Army Corps of Engineers ("USACE") and, as appropriate, a permit under section 404 of the CWA, and certification from OEPA pursuant to section 401 of the CWA. AK Steel shall submit to OEPA a Notice of Intent for coverage under the General Construction Activity Storm Water Permit.
3. Delineation, containment and recovery of free product in the vicinity of Monitoring Well MDA-33S. AK Steel will conduct a supplemental investigation in accordance with the provisions of the approved Uplands Sources Sampling and Analysis Plan (soil borings and temporary wells, groundwater monitoring and analysis) to delineate the nature and extent of free product in and around MDA-33S. AK Steel will contain and recover free product in the vicinity of monitoring well MDA-33S near Monroe Ditch by constructing a sheet pile barrier to prevent the migration of free product into Monroe Ditch, installing recovery wells at each end of the sheet pile containment barrier, periodically checking the wells for free product in accordance with the approved Operation and Maintenance (O&M) Plan, and removing any free product in the manner described in the approved O&M Plan. The sheet piling used to construct the containment barrier will be anchored into the underlying clay unit (the clay unit noted on the MDA-33S boring log to be at a depth of approximately 11 feet) with care to prevent breaching of the clay. The soil borings and temporary wells and sentinel/recovery wells shall be

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installed/screened such that the bottom of the boring/well screen interval penetrates into the underlying till. Operation and maintenance of the installed system shall be described in an O&M Plan to be submitted for review and approval in accordance with Section IX of the Consent Decree. The O&M Plan shall include provisions indicating how frequently AK Steel will check to determine if free product is present in the recovery wells and describing how AK Steel will remove such free product.

IM 3 will be completed as part of the upland source control effort prior to the implementation of IMs 6, 7, and 8.

4. Delineation, excavation and proper disposal of contaminated soils containing more than 5 mg/kg PCBs in the areas described in 4.A - 4.C, below, and, in the case of the area described in 4.C, containing oils, and restoration of the excavated area with clean fill and native vegetation or clean fill and gravel, as applicable.

- A. Soils in the vicinity of AK Steel Soil Sample SS-01 in the slag processing area.
- B. Soils in the vicinity of EPA floodplain soil sample S23 located west of Yankee Road on the north side of Dicks Creek.
- C. Soils in the vicinity of EPA floodplain soil samples S25/S28 located near Orman's Welding on the south side of Dicks Creek.

AK Steel shall delineate any contamination in the area described in 4.A in accordance with the provisions of the approved Upland Sources Sampling and Analysis Plan. AK Steel shall delineate any contamination in the areas described in 4.B & 4.C concurrently with IM 1, and in accordance with the provisions of the Floodplain Soil Sampling and Analysis Plan, approved with conditions by EPA on March 21, 2005.

Excavation of floodplain soil in the areas described in 4.B and 4.C may require pre-construction notification of the United States Army Corps of Engineers ("USACE") and, as appropriate, a permit under Section 404 of the CWA.

IM 4 will be completed as part of the upland source control effort prior to the implementation of IMs 6, 7, and 8.

5. Delineation, excavation and proper disposal of contaminated soils containing more than 25 mg/kg PCBs in the vicinity of AK Steel soil boring BH-08, and restoration of the excavated area with clean fill and native vegetation or clean fill and gravel, as applicable. AK Steel will collect and analyze soil samples in the vicinity of AK Steel boring BH-08 in accordance with the approved Upland Sources Sampling and Analysis Plan.

IM 5 will be completed as part of the upland source control effort prior to the implementation of IMs 6, 7, and 8.

6. Delineation, excavation and proper disposal of sediment and other material from Monroe Ditch, the Outfall 002 Channel and Reach 1 of Dicks Creek. AK Steel shall delineate the lateral and vertical extent of sediment present in the portion of Monroe Ditch on AK Steel's property, in the Outfall 002 Channel and in Reach 1 of Dicks Creek through a combination of depth probing and coring, in accordance with the approved Sediment Delineation Plan. AK Steel shall probe

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sediment depth at sufficient intervals to adequately delineate the horizontal and vertical extent of sediment depositional areas. AK Steel shall also collect at least 8 cores in Monroe Ditch and at least 25 cores in Reach 1 of Dicks Creek. Each of these cores shall be advanced to the point of refusal or at least eight (8) feet below the upper surface of the sediments. Nothing in this Paragraph shall be construed to require AK Steel to advance cores into or through bedrock or other rock strata.

In accordance with the approved Sediment Delineation Plan, some cores will be collected initially to verify sediment depth information collected from the depth probings. In addition, samples of the clay or other native material underlying the sediments will be collected from at least 25 cores and analyzed for PCBs in accordance with the approved Sediment Delineation Plan. AK Steel shall delineate the lateral and vertical extent of any areas in Reach 1, the Outfall 002 Channel and Monroe Ditch where PCB concentrations in such clay or other native material underlying the sediment exceed the applicable cleanup standards (i.e., where (1) the spatially-weighted average concentration of PCBs in the clay or other native material exceeds 1.5 mg/kg total PCBs dry weight, or (2) any individual sample of clay or other native material underlying the sediment exceeds 3.0 mg/kg total PCBs dry weight). AK Steel shall create plan view maps as well as cross-sections in order to clearly delineate the cut lines that will be used to excavate sediment and any underlying clay or other native material required to be removed from these areas. Also, access agreements will be required from property owners and approval of the Final Design Documents will be required from state and local transport authorities, appropriate railroad companies and utilities, as necessary.

AK Steel shall excavate and properly dispose of all sediment, as well as any underlying clay or other native material that exceeds the aforementioned cleanup standards in Monroe Ditch, the Outfall 002 Channel and Reach 1, as specified in the approved Final Sediment Remediation Design Document. In each of these areas, excavation work shall proceed from upstream to downstream.

AK Steel shall submit to OEPA applications for an NPDES permit and a Permit to Install ("PTI") for any dredge de-watering treatment and discharge system. This project will require a 401 Water Quality Certification issued from the State of Ohio, even if the USACE determines the activity can proceed under a nationwide permit. The application for the 401 Water Quality Certification shall occur at the same time as all other NPDES and PTI applications required by the Division of Surface Water, Ohio EPA, so that one antidegradation public hearing for all applications can be scheduled for the same date.

7. Delineation, excavation and proper disposal of sediment and other material from Reach 2 of Dicks Creek. AK Steel shall delineate the lateral and vertical extent of sediment to be removed from Reach 2 of Dicks Creek through a combination of probing and coring, as provided in the approved Sediment Delineation Plan. AK Steel shall probe sediment depth at sufficient intervals to adequately delineate the horizontal and vertical extent of sediment depositional areas in Reach 2. AK Steel shall also collect at least 30 cores in Reach 2 of Dicks Creek. Each of these cores shall be advanced to the point of refusal or at least eight (8) feet below the upper surface of the sediments. Nothing in this Paragraph shall be construed to require AK Steel to advance cores into or through bedrock or other rock strata.

In accordance with the approved Sediment Delineation Plan, some cores will be collected initially to verify sediment depth information collected from the depth probings. In addition, samples of sediments or clay or other native material underlying the sediments will be collected

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from the cores and analyzed for PCBs as specified in this Paragraph and the approved Sediment Delineation Plan.

A. In any portions of Reach 2 where the bottom of sediment is identified from probing and/or coring in accordance with the approved Sediment Delineation Plan, AK Steel shall excavate and properly dispose of all sediment, as well as any underlying clay or other native material that exceeds the applicable cleanup standard (i.e., where (1) the spatially-weighted average concentration of PCBs in such clay or other native material exceeds 1.5 mg/kg total PCBs dry weight, or (2) any individual sample of such clay or other native consolidated material exceeds 3.0 mg/kg total PCBs dry weight), in accordance with the approved Final Sediment Remediation Design Document.

From each core collected in portions of Reach 2 where the bottom of sediment is identified through coring in accordance with the approved Sediment Delineation Plan, AK Steel shall collect samples of any clay or other native material underlying Reach 2 sediment deposits and analyze the samples for PCBs. In such portions of Reach 2, AK Steel shall delineate the lateral and vertical extent of any areas where the clay or other native material underlying the sediment exceeds the aforementioned cleanup standard, consistent with the approved Sediment Delineation Plan, and in accordance with the approved Final Sediment Remediation Design Document.

B. In any portions of Reach 2 where the bottom of sediment is not identified from coring in accordance with the approved Sediment Delineation Plan, AK Steel shall excavate and properly dispose of the top two feet of sediment, as well as any additional underlying material that exceeds the applicable cleanup standard (i.e., where (1) the average concentration of PCBs exceeds 1.5 mg/kg total PCBs dry weight, or (2) any individual sample exceeds 3.0 mg/kg total PCBs dry weight).

From each core that recovers more than two feet of sediment in portions of Reach 2 where the bottom of sediment is not identified through coring in accordance with the approved Sediment Delineation Plan, AK Steel shall collect sample(s) of sediment beneath the top two feet of sediment and analyze such sample(s) for PCBs. In such portions of Reach 2, AK Steel shall delineate the lateral and vertical extent of any areas where PCB concentrations exceed the aforementioned cleanup standard in sediments beneath the top two feet of sediment.

C. AK Steel shall create plan view maps as well as cross-sections that clearly delineate cut lines that will be used to excavate all sediment and underlying clay or other native material required to be removed from Reach 2. The total number of cores collected by AK Steel in Reach 2 shall be sufficient to verify statistically that the cut lines will achieve the applicable cleanup standards. Excavation work in Reach 2 shall proceed from upstream to downstream.

AK Steel shall submit to OEPA applications for a NPDES permit and a PTI for any dredge dewatering treatment and discharge system. This IM will require a 401 Water Quality Certification issued from the State of Ohio, even if USACE determines the activity can proceed under a nationwide permit. The application for the 401 Water Quality Certification shall occur at the same time as all other NPDES and PTI applications required by the OEPA Division of Surface Water, so that one antidegradation public hearing for all applications can be scheduled for the same date. Also, access agreements will be required from property owners and approval of the Final Design Documents will be required from state and local transport authorities, appropriate railroad companies and utilities, as necessary.

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8. Restoration of the Outfall 002 channel, Reach 1 of Dicks Creek and Monroe Ditch after remediation. Upon completion of (or concurrent with) IM 6, AK Steel shall install rip-rap in the Outfall 002 channel (to restore it to pre-existing grade), and restore Reach 1 of Dicks Creek with clean sand, gravel and cobble, as appropriate, to minimize channel incision and restore biological productivity to the maximum extent practical. For Reach 1 of Dicks Creek, at least 1 foot of clean material will be placed in areas where 1 or more feet of sediments have been removed. Design of restoration of Reach 1 of Dicks Creek shall include measures to minimize down-cutting or under-cutting of the streams upstream and downstream from the areas undergoing remediation.

With regard to Monroe Ditch, from the railroad culvert to the existing concrete liner, upon completion of (or concurrent with) IM 6, AK Steel shall design and implement restoration of this stream in order to limit movement of contaminants from the adjacent areas, minimize channel incision, restore biological productivity to the maximum extent practical and limit further impairment of the stream. At a minimum, AK Steel shall consider the following issues when designing and implementing the restoration: (1) the need for an impervious synthetic liner in Monroe Ditch from the railroad culvert to the existing concrete liner, including, but not limited to, the usage of an underdrain system in the stream with treatment for the collected water, in-bed containment walls, and layers of liner and (2) restoration of the stream's biological habitat, including stream substrate restoration through placement of clean sand, gravel and cobble, prevention of channel incision, measures to minimize down-cutting or under-cutting of the stream upstream and downstream of the area undergoing remediation, establishment of a floodplain/floodway and other riparian restoration measures.

The origin of the clean material used for the Outfall 002 channel, Reach 1 of Dicks Creek and Monroe Ditch will be specified within the approved Final Sediment Remediation Design Document. This IM will require a 401 Water Quality Certification issued from the State of Ohio, even if USACE determines the activity can proceed under a nationwide permit. As stated above, the application for the 401 Water Quality Certification shall occur at the same time as all other NPDES and PTI applications required by the OEPA Division of Surface Water, so that one antidegradation public hearing for all applications can be scheduled for the same date. Also, access agreements will be required from property owners and approval of the Final Design Documents will be required from state and local transport authorities, appropriate railroad companies and utilities, as necessary.

9. Continued operation of existing groundwater interceptor trench to prevent PCB-containing seeps from entering Monroe Ditch. An O&M Plan will be developed and submitted for review and approval in accordance with Section IX of the Consent Decree to ensure proper operation and maintenance of the existing interceptor trench, consistent with current procedures. The O&M Plan shall provide that: samples of the influent and effluent to the treatment system will be collected and analyzed on a weekly basis, as currently performed; samples of Monroe Ditch and Dicks Creek water samples will be collected and analyzed on a monthly basis, as currently performed; and operation and maintenance reports will be submitted to OEPA on a quarterly basis. AK Steel shall operate the existing interceptor trench in accordance with the approved O&M Plan until no PCBs are detected in the influent to the interceptor trench treatment system for a period of at least 18 consecutive months.

10. Groundwater seep inspection and control. AK Steel shall inspect the banks of Dicks Creek adjacent to AK Steel property and the banks of Monroe Ditch for groundwater seeps every

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2 weeks, weather conditions permitting, and document the results of those inspections in its records. If weather conditions do not permit a scheduled inspection, the missed inspection will be undertaken the following week, weather conditions permitting, and subsequent inspections every two weeks thereafter, weather conditions permitting. If any new seep is detected, the new seep shall be sampled. All such samples shall be analyzed for PCBs, and if the seep is located outside the area covered by the phyto-remediation barrier described in IM 12, for pH. In any case where PCBs are detected in a seep, AK Steel shall also collect a sample of sediment or soil potentially impacted by such seep and analyze such sample for PCBs. If any sample required pursuant to this Paragraph contains PCBs, or if any such sample outside of the area covered by the phyto-remediation barrier described in IM 12 exhibits a pH greater than 9.0, then within 30 days after receiving results of analysis of all samples required pursuant to this Paragraph relating to a particular seep, AK Steel shall submit for approval in accordance with Section IX of the Consent Decree an Interim Measures Workplan providing for control of discharges from the seep, or a report evaluating whether the seep satisfies the criteria for implementation of Stabilization activities under Paragraph 22 of the Consent Decree.

AK Steel shall implement the groundwater seep inspections until no high pH (i.e. pH > 9) or PCBs are detected in any new seeps for a period of 18 months.

AK Steel shall address the requirements for the seep inspection and sampling pursuant to this IM in the O&M Plan required under IM 9.

11. Signs and fencing. Until completion of IM 2 through 8, above, AK Steel shall inspect and repair existing signs and fencing, as delineated in Exhibit A, on a monthly basis and document the results of these efforts in its records. AK Steel can remove the signs at the completion of IM 2-8. AK Steel shall ensure that gates on AK Steel property remain locked to restrict access to Dicks Creek. AK Steel shall address the requirements for this IM in the O&M Plan required under IM 9.

12. Control of groundwater seeps to Dicks Creek along the south bank. AK Steel will control groundwater seeps emanating from the south bank of Dicks Creek by evaluating and installing a phyto-remediation barrier over a 3,000 foot long area. The Interim Measures Workplan required pursuant to this SOW shall include (but not be limited to) the following information regarding the phyto-remediation barrier: number and species of plants to be used and how they will be planted; flow rates of ground water through the phyto-barrier; expected ranges of pH in the ground water; climate data for the site; some explanation of control effectiveness during plant dormancy period; time frame for implementation; and proposed O&M plan. AK Steel shall submit to OEPA an application for a PTI for the phyto-remediation barrier. Work under this IM may require pre-construction notification of the USACE and, as appropriate, a permit under Section 404 of the CWA, and certification from OEPA pursuant to Section 401 of the CWA.

III. Interim Measures Components

Components of the Interim Measures, which are discussed in more detail below, include the following:

Part I: Interim Measures Workplans

- A. Interim Measures Objectives and Scope
- B. Waste Characterization and Management

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- C. Public Involvement
- D. Quality Assurance
- E. Data Management and Reporting

Part 2: Health and Safety Plan

Part 3: Interim Measures Design Program

- A. Design Plans and Specifications
- B. Operations and Maintenance Plan
- C. Project Schedule
- D. IM Construction Quality Assurance Objectives

Part 4: Reports and Submittals

- A. Progress Reports
- B. Interim Measures Workplans
- C. Final Design Documents
- D. Interim Measures Report

Part 5: Schedule

Part 1: Interim Measures Workplans

Except as provided below in this paragraph, AK Steel shall prepare and submit for review and approval in accordance with Section IX of the Consent Decree Interim Measures Workplans to implement each of the Interim Measures described in Section II of this SOW, as well as an amended or supplemental Workplan(s) for any subsequent Stabilization required by EPA under paragraph 22 of the Consent Decree or additional Interim Measure proposed by AK Steel. AK Steel may elect to include more than one Interim Measure in a single workplan. In lieu of submitting Interim Measures Workplans for IMs 9, 11, and the groundwater seep inspection and sampling activities required under IM 10, AK Steel shall prepare and submit for review and approval in accordance with Section IX of the Consent Decree and in accordance with the schedule set forth in Part 5 of this SOW, an O&M Plan providing for implementation of such requirements. The Workplan(s) shall include the Floodplain Soil Sampling and Analysis Plan, the Sediment Delineation Plan, and the Upland Sources Sampling and Analysis Plan. The Workplan(s) for IMs 2, 3, 4, 5, 6, 7, 8 and 12 shall include each of the components described in Part 1.A - 1.E below.

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A. Interim Measures Objectives and Scope

The IM Workplan(s) shall specify in detail the objectives and scope of each IM, demonstrate how the IM will abate releases and threatened releases, and to the extent possible, be consistent and integrated with any long-term solution at the facility. The IM Workplan(s) will, as applicable, include a detailed discussion of the technical approach for each IM, including any sampling and analysis to be performed, a basis for the engineering design, engineering plans, schedules with implementation milestones for completion of each IM, and a description of key personnel responsible for directing the Interim Measures. Within 60 days after approval of each IM Workplan, a statement describing qualifications of key personnel performing the Interim Measures, including, as appropriate, contractor personnel, will be submitted for approval in accordance with Section IX of the Consent Decree. The IM Workplan(s) shall also document the overall management approach to the Interim Measures; include a Quality Assurance Project Plan (QAPP) and specify how data management and reporting will be accomplished for the IM.

B. Waste Characterization and Management

The IM Workplan shall provide a detailed description of how AK Steel will characterize, manage and dispose of any contaminated soils, sediments, wastewater and other wastes generated as a result of implementation of the Interim Measures.

C. Public Involvement

As part of the IM Workplan(s), AK Steel shall provide for public involvement in activities relating to the Interim Measures. AK Steel must never appear to represent or speak for EPA, OEPA, or Intervenors before the public, other government officials, or the media.

Public Involvement activities may include the following:

1. Conducting an open house and informal meeting(s) (i.e., availability session(s)), as appropriate, in a public location where people can talk to Agency officials and AK Steel on a one-to-one basis;
2. Preparing fact sheets summarizing current or proposed Interim Measure activities (all fact sheets shall be submitted to EPA, OEPA, and Intervenors for review prior to public distribution);
3. Maintaining an easily accessible repository (such as a municipal building or public library) of information on the facility-specific Interim Measure program, including the Consent Decree, approved workplans, and/or other reports.

A plan and proposed schedule for community relations activities shall be included in the public involvement component of the IM workplan(s), except for the approved Floodplain Soil Sampling and Analysis Plan, and the approved Sediment Delineation Plan. This schedule may be revised as appropriate, with EPA approval following reasonable notice to and opportunity to comment by OEPA and Intervenors.

D. Quality Assurance Project Plan(s) (QAPP)

As part of the IM Workplans, AK Steel shall prepare one or more QAPPs to document all monitoring procedures, sampling, field measurements and sample analysis performed during the IM so as to ensure that all information, data, and resulting decisions are technically sound, statistically valid, and properly documented. The QAPP(s) shall be prepared in accordance with guidance specified in Attachment 4 to the Consent Decree. A pre-QAPP meeting may be held prior to preparation of the QAPP. If held, AK Steel shall notify and afford an opportunity to participate to its QAPP preparer, laboratory representatives, EPA Project Coordinator, EPA Quality Assurance representatives, OEPA staff, and representatives of Intervenors.

A laboratory performance audit may be conducted by EPA or OEPA on the laboratory selected by AK Steel.

E. Data Management and Reporting

As part of the IM Workplan(s), AK Steel shall develop and implement data management and reporting procedures to document and track interim measures data and results. This component of the IM Workplan(s) shall identify and set up data documentation materials and procedures, project file requirements, and project-related progress reporting procedures and documents. The format to be used to present the raw data and conclusions of the Interim Measures shall be provided. As a final output, all locational, soil, sediment, water and groundwater data shall be submitted in an electronic database suitable for display in a GIS format.

Part 2: Health and Safety Plan

Concurrently with submission of the IM Workplan(s), AK Steel shall submit the Health and Safety Plan to EPA, OEPA and Intervenors for review. The Health and Safety Plan is not subject to approval pursuant to the Consent Decree; however EPA may submit comments on the Health and Safety Plan.

A. Major elements of the Health and Safety component may include:

- Facility description, including availability of resources such as roads, water supplies, electricity and telephone services;
- Description of the known hazards and evaluation of the risks associated with the known hazards and with each activity conducted;
- A list of key personnel and alternates responsible for site safety, response operations, and protection of human health;
- Description of the levels of protection to be worn by personnel;
- Delineation of the work area;
- Procedures to control site access;
- Description of decontamination procedures for personnel and equipment;

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- Site emergency procedures;
- Emergency medical care for injuries and toxicological problems;
- Description of requirements for an environmental surveillance program;
- Routine and special training required for response personnel; and
- Procedures for protecting workers from weather-related problems;

B. The IM Health and Safety component shall be consistent with:

- NIOSH Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities (1985);
- EPA Order 1440.1 - Respiratory Protection;
- EPA Order 1440.3 - Health and Safety Requirements for Employees engaged in Field Activities;
- Facility Contingency Plan;
- EPA Standard Operating Safety Guide (1984);
- OSHA regulations particularly in 29 CFR 1910 and 1926;
- State and local regulations; and
- Other EPA guidance as appropriate.

Unless the Parties agree that other measures of personal protection are appropriate for particular activities or areas, representatives from EPA and OEPA agree to wear safety glasses with permanently affixed side shields, hard hats, long sleeve shirts, long pants, and leather steel toed shoes with metatarsal protection when visiting the Facility in connection with implementation of any Interim Measures, except that rubber boots may be worn in lieu of leather steel toed shoes with metatarsal protection for investigatory activities in Floodplain areas, Dicks Creek and Monroe Ditch. The Defendant shall supply leather steel-toed shoes with metatarsal protection upon request by EPA and OEPA. Intervenors shall comply with safety practices of AK Steel when on the Facility, as specified in Attachment 8 to the Consent Decree.

Part 3: Interim Measures Design Program

A. Design Plans and Specifications

AK Steel shall develop and submit for approval in accordance with Section IX of the Consent Decree clear and comprehensive design plans and specifications for IMs 2, 3, 4, 5, 6, 7, 8 and 12. Such design plans and specifications shall include the following, as applicable:

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1. Discussion of the design strategy and the design basis;
2. Discussion of the technical factors of importance;
3. Description of assumptions made and detailed justification of these assumptions;
4. Discussion of the possible sources of operation and maintenance problems;
5. Detailed drawings of the proposed design;
6. Tables listing materials, equipment and specifications; and
7. Appendices including:
 - Sample calculations (one example presented and explained clearly for significant or unique design calculations);
 - Derivation of equations essential to understanding the report; and
 - Results of laboratory or field tests.

B. Operation and Maintenance Plan

AK Steel shall prepare and submit for approval in accordance with Section IX of the Consent Decree, an O&M Plan to cover both implementation and long-term maintenance of the Interim Measures. This O&M Plan shall address the requirements for IMs 3, 8, 9, 10, 11, and 12. The O&M Plan for IMs 9, 10, and 11 shall be submitted in lieu of an IM Workplan for these Interim Measures; the O&M Plan for IMs 3, 8, and 12 may be submitted either as part of the IM Workplan or as part of the Final Design Documents. Each O&M Plan shall be composed of the following elements as appropriate to the specific Interim Measure:

1. Equipment start-up and operator training

AK Steel shall prepare, and include in the technical specifications governing treatment systems, contractor requirements for providing appropriate service visits by experienced personnel to supervise the installation, adjustment, start-up and operation of the treatment systems and training covering appropriate operational procedures once the start-up has been successfully accomplished.

2. Description of normal operation and maintenance (O&M), including:
 - Description of tasks for operation;
 - Description of tasks for maintenance;
 - Description of prescribed treatment or operation conditions;

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- Schedule showing frequency of each O&M task; and
 - Common and/or anticipated remedies.
3. Description of routine monitoring and laboratory testing, including:
- Description of monitoring tasks;
 - Description of required laboratory tests and their interpretation;
 - Required QA/QC; and
 - Schedule of monitoring frequency and date, if appropriate, when monitoring may cease.
4. Description of equipment, including:
- Equipment identification;
 - Installation of monitoring components;
 - Maintenance of site equipment; and
 - Replacement schedule for equipment and installed components.
5. Records and reporting mechanisms required, including:
- Daily operating logs;
 - Laboratory records;
 - Mechanism for reporting emergencies;
 - Personnel and maintenance records; and
 - Monthly, quarterly, or annual reports, as specified, to Federal/State agencies.

The O&M Plan shall be submitted with the Final Design Documents or as approved in the Interim Measures Workplan(s).

C. Project Schedule

AK Steel shall develop and submit for approval in accordance with Section IX of the Consent Decree a proposed Project Schedule for construction and/or implementation of each Interim Measure which identifies timing for initiation and completion of all major milestones. At least 7 days prior to initiation of field activities associated with each major milestone task, AK Steel shall notify EPA, OEPA, and Intervenors of the scheduled dates for initiation and completion of such task. AK Steel shall specifically identify dates for completion of the project and major interim milestones which, upon approval, are enforceable terms of the Consent Decree. A

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proposed Project Schedule shall be included within the Interim Measures Workplan and an updated schedule shall be incorporated into the Final Design Documents, as appropriate.

D. Construction Quality Assurance (CQA) Objectives

As part of the Final Design Documents submitted for approval in accordance with Section IX of the Consent Decree, AK Steel shall identify and document the objectives and framework for the development of a construction quality assurance program including the following: inspection activities, sampling requirements and documentation. The responsibility and authority of all organizations (i.e., technical consultants, construction firms, etc.) and key personnel involved in the construction of the Interim Measure shall be described. AK Steel must identify a CQA officer and the necessary supporting inspection staff.

I. Inspection Activities

The observations and tests that will be used to monitor the construction and/or installation of the components of the Interim Measure(s) shall be summarized. The scope and frequency of each type of inspection or test shall be specified. Inspections shall verify compliance with all environmental requirements and include air quality and emissions monitoring records, as appropriate, waste disposal records (e.g., RCRA transportation manifests), etc. The inspection shall also ensure compliance with all health and safety procedures. In addition to oversight inspections, AK Steel shall conduct the following activities:

a. Preconstruction inspection and meeting

AK Steel may conduct a preconstruction inspection and meeting to:

- Review methods for documenting and reporting inspection data;
- Review methods for distributing and storing documents and reports;
- Review work area security and protocol;
- Discuss any appropriate modifications of the construction quality assurance plan to ensure that site-specific considerations are addressed; and
- Conduct a site walk-around to verify that the design criteria, plans, and specifications are understood and to review material and equipment storage locations.

If held, the preconstruction inspection and meeting shall be documented by a designated person and minutes shall be transmitted to all parties.

b. Final inspection

Upon project completion, AK Steel shall notify the Project Coordinators for EPA and OEPA and the Project Representative for Intervenors for the purposes of

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arranging a final inspection. The final inspection will consist of a walk-through inspection of the entire project site. The inspection is to determine whether the project is complete and consistent with the contract documents and the EPA-approved Interim Measures. Any outstanding construction items discovered during the inspection will be identified and noted. Additionally, treatment equipment will be operationally tested by AK Steel. AK Steel will certify that the equipment has performed to meet the purpose and intent of the specifications. Retesting will be completed where deficiencies are revealed. AK Steel will develop a final inspection report within 30 days of the inspection to outline the outstanding construction items, actions required to resolve items, completion date for these items, and date for any necessary follow-up inspection.

Upon completion of any outstanding construction items, AK Steel shall notify the Project Coordinators for EPA and OEPA and the Project Representative for Intervenors, and EPA will determine if a follow-up inspection is necessary. The final inspection report will be used as a checklist for the follow-up focusing on the outstanding items that were unresolved at the time of the last inspection.

In lieu of a single inspection upon completion of all IMs, a select number of final inspections may be conducted following completion of various major components of the IM SOW.

2. Sampling and Testing Requirements

The sampling and testing activities, sample size, sample and test locations, frequency of testing, acceptance and rejection criteria, and plans for correcting problems shall be presented in the CQA program.

3. Documentation

Recordkeeping requirements for CQA activities shall be described in detail. This shall include such items as daily summary reports, inspection data sheets, problem identification reports, design acceptance reports, and final documentation, including as-built plans and specifications. Provisions for the final storage of all records shall be presented.

Part 4: Reports and Submittals

A. Progress

AK Steel shall develop and submit to EPA, OEPA and Intervenors signed, monthly progress reports containing:

1. A description and estimate of the percentage of the Interim Measures completed;
2. Summaries of all findings;
3. Summaries of all changes made in the Interim Measures during the reporting period;

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4. Summaries of all formal contacts with representatives of the local community and public interest groups, or State government other than OEPA during the reporting period;
5. Summaries of all problems or potential problems encountered during the reporting period;
6. Actions being taken to rectify problems;
7. Summary of the status of any permit applications required for the IM;
8. Changes in management personnel during the reporting period; and
9. Projected work for the next reporting period.

B. Interim Measures Workplan

AK Steel shall submit for approval in accordance with Section IX of the Consent Decree the Interim Measures Workplan(s) as described in Section III, Part I.

C. Final Design Documents

AK Steel shall submit for approval in accordance with Section IX of the Consent Decree each of the final design documents described in Section III, Part 3.A through 3.D, above.

D. Interim Measures Report

At the "completion" of each Interim Measure (except for long-term operations, maintenance and monitoring), AK Steel shall submit an Interim Measure Implementation Report to EPA, OEPA and intervenors. Each such Report shall document that the subject Interim Measure is consistent with the design specifications, and that the Interim Measure is performing adequately. Each Interim Measure Implementation Report shall include the following elements:

1. Synopsis of the Interim Measure and certification of design and construction;
2. Explanation of any modifications to the design plan(s) and/or Interim Measures Workplan(s) and why these were necessary for the project;
3. Listing of criteria, established before the Interim Measure was initiated, for judging the functioning of the Interim Measure and also explaining any modification to these criteria;
4. Results of facility monitoring, indicating that Interim Measures will meet or exceed the performance criteria; and
5. Explanation of the operation and maintenance (including monitoring) to be undertaken at the facility.

This report shall be based on the inspection summary reports, inspection data sheets, problem identification reports, any photographic records, any design engineers' acceptance reports,

ATTACHMENT I: IM SOW

deviations from design and material specifications (with justifying documentation) and as-built drawings, which shall be maintained by AK Steel as part of the project files. All such documents shall be made available for inspection by EPA or OEPA, upon request, and if requested AK Steel shall provide copies of any such documents. After completion of all Interim Measures, AK Steel shall submit to EPA, OEPA and Intervenors an Interim Measures Completion Report, including a compilation of the Interim Measures Implementation Reports for each of the Interim Measures. The Interim Measures Completion Report will be the Completion Report for the IM Work required under Section XVI of the Consent Decree.

Part 5: Schedule

AK Steel will provide IM submittals and complete implementation of Interim Measures according to the following schedule:

Requirement	Due Date
Submission of Interim Measures Workplan(s)	
- Floodplain Soil SAP (relating to IMs 1, 4b, 4c)	Already submitted and approved
- Sediment Delineation Plan (relating to IMs 6 and 7)	Already submitted and approved
- Upland Sources SAP (relating to IMs 3, 4a, 5)	Within thirty (30) days after entry of the Consent Decree, unless EPA approves a longer period, after consultation with OEPA and Intervenors
- For all remaining elements of the Workplan(s) for IMs 2, 3, 4, 5, 6, 7, 8	Within thirty (30) days after entry of the Consent Decree, unless EPA approves a longer period, after consultation with OEPA and Intervenors
- Phytoremediation Workplan (IM 12)	Within sixty (60) days of entry of Consent Decree, unless EPA approves a longer period, after consultation with OEPA and Intervenors
- For control of seeps, if required pursuant to IM 10	Within thirty (30) days after receipt of analytical results indicating that seep contains PCBs or pH above 9.0, unless EPA approves a longer period, after consultation with OEPA and Intervenors

ATTACHMENT I: IM SOW

Requirement	Due Date
Submission of Public Involvement Plan Submission of Quality Assurance Plan Submission of Data Management Plan Submission of Health and Safety Plan	Within thirty (30) days after entry of the Consent Decree, unless EPA approves a longer period, after consultation with OEPA and Intervenors
Submission of Operations and Maintenance (O&M) Plans for IMs 9, 11, and seep inspection and sampling requirements of IM 10	Within thirty (30) days after entry of the Consent Decree, unless EPA approves a longer period, after consultation with OEPA and Intervenors
Submission of Design Documents, including Design Plans and Specs, O&M Plans, Project Schedules and Construction QA Plan for: - Floodplain Soil Remediation Design Document (relating to IMs 2, 4b, 4c) ^{1/} - Upland Soil Remediation Design Document (relating to IMs 4a, 5) - MDA 33S Remediation Design Document (relating to IM 3) - Sediment Remediation Design Document (relating to IMs 6, 7, 8) - Control of seeps, if required pursuant to IM 10 - Phytoremediation Design Document (relating to IM 12)	In accordance with the project schedules in the approved IM Workplan(s), unless EPA approves a longer period, after consultation with OEPA and Intervenors
Implementation of each approved Final Design Document	In accordance with project schedule in the approved Final Design Document, unless EPA approves a longer period, after consultation with OEPA and Intervenors

^{1/} Based on results of sampling pursuant to the Floodplain Soil SAP, floodplain remediation activities may be included in the Sediment Design Document.

ATTACHMENT 1: IM SOW

Requirement	Due Date
Submission of Interim Measures Completion Report(s)	In accordance with the project schedule in the approved IM Workplans and Design Documents, as applicable, unless EPA approves a longer period, after consultation with OEPA and Intervenors
Submission of Progress Reports	Monthly, by the 15 th of each Month, beginning on the first month after entry of the Consent Decree

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**Exhibit A to Attachment 1
Sign Location Map
Dick's Creek
Middletown, Ohio**

Legend

- Roads
- Railroads
- Stream
- Signs

Aerial Photograph purchased from IntraSearch Inc. Image is a 2003, .61 meter, full color aerial photograph georectified to UTM Zone 16N NAD83 Meters. Positions may vary in accuracy due to scale differences between the data sets. Spatial information is meant for general reference only.

Base Data are projected to: Lambert Conformal Conic projection, 1983 North American Datum, Local coordinate grid State Plane Ohio (south) FIPS 3402.

Cartography by ARCADIS - Greenville, SC



ATTACHMENT 2

**RCRA Facility Investigation/Corrective Measures Study
Scope of Work**

ATTACHMENT 2: RFI/CMS SOW

I. Objective:

The objective of the RFI/CMS is to conduct studies to evaluate the nature and extent of releases of Contaminants at and from the Facility and Additional Areas; to evaluate characteristics of the Facility and Additional Areas; to gather data necessary to support an assessment of risk to human health and the environment posed by such releases; and, as appropriate, to identify, develop, evaluate, and recommend corrective measures alternatives to protect human health and the environment. AK Steel shall complete the following steps in the RCRA Corrective Action Program during the conduct of the RFI/CMS:

1. Characterize the nature and extent of Contamination both within and migrating beyond the boundaries of the Facility and Additional Areas. This includes defining the pathways and methods of migration of the Contamination, including the media affected, the extent, direction, and rate of migration of the Contaminants, complicating factors influencing Contaminant movement, concentration profiles, etc.;
2. Locate the source(s) of release(s) of Contaminants (e.g., Hazardous Waste Management Units (HWMUs), Solid Waste Management Units (SWMUs), Areas of Concern (AOCs), spill areas, and other suspected source areas);
3. Identify areas and populations that may be adversely affected by releases of Contaminants from the Facility and Additional Areas;
4. Determine actual and potential threats to human health and/or the environment in both the short and long term resulting from releases of Contaminants from the Facility and Additional Areas;
5. Evaluate the overall integrity of existing containment structures and activities at the Facility and Additional Areas intended for long-term containment; and
6. Identify, develop, and evaluate corrective measures alternatives to prevent and remediate releases of Contaminants from the Facility and Additional Areas, including measures to monitor the maintenance and performance of any corrective measures, Interim Measures and stabilization measures.

The RFI/CMS shall be conducted in a manner consistent with EPA's "Interim Final RCRA Facility Investigation (RFI) Guidance," Volumes I through IV, OSWER Directive 9502.00-6D, EPA 530/SW-89-031, May, 1989, (RFI Guidance), and other applicable guidance, including guidance identified in this SOW and Attachment 4 to the Consent Decree. AK Steel shall implement the RFI/CMS in accordance with the requirements of the Consent Decree, this RFI/CMS SOW, the approved RFI/CMS Workplan, any applicable requirements of federal and state statutes or regulations, and all plans approved by EPA pursuant to the Consent Decree. AK Steel shall furnish all personnel, materials, and services necessary for, or incidental to, performing the RFI/CMS. For purposes of implementing the RFI/CMS required pursuant to this SOW, including any risk assessment and any evaluation of corrective measure alternatives, AK Steel may assume that the current and anticipated land use of the AK Steel property (but not

ATTACHMENT 2: RFI/CMS SOW

including any portions of Dicks Creek and Monroe Ditch) is “commercial/industrial” provided that: (i) concurrently with submission of any RFI Report or risk assessment that incorporates such an assumption, AK Steel also submits for approval in accordance with Section IX of the Consent Decree draft environmental covenants in accordance with R.C. §§ 5301.80 through 5301.92, enforceable by Plaintiffs, that prohibit other uses of the property in the future, and (ii) as a condition of approval of any such RFI Report or risk assessment, AK Steel shall execute and record the approved environmental covenant. Nothing in this SOW shall be construed to preclude AK Steel from including natural or engineered barriers, or institutional controls consistent with “Use of Institutional Controls in the RCRA Corrective Action Program,” USEPA Region 5, March 2000, as components of any corrective action alternative evaluated or recommended during any CMS implemented pursuant to this SOW; nor shall this SOW be construed to preclude EPA from selecting any corrective measure alternative that includes institutional controls, natural barriers or engineered barriers.

II. RFI/CMS Components

This RFI/CMS includes the following components which are discussed in more detail below. References to specific HWMUs, SWMUs, AOCs, spill areas, and other suspected source areas are by number as identified in Exhibit A to this SOW and/or as depicted in Exhibits B and C to this SOW.

Part 1: Current Conditions Report

- A. Facility Background
- B. Preliminary Assessment of Nature and Extent of Contamination
- C. Preliminary Site Conceptual Model
- D. Description of Interim/Stabilization Measures

Part 2: Project Management Plan

Part 3: RFI/CMS Workplans

- A. Purpose/Objectives
- B. Project Management Plan
- C. Data Collection Quality Assurance Project Plan (QAPP)

ATTACHMENT 2: RFI/CMS SOW

- D. Detailed Description of the Tasks to be Performed
- E. Data Management and Reporting
- F. Public Involvement
- G. Schedule for RFI/CMS

Part 4: Health and Safety Plan

Part 5: Facility Investigation

- A. Purpose/Objectives
- B. Environmental Setting
- C. Source Characterization
- D. Contamination Characterization
- E. Potential Receptor Identification
- F. Risk Assessment Assumptions Report

Part 6: Investigation Results and Analysis - RFI Report

- A. Data Analysis
- B. Analysis of Risk
- C. Corrective Measures Objectives

Part 7: Alternatives Summary Report and Corrective Measures Study Report

- A. Introduction/Purpose
- B. Description of Current Conditions
- C. Corrective Measures Objectives
- D. Identification, Screening and Development of Corrective Measure Alternatives - Alternatives Summary Report

ATTACHMENT 2: RFI/CMS SOW

- E. Evaluation of Corrective Measure Alternatives - Corrective Measures Study Report
- F. Recommendation by AK Steel for a Final Corrective Measure Alternative
- G. Public Involvement

Part 8: Progress Reporting

Part 9: Schedule

Part 1: Current Conditions Report

AK Steel shall submit for review and approval in accordance with Section IX of the Consent Decree a Current Conditions Report (CCR) as set forth below. The CCR shall provide background information on the Facility, including each of the areas identified in Exhibit A and/or depicted in Exhibits B and C to this SOW, the Contaminants and potentially affected media associated with each area, and any Interim Measures implemented to date. The CCR is not required to include detailed information regarding the Interim Measures required pursuant to Attachment 1 to the Consent Decree; however, such Interim Measures shall be depicted on maps of the Facility and Additional Areas in the CCR. AK Steel shall submit the CCR in accordance with the schedule in Part 9 of this SOW.

The objective of the CCR is to evaluate existing data to:

- Screen HWMUs, SWMUs, AOCs, spill areas, and other suspected source areas at the Facility and Additional Areas from inclusion in the RFI/CMS by comparing existing information concerning Contaminant levels in such areas with appropriate, conservative screening values as set forth in the screening level guidances in Section 15 of Attachment 4. To the extent that AK Steel proposes to eliminate any areas from further investigation based on this initial screening, the CCR shall (i) identify each area to be eliminated from further investigation, (ii) summarize the existing information concerning Contaminant levels in each such area and evaluate whether the existing data is sufficient to adequately characterize Contaminant levels in the area, and (iii) identify all screening values relied upon by AK Steel;
- Develop a preliminary conceptual site model that identifies potential source areas, release mechanisms, transport mechanisms, migration and exposure pathways, and exposure points/areas for both human and ecological receptors;

ATTACHMENT 2: RFI/CMS SOW

- Identify existing Interim Measures/corrective measures; and
- Identify data gaps.

The CCR shall be based on readily available information. The CCR shall serve as a baseline conditions report upon which the RFI/CMS Workplans required pursuant to Part 3 will build. Based on the approved CCR and Project Management Plan referred to in Part 2 below, AK Steel shall identify gaps in available data concerning the Facility and Additional Areas and develop investigations that address the data gaps in the RFI/CMS Workplans described in Part 3 below.

If any of the information specified below in Part 1 of this SOW is not available, AK Steel shall so indicate in the relevant section(s) of the CCR. The CCR shall contain information that is consistent with and builds on the data previously gathered regarding the Facility and Additional Areas, including the information contained in the Preliminary Assessment/Visual Site Inspection (PA/VSI) report prepared by an EPA contractor. AK Steel shall identify the Data Quality Objectives (DQOs) and level of data quality associated with any previously gathered data on which AK Steel proposes to rely, and shall provide and/or reference supporting QA/QC information for any existing data which has not been previously approved by EPA. The CCR may include, and during implementation of the RFI and CMS required by this SOW AK Steel may consider and use, previously collected data to the extent consistent with "Guidance Regarding Historical Data Usage in RCRA Facility Investigations In Region 5," USEPA Region 5, May 8, 1998 or to the extent such data were collected in accordance with provisions of a QAPP previously approved by EPA, provided that such data is used in a manner consistent with identified DQOs.

A. Facility Background

AK Steel's CCR shall summarize the regional location, pertinent boundary features, general physiography, hydrogeology, and historical use of the Facility and Additional Areas for the treatment, storage, or disposal of Contaminants. The CCR shall include:

1. *Maps.* All maps shall be of sufficient detail and accuracy to locate and report all current and future work performed at the site. Aerial photographs may be used with HWMUs, SWMUs, AOCs, and other source areas superimposed on them. Maps shall depict the following, to the extent that the information is readily available:

- General geographic location;
- Property lines, with the owners of all adjacent property clearly indicated;
- Topography and surface drainage depicting all waterways, wetlands, flood plains,

ATTACHMENT 2: RFI/CMS SOW

water features, drainage patterns, and surface-water containment areas;

- All tanks, buildings, utilities, paved areas, easements, rights-of-way, and other features;
- All solid or hazardous waste treatment, storage, or disposal areas active after November 19, 1980;
- All past solid waste treatment, storage or disposal areas, regardless of whether they were active on or after November 19, 1980;
- Any other areas identified in Exhibit A and/or depicted in Exhibits B and C to this SOW;
- All past and present product and waste underground tanks or piping;
- All past and present wastewater treatment and disposal facilities, including infiltration lagoons;
- Land uses (residential, commercial, industrial, agricultural, recreational, natural and undeveloped areas) at the Facility and surrounding areas;
- The location of all municipal, public, private, and industrial wells, along with all monitoring wells, at the Facility and Additional Areas and within a 1-mile radius of the Facility and Additional Areas. These wells shall be clearly labeled at ground and top of casing elevations and construction details included, if available (these elevations and details may be included as an attachment); and
- Wind rose and meteorology.

2. A history and description of ownership and operation, solid and hazardous waste generation, treatment, storage and disposal activities, and wastewater treatment, storage and disposal activities at the Facility and Additional Areas, to the extent that such information is obtainable from readily available information.

3. Approximate dates or periods of past product and waste spills at the Facility and Additional Areas, identification of the materials spilled, the amount spilled, the location where spilled, and a description of the response actions conducted (local, State, or Federal response units or private parties), including any inspection reports or technical reports generated as a result of the response, to the extent that such information is obtainable from readily available information.

ATTACHMENT 2: RFI/CMS SOW

4. A summary of past permits applied for and/or received, any enforcement actions and their subsequent responses and a list of documents and studies prepared for the Facility and Additional Areas, to the extent that such information is obtainable from readily available information. This may include information from previous and/or present owner/operators, if available.

5. A general description of major habitat types (e.g., grasslands, forests, lakes, streams, wetlands) located in and adjacent to the Facility and Additional Areas. In delineating wetlands, the U.S. Fish and Wildlife Service's National Wetland Inventory maps should be consulted. The U.S. Army Corps of Engineers should be consulted and wetlands should be delineated using the Federal Manual for Identifying and Delineating Jurisdictional Wetlands.

6. A general description of plants and animals at and adjacent to the Facility and Additional Areas, including the following: qualitative observations of resident plants and animals (birds, mammals, fish, stream benthos, etc.); and classification of vegetation community types. Threatened and endangered species possibly on or near the Facility and Additional Areas should be identified.

B. Preliminary Assessment of Nature and Extent of Contamination

The CCR shall describe the existing information on the nature and extent of Contamination at and adjacent to the Facility and Additional Areas.

1. The CCR shall summarize all known and currently suspected source areas of Contamination, including all HWMUs, SWMUs, AOCs, spill areas, and other areas identified in Exhibit A to this SOW or and/or depicted in Exhibits B and C to this SOW. For each area, AK Steel shall identify the following:

- Location of unit/area (to be depicted on Facility map referenced in Part 1.A.1);
- Quantities of Contaminants (both managed and spilled or released);
- Type of Contaminants to the extent known;
- A summary of the results of previous investigations; and
- Identification of areas where additional information is necessary.

2. The CCR shall include a preliminary assessment and description of the nature and extent of Contamination at and adjacent to the Facility and Additional Areas. This shall include:

- For each medium (e.g., soil, groundwater, surface water, sediments, etc.), a summary of any readily available information concerning the nature and extent of

ATTACHMENT 2: RFI/CMS SOW

Contamination. This description shall include all available monitoring data and qualitative information on the locations and levels of Contamination at and adjacent to the Facility and Additional Areas to the extent consistent with "Guidance Regarding Historical Data Usage in RCRA Facility Investigations In Region 5," USEPA Region 5, May 8, 1998 or to the extent such data were collected in accordance with provisions of a QAPP previously approved by EPA; provided that such use of the data is consistent with identified DQOs. Include bio-data (e.g., fish kills, distressed vegetation, abnormal individuals of a species, carcasses, tissue studies, etc.). Include an assessment of the data quality and associated DQOs (and any limitations on appropriate use of the data), a map showing the location of all existing sampling points and potential source areas, and contour maps showing any existing groundwater plumes at and extending beyond the Facility; and

- A list and brief description of all previous investigations that have occurred at the Facility and Additional Areas, including identification of the entity that conducted the investigation, identification of any agency that requested the investigation, and identification of any agency contacts with respect to the investigation.

C. Preliminary Site Conceptual Model

The CCR shall identify the potential impact(s) on human health and the environment, including potential exposure pathways, migration routes, and potential receptors for all relevant land use scenarios related to the Contamination identified in Part 1, Paragraphs B.1 and 2 above. A site-conceptual model shall be included which illustrates these pathways, routes, and receptors. The CCR shall include a description of:

- All potential migration pathways, including information on geology, pedology, hydrogeology, physiography, hydrology, water quality, foodwebs, meteorology, air quality, chemistry, fate and transport characteristics associated with affected media, and natural attenuation, as appropriate;
- Physical properties of known Contaminants;
- Areas where off-site migration of Contaminants has occurred or reasonably may be expected to occur;
- Media-specific potential human exposure pathways (e.g., ingestion, inhalation, dermal contact), including groundwater and surface water use;
- Potential ecological exposure areas and receptors;

ATTACHMENT 2: RFI/CMS SOW

- Current and future land use;
- Current or potential receptors at risk, including demography and identification of possible sensitive subpopulations (e.g., schools, homes for the elderly, hospitals, and sensitive ecosystems); and
- Preliminary Remediation Goals (PRGs) for detected Contaminants, which may be used as guidance for scoping and conducting the RFI.

D. Description of Interim/Stabilization Measures

The CCR shall document past and present interim/stabilization measures at the Facility other than those required to be implemented pursuant to the Consent Decree and its Attachment 1. This shall include a discussion of:

- Objectives of the interim/stabilization measures, including how the measure is mitigating a potential threat to human health and the environment and/or is consistent with and integrated into any long-term solution at the Facility;
- Permitting, design, construction, operation, and maintenance requirements; and
- Description of the zone of capture of the existing AK Steel groundwater pumping system, and supporting documentation.

Part 2: Project Management Plan

AK Steel shall submit for review and approval in accordance with Section IX of the Consent Decree a Project Management Plan (PMP) as set forth in more detail below. The PMP shall provide AK Steel's proposed overall technical and management approach to the RFI and CMS for the Facility and Additional Areas, including a detailed discussion of how AK Steel proposes to organize and conduct the RFI and CMS for the Facility and Additional Areas. The PMP may provide for dividing the RFI and/or CMS for the Facility and Additional Areas into separate phases or components:

(i) addressing releases from individual HWMUs, SWMUs, AOCs, spill areas, or other suspected source areas, or from groups of HWMUs, SWMUs, AOCs, spill areas, or other suspected source areas; or

(ii) on a media-specific basis,

consistent with the provisions of this Part 2.

ATTACHMENT 2: RFI/CMS SOW

The PMP shall provide a detailed description of each phase or component of the RFI and CMS, a schedule for submission of RFI Workplans (in accordance with Part 3 of this SOW) for each such phase or component, and the supporting rationale to justify the proposed approach. The rationale shall include an analysis of how each phase or component relates to the conceptual site model and to an assessment of human health and ecological risk for the Facility and Additional Areas as a whole.

A. The PMP shall establish priorities for expediting implementation of the following phases or components of the RFI and CMS for the Facility and Additional Areas:

- 1) submission of an RFI/CMS Workplan and completion of RFI and CMS activities relating to the "OMS area landfills" (SWMUs 38 and 39);
- 2) submission of RFI Workplan(s) and completion of RFI activities relating to:
 - (i) the past releases of coke oven gas and benzene from the melt area;
 - (ii) the remainder of the OMS area;
 - (iii) the TCE plume in the vicinity of AK Steel Monitoring Well GM 27-S, including identification of and further delineation of the source(s) of such plume; and
 - (iv) any other portions of the Facility and Additional Areas that (A) include or are situated above, or may contain sources that release Contaminants into, a perched or upper aquifer, and/or (B) include or may contain sources that release Contaminants into, portions of the intermediate or lower aquifer which are or may be outside the zone of capture of the existing AK Steel groundwater pumping system.

B. The PMP shall also provide for: (i) defining the zone of capture of the existing AK Steel groundwater pumping system, and evaluating the impact of AK Steel's pumping activities on groundwater flow patterns at and adjacent to the Facility; and (ii) submission of a CMS Workplan to evaluate corrective action alternatives to address groundwater contamination on a Facility-wide basis (other than any groundwater contamination from the OMS landfill areas, which will be addressed on an expedited basis, as provided above).

The PMP need not contain a detailed summary of past data collection efforts; that information will have been included in the CCR. The PMP shall be submitted in accordance with the schedule in Part 9 of this SOW.

Part 3: RFI and CMS Workplans

A. Purpose/Objectives

As provided in the schedules in the approved PMP and Part 9, below, AK Steel shall submit for review and approval in accordance with Section IX of the Consent Decree: (i) each of the Workplans referred to in Part 2, Paragraphs A and B, above; and (ii) an RFI and/or CMS Workplan, as applicable, for each other phase or component of the RFI and CMS identified in the approved PMP. The purpose of the Workplans is to describe the specific plans for determining the nature, extent, and impact of Contamination at and adjacent to the Facility and Additional Areas and for developing any additional information needed to prepare a Corrective Measures Study (CMS) which meets the requirements of this SOW and the Consent Decree.

The Workplan for each such phase or component shall include a detailed description of the tasks to be performed during that phase or component, the information needed for each task, the information to be produced during and at the conclusion of each task, and the work products that will be submitted. The Workplan for each RFI component identified in the approved PMP shall describe how AK Steel will obtain all of the information specified in Parts 5 and 6 of this SOW relevant to that phase or component of the RFI. Collectively, the Workplans governing RFI activities shall provide for AK Steel to obtain all of the information required under Parts 5 and 6 of this SOW, except to the extent that AK Steel demonstrates that particular items of information specified in Parts 5 or 6 are not relevant to investigation of the Facility or Additional Areas. The Workplan for each CMS component identified in the approved PMP shall describe how AK Steel will obtain all of the information specified in Part 7 of this SOW. All Workplans required pursuant to this Part 3 shall be consistent with the approved PMP and CCR.

Workplans required pursuant to this Part 3 shall not be required to provide for additional investigation or analysis of sediment, surface water or PCB contamination in soil in any area listed below:

- Monroe Ditch;
- Reach 1 of Dicks Creek;
- Reach 2 of Dicks Creek;
- Outfall 002 Channel; or
- Floodplain areas investigated pursuant to the approved Floodplain Soil Sampling and Analysis Plan
- Areas described in Attachment 1, Section II, Paragraphs 4.A and 5, that are investigated pursuant to the approved Upland Sources Sampling and Analysis Plan

except to the extent that there is reason to believe that there has been a release of Contaminants

ATTACHMENT 2: RFI/CMS SOW

from the Facility or Additional Areas

- (i) in or into Monroe Ditch, Reach 1 of Dicks Creek, Reach 2 of Dicks Creek, or the Outfall 002 Channel after the excavation and removal of contaminated sediments from such areas pursuant to Attachment 1, Section II, Paragraphs 6 or 7; or
- (ii) in or into Floodplain areas investigated pursuant to Attachment 1, Section II, Paragraphs 1 or 4 after the collection of the samples of such Floodplain areas required pursuant to the approved Floodplain Soil Sampling and Analysis Plan; or
- (iii) in or into the areas described in Attachment 1, Section II, Paragraphs 4.A and 5, after the investigation of such areas pursuant to the approved Upland Sources Sampling and Analysis Plan.

The Workplan for each RFI and CMS phase or component identified in the approved PMP shall be developed in a manner consistent with EPA's "Interim Final RCRA Facility Investigation (RFI) Guidance," Volume I, OSWER Directive 9502.00-6D, EPA 530/SW-89-031, May, 1989, the "RCRA Corrective Action Plan," OSWER Directive 9902.3-2A, May 1994, and other applicable guidance, including guidance identified in this SOW and Attachment 4 to the Consent Decree. Each such Workplan shall include a discussion of project management, quality assurance, data management and reporting, detailed descriptions of the methods and procedures for performing the required tasks, public involvement, and a proposed schedule for conducting the work. During the conduct of the RFI and/or CMS, it may be necessary to revise the Workplan for any RFI or CMS phase or component identified in the approved PMP to increase or decrease the detail of information collected to accommodate specific situations at and adjacent to the Facility and Additional Areas.

If, for any RFI phase or component identified in the approved PMP, EPA approves an RFI Report that concludes that there is no need for a CMS to evaluate potential corrective measure alternatives, AK Steel shall not be required to submit a CMS Workplan for such phase or component. If, for any RFI phase or component identified in the approved PMP, EPA (i) approves an RFI Report that recommends proceeding with a CMS; or (ii) disapproves or modifies AK Steel's conclusion that there is no need for a CMS Workplan to evaluate potential corrective action alternatives, AK Steel shall submit a CMS Workplan in accordance with the schedule in Part 9, subject to the Dispute Resolution provisions of Section XIII of the Consent Decree.

B. Project Management

As part of each Workplan, AK Steel shall address its overall project management consistent with the EPA approved PMP, including a discussion of the technical approach, levels of authority,

ATTACHMENT 2: RFI/CMS SOW

organizational chart, lines of communication, personnel, and a description of the qualifications of personnel performing or directing the RFI and/or CMS, including contractor personnel.

C. Data Collection Quality Assurance Project Plan (QAPP)

As part of the Workplan for each RFI and CMS phase or component identified in the approved PMP, AK Steel shall document all proposed monitoring procedures, sampling, field measurements and sample analyses to be performed during the RFI/CMS so as to ensure that all information and data meet the identified Data Quality Objectives (DQOs), and resulting decisions are technically sound, statistically valid, and properly documented. The quality assurance component of the RFI and CMS shall be prepared in accordance with applicable guidance, including guidance identified in Attachment 4 to the Consent Decree. AK Steel shall refer to the PRGs identified in the CCR when proposing analytical methods so as to ensure that detection limits are sensitive enough to achieve risk-based levels. A pre-QAPP meeting may be held prior to preparation of the QAPP. If held, AK Steel shall notify and afford an opportunity to participate to its QAPP preparer, laboratory representatives, EPA Project Coordinator, EPA Quality Assurance representatives, OEPA staff, and representatives of Intervenors.

A performance audit may be conducted by EPA or OEPA on the laboratories selected for analyses by AK Steel.

D. Detailed Description of the Tasks to be Performed

In the RFI and CMS Workplans required pursuant to this SOW, AK Steel shall describe in detail the methods and procedures for performing the tasks identified in Parts 5 through 8 of this SOW. For each investigation and data collection activity, AK Steel shall describe in detail the sampling and data-gathering methods that will be used to collect the data. AK Steel shall discuss how the specific tasks AK Steel will perform will meet the DQOs associated with the planned use of the data. For each investigation, AK Steel shall discuss previous sampling locations, analytical results, and other relevant information (visual observations, historical records, air photo analysis); the detailed objectives of the investigation, including DQOs; and how the specific work activities to be performed will meet the objectives of the investigation and be used in the RFI, the risk assessments, and the CMS. AK Steel shall include for each investigation a detailed description of the sampling locations, depths, and frequency; sampling equipment and procedures; field measurements, analyses, and procedures; sample preservation and handling; the field notes that will be collected; field quality assurance; planned analyses; standard operation procedures; decontamination procedures; and any procedures that will be implemented to protect the surrounding community from risks resulting from the investigation. AK Steel shall refer to the PRGs identified in the CCR when planning the delineation of the extent of Contamination at the Facility and Additional Areas.

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In each RFI Workplan required pursuant to this SOW, AK Steel shall preliminarily identify corrective measures technologies that may have application to specific Contamination problems at the Facility and Additional Areas and describe any information (other than information identified in Parts 5 and 6 of this SOW) that will be collected during the RFI to support any subsequent evaluation of such technologies during the CMS. In each CMS Workplan required pursuant to this SOW, AK Steel shall describe the general approach to investigating and evaluating potential corrective measures.

At the earliest opportunity, and not later than the Alternatives Summary Report for each CMS phase or component identified in the approved PMP, AK Steel shall also identify any pilot, laboratory, or bench scale studies that may need to be undertaken in support of corrective measures evaluation.

The Workplan for each RFI phase or component identified in the approved PMP shall include a proposed outline for the RFI Report required pursuant to Part 6 of this SOW for that phase or component, including a description of how information will be presented. The Workplan for each CMS phase or component identified in the approved PMP shall include a proposed outline of the CMS Report required pursuant to Part 7 of this SOW for that phase or component, including a description of how information will be presented.

E. Data Management and Reporting

As part of the Workplan for each RFI phase or component identified in the approved PMP, AK Steel shall propose data management and reporting procedures to document and track RFI data and results. This section of each such Workplan shall identify and set up data documentation materials and procedures, project file requirements, and project-related progress reporting procedures and documents. The plan shall also provide the format to be used to present the raw data and conclusions of the RFI phase or component.

As a final output, all locational, soil, sediment, water and groundwater data shall be submitted in an electronic database suitable for display in a GIS format.

F. Public Involvement

Each Workplan submitted pursuant to this SOW shall provide for public involvement activities relating to the phase or component of the RFI or CMS covered by that Workplan, including a schedule for community relations activities. This schedule for community relations activities may be revised as appropriate, with EPA approval following reasonable opportunity to comment by OEPA and Interveners. In any public statement relating to the RFI and/or CMS, whether issued pursuant to the approved plan or not, AK Steel shall not appear to represent or speak for the EPA, OEPA or Interveners before the public, other government officials, or the media.

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Public involvement activities required of AK Steel may include the following:

- Conducting open house and informal meetings (i.e., availability session) in public locations where people can talk to representatives of EPA, OEPA and AK Steel on a one-to-one basis;
- Preparing fact sheets summarizing current or proposed RFI/CMS activities (all fact sheets shall be submitted to the EPA, OEPA and Intervenors for review, prior to public distribution); and
- Maintaining an easily accessible repository (such as a municipal building or public library) of information on the RFI and CMS, including the Consent Decree, approved workplans and reports, each CMS Report required pursuant to this SOW, public involvement materials, and other submittals required by the Consent Decree or attachments thereto.

G. RFI/CMS Schedule

The Workplan for each RFI and CMS phase or component identified in the approved PMP shall include a proposed schedule, including identification of critical path elements and dependencies, for the activities to be implemented during that phase or component. The proposed schedule for each RFI and CMS phase or component identified in the approved PMP shall incorporate applicable elements set forth in Part 9 of this SOW, and provide a detailed timetable for initiation and completion of all other activities to be implemented during that phase or component, including:

1. Sampling
2. Analysis
3. Field Work
4. Evaluation/Screening of Potential Risks
5. Submittal of Reports
6. Laboratory or Bench-Scale Studies
7. Development and Screening of Corrective Measures Alternatives
8. Evaluation of Corrective Measures Alternatives

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9. Recommendation by AK Steel of Final Corrective Measures Alternative(s)

10. Public Involvement

The Workplans shall include separate schedules, including identification of critical path elements and dependencies, with expedited deadlines, consistent with Part 2 of this SOW, for conducting the RFI and CMS phases or components identified in Subpart 2.A of this SOW.

Part 4: Health and Safety Plan

AK Steel shall prepare and submit to EPA, OEPA and Intervenors for review a Health and Safety Plan. The Health and Safety Plan is not approved by EPA pursuant to Section IX of the Consent Decree, however EPA may submit comments on the Health and Safety Plan.

1. Major elements of the Health and Safety Plan include:

- A description of the Facility and Additional Areas, including availability of resources such as roads, water supplies, electricity and telephone services;
- A description of the known hazards and evaluation of the risks associated with conducting the RFI/CMS at the Facility and Additional Areas;
- A list of key personnel and alternates responsible for site safety, response operations, and for protection of human health;
- A description of the levels of protection to be worn by personnel;
- Delineation of the exclusion zones within the work areas;
- Procedures to control site access;
- A description of decontamination procedures for personnel and equipment;
- Site emergency procedures;
- Emergency medical care for injuries and toxicological problems;
- A description of requirements for an environmental surveillance program;
- A description of routine and special training required for response personnel; and

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- Procedures for protecting workers from weather-related problems.

2. The Health and Safety Plan shall be consistent with:

- NIOSH Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities (1985);
- EPA Order 1440.1 - Respiratory Protection;
- EPA Order 1440.3 - Health and Safety Requirements for Employees engaged in Field Activities;
- Any Facility Contingency Plan;
- EPA Standard Operating Safety Guide (1984);
- OSHA regulations particularly in 29 C.F.R. 1910 and 1926;
- State and local regulations; and
- Other EPA guidance as appropriate.

AK Steel shall revise and update the Health and Safety Plan as necessary to ensure that it adequately addresses all work undertaken pursuant to this SOW. AK Steel shall submit any updated Health and Safety Plan to EPA, OEPA and Intervenors for review prior to implementing activities covered by the updated Health and Safety Plan. EPA may submit comments on any updated Health and Safety Plan.

Unless the Parties agree that other measures of personal protection are appropriate for particular activities or areas, representatives from EPA and OEPA agree to wear safety glasses with permanently affixed side shields, hard hats, long sleeve shirts, long pants, and leather steel toed shoes with metatarsal protection when visiting the Facility in connection with implementation of the RFI or CMS, except that rubber boots may be worn in lieu of leather steel toed shoes with metatarsal protection for investigatory activities in Floodplain areas, Dicks Creek and Monroe Ditch. The Defendant shall supply leather steel-toed shoes with metatarsal protection upon request by EPA and OEPA. Intervenors shall comply with the safety practices specified in Attachment 8 of the Consent Decree.

Part 5: Facility Investigation

A. Purpose/Objectives

As discussed in more detail below in this Part 5, AK Steel shall conduct additional investigations (including sampling and analyses) needed to characterize the Facility and Additional Areas (Environmental Setting), define source(s) of Contamination (Source Characterization), define the degree and three dimensional extent of Contamination (Contamination Characterization), identify actual or potential receptors (Potential Receptors Identification), and assess risk. The investigations shall result in data of adequate technical quality consistent with approved quality assurance criteria to support the assessment of risk and the development and evaluation of corrective measure alternative(s) during the CMS.

AK Steel must have EPA approval prior to implementing the activities described in any Workplan required pursuant to Part 3 of this SOW. AK Steel shall implement all investigations and activities described in approved Workplans (including sampling and analysis of samples) in accordance with the terms and schedules set forth in the approved Workplans, including any revisions to such schedules approved by EPA.

B. Environmental Setting

As part of the RFI, AK Steel shall collect information to supplement and verify existing information on the environmental setting at the Facility and Additional Areas, including each of the elements identified below in this Part 5.

I. Hydrogeology

The RFI shall include a program to supplement past studies of hydrogeologic conditions at and adjacent to the Facility and Additional Areas, as needed to develop the following information:

- An updated description of the regional and Facility-specific geologic and hydrogeologic characteristics affecting groundwater flow beneath the Facility and Additional Areas, including:
 - Regional and Facility-specific stratigraphy including: description of strata including strike and dip, and identification of stratigraphic contacts;
 - Structural geology including: description of local and regional structural features (e.g., folding, faulting, tilting, jointing, etc.);
 - Depositional history;

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- Areas and amounts of recharge and discharge;
 - Regional and Facility-specific groundwater flow patterns;
 - Seasonal variations in the groundwater flow regime; and
 - Variations in groundwater flow regime related to fluctuations in river, stream, creek, ditch and channel stage.
- An analysis of any topographic features that might influence the groundwater flow system.
 - AK Steel shall classify and describe the hydrogeologic units at and adjacent to the Facility and Additional Areas (i.e., the aquifers and any intervening saturated and unsaturated zones) based on field data, tests, cores, groundwater monitoring wells, and piezometers. Data collected shall include:
 - Hydraulic conductivity, intrinsic permeability, particularly when non-aqueous phase liquids (NAPLs) are present, and porosity (total and effective);
 - Lithology, grain size, sorting, degree of cementation;
 - Determination of vertical and horizontal hydraulic inter-connections between saturated zones; and
 - The attenuation capacity and mechanisms of the natural earth materials (e.g., ion exchange capacity, organic carbon content, mineral content, etc.).
 - Based on field studies, cores, groundwater monitoring wells and piezometers, structural geology and hydrogeologic cross sections showing the extent (depth, thickness, lateral extent) of hydrogeologic units that may act as pathways for Contaminant migration, identifying each of the following, if present:
 - Sand and gravel in unconsolidated deposits;
 - Zones of fracturing or channeling in consolidated and unconsolidated deposits;
 - Zones of higher permeability or low permeability that might direct and restrict the flow of Contaminants;

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- The uppermost aquifer: geologic formation, group of formations, or part of a formation capable of yielding a significant amount of groundwater to wells, springs or seeps;
 - Water-bearing zones above the first confining layer that may serve as a pathway for Contaminant migration, including perched zones of saturation; and
 - All other geologic formations, or parts thereof, yielding a significant amount of groundwater.
- Based on data obtained from groundwater monitoring wells and piezometers installed upgradient and downgradient of the potential Contaminant source(s) and/or Contaminant plumes, a representative description of water level or fluid pressure monitoring including:
 - Water level contour and/or potentiometric maps;
 - Hydrologic cross sections showing vertical flow gradients;
 - The flow system, including the vertical and horizontal components of flow; and
 - Any temporal changes in hydraulic gradients (due to seasonal influences, rain events etc.).
 - A description of man-made influences that may provide preferential pathways for, or otherwise affect, migration of Contaminants at or from the Facility and Additional Areas, identifying:
 - Active and inactive local water-supply and production wells within a one mile radius of: (i) the Facility, (ii) Additional Areas and (iii) the limits of any Contaminant plume, with an approximate schedule of pumping of such wells; and
 - Man-made hydraulic structures (sewers, pipelines, french drains, ditches, ditch liners, Interceptor Trenches, unlined ponds, septic tanks, NPDES outfalls, retention areas, etc.).

2. Soils

AK Steel shall conduct a program to characterize the soil and rock units potentially affected by Contaminant release(s) at the Facility and/or Additional Areas; provided, however, that the requirements of this Subpart 5.B.2 shall not apply to Floodplain areas investigated pursuant to the approved Floodplain Soil Sampling and Analysis Plan or the areas described in Attachment 1, Section II, Paragraphs 4.A and 5 that are investigated pursuant to the approved Upland Sources Sampling and Analysis Plan, except to the extent that there is reason to believe that there has been a release of Contaminants from the Facility or Additional Areas into such areas after the collection of samples in such areas pursuant to the approved Floodplain Soil Sampling and Analysis Plan or the approved Upland Sources Sampling and Analysis Plan, respectively.

Such characterization shall include the following information, as applicable:

- Where remediation by removal of soils has been preliminarily identified in the approved RFI Workplan as a corrective measures technology that may have application to the subject RFI phase or component, provide map(s) and perpendicular cross sections showing:
 - The extent of Contamination;
 - Depth to groundwater; and
 - The consistency and distribution of soils [using the Unified Soil Classification System (ASTM D 2487)];

and provide the following information:

- Depth to bedrock and the relevant characteristics of the bedrock including any discontinuities such as faults, fissures, joints, fractures, sinkholes, etc.;
- A detailed soil survey conducted according to USDA Soil Conservation Service (SCS) procedures including:
 - USDA Textural Soil Classification and soil profiles showing stratifications or zones which may affect or direct the subsurface flow;

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- Hydraulic conductivity and the SCS hydrologic group classification of A, B, C or D;
- Relative permeability (only if the waste may have changed the soil's hydraulic conductivity, such as concentrated organics);
- Storage capacity (if excavated soil will be stored);
- Shrink-swell potential (where extreme dry weather could lead to the formation of cracks);
- Potential for Contaminant transport via erosion, using the Universal Soil Loss Equation;
- Soil sorptive capacity;
- Cation exchange capacity;
- Soil organic content; and
- Soil pH.
- The following Contaminant characteristics shall be included:
 - Physical state;
 - Viscosity;
 - pH;
 - pKa;
 - Density;
 - Water solubility;
 - Henry's Law Constant;
 - K_{ow} ;

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- Biodegradability; and
 - Rates of hydrolysis, photolysis and oxidation.
- Where in-situ soil treatment has been preliminarily identified in the approved RFI Workplan as a corrective measures technology that may have application to the subject RFI phase or component, the above information and the following additional information shall be provided:
 - Bulk density;
 - Porosity (total and effective);
 - Grain size distribution;
 - Mineral content;
 - Soil moisture profile;
 - Unsaturated hydraulic conductivity;
 - Effect of stratification on unsaturated flow; and
 - Infiltration and evapotranspiration.

3. Surface Water and Sediment

The RFI shall include a program to characterize those surface water bodies, including the Great Miami River (as it relates to Outfall 011 between River Mile 52.0 and River Mile 49.0), that may be affected by releases from the Facility and Additional Areas; provided, however, that the requirements of this Subpart 5.B.3 shall not apply to any area listed below unless, after excavation and removal of contaminated sediment from such area pursuant to applicable provisions of Attachment 1, Section II, Paragraph 6 or 7, there is reason to believe that there has been a release of Contaminants into that area from the Facility or Additional Areas:

Monroe Ditch;
Reach 1 of Dicks Creek;
Reach 2 of Dicks Creek; or
Outfall 002 Channel.

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Such characterization shall include the following activities and information:

- Description of the temporal and permanent surface water bodies including:
 - For any impoundments: location, elevation, surface area, depth, volume, freeboard, and purpose of impoundment;
 - For any rivers, streams, ditches, drains, wetlands and channels: location, elevation, flow, velocity, depth, width, seasonal fluctuations, and flooding tendencies (i.e., 100-year event);
 - Delineation of any wetlands;
 - Containment measures in place (e.g., levees, concrete lining, etc.);
 - Drainage patterns; and
 - Evapotranspiration rates.
- Description of the chemistry of the surface water and sediments, including determination of:
 - pH;
 - total dissolved solids;
 - total suspended solids;
 - biochemical oxygen demand;
 - alkalinity;
 - conductivity;
 - dissolved oxygen profiles;
 - nutrients (NH_3 , $\text{NO}_3^-/\text{NO}_2^-$, PO_4^{3-});
 - chemical oxygen demand;
 - total organic carbon.

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- Description of sediment characteristics including:
 - Deposition area;
 - Thickness profile; and
 - Physical parameters (e.g., grain size, density, ion exchange capacity, etc.).

4. Air

AK Steel shall provide information characterizing the climate in the vicinity of the Facility and Additional Areas. Such information shall include:

- A description of the following parameters:
 - Annual and monthly rainfall averages;
 - Monthly temperature averages and extremes;
 - Wind speed and direction;
 - Relative humidity/dew point;
 - Atmospheric pressure;
 - Evaporation data;
 - Development of inversions; and
 - Climate extremes that have been known to occur in the vicinity of the Facility and Additional Areas, including frequency of occurrence.
- A description of topographic and man-made features that affect air flow and emission patterns, including as applicable:
 - Ridges, hills, or mountain areas;
 - Canyons or valleys;
 - Surface water bodies (e.g., rivers, lakes, etc.);

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- Wind breaks and forests; and
- Buildings.

C. Source Characterization

As part of the RFI, AK Steel shall collect data, including analytical data, necessary to characterize the wastes and the locations at the Facility and Additional Areas where wastes have been placed, collected, removed or have migrated to, including: type; quantity; physical form; disposition (containment or nature of disposal); and any Facility characteristics that may affect or have affected a release (e.g., Facility security, integrity of engineered barriers). SWMUs 38 and 39 shall be investigated via intrusive investigations as specified in Exhibit D attached hereto. As necessary, AK Steel shall conduct intrusive investigations into other closed HWMUs, SWMUs, AOCs, spill areas, and other suspected source areas to characterize the wastes placed within such units. The source area investigations shall incorporate information in the approved CCR and develop additional information, consistent with Workplan(s) submitted pursuant to Part 3 of this SOW and approved by EPA, regarding the following specific characteristics at each source area to address any data gaps identified in the CCR:

1. Unit/Disposal Area/Area of Concern Characteristics:

- Location of unit/disposal area;
- Type of unit/disposal area;
- Design features;
- Operating practices (past, to the extent practical, and present), including closure activities and any history of releases, to the extent practical;
- Period of operation;
- Age of unit/disposal area;
- General physical conditions; and
- Method used to close or remediate the unit/disposal area.

2. Waste Characteristics:

- Type of waste placed in the unit;

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- Hazardous classification (e.g., flammable, reactive, corrosive, oxidizing or reducing agent);
- Quantity; and
- Chemical composition.
- Physical and chemical characteristics;
 - Physical form (solid, liquid, gas);
 - Physical description (e.g., powder, oily sludge);
 - Temperature;
 - pH;
 - General chemical class (e.g., acid, base, solvent);
 - Molecular weight;
 - Density;
 - Boiling point;
 - Viscosity;
 - Solubility in water;
 - Cohesiveness of the waste;
 - Vapor pressure; and
 - Flash point.
- Migration and dispersal characteristics of the waste;
 - Sorption;
 - Biodegradability, bioconcentration, biotransformation;

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- Photodegradation rates;
- Hydrolysis rates; and
- Expected chemical transformations.

AK Steel shall document the procedures used in making the above determinations.

D. Contamination Characterization

As specified in Workplan(s) submitted pursuant to Part 3 of this SOW and approved by EPA, AK Steel shall collect analytical data on environmental media, including groundwater, soils, surface water, sediment, and air likely to be affected by releases from the Facility and Additional Areas, except as provided below in this Subpart 5.D. This data shall be sufficient to define the extent, origin, direction, and rate of movement of Contaminants. Data shall include:

- time and location of sampling;
- media sampled;
- concentrations found;
- conditions during sampling; and
- the identity of the individuals performing the sampling and analysis.

AK Steel shall address the following types of Contamination at the Facility and Additional Areas:

1. Groundwater Contamination

As specified in Workplan(s) submitted pursuant to Part 3 of this SOW and approved by EPA, AK Steel shall conduct a groundwater investigation to fully characterize any plumes of Contamination at or emanating from the Facility and Additional Areas. This investigation shall provide the following information:

- A description of the horizontal and vertical extent of any immiscible or dissolved plume(s) originating from the Facility and/or Additional Areas;
- The horizontal and vertical direction of Contaminant movement;

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- The velocity of Contaminant movement;
- The horizontal and vertical concentration profiles of Contaminants in the plume(s);
- An evaluation of factors influencing the plume movement;
- An extrapolation of future Contaminant movement; and
- The potential for groundwater impacts on surface waters and sediments, including waters and sediments of the Great Miami River, Monroe Ditch and Dicks Creek.

AK Steel shall document the procedures used in making the above determinations (e.g., well design, well construction, sampling, field measurements, geophysics, modeling, etc.).

2. Soil Contamination

As specified in Workplan(s) submitted pursuant to Part 3 of this SOW and approved by EPA, AK Steel shall conduct an investigation to characterize the Contamination of the soil and rock units above the water table and in the smear zone, if present, at the Facility and Additional Areas, provided, however, that nothing in this Subpart 5.D.2 shall require further investigation of PCB contaminated soils in Floodplain areas investigated pursuant to the approved Floodplain Sampling and Analysis Plan or the areas described in Attachment 1, Section II, Paragraphs 4.A and 5, that are investigated pursuant to the approved Upland Sources Sampling and Analysis Plan, except to the extent that there is reason to believe that there has been a release of PCBs from the Facility or Additional Areas into such areas after the collection of samples in such areas pursuant to the approved Floodplain Soil Sampling and Analysis Plan or the approved Upland Sources Sampling and Analysis Plan, respectively.

The characterization of soil contamination shall include the following information:

- A description of the vertical and horizontal extent of Contamination;
- A description of Contaminant and soil chemical properties within the Contaminant source area and plume. This includes, as applicable, Contaminant solubility, speciation, adsorption, leachability, exchange capacity, biodegradability, hydrolysis, photolysis, oxidation and other factors that might affect Contaminant migration and transformation;
- Site-specific Contaminant concentrations;

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- Velocity and direction of Contaminant movement; and
- An extrapolation of future Contaminant movement.

AK Steel shall document the procedures used in making the above determinations.

3. Soil Vapor

As specified in Workplan(s) submitted pursuant to Part 3 of this SOW and approved by EPA, AK Steel shall conduct a program to characterize the soil vapor underlying the Facility and Additional Areas. Such characterization shall include the following information, as appropriate:

- Determination if immediate action is needed for mitigation of risks to human health from Contaminant soil vapor exposure:
 - ▶ strong odors
 - ▶ wet structures, which may include basements or slabs situated near shallow groundwater
 - ▶ safety issues such as detection of lower explosive limits
- Description of chemical Contaminants found at the Site:
 - ▶ volatility
 - ▶ toxicity
 - ▶ ability to biodegrade
- Description of geological and/or hydrological layers and soil types that may contain soil vapors and/or that may act as preferential pathways for soil vapor:
 - ▶ unsaturated soils
 - ▶ uppermost portions of groundwater and/or capillary fringe
- Identification and description of subsurface utilities/structures that may provide preferential pathways for vapor migration:
 - ▶ storm/sanitary sewers

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- ▶ natural gas lines
- ▶ other utility structures/conduits
- ▶ anthropogenic fill material more permeable than native geologic unit
- ▶ presence of sumps, crawl spaces, basements without floors, cracked foundations, or other significant openings to underlying soil in inhabited buildings.
- Descriptions may make use of investigational tools to insure that volatile Contaminants can be detected, such as:
 - ▶ direct measurements of vapor intrusion
 - ▶ site models
 - ▶ data quality objectives
 - ▶ appropriate detection levels for groundwater
- Identification of inhabited buildings that are located within 100 feet either laterally or vertically of known volatile Contaminants in soil or groundwater
- Evaluation of indoor air quality, if available, which may include:
 - ▶ subslab soil gas data
 - ▶ indoor air concentrations
 - ▶ background and ambient air quality evaluation
 - ▶ determination of potential pathways
- Determination if nature and extent of contaminated groundwater is adequately characterized in order to correlate groundwater information with soil vapor data.

4. Surface Water and Sediment Contamination

As specified in Workplan(s) submitted pursuant to Part 3 of this SOW and approved by EPA, AK Steel shall conduct a surface water and sediment investigation to characterize the potential

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for Contamination of surface water bodies and sediments as a result of any ongoing releases or migration of Contaminants at or from the Facility and Additional Areas as well as the potential for Contamination from storm water runoff. The investigation shall include the following information:

- A description of the horizontal and vertical extent of any immiscible or dissolved plume(s) originating from the Facility and/or Additional Areas and the extent of Contamination in underlying sediments;
- The horizontal and vertical direction of Contaminant movement;
- The Contaminant velocity;
- An evaluation of the physical, biological, and chemical factors influencing Contaminant movement;
- An extrapolation of future Contaminant movement; and
- A description of the chemical and physical properties of the contaminated surface waters and sediments, including determinations of pH, total dissolved solids, specific Contaminant concentrations, etc., provided, however, that AK Steel shall only be required to develop information about chemical and physical properties of surface waters and sediments in Monroe Ditch, Reach 1 and Reach 2 of Dicks Creek and the Outfall 002 channel to the extent that there is reason to believe that there has been a release of Contaminants from the Facility or Additional Areas in or into Monroe Ditch, Reach 1 of Dicks Creek, Reach 2 of Dicks Creek, or the Outfall 002 Channel after the excavation and removal of Contaminated sediments from such areas pursuant to Attachment 1, Section II, Paragraphs 6 or 7.

AK Steel shall document the procedures used in making the above determinations.

5. Air Contamination

As specified in Workplan(s) submitted pursuant to Part 3 of this SOW and approved by EPA, AK Steel shall conduct an investigation to characterize the particulate and gaseous Contaminants released into the atmosphere from any HWMUs, SWMUs, AOCs, spill areas, and other suspected source areas at the Facility and Additional Areas. This investigation shall provide the following information:

- A description of the horizontal and vertical direction and velocity of Contaminant movement;

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- The rate and amount of the release;
- The chemical and physical composition of the Contaminant(s) released, including horizontal and vertical concentration profiles; and
- An evaluation of any depositional areas impacted by air contaminant releases.

AK Steel shall document the procedures used in making the above determinations.

E. Potential Receptor Identification

As part of the RFI, AK Steel shall collect data describing the human populations and environmental systems that currently or potentially are at risk of exposure to Contaminants from the Facility and/or Additional Areas. Chemical analysis of biological samples may be needed. Data on observable effects in ecosystems may also be required by EPA, after consultation with OEPA and Intervenors. The following characteristics shall be identified:

1. Local uses and possible future uses of groundwater:

- Type of use (e.g., drinking water source: municipal or residential, agricultural, domestic/non-potable, public and industrial) and
- Location of groundwater users including wells and discharge areas.

2. Local uses and possible future uses of surface waters characterized pursuant to the "Environmental Setting" or "Contamination Characterization" Sections above (Subparts 5.B and 5.D);

- Domestic and municipal (e.g., potable and lawn/gardening watering);
- Recreational (e.g., swimming, fishing);
- Agricultural;
- Industrial; and
- Environmental (e.g., habitat, foraging areas, fish and wildlife propagation).

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3. Human use of or access to the Facility, Additional Areas, including but not limited to:

- Recreation;
- Hunting/Fishing;
- Residential;
- Commercial;
- Zoning; and
- Relationship between population locations and prevailing wind direction.

4. A demographic profile of the people who use or have access (authorized or unauthorized) to the Facility, Additional Areas, including, but not limited to: age; sex; income and ethnicity.

5. A description of the ecological characteristics of the Facility, Additional Areas and adjacent areas, including habitat and species present and expected to be present.

6. A description of the biota in surface water bodies on, adjacent to, or affected by the Facility and/or Additional Areas.

7. A description of any State and Federal endangered or threatened species (both proposed and listed) at or near the Facility and/or Additional Areas.

F. Risk Assessment Assumptions Report

At the conclusion of the RFI data collection and analysis activities for each RFI phase or component identified in the approved PMP, AK Steel shall prepare and submit for review and approval in accordance with Section IX of the Consent Decree a Risk Assessment Assumptions Report (RAAR). The RAAR shall provide a revised conceptual site model based on the data collected during the RFI. As part of the revised conceptual site model for ecological risks, the RAAR shall identify habitat areas where exposure pathways for ecological receptors are potentially complete. The RAAR shall identify any HWMUs, SWMUs, AOCs, spill areas, and other suspected source areas at the Facility and Additional Areas which AK Steel proposes to screen from further consideration based on a screening risk evaluation, using appropriate, conservative screening values, as set forth in the screening level guidances in Section 15 of Attachment 4, when screening to determine whether further investigation is required. The RAAR shall present the results and all supporting information relied upon in conducting the screening risk evaluation.

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The RAAR shall identify the approach that will be used to evaluate risks associated with potential exposure to Contaminants at or released from each HWMU, SWMU, AOC, spill area and other suspected source area at the Facility or Additional Area that is not screened from further evaluation pursuant to the preceding Paragraph or the approved CCR. For each such HWMU, SWMU, AOC, spill area and other suspected source area with releases of multiple contaminants and/or multiple potential pathways of contamination, the RAAR shall provide for AK Steel to conduct human health and ecological risk assessments in accordance with Subpart 6.B, below. With respect to all other HWMUs, SWMUs, AOC, spill areas or other suspected source areas at the Facility or Additional Areas that are not screened from further evaluation pursuant to the preceding Paragraph or the approved CCR, the RAAR may provide for AK Steel to complete human health and ecological risk assessments as provided below in Subpart 6.B or to rely on established cleanup values as the basis for development of the CMS.

If AK Steel proposes to rely upon established cleanup standards as the basis for development of the CMS for any HWMU, SWMU, AOC, spill area or other suspected source area at the Facility or Additional Areas, the RAAR shall: (i) identify each such HWMU, SWMU, AOC, spill area or other source area; (ii) identify the cleanup standards applicable to each such area identified; and (iii) provide all supporting information relied upon in determining the applicability of the identified cleanup standards.

AK Steel shall identify in the RAAR all of the assumptions, inputs, and supporting information required to complete the human health and ecological risk assessments under reasonable maximum exposure conditions for both current and reasonably expected future land use scenarios, including the following:

- updated conceptual site model(s) (human health and ecological);
- all current and potential receptors to be evaluated;
- all exposure scenarios to be evaluated;
- all exposure media to be evaluated;
- all screening values and sources (toxicity-base and/or background, including the method(s) and data used to derive background concentrations), if any, used in the reduction of chemicals of potential concern;
- list of all chemicals of potential concern per medium;
- all risk assessment exposure assumptions needed to complete the human health risk assessment and the final ecological risk assessment level;
- all exposure point concentrations and equations used to derive those values; and,
- methods and input values that will be used to evaluate specific Contaminants, such as lead, or environments such as surface waters or wetlands, as may be needed.

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AK Steel shall submit the RAAR in accordance with the schedule in the approved Workplans for RFI activities.

Part 6: RFI Reports

For each RFI phase or component identified in the approved PMP, AK Steel shall, upon completion of the field activities for such RFI phase or component, prepare and submit for review and approval in accordance with Section IX of the Consent Decree an RFI Report which incorporates the results of all previous reports relating to that RFI phase or component. Each RFI Report shall be comprehensive and sufficiently detailed to provide an adequate basis for decisions regarding the need for a CMS, the need for stabilization measures, and the appropriateness of any Interim Measures proposed by AK Steel pursuant to Paragraph 22 of the Consent Decree. For each RFI phase or component identified in the approved PMP, the RFI Report shall include AK Steel's recommendation regarding the need for a CMS to evaluate potential corrective measure alternatives for addressing releases at or from each HWMU, SWMU, AOC, spill area, and other suspected source area located in the area covered by that phase or component and shall set forth the basis for such recommendation.

Each RFI Report shall be prepared in a manner consistent with the RFI Guidance and other applicable guidance, including guidance identified in this SOW or in Attachment 4 to the Consent Decree, and shall include all of the information specified below in this Part regarding Data Analysis, Analysis of Risk, and Corrective Measures Objectives (CMOs). Each RFI Report shall be based upon an analysis of investigation data that is sufficient in quality (e.g., quality assurance procedures have been followed; DQOs have been met) and quantity to describe the nature and extent of Contamination, the potential threat to human health and/or the environment, and to support a Corrective Measures Study. The RFI Report for each RFI phase or component identified in the approved PMP shall be submitted in accordance with the schedule in the approved Workplan for that RFI phase or component. The conceptual site model shall be updated in each RAAR to ensure that human health and the environment are protected on a site-wide basis.

A. Data Analysis

The RFI Report shall include a summary and analysis of all investigation data, together with any additional relevant information in the Current Conditions Report, and provide a detailed description of the sources, type, and extent of Contamination, and the migration pathways at the Facility and Additional Areas. The RFI Report shall describe the extent of Contamination in relation to background levels indicative of the area as well as in relation to applicable Media Cleanup Standards as developed under Subpart 6.C, Corrective Measures Objectives, below.

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B. Analysis of Risk

As provided in the RAAR, AK Steel shall conduct an assessment of human health risks and ecological risks associated with exposure to Contaminants at and adjacent to the Facility and Additional Areas, in accordance with Paragraphs 1 and 2 of this Subpart 6.B. The estimates of risk must estimate both human health and ecological risks under reasonable maximum exposure conditions for both current and reasonably expected future land use scenarios. For purposes of the human health risk assessment, the current and reasonably expected future land use of the AK Steel property may be considered to be “industrial/commercial,” consistent with Section I of this SOW.

The RFI Report shall include a Human Health Risk Assessment Report and an Ecological Risk Assessment Report as provided below in this Subpart 6.B. Both the Human Health Risk Assessment Report and the Ecological Risk Assessment Report shall include a discussion of any major areas of uncertainty in the risk assessment, the direction of any such uncertainties, and the approaches used to address such uncertainties. Such discussion shall include a discussion of:

- Key areas of uncertainty and the degree of scientific consensus with respect to such areas;
- Major data gaps and whether gathering additional data would add significantly to overall confidence in assessment results;
- Key science policy judgements or default assumptions used to bridge information gaps and the basis for these assumptions; and
- Any significant elements of quantitative uncertainty analysis embedded in the risk estimate.

I. Human Health Risk Assessment

AK Steel shall conduct a human health risk assessment that focuses on current and potential future risks to persons coming into contact with Contaminants or Contaminated media related to the Facility and/or Additional Areas, including risks from ingestion of contaminated organisms. The human health risk assessment shall use data from the Facility and Additional Areas to identify the Contaminants of Concern (COCs), provide an estimate of how and to what extent human receptors might be exposed to the COCs currently and in the future (e.g., based on fate and transport modeling and/or changes in land or groundwater use), and provide an assessment of the health effects associated with these COCs. The human health risk assessment shall:

- (i) Project the potential risk of health problems occurring if no cleanup action is taken at the Facility or Additional Areas (other than actions completed pursuant to Attachment 1, Section II, Paragraphs 2, 4, 5, 6, 7 and 8 of the Consent Decree);

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(ii) Identify all areas and/or media where risks exceed an excess lifetime cancer risk of $1E^{-6}$ and all areas and/or media with a hazard index of 1 or greater; and

(iii) For each of the risk or hazard levels referred to in Subpart 6.B.1(ii) above, calculate Media Cleanup Standards for the COCs (carcinogenic and non-carcinogenic) by rearranging the risk assessment equations to derive media and chemical-specific Contaminant concentrations based upon the same expected or potential exposures identified and evaluated in the completed risk assessment.

At AK Steel's option, the human health risk assessment may also identify all areas and/or media where excess lifetime cancer risks exceed $1E^{-4}$ and $1E^{-5}$. In this case, the human health risk assessment shall also calculate alternate Media Cleanup Standards that reflect such risk levels for each COC. Media Cleanup Standards shall be calculated in the manner specified in Subpart 6.B.1(iii) above.

AK Steel shall describe the methods and procedures for conducting the human health risk assessment in the RFI Workplan(s). AK Steel shall conduct the human health risk assessment consistent with relevant guidance identified by U.S. EPA, including guidance listed in Attachment 4 to this Consent Decree.

In accordance with the schedules in approved Workplans for RFI activities, AK Steel shall submit for review and approval in accordance with Section IX of the Consent Decree Human Health Risk Assessment Report(s) which shall set forth the results of the human health risk assessment(s) for each HWMU, SWMU, AOC, spill area and other suspected source area not screened from further evaluation pursuant to the approved CCR or Subpart 5.F, above. The Human Health Risk Assessment Report(s) shall also include the information that U.S. EPA will need to evaluate AK Steel's recommendation of a preferred corrective measure alternative. (See Sections 6 and 9 of U.S. EPA's *A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Documents* (EPA 540-R-98-031, July 1999) for the information that is needed). The Human Health Risk Assessment Report(s) may be submitted as a separate document from the RFI Report, although AK Steel must summarize the results and the conclusions of the human health risk assessment in the RFI Report. The Human Health Risk Assessment Report shall contain the following general elements:

- data collection and evaluation;
- exposure assessment;
- toxicity assessment; and
- risk characterization.

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2. Ecological Risk Assessment

AK Steel shall conduct an ecological risk assessment in accordance with relevant guidance provided by U.S. EPA, including, guidance listed in Attachment 4 to the Consent Decree. The ecological risk assessment shall describe the data collection activities conducted and the information listed below. The ecological risk assessment shall evaluate both current and potential future risks to ecosystems (e.g., eventual transport of Contaminants to surface waters and other ecosystems).

In accordance with the schedules in approved Workplans for RFI activities, AK Steel shall submit for review and approval in accordance with Section IX of the Consent Decree, Ecological Risk Assessment Report(s) which shall set forth the results of the ecological risk assessment. The Ecological Risk Assessment Report shall also include the information that U.S. EPA will need to evaluate AK Steel's recommendation of a preferred corrective measure alternative. (See Sections 6 and 9 of U.S. EPA's *A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Documents* (EPA 540-R-98-031, July 1999) for the information that is needed). The Ecological Risk Assessment Report may be submitted as a separate document from the RFI Report, although the results and the conclusions of the ecological risk assessment shall be summarized in the RFI Report. The Ecological Risk Assessment Report shall include a discussion of the following elements:

- Project Scoping, Planning and Study Objectives;
- Conceptual Site Model;
- Ecological Exposure Areas;
- Chemicals of Concern, Fate and Transport, Sources of Data and the Analytical Procedures Used;
- Potential Ecological Receptors;
- Assessment and Measurement Endpoints;
- Stressor-Response and Exposure Profiles; and
- Risks to Assessment Endpoints, including Risk Estimates and Adversity Evaluations.

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The Ecological Risk Assessment shall be based upon and reflect consideration of:

- Chemical sampling in potentially exposed habitats and reference sites;
- Toxicity testing;
- Tissue analyses;
- Biological community assessment;
- Habitat assessment of aquatic and terrestrial habitats on or potentially affected by the Facility and Additional Areas; and
- Assessment of ecological impacts on receptors. Impacts should include those occurring at individual level (e.g., mortality, growth and reproductive impairments) and those occurring at higher levels of biological organization (i.e., at population, community, and ecosystem levels).

C. Corrective Measures Objectives

The RFI Report shall include Corrective Measures Objectives (CMOs) on a facility area-wide or unit-specific basis as appropriate, developed in a manner consistent with the approved RAAR. Each CMO shall specify 1) a Media Cleanup Standard (MCS) (an acceptable Contaminant concentration); 2) the affected media; 3) the associated exposure pathway(s) and receptor(s); and 4) a point of compliance (where MCSs should be achieved). MCSs based on risk assessment shall be calculated by rearranging the risk assessment equations to derive media and chemical-specific Contaminant concentrations based on acceptable risk and hazard goals and expected or potential exposures identified and evaluated in the completed risk assessments. MCSs may also be based on background concentrations if the background-based MCSs are greater than risk-based values. The RFI Report shall include CMOs that specify MCSs reflecting a cumulative excess lifetime cancer risk of $1E^{-6}$. At AK Steel's option, the RFI Report may also include alternate CMOs that specify MCSs reflecting cumulative excess lifetime cancer risks of $1E^{-4}$ and $1E^{-5}$. AK Steel shall not be required to identify any CMO or MCS for (i) sediments or surface water in Monroe Ditch, Reach 1 or Reach 2 of Dicks Creek or the Outfall 002 channel, unless there is reason to believe that Contaminants have been released in or into such areas from the Facility or Additional Areas after the excavation and removal of Contaminated sediments from such areas pursuant to Attachment 1, Section II, Paragraphs 6 or 7; (ii) PCB contamination in Floodplain areas investigated pursuant to the approved Floodplain Soil Sampling and Analysis Plan, unless there is reason to believe that PCBs have been released in or into this area from the Facility or Additional Areas after collection of the samples required pursuant to the approved Floodplain Soil Sampling and Analysis Plan; or (iii) PCB contamination in areas described in

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Attachment 1, Section II, Paragraphs 4.A and 5 that are investigated pursuant to the Upland Sources Sampling and Analysis Plan, unless there is a reason to believe that there has been a release of PCBs into such areas from the Facility of Additional Areas after collection of the samples required in such areas pursuant to the Upland Sources Sampling and Analysis Plan.

The CMOs shall support the development of corrective measures alternatives for evaluation in the CMS and ultimately the evaluation and recommendation by AK Steel of proposed corrective measures. AK Steel shall include in the RFI Report all information relied upon in developing the CMOs.

Part 7: Alternatives Summary Reports and Corrective Measures Studies

Purpose

The purpose of the Alternatives Summary Reports and the Corrective Measures Studies (CMS) portion of the RCRA corrective action process is to identify and evaluate potential corrective measures alternatives which address each of the CMOs identified in the approved RFI Reports.

As a first step, AK Steel shall submit for review and approval in accordance with Section IX of the Consent Decree an Alternatives Summary Report (ASR) for each CMS phase or component identified in the approved PMP. AK Steel shall submit the ASRs in accordance with the schedule in Part 9 of this SOW. The ASR for each CMS phase or component identified in the approved PMP shall include the following elements:

A. Introduction/Purpose

The ASR shall describe the purpose of the CMS and provide a summary description of the project.

B. Description of Current Conditions

The ASR shall include a summary/discussion of any new information that has resulted from the conduct of the RFI. This discussion shall identify and should concentrate on those issues which could significantly affect the evaluation and selection of the corrective measures alternative(s).

C. Corrective Measures Objectives

The ASR shall identify each of the CMOs in the approved RFI Report. AK Steel shall refer to each of the CMOs during the identification, screening, and development of Corrective Measures Alternatives described in Subpart 7.D, below.

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D. Identification, Screening, and Development of Corrective Measure Alternatives

1. Identification: The ASR shall revise the list of potential remedial technologies identified in the approved CCR based on the results of the RFI as necessary to ensure that the identified potential remedial technologies address each CMO in the approved RFI Report. AK Steel shall describe each potential remedial technology and specify the areas and/or volumes of contaminated media the potential technology will address. A table shall be included that summarizes the available remedial technologies, the scope of their application, and the related CMOs identified in the approved RFI Report. Depending on the site-specific situation, EPA, after consultation with OEPA and Intervenors, may require AK Steel to consider additional remedial technologies.

AK Steel shall consider innovative treatment technologies, especially in situations where there are a limited number of applicable remedial technologies. Innovative technologies are defined as those technologies utilized for remediation other than incineration, solidification/waste stabilization, and pumping with conventional treatment for contaminated groundwater. Innovative treatment technologies may require extra effort to gather information, to analyze options, and to adapt the technology to the site-specific situation. Treatability studies and on-site pilot scale studies may be necessary for evaluating innovative treatment technologies.

2. Technology Screening: For each remedial technology identified pursuant to Subpart 7.D.1 of this SOW, the ASR shall include a screening evaluation based on effectiveness, implementability, and cost as those criteria are defined in Section 4.2.5 of EPA's "Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA," EPA/540/G-89/004, OSWER Directive 9355.3-01, October 1988 (RI/FS Guidance). The evaluation shall focus on effectiveness at this stage with less emphasis on implementability and cost. Relative cost may be considered as a screening criterion only when comparing different remedial technologies that offer an equivalent level of protectiveness with respect to cumulative excess lifetime cancer risk (e.g., several different technologies that achieve $1E^{-6}$). The screening evaluation shall reflect consideration of Contaminant and site-specific considerations.

3. Corrective Measure Alternative Development: The ASR shall assemble the remedial technologies that survive the screening step into corrective measures alternatives, each of which comprehensively addresses the CMOs identified in the approved RFI Report and the applicable requirements of federal and state laws and regulations. The ASR shall develop a range of corrective measures alternatives, including combinations of treatment and containment technologies that address the Facility and Additional Areas (or subset thereof as identified in the approved PMP) as a whole. Each alternative shall be described with respect to the locations and areas affected, approximate volumes of media to be removed or treated, and any other information needed to adequately describe the alternative and document the logic behind the assembly of remedial technologies into specific corrective measures alternatives. For

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groundwater, AK Steel shall develop corrective measures alternatives in a manner consistent with EPA's "Handbook of Groundwater Protection and Cleanup Policies for RCRA Corrective Action," EPA/530/R-01/015, April 2004.

4. Alternatives Screening Evaluation: As part of the ASR, AK Steel may perform, or EPA may require, that the assembled corrective measures alternatives undergo a screening process based on short- and long-term aspects of effectiveness, implementability, and relative cost as those criteria are defined in Section 4.3 of the RI/FS Guidance. The screening of alternatives is generally performed when there are many feasible alternatives available for detailed analysis. If necessary, the screening shall be conducted to assure that only those alternatives with the most favorable composite evaluation of all factors are retained for further analysis, while at the same time preserving an appropriate range of corrective measures options. Prior to conducting a screening of alternatives, AK Steel shall further define the alternatives such that aspects of the alternative such as sizing requirements for technologies, remediation time frames, interactions among media, and site-wide protectiveness (ability of the alternative to satisfy all of the CMOs) are described sufficiently to ensure that a basis exists for evaluating and comparing the alternatives (Section 4.3.1 of the RI/FS Guidance). To the extent that the RFI Report includes CMOs and MCSs that reflect varying levels of cumulative excess lifetime cancer risk, relative cost may be considered as a screening criterion only when screening different corrective measure alternatives that offer an equivalent level of protectiveness with respect to cumulative excess lifetime cancer risk.

The screening shall preserve the range of treatment and containment alternatives that was initially developed. The range of remaining alternatives shall include options that use treatment technologies and permanent solutions to the maximum extent practicable, and minimize inter-media transfer of contaminants. The chemical and physical characterization of the Facility and Additional Areas shall also be considered by identifying relationships between source areas with ongoing Contaminant releases and the media affected by the release. Where interactions among media appear to be important, the effect of source control actions on MCSs and/or time frames for other media should be evaluated.

5. Post-screening Considerations: At the conclusion of the alternative screening phase, or if no screening is needed, AK Steel shall determine if the amount and type of data existing (as provided in Section 4.3.3.3 of the RI/FS Guidance) for the Facility and Additional Areas will support the analysis of each corrective measures alternative that survived the screening step described in Subpart 7.D.4. Specifically, AK Steel shall consider whether any additional field investigation or treatability testing is necessary prior to proceeding with the analysis of the alternatives. If AK Steel determines that additional site data or treatability testing is needed, AK Steel shall document that determination, identify the specific types of data needed, and specify the time frame for obtaining the data in the ASR. If EPA concurs with AK Steel's determinations, AK Steel shall submit for review and approval in accordance with Section IX of

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the Consent Decree such workplans or treatability study plans as needed to obtain the additional data. Should EPA determine, based on review of the ASR, that additional data is needed in order to perform the analysis of corrective measures alternatives, EPA, following consultation with OEPA and Intervenors, shall notify AK Steel of the need for and types of additional data needed. AK Steel shall submit for review and approval in accordance with Section IX of the Consent Decree such workplans or treatability study plans as needed to obtain the additional data.

The ASR shall include all of the information required pursuant to Subparts 7.A through 7.D above. The ASR shall also identify the federal and state laws and regulations applicable to each alternative, and shall document the methods, rationale, and results of the technology and alternatives development and screening process. The alternatives shall be modified by AK Steel if required by EPA's comments, to assure identification of an appropriate range of viable alternatives for consideration in the corrective measures alternatives evaluation. The ASR, as modified by EPA's comments, if any, shall be combined with the evaluation of corrective measures alternatives and recommendation of a preferred corrective measure described in Subparts 7.E and 7.F below to form the Corrective Measures Study Report. The ASR shall be submitted in accordance with the schedule in Part 9 of this SOW.

E. Evaluation of Corrective Measures Alternatives

Once it has been determined that sufficient data exist to proceed, AK Steel shall conduct an evaluation of each corrective measures alternatives that survived the screening step in Subpart 7.D.4 to provide EPA with the information needed to evaluate AK Steel's recommendation of a preferred corrective measures alternative. The evaluation shall consist of an evaluation of each alternative against each of the five evaluation criteria and a comparative analysis of all alternatives using the same evaluation criteria as a basis for comparison. At the conclusion of the evaluation, AK Steel shall submit for review and approval in accordance with Section IX of the Consent Decree a draft and final CMS Report. AK Steel shall submit the draft and final CMS Report in accordance with the schedule in Part 9 of this SOW. The CMS Report shall include the following elements.

For each corrective measures alternative that survived the screening step in Subpart 7.D.4, the CMS Report shall provide detailed documentation of how the major technical components of corrective measures, including cleanup of releases, source control and management of wastes that are generated by corrective action activities, will satisfy each of the criteria listed and discussed below:

1. Protect Human Health and the Environment;
2. Achieve Corrective Measures Objectives;

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3. Control the source of releases of Contaminants so as to reduce or eliminate, to the extent practicable, further releases of Contaminants that may pose a threat to human health and the environment;
4. Comply with any applicable federal and state laws and regulations for management of wastes; and
5. Other Factors, as provided in Subpart 7.E.5 below.

Each of these criteria is discussed in more detail below.

1. Protect Human Health and the Environment

Corrective measures alternatives must be protective of human health and the environment. The CMS Report shall describe how each alternative achieves protection of human health and the environment, including an estimate of the time frame needed to achieve protection.

2. Achieve Corrective Measures Objectives

Corrective measures alternatives will be required to achieve the CMOs identified in the approved ASR. The CMS Report shall address whether the potential corrective measures alternatives will achieve each of the approved CMOs. The CMS Report shall also include an estimate of the time frame necessary for each alternative to meet the CMOs.

3. Control the Sources of Releases

A critical objective of any corrective measures alternative must be to minimize further environmental degradation by controlling or eliminating further releases that may pose a threat to human health and the environment. Unless source control measures are taken, efforts to clean up releases may be ineffective or, at best, will essentially involve a perpetual cleanup. Therefore, an effective source control program is essential to ensure the long-term effectiveness and protectiveness of the corrective measures alternatives.

As part of the CMS Report, AK Steel shall address the issue of whether sources of Contaminant releases are controlled. AK Steel shall include in the CMS Report a discussion on how well the source control methods are anticipated to work given the particular situation at the Facility and/or Additional Areas and the known track record of the specific technology.

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4. Comply With Any Applicable Federal and State Laws and Regulations for Management of Wastes.

The CMS Report shall include a discussion of how the specific waste management activities will be conducted in compliance with all applicable State or Federal laws and regulations (e.g., closure requirements, land disposal restrictions).

5. Other Factors

There are five general factors that will be considered as appropriate by EPA in selecting/approving a corrective measures alternative that meets the four standards listed above. These factors represent a combination of technical measures and management controls for addressing the environmental problems at the Facility and Additional Areas. The five general decision factors include:

- a. Long-term reliability and effectiveness;
- b. Reduction in the toxicity, mobility or volume of wastes;
- c. Short-term effectiveness;
- d. Implementability; and
- e. Cost.

AK Steel shall evaluate each corrective measures alternative against the factors listed below and provide all information supporting the use of these factors in the evaluation.

a. Long-term Reliability and Effectiveness

Demonstrated and expected reliability is a way of assessing the risk and effect of failure. AK Steel shall consider whether the technology or combination of technologies have been used effectively under analogous site conditions, whether failure of any one technology in the alternative would have an immediate impact on receptors, and whether the alternative would have the flexibility to deal with uncontrollable changes at the Facility and/or Additional Areas (e.g., heavy rain storms, flooding, earthquakes, etc.).

AK Steel shall also evaluate each corrective measure alternative in terms of the projected useful life of the overall alternative and of its component technologies. Useful life is defined as the length of time the level of effectiveness can be maintained.

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b. Reduction in the Toxicity, Mobility or Volume of Contaminants

AK Steel shall evaluate the extent to which each alternative employs treatment technologies that are capable of eliminating or substantially reducing the inherent potential for the Contaminants in HWMUs, SWMUs, AOCs, spill areas, and other suspected source areas (and/or Contaminated media at the Facility and or Additional Areas) to cause future environmental releases or other risks to human health and the environment. AK Steel shall identify any situations where achieving substantial reductions in toxicity, mobility or volume may not be practical, such as large, municipal-type landfills, or Contaminants that would be extremely dangerous to handle and for which the short-term risks of treatment outweigh potential long-term benefits.

AK Steel shall estimate how much each corrective measures alternative will reduce the toxicity, mobility, and volume of the Contaminants. This may be done through a comparison of initial site conditions to expected post-corrective measure implementation conditions.

c. Short-term Effectiveness

Short-term effectiveness may be particularly relevant when remedial activities will be conducted in densely populated areas, or where Contaminant characteristics are such that risks to workers or to the environment are high and special protective measures are needed. Factors to consider include fire, explosion, exposure to hazardous substances and potential threats associated with treatment, excavation, transportation, and re-disposal or containment of Contaminants.

d. Implementability

AK Steel shall identify alternatives or components of alternatives that will require State or local approvals prior to construction, which may increase the time necessary to implement the remedy. In some cases, State or local restrictions or concerns may necessitate eliminating or deferring certain technologies or remedial approaches from consideration in remedy selection. Information to consider when assessing implementability may include:

1. The administrative activities needed to implement the corrective measure alternative (e.g., permits, rights of way, off-site approvals, etc.) and the length of time these activities will take;
2. The constructability, time for implementation, and time for achieving CMOs;

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3. The availability of adequate off-site treatment, storage capacity, disposal services, needed technical services and materials; and
4. The availability of prospective technologies for each corrective measure alternative.

e. Cost

The relative cost of an alternative may be considered in those situations where several different technical alternatives offer equivalent protection of human health and the environment but vary widely in cost. However, in those situations where only one remedy is being proposed, the issue of cost does not need to be considered. AK Steel shall provide cost information including costs for: engineering, site preparation, construction, materials, labor, sampling/analysis, waste management/disposal, permitting, health and safety measures, training, operation and maintenance, etc.

F. Recommendation by AK Steel of a Corrective Measure Alternative

In each CMS Report submitted pursuant to this SOW, AK Steel shall recommend a preferred corrective measures alternative for consideration by EPA, OEPA and Intervenors. Such a recommendation shall include a description, supporting rationale, and all information needed to determine if the alternative is consistent with the criteria and decision factors discussed in Subpart 7.E above and with EPA's "Rules of Thumb for Superfund Remedy Selection," EPA 540-R-97-013, OSWER Directive 9355.0-69, PB97-963301, August 1997.

G. Public Participation

Prior to approval of any CMS Report, EPA may, following consultation with OEPA and Intervenors, issue a proposed decision regarding selection of corrective measures for the Facility and Additional Areas, and provide a Statement of Basis for such proposed decision. EPA may propose to select corrective measures other than the corrective measure alternative recommended by AK Steel in the CMS Report. EPA may provide an opportunity for submission of public comments, an opportunity for a public meeting and other public involvement activities, as well as providing a response to any public comments on the proposed corrective measures, prior to issuing its final decision regarding selection of corrective measures for the Facility and Additional Areas. Changes to the proposed corrective measures for the Facility and Additional Areas may be made after consideration of public comment. If EPA determines, based on public comment or otherwise, that the CMS Report does not provide information necessary to support its proposed corrective measures or any modifications to the final corrective measures in light of public comments, EPA, following consultation with OEPA and Intervenors, may require AK Steel to perform additional studies and revise the CMS Report to incorporate the information

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developed during such studies. EPA's approval of the revised CMS Report shall not constitute or be construed as adoption of the recommendation in the CMS Report regarding a preferred corrective action alternative.

Part 8: Progress Reporting

Upon request by EPA, following consultation with OEPA and Intervenors, AK Steel shall participate in periodic (no more than monthly) conference calls with EPA, OEPA, and Intervenors, to discuss the progress of the RFI and CMS, including data and other findings as they are generated. AK Steel shall also submit to EPA, OEPA and Intervenors signed monthly progress reports, which shall include the following information:

1. A description of activities performed and estimate of the percentage of the RFI/CMS completed;
2. Summaries of all findings in the reporting period, including results of any sampling and analysis, pilot studies, or other studies;
3. Summaries of any deviations from approved workplans for the RFI/CMS during the reporting period and the reasons for such deviations;
4. Summaries of all formal contacts with representatives of the local community, public interest groups or State government other than OEPA during the reporting period;
5. Summaries of all contacts made regarding access to off-site property;
6. Summaries of all problems encountered during the reporting period;
7. Actions being taken to rectify problems;
8. Changes in relevant personnel during the reporting period; and
9. Projected work for the next reporting period.

AK Steel shall maintain in its records and provide upon request or make available for inspection, copies of laboratory/monitoring data, inspection reports, and contractor reports or other documents providing a description of work performed for AK Steel as part of the RFI/CMS, etc.

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Part 9: Schedule

AK Steel shall implement the RFI/CMS in accordance with the following schedule:

Facility Submission	Due Date
Submit Current Conditions Report	120 days after entry of the Consent Decree, unless EPA approves a longer period after consultation with OEPA and Intervenors
Submit Project Management Plan	180 days after entry of the Consent Decree, unless EPA approves a longer period after consultation with OEPA and Intervenors
Submit RFI/CMS Workplan relating to the OMS area landfills (SWMUs 38 and 39)	180 days after entry of the Consent Decree, unless EPA approves a longer period after consultation with OEPA and Intervenors
Submit RFI Workplan relating to past releases of coke oven gas and benzene from the melt area	In accordance with the schedule in the approved PMP, unless EPA approves a longer period after consultation with OEPA and Intervenors
Submit RFI Workplan relating to any other high priority areas identified in Part 2 of this SOW	In accordance with the schedule in the approved PMP, unless EPA approves a longer period after consultation with OEPA and Intervenors
Submit Facility-wide groundwater CMS (excluding groundwater from the OMS landfill areas) (SWMUs 38 and 39)	In accordance with the schedule in the approved PMP, unless EPA approves a longer period after consultation with OEPA and Intervenors
Submit RFI Workplan(s) for any other areas of the Facility and Additional Areas	In accordance with the schedule in the approved PMP, unless EPA approves a longer period after consultation with OEPA and Intervenors
Submit Health and Safety Plan	90 days after entry of the Consent Decree, unless EPA approves a longer period after consultation with OEPA and Intervenors

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Facility Submission	Due Date
Implement RFI investigations for each RFI phase or component identified in the approved PMP	In accordance with schedule in approved RFI Workplan or RFI/CMS Workplan, as applicable, for the respective RFI phase or component, unless EPA approves a longer period after consultation with OEPA and Intervenor
Submit RAAR for each RFI phase or component identified in the approved PMP	In accordance with the schedule in the approved RFI Workplan or RFI/CMS Workplan, as applicable, for the respective RFI phase or component, unless EPA approves a longer period after consultation with OEPA and Intervenor
Submit RFI Report for each RFI phase or component identified in the approved PMP	In accordance with the schedule in the approved RFI Workplan or RFI/CMS Workplan, as applicable, for the respective RFI phase or component, unless EPA approves a longer period after consultation with OEPA and Intervenor
Submit each CMS Workplan required pursuant to any approved RFI Report	Within 30 days after approval of the RFI Report, unless EPA approves a longer period after consultation with OEPA and Intervenor
Submit ASR for each identified CMS phase or component for which a CMS is required pursuant to this SOW	Within 30 days of EPA's approval of the CMS Workplan, unless EPA approves a longer period, after consultation with OEPA and Intervenor
Submit CMS Report for each identified CMS phase or component for which a CMS is required pursuant to this SOW	Within 60 days of EPA approval of the ASR for the respective CMS phase or component, unless EPA approves a longer period, after consultation with OEPA and Intervenor

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Facility Submission	Due Date
For each identified CMS phase or component for which a CMS is required pursuant to this SOW, submit final revisions to CMS Report, if required after Public Involvement Process in Subpart 7.F	45 days after receipt of notification that revisions are required, unless EPA approves a longer period, after consultation with OEPA and Intervenors
Submit Progress Reports	Monthly, by the 15th of each Month, beginning on the first month after entry of the Consent Decree

Exhibit A to Attachment 2 AK Steel Company – Middletown Works Preliminary List of HWMUs, SWMUs, AOCs, Spills and Additional Areas of Potential Contamination for Evaluation in RFI/CMS	
NUMBER	NORTH PLANT AREA
SWMU 1	North Terminal Wastewater Treatment Plant (WWTP)
SWMU 2	North Terminal WWTP Concentrator Pit
SWMU 3	Terne Coat Flux Hazardous Waste Storage Area
SWMU 4	Terne Coat Dross Bucket Storage Area
SWMU 5	Terne Coat Satellite Accumulation Area
SWMU 6	PCB Storage Area (Door 7)
SWMU 7	Former Used Oil Reclamation Facility (Door 55A)
SWMU 8	Used Oil Reclamation Facility Number 2
SWMU 9	Former Used Oil Reclamation Facility Number 3 (Door 179A)
	MELT PLANT AREA
SWMU 10	Dorr Thickener and East Sump
SWMU 11	Blast Furnace/Sinter Plant Wastewater Treatment Sludge Ponds
SWMU 12	Blast Furnace/Sinter Plant Wastewater Treatment Facility
SWMU 13	BOF Wastewater Treatment Facility
SWMU 14	Coke Plant Wastewater Equalization Tank
SWMU 15	Former Coal Tar Decanter Sludge Recycling Area
SWMU 16	Former Coal Tar Decanter Sludge Collection Bin
SWMU 17	Robin Hood Coal Storage Pile (K087 Sprayed)
SWMU 18	Former Open Hearth WWTP
SWMU 19	Former Used Oil Storage Area
SWMU 20	Former Benzol Tank Farm Area (including Tar Tank Sludge Storage Area)
SWMU 21	Former Used Oil Accumulation Area (by Sinter Plant)
SWMU 44	Coke Oven Gas Pipeline and Release Area
AOC 1	Coke Quenching Water Collection Plant

Exhibit A to Attachment 2
AK Steel Company – Middletown Works
Preliminary List of HWMUs, SWMUs, AOCs, Spills and Additional Areas of
Potential Contamination for Evaluation in RFI/CMS

AOC 2	Tar Tanks
AOC 4	Former Rail Car Transfer Area
AOC 5	PCB Transformer Building (next to former Open Hearth WWTP)
AOC 6	Flushing Liquor Sump
AOC 8	Benzene Release Area Possibly Related to AOC 2, Tar Tanks
AOC 20	AK/Armco property at Oxford State Road (NS) and Ottawa Street (WS)
AOC 21	Dredge spoil fill area – E/W diagonal fill area between Melt Areas and South Plant (2000 feet on both sides of the Jackson Lane Ditch)
COIL PAINT AREA	
SWMU 23	Former Coil Paint Wastewater Treatment Lagoons
SOUTH PLANT	
SWMU 28	South Terminal WWTP
SWMU 29	South Terminal Wastewater Treatment Polishing Ponds
SWMU 30	Former Emergency Pond for South Terminal Wastewater Treatment Plant Upsets
SWMU 31	South Terminal Used Oil Recovery Facility
SWMU 32	Hot Slab (or Mill) WWTP
SWMU 33	Spent Pickle Liquor Tank Farm
SWMU 34	Spent Pickle Liquor Filtration System
HWMU 1	Easternmost Spent Pickle Liquor Injection Well (SWMU 35)
HWMU 2	Westernmost Spent Pickle Liquor Injection Well (SWMU 36)
SWMU 37	Solid Waste Transfer Area
SWMU 50	Former Slag Processing Area
AOC 22	Dredge Spoil fill area near corner of Jackson Lane Ditch and Lefferson Road

Exhibit A to Attachment 2 AK Steel Company – Middletown Works Preliminary List of HWMUs, SWMUs, AOCs, Spills and Additional Areas of Potential Contamination for Evaluation in RFI/CMS	
AOC 23	Dredge Spoil fill area near corner Oxford State Rd and North Branch of Dicks Creek
AOC 24	Dredge Spoil fill area on the north side and parallel to Oxford State Rd running from North Branch of Dicks Creek to Jackson Lane Ditch (4000')
SLAG PROCESSING AREA	
SWMU 38	Closed Solid Waste Landfill by Yankee Road and Dicks Creek
SWMU 39	Closed CERCLA Notification Solid Waste Landfill (includes former ponds west of Monroe Ditch)
SWMU 40	Closed Solid Waste Landfill on West Side of Slag Processing Area
SWMU 41	Closed Solid Waste Landfill West of Slag Processing Area Access Road
SWMU 42	Closed Solid Waste Landfill East of Slag Processing Area Access Road
SWMU 43	Closed Solid Waste Landfill
SWMU 45	Interceptor Trench and Treatment System
SWMU 46	Current Oil Storage Area
SWMU 47	Former Oil Separator Ponds and vicinity
SWMU 48	Existing Fueling Area in SW part of OMS
SWMU 49	Former Kish Quenching Area
AOC 9	PCB Seep Area East of Outfall 002 on South Side of Dicks Creek
AOC 10	PCB Seep Area near Bend in Monroe Ditch
AOC 11	Mill Scale Area 1
AOC 12	Mill Scale Area 2
AOC 13	Mill Scale Area 3
AOC 14	Raw Slag Area
AOC 15	Finished Slag Area
AOC 16	7 Oil Transformer Locations
AOC 17	Former Drainage Path from Former Oil Ponds (SWMU 47)

Exhibit A to Attachment 2 AK Steel Company – Middletown Works Preliminary List of HWMUs, SWMUs, AOCs, Spills and Additional Areas of Potential Contamination for Evaluation in RFI/CMS	
ADDITIONAL AREAS OF POTENTIAL CONTAMINATION	
AOC 18	Flood Plain Area west of Railroad Bridge in Vicinity of USEPA Samples S25/S28
AOC 19	Flood Plain Area in Front of Former Orman's Welding
AA 01	Flood Plain Area west of Yankee Road in Vicinity of USEPA Sample S23
AA 02	Former Glenn Cartage property (NS of DC, East of Yankee Road)
AA 03	Sturgell Property (NS of DC, West of RR Bridge, East of Yankee Road)
AA 04	Back Half of Properties between Glenn Cartage and Sturgell Properties (NS of DC)
AA 05	Old Armco Lot NS DC, North of Big Meander
AA 06	Former Burrige Machine Shop Property, NS DC (now a dairy outlet)
AA 07	Former Cecil Osburn Lot (located between Station 12-18, NS of DC)
AA 08	Pipeline Fill, Stations 32-36, along Oxford State Road, north of Outfall 002
AA 09	Former Orman's Welding Property



KEY

- SWMU 1 North Plant WWTW Treatment Plant (WWTW)
- SWMU 2 North Plant WWTW Clarification Pond
- SWMU 3 North Plant WWTW Clarification Pond
- SWMU 4 North Plant WWTW Clarification Pond
- SWMU 5 North Plant WWTW Clarification Pond
- SWMU 6 North Plant WWTW Clarification Pond
- SWMU 7 North Plant WWTW Clarification Pond
- SWMU 8 North Plant WWTW Clarification Pond
- SWMU 9 North Plant WWTW Clarification Pond
- SWMU 10 North Plant WWTW Clarification Pond
- SWMU 11 North Plant WWTW Clarification Pond
- SWMU 12 North Plant WWTW Clarification Pond
- SWMU 13 North Plant WWTW Clarification Pond
- SWMU 14 North Plant WWTW Clarification Pond
- SWMU 15 North Plant WWTW Clarification Pond
- SWMU 16 North Plant WWTW Clarification Pond
- SWMU 17 North Plant WWTW Clarification Pond
- SWMU 18 North Plant WWTW Clarification Pond
- SWMU 19 North Plant WWTW Clarification Pond
- SWMU 20 North Plant WWTW Clarification Pond
- SWMU 21 North Plant WWTW Clarification Pond
- SWMU 22 North Plant WWTW Clarification Pond
- SWMU 23 North Plant WWTW Clarification Pond
- SWMU 24 North Plant WWTW Clarification Pond
- SWMU 25 North Plant WWTW Clarification Pond
- SWMU 26 North Plant WWTW Clarification Pond
- SWMU 27 North Plant WWTW Clarification Pond
- SWMU 28 North Plant WWTW Clarification Pond
- SWMU 29 North Plant WWTW Clarification Pond
- SWMU 30 North Plant WWTW Clarification Pond
- SWMU 31 North Plant WWTW Clarification Pond
- SWMU 32 North Plant WWTW Clarification Pond
- SWMU 33 North Plant WWTW Clarification Pond
- SWMU 34 North Plant WWTW Clarification Pond
- SWMU 35 North Plant WWTW Clarification Pond
- SWMU 36 North Plant WWTW Clarification Pond
- SWMU 37 North Plant WWTW Clarification Pond
- SWMU 38 North Plant WWTW Clarification Pond
- SWMU 39 North Plant WWTW Clarification Pond
- SWMU 40 North Plant WWTW Clarification Pond
- SWMU 41 North Plant WWTW Clarification Pond
- SWMU 42 North Plant WWTW Clarification Pond
- SWMU 43 North Plant WWTW Clarification Pond
- SWMU 44 North Plant WWTW Clarification Pond
- SWMU 45 North Plant WWTW Clarification Pond
- SWMU 46 North Plant WWTW Clarification Pond
- SWMU 47 North Plant WWTW Clarification Pond
- SWMU 48 North Plant WWTW Clarification Pond
- SWMU 49 North Plant WWTW Clarification Pond

- Legend**
- AOC 7 AOC Location
 - 2 SWMU Location
 - 23 Transformer



Client: AK Steel
 Project: OH 000938.0008
 Project Manager: N. Gillohi
 Cartography By: Greenville, SC
 Date: 1/6/2006

Exhibit B to Attachment 2 to Consent Decree
Map of SWMUs and AOCs,
 AK Steel, Middletown, Ohio



KEY	
AA 01	Floodplain Area West of Yankee Road (Vicinity of USEPA Sample S23)
AA 02	Former Carriage Property
AA 03	Stargel Property
AA 04	South Half of Properties between former Carriage and Stargel Properties
AA 05	Former Armco Steel Lot (north of former meander)
AA 06	Former Burdige Machine Shop Property
AA 07	Former Oxburn Lot
AA 08	Pipeline FRI Area, Adjacent to Station 36, along Oxford Stone Road
AA 09	Former Oxburn's Wasting Property

Legend
AA 01 AA Location

Notes:
* Spatial information is meant for general reference



Client:	AK Steel
Project:	OH 000938.003
Project Manager:	N. Gillotti
Cartography By:	Greenville, SC
Date:	10/26/2005

Exhibit C to Attachment 2
**Additional Areas for Evaluation
in the RFI/CMS**
AK Steel, Middletown, Ohio

Exhibit D to Attachment 2

Scope of Work for Intrusive Investigation AK Steel Middletown Works OMS Area Landfills SWMUs 38 and 39

Introduction: This scope of work outlines intrusive investigations at two closed AK Steel OMS area landfills (SWMUs 38 and 39) and the former oil ponds which underlie SWMU 39. This scope of work is not intended to present all of the tasks that may be necessary to complete an intrusive investigation of SWMUs 38 and 39. The intrusive investigation is being conducted to characterize potential source areas and potential “hot spots” within source areas. The intrusive investigation should not be confused with perimeter investigations, also conducted as part of the RFI/CMS for SWMUs 38 and 39, the purpose of which is to identify and characterize pathways of contaminant migration from such source areas. AK Steel shall detail the tasks necessary to perform this scope of work in the RFI/CMS Workplan and supporting documents for SWMUs 38 and 39 (Workplan).

Objectives: The overall objective of the intrusive investigation is to assist in determining if the former oil ponds and SWMUs 38 and 39 are potential sources of contamination to surrounding environmental media. Specific objectives include: 1) characterizing solid and semi-solid wastes; 2) characterizing liquids within the waste, if present (leachate; NAPLs); 3) determining the vertical extent of waste (native material/waste interface); 4) determining and characterizing the vertical extent of any gross contamination of native materials beneath the waste; and 5) collecting data to assist in evaluating the adequacy and integrity of waste containment.

Intrusive Borings: The intrusive work will include six borings into SWMU 39, each of which is located over a former oil pond, seven borings in the remaining areas of SWMU 39, and five borings in SWMU 38 as depicted on Figure 1. Figure 1 was generated by superimposing a USGS Topo map, photo-revised prior to landfill closure, on a 1992 aerial of the closed landfills using Ohio EPA’s ArcMap GIS system, which also provided the coordinates in Table 2 for locating each of the borings in the field. The topo lines in Figure 1 do not represent the current contours of the closed landfills and should be ignored.

Each boring will be continuously sampled until clean native materials are encountered or until the integrity of the anticipated underlying till unit is threatened. Each boring will be conducted in a manner which minimizes the potential for cross contamination of native units underlying the fill. AK Steel shall include procedures in the Workplan for insuring that the integrity of underlying till unit is not compromised. The borings will be logged and the soil cores classified according to the USCS. The surface of the landfill will be surveyed at each boring location prior to drilling to assist in anticipating the till unit during drilling. Borings encountering saturated conditions will be converted to leachate wells. Each boring not converted to a leachate well will be sealed upon completion of sampling at that boring. Borings and leachate wells may also serve as landfill gas sampling points, as needed.

Sample Collection and Analyses: Waste/soil samples from each boring will be field screened using methods appropriate for the parameters listed in Table 1 to assist in selecting samples to be submitted for laboratory analysis. At any given sampling location, waste materials which are similar based on field observations and field screening may be composited. Discrete grab

samples will be collected of waste materials exhibiting unique characteristics. Samples will be analyzed using the methods and parameters identified in Table 1. Samples for PCB congener analyses will be determined based on review of the Aroclor results. Potential sample media for waste samples include soil, waste, LNAPL, DNAPL, and water.

Samples of the landfill cover and of the native materials beneath the landfills will also be collected to assist in evaluation of existing waste containment. These samples will be analyzed for geotechnical parameters such as grain size distribution, Atterberg limits, and hydraulic conductivity. Samples of native materials beneath the landfills will be collected from the borings shown on Figure 1. The number and location of cover samples will be determined in the RFI/CMS Workplan.

Leachate/monitoring wells will be checked for the presence of NAPLs prior to collecting liquid samples. Depth to water and any NAPL present will be measured from the surveyed top of each well casing. One aqueous and potentially two NAPL (i.e., one LNAPL and one DNAPL) samples (if present) will be collected from each installed well. Samples will be analyzed using the methods and parameters identified in Table 1. Aqueous samples will also be analyzed for pH, conductivity, turbidity, and temperature as field parameters. Samples of DNAPL will also be collected from existing monitoring well MDA-33-S and analyzed for Aroclors, PCB congeners (depending on Aroclor results) and SVOCs, assuming sufficient DNAPL is present in the well.

Sample matrices and parameters for the borings depicted in Figure 1 and for MDA-33S are summarized in Table 1. Table 1 assumes each boring could potentially encounter solids, LNAPLs, water (leachate), and DNAPLs. It is likely that not all of these sample media exist at some or all of the boring locations. Extra sample quantities will be collected for QA/QC purposes and to provide samples to be frozen in the lab for potential PCB congener analysis following review of the Aroclor results by AK Steel and Plaintiffs.

The results of the intrusive investigations outlined in this scope of work will be reviewed by AK Steel and Plaintiffs, along with any other relevant information, to determine whether additional intrusive investigation of SWMUs 38 and 39 is needed to meet the objectives of this scope of work.

Table 1 OMS Area Landfill Intrusive Investigation Sample Parameters and Methods (SWMUs 38 and 39)							
Sample Parameters	SVOCs	VOCs	Aroclors	209 PCB congeners	Cyanide and Free Cyanide	Metals	Dioxin/furan
Analytical Methods	8072C	8260A	8082	1668A	9010B/ D4282	6020/6010B 7471A	8290
Borings 1 - 18	Solid	●	●				
	Aqueous	●	●	● ¹	● ²	● ²	● ²
	LNAPL	●					
	DNAPL	●					
MDA-33S	DNAPL	●	●	●			●

Notes: ¹ Selection of sample matrix dependent on Aroclor results
² Selection of sample matrix based on field screening and potential environmental mobility

Table 2 Boring Location Coordinates			
Boring #	X	Y	SWMU
1	1434157.99582	541100.107239	39
2	1434447.6486	540979.459785	39
3	1434153.60498	540857.946902	39
4	1434294.61902	540730.08607	39
5	1434245.95056	540404.61404	39
6	1434448.32012	540160.822733	39
7	1434254.07211	541414.53237	39
8	1434596.32858	541402.470847	39
9	1434963.01291	541170.447608	39
10	1434816.68397	540979.930116	39
11	1434680.41001	540782.04046	39
12	1434953.28496	540520.833364	39
13	1434776.83554	540329.572966	39
14	1434334.46745	542032.67362	38
15	1434727.25915	542044.058887	38
16	1435057.43189	541981.43992	38
17	1434471.09065	541856.201986	38
18	1434863.88235	541839.124086	38

Coordinate System: NAD 1983 State Plane Ohio South (Feet)

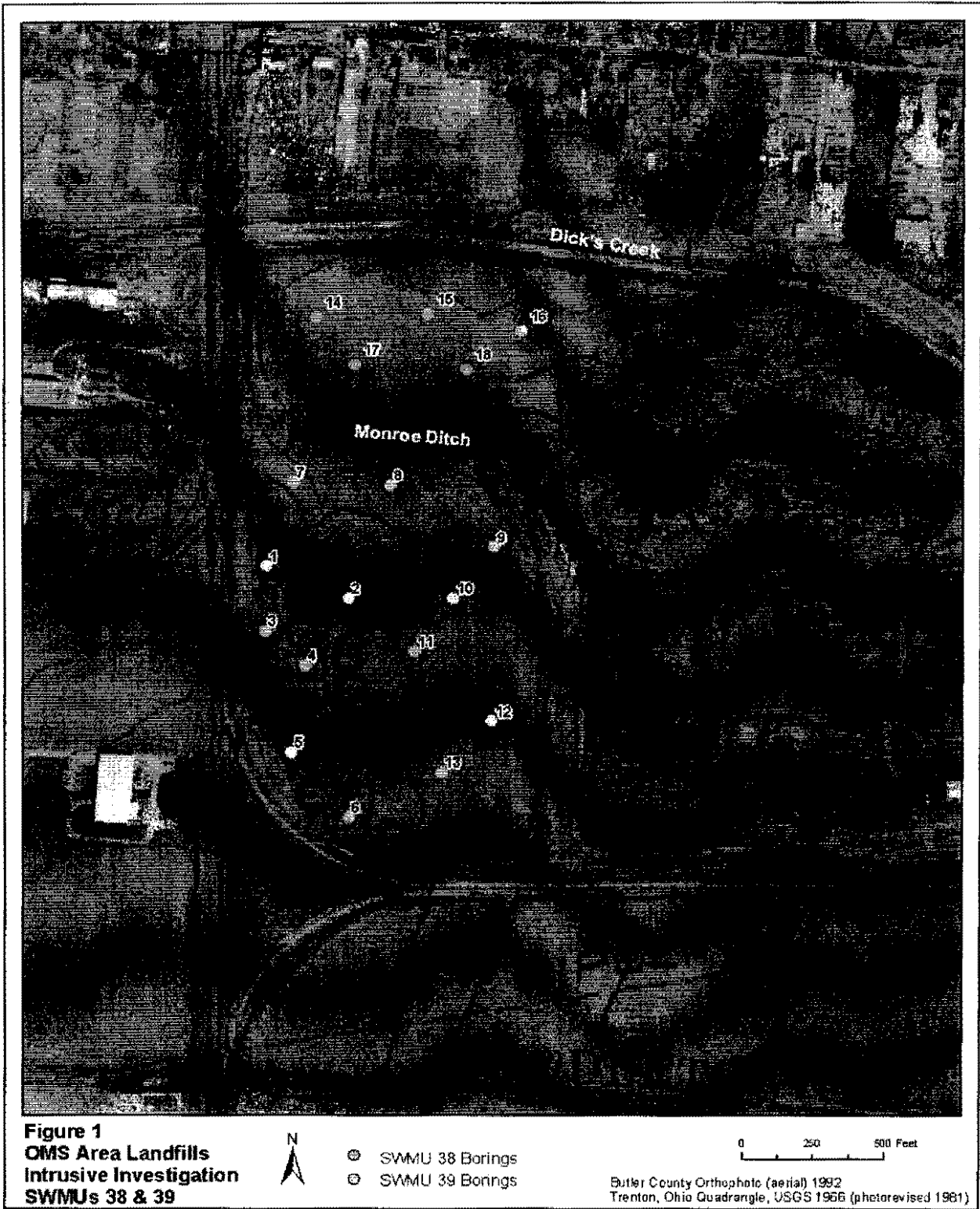


Figure 1
OMS Area Landfills
Intrusive Investigation
SWMUs 38 & 39



- SWMU 38 Borings
- ⊙ SWMU 39 Borings

0 250 500 Feet

Butler County Orthophoto (aerial) 1992
Trenton, Ohio Quadrangle, USGS 1966 (photorevised 1981)

ATTACHMENT 3

**Supplemental Environmental Project
Scope of Work**

SEP SOW

I. PURPOSE

Consistent with and as provided in the May 1, 1998 "Final Supplemental Environmental Projects Policy," the Supplemental Environmental Project ("SEP") described herein is an environmentally beneficial project which Defendant has agreed to undertake as part of the settlement of *United States et al. v. AK Steel Corporation*, Civil Action No. C-1-00530 (S.D. Ohio), but which Defendant is not otherwise legally required to perform.

II. BUSINESS CONFIDENTIALITY

Pursuant to 40 C.F.R. § 2.203, Defendant may submit a claim of confidentiality for any document or information submitted pursuant to this Scope of Work or under the attached Consent Decree. Failure to make a confidentiality claim, including the submission of a redacted copy of the document in question, at the time the document is submitted shall constitute a waiver of such claim. Defendant shall not assert a claim of confidentiality with respect to any sampling, monitoring or analytical data.

III. REFRIGERANT CONVERSION SEP

A. Project Description

Defendant shall permanently convert certain refrigeration units at the Facility from higher Ozone Depleting Potential (ODP) to lower or no ODP, through either replacement or retrofit, as provided below in this SOW.

1. Defendant shall recover, inventory and properly destroy the refrigerant currently used in the "EGL Chiller 389" (identified as Unit No. 1 on the table set forth below), and Defendant shall convert the EGL Chiller 389 to use a refrigerant that is neither a Class I nor a Class II refrigerant.
2. Except as provided in Paragraphs III.A.3 and 5, below, Defendant shall recover, inventory and properly destroy the refrigerant currently used in the cooling system for each of the crane units identified as Unit Nos. 2 through 8 on the table set forth below, and Defendant shall convert such crane units to use a Class II refrigerant or a refrigerant with no ODP.

Unit Number	Unit Name	Pre-Conversion Refrigerant	Pre-Conversion Refrigerant Capacity (pounds)
1	EGL Chiller 389	R-11	850
2	HSM Crane Unit 303	R-114	45
3	HSM Crane Unit 310	R-114	45
4	HSM Crane Unit 311	R-114	45
5	HSM Crane Unit 312	R-114	45
6	BOF Crane Unit 502	R-114	45
7	BOF Crane Unit 504	R-114	45
8	Caster Crane Unit 532	R-114	45

3. In lieu of converting one or more of the crane units referred to in Paragraph III.A.2, above, Defendant may elect to recover, inventory and properly dispose of ODP refrigerants from other refrigerant containing device(s) at the Facility, and convert such refrigerant containing devices from higher ODP to lower or no ODP, provided:

- a. Defendant provides a written justification for the substitution in the quarterly report submitted pursuant to Paragraph III.D below (Periodic Reports), prior to the quarter in which the conversion is to proceed and Defendant receives prior written approval from EPA that the substitution is appropriate;
- b. Defendant identifies the unit, pre-conversion refrigerant, pre-conversion refrigerant charge in pounds, post-conversion refrigerant, and post-conversion refrigerant charge in pounds; and
- c. Defendant provides a written certification that the certification provided pursuant to Paragraph 28 of the Consent Decree is applicable to the proposed substitution, and that the proposed substitution is in compliance with all applicable provisions of 40 C.F.R. Part 82. Under no circumstances is the Defendant relieved of complying with the repair, retrofitting or retirement provisions of 40 C.F.R. Part 82.

4. Defendant will send for proper off-site destruction all Class I and Class II substances extracted from any unit at the Facility in performance of this SEP. Evidence of refrigerant destruction is to be provided by means of shipping and destruction records certified by Defendant and any third party used in this process.

5. Defendant shall continue converting refrigeration units at the Facility until the total costs incurred under Paragraphs III.A.1 through III.A.4 is no less than \$750,000.

B. SCHEDULE

1. Defendant will initiate this refrigerant conversion SEP within ninety (90) days of entry of this Consent Decree. For purposes of this paragraph, initiation of the SEP shall refer to the initiation of bid solicitations for the work required under this SOW.

2. Defendant shall complete all refrigerant unit conversions required pursuant to this SEP within twenty-four (24) months after initiation of the SEP.

C. COSTS

The costs for this SEP shall total no less than \$750,000.

D. PERIODIC REPORTS

Defendant shall submit to Plaintiffs quarterly status reports regarding its performance of this SEP. Such reports must be received by Plaintiffs no later than: April 30 (for the period starting January 1 through March 31); July 31 (for April 1 through June 30); October 31 (for July 1 through September 30); and January 31 (for October 1 through December 31). Such quarterly reports shall continue until Defendant submits the SEP Completion Report. Each status report shall, at a minimum, contain the following information:

1. A narrative description of the work completed in the past calendar quarter and the actions taken by Defendant towards implementing the SEP, including, for each unit converted: whether the unit was replaced or retrofitted, a listing of the post-conversion refrigerant used and the total post-conversion refrigerant charge;
2. The amount of pre-conversion refrigerant that was destroyed and the name, address and telephone number of the company that destroyed the refrigerant;
3. A running total of expenditures to date;
4. A proposed schedule and description of all activities projected for the next quarterly reporting period, including any unit substitutions;
5. a description of any problems and/or delays encountered or anticipated directly or indirectly resulting from implementation of the SEP; and
6. a description of any actions taken to prevent or mitigate such problems and (if applicable) a proposed modified completion schedule.

ATTACHMENT 4

References

References

The RCRA Corrective Action Program relies on an evolving body of policy directives, guidance and research documentation. The purpose of this reference list is to provide AK Steel with direction and guidance for effectively conducting the Work required by the Consent Decree. This Attachment identifies guidance documents relevant to some key elements of the Work required pursuant to the Consent Decree, but it is not intended to identify all guidance documents that are relevant to every activity that may be undertaken pursuant to the Consent Decree. AK Steel shall perform the Work required under the Consent Decree in a manner consistent with relevant guidance documents, as provided in Paragraph 16 of the Consent Decree.

Sources and contacts for additional information are provided below. Please note that where provided, links to web sites are not maintained. References are grouped by general subject area although many references overlap several subject areas. Many of the listed references incorporate by reference related guidance which may not be independently listed below.

1. Analytical Methods

"A Compendium of Chemical, Physical and Biological Methods for Assessing and Monitoring the Remediation of Contaminated Sediment Sites" U.S. EPA, February 17, 2003, <http://www.epa.gov/ner/eerd/108Complete.pdf>

"Test Methods for Evaluating Solid Waste" SW846, 3rd Edition and updates, U.S. EPA, November 1986, <http://www.epa.gov/epaoswer/hazwaste/test/sw846.htm>

2. Data Quality Objectives (DQOs)/Data Review (see also QAPP references below)

"Guidance for the Data Quality Objective Process, EPA QA/G-4" U.S. EPA, EPA/600/R-96/055, August 2000, <http://www.epa.gov/quality/qs-docs/g4-final.pdf>

"Data Quality Objectives Process for Hazardous Waste Site Investigations, EPA QA/G-4HW" U.S. EPA, EPA/600/R-00/007 January 2000.

"Statistical Methods for Evaluating the Attainment of Cleanup Standards, Vol. 1: Soils and Solid Media" U.S. EPA, EPA 230/02-89-042. February 1989.

"Statistical Methods for Evaluating the Attainment of Cleanup Standards, Vol. 2: Ground Water" U.S. EPA, EPA 230-R-92-014. July 1992.

"Statistical Methods for Evaluating the Attainment of Cleanup Standards, Vol. 3: Reference-Based Standards For Soils and Solid Media" U.S. EPA, EPA 230-R-94-004. December 1992.

"Guidance for Data Quality Assessment: Practical Methods for Data Analysis" U.S. EPA, EPA/600/R-96/084, July 2000.

"Guidance on Environmental Data Verification and Data Validation" U.S. EPA, EPA/204/R-02/004, November 2002.

3. Ecological Risk Assessment

"Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments" U.S. EPA, EPA/540/R-97/006, September 26, 1997.

"Guidelines for Ecological Risk Assessment" U.S. EPA, EPA/630/R-95/002-F, April 1998.

"ECO Update Series"
<http://www.epa.gov/superfund/programs/risk/ecoup/index.htm>

"Wildlife Exposure Factors Handbook" Volumes I and II, U.S. EPA ORD, 1993,
<http://cfpub.epa.gov/ncea/cfm/recorddisplay.cfm>

"Framework for Ecological Risk Assessment" U.S. EPA, Risk Assessment Forum; EPA/630/R-92/001, 1992.

"Generic Ecological Assessment Endpoints (GAEs) for Ecological Risk Assessment" U.S. EPA, EPA/630/P-02/004F, October 2003.

"Ecological Risk Assessment and Risk Management Principles for Superfund Sites" U.S. EPA, OSWER Directive 9285.7-28 P, October 1999.

Table 2. *Ohio Specific Sediment Reference Values, (Attachment H to Chapter 3, "Guidance for Conducting Ecological Risk Assessments")* Ohio EPA, DERR-00-RR-031, February 2003.
<http://www.epa.state.oh.us/derr/rules/RR-031.pdf>

"Technical Basis for Deriving Sediment Quality Criteria for Nonionic Organic Contaminants for the Protection of Benthic Organisms by Using Equilibrium Partitioning" U.S. EPA, EPA-8228R-93-011, 1993.

"Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks (ESBs) for the Protection of Benthic Organisms: PAH Mixtures" U.S. EPA, EPA-600-R-02-013, 2003.

"Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks (ESBs) for the Protection of Benthic Organisms: Endrin" U.S. EPA, EPA-600-R-02-009, 2003.

"Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks (ESBs) for the Protection of Benthic Organisms: Dieldrin" U.S. EPA, EPA-600-R-02-010, 2003.

"Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks (ESBs) for the Protection of Benthic Organisms: Metal Mixtures" U.S. EPA, EPA-600-R-02-011, 2005.

"Interim Report on Data and Methods for Assessment of 2,3,7,8-Tetrachlorodibenzo-p-dioxin Risks to Aquatic Life and Associated Wildlife" U.S. EPA, EPA/600/R-93/055, March 1993.

4. Environmental Indicators

"Interim-Final Guidance for RCRA Corrective Action Environmental Indicators" U.S. EPA OSW, February 5, 1999.

"Environmental Indicators - Frequently Asked Questions"
<http://www.epa.gov/epaoswer/hazwaste/ca/eis/faqs.htm>

5. Ground Water Investigation and Remediation

"Ground Water Reference List" U.S. EPA, Technical Support Project,
<http://www.epa.gov/tio/tsp/refer.htm>

"Handbook of Groundwater Protection and Cleanup Policies for RCRA Corrective Action" U.S. EPA, EPA530-R-04-030, April 2004.

"Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities - Interim Final Guidance" U.S. EPA, EPA/530-SW-89-026, April 1989.

"Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities - Addendum to Interim Final" U.S. EPA, EPA/530-R-93-003, July 1992.
<http://www.epa.gov/epaoswer/hazwaste/ca/resource/guidance/sitechar/gwstats/gritsstat/download/addendum.pdf>

"Proceedings of the Ground-Water/Surface-Water Interactions Workshop" Parts 1, 2 & 3, U.S. EPA 542/R-00/007, July 2000.

"Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures" EPA/542/S-02-001/504, U.S. EPA, May 2002.

"Handbook of RCRA Ground-Water Monitoring Constituents: Chemical and Physical Properties" EPA/530/R-92/022, September 1992.

"Superfund Ground Water Issue: Ground Water Sampling for Metals" EPA/540/4-89/001, U.S. EPA, March 1989.

"Region 5 Framework for Monitored Natural Attenuation Decisions for Ground Water" U.S. EPA Region 5, 2000.

"DNAPL Site Characterization" EPA/540/F-94/049, U.S. EPA September 1994.

"Ground Water Issue: Light Nonaqueous Phase Liquids" EPA/540/S-95/500, 28p., U.S. EPA July 1995.

"Technical Guidance Manual for Hydrogeologic Investigations and Groundwater Monitoring" Ohio EPA, Division of Drinking and Groundwaters, June 2005.
<http://www.epa.state.oh.us/ddagw/tgmweb.htm>

6. Human Health Risk Assessment

"Assessing Compounds without Formal Toxicity Values Available for use in Human Health Risk Assessment" Ohio EPA, DERR-00-TDCR-002, April, 2004.

"Waste and Cleanup Risk Assessment" U.S. EPA, OSWER,
<http://www.epa.gov/oswer/riskassessment/index.htm>

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U.S. EPA Home Page: <http://www.epa.gov/>

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U.S. EPA RCRA Laws and Regulations: <http://www.epa.gov/epaoswer/osw/laws-reg.htm>

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Ohio EPA Cleanup Guidance: <http://www.epa.state.oh.us/derr/rules/rules.html>

Ohio EPA Rules: <http://www.epa.state.oh.us/rules.html>

Ohio EPA Policies and Guidance: <http://www.epa.state.oh.us/other/pgfull1.html>

Ohio EPA Hazardous Waste Laws and Regulations:
http://www.epa.state.oh.us/dhwm/laws_regs.html

Ohio EPA Surface Water Laws and Rules:
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Ohio EPA Drinking and Ground Water Laws and Rules:

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Ohio EPA Solid and Infectious Waste Laws and Rules:

<http://www.epa.state.oh.us/dsiwm/pages/rules.html>

20. Useful Telephone Numbers:

ORD Publications Office, Center for Environmental Research Information (513) 569-7562

National Technical Information Services (NTIS) (703) 487-4650
(800) 553-6847



Attachment 6b
Floodplain Boundary Reach 1 (West)
Dicks Creek Study Area
Middletown, Ohio

Legend
 Floodplain Boundary

Aerial Photograph purchased from IntaSearch Inc. Image is a 2003, 61 meter, full color aerial photograph georectified to UTM Zone 16N NAD83 Meters. Positions may vary in accuracy due to scale differences between the data sets. Spatial information is meant for general reference only.

Base Data are projected to:
 Lambert Conformal Conic projection, 1983 North American Datum, Local coordinate grid State Plane Ohio (south) FIPS 3402.
 Cartography by ARCADIS - Greenville, SC





Attachment 6d
Floodplain Boundary Reach 2 (West)
Dicks Creek Study Area
Middletown, Ohio

- Legend**
- Floodplain Boundary

Aerial Photograph purchased from InterSearch Inc. Image is a 2003, 61 meter, full color aerial photograph georectified to UTM Zone 18N NAD83 Meris. Positions may vary in accuracy due to scale differences between the data sets. Spatial information is meant for general reference only.

Base Data are projected to:
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 Cartography by ARCADIS - Greenville, SC



Attachment 7

Document Number	Date	Document Type	Author	Sending Organization	Recipient	Recipient Organization	Document Subject
1	9/3/1999	table	Ohio EPA	Ohio EPA			OEPA Sediment Sampling Results: Organics (Dated Dec., 1995-June 2, 1999)
2	4/26/2000	fax & table	Mary Osika	Ohio EPA	Lisa Geist	USEPA Region 5	3-page table OEPA Fish Tissue Sampling Results, Sept 3, 1999
3	7/19/1999	letter	John Spitzer	Ohio EPA	Mark Maloney	USEPA Region 5	Enclosed sediment and water sampling results data sheets
4	1/21/1997	lab data	J Naylor	Ohio EPA DES	Ohio EPA	Ohio EPA	Orenochlorine Pesticides and PCBs Analysis Data Report at IMS and Landfill see
5	10/31/1997	OAC excerpt	State of Ohio	State of Ohio			Ohio Administrative Code 3745-1-01 re: water quality standards of Ohio River and tributaries
6	12/5/1997	letter	John Spitzer	Ohio EPA	M. Adams, J. Piccioni	AK Steel, IMS	Seeps observed around Dick's Creek, IMS site
7	11/20/1998	letter	John Spitzer	Ohio EPA	M. T. Adams	AK Steel	Notice of Violation and Ohio EPA DES lab analysis data report
8	12/21/1998	letter	Mary Osika	Ohio EPA	Carl Balliner	AK Steel	PCB Seepage Area
9	12/30/1997	news release	Both Gianforaro	Ohio EPA	media	various media	Press Release: Ohio EPA Issues PCB Warning for Dick's Creek Tributary
10	12/1/1999	letter	Christopher Jones	Ohio EPA	Francis Lyons	USEPA Region 5, RA	AK Steel Corrective Action and Attachments
11	12/30/1997	report	Ohio EPA	Ohio EPA			Excerpts from Biological and Water Quality Study of the Middle and Lower Great Miami River and Selected Tributaries, 1995, Vol. I (OEPA Technical Report MAS/1996-12-8)
12	12/11/1992	report	PRC Environmental	PRC Environmental	USEPA	USEPA Region 5	Preliminary Review/Visual Site Inspection Final Report, ARMCO, Middletown, Ohio
13	12/18/1996	letter	Douglas Courtney	FORE Testing Labs	J. Jeffrey McNealey	Porter, Wright, Morris & Archer	Enclosed Report: Results of Sediment Sampling at AK Steel Middletown Works and Surrounding Tributaries for the Purpose of Determining PCB Concentrations, Jan.-Oct. 1996 (submitted as part of Appendix D to Document #15)
14	7/14/1999	letter	Carl Balliner	AK Steel	Mary Osika	Ohio EPA	Enclosed lab analytical reports of sampling June 1, 1999 at IMS, Monroe Ditch
15	10/15/1999	letter	G. Hamper, J. Traub	USEPA Region 5	AK Steel	AK Steel	Enclosed RCRA 3607/CWA 308 Information Request
16	12/3/1999	letter	Paul Casper, Jr	Frost & Jacobs	Lisa Geist	USEPA Region 5	Response to USEPA's RCRA 3607/CWA 308 Information Request
17	1/30/1998	report	Astle & Graves	ARCADIS	Porter, Wright	Porter, Wright, Morris & Archer	Preliminary Plan for Investigation and Remediation, Monroe Ditch Area (selected parts, submitted as Appendix D)
18	7/15/1999	report	Astle, Banaszak, Graves	ARCADIS	AK Steel	AK Steel	Monroe Ditch Investigation First Interim Report, AK Steel Monroe Ditch Area
19	7/15/1999	report	Astle, Banaszak, Graves	ARCADIS	AK Steel	AK Steel	Portions of Appendix H Monroe Ditch Investigation First Interim Report, AK Steel Property
20	1/1/1996	map	R. Smith, R. Astle	ARCADIS	AK Steel	AK Steel	Monitoring Wells Upgradient from Landfills South of Oxford State Road, AK Steel
21	5/8/1998	letter	Richard Astle	ARCADIS	John Spitzer	Ohio EPA	1st Quarter 1998 to 3rd Quarter 1999 Treatment and Management of Interception-Trench Water for Monroe Ditch Area (Appendix H)
22	1/29/1998	letter	Betty Montgomery	Ohio Attorney General	J. Jeffrey McNealey	Porter, Wright, Morris & Archer	Settlement document re AK Steel's site--spills and releases
23	3/7/2000	report	G. Allen Burton, et al	Wright State U	USEPA	USEPA Region 5	Partial Summary of Research Activities in Dick's Creek Toxicity Surveys
24	2/14/2000	memo	Michael Mikulka	USEPA Region 5	Robert Guenther	USEPA Region 5	Site Visit to AK Steel Middletown, OH
25	5/30/1999	Map	ARCADIS G&M	ARCADIS G&M	AK Steel	AK Steel	Figure 2 - Layout of Facility - Armo Middletown Works (from G&M 1989 Report)
26	10/20/1997	memo	Sтивен Herman	USEPA, Washington	Addressees	USEPA	Transmittal of enclosed Guidance on the use of Section 7003 of RCRA, Oct. 1997
27	4/15/1996	article	Ingersoll, et al	Midwest Science Center & USEPA	publication	Journal of Great Lakes Research	Calculation and Evaluation of Sediment Effect Concentrations for the Amphipod <i>Hyalella azteca</i> and the Midge <i>Chironomus riparius</i> Journal of Great Lakes Research 22(3):602-623 (1996)
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29	1/8/1993	report	Persaud, Jagurnani, Hayton	Ontario Ministry of the Environment	publication		Guidelines for the protection and Management of Aquatic Sediment Quality in Ontario (ISBN 0-7726-9248-7)
30	4/15/1996	article	Judy Crane	EVS Consultants	publication	Journal of Great Lakes Research	Carcinogenic Human Health Risks Associated with Consuming Contaminated Fish from Five Great Lakes Areas of Concern, Journal of Great Lakes Research 22(3):653-668 (1996)
31	2/5/1997	article	Long, Field, MacDonald	various	publication	SETAC Press	Predicting Toxicity in Marine Sediments with Numerical Sediment Quality Guidelines, Environmental Toxicology and Chemistry 17(4):714-727, 1998
32	1/9/1999	fact sheet	US EPA	USEPA	publication	USEPA Office of Water	PCBs Update: Impact on Fish Advisories
33	2/2/1999	www	U.S. PHS & EPA	U.S. PHS & EPA	www.epa.gov/OST/fish		4/26/00 download of Public Health Implication of Exposure to PCBs
34	4/13/2000	memo	Jennifer Hubbard	USEPA Region 3	RBC Table users	USEPA	Risk-Based Concentration Table
35	10/1/1999	memo	Stanford Strucker	USEPA Region 9	PRG Table Mailing List	USEPA	Region 9 Preliminary Remediation Goals (PRGs) 1999
36	1/1/1999	report	USEPA Region 5	USEPA Region 5	publication	USEPA	Ecological Screening Levels for RCRA Appendix IX Hazardous Constituents
37	1/27/2000	www	U.S. Food & Drug Admin	U.S. Food & Drug Admin	www.vn.cfsan.fda.gov	U.S. FDA Center for Food Safety	Fish and Fishery Products Hazards and Controls Guide (downloaded 4/27/00)
38	4/27/2000	memo	Lisa Geist	USEPA Region 5	Robert Guenther	USEPA Region 5	AK Steel, Middletown, OH - fish consumption risk calculation
39	7/1/1997	guidance	USEPA, Washington	USEPA, Washington	publication		Guidance for Assessing Chemical Contaminant Data for Use in Fish Advisories, Vol. 2 Risk Assessment & Fish Consumption Limits, 2nd Ed.
40	1/1/1995	article	Long, et al	various	publication	Environment Management	Incidence of Adverse Biological Effects Within Ranges of Chemical Concentrations in Marine and Estuarine Sediments, Environmental Management 18(1):81-97, 1995
41	12/2/1998	letter	Mary Osika	Ohio EPA	Mike Brune	Butler County Health Dept	Re: Dick's Creek
42	1/16/1998	letter	Mary Osika	Ohio EPA	Ron Murray	Middletown City Health Dept	Re: Dick's Creek
43	10/2/1998	phone memo	Diana Zimmerman	Ohio EPA	file	Ohio EPA	Dick's and Landfill Tmb call from Allen Burton
44	5/1/1998	letter	Norman Niedergang	USEPA Region 5	Requester	public	Enclosed GAPP Policy, May 1998
45	6/2/1999	report	Mark Maloney	USEPA Region 5	Ohio EPA	USEPA Region 5	Joint Sampling Project field observations, map, and data
46	6/2/1999	lab data	Ohio EPA DES	Ohio EPA DES	Ohio EPA	Ohio EPA	Inorganic analysis data results
47	12/1/1999	statement	Agency for Toxic Substances & Disease	Agency for Toxic Substances & Disease	www.atstdr.cdc.gov/Tox		Polycyclic Aromatic Hydrocarbons (5/23/00 download)
48	5/20/1999	www	Richard Swartz	National Health & Env Effects Res Lab	www.epa.gov/naaajy/th		Consensus Sediment Quality Guidelines for PAH Mixtures, Journal of Environmental Toxicology and Chemistry 16(4):760-787, 1999
49	5/23/2000	memo	Mikulka & Geist	USEPA Region 5	Robert Guenther	USEPA Region 5	Field Survey of Dick's Creek and Landfill Tributary Adjacent to AK Steel
50	6/2/2000	memo	Robert Guenther	USEPA Region 5	File	USEPA Region 5	Involvement of CRL Analysts Suspected of Distorting Laboratory Analyses in AK Steel Multi-Media Referral

Attachment 7

Document Number	Date	Document Type	Author	Sending Organization	Recipient	Recipient Organization	Document Subject
51	5/25/2000	memo	Joseph Boyle	USEPA Region 5	Michael Savage	Ohio EPA	Notice pursuant to Section 7003 of RCRA
52	6/6/2000	email	Mark Maloney	USEPA Region 5	Michael Mikulka	USEPA Region 5	AK Steel PCB Sediment Sample Taken by USEPA on 6/19/96
53	6/14/2000	memo	Lisa Geist	USEPA Region 5	File	USEPA Region 5	Ohio EPA field notes and photos from various sampling events re Dick's Creek and AK Steel
54	6/14/2000	memo	Lisa Geist	USEPA Region 5	File	USEPA Region 5	Telephone call with John Dorkin, USEPA Region 5 WD re PCBs in sediment
55	6/2/1999	photos	Mark Maloney	USEPA Region 5	File	USEPA Region 5	Photos taken by Maloney at June 2, 1999 AK Steel field sampling
56	4/1/1998	report	USEPA Office of Water	USEPA Office of Water	publication	USEPA Office of Water	EPA's Contaminated Sediment Management Strategy, EPA-823-R-98-001
57	6/28/2000	letter	Robert Guenther	USEPA Region 5	Paul Casper, Jr	Frost & Jacobs	USEPA acceptance of AK Steel's notice of intent to comply with 7003 Order and extension of time to submit Notice
58	8/29/2000	letter	Robert Guenther	USEPA Region 5	Paul Casper, Jr	Frost Brown Todd	Supplement to 6/28/00 letter requesting information regarding ongoing AK Steel work
59	8/30/2000	meeting summary	Lisa Geist	USEPA Region 5	USEPA	USEPA Region 5	August 30, 2000 Chicago O'Hare meeting of DOJ, USEPA, AK Steel and its counsel
60	9/1/2000	letter	Paul Casper, Jr	Frost & Jacobs	Robert Guenther	USEPA Region 5	Understanding of meeting and agreement between USEPA and AK Steel
61	9/6/2000	letter	Robert Guenther	USEPA Region 5	Paul Casper, Jr	Frost & Jacobs	Agreement to extend submission date to Sept 30, 2002 between USEPA and AK Steel and Immediate Actions
62	9/13/2000	letter	Robert Guenther	USEPA Region 5	Paul Casper, Jr	Frost & Jacobs	Response to Sept 8, 2000 request for stay of penalties
63	9/8/2000	letter	Paul Casper, Jr	Frost & Jacobs	Robert Guenther	USEPA Region 5	Response to Guenther's Sept 6, 2000 letter and request to stay penalties
64	9/19/2000	letter	Paul Casper, Jr	Frost & Jacobs	Robert Guenther	USEPA Region 5	Enclosed copy of 9/8/00 letter to Amanda Elementary School
65	9/20/2000	letter	Lisa Geist	USEPA Region 5	Carl Battiner	AK Steel	Actions required under RCRA 7003(a) Order Paragraph 127 (postal certification and fax cover)
66	9/21/2000	fax	Paul Casper, Jr	Frost & Jacobs	Robert Guenther	USEPA Region 5	Enclosed summary of press articles and releases re PCBs and Dick's Creek
67	9/21/2000	letter	Paul Casper, Jr	Frost & Jacobs	Robert Guenther	USEPA Region 5	Enclosed summary of press articles and releases re PCBs and Dick's Creek (with media articles)
68	9/25/2000	fax & letter	Carl Battiner	AK Steel	Lisa Geist	USEPA Region 5	Response to Geist Sept 20, 2000 letter re warning signs and pump with map
69	9/29/2000	letter	Paul Casper, Jr	Frost & Jacobs	Robert Guenther	USEPA Region 5	Letter sending AK Steel's soil sampling, groundwater monitoring, seepage inspection, sediment sampling, water usage evaluation, and OA plans
70		report	S. L. Francis	AK Steel	US EPA	US EPA	Annual Logs of PCB's Removed 1983-1998 (Appendix D to Document #16)
71		maps	OEPA	OEPA	USEPA	USEPA	AK Steel Sediment Sites - 2006 (2 Map Views) AKG-014428
72		publication	W. Boothman, et al	USEPA	publication	USEPA	Predicting Toxicity of Chromium-Spiked Sediments by Using Volatile Sulfide and Interstitial Water Measurements
73		www	hhr.highlands.com	hhr.highlands.com	www	www	Natural History of the Hudson River: The River that Flows Both Ways (undated webarticle)
74		www	ecostudies.org/research	IES@www.ecostudies.org	www	Institute of Ecostudies	Hudson River Ecosystem Study Overview (undated webarticle)
75		table					RCRA Leachate Analysis of Sludge (Middletown Works), undated tables (marked Appendix K)
76		table					RCRA Leachate Analysis of Sludge (Middletown Works), undated tables (marked Appendix L)
77		table	Mike Calhoun	USEPA Headquarters	USEPA Region 5	USEPA Region 5	Table 1: Arco Middletown, Ohio PCB Purchases 1970-72 from Monsanto List
78		map					Maptech, Inc. 1997 map of seeps 4-8
79		map	Lisa Geist	USEPA Region 5	Files	USEPA Region 5	1985, 1997, 1999 PCB Sampling Locations by OEPA & AK Steel
80		ROD	USEPA	USEPA			Hudson River PCBs Site Record of Decision Responsiveness Summary (pp 1-13)
81		www	Bezak Environmental Education Ct	Bezak Environmental Education Ct			The Hudson River (undated webarticle)
82		report		ARCADIS			Appendix A: Methodology to soil, sediment perched zone, groundwater investigation for Monroe Ditch
83	4/1/1972	article	Dahlgren, et al	South Dakota St U	publication	Environmental Health Perspectives	Polychlorinated Biphenyls: Their Effects on Panned Pheasants, EHP 89-101 (April 1972)
84	1/1/1974	article	Nepcker & Puglisi	USEPA	publication	American Fisheries Society	Effect of PCBs on Survival and Reproduction of Daphnia, Gammarus, and Tanytarsus, TAFS 103:722-728 (1974)
85	1/1/1974	article	Hansen, et al	USEPA Gulf Breeze	SE Game & Fish Commission	Southeastern Game and Fish Commission, 1974	Aroclor 1254 in Eggs of Sheepshead Minnows: Effect of Fertilization Success and Survival of Embryos and Fry, Proceedings of SE Game and Fish Commission, 1974
86	11/10/1976	letter	W.B. Pappageorge	Monsanto	Blake Bilas	USEPA	Interim response to Leg's 10/17/75 letter re USEPA request for PCB information
87	12/11/1979	letter	W.B. Pappageorge	Monsanto	Earl Stephenson	USEPA	Response to EPA's Request for information re PCBs
88	1/1/1977	article	Aulerich & Ringer	Michigan State U	publication	Arch. Environm. Contam. & Toxicology	Current Status of PCB Toxicity to Mink, and Effect on Their Reproduction AECT 6:279-292 (1977)
89	7/1/1978	article	D.I. Defoe, et al	USEPA	publication	Journal of Fisheries Research Board CAN	Effects of aroclor 1249 and 1260 on the Fathead Minnow, JFRCB 35 (7):997-1002 (July 1978)
90	1/1/1980	article	Bengt-Erik Bengtsson	NEPB, Sweden	publication	Water Research, Pergamon Press	Long-Term Effects of PCB (Colophen A50) on Growth, Reproduction and Swimming Performance in the Minnow, WR 14(6):681-687(1980)
91	1/1/1980	article	M.R. Bleavins, et al	Michigan State U	publication	Arch. Environm. Contam. & Toxicology	Polychlorinated Biphenyls (Aroclors 1016 and 1242): Effects on Survival and Reproduction in Mink and Ferrets, AECT, 627-635(1980)
92	1/1/1980	article	Custer & Heinz	US Fish & Wildlife	publication	Environmental Pollution	Reproductive Success and Nest Attentiveness of Mallard Ducks Fed Aroclor 1254, EP (Series A) 21:313-318 (1980)
93	1/1/1980	article	McLane & Hughes	US Dept Interior FWS	publication	Arch Environ Contam Toxicol	Reproductive Success of Screech Owls Fed Aroclor 1248, AECT 9:661-665 (1980)
94	8/1/1980	article	Rupp, et al	Oak Ridge Nat'l Lab	publication	Health Physics	Some Results of Recent Surveys of Fish and Shellfish Consumption by Age and Region of U.S. Residents, Health Physics 39:165-175 (August 1980)
95	4/1/1982	article	Davis, William J	U of Cincinnati	publication	The Auk	Territory Size in Megaceryle Alcyon Along a Stream Habitat, The Auk 99:353-362 (April 1982)
96	3/8/1983	letter	Sheldon Simon	USEPA Region 5	Maurice Lewis	Arco, Inc.	Notice letter with PCB Compliance Inspection Report of Arco dated 4/5/83 (submitted as Appendix D to Document #16)
97	12/12/1983	letter	Sieve Francis	ARMCO	Sheldon Simon	USEPA Region 5	cleanup status of PCB contaminated soil at Door 168 (submitted as Appendix D to Document #16)
98	8/1/1985	report	Friske, Bart	Colorado State U	publication	US Fish & Wildlife	Habitat Suitability Index Models: Belted Kingfisher, Biological Report 82 (10:87), Aug 1985
99	9/15/1985	report	Thomas Belton, et al	NJ Dept of Environ Protection	publication	NJ Dept of Environ Protection	A Study of Toxic Hazards to Urban Recreational Fisherman and Crabbers
100	11/15/1985	letter	Sieve Francis	Arco	Ed Manning	Middletown Division of Fire	Letter sending drawings locating PCB transformers (Appendix E to Document #16)
101	1/1/1986	article	Shiu & Mackay	U of Toronto	publication	J Phys Chem Ref Data	A Critical Review of Aqueous Solubilities, Vapor Pressures, Henry's Law Constants, and Octanol-Water Partition Coefficients of the PCBs, J Phys Chem Ref Data 15(2):911-929 (1986)
102	11/1/1986	report	Arthur Allen	US Fish & Wildlife	publication	US Dept of Interior	Habitat Suitability Index Models: Mink, Biological Report 82 (10:127), Nov. 1986 Revised
103	11/1/1986	article	Belton, et al	NJ Dept of Environ Protection	publication	Environment	Urban Fishermen: Managing the Risks of Toxic Exposure, Environment 28(9):19-37 (1986)

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Document Number	Date	Document Type	Author	Sending Organization	Recipient	Recipient Organization	Document Subject
104	3/31/1987 letter		Marin Conner	Ohio EPA	Armo, Inc	Armo, Inc	Letter with attached Director's Final Findings and Orders re OESA Permit No. 1526201185 dated 4/1/87.
105	1/11/1988 manual		Ecology Assess Sec	Ohio EPA	Ohio EPA	Biological Criteria for the Protection of Aquatic Life, Vol 2, Users Manual for Biological Field Assessment of Ohio Surface Waters, Oct 30, 1987, updated Jan 1, 1988	
106	1/11/1988 article		Swartz, et al	USEPA	Environ Toxicology & Chemistry	Environ Toxicology & Chemistry	Effects of Mixtures of Sediment Contaminants on the Marine Infaunal Amphipod, Rheporeus Abundus. Environmental Toxicology & Chemistry 7: 1013-1020 (1988)
107	6/11/1989 report		Geography & Miller	Geography & Miller	Armo Steel	Investigation of Ground Water Flow Conditions at the ARMOCO Plant, Middletown, OH with Appendixes Vols. A-1 (submitted as Appendix 1) to Document #10)	
108	5/11/1989 report		West, et al	U of Michigan	Armo Steel	Michigan Sport Anglers Fish Consumption Survey, May 1989	
109	5/11/1989 map			Geography & Miller	Mil Toxic Substances Control Commission	Layout of Facility—Armo Middletown Works (Figure 3 from investigation of Ground Water Flow Conditions at the Armo Plant)	
110	5/12/1989 field		Kellogg, Estabrook, Kellogg, Estabrook	Kellogg, Estabrook	Builer County, OH	Guidance program issued Armo Steel Co Vol. 1663, p. 569-73, submitted as Appendix A to Document #10)	
111	5/12/1989 field		Kellogg, Estabrook	Kellogg, Estabrook	Builer County, OH	Guidance program issued Armo Steel Co Vol. 1664, p. 1-53, submitted as Appendix A to Document #10)	
112	9/11/1989 guidance		Devouillard & Maxfield	USEPA	USEPA	Period Document Assessing Human Health Risks from Chemically Contaminated Fish and Shellfish, USEPA Guidance Manual, Sept. 1989 (pp.2-59) (1989)	
113	1/11/1990 article		Smith, et al	U of Wisconsin	Food Safety Science	Metabolism and Nutrition: Breeding, Fattening and Pregnancy Performance When Hens Are Fed Excessive Dietary Zinc. Faculty New York Statewide Angler Survey, 1989	
114	4/11/1990 report		N. Connolly, et al	U of California	NY Dept Env Conservation	Perchloroethylene Absorption of [14C]DDT and [14C]benzodiphenylene from Soil: Fundamental and Applied Toxicology	
115	5/24/1990 article		Wester, et al	USEPA OSWER	USEPA	www.epa.gov/oswer/oswer00815.0MSWER Directive 9356 4.01, Guidance on Remedial Actions for Superfund Sites with PCB Contamination.	
116	8/15/1990 guidance		Henry Longest	USEPA	USEPA Office of Emergency Response	Declaration for the Record of Decision, Armo Solvent Reclaiming, Inc. Vannabago County, IL	
117	12/31/1990 ROD		USEPA	USEPA	USEPA Office of Emergency Response	Superfund Record of Decision, Phelps Pk., IL	
118	6/28/1991 ROD		USEPA	USEPA	USEPA Office of Emergency Response	Finalization of a Stream Sport Fish Monitoring Program for Some South Georgia Streams, Sept. 1991	
119	6/30/1991 report		Wagner Probst	Georgia Dept of Nat Res	USEPA Office of Emergency Response	Superfund Record of Decision, Steubenville City Landfill, W. Va	
120	9/30/1991 ROD		USEPA	USEPA	USEPA Office of Emergency Response	Ecotoxicity from Blurred Hazardous of Physical-Chemical Properties and Environmental Fate for Organic Chemicals, Vol 1, 1992 (pp. 342-345, 348-357)	
121	1/11/1992 book		Harvey, et al	none	USEPA Region 5	Investigation of On-Site Extent of Benzene in the Upper Aquifer in the Vicinity of GR-45 at Armo Steel (submitted as Appendix A to Document #10)	
122	2/27/1992 ROD		Dave Vercel	Armo Steel	Armo Steel	Investigation of On-Site Extent of Benzene in the Upper Aquifer in the Vicinity of GR-45 at Armo Steel (submitted as Appendix A to Document #10)	
123	3/27/1992 report		George Conr	Geography & Miller	Armo Steel	Declaration for Record of Decision Amendment Miro II, Gay, IN	
124	4/13/1992 ROD		USEPA	USEPA	Armo Steel Co	NPDES Discharge Permit 11000007100 submitted as Appendix B to Document #10)	
125	9/30/1992 permit		Robert Priebe	USEPA	Armo Steel Co	Final Lake Sta. M1 Operable Units I and II Declaration for the Record of Decision	
126	9/30/1992 ROD		USEPA	USEPA	Armo Steel	Results of Phase II Investigation to Determine the On-Site Extent of Benzene in Ground Water (submitted as part Appendix A to Document #10)	
127	11/8/1992 report		George Cohen	Geography & Miller	Armo Steel	Phase II Investigation to Determine the On-Site Extent of Benzene in Ground Water (submitted as part Appendix A to Document #10)	
128	12/14/1992 report		PRC Environmental	PRC Environmental	Office of Waste Programs Enforcement	Preliminary Review/Mutual Site Inspection Armo, Rolling Mill Company (ARMOCO) Middletown, OH, Plant	
129	11/01/1993 report		Ebert, et al	McLaren/Jan Eviron	North American Journal of Fisheries	Estimating Consumption of Freshwater Fish among Maine Anglers, N.A.J.F. 13:237-245 (1993)	
130	2/11/1993 article		DiPietro, et al	U of South Carolina	Environ Toxicology & Chem	Federal and Sublethal Effects of the Sediment-Associated PCB Mixture 1284 On a Mesocosmic Coppod, ETC 12:1808-1918 (1993)	
131	4/11/1993 article		Adema, et al	Toxol A & M U	Fisheries	Explaining Differences in Angling Rates in the U.S., Fisheries 18:401-117 (April 1993)	
132	5/11/1993 report		West, et al	U of Michigan	MI Great Lakes Protection Fund	1991-92 Michigan Sport Anglers Fish Consumption Survey, May, 1993	
133	9/11/1993 report		Henry Anderson, et al	MI Dept of Health & Social Services	Great Lakes Sport Fish Advisory Task Force	Protocol for a Uniform Great Lakes Sport Fish Consumption Advisory, September 1993	
134	9/30/1993 ROD		USEPA	USEPA	USEPA, Region IX	Declaration for the Record of Decision, Powell Landfill Harbor Heights, OH	
135	10/11/1993 memo		Marina Prothro	USEPA, Washington	Alabama Dept of Env	Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Verbs Criteria	
136	1/11/1994 report		Harris & Gunmaster	Fishery Info Manage	USEPA, Region IX	Estimation of Daily per Capita Freshwater Fish Consumption of Alabama Anglers, 1994	
137	1/11/1994 article		USEPA	USEPA	USEPA, Region IX	Assessment of Variability and Uncertainty Contributions for Final Risk Analysis 14:713-730 (1994)	
138	2/9/1994 ROD		USEPA	USEPA	USEPA, Region IX	Declaration for the Record of Decision, Deshaire Arroyo/Ala Estuary, Superfund Site Northampton, MA	
139	4/30/1994 field		Randall, Weinman	AK Steel	Builer County, OH	Final Record of Decision, Deshaire Arroyo/Ala Estuary, Superfund Site Northampton, MA	
140	4/30/1994 article		W. N. Bevan, et al	US Fish & Wildlife	Journal of Wildlife Management	Estimates of Soil Ingestion by Wildlife, J.W.M. 59(2): 315-322 (April 1994)	
141	6/11/1994 report		Allen, et al	SCOWPRA	State Medical Bay Restoration Project	State Medical Bay Stalked Consumption Study, Final Report, June 1994	
142	7/11/1994 inspection		Isaac Weller	Ohio EPA	AK Steel	SCA Inspection Conditional Notice and EPA Compliance Inspection Field Citation (submitted as part Appendix D to Document #10)	
143	8/11/1994 report		Daigne, et al	U of Florida	Florida Dept of Env. Prot	Per Capita Fish and Shellfish Consumption in Florida, Report 94-2, August 1994	
144	8/23/1994 ROD		USEPA	USEPA	USEPA	Declaration for the Record of Decision, Fossilville Battery, Vincennes, IN	
145	10/11/1994 report		CRIFC	CRIFC	USEPA	A Fish Consumption Survey of the Umanilla, Nez Parce, Yakra, and Warm Springs' Tribes of the Columbia River Basin, Technical Report 94-3, October 1994	
146	12/11/1994 table		CRIFC	CRIFC	USEPA	Final Report, Table F-1-36, Exposure Point Concentrations and Assumptions Used in the Lead 1994 Model.	

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Document Number	Date	Document Type	Author	Sending Organization	Recipient	Recipient Organization	Document Subject
147	12/2/1994	report	USEPA	USEPA	USEPA	USEPA	Assessment of Chemical Contaminants in Fish Consumed by Four Native American Tribes in the Columbia River Basin, Final Draft Study Design
148	12/13/1994	purchase order	Wood & Helmsman	AK Steel			Purchase order status inquiry re PCB disposal 1994-97 (submitted as Appendix I to Document #16)
149	1/1/1995	article	Bruce Boese, et al	USEPA	publication	Environmental Tox & Chem	PCB Congeners and Hexachlorobenzene Biota Sediment Accumulation Factors for Macoma Nasuta Exposed to Sediments with Different Total Organic Carbon Contents ETC 14(2), 303-310 (1995)
150	1/1/1995	article	Fitzgerald, et al	NY St Dept of Health	publication	Environ Epidemiol	Fish PCB Consumption Patterns Among Mohawk Women at Akwesasne, JEAEE 5(1):1-19 (1995)
151	1/1/1995	book	Yoder, et al	OEPA	publication	ORC Press	Chapter 17: Biological Response Signature and the Area of Degradation Value: New Tools for Interpreting Multimetric Data (in Davis & Simon, Biological Assessment and Criteria: Tools for Water Resource Planning and Decision Making)
152	1/8/1995	article	D.L. Arnold, et al	Health Canada	publication	Fd Chem Toxic	Toxicological Consequences of Aroclor 1254 Ingestion by Female Rhesus Monkeys, Part 2
153	4/27/1995	article	M. G. Barron, et al	Hager Bailey Consultants	publication	Comparative Biochem Physiol	Comparative Reproductive and Developmental Toxicology of PCBs in Birds. CBP 112 (1):1-14 (1995)
154	5/17/1995	article	Kimbrough, Renate	Institute for Evaluating Health Risks	publication	Critical Reviews in Toxicology	Fax of "PCBs and Human Health: An Update," CRT 25(2):133-163 (1995)
155	7/27/1995	letter	Mary Osika	Ohio EPA		AK Steel	Notice of Violation of NPDES Permit 3CH0009997 re July 26, 1995 fish kill
156	8/21/1995	letter	Carl Rafiner	AK Steel		Ohio EPA	30-day notice letter re flushing of liquor release July 26, 1995
157	1/1/1996	map	Smith & Astle	ARCADIS		AK Steel	2 oversize maps and tables of Monitoring Wells Upgradient from Landfills South of Oxford State Rd (labelled Appendix G and K, submitted with Document #16)
158	1/1/1996	article	N. Connelly, et al	Cornell U	publication	North American Fisheries	Sportfish Consumption Patterns of Lake Ontario Anglers and the Relationship to Health Advisories North American Journal of Fisheries Management 16:90-101 (1996)
159	1/1/1996	abstract	Gillis & Price	McLaren/Hart Environ	publication	SOT	SOT 1996 Annual Meeting abstracts noting Companion of Noncarcinogenic Effects and PCB Body Burdens in Rhesus Monkeys
160	1/1/1996	article	Stern, et al	NJ Dept Env Protection	publication	Journal of Exposure Risk & Environ Epidemiol	Estimation of Fish Consumption and Methylmercury Intake in the NJ Population, Journal of Exposure Risk and Environmental Epidemiology 6(4):583-527 (1996)
161	4/18/1996	article	M.J. Allen, et al	SOCWATER Research	publication	Fishery Bulletin	Demographic variability in seafood consumption rates among recreational anglers of Santa Monica Bay, CA, 1991-92, FB 94:597-610
162	5/20/1996	article	Hansen, et al	USEPA	publication	Env. Tox. & Chem., SETAC Press	Predicting Toxicity of Metal-Contaminated Field Sediments Using Interstitial Concentration of Metals and Acid-Volatile Sulfide Normalizations, ETAC 15(12):2080-2094 (1996)
163	8/13/1996	paper	Wolfe, Robert J	Alaska Dept Fish & Game		NAS	Substance Food Harvests in Rural Alaska and Food Safety Issues, presentation to Institute of Medicine, NAS Committee on EJ
164	9/1/1996	report	USEPA	NCEA, Office of R & D		USEPA	EPA/600/P-96/001F, PCBs: Cancer Dose-Response Assessment and Application to Environmental Mixtures
165	9/12/1996	article	Bauman & Harshberger	Ohio State U	publication	Environmental Monitoring & Assessment	Long Term Trends in Liver Neoplasm Epidemiology of Brown Bullhead in the Black River, Ohio, EM&A Special issue 53:213-223 (1998)
166	11/30/1996	article	Thomas Belton, et al	Rutgers U	publication	Environment	Urban Fishermen: Managing the Risks of Toxic Exposure, Environment 28(9):19-37 (Nov 1986)
167	12/18/1996	table	Ohio EPA	Ohio EPA			Tables and maps summarizing "Sediment PCB Trends in SW District of the Ohio EPA"
168	12/18/1996	table	Ohio EPA	Ohio EPA			Tables summarizing "Sediment PAH Trends in SW District of the Ohio EPA"
169	12/19/1996	report	Douglas Courney	FORE Testing Labs		J. Jeffrey McNealy	Ohio EPA 9/4/01 memo with attached letter and "Sediment Sampling Results at AK Steel Facility and Tributaries Jan-Oct 1995"
170	1/1/1997	article	Joel Barnhart	American Chrome & Chemical	publication	Journal of Soil Contamination	Chromium Chemistry and Implications for Environmental Fate and Toxicity, JSC 6(6):561-568 (1997)
171	1/1/1997	article	Bergman Donald-King	SETAC	publication	SETAC Press	Chapter 3: Reassessment of Metals Criteria for Aquatic Life Protections: Regulatory Practice for Metals, Setac, pp13-30 (1997)
172	1/1/1997	article	Murdoch, et al	EVS Env Consultants	publication	Environmental Toxicology & Chemistry	Spiking Sediment with Organochlorines for Toxicity Testing, ETAC 16(7):1504-1509 (1997)
173	1/1/1997	article	Murdoch, et al	EVS Env Consultants	publication	Environmental Toxicology & Chemistry	Chronic Effects of Organochlorine Exposure in Sediment to the Marine Polychaete Nereis Acanthodonta, ETAC 16(7):1494-1503 (1997)
174	1/1/1997	comments	Ohio EPA	Ohio EPA		USEPA	Ohio EPA's Comments to AK Steel's PCB Sediment Sampling and Analysis Report
175	2/17/1997	grant applic	William Sellers	Wright State U		USEPA	WBL application for federal assistance for sediment contamination Assessment Methods Study enclosure to Allen Burton
176	3/11/1997	letter	Steve Francis	AK Steel		USEPA Region 5	09/27/01 memo to Eric Morton
177	3/27/1997	letter	G. Allen Burton	Wright State U		USEPA	Attached PCB risk reduction costs 1994-96
178	5/29/1997	lab data	Ohio EPA	Ohio EPA		Ohio EPA	Enclosed draft Quality Assurance Project Plan for the U.S. EPA's Freshwater Sediment Toxicity Methods Evaluation
179	7/25/1997	requisition	Dan W. Mullins	AK Steel		Ed Clancy	Lab results for May 1997 Sediment Sample AK Steel/Dicks Creek
180	8/1/1997	article	George Frame	General Electric	publication	Analytical Chemistry News & Features	Capitol request for expenditure of \$2.3M to eliminate PCB risk with attached Engineering Report
181	9/5/1997	letter	Paul Casper	Frost & Jacobs		Robert Smith	Congener-Specific PCB Analysis, Analytical Chemistry, 468-475 (Aug 1, 1997)
182	9/26/1997	ROD	USEPA	USEPA		USEPA Region 5	AK Steel's response to RCRA and CERCLA Information Requests re Middletown, OH Works with index (submitted as part of Appendix J to Doc. # 16)
183	9/30/1997	report	Richard Astle	Geraghty & Miller		AK Steel	Declaration for the Record of Decision South Point Plant Site, South Point, Lawrence County, Ohio
184	9/30/1997	report	Richard Astle	Geraghty & Miller		AK Steel	Evaluation of Biological Attenuation in the Benzene Area of Investigation (submitted as part of Appendix J to Doc. # 16)
184	9/30/1997	book	Research Triangle Institute	US Dept H & HS		Gary Cygan	Toxicological Profile for PCBs (update)
185	9/30/1997	report	Obaid Fareon	RTI	publication	ATSDR	Faroon & Liska published report by Research Triangle Institute, Toxicological Profile for PCB (update)
186	12/9/1997	letter	Patrick Gallo	AK Steel		Ohio EPA	AK Steel's 304 release of oil on 11/11/97 OEPA Report # 9711-09-4483
187	12/24/1997	permit	Martha Spurbek	Ohio EPA		AK Steel	Revised NPDES Permit No. 1000001*FD (OH 000997)

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Document Number	Date	Document Type	Author	Sending Organization	Recipient	Recipient Organization	Document Subject
234	2/23/1999	letter	Steve Francis	AK Steel	Kendall Moore	USEPA Region 5	Final part PCB SEP Completion Report submitted as part of (Appendix D to Doc #16)
235	3/1/1999	article	Kimbrough, et al	Institute for Evaluating Health Risks	publication	Journal of Environmental Medicine	May 14, 2002 fax of "Mortality in Male and Female Capacitor Workers Exposed to PCBs. JOEM 41(3) 161-171(March 1999)
236	3/10/1999	letter	Richard Astle	ARCADIS	John Spiller	Ohio EPA	4th Quarter 1999 Treatment and Management of Interception-Trench Water for Monroe Ditch Area (submitted as part Appendix M to Doc # 16)
237	3/12/1999	article	Hanning, et al	ARCADIS, Maine	publication	Human & Ecological Risk Assessment	Distributions for Key Exposure Factors Controlling the Uptake of Xenobiotic Chemicals by Great Blue Herons through Ingestion of Fish. H&ERA 5(1):125-144 (1999) faxed 3/12/99
238	4/28/1999	letter	Richard Astle	ARCADIS	John Spiller	Ohio EPA	1st Quarter 1999 Treatment and Management of Interception-Trench Water for Monroe Ditch Area
239	5/3/1999	letter	Richard Astle	ARCADIS	John Spiller	Ohio EPA	Revised Table of 1st Quarter 1999 Treatment and Management of Interception-Trench Water for Monroe Ditch Area (submitted as part of Appendix M to Doc # 16)
240	5/7/1999	lab results	Matt Lake	Belmonte Park ES	Russ Dudek	AK Steel	Analyses results of RCRA leachate analyses and dust analyses of samples
241	5/24/1999	letter	Mary Osika	Ohio EPA	Jeff Agnew	Butler County Health Dept	Request to post signs re Dicks Creek
242	5/27/1999	report	Sechena, et al	NIEHS Center	sponsor	USEPA	Asian and Pacific Islander Seafood Consumption Study (EPA 519/A-99-003)
243	6/1/1999	report	Mary Osika	Ohio EPA	Ohio EPA	Ohio EPA	IMS Inspection 6/1/99-6/3/99, pp. 1-3
244	6/8/1999	lab results	Tom Batten	Belmonte Park ES	Russ Dudek	AK Steel	Analyses results of RCRA leachate analyses and dust analyses of samples
245	6/9/1999	www	Williams, et al	Purdue U	publication		An Examination of Fish Consumption by Indiana Recreational Anglers, Executive Summary June 9, 1999
246	6/21/1999	report	Hudsonwatch	Hudsonwatch	publication	Hudsonwatch	Webarticle An Evaluation of the Feasibility of Environmental Breeding in the Upper Hudson River downloaded 6/21/99
247	6/28/1999	letter	Mary Osika	Ohio EPA	Mark Meloney	USEPA Region 5	Information re AK Steel PCB problem listing 4 enclosures
248	7/15/1999	report	Astle, Banaszak, Graves	ARCADIS	AK Steel	AK Steel	Appendices A & B to Monroe Ditch Investigation First Interim Report (Methodology & Boing Logs)
249	7/20/1999	report	Richard Astle	ARCADIS	John Spiller	Ohio EPA	2nd Quarter 1999 Treatment and Management of Interception-Trench Water, Monroe Ditch Area (submitted as part Appendix M to Doc # 16)
250	7/21/1999	guidance	USEPA	www.epa.gov/opptintr	www		Office of Pollution Prevention and Toxics webarticle, Health Effects of PCBs, downloaded 8/14/09
251	7/31/1999	report	NCEA	USEPA ORD	publication	USEPA	Sociodemographic Data Used for Identifying Potentially Highly Exposed Populations, EPA/600/R-99/060, July 1999
252	8/1/1999	report	Kitts & Steinback	Nat Marine Fisheries	publication	US Dept of Commerce	Data Needs for Economic Analysis of Fishery Management Regulations, Aug 1999
253	8/1/1999	report	TAMS Consultants Manze-Cura	TAMS Consultants Manze-Cura	USEPA, Region 2	USEPA, Region 2	Phase 2 report Baseline Ecological Risk Assessment Hudson River PCBs Reassessment RIFS, Aug. 1999
254	8/1/1999	www	epa.gov/hudson/era- extsum	USEPA	public website		Hudson River PCBs Ecological Risk Assessment Executive Summary, August 1999
255	10/14/1999	report	J Sarapata	Test America	Carl Badlner	AK Steel	Analytical report of samples with chain of custody for MOA DEP
256	10/27/1999	report	Richard Astle	ARCADIS	John Spiller	Ohio EPA	3rd Quarter 1999 Treatment and Management of Interception-Trench Water, Monroe Ditch Area (submitted as part of Appendix M to Doc #16)
257	11/12/1999	table	AK Steel	AK Steel	Frost Brown Todd	Frost Brown Todd	BCF Steel Making Slag (Appendix L)
258	11/15/1999	letter	Steve Francis	AK Steel	John Sauter	Middletown Fire Dept	Notice that all PCB transformers listed 11/15/85 are removed (Appendix E)
259	11/15/1999	letter	Steve Francis	AK Steel	John Sauter	Middletown Fire Dept	letter re drawings locating PCB transformers
260	11/30/1999	report	Duda, et al	Responsive Management	publication	IAFWA	The Future Of Fishing in the U.S.: Assessment of Needs to Increase Sport Fishing, IAFWA (Nov 1999), Phase V: Final Report
261	12/2/1999	legal	John Hritz	AK Steel	USEPA Region 5	USEPA Region 5	Certification for response to Information Request (Appendix N)
262	12/9/1999	letter	Paul Casper, Jr	Frost & Jacobs	Lisa Gelst	USEPA Region 5	Re: USEPA info Request under RCRA 307 and CWA 306
263	12/9/1999	logs	George Colvin	Geraghy & Miller	ARMCO	ARMCO	Well construction bore hole logs by various engineers of wells drilled 6/21/88-3/1/95 (Appendix F to Document # 16)
264	12/7/1999	lab report	Charles Ely	USEPA Region 5 CRL	USEPA	USEPA Region 5	USEPA Region 5 CRL Review of Data Set 990076 for VOA (organics) for samples 6/2/99
265	1/1/1999	book	Jarvinen, et al	USEPA	publication	SETAC	Linkage of Effects to Tissue Residues: Development of a Comprehensive Database for Aquatic Organisms Exposed to Inorganic and Organic Chemicals, 1999
266	1/1/2000	report	EA Engineering	EA Engineering			Biological Survey of Dicks Creek and its Tributaries 2001
267	1/1/2000	report	Linton, et al	Great Lakes Env Ct, HydroQual, USEPA,	unstated	unstated	Prevalence of Terata and Neoplasia Induced by PAHs in Fishes, undated
268	1/1/2000	manual	DiToro, et al	HydroQual, Inc. & USEPA	publication	USEPA	Draft: Technical Basis for the Derivation of Equilibrium Partitioning Sediment Guidelines for the Protection of Benthic Organisms: Nonionic Organics
269	1/6/2000	article	Matta, et al	Nat Oceanic & Atmos	publication	Environ Toxicology & Chem	Reproductive and Transgenerational Effects of Methylmercury or Aroclor 1268 on Fundulus heteroclitus, ETAC 20(2):327-335 (2001)
270	1/13/2000	report	Richard Astle	ARCADIS	John Spiller	Ohio EPA	4th Quarter 1999 Treatment and Management of Interception-Trench Water, Monroe Ditch Area
271	2/8/2000	report	Astle & DeNiro	ARCADIS	John H. McGinnis	USEPA Region 5	Production Well Pumpage and Groundwater Flow, July-Dec, 1999, AK Steel
272	3/31/2000	lab report	E. Evangelista	USEPA Region 5 CRL	Water Division	USEPA Region 5	USEPA Region 5 CRL Review of Data Set 990076 re PCB analysis
273	4/5/2000	manual	USEPA	USEPA	USEPA	USEPA	Equilibrium Partitioning Sediment Guidelines for the Protection of Benthic Organisms: PAH Mixtures, Final Draft, April 5, 2000
274	4/7/2000	lab report	Charles Ely	USEPA Region 5 CRL	Water Division	USEPA Region 5	USEPA Region 5 CRL Review of Data Set 990076 for ABNs
275	4/10/2000	report	Golden, et al	Georgetown U			Appendix G.1 A Weight-of-Evidence Review of the Human Studies of the Potential Cancer Effects of PCBs, April 10, 2000
276	4/30/2000	report	EA Engineering	EA Engineering	AK Steel	AK Steel	Biological Survey of Dicks Creek and its Tributaries, 1999
277	5/1/2000	memo	Sylvia Gaffin	USEPA Region 5 CRL	Water Division	USEPA Region 5	Memo and supporting data, analyses, and documentation re Review of Region 5 Data for Data Set 990076 AK Steel Samples
278	5/3/2000	lab report	Kathleen Swan	USEPA Region 5 CRL	John McGuire	USEPA Region 5	USEPA Region 5 CRL Review of Data Set 990076 for ICP Metals for samples 6/2/99
279	5/9/2000	letter fax	Came Rowland	Wright State U	Michael Mikulka	USEPA Region 5	Dicks Creek site and sampling map [map attached]
280	5/22/2000	report	Richard Astle	ARCADIS	John Spiller	Ohio EPA	1st Quarter 2000 Treatment and Management of Interception-Trench Water, Monroe Ditch Area
281	5/23/2000	lab report	Awanya, Ockvassa, Sanlago	USEPA Region 5	Water Division	USEPA Region 5	USEPA Region 5 CRL Review of Data Set 990076 for Total Solids, Total Volatile Solids, etc. for water samples 6/2/99

Attachment 7

Document Number	Date	Document Type	Author	Sending Organization	Recipient	Recipient Organization	Document Subject
282	5/23/2000	email	Thomas Bramscher	USEPA Region 5	Michael Mikulka	USEPA Region 5	Forwarding of Moloney email and Attached field report and description of sampling locations for AK Steel 6/2/99 sampling
283	5/23/2000	email	Mark Moloney	USEPA Region 5	Thomas Bramscher	USEPA Region 5	Attached field report and description of sampling locations for AK Steel 6/2/99 sampling
284	5/31/2000	lab report	Kathleen Swan	USEPA Region 5	John McGuire	USEPA Region 5	USEPA Region 5 CRL Review of Data Set 980076 for ICP Metals for samples 6/2/99
285	5/31/2000	lab report	ARCADIS	ARCADIS	Frost Brown & Todd	Frost Brown & Todd	Analytical Laboratory Data for Human Health & Ecological Risk Assessments for AK Steel Middletown Works Volume 1-3
286	5/31/2000	RGD	USEPA	USEPA	public record		Declaration for Record of Decision Sheboygan River and Harbor, Sheboygan, WI
287	6/2/2000	letter	Christopher Schraff	Porter Wright Morris	Robert Karl	Office of the OH Ad	Enclosed lab reports, analyses, and bench sheets dated from 12/12/97 to 4/23/99 submitted to USEPA 6/2/00
288	6/13/2000	fax	Mary Osika	Ohio EPA	Lisa Geist	USEPA Region 5	6 pages of log notes on sediment sampling 5/28/97, 12/12/95, 9/13/95, 10/26/95, 10/12/95
289	6/14/2000	letter	Lisa Geist	USEPA Region 5	Carl Battlinger	AK Steel	Letter transmitting copies of a USEPA analytical results of 6/3/99 water and sediment samples
290	6/14/2000	lab report	Mary Osika	Ohio EPA	Lisa Geist	USEPA Region 5	Faxed lab report for OEPA organic samples from Dick's Creek
291	6/30/2000	custody form	Becky Schwab, et al	Wright State U	Garnett Van Ness	Wright State U-Trieman Lab	Chain of Custody for Dick's Creek WSU sampling June and Aug 2000
292	8/7/2000	report	Richard Astle	ARCADIS	John Spiller	Ohio EPA	2nd Quarter 2000 Treatment and Management of Interception-Trench Water, Monroe Ditch Area
293	8/18/2000	table	Wright State U	Wright State U	Gary Cygan	USEPA Region 5	WSU PAH & PCB analysis summaries for Dick's Creek
294	8/23/2000	report	Enviro Firm Search	DataMap Tech Corp	ARCADIS	ARCADIS	Dick's Creek site info, job #MR48,0001
295	8/29/2000	data sheet	G. Allen Burton	Wright State U	G. Allen Burton	Wright State U	Water quality and physical characterization data for Tod Hunter Creek, Dick's Creek, and Little Sugar Creek
296	8/31/2000	report	General Electric Co	General Electric Co	publication	General Electric Co	Environmental Dredging: An Evaluation of Its Effectiveness in Controlling Risks, GE Corporate Environmental Programs August 2000
297	9/1/2000	report	Severn Trent Laboratories	Severn Trent Laboratories	www.st-inc.com		Corporate Statement of Qualifications
298	9/8/2000	letter	Paul Casper, Jr	Frost & Jacobs	Robert Guenther	USEPA Region 5	Response to Guenther's Aug 29, 2000 letter requesting documents re investigation of Dick's Creek and Monroe Ditch
299	9/22/2000	letter	G. Allen Burton	Wright State U	Jackie Timmer	MSE-HKM Labs	Request for QA Manual and certifications
300	9/22/2000	letter	Lisa Geist	USEPA Region 5	Paul Casper, Jr	Frost & Jacobs	Reply to Sept 19, 2000 letter requesting WSU research
301	9/26/2000	letter	Kevin Kissell	MSE-HKM, Inc.	Allen Burton	Wright State U	Enclosed HKM Quality Assurance Plan and state certification
302	9/28/2000	report	Akin (Barber), Copeland, Reid	ARCADIS	AK Steel	AK Steel	Water Use Alternatives in Slag Processing Operations Work Plan
303	9/28/2000	report	ARCADIS	ARCADIS	AK Steel	AK Steel	Sampling & Analysis Plan
304	9/28/2000	letter	Steven Weil	Brookside Labs	G. Allen Burton, Jr	Wright State U	Enclosed QC Manual and OEPA analyst certificates
305	9/29/2000	plan	Astle & Reid	ARCADIS	AK Steel	AK Steel	Seep Inspection Plan, OMS Operations Area
306	9/29/2000	plan	Astle & Reid	ARCADIS	AK Steel	AK Steel	Soil Investigation Plan, OMS Operation Area, AK Steel
307	9/29/2000	plan	Astle & Reid	ARCADIS	AK Steel	AK Steel	Hydrogeologic Investigation Plan OMS Operations Area, AK Steel
308	9/29/2000	plan	Astle & Reid	ARCADIS	AK Steel	AK Steel	Quality Assurance Project Plan OMS Operations Area, AK Steel
309	10/2/2000	letter	Thomas Tierman	Wright State U	G. Allen Burton, Jr	Wright State U	Enclosed WSU Brahm Research Labs QA Manual replying to 9/22/00 request
310	10/4/2000	letter	Richard Astle	ARCADIS	Lisa Geist	USEPA Region 5	Cover letter for ARCADIS' AK Steel Soil Sampling, Groundwater Monitoring, Seepage Inspection, Sediment Sampling, and Water Usage Evaluation Plans (no enclosure)
311	10/21/2000	article	Staneek, et al	U of MA	publication	Human & EPA	Soil Ingestion Distributions for Monte Carlo Risk Assessment in Children, Human and Ecological Risk Assessment 7(2)357-368(2001)
312	10/27/2000	report	Richard Astle	ARCADIS	John Spiller	Ohio EPA	3rd Quarter 2000 Treatment and Management of Interception-Trench Water, Monroe Ditch Area with enclosure
313	10/30/2000	letter	Joe Boyle	USEPA Region 5	Richard Wardrup	AK Steel	Disapproval of Sampling and Analysis Plan
314	10/30/2000	letter	Joe Boyle	USEPA Region 5	Richard Wardrup	AK Steel	Comments on the Quality Assurance Project Plan under 7003 Order
315	10/30/2000	letter	Joe Boyle	USEPA Region 5	Richard Wardrup	AK Steel	Approval with modifications of Seep Inspection Plan with enclosure
316	10/30/2000	fax	Joe Boyle	USEPA Region 5	Richard Wardrup	AK Steel	Fax covers for Boyle's 2/13/00 letters re comments on QA plan and approval with modification of SEEP Inspection Plan
317	10/31/2000	letter	Joe Boyle	USEPA Region 5	Richard Wardrup	AK Steel	Disapproval of Water Use Alternatives in Slag Processing Operations Plan
318	11/1/2000	manual	USEPA	USEPA	publication	USEPA	Guidance for Assessing Chemical Contaminant Data for Use in Fish Advisories, Vol 1-2, Risk Assessment and Fish Consumption Limits, 3rd Ed, Nov 2000
319	11/1/2000	report	USEPA (OST)	USEPA	USEPA	USEPA	Phase 2 Report: Further Site Characterization and Analysis Vol 2E-Revised Baseline Ecological Risk Assessment Hudson River PCBs Reassessment, Books 1-2, Nov 2000
320	11/6/2000	plan	Ricard Astle	ARCADIS	Lisa Geist	USEPA	Seep Inspection Plan for OMS Operations Area, Rev. 1
321	11/6/2000	fax	Kurt Hileman	AK Steel	Mary Osika	Ohio EPA	Seeps to Dick's Creek with latitude-longitude
322	11/6/2000	fax	Kurt Hileman	AK Steel	Mary Osika	Ohio EPA	Attached lat/long of seeps into Dick's Creek
323	11/7/2000	letter	Joe Boyle	USEPA Region 5	Richard Wardrup	AK Steel	Disapproval of Soil Investigation Plan under 7003 Order
324	11/14/2000	report	ARCADIS	ARCADIS	AK Steel	AK Steel	Surface Water and Sediment Sampling and Analysis Plan; Revision 1
325	11/14/2000	report	ARCADIS	ARCADIS	AK Steel	AK Steel	Quality Assurance Project Plan; Revision 1
326	11/14/2000	report	ARCADIS	ARCADIS	AK Steel	AK Steel	Work Plan for Human Health and Ecological Risk Assessment
327	11/14/2000	letter	Timothy Barber	ARCADIS	Lisa Geist	USEPA Region 5	Cover letter for ARCADIS' AK Steel Sampling and Analysis Plan Revision 1 and Work Plan for Human Health & Environmental Risk Assessment, 3) QAPP Rev. 1, 4) Water Use Alternative Plans, Rev 1
328	11/14/2000	plan	Akin Copeland Reid	ARCADIS	AK Steel	AK Steel	Water Use Alternatives in Slag Processing Operations Plan OMS Operations Area, AK Steel
329	11/14/2000	plan	Barber, Reid Banaszak	ARCADIS	AK Steel	AK Steel	Sampling and Analysis Plan, AK Steel, Revision 1
330	11/14/2000	letter	Joe Boyle	USEPA Region 5	Richard Wardrup	AK Steel	Disapproval of Hydrologic Investigation Plan
331	11/16/2000	www	epa.gov/toxteam/pcbdl/	USEPA	public website		PCB Toxicity Equivalent Factors (with Table updated 11/16/2000, downloaded 12/16/2002)
332	11/17/2000	report	Eric Morton	Tetra Tech EM, Inc	Lisa Geist	USEPA Region 5	Draft Human Health Risk Assessment Dick's Creek and Tributaries, AK Steel Middletown Works
333	11/20/2000	fax	Carl Battlinger	AK Steel	Mary Osika	Ohio EPA	Attached analyses for seep 1 and 2
334	11/22/2000	letter	Paul Casper	Frost Brown & Todd	Robert Guenther	USEPA Region 5	Letter re attached ARCADIS AK Steel groundwater data [also faxed copy to Lisa Geist]
335	11/29/2000	fax/letter	Paul Casper	Frost Brown & Todd	Robert Guenther	USEPA Region 5	11/29/00 letter attaching ARCADIS AK Steel soil data [also faxed copy to Lisa Geist]
336	11/30/2000	letter	James Reid	ARCADIS	Lisa Geist	USEPA Region 5	Enclosed Soil Investigation Plan; Revision 1

Document Number	Date	Document Type	Author	Sending Organization	Recipient	Recipient Organization	Document Subject
387	3/19/2001	letter	James Shewell	Tube City, Inc.	Gary Cygan	USEPA Region 5	Remediation of Virgin Petroleum Contaminated Media and MSDS, Waste Water and Photos
388	3/22/2001	article	Kakela, et al	U of Joensuu	publication	Environmental Toxicology & Chem	Vitamins A and A2 in Hepatic Tissue and Subcellular Fractions in Mink Feeding on Fish-Based Diets and Exposed to Arochlor 1242. ETAC 21(2):397-403
389	3/26/2001	MPPR	Timothy Barber	ARCADIS	Gary Cygan	USEPA Region 5	RCRA 7003 Order Monthly Progress Report
390	3/31/2001	report	Gregg Seeger	EA Engineering	AK Steel	AK Steel	Sampling & Analysis Plan, Biological Community & Habitat Assessment
391	4/4/2001	fax	Kurt Hileman	AK Steel	Mary Osika	Ohio EPA	Attached seep lat/long, seep 10 resampling, and seep 16 and 17 sample results
392	4/10/2001	report	Berner, et al	SUNY	USEPA	USEPA	Appendix Q 2. Non-Cancer Effects of PCBs--A Comprehensive Literature Review, April 10, 2001
393	4/11/2001	letter	Gary Cygan	USEPA Region 5	Carl Battliner	AK Steel	Disapproval of Human Health and Ecological Risk Assessment Work Plan, Revision 1
394	4/13/2001	MPPR	Timothy Barber	ARCADIS	Gary Cygan	USEPA Region 5	RCRA 7003 Order Monthly Progress Report
395	4/19/2001	fax	Kurt Hileman	AK Steel	Mary Osika	Ohio EPA	Attached Seep locations # 18 and 19
396	4/21/2001	letter	Carl Battliner	AK Steel	Gary Cygan	USEPA Region 5	Request for extension to submit revised work plan
397	4/25/2001	letter	Mary Osika	Ohio EPA	Kurt Hileman	AK Steel	Re-posting of warning signs
398	4/26/2001	report	Barber and Reid	ARCADIS	AK Steel	AK Steel	Data Summary Report, Sediment and Surface Water (for 18 Dec. 2000 - 2 Feb. 2001 with CD)
399	4/26/2001	letter	Carl Battliner	AK Steel	Gary Cygan	USEPA Region 5	USEPA Comments on Human Health and Ecological Risk Assessment Work Plan Revision 1, Jan. 16, 2001
400	4/26/2001	fax	Carl Battliner	AK Steel	Gary Cygan	USEPA Region 5	USEPA Comments on Human Health and Ecological Risk Assessment Work Plan Revision 1, Jan. 16, 2001
401	4/30/2001	report	G.A. Burton, et al	AquaQual Services	Eric Morton	Tetra Tech EM, Inc	Ecological Risk Assessment of Dick's Creek Final Report
402	5/1/2001	fax	Kurt Hileman	AK Steel	Mary Osika	Ohio EPA	Attached Sample results for Seeps 16 and 19
403	5/1/2001	lab data	ARCADIS	ARCADIS	Frost Brown Todd	Frost Brown Todd	Analytical Lab Data for Human Health & Environmental Risk Assessments
404	5/15/2001	MPPR	Timothy Barber	ARCADIS	Gary Cygan	USEPA Region 5	RCRA 7003 Order Monthly Progress Report
405	5/17/2001	list	Kurt Hileman	AK Steel	Mary Osika	Ohio EPA	Seep Locations
406	5/24/2001	report	Stickney and Barber	ARCADIS	AK Steel	AK Steel	Work Plan for Human Health and Ecological Risk Assessment, Revision 2
407	5/24/2001	article	Peter Chapman	EVS Envr Consultants	publication	Science of the Total Environment	Ecological Risk Assessment and Hormesis TSTE 288:131-140 (2002)
408	5/24/2001	letter	Timothy Barber	ARCADIS	Gary Cygan	USEPA Region 5	Letter attaching Ecological Risk Assessment and Hormesis TSTE 288:131-140 (2002)
409	5/25/2001	letter	Gary Cygan	USEPA Region 5	Carl Battliner	AK Steel	Supporting Documentation for WGU Analytical Data for Dick's Creek
410	5/25/2001	fax	Konrad Banaszak	ARCADIS	Phyllis Fuchsman	ARCADIS	Pages 216-221 of Handbook of Environmental Data on Organic Chemicals, 2nd Edition, 1983, Verschueren, ed.
411	5/29/2001	letter fax	Carl Battliner	AK Steel	Gary Cygan	USEPA Region 5	USEPA Comments on Human Health and ERA Work Plan Revision 1
412	5/31/2001	report	EA Engineering	EA Engineering	AK Steel	AK Steel	Biological Survey of Dick's Creek and Its Tributaries 2000
413	5/31/2001	fax	Kurt Hileman	AK Steel	Mary Osika	Ohio EPA	Attached latitude and longitude of seeps 20-22
414	6/1/2001	table	Ohio EPA	Ohio EPA	Gary Cygan	USEPA Region 5	Ohio EPA Summary of AK Steel Seeps found Nov. 2000-May 2001 with ARCADIS map
415	6/4/2001	report	Stickney & Barber	ARCADIS	Frost Brown Todd	Frost Brown Todd	Human Health Risk Assessment, Dick's Creek, OH (Ex 1 to AK Steel's Motion for Injunction Under All Wrts)
416	6/4/2001	report	Stickney & Barber	ARCADIS	Frost Brown Todd	Frost Brown Todd	Evaluation of Potential Risks Associated with On-Site Soils, AK Steel Corp Middletown Works (Ex 2 to AK Steel's Motion for Injunction Under All Wrts)
417	6/4/2001	report	Stickney & Barber	ARCADIS	Frost Brown Todd	Frost Brown Todd	Evaluation of Potential Risks Associated with On-Site Sediment and Surface Water, AK Steel Corp Middletown Works (Ex 3 to AK Steel's Motion for Injunction Under All Wrts)
418	6/4/2001	report	Fuchsman & Barber	ARCADIS	Frost Brown Todd	Frost Brown Todd	Ecological Risk Assessment, Dick's Creek (Ex 4 to AK Steel's Motion for Injunction Under All Wrts)
419	6/6/2001	motion	Paul Casper, Jr	Frost Brown Todd	Judge Herman Weber	Western Div	AK Steel's Motion for Preliminary Injunction Pursuant to the All Wrts Act with Exs 1-4
420	7/6/2001	report	David Vicarel	ARCADIS	John Spiller	Ohio EPA	2nd Quarter 2001 Treatment and Management of Interception-Trench Water, Monroe Ditch Area
421	6/15/2001	MPPR	Timothy Barber	ARCADIS	Gary Cygan	USEPA Region 5	RCRA 7003 Order Monthly Progress Report for May 2001
422	6/15/2001	fax	Kurt Hileman	AK Steel	Mary Osika	Ohio EPA	Attached lab analytical results for Seeps 20-22
423	6/21/2001	letter	Mary Osika	Ohio EPA	Kurt Hileman	AK Steel	Notice of Violation: Seeps Discharging to Dicks Creek
424	6/21/2001	news	Andrew Thompson	Ohio EPA	public	public	News Release: Ohio EPA Urges Public to Heed Health Advisories Issued for Dick's Creek
425	6/25/2001	report	David Vicarel	ARCADIS	John Spiller	Ohio EPA	1st Quarter 2001 Treatment and Management of Interception-Trench Water, Monroe Ditch Area
426	6/26/2001	email	Mary Osika	Ohio EPA	Michael Mkuika	USEPA Region 5	email transmitting Ohio EPA Summary of AK Steel Seeps found during Seep Inspections starting Nov. 2000-May 2001 per USEPA 7003 Order
427	6/27/2001	letter	Joseph Boyle	USEPA Region 5	Carl Battliner, et al	AK Steel	Notice of Violations of 7003(a) Order (with 4 fax confirmation sheets)
428	7/1/2001	plan	David Vicarel	ARCADIS	AK Steel	AK Steel	Final Soil and Groundwater Investigation Plan for Olympic Mills Area
429	7/2/2001	letter	Kurt Hileman	AK Steel	Mary Osika	Ohio EPA	Response to June 21, 2001 NOV letter
430	7/2/2001	letter	Joseph Boyle	USEPA Region 5	Carl Battliner	AK Steel	Approval with modifications of Revised Soil and Groundwater Investigation Plan
431	7/5/2001	letter	Timothy Barber	ARCADIS	Gary Cygan	USEPA Region 5	Letter re WGU data for Dick's Creek (enclosure to 6/15/02 Casper letter to Guanoher)
432	7/6/2001	report	Stickney & Barber	ARCADIS	Frost Brown Todd	Frost Brown Todd	Addendum 2 to the Human Health Risk Assessment, Acceptable Risk Benchmarks, Dick's Creek
433	7/6/2001	report	Stickney & Barber	ARCADIS	Frost Brown Todd	Frost Brown Todd	Addendum 1 to the Human Health Risk Assessment, Background Risks, Dick's Creek
434	11/16/2001	report	Stickney & Barber	ARCADIS	Frost Brown Todd	Frost Brown Todd	Addendum 4 to the Human Health and Risk Assessment, Dick's Creek: Human Use Survey
435	7/6/2001	report	Stickney & Barber	ARCADIS	Frost Brown Todd	Frost Brown Todd	Addendum 5 to the Human Health and Risk Assessment, Dick's Creek: Validation of Assumptions Related to Fish Consumption
436	7/6/2001	letter	David Vicarel	ARCADIS	John Spiller	Ohio EPA	Second Quarter 2001- Treatment, Management of Interception Trench Groundwater, Monroe Ditch
437	7/8/2001	transcript	US District Court	US District Court	USDOJ	USDOJ	Transcript of proceedings before Judge H.J. Weber, U.S.A v AK Steel July 8, 2001
438	7/10/2001	report	Timothy Barber	ARCADIS	AK Steel	AK Steel	Sediments
439	7/11/2001	report	Timothy Barber	ARCADIS	AK Steel	AK Steel	Addendum 2 to the Ecological Risk Assessment: Background Risks
440	7/13/2001	MPPR	Timothy Barber	ARCADIS	Gary Cygan	USEPA Region 5	RCRA 7003 Order Monthly Progress Report for June 2001
441	7/16/2001	pleading	Paul Casper, Jr	Frost Brown Todd	Judge Herman Weber	Western Div	Reply by AK Steel to Response to Motion for Preliminary Injunction with Exs 1-6
442	7/18/2001	record	Gary Cygan	USEPA Region 5	Judge Herman Weber	Western Div	Certification and Index of 56 records of the Initial Administrative Record supporting USEPA's Order under Section 7003 of RCRA

Attachment 7

Document Number	Date	Document Type	Author	Sending Organization	Recipient	Recipient Organization	Document Subject
490	1/14/2002	index	Michael Mikulka	USEPA Region 5	Judge Herman Weber	US District Court, S.D. OH, Western Div	Certification and Index of 56 records of the Initial Administrative Record supporting USEPA's Order under Section 7003 of RCRA
491	1/15/2002	report	Blasland Bouck & Lee	Blasland Bouck & Lee	The Fox River Group	The Fox River Group	Baseline Ecological Risk Assessment of the Lower Fox River and Green Bay, Wisconsin
492	1/15/2002	report	AMEC Earth & Env	AMEC Earth & Env	FRG Members	FRG Members	FRG's Alternative Human Health Risk Assessment of the Lower Fox River and Green Bay, WI
493	1/15/2002	MFR	Timothy Barber	ARCADIS	Gary Cygan	USEPA Region 5	RCRA 7003 Order Monthly Progress Report for Dec 2001
494	1/18/2002	pleading	Paul Casper, Jr	Frost Brown Todd	Judge Weber	US District Court, S.D. OH, Western Division	AK Steel Corp's Reply to the United States Response to AK Steel's First and Second Notices of Supplemental Authority in Support of its Motion for an Injunction with Attachments
495	1/22/2002	report	David Vicarel	ARCADIS	John Spiller	Ohio EPA	Fourth Quarter 2001--Treatment and Management of Interception Trench Groundwater, Monroe Ditch Area
496	1/29/2002	letter	Joe Boyle	USEPA Region 5	Carl Battliner	AK Steel	Approval with modifications of Human Health and Ecological Risk Assessment Work Plan, Revision 2 dated 5/24/01 with 23 page enclosure and mailing documentation
497	1/31/2002	letter	Gary Cygan	USEPA Region 5	Timothy Barber	ARCADIS	Letter enclosing raw sampling data responding to ARCADIS' 11/30/01 queries and data
498	1/12/2002	www	Stearns, Thomas L	www.NatureDoc	www		Schedule for Introducing Solid Foods, pp 1-6 (copyright 2002, print date illegible)
499	2/1/2002	ROD	USEPA		public record		Pages 13-30 of Hudson River PCBs Site NY Record of Decision
500	2/5/2002	pleading	Paul Casper, Jr	Frost Brown Todd	Judge Weber	US District Court, S.D. OH, Western Division	AK Steel's Third Notice of Supplemental Authority in Support of its Motion for an Injunction Under the All Writs Act with Attachment: Biological Survey of Dick's Creek, 2001
501	2/5/2002	email	Rebecca Weisner	ARCADIS	Diana Zimmerman	Ohio EPA	Re requested 2000 organic data
502	2/6/2002	pleading	Paul Casper, Jr	Frost Brown Todd	Judge Weber	US District Court, S.D. OH, Western Division	AK Steel's Fourth Notice of Supplemental Authority in Support of its Motion for an Injunction Under the All Writs Act
503	2/7/2002	report	Copeland & Reid	ARCADIS	AK Steel	AK Steel	Alternatives and Reuse Assessment - Water Use in Slag Processing Operations
504	2/8/2002	report	Vicarel et al.	ARCADIS	AK Steel	AK Steel	Soil and Groundwater Investigation Report Vol 1 & 2 with cover letter transmittal 503 & 504
505	2/8/2002	letter	David Vicarel	ARCADIS	Gary Cygan	USEPA Region 5	Letter and Attachments 1-16 for the Soil and Groundwater Investigation Report
506	2/13/2002	plan	Leigh & Barber	ARCADIS	AK Steel	AK Steel	Floodplain Soil and Supplemental Sediment Sampling Analysis Plan for OMS Facility
507	2/13/2002	letter	Timothy Barber	ARCADIS	Gary Cygan	USEPA Region 5	Cover letter to Floodplain Soil and Sediment Work Plan
508	2/13/2002	MFR	Timothy Barber	ARCADIS	Gary Cygan	USEPA Region 5	RCRA 7003 Order Monthly Progress Report
509	2/20/2002	letter	Doug Shelton	U.S. Army Corps of Engineers	Timothy Barber	ARCADIS	Nationwide Authorization to construct a wet/treatment area with attached General Permit
510	2/25/2002	pleading	Paul Casper, Jr	Frost Brown Todd	Judge Weber	US District Court, S.D. OH, Western Division	AK Steel's Renewed and Urgent Request for an Expedited Ruling on its Motion for Injunction under the All Writs Act with Exs 1-2
511	3/1/2002	plan	Shockey & Barber	ARCADIS	Frost Brown Todd	Frost Brown Todd	Work Plan for Human Health and Ecological Risk Assessment, Revision 3
512	3/15/2002	MFR	Timothy Barber	ARCADIS	Gary Cygan	USEPA Region 5	RCRA 7003 Order Monthly Progress Report for Jan, 2002 for Feb 2002
513	3/22/2002	www	www.srnboz	SMERP	public website		Santa Monica Bay Home Page re Prop 12 and Bay Restoration Project (2/22/02 download)
514	3/22/2002	www	1deo.columbia.edu/Hudson	1deo.columbia.edu/Hudson	public website		Hudson River Research at Columbia (webarticle printed March 22, 2002)
515	3/22/2002	www	cfpu.epa.gov/surf	cfpu.epa.gov/surf	public website		Surf Your Watershed Kalamazoo Watershed Info
518	3/22/2002	www	cfpu.epa.gov/surf	cfpu.epa.gov/surf	public website		Surf Your Watershed Upper Fox Watershed Info
517	3/22/2002	www	cfpu.epa.gov/surf	cfpu.epa.gov/surf	public website		Surf Your Watershed Hudson River Watershed Info
518	3/27/2002	www	americanrivers.org	americanrivers.org	public website		Most Endangered #4 Hudson River
519	3/27/2002	fax	Paul Casper, Jr	Frost Brown Todd	Chris Park	USDOJ	Fax of 8 page March 22, 2002 fax-letter to Christopher Peak attaching first set of documents for supplemental Administrative Record
520	3/28/2002	letter	Paul Casper, Jr	Frost Brown Todd	Robert Guenther	USEPA Region 5	Attached March 28, 2002 index to boxes of documents to supplement Record
521	4/2/2002	email	Rebecca Weisner	ARCADIS	Diana Zimmerman	Ohio EPA	Re requested 2000 organic data
522	4/8/2002	email	Rebecca Weisner	ARCADIS	Diana Zimmerman	Ohio EPA	Organic data, Dick's Creek 2000
523	4/15/2002	table	US BL & Census	US BL & Census	publication	US BL & Census	General Demographic Characteristics for Middletown, OH, 2000
524	4/15/2002	regulations	Ohio DNR	Ohio DNR	publication	Ohio DNR	2002-2003 Fishing Regulations from Ohio DNR website
525	4/15/2002	MFR	Timothy Barber	ARCADIS	Gary Cygan	USEPA Region 5	RCRA 7003 Order Monthly Progress Report for March 2002
526	4/16/2002	letter	Robert Darnell	US DOJ	Paul Casper, Jr	Frost Brown Todd	Re AK Steel's opportunity to confer, completion of the Record, and potential settlement
527	4/17/2002	index	ARCADIS	ARCADIS	USEPA Region 5	USEPA Region 5	Revision 1 to Index of References 3-28-02
529	4/18/2002	www	epa.gov/r5/Superfndpt	epa.gov/r5/Superfndpt			Fact Sheet, Allied Paper, Inc./Portage Creek/Kalamazoo River, Superfund Site Status Report, Nov 2000
529	4/18/2002	www	epa.gov/region02	epa.gov/region02			Region 2 Superfund, Hudson River PCBs Site Status Report
530	4/22/2002	www	yourchildshhealth.com	Children's Med Ct			Cook Your Kids Something Fishy (web-article)
531	4/22/2002	www	epa.gov/osr/8shadvice	USEPA Office of Water			National Advice on Mercury in Fish Caught by Family and Friends, January 2001
532	4/22/2002	www	BabyCenter	babycenter.com	ARCADIS	ARCADIS	Introducing Solid Foods (web article downloaded 4/22/02)
533	4/24/2002	letter	Steven Westloh	Frost Brown Todd	Robert Guenther	USEPA Region 5	Enclosed index and documents AK Steel requests added to the record for the RCRA 7003 order
534	4/25/2002	letter	Robert Guenther	USEPA Region 5	Paul Casper, Jr	Frost Brown Todd	Response to Casper April 24, 2002 letter to Darnell re opportunity to confer re 7003 Order
535	4/26/2002	letter	Paul Casper, Jr	Frost Brown Todd	Robert Guenther	USEPA Region 5	Response to Guenther re proposed May 1 meeting
536	4/26/2002	letter	Paul Casper, Jr	Frost Brown Todd	Robert Guenther	USEPA Region 5	Re May 1, 2002 meeting to confer re 7003 Order
537	5/1/2002	presentation	Timothy Barber	ARCADIS G & M	ORC	USEPA Region 5	Power Point presentation re AK Steel current conditions OMS Operations Area and Dick's Creek
538	5/1/2002	memo	unrelated	State of Ohio	USEPA Region 5	USEPA Region 5	The State of Ohio's Response to AK Steel's Comments on the Notes Taken by U.S. EPA During the "Opportunity to Confer" of May 1, 2002
539	5/1/2002	minutes	Leverett Nelson	USEPA Region 5	file	file	USEPA's draft minutes of May 1, 2002 opportunity to confer
540	5/1/2002	minutes	AK Steel	AK Steel	USEPA Region 5	USEPA Region 5	AK Steel's comments on USEPA's draft minutes of 5/1/02 meeting (enclosure to Casper's 5/15/02 letter to Guenther)
541	5/3/2002	letter	Paul Casper, Jr	Frost Brown Todd	Robert Guenther	USEPA Region 5	Re follow-up to May 1, 2002 meeting and request for extension
542	5/13/2002	lab report	Diana Zimmerman	Ohio EPA	Gary Cygan	USEPA	Ohio EPA Summary of AK Steel Seeps found during Seep Inspections starting Nov 2000-Oct 2001 per USEPA 7003 Order
543	5/13/2002	letter	Paul Casper, Jr	Frost Brown Todd	David C. Cox	Office of Ohio Attorney General	Enclosed U.S. Army Corps' nationwide permit
544	5/13/2002	letter	Paul Casper, Jr	Frost Brown Todd	Robert Guenther	USEPA Region 5	Request for Ohio EPA sediment data

Attachment 7

Document Number	Date	Document Type	Author	Sending Organization	Recipient	Recipient Organization	Document Subject
546	5/14/2002	lab report	Diana Zimmerman	Ohio EPA	Gary Cygan	USEPA Region 5	Letter enclosing Lab organic analysis data results from AK Steel outfall 002
548	5/14/2002	www	epa.gov/rivers/86rivers	epa.gov/rivers/86rivers	www		14 listed American Heritage Rivers
547	5/14/2002	www	amrivers.org/mostendange	amrivers.org/mostendange			1996 Most Endangered Rivers Report
548	5/14/2002	letter	Paul Casper	Frost Brown Todd	Robert Guenther	USEPA Region 5	Cover letter listing enclosed documents for adding to Administrative Record
549	5/14/2002	report	Richard Astle	ARCADIS	John P. Spitzer	Ohio EPA	Quarterly Interceptor Trench Reports from May 8, 1998 to April 10, 2002 (enclosure to Casper letter to Guenther)
550	5/14/2002	letter	Tim Barber	ARCADIS	Gary Cygan	USEPA Region 5	Notice of removal of data loggers and dismantling of wellpoint based on Soil and Groundwater Investigation Plan (enclosure to 5/15/02 Casper letter)
551	5/14/2002	letter	Tim Barber	ARCADIS	K. Doug Shelton	US Army Corps Engineers	Documentation of completed restoration floodplain activities (enclosure to 5/15/02 Casper letter to Guenther)
552	5/14/2002	letter	Tim Barber	ARCADIS	Gary Cygan	USEPA Region 5	Comments re WSU data for Dick's Creek (enclosure to 5/15/02 Casper letter to Guenther)
553	5/14/2002	letter	Tim Barber	ARCADIS	Harold O'Connell	Ohio EPA	Request to Abandon Boring MDA-315 Soil & Groundwater Investigation, OMS Operations Area (enclosure to 5/15/02 Casper letter)
554	5/14/2002	letter	Tim Barber	ARCADIS	Paul Casper	Frost Brown Todd	Comparison of Dick's Creek with Other PCB-Contaminated Waterways (enclosure to 5/15/02 Casper letter to Guenther)
555	5/14/2002	report	Stickney & Barber	ARCADIS	Frost Brown Todd	Frost Brown Todd	Critique of Tetra Tech Human Health Risk Assessment Dick's Creek and Tributaries (enclosure to 5/15/02 Casper letter to Guenther)
556	5/14/2002	letter	Timothy Barber	ARCADIS	Gary Cygan	USEPA Region 5	Request for WSU data re Dick's Creek
557	5/14/2002	letter	Timothy Barber	ARCADIS	Gary Cygan	USEPA Region 5	Completion of surface and groundwater measurements
558	5/14/2002	fax	Robert Guenther	USEPA Region 5	Paul Casper, Jr	Frost Brown Todd	Fax Confirmation of letter granting extension of time to respond to human health risk assessment
559	5/15/2002	MPR	Timothy Barber	ARCADIS	Gary Cygan	USEPA Region 5	Enclosed RCRA 703 Order Monthly Progress Report for activities in April 2002
560	5/15/2002	letter	Tim Barber	ARCADIS	Robert Guenther	USEPA Region 5	Cover letter to (1) Critique of WSU ERA, (2) Summary of Current Conditions, (3) FRG's Alternative Human Health Risk Assessment of Lower Fox River & Green Bay (4) Baseline ERA Hudson River
561	5/15/2002	report	Fuchsman & Barber	ARCADIS	Frost Brown Todd	Frost Brown Todd	Critique of WSU Ecological Risk Assessment, Dick's Creek Middletown, OH
562	5/15/2002	report	Tim Barber	ARCADIS	Frost Brown Todd	Frost Brown Todd	Summary of Current Conditions--OMS Operations Area and Dick's Creek AK Steel Middletown, OH
563	5/15/2002	legal memo	Paul Casper, Jr	Frost Brown Todd	USEPA Region 5	USEPA Region 5	Legal Analysis Supporting AK Steel's Position that There was No Imminent and Substantial Endangerment to Human Health of the Environment in the Dick's Creek Study Area
564	5/15/2002	e-mail	Rebecca Weisner	ARCADIS	various Ohio EPA	Ohio EPA	e-mails re AK Steel Site to and from Weisner dated from April 2 to April 26, 2002(enclosure to Casper 5/15/02 letter to Guenther)
565	5/15/2002	e-mail	Tim Barber	ARCADIS	various	USEPA Region 5	e-mail to and from Barber dated between Nov 7, 2000 and March 22, 2001 (enclosure to Casper 5/15/02 letter to Guenther)
566	5/15/2002	call record	Tim Barber	ARCADIS	Gary Cygan	USEPA Region 5	Faxs of 3 Barber records of calls to Cygan 3/14 and 4/18 re AK Steel (enclosure to 5/15/02 Casper letter to Guenther)
567	5/15/2002	e-mail	David Vicarel	ARCADIS	various	USEPA Region 5, AK Steel	e-mail to and from Vicarel re AK Steel site dated between 8/10/01 and 10/24/01(enclosure to 5/15/02 Casper letter to Guenther)
568	5/15/2002	call record	David Vicarel	ARCADIS	Gary Cygan	USEPA Region 5	4 Vicarel call records of calls to and from Cygan dated 7/30/01, 8/6/01, 8/10/01, 8/14/01(enclosure to 5/15/02 Casper letter to Guenther)
569	5/15/2002	call record	David Vicarel	ARCADIS	Eric Morton	Tetra Tech Chicago	2 Vicarel call records of calls to and from Morton dated 7/30/01 and 8/6/01 (enclosure to 5/15/02 Casper letter to Guenther)
570	5/15/2002	call record	Kurt Hileman	AK Steel	Mary Osika	Ohio EPA	12 call records and 1 fax to and from Hileman and Osika dated between 11/02 and 10/01 re Dick's Creek SEEP notifications (enclosure to 5/15/02 Casper letter to Guenther)
571	5/15/2002	Curr. Vitae	various	ARCADIS	Robert Guenther	USEPA Region 5	Curriculum Vitae for ARCADIS personnel Banaazak, Barber, Copeland, Fuchsman, Henning, Payne, Quilman, Reid, Stickney, Vicarel, EA's Seagert, Sween, and Vendruska, for consultants zimbrough, Barnhouse, and Wilson (enclosure to 5/15/02 Casper letter to Guenther)
572	5/15/2002	letter	Paul Casper, Jr	Frost Brown Todd	Robert Guenther	USEPA Region 5	Cover letter to listed documents for supplemental record under 7003 Order
573	5/15/2002	letter	Paul Casper, Jr	Frost Brown Todd	Robert Guenther	USEPA Region 5	Comments (in bold) in attached draft of Nelson's minutes of May 1, 2002 meeting re 7003 Order
574	5/15/2002	letter	Paul Casper, Jr	Frost Brown Todd	Robert Guenther	USEPA Region 5	Request for WSU ERA data cited in Barber May 14, 2002 letter to Cygan
575	5/15/2002	letter	Paul Casper, Jr	Frost Brown Todd	Robert Guenther	USEPA Region 5	Cover letter to AK Steel's Compliance Certification for Nationwide Permit for Stream and Wetland Restoration Activities, Dick's Creek
576	5/17/2002	article	Wilson, et al	N.D. Wilson & Assoc	publication	Health	An Event-By-Event Probabilistic Methodology for Assessing the Health Risks of Persistent Chemicals in Fish. Journal of Toxicology and Environmental Health Part A 52:595-642(2001)
577	5/17/2002	memo	Ohio EPA	Ohio EPA	Gary Cygan	USEPA Region 5	Ohio EPA Comments on "Soil and Groundwater Investigation Report--Olympic Mill Services Area, AK Steel, Middletown, Ohio, February 2002
578	5/17/2002	memo	Ohio EPA	Ohio EPA	Gary Cygan	USEPA Region 5	Ohio EPA Comments on the AK Steel Floodplain and Sediment Work Plan
579	5/17/2002	memo	Ohio EPA	Ohio EPA	Gary Cygan	USEPA Region 5	Ohio EPA Review Comments: Arcadis report on Alternatives and Reuse Assessment--Water Use in Slag Processing Operations, Feb 7, 2002
580	5/17/2002	memo	Ohio EPA	Ohio EPA	Gary Cygan	USEPA Region 5	Ohio EPA Comments re EA Report of the 2001 Biological Survey for Dick's Creek
581	5/22/2002	MPR	Tim Barber	ARCADIS	Gary Cygan	USEPA Region 5	Fax with attached Monthly Progress Report for April 2002 activities
582	5/23/2002	memo	Nita Nordstrom	Ohio EPA	Gary Cygan	USEPA Region 5	Ohio EPA comments for AK Steel Work Plan for Human Health and ERA Revision 3 dated 3/1/02
583	5/23/2002	memo	Nita Nordstrom	Ohio EPA	Gary Cygan	USEPA Region 5	Ohio EPA Comments for AK Steel Work Plan for Human Health and Ecological Risk Assessment Revision 3, Dated March 1, 2002
584	5/30/2002	letter	Paul Casper, Jr	Frost Brown Todd	Robert Guenther	USEPA Region 5	Re Dick's Creek data, WSU ERA, other data, and supplementation of the Record (May 24, 2002 ARCADIS fax pp 2-4 of WSU ERA attached)
586	6/4/2002	paper	Allen Burton	Wright State U			Meeting Agenda, CD, and overheads for paper "Linking Sediment Exposure with Effects: Laboratory and Field Assessment Techniques"
586	6/8/2002	manual	Christian, et al	Columbia Analytical Services			Quality Assurance Manual, revision 12.0

Attachment 7

Document Number	Date	Document Type	Author	Sending Organization	Recipient	Recipient Organization	Document Subject
587	6/15/2002	MPR	Timothy Barber	ARCADIS	Gary Cygan	USEPA Region 5	RCRA 7003 Order Monthly Progress Report
588	6/18/2002	letter	David Cox	Ohio Ass't Attorney General	Robert Darnell	US DOJ	Letter attaching ARCADIS Quarterly Reports re Interceptor Trench Water since May 1998
589	6/19/2002	report	Hileman, Courtney, Martin	AK Steel & PTG		AK Steel	Investigation of Potential Pollution Located Behind Art's Parts Oxford State Road
590	6/26/2002	letter	Paul Casper, Jr	Frost Brown Todd	Robert Guenther	USEPA Region 5	Re Cox's June 6, 2002 and information supplemental to Record
591	6/28/2002	letter	Paul Casper, Jr	Frost Brown Todd	Robert Guenther	USEPA Region 5	Re enclosed Hileman, Courtney, and Martin report re Dick's Creek pollution and Art's Parts
592	7/1/2002	letter	David Cox	General	Paul Casper, Jr	Frost Brown Todd	Attached copies of water samples completing ARCADIS' and AK Steel's request for information and response to Casper's June 26, 2002 letter to USEPA's Guenther
593	7/1/2002	report	Qualitative Environmental Analysis	Qualitative Environmental Analysis	General Electric	General Electric	Hudson River PCBs Site
594	7/8/2002	fax	Robert Guenther	USEPA Region 5	Paul Casper, Jr	Frost Brown Todd	Re: Casper June 26, 2002 correspondence
595	7/9/2002	letter	Robert Guenther	USEPA Region 5	Paul Casper, Jr	Frost Brown Todd	Response to Casper June 26, 2002 letter re Art's Parts
596	7/12/2002	pleading	David Cox	Ohio Assistant Attorney General	Judge Weber	US Distict. Court, S.D. OH, Western Div	Plaintiff State of Ohio's Reply to Defendant's Memorandum in Opposition to Plaintiff's Revised Motion for Leave to File Second Amended Complaint
597	7/15/2002	MPR	Timothy Barber	ARCADIS	Gary Cygan	USEPA Region 5	RCRA 7003 Order Monthly Progress Report
598	7/16/2002	letter	Paul Casper, Jr	Frost Brown Todd	Robert Guenther	USEPA Region 5	Re Cox's letter of July 1, 2002 and information sought
599	7/25/2002	pleading	Paul Casper, Jr	Frost Brown Todd	Judge Weber	U.S. District Court, S.D. Ohio	A.K. Steel Corporation's Sixth Notice of Supplemental Authority in Support of its Motion for an Injunction Under the All Writs Act
600	7/31/2002	memo	Michael Mikulka	USEPA Region 5	G Cygan & R Guenther	USEPA Region 5	Edible Portion of Fish
601	8/1/2002	letter	Robert Guenther	USEPA Region 5	Paul Casper, Jr	Frost Brown Todd	Re response to Casper letters of June 26 and July 8, 2002 re WSU data and attached Burton June 4-5, 2002 sediment conference presentation
602	8/16/2002	MPR	Timothy Barber	ARCADIS	Gary Cygan	USEPA Region 5	Monthly Progress Report for activities performed July 2002
603	8/30/2002	www	epa.gov/toxteam/polbid/arc_dar_plots	USEPA	www		PCB - Plots of PCB (Aroclor) Composition Data (Tables last updated 8/30/02, downloaded 12/16/02)
604	8/30/2002	www	epa.gov/toxteam/polbid/dets	USEPA	www		PCB ID - Definitions (last updated 8/30/02, downloaded 12/16/02)
605	8/30/2002	www	epa.gov/toxteam/polbid/bzvupac	USEPA	www		PCB ID - BZ versus IUPAC (updated 8/30/02, downloaded 12/16/02)
606	8/15/2002	MPR	Timothy Barber	ARCADIS	Gary Cygan	USEPA Region 5	Monthly Progress Report for activities performed August 2002
607	9/16/2002	www	USEPA	epa.gov/R6Super/npl	www		NPL Factsheets for Ohio: Skinner Landfill printed 11/19/02
608	9/16/2002	www	USEPA	epa.gov/R6Super/npl	www		NPL Factsheets for Ohio: Cham-Dyne printed 11/19/02
609	10/4/2002	report	Wiesner & Barber	ARCADIS	Frost Brown Todd	Frost Brown Todd	Evaluation of Potential Sources of Constituents in the Dick's Creek Study Area
610	10/9/2002	letter	Paul Casper, Jr	Frost Brown Todd	Robert Guenther	USEPA Region 5	Request for investigation of other sources
611	10/22/2002	www	USEPA	epa.gov/glnpo/hnstdocs	www		Background Information on PCB Sources and Regulations (e-doc rev. Oct. 4, 1999)
612	10/30/2002	report	Diana Zimmerman	Ohio EPA	Michael Mikulka	USEPA Region 5	Justification for Recommended Warmwater Habitat Aquatic Life Use for Monroe Ditch (Dick's Cree Watershed)
613	9/30/2002	lab data	Diana Zimmerman	Ohio EPA	Gary Cygan	USEPA Region 5	Letter with enclosed PCB analysis of fish tissue from Dicks Creek samples July 19-11, 2002
614	11/1/2002	report	Hennig & Barber	ARCADIS	Frost Brown Todd	Frost Brown Todd	Comparison of PCB Exposure Based on Federal Standards to Dick's Creek Study Area Exposures
615	11/13/2002	report	V.B. Casimuran	Booz Allen Hamilton	Bernie Orenstein	USEPA Region 5	Analytical Data Compilation and Data Source Verification Report: PCBs in Surface Water, Biological, and Sediment Samples (AK Steel) Corp.
616	12/12/2002	photo	Holly Arrigoni	USEPA Region 5	USEPA Region 5	USEPA Region 5	Oversize Aerial Photo Map: Dick's Creek, Middletown, OH
617	12/12/2002	photo	Holly Arrigoni	USEPA Region 5	USEPA Region 5	USEPA Region 5	Oversize Aerial Photo Maps: 2001 AK Steel Samples - Dick's Creek & Vicinity, Horizon A: PCB Aroclors* 0-6 inches (2 photos)
618	12/12/2002	photo	Holly Arrigoni	USEPA Region 5	USEPA Region 5	USEPA Region 5	Oversize Aerial Photo Maps: 2001 AK Steel Samples - Dick's Creek & Vicinity, Horizon B: PCB Aroclors* 6-12 inches (2 photos)
619	12/12/2002	photo	Holly Arrigoni	USEPA Region 5	USEPA Region 5	USEPA Region 5	Oversize Aerial Photo Map: 2001 AK Steel Samples - Dick's Creek & Vicinity, Horizon C: PCB Homologues** 0-6 inches (2 photos)
620	12/12/2002	photo	Holly Arrigoni	USEPA Region 5	USEPA Region 5	USEPA Region 5	Oversize Aerial Photo Map: 2001 AK Steel Samples - Dick's Creek & Vicinity, Horizon C: PCB Homologues** 6-12 inches (photo)
621	12/12/2002	photo	Holly Arrigoni	USEPA Region 5	USEPA Region 5	USEPA Region 5	Oversize Aerial Photo Map: 2001 AK Steel Samples - Dick's Creek & Vicinity, Horizon C: PCB Homologues** 12-24 inches (photo)
622	12/12/2002	photo	Holly Arrigoni	USEPA Region 5	USEPA Region 5	USEPA Region 5	Oversize Aerial Photo Map: 2001 AK Steel Samples - Dick's Creek & Vicinity, Horizon C: PCB Homologues** 12-24 inches (photo)
623	1/6/2003	letter	Booz Allen	Booz Allen	Bernie Orenstein	USEPA Region 5	Technical Review of Ohio EPA Fish Collection and Storage Documentation, AK Steel
624	1/13/2003	lab data	Axys Environmental	Axys Environmental	Sierra Club	Sierra Club	PCB sampling analyses conducted by Sierra Club
625	2/10/2003	memo & plan	Michael Mikulka	USEPA Region 5	J. Boyle, P. Reed	USEPA Region 5	Approval of Quality Assurance Project Plan and Sampling Plan for Sampling of Dick's Creek and Vicinity
626	2/26/2003	addendum	Michael Mikulka	USEPA Region 5	file & distribution	USEPA Region 5	Distribution List for Addendum 1 to Dick's Creek & Vicinity Field Sampling & Analysis Plan
627	2/27/2003	memo	Michael Mikulka	USEPA Region 5	file & distribution	USEPA Region 5	Addendum 1 to Dick's Creek & Vicinity Field Sampling & Analysis Plan
628	11/10/2003	Report	Allen J. Madine	Water Science & Engineering	DOJ	DOJ	Expert Report - Analysis of environmental samples for the presence of polychlorinated biphenyls (PCBs)
628	11/10/2003	report	Gary R. Chirlin	Chirlin & Associates, Inc.	DOJ	DOJ	Expert Report - Surface-Water and Ground-Water Contamination at AK Steel Works, Middletown, Ohio
630	11/10/2003	Report	Richard DeGrandchamp	Hamilton, Inc.	USEPA	USEPA	Human Health Risk Assessment for Dick's Creek and Tributaries
631	10/28/2003	Letter	Mary Osika	Ohio EPA	Kurt Hileman	AK Steel Corporation	Notice of Violation - OAC 3746-31 Permit to Install
632	10/28/2003	Letter	Mary Osika	Ohio EPA	Keith Howell	AK Steel Corporation	AK Steel Middletown Works Slag Processing Area Inspection, CEPA Permit 11D0001-1D
633	2/12/2004	Phone Record	Mike Mikulka	USEPA	Mary Osika	Ohio EPA	Seep Summary

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Document Number	Date	Document Type	Author	Sending Organization	Recipient	Recipient Organization	Document Subject
634	2/11/2004	Letter	Paul W. Casper, Jr.	Frost Brown Todd LLC	C. Banerjee Rojko	DOJ	AK Steel's Responses to request for admissions
635	10/22/2003	Report	Mace G. Barron, Ph.D.	ASE, Inc./Booz Allen Hamilton, Inc	USEPA	USEPA	Baseline Ecological Risk Assessment for Dick's Creek and Monroe Ditch - Final October 22, 2003
636	11/6/2003	Report	Mace G. Barron, Ph.D.	ASE, Inc./Booz Allen Hamilton, Inc	DOJ	DOJ	Ecological Risks in the Dick's Creek System Attributed to Releases from the AK Steel Facility, Middletown, Ohio Site - Final Report November 6, 2003
637	2/17/2004	Memo	Mitchell G. Page	DOJ	Paul W. Casper, Jr.	Frost Brown Todd LLC	PLAINTIFFS MEMORANDUM OF OPPOSITION TO AK STEEL'S MOTION TO COMPEL RULE 26(a)(2) DISCLOSURES AND AMEND SCHEDULING ORDER - 2/17/04
638	12/1/2003	Memo	Thomas L. Sarsonetti	DOJ	AKSteel	AKSteel	PLAINTIFFS' MEMORANDUM IN OPPOSITION TO AK STEEL'S MOTION FOR SUMMARY JUDGMENT ON CLAIM FOR RELIEF FIVE OF THE UNITED STATES' FIRST AMENDED COMPLAINT AND CLAIM FOR RELIEF FIVE OF THE SIERRA CLUB/NATIONAL RESOURCES DEFENSE COUNCIL'S COMPLAINT
639		map	Mary Osika	Ohio EPA	Michael Mikulka		Seeps Found During Seep Inspections
640	7/1/2003	Report	Michael Mikulka	USEPA	Carl Bartiner	AK Steel	Field and Laboratory Data Report Physical and Chemical Characterization of Dicks Creek and Associated Flood Plain, Middletown, Ohio - Volumes 1-3
641	3/9/2004	Letter	Mstarka Ellis	DOJ	Michael Mikulka	USEPA	Transmittal of AK Steel's expert reports
642	2/27/2004	Report	Natalie D. Wilson	N.D. Wilson & Associates, LLC		AK Steel	Expert Report of Natalie D. Wilson Rebutting Expert Report of Dr. Richard L. DeGrandchamp, Ph.D.
643	2/10/2004	Report	Timothy R. Barber, Ph.D.	ARCADIS G&M, Inc.		AK Steel	Rebutting: Appendix A. Statistical Fingerprinting: PCB, Dioxin, and Furan Mixtures in AK Steel AGCs and Background Sediments and Fish Prepared by R. DeGrandchamp
646	2/10/2004	Report	Renate D. Kimbrough, M.D.			AK Steel	Rebuttal of Dr. Richard DeGrandchamp's Opinion on the Toxicity of PCBs Based Upon Studies That I Have Conducted
648	2/10/2004	Report	Timothy R. Barber, Ph.D.	ARCADIS G&M, Inc.		AK Steel	Rebutting: Expert Report by A. J. Madine
650	2/10/2004	Report	Renate D. Kimbrough, M.D.			AK Steel	Peer Review of Human Health Risk Assessment Prepared by ARCADIS for AK Steel Corporation
651	2/11/2004	Report	Russell E. Keenan, Ph.D.	AMEC Earth & Environmental, Inc.		AK Steel	Expert Report of Russell E. Keenan, Ph.D. Rebutting Expert Report of Dr. Richard L. DeGrandchamp, Ph.D.
652	2/10/2004	Report	Renate D. Kimbrough, M.D.			AK Steel	Rebuttal of Toxicological Evaluation of PCBs and Human Health Risk Assessment for Dicks Creek and Tributaries Prepared by Dr. Richard L. DeGrandchamp, Ph.D.
653	2/9/2004	Report	Dennis J. Paustenback, Ph.D.	ChenRisk		AK Steel	Rebuttal Expert Report Opinion of Dr. Dennis Paustenback Regarding the Views of Dr. DeGrandchamp
654	2/10/2004	Report	Timothy R. Barber, Ph.D.	ARCADIS G&M, Inc.		AK Steel	Rebutting: Assessment of the Impacts of the AK Steel Middletown Facilities in the Dicks Creek Watershed and the Great Miami River Mainstem Prepared by C.O. Yoder and J.E. DeSton
655	2/11/2004	Report	Dan Miklos	Advanced Treatment Sciences, Inc.		AK Steel	Expert Report: Addressing (1) Potential Human Health and Environmental Impacts from Five Alleged Violations of the Local pH Limit Established by the City of Middletown as an Approved Wastewater Pretreatment Authority, and (2) Adequacy of the Enforcement Response Taken by the City Regarding Alleged Violations
656	2/10/2004	Report	Timothy R. Barber, Ph.D.	ARCADIS G&M		AK Steel	Rebutting: Ecological Risks in the Dick's Creek System Attributed to Releases from the AK Steel Facility, Middletown, Ohio Prepared by M.G. Barron
657	2/11/2004	Report	Jacquelyn R. Clarkson	ARCADIS G&M, Inc.		AK Steel	Rebuttal Expert Report: Comprehensive Human Health Risk Assessment Rebutting Expert Report of Dr. Richard L. DeGrandchamp
658	1/1/2002	Reports	EA Engineering	EA Engineering		AK Steel	(a) Biological Survey of Dick's Creek and its Tributaries, 1997, 1998, 1999, 2000, 2001; (b) Fish Population Estimates for Dick's Creek; (c) Biological Survey of Dicks Creek and its Tributaries, 2000; (d) Biological Survey of Dicks Creek and its Tributaries, 1999; (e) Biological Survey of Dicks Creek and its Tributaries, 1998; (f) Biological Survey of Dicks Creek and its Tributaries, 1997
659	11/18/1989	Letter	Steve Francis	Armed Steel Corporation			Plant Locator Grid Map for Fire Hydrants and PCB Transformers
660	3/9/2004	Documents	Mitchell Page	DOJ	Mike Mikulka	USEPA	Supplemental Discovery - Dorr Thickener @ AK Steel Middletown Facility
661	9/11/2003	Letter	Paul W. Casper, Jr.	Frost Brown Todd LLC	Robert W. Darnell	DOJ	Letter and Data from Dick's Creek Split Samples by STL 3/23/03
662	4/3/2003	Report	Thomas McDonald	TDI-Brooks International, Inc.	Paul Casper	Frost Brown Todd LLC	Determination of: Total Petroleum Hydrocarbons, Extractable Organic Matter, Polycyclic Aromatic Hydrocarbons, and Total Organic Carbon in Sediments
663	2/18/2004	Deposition		Verbatim Reporting	Cathy Rojko	DOJ	Deposition of Richard Dugan
664	3/11/2004	Map	Holly Aragon	USEPA	Mike Mikulka	USEPA	Map of Seeps and Trench System
665	3/11/2004	Report	Martin Hamper	ARCADIS	Paul Casper	Frost Brown Todd LLC	Expert Report Rebuttal of Dr. Gary R. Chirlin Surface-Water and Groundwater Contamination at the AK Steel Works, Middletown, OH
666	3/11/2004	Letter	Paul W. Casper	Frost Brown Todd LLC	Rojko	DOJ	Letter Transmitting Expert Reports
667	2/19/2004	Deposition		Verbatim Reporting	Rojko	DOJ	Deposition of Stephen Fekso
668	3/11/2004	Report	Eldon C. Blanchet, II Ph.D.	TAI Scientists, Strand Associates		AK Steel	Rebuttal Expert Report: Surface Water and NPDES Issues Rebutting Gary R. Chirlin
669	3/11/2004	Report	Paul Ammann/Kenneth T. Wise	The Brattle Group	AK Steel	AK Steel	Rebutting Expert Opinion of Gail B. Coad Regarding Economic Benefit of Alleged Noncompliance - November 10, 2003
671	3/11/2004	Report	Joseph A. Quinan, PE, PG	ARCADIS G&M	AK Steel	AK Steel	Expert Report Rebutting Gary R. Chirlin: Rebuttal to Surface-Water and Groundwater Contamination at the AK Steel Works, Middletown, Ohio
672	3/22/2004	Deposition	Melissa Daniels	Sonntag Reporting Service, Ltd.	Paul Casper	Frost Brown Todd	Deposition of Michael J. Mikulka, USEPA Region 5
674	3/18/2004	Deposition		Sonntag Reporting Services, Ltd.	Paul Casper	Frost Brown Todd	Deposition of Gary L. Cygan, USEPA Region 5
675	5/12/2004	Deposition		Verbatim Reporting	Mitchell Page	DOJ	Deposition of John Davis, AK Steel (retired)
676	5/14/2004	Deposition		Verbatim Reporting	Cathy Rojko	DOJ	Deposition of Lella McAdams, AK Steel (with ENSR @ time of deposition)
677	3/15/2004	Deposition		Verbatim Reporting			Deposition of Marilyn Wall, full-time volunteer for Sierra Club

Attachment 2

Document Number	Date	Document Type	Author	Sending Organization	Recipient	Recipient Organization	Document Subject
635	3/31/2004	Deposition		Vareian Reporting	Cathy Regis	DOJ	Deposition of Michael Current, employee of AK Steel
636	4/17/2004	Deposition		Vareian Reporting	Robert Dornell	DOJ	Deposition of George Cobin, Cox Cobin & Associates
637	4/21/2004	Deposition		Vareian Reporting	AK Steel	AK Steel	Deposition of Joseph Brown, former employee of Region of Ohio
638	4/22/2004	Deposition		Dornell Reporting	AK Steel	AK Steel	Deposition of Bobby Gibbs, former employee of plating of Ohio
639	4/23/2004	Deposition		Dornell Reporting	AK Steel	AK Steel	Deposition of Susan King, former of Ak Steel
640	5/17/2004	Deposition		Dornell Reporting	AK Steel	AK Steel	Deposition of Raymond Allen, worker for Akma Steel
641	5/17/2004	Deposition		Dornell Reporting	AK Steel	AK Steel	Deposition of Raymond Allen, worker for Akma Steel
642	5/17/2004	Deposition		Dornell Reporting	AK Steel	AK Steel	Deposition of Raymond Allen, worker for Akma Steel
643	5/17/2004	Deposition		Dornell Reporting	AK Steel	AK Steel	Deposition of Raymond Allen, worker for Akma Steel
644	5/17/2004	Deposition		Dornell Reporting	AK Steel	AK Steel	Deposition of Raymond Allen, worker for Akma Steel
645	4/8/2003	Report	Phoebe Davoli	Ecocycle Hamilton	Bernie Christensen	USEPA Region 5	Letter and Detailed Data Validation Report for Fish Tissue Samples, Bates stamped AK5-0399534 through AK5-0009962
646	8/4/2003	data	Michael J. Mikulka	USEPA Region 5	R. Guenther, G. Cygan	USEPA Region 5	Memorandum transmitting validated final Fish Tissue Results for July 2002 USEPA fish tissue samples with a Summary Table and Bar Chart and Table 2 with detailed PCB congener and dioxin/furan congener results, marked AK5 044211 - AK5 044332
647	3/14/2003	Report	John Reynolds	Sevens Trant Labs	Michael Mikulka	USEPA Region 5	Analytical report for EPA Fish Tissue Samples, Bates Numbers AK5-0009884 through AK5-013520 (suppdoc documents 638 & 639)
648	2/18/2003	letter	Arcadis Geraghty & Miller	Arcadis	Diana Zimmerman	Ohio EPA	Regarding Ohio EPA Biological Survey results for Duck's Creek 2000 with tables and figures
649	4/17/2003	letter	Arcadis Geraghty & Miller	Arcadis	John Spiller	Ohio EPA	Regarding 1st quarter 2003 Interceptor Trench Report
650	4/8/2004	letter	Arcadis Geraghty & Miller	Arcadis	John Spiller	Ohio EPA	Regarding 1st quarter 2004 - Treatment and management of interception trench groundwater - Monroe Ditch Area
651	7/16/1998	letter	Carit Bannister	AK Steel	Mary Ciska	Ohio EPA	Summarizing Monroe Ditch investigation performed in 1997, 1998 and 1999
652	1/17/2003	e-mail	Carolyn Bury	USEPA	Mik & Mikulka and Mary Ciska	USEPA and OSEPA	Regarding AK Steel seep shot and pictures
653	5/28/2003	letter	David Cox	Ohio AG Office	Paul Casser	Pross Brown Todd	Enclosing field notes and analytical results from March 2003 sampling event at Duck's Creek
654	1/17/2001	letter	David Vicarel	Arcadis	John P. Spiller	Ohio EPA	Treatment and Management of Interception Trench Groundwater, Monroe Ditch area, Third Quarter 2001
655	4/15/2002	letter	David Vicarel	Arcadis	John P. Spiller	Ohio EPA	Interception Treatment and management of trench First Quarter 2002
656	7/24/2002	letter	David Vicarel	Arcadis	John P. Spiller	Ohio EPA	Second Quarter 2002 - Treatment and management of Interceptor Trench
657	10/6/2002	letter	David Vicarel	Arcadis	John P. Spiller	Ohio EPA	Third Quarter 2002 - Treatment and management of Interceptor Trench
658	5/12/2001	survey	EA Engineering Science & Technology	EA Engineering Science & Technology	AK Steel	AK Steel	Fish and Benthic Survey of the Great Miami River 2000
659	1/31/1998	letter	Jeff McCreedy	Porter Kraft	Susan Koeser	Assistant Attorney General	Summarizing Monroe Ditch seep with picture and PCB analysis at various areas around the seep
700	12/11/1997	telephone memo	Mike Connolly	IMS	John Spiller	Ohio EPA	Regarding seep discharges
701	12/16/1997	letter	Carl Stahler and Michael Connolly	AK Steel and Environmental Engineering, IMS	John Spiller	Ohio EPA	Regarding potential sources of PCBs
702	7/24/1999	report	Ohio EPA	Ohio EPA	report	Ohio EPA	Preliminary Results from the Biological and Water Quality Study at the Middle and Lower Great Miami River and Selected Tributaries
703	10/25/2002	letter and fax	Robert Guenther	U.S. EPA	Paul Casser	Pross Brown Todd	Providing copies of additional data from Trench Tech EMI, Inc dated 4/30/03
704	10/17/2003	letter	David Vicarel	Arcadis	Valerie Orr	Ohio EPA	Carbon and Sulphur Slurry Introduction at Groundwater Seep #40, OMS Operation Area, Middletown, Ohio
705	11/22/2003	letter	Kurt Hehman	AK Steel	Mary Ciska	Ohio EPA	Regarding the 6/21/2003 inspection of the OMS slag processing area
706	12/16/2002	letter	Dave Kiesel	Arcadis	Valerie Orr	Ohio EPA	Dilute Acetic Acid and Powdered Sulfur Introduction at Groundwater Seep #40, OMS Operations Area, Middletown, Ohio
707							All filings in The United States of America v. AK Steel Corporation, U.S.D.C. for the Southern District of Ohio, Case No. C-1-00-530
708							All discovery requests in the above-referenced case, and all discovery responses thereto, including deposition transcripts.
709							All expert reports prepared in the above-referenced case and all affidavits responsive to such reports.
710							All documents comprising the administrative record associated with the FRCA 7005 order that U.S. EPA issued to AK Steel on August 17, 2000.

Attachment 8

SITE ACCESS AND CONFIDENTIALITY AGREEMENT

This SITE ACCESS AND CONFIDENTIALITY AGREEMENT ("Agreement") is made and entered into on this ___th day of March, 2006 by and between the Sierra Club and Natural Resources Defense Council ("Intervenors") and AK Steel Corporation ("AK Steel").

The purpose of this Agreement is to set forth the terms and conditions upon which AK Steel will grant Intervenors access to the Facility, as that term is defined in the Consent Decree, for the specific, limited purposes set forth Paragraph 78 (a)(ix) of the Consent Decree. The provisions of Section XX (Covenant Not to Sue of Defendant) of the Consent Decree do not bar actions taken by AK Steel to enforce the terms of Attachment 8.

1. Access to the Facility does not convey any right, title, easement, or interest of a permanent nature in the Facility to the Intervenors or any other person or entity. Intervenors' access to the Facility shall be limited in time and location coinciding with site access provided to Government Plaintiffs. Intervenors shall not use or possess any cameras or video recording devices at the Facility. Intervenors are not granted the right to take samples on the property, except for split samples pursuant to Paragraph 78(d) of the Consent Decree. Nothing herein shall be construed to allow Intervenors or Intervenors' technical expert to perform any actions at the Facility other than the activities specifically described in Paragraph 78(a)(ix) of the Consent Decree.

2. AK Steel only grants access to one named technical expert and one alternate technical expert (collectively, "Intervenors' technical expert") in the event the named technical expert is unavailable. Only one technical expert for the Intervenors can visit the Facility at a time. The Intervenors' technical expert shall be retained by the Intervenors at their sole expense. Such technical expert shall adhere to the specific safety and training requirements as provided in Exhibit A to this Attachment 8. Proof of the necessary accreditation shall be provided to AK Steel at least 20 business days prior to the first site visit by the technical expert. AK Steel shall provide notice of any accreditation deficiencies not later than 10 business days after receipt by AK Steel of any proof of accreditation. Any subsequent renewals obtained prior to the Completion of Work shall be provided to AK Steel upon receipt. AK Steel reserves the right to refuse access to any technical expert retained by the Intervenors if it determines in good faith that the technical expert does not possess the required accreditations and training to be on the property, or that the technical expert has an actual or perceived conflict of interest with AK Steel. To the extent Intervenors' primary technical expert is not available to observe a listed activity, an alternate technical expert may attend the observation activity, provided that the provisions of this Paragraph are met with regard to the alternate technical expert.

3. Intervenors' technical expert shall adopt and enforce sound and accepted safety practices in accordance with the safety practices and rules of AK Steel including, but not limited to, the mandatory requirements of Personal Protective Equipment as required by AK Steel's safety department. It shall be the responsibility of Intervenors' technical expert to become familiar with and require strict adherence to the safety practices and rules of AK Steel. Intervenors acknowledge receipt of the AK Steel Safety and Health Rules and Instructions. Any violation of the safety practices and rules by Intervenors' technical expert or any other violation of the terms of this Agreement shall be grounds for immediate removal from the Facility. In the event that additional safety requirements are identified by AK Steel during the term of this Agreement, AK

Steel agrees to not impose upon Intervenors' technical expert any safety requirement in excess of the same requirements imposed upon AK Steel's employees, contractors or service providers.

4. Intervenors' technical expert agrees to fully comply with all applicable laws, ordinances, rules, and regulations of any state, county, municipality, or other governmental, unit or agency. Intervenors and Intervenors' technical expert agree to joint and severally indemnify and save harmless AK Steel from any and all damages occasioned by the failure of Intervenors' technical expert to fully comply with the provisions of this Paragraph.

5. **Indemnity.**

a. Intervenors and Intervenors' technical expert shall jointly and severally indemnify, defend and hold harmless, AK Steel, any of its subsidiaries, or affiliates, and any of its or their employees, workmen, servants, or agents ("Indemnified Parties") of and from any loss, cost, damage or expense arising from:

(1) any and all claims which may be made against any Indemnified Parties by reason of bodily injury or death to person, or damage to property, including pollution liability claims of any nature arising out of spills or releases on-site or off-site, suffered by any person, firm, corporation, or other entity, primarily caused by any act or omission of the Intervenors or Intervenors' technical expert;

(2) any and all damage to the property of any Indemnified Parties, including but not limited to, property occupied or used by or in the care, custody or control of AK Steel, primarily caused by any act or omission, of the Intervenors or Intervenors' technical expert; and

(3) any and all claims which may be made against any Indemnified Parties by reason of bodily injury or death to person, or damage to property (except for injury, death, or damage caused by the sole or primary negligence, gross negligence or willful misconduct of any Indemnified Parties) suffered by the Intervenors or Intervenors' technical expert, agents or employees, notwithstanding the application of the provisions of any applicable state Workers' Compensation law or statute.

b. The Indemnified Parties shall promptly notify Intervenors and Intervenors' technical expert in writing of any claim against Indemnified Parties for which indemnification will or could be sought pursuant to this Agreement. In addition, Indemnified Parties shall give Intervenors and Intervenors' technical expert such information and cooperation as they may reasonably request with respect to all such claims.

c. With respect to any proceeding for which Indemnified Parties notify Intervenors and Intervenors' technical expert in writing of the commencement thereof: (1) Intervenors and/or Intervenors' technical expert shall be entitled to participate at their own expense; (2) Intervenors and/or Intervenors' technical expert may assume the defense thereof; and (3) Intervenors and/or Intervenors' technical expert shall not be

liable to Indemnified Parties under this Agreement for any amounts paid in settlement of any action, claim or proceeding effected without the written consent of Intervenor and Intervenor's technical expert. Indemnified Parties reserve the right to reasonably conclude that there may be a conflict of interest between Intervenor and/or Intervenor's technical expert on the one hand and Indemnified Parties on the other hand in the conduct of the defense of such action.

d. No indemnity pursuant to this Agreement shall be provided by Intervenor or Intervenor's technical expert: (1) for damages that have been paid directly to Indemnified Parties pursuant to an insurance policy or any other means for any act or omission related to this Agreement; (2) with respect to remuneration paid to Indemnified Parties if it shall be determined by a final judgment or other final adjudication that such remuneration was in violation of law; (3) on account of any conduct of Indemnified Parties which is finally adjudicated to have been intentional misconduct or a knowing violation of the law; or (4) if a final decision by a court having jurisdiction in the matter shall determine that such indemnification is not lawful.

The provisions of this Paragraph shall survive termination of the Consent Decree.

6. Intervenor and Intervenor's technical expert shall maintain as confidential and shall not disclose to any person any information or observations learned at the AK Steel property that (a) do not concern the Work required to be performed under the Consent Decree, regardless of whether the information or observation would relate to confidential business information entitled to protection from public disclosure subject to the requirements of 40 CFR Part 2 and O.A.C. 3745-49-03 and 3745-49-031; or (b) relate to the Work required to be performed under the Consent Decree but that constitutes raw or unvalidated data or confidential business information entitled to protection from public disclosure subject to the requirements of 40 CFR Part 2 and O.A.C. 3745-49-03 and 3745-49-031. The review of raw or unvalidated data by Intervenor's technical expert shall be governed the applicable terms of the Consent Decree. The provisions of this Paragraph shall survive the termination of the Consent Decree.

7. Intervenor or Intervenor's technical expert shall maintain, at all times during the Work, insurance in at least the following amounts: (i) Workers' Compensation – statutory; (ii) General Liability Insurance – (a) Bodily Injury Property damage - \$1,000,000 per occurrence, (b) Annual General Aggregate - \$2,000,000, (c) Personal and Advertising Injury - \$1,000,000 per person; (iii) Contractor's Pollution Liability Insurance - \$1,000,000 per loss/\$2,000,000 annual aggregate; and (iv) Automobile Liability Insurance - Intervenor or Intervenor's technical expert shall maintain automobile liability insurance at a minimum at the state-mandated minimum coverage requirements and shall, upon request from AK Steel, provide proof of such insurance. Insurance shall be written on an "Occurrence Coverage Basis. Such insurance, within the terms and conditions of the policy, shall specifically cover liability assumed under Paragraph 5 of this Agreement; regardless of whether the indemnification obligation giving rise to such liability is found to be void or otherwise unenforceable due to Worker's Compensation immunity or other grounds. In addition, such insurance shall include AK Steel as an additional insured using ISO Forms CG 20 10 10 01 and CG 20 37 10 01 with respect to claims arising out of activities performed pursuant to or incidental to this Agreement. It is further agreed that the coverage

afforded the Indemnified Parties shall be primary insurance for the Indemnified Parties with respect to claims arising out of activities performed pursuant to or incidental to this Agreement. If the Indemnified Parties have other insurance which is applicable to the claim, such other insurance shall be on an excess basis and not contributory. Intervenor's technical expert will provide evidence or certificates of insurance meeting these terms to AK Steel before Intervenor's technical experts first visit to the Facility. All such insurance shall provide that thirty (30) days notice will be given to AK Steel before any such insurance is canceled.

8. AK Steel and the Intervenor's reserve all causes, rights of action and defenses that each may have against the other and against third parties relating to the Work required under the Consent Decree and the AK Steel property. The provisions of this Paragraph shall survive termination of this Consent Decree.

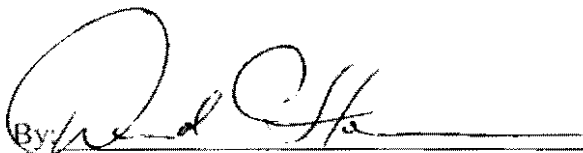
9. Any modification of the terms of this Agreement must be in writing and signed by the parties.

10. This Agreement may be executed in any number of counterparts, and if so executed, shall be effective as against each of the respective parties when that party has executed at least one such counterpart.

11. Any technical expert retained by the Intervenor's shall indicate acceptance with the terms and conditions of this Agreement in writing.

United States, et al. v. *A. Steel Corporation*, Civil Action No. C. 00530
Consent Decree Attachment 8

AK STEEL CORPORATION

By:  _____

Title: Se VP, GC & Services

Date: 3/2/06

United States, et al. v. Adel Corporation, Civil Action No. C 0530
Consent Decree Attachment 8

SIERRA CLUB

By: Marilyn Wall

Title: Ohio Chapter Sierra Club Conservation Chair

Date: 3-21-06

United States, et al. v. ... Steel Corporation, Civil Action No. C- 1-00530
Consent Decree Attachment 8

NATURAL RESOURCES DEFENSE COUNCIL

By: Mitchell S. Bernard / AET

Title: Litigation Director

Date: 3/24/06

Exhibit A

Safety and Training Requirements

SHIELD training card (6-hour health and safety training program administered by SHIELD for AK Steel. This training is specific to the Facility.)

Initial OSHA 40-hour training certificate (Hazardous Waste Site Operations training)

Current 8-hour annual refresher training certificate for Hazardous Waste Site Operations

Copy of annual medical clearance

Respirator fit test certificate (Respirator fit testing will be required only if Intervenor's technical expert does not already have certification)

Triennial Standard First Aid Certificate

Valid Driver's License