

STATE OF MICHIGAN  
DEPARTMENT OF ATTORNEY GENERAL

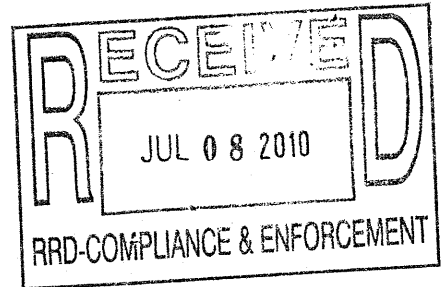


MIKE COX  
ATTORNEY GENERAL

P.O. Box 30755  
LANSING, MICHIGAN 48909

July 7, 2010

Clerk of the Court  
Wexford County Circuit Court  
437 East Division Street  
Cadillac, MI 49601



Dear Clerk:

Re: *Michael A. Cox, MDEQ et al v AAR Brooks and Perkins and AAR CORP*  
Wexford County Circuit Court File No. 83-5771-CE

Enclosed is a PROOF OF SERVICE indicating that copies of the Stipulation and Order to Amend the 1985 Consent Decree which was entered by Judge Fagerman on June 24, 2010 were served today on counsel.

Very truly yours,

A handwritten signature in cursive script, reading "Kathleen L. Cavanaugh".

Kathleen L. Cavanaugh  
Assistant Attorney General  
Environment, Natural Resources,  
and Agriculture Division  
(517) 373-7540

KLC/pjb  
c: Michael Robinson

AAR Cadillac/2001012098/cl POS stip amend 7.07.10

STATE OF MICHIGAN  
IN THE CIRCUIT COURT FOR THE COUNTY OF WEXFORD

MICHAEL A. COX, Attorney General  
of the State of Michigan, Public Officer-  
Successor in Interest; MICHAEL A. COX,  
*ex rel* MICHIGAN NATURAL RESOURCES  
COMMISSION, MICHIGAN WATER  
RESOURCES COMMISSION, and Rebecca Humphries,  
Director of the Michigan Department  
of Natural Resources and Environment,  
Plaintiffs,

File No. 83-5771-CE

Hon. Judge William M. Fagerman

v

AAR BROOKS & PERKINS CORPORATION,  
an Illinois corporation, a subsidiary of AAR  
CORPORATION, a Delaware corporation,  
Defendant.

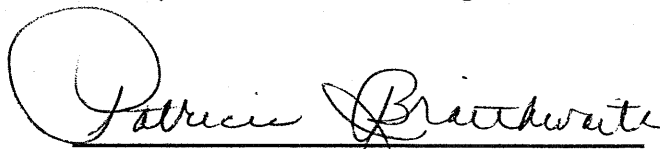
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**PROOF OF SERVICE**

On July 7, 2010, I sent by First Class U.S. Mail a copy of the STIPULATION AND  
ORDER TO AMEND THE 1985 CONSENT DECREE to:

James Moskal (P41885)  
Michael L. Robinson (P23160)  
Joseph A. Kuiper (P58793)  
Warner, Norcross & Judd, LLP  
900 Fifth Third Center  
111 Lyon Street, N.W.  
Grand Rapids, MI 49503  
Attorneys for Defendant

I declare that the statements above are true to the best of my information, knowledge, and belief.

  
Patricia J. Braithwaite

## SETTLEMENT AGREEMENT AND RELEASE

This Settlement Agreement and Release (Settlement Agreement) is entered into between AAR CORP. and AAR Manufacturing, Inc. (AAR Manufacturing, Inc. is referred to herein as "AAR"), and the Michigan Department of Natural Resources and Environment (MDNRE) and the Attorney General of the State of Michigan (collectively the "State") (all collectively the "Parties"). The Attorney General is a Party to this Settlement Agreement for purposes of Paragraphs 7 through 13 only and is not obligated under the Stipulation and Order to Amend the Consent Decree for the obligations to perform work. This Settlement Agreement is entered into to resolve issues in the following cases: *Michigan Department of Environmental Quality v AAR Cadillac Manufacturing, et al.*, Wexford County Circuit Court Case No. 05-18853-CE and Court of Appeals No. 294552, and *AAR Manufacturing, Inc. v Michigan Department of Environmental Quality*, Wexford County Circuit Court acting as the Court of Claims Case No. 07-96-MZ.

## RECITALS

WHEREAS, in the early 1980s, trichloroethylene (TCE) was discovered in a process-water supply well used at the AAR property on Haynes Street in Cadillac, Michigan (Site) and in 1983 the Attorney General, the Michigan Natural Resources Commission and the Director of the Michigan Department of Natural Resources (now MDNRE) filed a complaint against AAR Brooks & Perkins Corporation in the Wexford County Circuit Court (1983 Litigation, Case No. 83-5771-CE) regarding the alleged contamination;

WHEREAS, the parties to the 1983 Litigation reached a settlement agreement to resolve the 1983 Litigation, and reduced that agreement to writing in the form of a consent decree (Consent Decree) that was approved and entered by the Wexford County Circuit Court on February 13, 1985;

WHEREAS, by letter dated August 14, 1997, MDNRE notified AAR that it believed there had been a post-Consent Decree release of TCE into the soil and groundwater at the Site. Over the next several years, MDNRE issued other demand letters, including without limitation, letters dated June 12, 2000 and June 14, 2002. The demand letters are referred to collectively herein as the "Demand Letters";

WHEREAS, on August 7, 2003, MDNRE issued a unilateral Administrative Order to AAR ordering it to undertake certain response activities at the Site under Section 20119 of Part 201 of the Michigan Natural Resources and Environmental Protection Act, Act 451 of 1994, as amended (NREPA). On February 19, 2004, MDNRE issued a "Modification" to the Administrative Order. The Administrative Order, as modified by the Modification, is referred to herein as the "Administrative Order";

WHEREAS, on March 31, 2005, MDNRE filed a Complaint against AAR and AAR CORP. in the Wexford County Circuit Court (the 2005 Litigation, Case No. 05-18853-CE);

WHEREAS, the Wexford County Circuit Court issued various rulings and judgments, including its ruling after a trial;

WHEREAS, on October 14, 2009, MDNRE filed an appeal from the Wexford County Circuit Court's judgments and rulings in the 2005 Litigation;

WHEREAS, on October 21, 2009, AAR filed a Bill of Costs under Michigan Court Rule 2.625 for certain costs and fees it allegedly incurred in connection with the 2005 Litigation;

WHEREAS, on August 24, 2007, AAR filed a separate lawsuit against MDNRE in the Michigan Court of Claims (Case No. 07-96-MZ) under Section 20119 of Part 201 of the NREPA, seeking reimbursement of certain costs it allegedly incurred in complying with the

Administrative Order (the Court of Claims Litigation). The Court of Claims Litigation remains pending;

WHEREAS, this Settlement Agreement contemplates specific additional activities to be undertaken by AAR and the MDNRE in relation to the Site. The Parties agree that the Wexford County Circuit Court has continuing jurisdiction under the Consent Decree to enter an amendment to the Consent Decree agreed to by the State and AAR regarding such additional activities, as set forth in Attachment 1;

WHEREAS, the Parties wish to preserve their rights and obligations under the Consent Decree, except as expressly set forth in this Settlement Agreement.

**NOW, THEREFORE**, in consideration of the foregoing and the mutual promises and covenants set forth below, AAR and the State mutually agree as follows:

#### **TERMS**

1. Within seven (7) days after the execution of this Settlement Agreement, the MDNRE and AAR agree to stipulate to, execute, and file with the Wexford County Circuit Court the Stipulation and Order to Amend the Consent Decree, set forth in Attachment 1. The Stipulation and Order to Amend the Consent Decree is incorporated herein and is a binding part of this Settlement Agreement.
2. Within seven (7) days after the effective date of this Settlement Agreement, the MDNRE and AAR agree to execute and file the Stipulation and Order to Dismiss in the Wexford County Circuit Court Case No. 07-96-MZ, set forth in Attachment 2.
3. Within seven (7) days after the effective date of this Settlement Agreement, the MDNRE, AAR, and AAR CORP. agree to execute and file the Stipulation and Order to Dismiss in the Wexford County Circuit Court Case No. 05-18853-CE, set forth in Attachment 3.

4. Within seven (7) days after the effective date of this Settlement Agreement, the MDNRE, AAR, and AAR CORP. agree to execute and file the Stipulation and Order to Dismiss Appeal in the Court of Appeals Case No. 294552, set forth in Attachment 4.

5. Within seven (7) days after the effective date of this Settlement Agreement, AAR and AAR CORP. agree to file in Wexford County Circuit Court Case No. 05-18853-CE the Withdrawal of Bill of Costs, set forth in Attachment 5. AAR and AAR CORP. further agree not to pursue any costs, fees, or sanctions in Case No. 05-18853-CE.

6. The Parties agree not to seek costs, fees or sanctions of any kind related to the 2005 Litigation (including MDNRE's appeal of the 2005 Litigation) and the Court of Claims Litigation.

7. Except as provided in Paragraphs 9 through 12, the Parties mutually release each other from all past, present and future claims, causes of action, demands, liability, costs, losses, obligations, and attorney fees, that the Parties now have, have ever had, or may have in the future arising from or relating to any actual or alleged contamination existing prior to the date of this Settlement Agreement that is at, has migrated from, is migrating from, or will in the future migrate from, or which is migrating to the Site. Nothing in the preceding sentence shall be construed as relieving AAR from liability for hazardous substances released or generated by AAR which first entered the environment at a location other than the Site. This release includes all claims that were asserted or could have been asserted in the 2005 Litigation, the Administrative Order, the Demand Letters and the Court of Claims Litigation. Except as provided in Paragraphs 9 through 12, this release is a complete and final resolution of any and all claims related to or arising directly or indirectly from contamination, whether known or unknown, that exists prior to the date of this Settlement Agreement.

8. The release in Paragraph 7 will not be affected by any change in applicable state or federal law that takes place on or after the date of the Settlement Agreement, including new or amended statutes, court decisions, rules, regulations or other law and the Parties agree that this release will be effective against any claims asserted under such new or changed law.

9. Nothing in this Settlement Agreement or release shall prevent the Parties from enforcing the terms of the Consent Decree as amended by Attachment 1, or seeking any relief as a result of any alleged failure to comply with the terms of the Consent Decree, as amended by Attachment 1, which alleged failure occurs after the date of this Settlement Agreement.

10. Nothing in this Settlement Agreement shall be construed as relieving AAR from liability for any violations of any permits.

11. Nothing in this Settlement Agreement shall be construed as relieving AAR from liability for any new release by AAR of a hazardous substance that occurs after the effective date of this Settlement Agreement, including but not limited to, liability to the extent such a new release commingles with contamination that occurred prior to the effective date of this Settlement Agreement. For the purposes of this Settlement Agreement, the term "new release" does not include leaching, migration or other movement of contamination that was present in soils or groundwater prior to the date of this Settlement Agreement. Nothing in this Settlement Agreement shall preclude AAR from raising or establishing any defenses to any claims associated with an alleged new release or commingled release, including but not limited to divisibility, allocation, apportionment and third-party causation. The parties agree that, to the extent any such alleged new release commingles with historical contamination that AAR is not liable for because of the terms of this Settlement Agreement, then such historical contamination shall be treated as if it were released by a third party solely for the purposes of AAR's assertion

and establishment of the defenses of divisibility, allocation, apportionment or third-party causation in connection with such alleged new release.

12. Nothing in this Settlement Agreement shall be construed as relieving AAR CORP. from liability in the event it is responsible for an activity causing a release after the effective date of this Settlement Agreement.

13. Neither the State, AAR, nor AAR CORP. will seek reimbursement from any other Party for any work done under the Stipulation and Order to Amend the Consent Decree.

14. The effective date of this Settlement Agreement is the later of (a) the date it is fully executed by all Parties or (b) the date the Stipulation and Order to Amend the Consent Decree is entered by the Wexford County Circuit Court.

15. Each of the terms of this Settlement Agreement benefits and is binding upon the Parties and their respective successors and assigns.

MICHIGAN DEPARTMENT OF NATURAL  
RESOURCES AND ENVIRONMENT

By: *Myrae Masey*  
Title: *Asst. Chief Remediation Division*

Dated: *6/23/10*

AAR CORP.

By: *Robert J. Regan*  
Title: *Vice President, General Counsel and Secretary*

Dated: *6-21-10*

MICHIGAN DEPARTMENT OF  
ATTORNEY GENERAL

By: *Robert L. Cavanaugh*  
Title: *Asst. Attorney General*

Dated: *6-23-10*

AAR MANUFACTURING, INC.

By: *Lee Huntz*  
Title: *V.P. GENERAL MANAGER*

Dated: *6-18-10*





STATE OF MICHIGAN  
IN THE CIRCUIT COURT FOR THE COUNTY OF WEXFORD

MICHAEL A. COX, Attorney General  
of the State of Michigan, Public Officer-  
Successor in Interest; MICHAEL A. COX,  
*ex rel* MICHIGAN NATURAL RESOURCES  
COMMISSION, MICHIGAN WATER  
RESOURCES COMMISSION, and Rebecca Humphries,  
Director of the Michigan Department  
of Natural Resources and Environment,  
Plaintiffs,

v

AAR BROOKS & PERKINS CORPORATION,  
an Illinois corporation, a subsidiary of AAR  
CORPORATION, a Delaware corporation,  
Defendant.

File No. 83-5771-CE

Hon. Judge William M. Fagerman

A TRUE COPY  
24 June 2010  
Elaine L. Richardson  
WEXFORD COUNTY CLERK  
Linda Rathbun  
DEPUTY

Kathleen L. Cavanaugh (P38006)  
Assistant Attorney General  
Environment, Natural Resources,  
and Agriculture Division  
6th Floor, Williams Building  
525 West Ottawa Street  
P.O. Box 30755  
Lansing, MI 48909  
(517) 373-7540  
Attorney for Plaintiffs

James Moskal (P41885)  
Michael L. Robinson (P23160)  
Joseph A. Kuiper (P58793)  
Warner, Norcross & Judd, LLP  
900 Fifth Third Center  
111 Lyon Street, N.W.  
Grand Rapids, MI 49503  
(616) 752-2000  
Attorneys for Defendant

**STIPULATION AND ORDER  
TO AMEND THE CONSENT DECREE**

The Parties stipulate to amend the Consent Decree entered on February 13, 1985 as follows:

1. AAR Manufacturing, Inc (AAR) (f/k/a AAR Brooks & Perkins Corporation) shall, by January 31, 2011, install a soil vapor extraction air sparge system (SVE/AS System) in the location detailed in Exhibit A (Soil Vapor Extraction and Air Sparge System), in conjunction with the work to be performed by the Michigan Department of Natural Resources and

Environment (MDNRE) (f/k/a Michigan Department of Natural Resources) under the Geoprobe Work Plan set forth in Exhibit B. The MDNRE shall complete the work in Exhibit B by September 30, 2010, provided AAR grants MDNRE the necessary access to the property to complete the Geoprobe Work Plan. The specifications for the installation of the SVE/AS System are set forth in Exhibit A. The MDNRE shall be responsible for all response activities that become necessary due to any exacerbation of environmental contamination at and in the vicinity of the Site due to any of the work performed by the MDNRE in connection with the Geoprobe Work under Exhibit B.

2. After the installation of the SVE/AS System is complete, AAR shall operate the SVE/AS System according to the terms set forth in Exhibit A. AAR shall operate the SVE/AS System until either one of the shut down criteria specified in Exhibit A is met. Once the SVE/AS System is permanently shut down in accordance with Exhibit A, except as provided in Exhibit A, AAR will have no further obligation to relocate, operate, restart or expand the SVE/AS System.

3. MDNRE shall, by October 31, 2010, install the new monitoring wells depicted and described in Exhibit C (MDNRE Groundwater Monitoring).

4. Until operation of the Purge System is terminated pursuant to Paragraph 9 of this Stipulation and Order to Amend the Consent Decree, MDNRE shall collect and analyze groundwater samples from the monitoring wells described in Exhibit C, according to the requirements set forth in Exhibit C, provided adequate funds have been appropriated by the legislature. After operation of the Purge System is terminated, MDNRE's monitoring obligations are set forth in Paragraph 10 of this Stipulation and Order to Amend the Consent Decree.

5. Within sixty (60) days after each sampling event, MDNRE shall provide AAR with copies of all analytical data reports from the lab, field notes, field files, and boring/monitoring well logs performed or taken pursuant to Paragraph 4.

6. AAR's obligations to perform influent and effluent monitoring under Paragraph 7 and groundwater monitoring under Paragraphs 8 and 9 of the Consent Decree are eliminated and replaced with the monitoring requirements set forth in Exhibit D (AAR Groundwater Monitoring) and paragraph 10 of this Stipulation and Order to Amend the Consent Decree. AAR shall undertake the monitoring set forth in Exhibit D until the operation of the Purge System is terminated pursuant to Paragraphs 9, 15, or 20 of this Stipulation and Order to Amend the Consent Decree. After operation of the Purge System is terminated pursuant to Paragraph 9 of this Stipulation and Order to Amend the Consent Decree, AAR's monitoring obligations are set forth in Paragraphs 10 and 11. Nothing in this Paragraph releases AAR from any monitoring required by AAR's NPDES permit.

7. Within sixty (60) days after each sampling event, AAR shall provide MDNRE with copies of all analytical data reports from the lab, field notes and field files performed or taken pursuant to Paragraph 6.

8. The principal purpose of the groundwater monitoring, sampling and analyses described in Exhibits C, D and E of this Stipulation and Order to Amend the Consent Decree is to determine whether trichloroethylene (TCE) in the groundwater is naturally attenuating such that the groundwater purge system and groundwater treatment system described in Paragraphs 3, 4, 5, and 6 of the Consent Decree (collectively the "Purge System") may be shut down pursuant to this Stipulation and Order to Amend the Consent Decree. The criteria for determining if natural attenuation is occurring are described in Exhibit E.

9. The Purge System termination provisions described in Paragraphs 10, 11, and 12 of the Consent Decree are eliminated and are replaced with the following:

AAR may petition this Court to permanently terminate the operation of the Purge System and the Court shall permanently terminate AAR's obligations to operate the Purge System if AAR demonstrates to this Court that all the conditions of either (a) or (b) below have been met:

(a) (i) the groundwater contamination is attenuating as described in Exhibit E;

(ii) AAR has shut down the SVE/AS System in accordance with Exhibit A; and

(iii) the average concentration of TCE in the semi-confined aquifer adjacent to purge well PW-3 is equal to or below 40 parts per billion in any two consecutive sampling events taken at least thirty (30) days apart. The average concentration shall be determined using groundwater samples from wells PW-3, MW-205d, MW-203, and New Well I (east well immediately north of the AAR building as described in Exhibit C.)

OR

(b) (i) AAR has shut down the SVE/AS System in accordance with Exhibit A; and

(ii) the influent to purge well PW-3 is equal to or below the drinking water criterion for TCE [5 micrograms per liter (ug/L)] in any two consecutive sampling events taken at least thirty (30) days apart.

10. After the Purge System is permanently shut down pursuant to the terms of Paragraph 9 of this Stipulation and Order to Amend the Consent Decree, AAR will conduct post response monitoring for one (1) year (two semi-annual sampling events) after the date the Purge System is shut down. AAR's post response monitoring shall include monitoring all wells set forth in Exhibits C and D, excluding any Additional Sentinel Wells. The monitoring shall be conducted as described in Exhibits C and D. After AAR's 1-year period of post response monitoring ends, MDNRE will continue post response monitoring, including monitoring all the wells and performing the work described in Exhibits C, D, and E, for one (1) year (semi-annual sampling events), provided adequate funds have been appropriated by the legislature. If, within the two (2) years following shut down of the Purge System, Additional Sentinel Well(s) must be installed as set forth in Exhibit E, AAR will be responsible for installation of up to a total of four (4) Additional Sentinel Wells as set forth in Exhibit E.

11. After the Purge System is permanently shut down pursuant to Paragraph 9 AAR shall have no obligations, under the Consent Decree (as amended by this Stipulation and Order to Amend the Consent Decree) or otherwise, to operate the Purge System or to perform monitoring (except for monitoring required to be performed by AAR under Paragraph 10).

12. In the event that either MDNRE or AAR fails to perform any of their obligations under this Consent Decree (as amended by this Stipulation and Order to Amend the Consent Decree), either Party may petition this Court to require compliance with the Consent Decree, as amended.

13. In the event MDNRE fails, for any reason, to perform its monitoring obligations under this Consent Decree (as amended by this Stipulation and Order to Amend the Consent

Decree), AAR shall have the option, but not the obligation, to collect and analyze groundwater samples from any wells in Table 1 (attached to Exhibits C and D).

14. Prior to bringing an action to enforce the terms of the Consent Decree (as amended by this Stipulation and Order to Amend the Consent Decree) as provided in Paragraph 12, the alleged non-compliant Party shall be given written notice by the other Party describing the non-compliance. If the alleged non-compliant Party cures the non-compliance by coming back into compliance within thirty (30) days after receipt of such written notice, then no enforcement action may be brought to enforce the terms of the Consent Decree (as amended by this Stipulation and Order to Amend the Consent Decree) except to resolve a continued dispute as to whether the alleged non-compliant Party has come back into compliance or if there was or is any noncompliance.

15. If MDNRE fails, for any or no reason, (1) to perform any of the groundwater monitoring referenced in Paragraph 4, (2) to perform any of the post response monitoring referenced in Paragraph 10, or (3) to install, sample or analyze the Additional Sentinel Wells as set forth in Exhibit E, and fails to cure any of these alleged noncompliance issues as provided below, then AAR's obligations pursuant to the Consent Decree, as amended by this Stipulation and Order to Amend the Consent Decree, to operate the Purge System, conduct any groundwater monitoring, conduct any post response monitoring, to install any Additional Sentinel Wells, or to notify the City of Cadillac City Manager under Exhibit E, shall terminate unless the alleged failure is cured or disproven as provided in the following sentence. AAR shall provide written notice of such alleged failure to MDNRE and MDNRE shall have the opportunity to cure the alleged failure within thirty (30) days after receipt of such notice or to dispute the alleged noncompliance. If there is a dispute as to whether (1) there was noncompliance or (2) whether

the noncompliance was cured within thirty days after receipt of written notice, then the dispute shall be resolved as set forth in Paragraph 20. AAR's obligations shall terminate under this Paragraph if the dispute is resolved in AAR's favor by this Court unless a stay has been granted for any appeals, consistent with the Michigan court rules.

16. The MDNRE and its agents and contractors, when entering or performing any work on the AAR property, pursuant to this Consent Decree (as amended by this Stipulation and Order to Amend the Consent Decree), shall comply with all of AAR's safety rules and requirements.

17. Paragraph 16 of the Consent Decree is modified to include the filing of the Restrictive Covenant set forth in Exhibit F. The "Old Degreaser" area depicted in Exhibit 1 to Exhibit F will be finalized by the Parties within thirty (30) days after MDNRE completes the work in Exhibit B, but in no event shall the boundary of the Old Degreaser restricted area extend more than 50 feet beyond the locations of the Geoprobe locations that have analytical results above the drinking water protection criteria for TCE, 1,1,1-Trichloroethane, their breakdown products, or 1,2-Dichloroethane. The restricted area related to the "New Degreaser" area, as described in Exhibit F, shall not be subject to any additional modification. AAR shall record the Restrictive Covenant with the Wexford County Register of Deeds within sixty (60) days after MDNRE completes the work in Exhibit B.

18. AAR shall retain responsibility for maintaining the integrity of the impermeable barrier as described in the Restrictive Covenant, Exhibit F, unless performance of such obligation is assigned to another party or entity pursuant to the provisions set forth in Paragraph 18 of the Consent Decree.

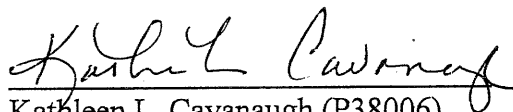


19. Exhibits A, B, C, D, E, and F are incorporated herein and Exhibits A, B, C, D, and E, are an enforceable part of this Consent Decree (as amended by this Stipulation and Order to Amend the Consent Decree).

20. Either party may file a Motion with this Court to resolve any disputes between the Parties concerning the requirements of the Consent Decree (as amended by this Stipulation and Order to Amend the Consent Decree).

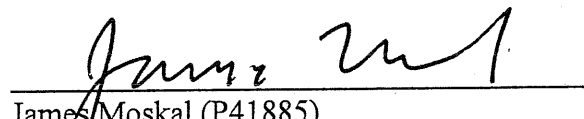
21. Paragraph 26 of the Consent Decree is modified by replacing "Defendant" in the second sentence with "obligated party" and adding the following additional sentence at the end of the paragraph: "For purposes of this Consent Decree (as amended by this Stipulation and Order to Amend the Consent Decree) only, the failure of the legislature to appropriate funds or any other lack of funds shall not constitute an excusable delay."

22. Except as provided by this Stipulation and Order to Amend the Consent Decree, the terms of the Consent Decree shall remain in effect.



Kathleen L. Cavanaugh (P38006)  
Assistant Attorney General  
Environment, Natural Resources,  
Attorney for Plaintiffs/State

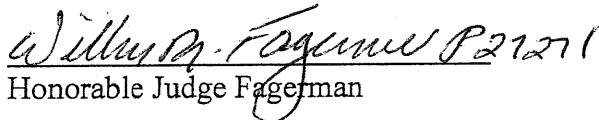
Dated: 6-23-10



James Moskal (P41885)  
Warner Norcross & Judd LLP  
Attorney for AAR

Dated: 6-17-10

IT IS SO ORDERED.

  
Honorable Judge Fagerman

Dated: 6/24/10

## INDEX OF EXHIBITS

Exhibit A.....	Soil Vapor Extraction and Air Sparge System
Exhibit B.....	Geoprobe Work Plan
Exhibit C .....	MDNRE Groundwater Monitoring
Exhibit D.....	AAR Groundwater Monitoring
Exhibit E.....	Determination of Natural Attenuation
Exhibit F.....	Restrictive Covenant



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## **Exhibit A**

## **Exhibit A – Soil Vapor Extraction and Air Sparge System**

AAR Manufacturing, Inc. (AAR) shall install a Soil Vapor Extraction (SVE) and Air Sparge (AS) System in the Old Degreaser area in the AAR plant located at 201 Haynes Street in Cadillac, Michigan. The SVE/AS system shall include the following: 2-HP SVE blower, 10-HP AS compressor, ¼-HP heat exchanger, and 55-gallon knockout tank. The system shall be equipped with visual alarm indicators to notify personnel when system adjustments are required. The system shall be piped to five (5) SVE extraction wells and a minimum of three (3) and a maximum of five (5) AS wells unless the parties mutually agree in writing to more AS wells. The number of AS wells and the locations of the one or two AS wells beyond the minimum of three (3) AS wells shall be based on the results of the Geoprobe Work and shall be agreed upon by AAR and the MDNRE. In the event the Parties cannot agree, then the Court shall determine the number and/or location after either party requests the Court to make such determination. The SVE wells and AS wells shall be installed within the area identified on Figure 1 (attached to both Exhibits A and B) at locations based upon an investigation within the area identified on Figure 1 performed by the MDNRE in accordance with the Geoprobe Work Plan attached as Exhibit B. The AS wells shall be installed above the top of the confining layer for the shallow aquifer at a depth determined by the Geoprobe Work. The SVE wells shall be installed with the bottom of the well screen at least one (1) to three (3) feet above the water table and based on the Geoprobe Work.

Since the air discharge from the SVE system would be operated under a controlled flow rate (i.e. gradually increasing), start-up and operation are expected to be exempt from air permitting under the Michigan Act 451 Part 55 Rule 290 exemption. Baseline air samples will be collected and will be evaluated to confirm that the conditions for the Rule 290 exemption are met. The system start-up shall consist of a two (2) stage start-up. Initially only the SVE system shall be placed into operation and no air shall be injected into the AS system. An air sample from the SVE system shall be collected within an hour of start-up, and a second sample shall be collected one (1) day after start-up. If the average of these two air samples document that the air emissions are below the limitations in the Rule 290 exemption, then compressed air shall begin to be sparged through the AS wells and two additional air samples will be collected. The two air samples from the SVE system after the AS system is turned on shall be averaged and shall be considered the Baseline SVE/AS Trichloroethylene (TCE) Concentration. Once the SVE/AS system is fully operational, monthly samples shall be collected for the first (6) six months of operation and quarterly samples shall be collected thereafter to document air quality and system performance.

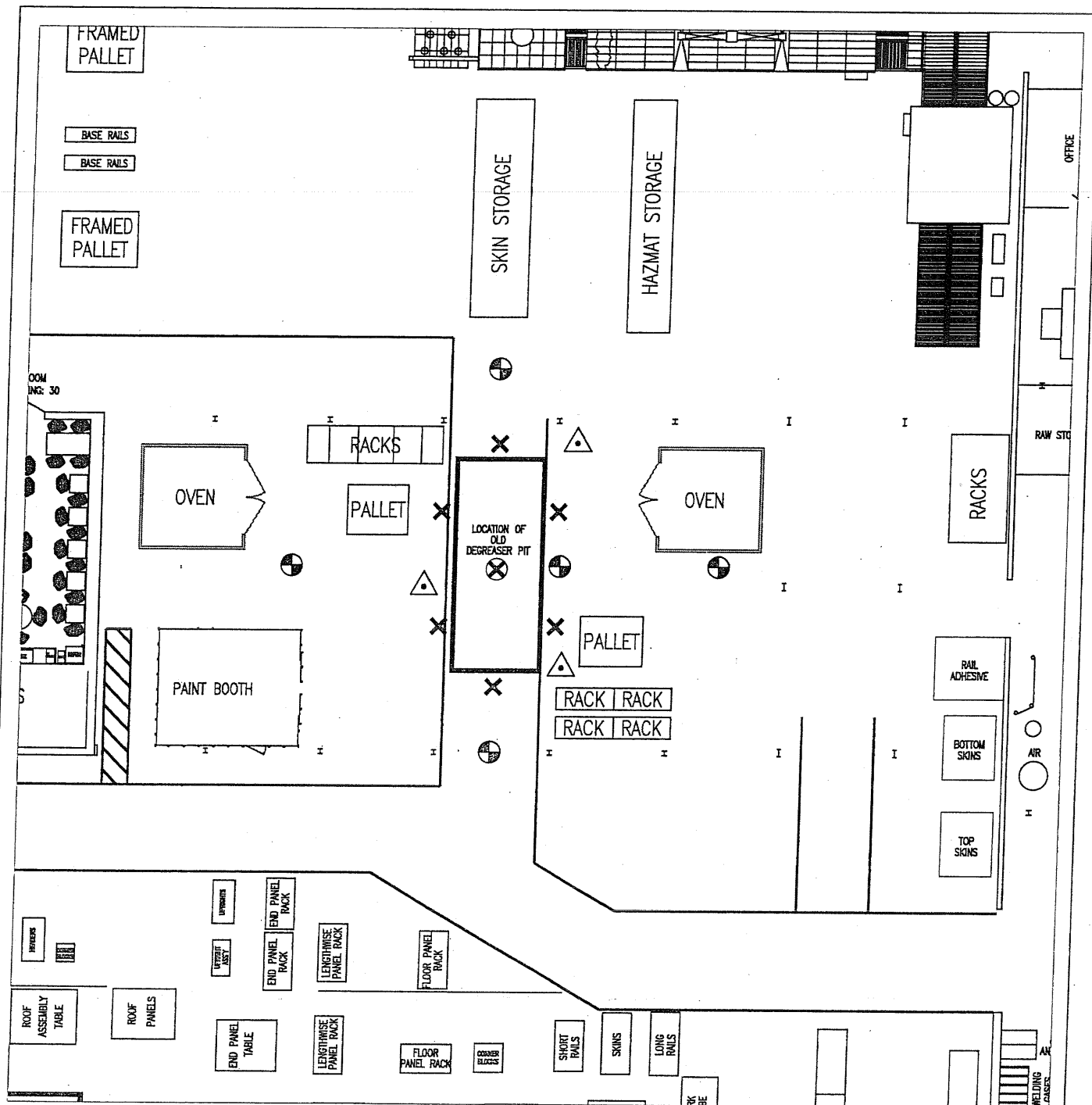
If the air samples indicate that the volatile organic compounds (VOC) emission rate from the SVE/AS system may exceed the Rule 290 exemption, then the system shall be operated to keep the emission rates below the requirement for the exemption.

When the concentration of TCE in the air extracted by the SVE/AS system is less than 15% of the Baseline SVE/AS TCE Concentration, the system will be operated in a pulsed fashion. As an example of pulsed operations, one AS well may be shut down and restarted after one week, with the remaining AS wells operating during that week. Alternatively, and also by way of example, the entire system may be shut off for a period of time and restarted.





The SVE/AS system shall continue to run, with the exception of brief periods of shut down for planned maintenance, not to exceed five (5) business days, and events that are beyond the control of AAR such as power outages and equipment failures, until either of the following shutdown conditions has been met:

- The concentration of TCE in two (2) consecutive samples of groundwater, collected at least one (1) month apart, from monitoring well MW-114 and from the well which is converted from the Geoprobe in the center of the old degreaser location ("Old Degreaser Well") are both below either i) 10% of the Old Degreaser TCE Baseline Concentration, or ii) 75 ppb. The Old Degreaser TCE Baseline Concentration is defined as the highest concentration of TCE sampled, after the date of this Stipulation and Order to Amend the Consent Decree and before startup of the SVE/AS system, from MW-114 and the Old Degreaser Well.
- Alternatively, if the concentration of TCE in the air extracted by the SVE/AS system has dropped, in an air sample collected one hour after a restart of the SVE/AS system (both systems operating) after the SVE/AS has been shut off for at least one week, to less than 10% of the Baseline SVE/AS TCE Concentration, then AAR may shut down the SVE/AS system. If the SVE/AS system is shut down pursuant to the criterion in this paragraph, and the criterion in the paragraph above is not met, then the MDNRE shall have a one-time option to move the existing SVE and/or AS wells to new locations within a radius of 100 feet from the Old Degreaser Well and manifold the newly installed SVE and/or AS wells into the transmission lines for the existing system at MDNRE's cost, but the number and location of pumps, compressors, motors, and other ancillary equipment (i.e. heat exchangers, knock out tanks, etc.) shall not change. If MDNRE chooses this option, then AAR will pay for the continued operations of the SVE/AS system until either of the criteria for shutdown in this Exhibit A is met at which point the SVE/AS system may be permanently shut down. If the MDNRE chooses not to exercise the one time option to modify the SVE/AS system, then AAR may permanently shut down the SVE/AS system.

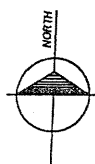
AAR shall submit a written notice to the MDNRE within sixty (60) days after one of the shutdown conditions is known to AAR to have been met. Such notice shall include an explanation of which condition was met and the date on which the SVE/AS was shut down. If MDNRE exercises its one-time option under the second bullet point above to move the SVE and/or AS wells, then the MDNRE shall notify AAR of their intention to exercise the option within sixty (60) days of receiving the shut-down notice from AAR. The MDNRE shall complete installation and connection within six (6) months of notifying AAR of the exercise of its option. In performing such work, the MDNRE shall not damage any structures at the AAR plant, injure any person, or interfere with AAR plant operation or safety. The MDNRE agrees to restore the property to the same condition existing prior to the commencement of activities under this Stipulation and Order to Amend the Consent Decree, provided AAR provides the MDNRE access to the property in order to do so.



# LEGEND

-  PROPOSED SVE WELL \*
-  PROPOSED AIR SPARGE WELL \*
-  GEOPROBE LOCATION
-  GEOPROBE LOCATION/OLD DEGREASER WELL

\* WELLS WILL BE INSTALLED WITHIN  
±25 FEET OF PROPOSED LOCATIONS



**AECOM**

5555 Glenwood Hills Parkway, SE • Suite 200 • Grand Rapids, MI 49512 • (616) 942-9000

DRAWN BY: D. TANIS	DATE: OCTOBER, 2009
CHECKED BY: T.B.	EDITED BY: DPE051910
FILE NAME: 94243-SVE-AS	

FIGURE 1

AAR CADILLAC  
CADILLAC, MICHIGAN

PROJECT NUMBER	94243	SCALE: 1" = 20'-0"
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## **Exhibit B**

## **Exhibit B – Geoprobe Work Plan**

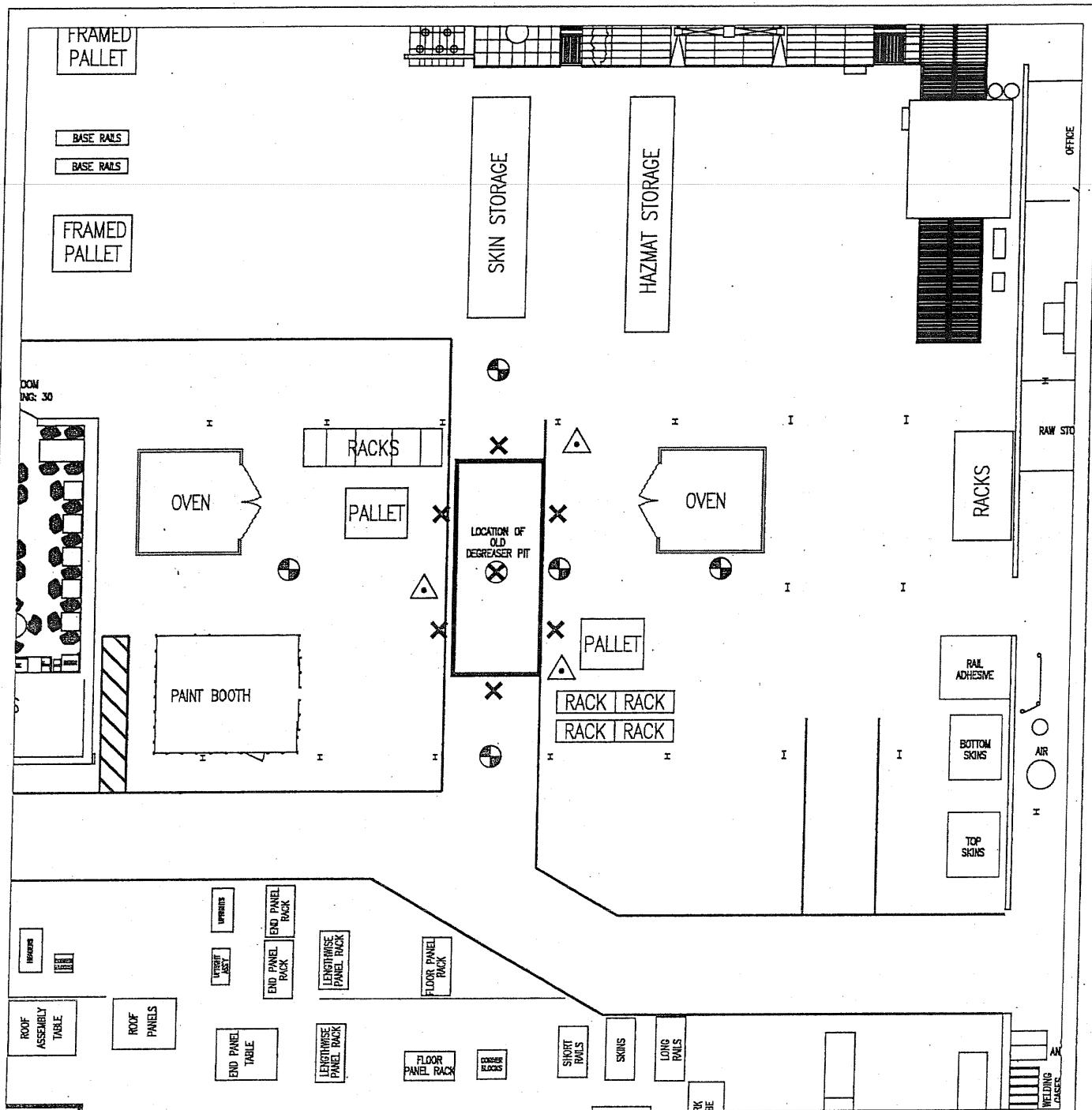
### **Objectives**

A source investigation will be conducted near the old degreaser at the AAR Haynes Street Plant to aid in the design of the source remediation to be conducted by AAR.

### **Methods**

The Michigan Department of Natural Resources and Environment (MDNRE) will install seven soil borings proximal to and in the old degreaser area at the locations shown on Figure 1 (attached to both Exhibit A and B). Seven borings are initially planned and the addition of up to five (5) borings will be determined in the field based on observations. The MDNRE must obtain written approval from AAR prior to installing any of the additional borings. The soil borings will be installed utilizing direct push (e.g. Geoprobe) drilling technologies. The borings will be advanced to a terminal depth of approximately 40 feet below ground or until the top of the lake bed clay is reached. Soil samples will be collected continuously from each boring and logged using the Unified Soil Classification System (USCS). The soil samples will be field screened using a photo ionization detector (PID) and any other observations will be noted (e.g. visual, olfactory, etc.). Based on the field screening, up to four soil samples will be collected from each boring to be analyzed at a laboratory using United States Environmental Protection Agency (EPA) Method 8260 for volatile organic compounds (VOCs). The soil samples will be field preserved/extracted with methanol according to EPA Method 5035. If nothing is detected in the field screening, two soil samples will be collected - one soil sample will be collected immediately above the capillary fringe and a second will be collected at the water table.

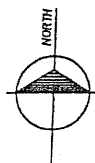
Upon completion of each bore hole, with the exception of the boring in the former degreaser pit, the boring will be abandoned by filling it with drill cuttings to approximately five feet below ground surface. The remaining bore hole will be filled with concrete capable of withstanding the load of heavy duty factory vehicles, which will not chip, scour or flake, and that matches the existing factory floor finish. The boring that is installed in the former degreaser pit will be completed as a 1-inch inner diameter groundwater monitoring well with a five foot long screen (Old Degreaser Well). The depth of the screen will be based on visual observations in the boring. The area surrounding the screen will either be allowed to collapse or will be filled with a sand pack (likely 10/20 mesh) to approximately 2 feet above the top of the well screen. Above the sand pack will be approximately a 1 foot thick layer of bentonite pellets. The remaining annular space will be filled with a cement grout to approximately 2 feet below the ground surface. The well will be completed as a flush mount with an eight inch diameter well cover in a 1 foot by 1 foot concrete pad that meets the same requirements as described above. In no event shall a geoprobe boring or the Old Degreaser Well be installed at a location or in a manner which damages structures or injures a person at the AAR plant or which interferes with AAR plant operations or safety.



# LEGEND

- PROPOSED SVE WELL \*
- PROPOSED AIR SPARGE WELL \*
- GEOPROBE LOCATION
- GEOPROBE LOCATION/OLD DEGREASER WELL

\* WELLS WILL BE INSTALLED WITHIN  
±25 FEET OF PROPOSED LOCATIONS



AECOM

5555 Glenwood Hills Parkway, SE • Suite 200 • Grand Rapids, MI 49512 • (616) 942-9500

DRAWN BY: D. TANIS

DATE: OCTOBER, 2009

CHECKED BY: T.B.

EDITED BY: DPE051910

FILE NAME: 94243-SVE-AS

FIGURE 1

AAR CADILLAC  
CADILLAC, MICHIGAN

PROJECT  
NUMBER

94243

SCALE: 1" = 20'-0"



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## **Exhibit C**

## **Exhibit C – MDNRE Groundwater Monitoring**

The Michigan Department of Natural Resources and Environment (MDNRE) agrees to install nine (9) new vertical aquifer sampling (VAS) borings to investigate groundwater quality in the semi-confined aquifer (sometimes referred to as the intermediate aquifer) at the locations shown on Figure 2 (the "New Monitoring Wells") (Figure 2 is referenced in and attached to Exhibits C, D, and E).<sup>\*</sup> Seven (7) of the VAS borings will be installed using hollow stem augers with a lead screened auger and completed as groundwater monitoring wells. Two of the VAS borings may only be installed to determine the presence or absence of the well field clay in areas where monitoring wells currently exist and will be installed using Rotasonic drilling technologies. If it is determined that a monitoring well at a VAS location will not provide useful hydraulic or groundwater quality data, a monitoring well will not be installed and the vertical aquifer sampling borehole will be properly abandoned.

The New Monitoring Wells that will be installed in the VAS borings will be constructed as either single or cluster wells, depending on VAS data, for additional sampling points. The wells will be constructed using 5-foot, 2-inch diameter, polyvinyl chloride (PVC) screens and risers. The depths of the well screens will be determined based on VAS data collected prior to installation. In VAS borings where Trichloroethylene (TCE) is detected, the well screen will be set at the interval with the highest detection. If no TCE is detected, but other chlorinated VOCs ("other chlorinated VOCs" is defined as TCE breakdown products of 1,1-Dichloroethene, cis-1,2-Dichloroethene, trans-1,2-Dichloroethene, and vinyl chloride and 1,1,1-Trichloroethane and its breakdown products of 1,1-Dichloroethene, 1,1-Dichloroethane, and chloroethane) are detected, the well screen will be set at the interval with the highest detection. If no chlorinated VOCs are detected, then the well screens will be set to depths where the TCE and/or other chlorinated VOCs will likely migrate based on data from the other borings. For example, to the west of monitoring well W04-15 if no chlorinated VOCs are detected, the wells will be installed to a depth of approximately 185 feet below ground. The new wells shall be surveyed to an accuracy of 0.01 foot for both vertical elevations and horizontal coordinates.

MDNRE agrees to collect groundwater samples from the New Monitoring Wells, plus four (4) additional, existing monitoring wells, for a total of eleven (11) monitoring wells. The MDNRE also agrees to collect groundwater samples from the Round 1 Additional Sentinel Wells and Round 2 Additional Sentinel Wells if the installation of these wells is required under Exhibit E. The well locations and exact number of wells will be subject to change with the approval of both parties, based on the data and number of new wells installed; however, the initial groundwater sampling locations will be: the New Monitoring Wells, W03-2s, W03-2d, W03-9, and W04-15 as described in the Table 1\* (attached to both Exhibits C and D) and Figure 2. Groundwater samples from the wells will be collected and analyzed on a semi-annual basis.

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<sup>\*</sup> Table 1 and Figure 2 set forth all the wells to be monitored by both AAR and MDNRE. Table 1 designates which wells AAR is required to monitor and which wells the MDNRE is required to monitor. Figure 2 includes the nine (9) VAS borings and the seven (7) wells to be installed by MDNRE pursuant to this Exhibit C and the Old Degreaser Well to be installed pursuant to Exhibit B.

The monitoring wells shall be sampled using either a modified low-flow (minimum drawdown) procedure or by purging 3 well volumes with a purge pump and inflatable packer assembly so that collected groundwater samples are representative of aquifer conditions. The groundwater samples will be analyzed in the field for the geochemical parameters of pH, Oxidation-Reduction Potential (ORP), dissolved oxygen (DO), and specific conductance and in a fixed laboratory for volatile organic compounds using Environmental Protection Agency (EPA) method 8260. Target method detection limits and quality assurance/ quality control sample results shall be within acceptable ranges to support the decisions called for under this Stipulation and Order to Amend the Consent Decree.

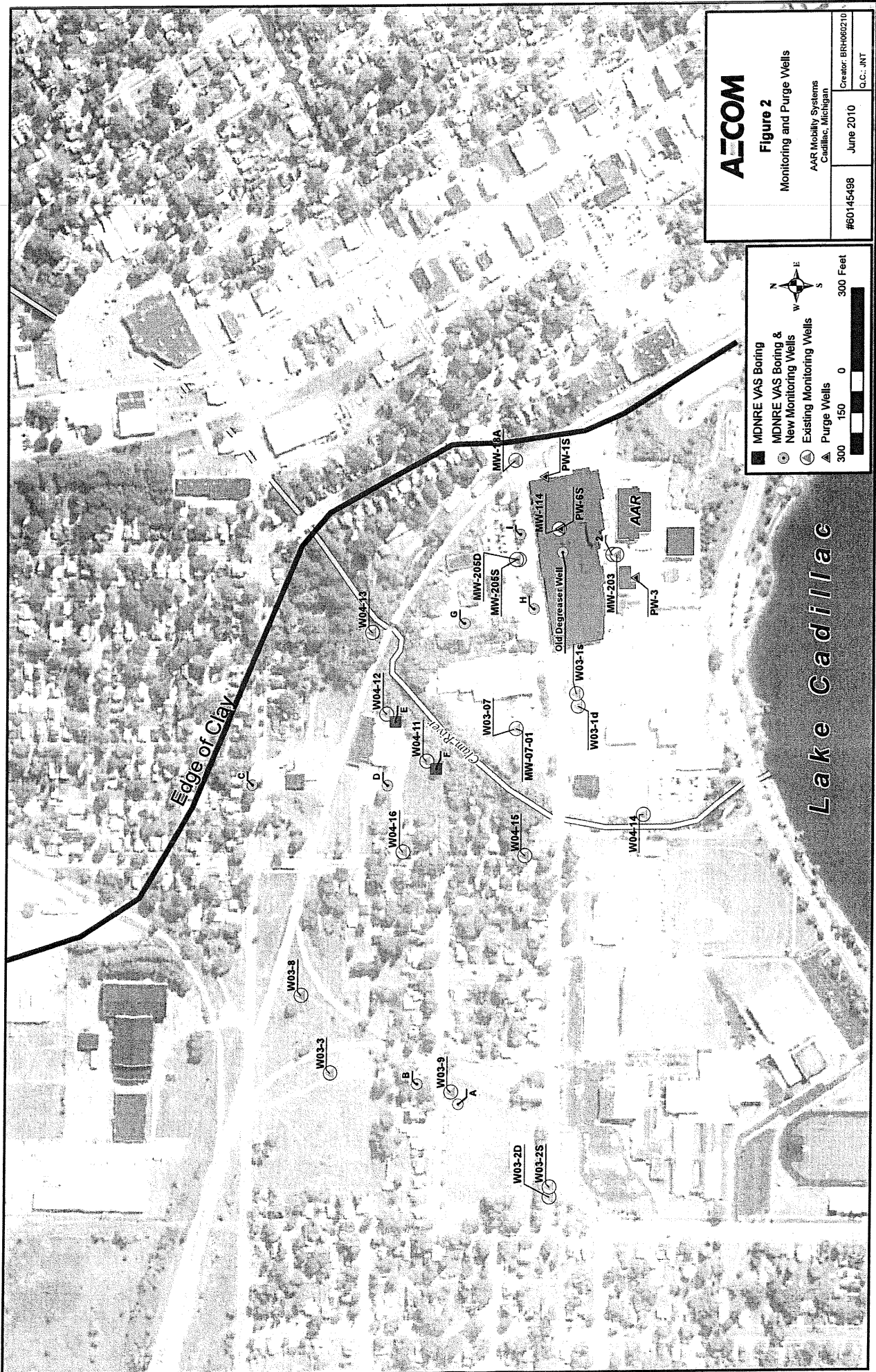
**Monitoring and Purge Wells to be Sampled**  
**Exhibits C and D**  
**Table 1**

<b>Monitoring Wells</b>		
<b>Well ID</b>	<b>Sampler</b>	<b>Aquifer</b>
Well 2	AAR	Semi-Confined
MW-18A	AAR	Shallow
MW-114	AAR	Shallow
MW-203	AAR	Semi-Confined
MW205S	AAR	Semi-Confined
MW205D	AAR	Semi-Confined
W03-1S	AAR	Semi-Confined
W03-1D	AAR	Semi-Confined
W03-2S	MDNRE	Semi-Confined
W03-2D	MDNRE	Semi-Confined
W03-03	AAR	Semi-Confined
W03-07	AAR	Semi-Confined
W03-08	AAR	Semi-Confined
W03-09	MDNRE	Semi-Confined
W04-11	AAR	Semi-Confined
W04-12	AAR	Semi-Confined
W04-13	AAR	Semi-Confined
W04-14	AAR	Semi-Confined
W04-15	MDNRE	Semi-Confined
W04-16	AAR	Semi-Confined
MW-07-01	AAR	Semi-Confined
Old Degreaser Well	AAR	Shallow
New Well North of Clam River NW of W04-11 & W04-12 (Well C*)	MDNRE	Semi-Confined
New Well North of Clam near W04-11 & W04-12 (Well D*)	MDNRE	Semi-Confined
New Far West Well #1 (near W03-09 / Well A*)	MDNRE	Semi-Confined
New Far West Well #2 (near W03-09 / Well B*)	MDNRE	Semi-Confined
New Well North of AAR Building (Well H*)	MDNRE	Semi-Confined
New Well North of AAR Building (Well I*)	MDNRE	Semi-Confined
New Well South of Clam River (Well G*)	MDNRE	Semi-Confined
Additional Sentinel Wells (if installed as required in Exhibit E)	MDNRE	Semi-Confined

\*As deonted on Figure 2

<b>Purge Wells</b>		
<b>Well ID</b>	<b>Sampler</b>	<b>Aquifer</b>
PW-1S	AAR	Shallow
PW-6S	AAR	Shallow
PW-3	AAR	Semi-Confined







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## **Exhibit D**

## **Exhibit D – AAR Groundwater Monitoring**

AAR shall collect groundwater samples from eighteen (18) monitoring wells and each purge well for a total of twenty-one (21) wells. The well locations and exact number of monitoring wells will be subject to change with approval of both parties. The monitoring wells to be sampled by AAR are: Old Degreaser Well (described in Exhibit B), MW-114, MW-18A, MW-203, MW-205s, MW-205d, W03-1s, W03-1d, W03-3, W03-7, W03-8, W04-11, W04-12, W04-13, W04-14, W04-16, MW-07-01, and Well 2 as described in the attached Table 1 and Figure 2.\* The purge wells to be sampled are PW-1s, PW-6s, and PW-3. Groundwater samples for all monitoring and purge wells shall be collected on a semi-annual basis.

The monitoring wells shall be sampled using low-flow (minimum drawdown) procedures, modified low-flow, or by purging 3 well volumes using a purge pump and packer assembly so that collected groundwater samples are representative of aquifer conditions. Groundwater samples will be collected from purge wells through a sampling port while they are operating. After the purge wells are shut down, the submersible pumps in the purge wells will be turned on and allowed to run for the earlier of at least ten minutes or until at least 50 gallons of water have been purged prior to collecting a sample through the sampling port. The groundwater samples will be analyzed in the field for the geochemical parameters of pH, Oxidation-Reduction Potential (ORP), dissolved oxygen (DO), and specific conductance and in a fixed laboratory for volatile organic compounds using Environmental Protection Agency (EPA) method 8260. Target method detection limits and quality assurance/ quality control sample results shall be within acceptable ranges to support the decisions called for under this Stipulation and Order to Amend the Consent Decree.

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\* Table 1 and Figure 2 set forth all the wells to be monitored by both AAR and MDNRE. Table 1 designates which wells AAR is required to monitor and which wells the MDNRE is required to monitor.

**Monitoring and Purge Wells to be Sampled**  
**Exhibits C and D**  
**Table 1**

<b>Monitoring Wells</b>		
<b>Well ID</b>	<b>Sampler</b>	<b>Aquifer</b>
Well 2	AAR	Semi-Confined
MW-18A	AAR	Shallow
MW-114	AAR	Shallow
MW-203	AAR	Semi-Confined
MW205S	AAR	Semi-Confined
MW205D	AAR	Semi-Confined
W03-1S	AAR	Semi-Confined
W03-1D	AAR	Semi-Confined
W03-2S	MDNRE	Semi-Confined
W03-2D	MDNRE	Semi-Confined
W03-03	AAR	Semi-Confined
W03-07	AAR	Semi-Confined
W03-08	AAR	Semi-Confined
W03-09	MDNRE	Semi-Confined
W04-11	AAR	Semi-Confined
W04-12	AAR	Semi-Confined
W04-13	AAR	Semi-Confined
W04-14	AAR	Semi-Confined
W04-15	MDNRE	Semi-Confined
W04-16	AAR	Semi-Confined
MW-07-01	AAR	Semi-Confined
Old Degreaser Well	AAR	Shallow
New Well North of Clam River NW of W04-11 & W04-12 (Well C*)	MDNRE	Semi-Confined
New Well North of Clam near W04-11 & W04-12 (Well D*)	MDNRE	Semi-Confined
New Far West Well #1 (near W03-09 / Well A*)	MDNRE	Semi-Confined
New Far West Well #2 (near W03-09 / Well B*)	MDNRE	Semi-Confined
New Well North of AAR Building (Well H*)	MDNRE	Semi-Confined
New Well North of AAR Building (Well I*)	MDNRE	Semi-Confined
New Well South of Clam River (Well G*)	MDNRE	Semi-Confined
Additional Sentinel Wells (if installed as required in Exhibit E)	MDNRE	Semi-Confined

\*As deonted on Figure 2

<b>Purge Wells</b>		
<b>Well ID</b>	<b>Sampler</b>	<b>Aquifer</b>
PW-1S	AAR	Shallow
PW-6S	AAR	Shallow
PW-3	AAR	Semi-Confined





## **Exhibit E**



## **Exhibit E – Determination of Natural Attenuation**

The process for determining if natural attenuation is occurring shall be as described below in the three criteria. Compliance with these criteria shall be determined using data from groundwater samples collected pursuant to the monitoring plans described in Exhibits C and D. These three criteria are:

1. Reduction or no change in Trichloroethylene (TCE) over time in groundwater as specified below.
2. Presence of TCE breakdown products and 1,1,1-trichloroethane (1,1,1-TCA) breakdown products in groundwater within the plume.
3. Sentinel Wells or Additional Sentinel Wells, as further described below, do not exceed promulgated groundwater clean up criteria protective for drinking water developed under Part 201 (DWC) for TCE and its breakdown products and 1,1,1-TCA and its breakdown products (Chlorinated VOCs).

If all of these 3 criteria are satisfied, as described in further detail below, then natural attenuation will be deemed to be occurring.

### **Compliance with Criterion #1**

The procedure described below will determine compliance with the first criterion for demonstrating natural attenuation. This criterion will be evaluated by AAR and reported to the MDNRE after every sampling event using a combined statistical analysis (both parametric and non-parametric) and spatial moment analysis. These analyses will be performed using the Monitoring and Remediation Optimization System software (MAROS) version 2.2 developed by the United States Air Force Center for Environmental Excellence. The methods and approach described below for the application of the MAROS software are detailed in the User's Guide for version 2.2 of the MAROS Software and both the MDNRE and AAR are in possession of the User's Guide, and AAR shall use this User's Guide. The statistical trend analysis is described in Appendix A.2 of the User's Guide and the zeroth moment analysis is described in Appendix A.5 of the User's Guide. MAROS will be used to analyze the data and provide a concentration trend of the individual wells and a spatial moment trend (zeroth moment) according to the following MAROS categories: increasing, probably increasing, no trend, stable, probably decreasing, or decreasing. In the future an alternative software or method may be utilized if mutually agreed to by the parties. The wells to be used for the MAROS analysis are MW-203, MW-205d, New Monitoring Well H, New Monitoring Well I, W03-1s, W03-1d, W04-11, W04-14, and W04-15 in the semi-confined aquifer, and MW-114 and the Old Degreaser Well in the shallow aquifer. The locations of the wells are shown on Figure 2. The results of these analyses will be evaluated after every sampling event conducted under Exhibits C and D as follows:

### **Individual Well / Concentration Analysis**

- A Mann-Kendall analysis and a linear regression statistical analysis will be conducted on the TCE concentration in each of the individual wells using the MAROS software.
- If the results of both analyses are the same, then that will be considered the concentration trend for the individual well being analyzed.
- If the results of the two statistical analyses for an individual well are different, then the result with higher confidence in the trend will be considered the concentration trend for that individual well.
- The concentration trend of TCE will be determined to be stable, probably decreasing or decreasing, when at least 60% of the wells listed above have a concentration trend, as determined by MAROS, which is stable, probably decreasing, or decreasing.
  - Data will be treated in the following manner for statistical analysis conducted pursuant to this Exhibit: no time consolidation of the sampling events will be utilized, duplicate samples will be averaged, values for non-detect samples will be  $\frac{1}{2}$  the reported detection limit, and if the analytical results are flagged (i.e. trace, estimated, etc.) the analytical results as reported will be utilized.
- If the concentration of TCE in a well remains below 5 micrograms per liter (ug/L) in the semi-confined aquifer or below 75 ug/L in the shallow aquifer for four (4) consecutive sampling events, the concentration trend for that well will be considered stable.

### **Overall Plume / Zeroth Moment Analysis**

- The results of the zeroth moment spatial analysis (relative change in dissolved mass over time) will be determined for the following set of monitoring wells in the semi-confined aquifer: MW-203, MW-205d, New Monitoring Well H, New Monitoring Well I, W03-1s, W03-1d, W04-11, W04-14, and W04-15. This evaluation does not apply to wells in the shallow aquifer. The location of each of these monitoring wells is shown on Figure 2. If the trend in the zeroth moment is determined by MAROS to be stable, decreasing, or probably decreasing, then the zeroth moment (relative dissolved mass) of the plume will be deemed to be stable, probably decreasing, or decreasing. If the data shows no trend, as defined by MAROS, the data will be considered inconclusive and additional sampling and analysis will be required to establish a trend.
  - For the calculation of the zeroth moment, a porosity of 0.4 and a uniform saturated thickness of 5 feet will be utilized for screen length.

If both the concentration trend of TCE analysis and zeroth moment spatial analysis show any combination of stable, probably decreasing, or decreasing trends, as described above, using a minimum of four consecutive sampling events, the first criterion will be considered to have been met. After greater than 3 years of data (semi-annual sampling) is collected from the monitoring wells, AAR may use only the 6 most recent consecutive sampling events in the analysis.

### **Compliance with Criterion #2**

The second criterion for demonstrating that natural attenuation is occurring is the presence of any of the breakdown products of TCE and 1,1,1-TCA. If breakdown products are observed then this criterion is satisfied.

### Compliance with Criterion #3

The third criterion for demonstrating that natural attenuation is occurring is that concentrations of Chlorinated VOCs in the applicable sentinel wells remain below DWC, to the extent they exist (if they do not exist, then this third criterion shall not apply for that Chlorinated VOC). Monitoring wells W03-2s, W03-2d, W03-9, W03-8, and New Monitoring Wells A and B are the Initially Designated Sentinel Wells. The locations of the Initially Designated Sentinel Wells are shown in Figure 2.

If the data obtained by MDNRE under Exhibit C and AAR under Exhibit D from any Initially Designated Sentinel Well indicates that the concentration of any Chlorinated VOC is above the DWC (Impacted Sentinel Well), then Round 1 Additional Sentinel Wells will be installed. The Round 1 Additional Sentinel Wells will be sampled to monitor compliance with this criterion in lieu of the Impacted Sentinel Well(s). The Initially Designated Sentinel Wells that do not have detections of Chlorinated VOCs above the DWC will continue to be sampled to determine compliance with this criterion. Round 1 Additional Sentinel Wells shall be installed in the down gradient direction of groundwater flow from the Impacted Sentinel Well in the semi-confined aquifer at approximately 1,250 feet hydraulically down gradient from the Impacted Sentinel Wells.

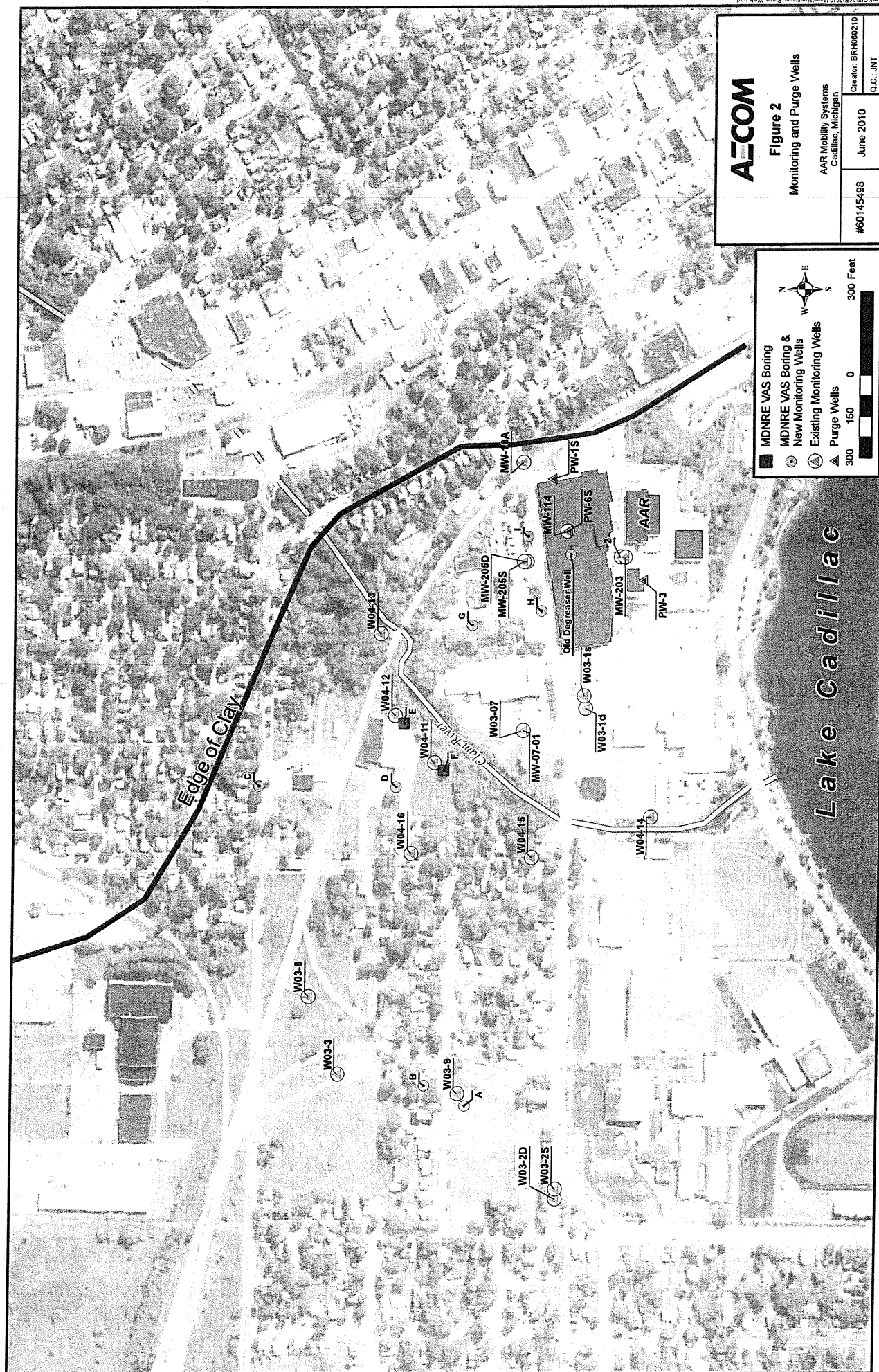
If the data from a Round 1 Additional Sentinel Well indicates that the concentration of a Chlorinated VOC is above the DWC (Impacted Round 1 Additional Sentinel Well), then Round 2 Additional Sentinel Well(s) will be installed. The Round 2 Additional Sentinel Wells will be sampled to monitor compliance with this criterion in lieu of the Impacted Sentinel Well(s) and in lieu of the Impacted Round 1 Additional Sentinel Well(s). The Initially Designated Sentinel Wells and the Round 1 Additional Sentinel Wells that have never had detections of Chlorinated VOCs above the DWC will continue to be sampled to determine compliance with this criterion. Round 2 Additional Sentinel Wells shall be installed in the down gradient direction of groundwater flow from the Impacted Round 1 Additional Sentinel Well in the semi-confined aquifer at approximately 1,500 feet from the Impacted Round 1 Additional Sentinel Well.

AAR shall be responsible for the installation of up to a total of four (4) Additional Sentinel Wells within 6 months of discovery of any Chlorinated VOC above the DWC in one or more impacted Sentinel Wells, provided the MDNRE has obtained access for AAR to install the Additional Sentinel Well(s) within 4 months after such discovery. These four wells will be installed during a maximum of two mobilizations – one after the first discovery of any Chlorinated VOC at an Initially Designated Sentinel Well, and a second mobilization (if necessary) after the first discovery of any Chlorinated VOC at a Round 1 Additional Sentinel Well or Initially Designated Sentinel Well, as applicable. If Additional Sentinel Well(s) are required, the Additional Sentinel Well(s) will be installed in a location(s) determined by the MDNRE, in accordance with the location requirements noted above. The MDNRE shall be responsible for the installation of any Additional Sentinel Wells that may be required beyond the four (4) installed by AAR as described above. If any Additional Sentinel Well(s) are installed, then the MDNRE shall be responsible for the collection and analysis of all groundwater samples from all of the Additional Sentinel Well(s). If the MDNRE does not install any Additional Sentinel Well(s) within six months after the detection of a Chlorinated VOC at a concentration above the DWC in an

Initially Designated Sentinel Well(s) or an Additional Sentinel Well(s), after AAR has installed the four (4) Additional Sentinel Well(s), then Paragraph 15 of the Stipulation and Order to Amend the Consent Decree shall apply.

If any Chlorinated VOC is detected above a DWC by MDNRE in a Round 2 Additional Sentinel Well, and MDNRE promptly provides AAR with a copy of the laboratory report showing such detection, then AAR shall promptly provide the City of Cadillac City Manager a written notice containing such data from the Round 2 Additional Sentinel Well(s).

This third criterion shall be determined to be met or not met based on the most recent samples from the then applicable sentinel wells at the time the other two criteria are met. If MDNRE fails to collect and analyze groundwater samples from Initially Designated Sentinel Wells or Additional Sentinel Wells in accordance with Exhibits C and E, then Paragraph 15 of the Stipulation and Order to Amend the Consent Decree shall apply.





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## **Exhibit F**

### **AMENDED DECLARATION OF RESTRICTIVE COVENANTS**

AAR Manufacturing, Inc., an Illinois corporation, is the present title owner of the following described real property ("Property") located in the City of Cadillac, County of Wexford, State of Michigan:

Com. at intersection of townline and E line outlet 7 W along townline 700 ft N at rt. ang. 116.84 ft N 10deg 03min W 116.84 ft to S line of Haynes Street NEly along S line Haynes St to W line AA-RR SEly along W line AA-RR to E line outlet 7 S along E line outlet 7 to beg. and that part of lots 4 & 5 lying W AA-RR and com at N  $\frac{1}{4}$  cor. Sec 4-21-9W W along townline 478.95 ft S par. with  $\frac{1}{4}$  line 120 ft E par with townline 100 ft S par with  $\frac{1}{4}$  line 180 ft E par with townline to a point 220 ft W of E line outlet 7 N par with  $\frac{1}{4}$  line 120 ft E par with townline 180 ft to a point 40 ft W of E line outlet 7 N par with E line of outlet 7 180 ft to townline W along townline 160 ft to beg. Cummer & Haynes Addn.

In accordance with the terms and provisions of the Consent Decree, as amended on \_\_\_\_\_, 2010, entered in the cause of Frank J. Kelley, Attorney General of the State of Michigan, *et al.*, versus AAR Brooks & Perkins, Docket No. 83-5771-CE in the Circuit Court for the County of Wexford, State of Michigan;

And because of evidence that certain soils underlying a portion of the AAR Cadillac Manufacturing plant (AAR Cadillac Manufacturing is a division of AAR



Manufacturing, Inc.) located at 201 Haynes Street, Cadillac, Michigan 49601 ("Plant"), that is situated on the above-described real property, are contaminated with Trichloroethylene ("TCE"), 1,1,1-Trichloroethane ("TCA"), 1,2 dichloroethane, and their respective breakdown products (collectively referred to as VOCs);

And in order to ensure that such soils, if contaminated with VOCs, do not become a further source for contamination of the groundwaters of the State of Michigan to the detriment of the public health, safety, and the environment;

NOW, THEREFORE, these restrictive covenants are executed by AAR Manufacturing, Inc., an Illinois corporation, and shall apply to those areas of the Plant shown on Exhibit 1 to this Amended Declaration of Restrictive Covenants. These restrictive covenants shall run with the land, and are binding upon the owner of the above-described real property ("Owner"), and run in favor of the People of the State of Michigan:

1. The Owner shall maintain an impermeable barrier for the restricted area shown on Exhibit 1 to protect the Exceedance Soils (defined below) beneath the impermeable barrier from percolation from the surface downward by natural precipitation or other liquids. Exceedance Soils are those soils within the restricted area that contain VOCs in concentrations that exceed the Part 201 promulgated soil cleanup criteria for protection of groundwater for drinking use ("DWPC") (based on data existing on the date of this Amended Declaration of Restrictive Covenant). The impermeable barrier that exists on the date of this Amended Declaration of Restrictive Covenant is acceptable and meets this restriction. The impermeable barrier shall be maintained and kept in place, in whole or in part, as necessary to cover the Exceedance Soils until the Exceedance Soils (some or all as applicable) are i) removed, ii) treated such that the concentrations of VOCs in such soils no longer exceed the DWPC, or iii) shown to no longer

have VOCs in concentrations that exceed the DWPC. Owner may submit data to the Michigan Department of Natural Resources and Environment ("MDNRE") to support Owner's proposed termination of all or part of the restriction and to request MDNRE's approval of the partial or complete termination of the restrictions, and such approval shall not be unreasonably withheld. If the MDNRE approves the proposed termination submitted by Owner, then Owner may record a document with the Wexford County Register of Deeds evidencing such termination. If the MDNRE does not approve such proposed termination, Owner may seek a determination by the Wexford County Circuit Court as to whether or not such proposed termination should be approved. If the Court approves such termination, then Owner may record a document with the Wexford County Register of Deeds evidencing the termination.

2. In the event that Owner proposes to remove, reduce, replace or modify the impermeable barrier or to take some other action that would expose the underlying soils to the infiltration of natural precipitation or other liquid, Owner shall submit to the MDNRE a plan for doing so. Such a plan may be implemented upon written approval by the MDNRE and such approval shall not be unreasonably withheld. If the plan is not approved, Owner may seek a determination by the Wexford County Circuit Court to approve the plan or to identify measures needed to be added to the plan to protect the public health, safety and the environment from leaching of VOCs above the DWPC from soil to groundwater in the areas depicted in Exhibit 1 caused by percolation of natural precipitation or other liquids under the plan.

3. Owner and the MDNRE agree that no approval by MDNRE and no plan preparation by Owner is necessary for a modification of the impermeable barrier by Owner that

- i) removes building walls, roofs, ceilings and fixtures in the areas in Exhibit 1 but that leaves intact the floors in the areas in Exhibit 1 (or a reduced area where the reduction was approved by

the MDNRE or the Court), provided that there are no cracks, holes, or joints in the floor that interfere with or impair its function as an impermeable barrier; ii) removes building walls, roofs, ceilings, fixtures and floors in the areas in Exhibit 1 if Owner immediately replaces the floors over the areas in Exhibit 1 (or a reduced area where the reduction was approved by the MDNRE or the Court) with asphalt with a minimum thickness of four inches, concrete or other equivalent impermeable barrier, but not a clay or other soil cover.

4. To ensure compliance with the requirements of paragraph 1, above, Owner shall give written notice, delivered by registered mail, to the MDNRE and the Attorney General of Michigan of any transfer or conveyance of title or other possessory interest of the above-described real property, together with a certification that a copy of this Amended Declaration of Restrictive Covenants has been provided to the person or entity to whom the property is transferred or conveyed.

5. The State of Michigan and Owner may enforce this Amended Declaration of Restrictive Covenant by appropriate legal action in the Circuit Court for Wexford County.

Dated the \_\_\_\_\_ day of \_\_\_\_\_, 2010.

AAR Manufacturing, Inc.

By: \_\_\_\_\_

Its: \_\_\_\_\_

STATE OF MICHIGAN) ) ss:  
COUNTY OF \_\_\_\_\_)

) SS:

COUNTY OF \_\_\_\_\_)

The foregoing instrument was acknowledged before me this \_\_\_\_ day of \_\_\_\_\_, 2010, by \_\_\_\_\_ of AAR Manufacturing, Inc., an Illinois corporation, on behalf of the Corporation.

Notary Public

\_\_\_\_\_ County, Michigan

My commission expires: \_\_\_\_\_



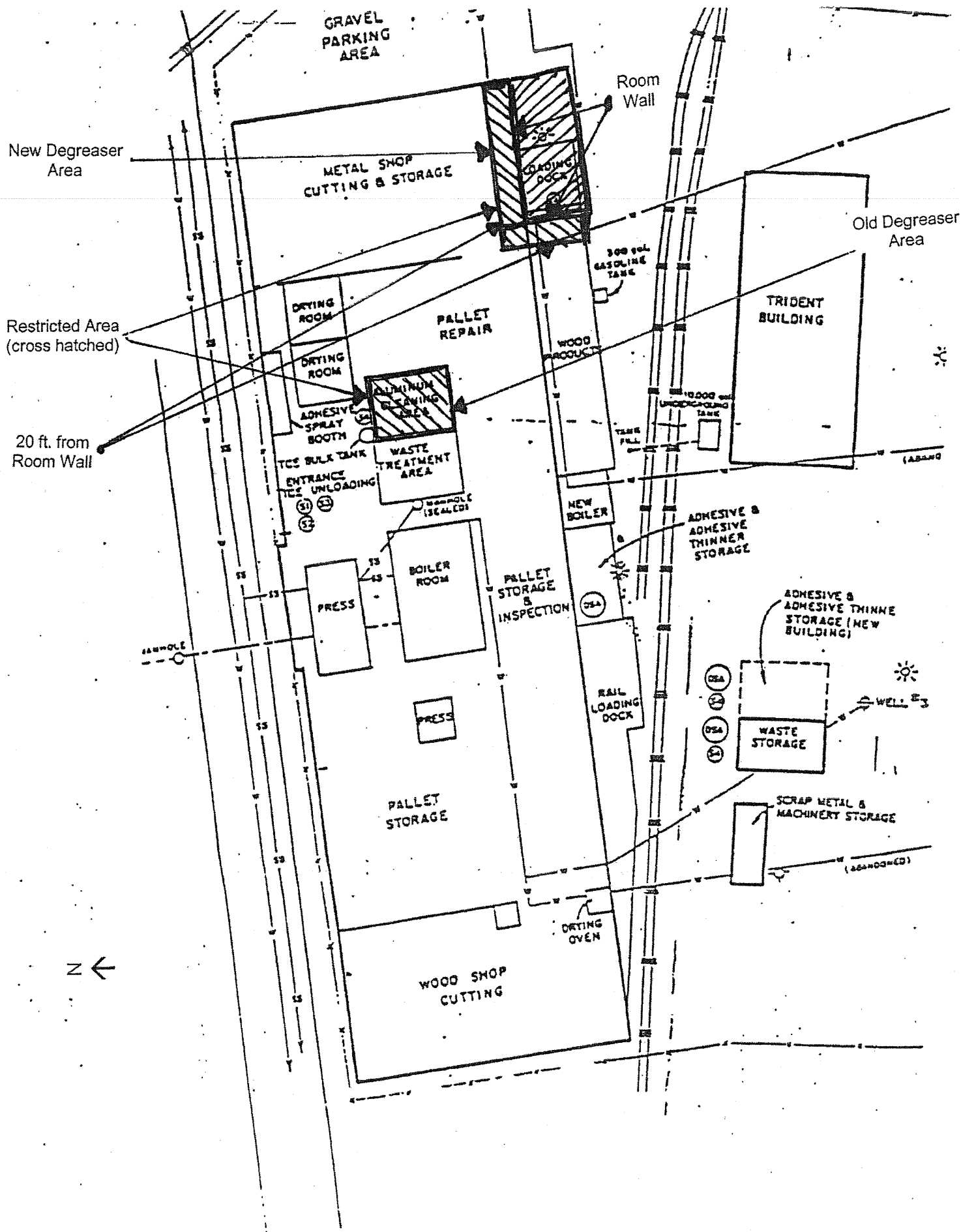


EXHIBIT 1



## **Attachment 2**



STATE OF MICHIGAN  
CIRCUIT COURT FOR THE 28<sup>TH</sup> JUDICIAL CIRCUIT  
WEXFORD COUNTY

AAR MANUFACTURING, INC.,  
Plaintiff,

v

MICHIGAN DEPARTMENT OF  
ENVIRONMENTAL QUALITY,  
Defendant.

Case No. 07-000096-MZ-C30

Honorable William Fagerman  
Sitting as the Court of Claims

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**STIPULATION AND ORDER TO DISMISS**

The parties stipulate to dismiss all claims and counterclaims in this matter, with prejudice and without costs to any party.

This Order resolves all pending matters and closes the case.

IT IS SO ORDERED.

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Honorable William Fagerman  
Circuit Court Judge, Sitting as the Court of Claims

Dated: \_\_\_\_\_

Approved as to Form and Content:

By: \_\_\_\_\_  
James Moskal (P41885)  
Joseph A. Kuiper (P58793)  
WARNER NORCROSS & JUDD LLP  
111 Lyon Street, N.W., Suite 900  
Grand Rapids, MI 49503-2487  
(616) 752-2128  
Attorneys for Plaintiff

By: \_\_\_\_\_  
Kathleen L. Cavanaugh (P38006)  
Assistant Attorney General  
Environment, Natural Resources,  
and Agriculture Division  
P.O. Box 30755  
Lansing, MI 48909  
(517) 373-7540  
Attorney for Defendant

Dated: \_\_\_\_\_, 2010

Dated: \_\_\_\_\_, 2010



## **Attachment 3**

STATE OF MICHIGAN  
CIRCUIT COURT FOR THE 28<sup>TH</sup> JUDICIAL CIRCUIT  
WEXFORD COUNTY

MICHIGAN DEPARTMENT OF  
ENVIRONMENTAL QUALITY,

Plaintiff,

v

AAR CADILLAC MANUFACTURING,  
a division of AAR MANUFACTURING  
GROUP, INC., an Illinois corporation,  
Defendant.

File No. 05-18853-CE

Honorable William Fagerman

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**STIPULATION AND ORDER TO DISMISS**

The parties stipulate to the dismissal of all claims and counterclaims in this matter, with prejudice and without costs to any party.

This Order resolves all pending matters and closes the case.

IT IS SO ORDERED.

---

Honorable William Fagerman  
Circuit Court Judge

Dated: \_\_\_\_\_

Approved as to Form and Content:

---

Kathleen L. Cavanaugh (P38006)  
Polly Ann Synk (P63473)  
Assistant Attorneys General  
Environment, Natural Resources,  
and Agriculture Division  
P.O. Box 30755  
Lansing, MI 48909  
(517) 373-7540  
Attorneys for Plaintiff

---

Joseph A. Kuiper (P58793)  
Jason L. Byrne (P69148)  
WARNER NORCROSS & JUDD  
111 Lyon Street, NW  
900 Fifth Third Center  
Grand Rapids, MI 49503  
(616) 752-2000  
Attorneys for Defendants

Dated: \_\_\_\_\_

Dated: \_\_\_\_\_





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## **Attachment 4**

STATE OF MICHIGAN  
IN THE COURT OF APPEALS

MICHIGAN DEPARTMENT OF  
ENVIRONMENTAL QUALITY,  
Plaintiff-Appellant,

v

AAR MANUFACTURING INC. and AAR  
CORP., *et al*,

Defendants-Appellees.

Court of Appeals Case No. 294552

Wexford County Circuit Court  
File No. 05-18853-CE

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**STIPULATION AND ORDER TO DISMISS APPEAL**

Plaintiff-Appellant Michigan Department of Environmental Quality (now Michigan Department of Natural Resources and Environment) and Defendants AAR Manufacturing, Inc., and AAR CORP, stipulate to the dismissal of the appeal, in its entirety, with prejudice and without costs to any party.

Dated: \_\_\_\_\_

Dated: \_\_\_\_\_

\_\_\_\_\_  
Kathleen L. Cavanaugh (P38006)  
Assistant Attorney General  
Environment, Natural Resources,  
and Agriculture Division  
P.O. Box 30755  
Lansing, MI 48909  
(517) 373-7540  
Attorneys for Plaintiff-Appellant

\_\_\_\_\_  
Joseph A. Kuiper (P58793)  
WARNER NORCROSS & JUDD LLP  
111 Lyon Street, NW  
900 Fifth Third Center  
Grand Rapids, MI 49503  
(616) 752-2000  
Attorneys for Defendants-Appellees

**ORDER**

At a session of the Michigan Court of Appeals held on \_\_\_\_\_, 2010.

PRESENT: Honorable \_\_\_\_\_

IT IS SO ORDERED.





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## **Attachment 5**

STATE OF MICHIGAN  
CIRCUIT COURT FOR THE 28<sup>TH</sup> JUDICIAL CIRCUIT  
WEXFORD COUNTY

MICHIGAN DEPARTMENT OF  
ENVIRONMENTAL QUALITY,

Plaintiff,

v

AAR CADILLAC MANUFACTURING,  
a division of AAR MANUFACTURING  
GROUP, INC., an Illinois corporation,  
Defendant.

File No. 05-18853-CE

Honorable William Fagerman

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**AAR'S WITHDRAWAL OF BILL OF COSTS**

AAR Manufacturing, Inc. and AAR CORP. (collectively, "AAR") voluntarily withdraw  
the Bill of Costs filed by AAR on October 21, 2009.

Respectfully submitted,

Dated: \_\_\_\_\_

\_\_\_\_\_  
Joseph A. Kuiper (P58793)  
Jason L. Byrne (P69148)  
WARNER NORCROSS & JUDD, LLP  
111 Lyon Street, NW  
900 Fifth Third Center  
Grand Rapids, MI 49503  
(616) 752-2000  
Attorneys for AAR

IT IS SO ORDERED.

\_\_\_\_\_  
Honorable William Fagerman  
Circuit Court Judge

Dated: \_\_\_\_\_