MEMORANDUM OF DECISION FOR ENVIRONMENTAL RESPONSE ACTIONS

US EPA Brownfield Revolving Loan Fund Program

DRAFT DECISION MEMORANDUM

44-acre Refuge Gateway
Trenton, Wayne County, Michigan

Approved by: _____
Downriver Community Conference

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1.0 PURPOSE

Soil and Materials Engineers, Inc. (SME) prepared this Decision Memorandum to document the Downriver Area Brownfield Consortium's (DABC's) recommendation, on behalf of the Downriver Community Conference (DCC), of proposed environmental response actions. The environmental response actions will improve the existing soil and concrete exposure barriers that encapsulate contaminated soil at Wayne County's 44-acre Refuge Gateway, located in Trenton, Wayne County, Michigan (the site). The Refuge Gateway site is owned by Wayne County and is located at 5437 West Jefferson Avenue, in the city of Trenton, Wayne County, Michigan. The site consists of approximately 44 acres along the western bank of the Trenton Channel (Figure 1). The site will be incorporated into the over 5,000-acre Detroit River International Wildlife Refuge (DRIWR).

The site became impacted as a result of its 44-year use as the Trenton Chemical Facility operated by Chrysler Corporation (Chrysler). A response action will be conducted to improve the soil and concrete exposure barriers that encapsulate contaminated soil at the site. The response action will assist in preparing the site for redevelopment into a park and wildlife refuge. The DCC will provide the $200,000 Brownfield Revolving Loan Fund (BRLF) sub-grant to Wayne County to facilitate environmental response actions. A copy of the Sub-grant Agreement between DCC and Wayne County is included as Attachment B.

The site is a brownfield as defined by the U.S. EPA and Part 201 of the Michigan Natural Resources and Environmental Protection Act (Part 201). Wayne County owns the site and is not liable for the environmental impact currently present on the site. The International Wildlife Refuge (IWR) Alliance is overseeing the redevelopment of the site into a park and wildlife refuge. The site will consist of a park-like setting with restored woodlands and wetlands, a new Welcome Center facility, nature trails, various site amenities, as well as direct and indirect connections to existing waterways, greenways, and the adjoining Humbug Marsh. The redevelopment of the site and the construction of the Welcome Center Facility will require the additional capping of select areas of the site to ensure the protection of human health and the environment. A schematic design of the site is presented on Figure 2.

Information about the site's history and the threats to human health and the environment posed by existing impact is included in this memorandum. An Analysis of Brownfields Cleanup Alternatives (ABCA) of environmental response options and a description of the proposed environmental response actions and anticipated costs are also included. Following acceptance by the DCC, and pending any modifications based on input received during public comment period, this memorandum will serve as approval for Wayne County receive and use BRLF sub-grant funds for the proposed environmental response actions at the site described in this memorandum.

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2.0 SITE CONDITIONS AND BACKGROUND

A. Site Location and Description

The Refuge Gateway site occupies approximately 44 acres along the western bank of the Detroit River located at address 5437 West Jefferson Avenue, in the City of Trenton, Wayne County, Michigan (Figure 1). The legal tax identification number of the site is 54-02-699-000-2. The site is currently being redeveloped into a county park and wildlife refuge which will become part of the over 5,000-acre DRIWR. The site will be a hub within the DRIWR and function as a starting point to explore the surrounds and adjacent 465-acre Humbug Marsh.

B. Site History

The site was formerly occupied by the Trenton Chemical Facility. Chrysler operated the Trenton Chemical Facility for 44 years to manufacture automobile components such as brake pad adhesives, blended oils, paints, sealers, powered metal parts, asbestos brake pads, and phenolic brake pistons. The site previously contained wastewater treatment ponds, various buildings that stored chemicals and waste products, a drum burial area, an oil lagoon, a sludge holding area, and a tank farm that contained above grounds storage tanks (ASTs) and underground storage tanks (USTs). Fill material was also placed in low-lying areas on the east portion of the site between 1940 and 1967 to expand the site's eastern shoreline and increase the usable size of the site. Soil and groundwater at the site became contaminated as a result of these historical activities.

Plant deactivation activities began in 1990 and the above-grade structures were removed. Some concrete floor slabs were left in place for use as exposure barriers to underlying contaminated soil. A Remedial Action Plan and Closure Report (RAP) were completed for the site in 1997 and the Michigan Department of Environmental Quality (MDEQ) granted the site an industrial closure under Part 201 of the Natural Resources and Environmental Protection Act, Public Act 451 of 1994, as amended (NREPA). On-site cleanup activities included the removal or capping of inorganic (asbestos, arsenic, barium, cadmium, lead, cyanide, and thallium) and organic (benzene, chlorobenzene, methylene chloride, toluene, vinyl chloride, and xylene) contaminated soils and the removal of USTs and drums. As part of the closure, the following restrictions were placed on the property deed: 1) soils cannot be removed from the site without characterization, 2) soil and concrete exposure barriers must be maintained, and 3) groundwater may not be used as a drinking water source on-site.

The site was purchased by Wayne County in 2002 and since that time has been vacant with the exception of construction activities related to its redevelopment into a county park and wildlife refuge. The existing site is covered with low-lying vegetation with the exception of an asphalt concrete paved access drive and two former building concrete floor slabs on the north-central portion of the site. The concrete floor slabs will be covered with clean soil as part of the planned response activities.

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C. Site Environmental Conditions

Soil and groundwater at the site were contaminated as a result of releases of hazardous and petroleum substances associated with historical activities described above in Section 2(B). Multiple environmental assessments and remedial actions have been completed at the site by various consultants starting in the late 1980s with the most recent assessment in 2005. The site was granted a limited industrial closure in 1997 by the MDEQ based on an approved RAP. Copies of environmental reports are available at the project document repository established at the IWR Alliance offices located at 9311 Groh Rd., Grosse Ile, MI 48138. Environmental impacts at the site are summarized below and depicted on Figure 3.

- Lead concentrations were measured above MDEQ Part 201 Generic Residential Direct Contact Cleanup Criteria and Screening Levels (residential direct contact cleanup criteria) in soil on the east portion of the site.
- Lead and arsenic concentrations were measured above MDEQ Part 201 residential direct contact cleanup criteria in surface soils in several areas of the site, particularly in the southeast portion where fill material is present.
- Xylenes and benzo(a)pyrene concentrations were measured above MDEQ Part 201 residential direct contact cleanup criteria in soil in the former tank farm area on the south-central portion of the site.
- Selenium, silver, mercury, chlorobenzene, naphthalene, 1,2,4-trimethylbenzene, xylene, fluoranthene, and phenanthrene concentrations were measured above MDEQ Part 201 residential groundwater surface water interface (GSI) protection cleanup criteria in soil in several areas of the site, particularly in the southeast portion where fill material is present.
- Asbestos-containing materials are capped with one foot of clean soil in the northwestern portion the site.
- Benzene, chlorobenzene, methylene chloride, vinyl chloride, arsenic, barium, cadmium, lead, and thallium concentrations were measured in groundwater above MDEQ Part 201 residential groundwater surface water interface (GSI) cleanup criteria on the southeastern portion of the site.
- Benzene concentrations were measured in groundwater above MDEQ Part 201 residential drinking water and GSI cleanup criteria in the former tank farm area on the south-central portion of the site. The benzene contamination was demonstrated to be limited to the former tank farm area and did not extend beyond the site property boundaries.

The soil contamination at the site has been addressed primarily by the installation and maintenance of clean soil caps and left in-place former building concrete floor slabs. The MDEQ approved RAP indicated that no further remedial action was necessary for the groundwater contamination on the southeast portion of the site because source material had been removed and estimated constituent concentrations for groundwater venting to the Trenton Channel of the Detroit River were below the Part 201 GSI criteria.

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Based on results of the environmental assessments at the site summarized above, the site meets the definition of a "facility" pursuant to Part 201 of the NREPA and "brownfield" pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). The redevelopment of the site into a county park and wildlife refuge will require the improvement of the soil caps and concrete floor slab exposure barriers in five areas of the site. The exposure barrier improvements will be consistent with the 1997 RAP, the restrictive covenants placed on the site, and the 2002 MDEQ approved Compliance Analysis (CA) work plan.

D. Previous Response Actions

Environmental response actions previously completed at the site are documented in the MDEQ approved 1997 RAP. Features associated with the former chemical facility are depicted on Figure 4. The previous environmental response actions are summarized below.

- The above-ground structures were demolished and the debris was removed, transported off-site, and disposed or recycled as appropriate during plant decommissioning activities in 1990.
- Residuals in the former wastewater retention ponds were removed and the ponds deactivated during plant closure activities in 1990. The empty ponds were later filled to grade with imported aggregate and clay fill in 1993.
- Nine USTs were removed from the site and one was abandoned in-place in 1988/1989. Impacted soil around the USTs was removed, transported off-site, and disposed at a licensed landfill. The remaining ASTs and associated piping were removed, transported off-site, and disposed.
- Approximately 1,675 empty drums and 81,000-tons of contaminated soil were excavated, transported off-site, and disposed/treated in 1989. The excavation was backfilled to grade and capped with clay soil in 1993.
- An approximately one-foot thick clay soil cap was installed and subsequently seeded for vegetation on the northeastern portion of the site in 1987. The cap was installed to prevent dermal contact with asbestos-containing materials buried at the site.
- Concrete slabs of former buildings were removed from the western portion of the site in 1995. These activities also included the removal of concrete pavements from the southwestern portion of the site. Concrete slabs of two former buildings located on the north-central portion of the site were repaired and left in place as an exposure barrier. These two concrete slabs remain intact at the site.
- A utility corridor was demolished and debris removed, transported off-site, and disposed in 1995. Contaminated water removed from the utility trench was treated on-site and used for on-site dust control during response activities.
- The 1997 RAP and MDEQ approved limited industrial closure. As a condition of the limited industrial closure, the following deed restrictions were placed on the property deed: 1) soils cannot be removed from the site without characterization, 2) soil and concrete caps must be maintained, and 3) groundwater may not be used as a drinking water source on-site.

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E. State and Local Authorities' Roles

A $200,000 sub-grant from the DCC's US EPA BRLF Grant will be provided to Wayne County (the site owner) to help fund environmental response actions necessary to redevelop the site into a park and wildlife refuge. The site will be incorporated into the over 5,000-acre DRIWR. The DRIWR is managed by the IWR Alliance. The IWR Alliance will manage the grant and execute the environmental response actions at the site on behalf of Wayne County. Wayne County will execute a sub-grant agreement with the DCC prior to commencement of the proposed response actions. Wayne County is also a member of the IWR Alliance and will be involved in each step of the implementation of the response actions.

Wayne County will to manage environmental response actions implemented by the IWR Alliance funded by the $200,000 sub-grant. The DABC will work on behalf of the DCC to administer the BRLF sub-grant to Wayne County..

The State of Michigan's role in the redevelopment of the site is directed by the MDEQ. The MDEQ has already played a significant role in the assessment and cleanup of the site, as demonstrated in Section D above.

Wayne County will ensure continued MDEQ involvement in BRLF sub-grant funded brownfield response actions at the site. The MDEQ's primary role is to ensure that environmental response actions conducted at the site are consistent with the state voluntary cleanup program (Part 201). Environmental response actions planned for the site were documented in the October 20, 2002, Part 20107a CA work plan prepared by the Mannik & Smith Group, Inc. (Mannik & Smith) on behalf of Wayne County. The CA outlined how Wayne County will comply with "due care" obligations pursuant to Section 20107a of Part 201 of NREPA and the associated Administrative Rules R299.5901-R299.5919, effective March 11, 1999. The CA was reviewed and approved by the MDEQ, a requirement for use of BRLF funds. The MDEQ also prepared a letter dated January 13, 2009, reaffirming their approval of the CA in the context of the current site conditions and the revised Administrative Rules R299.51001-R299.51021, effective December 21, 2002. Detailed descriptions of the risk analyses and proposed cleanup criteria; proposed response actions; specific tasks and costs; and proposed environmental sampling, analyses, and QA/QC plans and protocols have, and will continue to be, made available to the MDEQ prior to initiation of the response actions.

3.0 THREATS TO HUMAN HEALTH AND THE ENVIRONMENT

The results of multiple assessments at the site indicate that historical releases of one or more chemical compounds defined as hazardous substances under the CERCLA and Part 201 have occurred at the site. These hazardous substances pose a threat to the human health, welfare and environment. Specifically, various VOCs, PAHs, and metals were measured in soil at concentrations above Part 201 generic residential, commercial, and industrial cleanup criteria.

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The site was granted a limited industrial closure in 1997 based in part on existing soil and concrete exposure barriers. However, the thickness of the existing soil and concrete exposure barriers are insufficient to protect human health and the environmental for the proposed use as a park and wildlife refuge. Based on the proposed recreational use and the potential for burrowing by wildlife, a due care evaluation determined that a soil cap with a thickness of approximately four to six feet would be required to be protective of human health and the environment. Therefore, the existing soil and concrete exposure barriers will be improved with approximately four to six feet of clean soil.

The DABC, on behalf of the DCC, has determined that use of BRLF sub-grant funds to improve the soil and concrete exposure barriers for contaminated soil on the site is appropriate in accordance with Section 300.415(b)(1) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) based on the following criteria:

- An actual or potential exposure risk to the nearby human population from hazardous substances on the site exists.
- Other appropriate federal or state response mechanisms to respond to the release(s) are not available.
- The IWR Alliance will manage the grant and execute the environmental response actions at the site on behalf of Wayne County. Wayne County is also a member of the IWR Alliance and will be involved in each step of the implementation of the response actions. Environmental response activities will be funded from a $200,000 sub-grant from DCC's US EPA BRLF Grant. Other response mechanisms are not available because the site is not a priority for state-funded response actions and is not on the CERCLA National Priorities List (NPL) for federal response action.

4.0 ANALYSIS OF BROWNFIELD CLEANUP ALTERNATIVES

Hazardous substances in soil at the site pose imminent and substantial threats to the human health and to the environment for the proposed use as a park and wildlife refuge. These threats must be mitigated to protect human health and the environment and prepare the site for redevelopment. An ABCA was performed to identify the most appropriate environmental response action for the site consistent with the redevelopment plans. The following three environmental response approaches were evaluated:

- No response action;
- Excavation and off-site disposal of impacted soil in a licensed landfill; and
- Improvement of existing soil and concrete exposure barriers.

Results of the ABCA are summarized in the following subsections.

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No Response Action

The no response action alternative is easily implemented without any associated cost. However, absent any response action, the presence of contamination on the site under current conditions would continue to pose an unacceptable exposure risk to human health and the environment. The existing soil and concrete exposure barriers are of insufficient thickness to be protective of human health and the environment for the proposed use of the site. For these reasons, the "no response action" alternative was not selected for the site.

Excavation and Off-site Disposal of Impacted Soil

Soil is impacted at levels that pose a dermal contact exposure risk for the proposed use on five locations at the site that total approximately 15-acres. The existing soil and concrete exposure barriers are of insufficient thickness to be protective of human health and the environment for the proposed use of the site. The current soil exposure barriers consist of approximately 6 to 12 inches of clean imported fill. The current concrete exposure barriers consist of approximately eight to ten-inch thick concrete slabs. The depth of impact varies by location but in general extends to an average depth of approximately five feet below the ground surface. To access, excavate, and dispose of impacted soil at the site, the clean soil cap would need to be removed and the existing concrete floor slabs would need to be demolished and removed from the site. Removal of the existing soil and concrete exposure barriers and excavation and off-site disposal of the impacted soil is implementable with readily available techniques and technologies; however, this alternative is potentially cost prohibitive.

Approximately 102,900 cubic yards (cy) of impacted soil in total is located within the five areas that pose an unacceptable risk to human health and the environment for the proposed use of the site. The impacted soil is encapsulated below approximately 10,300 cy of clean soil and approximately 7,800 cy of concrete. To excavate the encapsulated impacted soil, the clean soil cap would be excavated and stockpiled and the concrete cap would be demolished, removed, and disposed off-site at a licensed disposal facility. The impacted soil would then be excavated, transported, and disposed at a licensed disposal facility. Preliminary engineering estimates also indicate that approximately 55,500 cy of clean soil will be generated from clean areas of the site during construction activities and approximately 10,300 cy of clean soil from the existing soil cap could be reused as clean fill. The majority of the clean on-site soil generated during construction, approximately 42,500 cy, will be generated from the day-lighting of the Monguagon Creek. Based on these estimates, approximately 55,200 cy of clean soil will be required from off-site sources to backfill the excavations. Landfills (Type II) licensed to accept these types of waste are located near the site and have sufficient capacity. Clean fill from off-site sources is typically generated during other development or redevelopment projects and is anticipated to be available. Mud mats and other control measures would be implemented for out-going trucks to mitigate the risk of tracking contaminated soil off-site. The following table presents a summary of the cost analysis for this approach.

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Response Activity Task	Unit Cost	Quantity	Est. Cost
Engineering	$75,000	1 each	$75,000
Removal and stockpiling of clean soil caps	$3/cy	10,300 cy	$30,900
Demolition and off-site transportation and disposal of concrete caps	$25/cy	7,800 cy	$195,000
Excavation and off-site transportation of contaminated soil	$20/cy	102,900 cy	$2,058,000
Landfill disposal of contaminated soil	$15/cy	102,900 cy	$1,543,500
Transportation of clean soil from on-site locations during construction	$1/cy	65,800 cy	$65,800
Acquisition and transport of clean soil from an off-site source	$8/cy	55,200 cy	$441,600
Placement and compaction of clean backfill from on- and off-site sources	$3/cy	121,000 cy	$363,000
TOTAL ESTIMATED COST			**$4,772,800**

The removal and disposal of the impacted soil is not a cost effective way to mitigate the human health threat associated with the dermal contact exposure pathway. This alternative would require the handling and removal of existing soil and concrete exposure barriers and produce no measurable benefit to human health above encapsulating the impacted soil. Moreover, because of the removal of existing exposure barriers and impacted soil, this alternative would be more expensive and take more time to implement than a readily available alternative. Furthermore, the transportation and off-site disposal of the contaminated soil would generate unnecessary truck traffic around the site during construction. This alternative is not recommend for the site because the cost was too high, the activity would take took long to implement, and this alternative would not produce a measurable benefit to public health over an easily implementable alternative.

Improvement of the Existing Soil and Concrete Exposure Barriers

Soil is impacted at levels that pose a dermal contact exposure risk for the proposed use on five locations at the site that total approximately 15-acres. The existing soil and concrete exposure barriers are currently of insufficient thickness to be protective of human health and the environment for the proposed use. The soil exposure barriers consist of approximately 6 to 12 inches of clean imported fill. The existing concrete exposure barriers consist of approximately eight to ten-inch thick concrete slabs. The depth of impact varies by location but in general extends to an average depth of approximately five feet below the ground surface. The existing soil and concrete exposure barriers would be improved with approximately four to six feet of clean soil. The improvement of the existing soil and concrete exposure barriers with additional clean soil is implementable and a potentially cost effective environmental response alternative that would be protective of human health and the environment with proper long term maintenance.

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Preliminary engineering estimates indicate that a total of approximately 125,000 cubic yards (cy) of clean soil will be required to improve the existing soil and concrete exposure barriers to sufficient thickness to mitigate the dermal contact exposure risk and protect human health and the environment for the proposed use of the site. Preliminary engineering estimates indicate that approximately 55,500 cy of clean soil will be generated from clean areas of the site during construction activities. The majority of the clean on-site soil, approximately 42,500 cy, will be generated from the day-lighting of the Monguagon Creek. Based on these estimates, an additional approximately 69,500 cy of clean soil will be required from off-site sources to complete the soil caps. Clean fill from off-site sources is typically generated during other development or redevelopment projects and is anticipated to be available. The following table presents a summary of the cost analysis for this approach.

Response Activity Task	Unit Cost	Quantity	Est. Cost
Engineering	$50,000	1 each	$50,000
Transportation of clean soil from on-site locations during construction	$1/cy	55,500 cy	$55,500
Acquisition and transport of clean soil from an off-site source	$8/cy	69,500 cy	$556,000
Construction of soil caps	$3/cy	125,000 cy	$375,000
TOTAL ESTIMATED COST			**$1,036,500**

The improvement of the existing soil and concrete exposure barriers with four to six feet of clean fill is implementable with readily available techniques and technologies and would be protective of human health and the environmental for the proposed use of the site. This alternative would also cost less money and take less time to implement than the implementable alternative above. This alternative was deemed the most cost effective choice and is the recommended alternative to protect human health and the environment.

5.0 PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Response Activities

The environmental assessments completed to date identified the site as a "facility" and a "brownfield." A detailed CA work plan, documenting appropriate due care obligations and methods for mitigation of human health and environmental threats, was prepared and approved by the MDEQ. The environmental response actions selected for implementation at the site funded by the $200,000 sub-grant to Wayne County from the DCC's US EPA BRLF Grant are consistent with the due care response actions described in the CA. However, it should be noted, that not all environmental response activities described in the CA will be funded with the $200,000 sub-grant. In particular, the sub-grant funds are insufficient to completely fund the construction of the necessary improvements to the soil and concrete exposure barriers on the site. The additional environmental response activities described in the CA and a report to document the response activities will be funded by other sources. The final documentation report will be submitted to the MDEQ after completion of response activities.

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The $200,000 sub-grant to Wayne County will fund the relocation of clean soil excavated during the day-lighting of the on-site Monguagon Creek and the improvement of the existing soil and concrete exposure barriers with the relocated clean soil. More detailed descriptions of the eligible environmental response activities that will be funded by the $200,000 sub-grant from the DCC's US EPA BRLF Grant to Wayne County are presented below:

1. **Engineering and Project Management**

   The construction of the soil cap exposure barrier improvements to be funded with this sub-grant will be designed, the construction will be monitored, and compaction will be tested during placement of clean soil caps.

2. **Transportation of Clean Soil from the Day-lighting of the Monguagon Creek**

   Approximately 42,500 cubic yards of clean soil will be generated during the day-lighting of the Monguagon Creek. The day-lighting activities will be funded from other sources. This sub-grant will fund the on-site transportation of the clean soil generated from day-lighting activities to the soil cap areas.

3. **Installation and Construction of Soil Cap Exposure Barrier Improvements**

   Approximately 42,500 cubic yards of clean soil generated from the day-lighting of the Monguagon Creek will be used to improve existing soil or concrete exposure barriers at the site. The improved exposure barriers will consist of an additional approximately four to six feet of clean soil. The $200,000 sub-grant will fund the improvement of the existing exposure barriers over approximately 5-acres of impacted soil. This area is approximately one-third of the total area that requires exposure barrier improvement. The proposed exposure barrier areas to be improved with funds from this sub-grant are depicted on Figure 3.

B. Applicable or Relevant and Appropriate Requirements

Wayne County's 44-acre Refuge Gateway site is a brownfield redevelopment project that is consistent with the operational requirements of the ***Superfund Memorandum of Agreement, Addendum I: Brownfields Redevelopment*** between the U.S. EPA and MDEQ. Under this agreement, the U.S. EPA recognizes response activities (at sites not listed or proposed for listing on the NPL) carried out under Part 201 of the Natural Resources and Environmental Response Act (NREPA), 1994 PA 451, as amended, MCL 324.20101 et esq. (Part 201).

Response actions conducted at the site are designed to be compliant with the requirements of Part 201 for environmental response actions and safe future use (Due Care) of the site as provided at MCL 324.20107a and in Rule 1001 (R299.51001). The following applicable parts of NREPA, and the rules promulgated thereto, are ARARs for the proposed response activities:

- Part 201 (MCL 324.20101 et seq.) – Environmental Remediation
- Part 111 (MCL 324.11101 et seq.) – Hazardous Waste Management
- Part 115 (MCL 324.11101 et seq.) – Solid Waste Management
- Part 211 (MCL 324.21101 et seq.) – Underground Storage Tank Regulations

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- Part 213 (MCL 324.21301 et seq.) – Leaking Underground Storage Tanks

C. Project Schedule

The environmental response activities to be funded by the $200,000 sub-grant are expected to be completed by the summer of 2009.

D. Estimated Costs

The estimated costs for implementation of the selected environmental response action are summarized below:

1. Engineering and Project Management.....$30,000
2. Transportation of Clean Soil from the Day-lighting of the Monguagon Creek.....$42,500
3. Installation and Construction of Soil Cap Exposure Barrier Improvements $127,500

TOTAL ESTIMATED COST.....$200,000

6.0 PUBLIC COMMENT

A draft copy of this Decision Memorandum and other project documents are included in the project document repository and are available to the public for viewing and comment from February 8, 2009 through February 26, 2009. A public notice for the comment period was published in the News-Herald on February 8, 2009. The public notice announced the public comment period and a public meeting to be held on February 26, 2009 at the DCC offices located at 15100 Northline Road, Southgate, Michigan 48195. The public notice also announced that public comments can be submitted in writing to Ms. Paula Boase, Program Director the DCC, at the same address or via E-mail toPaula.Boase@dccwf.org. The purpose of the public meeting will be to review submitted written comments and accept oral comments on the draft Decision Memorandum, the ABCA, and other documents contained in the project repository. Submitted comments will be evaluated by the DABC, on behalf of the DCC, and addressed in the final Decision Memorandum. A list of the project documents in the document repository is provided as Attachment B.

7.0 DECISION TO PROCEED

The DCC, after consideration of all factors presented in this Decision Memorandum and relevant public comment, will issue the final approval the environmental response actions at the 44-acre Refuge Gateway site. The environmental response actions described herein will be funded by a $200,000 sub-grant to Wayne County from the DCC's US EPA BRLF Grant and will be consistent with the proposed action and the MDEQ approved CA.

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If there are questions concerning this memorandum, please contact us.

Respectfully Submitted,

SOIL AND MATERIALS ENGINEERS, INC.

Mark J. Quimby
Senior Environmental Specialist

Daniel R. Cassidy
Project Geologist

Attachment A: Figures
Attachment B: Sub-grant Agreement between DCC and Wayne County
Attachment C: 44-Acre Refuge Gateway Site Project Document Repository List
Attachment D: January 13, 2009, MDEQ CA Reaffirmation Letter

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ATTACHMENT A

FIGURES

Figure 1: Site Location Map
Figure 2: Schematic Site Plan
Figure 3: Summary of Environmental Conditions Figure
Figure 4: Summary of Former Chemical Facility Site Features

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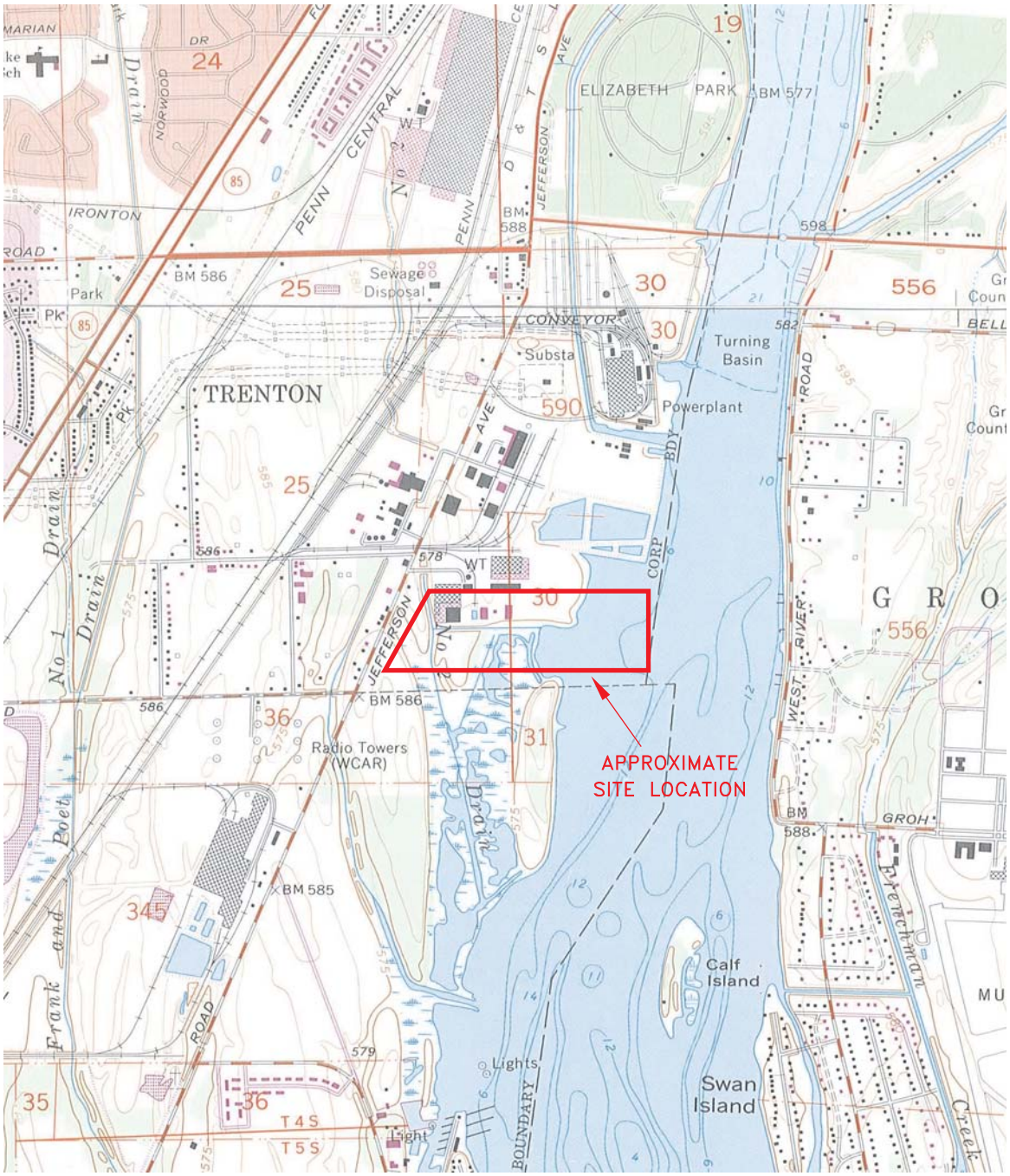

SCALE 1:24000

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 5 FEET
DATUM IS MEAN SEA LEVEL
DEPTH CURVES AND SOUNDINGS IN FEET—DATUM IS RIVER SURFACE AT FOLLOWING STAGES: LAKE ST. CLAIR 571.7 AND LAKE ERIE 568.6

NORTH

NOTE:
TOPOGRAPHIC MAPS TAKEN FROM WYANDOTTE AND ROCKWOOD, MICHIGAN 7.5 SERIES USGS TOPOGRAPHIC QUADRANGLES

December 23, 2008 - 4:00pm - mjq

smc
43980 PLYMOUTH OAKS BOULEVARD
PLYMOUTH, MICHIGAN 48170
(734) 454-9900

BAY CITY
GRAND RAPIDS
KALAMAZOO
LANSING
PLYMOUTH
SHELBY TWP.
TOLEDO
TRAVERSE CITY

DATE: 12/23/2008
DRAWN BY: MJQ
SCALE: N/A
PROJECT: PE55161B

SITE LOCATION MAP
44-ACRE REFUGE GATEWAY
TRENTON, MICHIGAN

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Figure No. 1

NOTE:
1. DRAWING WAS TAKEN FROM WAYNE COUNTY SCHEMATIC SITE PLAN.
2. FEATURES ARE APPROXIMATE AND NOT TO SCALE.

SCHEMATIC SITE PLAN
44-ACRE REFUGE GATEWAY
TRENTON, MICHIGAN

DATE: 12/23/2008
SCALE: N/A
DRAWN BY: MJQ
PROJECT: PE55161B

PLYMOUTH – BAYCITY – GRAND RAPIDS
KALAMAZOO – LANSING – SHELBY TWP.
TOLEDO – TRAVERSE CITY

December 23, 2008 – 4:35PM – mjq

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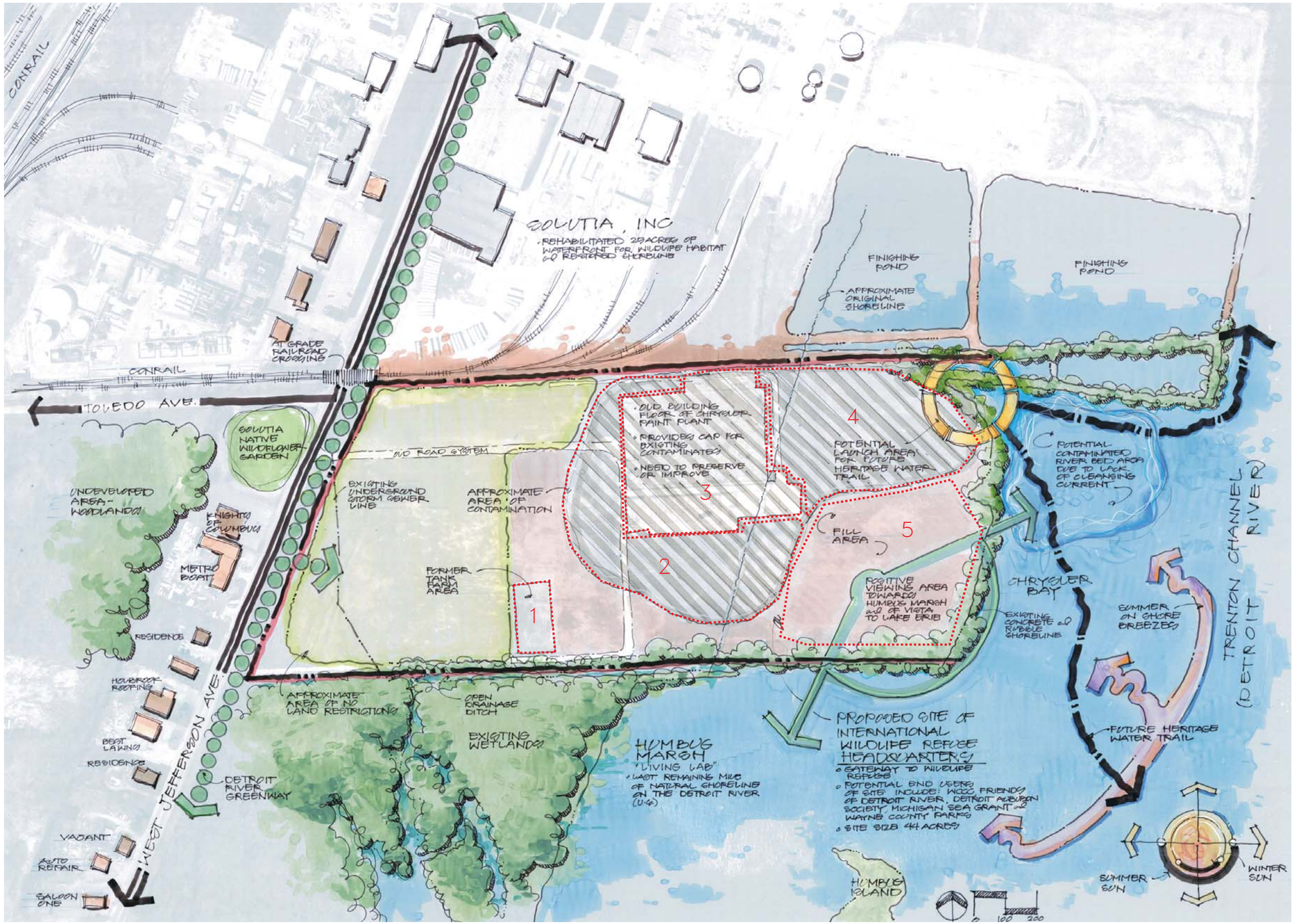
FIGURE NO. 2



NOTE:

1. DRAWING WAS TAKEN FROM WAYNE COUNTY SITE PLAN.
2. FEATURES ARE APPROXIMATE AND NOT TO SCALE.

LEGEND

APPROXIMATE EXPOSURE BARRIER IMPROVEMENT AREAS

SUMMARY OF ENVIRONMENTAL CONDITIONS
44-ACRE REFUGE GATEWAY
TRENTON, MICHIGAN

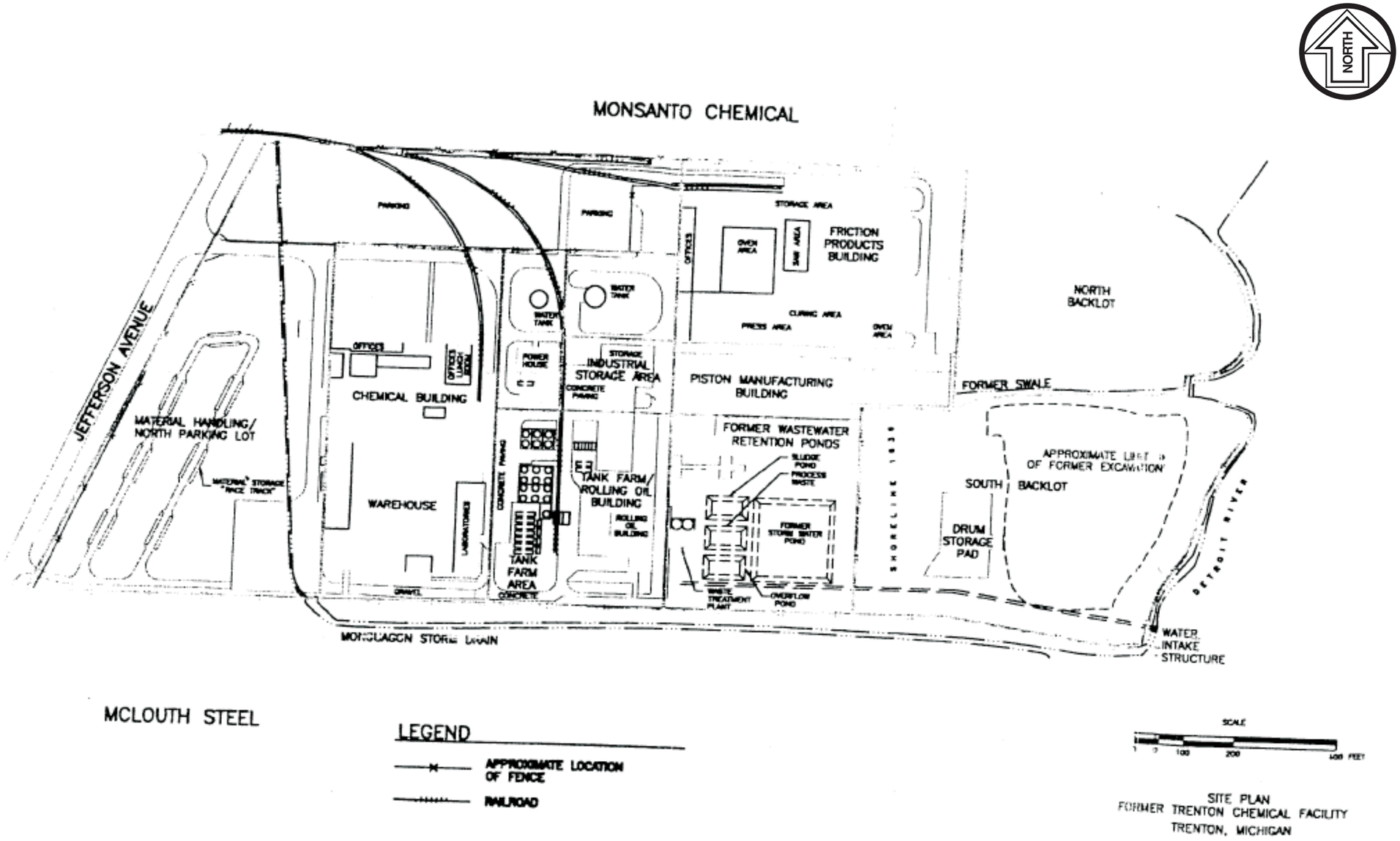
DATE: 12/23/2008
SCALE: N/A
DRAWN BY: MJQ
PROJECT: PE55161B

PLYMOUTH – BAYCITY – GRAND RAPIDS
KALAMAZOO – LANSING – SHELBY TWP.
TOLEDO – TRAVERSE CITY

December 23, 2008 – 4:15PM – mjq

S:\PROJECTS\DABC\PE55161-DCC BRLF Mgmt\PE55161B-Wildlife Refuge Subgrant\Figures\Figure 4.cdr

FIGURE NO. 3



SITE PLAN
FORMER TRENTON CHEMICAL FACILITY
TRENTON, MICHIGAN

NOTE:
1. DRAWING WAS TAKEN FROM MCLAREN HART SITE PLAN.
2. FEATURES ARE APPROXIMATE AND NOT TO SCALE.

SUMMARY OF FORMER SITE FEATURES
44-ACRE REFUGE GATEWAY
TRENTON, MICHIGAN

DATE: 12/23/2008
SCALE: N/A
DRAWN BY: MJQ
PROJECT: PE55161B

PLYMOUTH – BAYCITY – GRAND RAPIDS
KALAMAZOO – LANSING – SHELBY TWP.
TOLEDO – TRAVERSE CITY

December 23, 2008 – 4:10PM – mjq

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FIGURE NO. 4

ATTACHMENT B

SUB-GRANT AGREEMENT BETWEEN DCC AND WAYNE COUNTY

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DRAFT

Downriver Community Conference

BROWNFIELDS REVOLVING LOAN FUND GRANT AGREEMENT

THIS AGREEMENT is made and entered into on this _____ day of _____, 20_____, by and between the_____{name of subgrantee and type of organization}, with an address at {address of subgrantee} (hereinafter referred to as "Grantee"), and the_____{name of RLF grant recipient} (hereinafter referred to as "Grantor").

{The whereas clauses can be numbered paragraphs and need not say "whereas" before each one. It is drafted this way since many attorneys prefer whereas clauses for assertions of the facts that led up to the execution of the agreement. This could just as well be titled "BACKGROUND" and have numbered paragraphs}

WHEREAS, the _____{name of RLF grant recipient}is the recipient of Brownfields Revolving Loan Funds ("RLF") and authorized to make certain grants from these funds ("Grant Funds"); and

WHEREAS, Grant Funds are to be used to undertake cleanup of brownfields sites by making low interest loans and grants to parties willing to undertake cleanup of these sites; and

WHEREAS, the Grantee is the owner of certain real property located in _____ (the "Property"), which property is more particularly described in Exhibit 1, attached hereto; and

WHEREAS, the Grantor has agreed to grant to Grantee certain of the Grant Funds which will be used by the Grantee for a portion of the remediation of the Property (the "Remediation Work"); and

WHEREAS, the Property is not listed, or proposed for listing on the National Priorities List of the U. S. Environmental Protection Agency ("EPA"); and

WHEREAS, the Grantee is not a generator or transporter of any contamination located at the Property; and

WHEREAS, the Grantee is not and has never been subject to any penalties resulting from environmental non-compliance at or on the Property nor is the Grantee, or, to the best of its knowledge, its Project contractors or subcontractors currently suspended, debarred, or otherwise declared ineligible for participation in this federal program or from the receipt of these funds; and

WHEREAS, a claim has not been asserted against the Grantee for liability under Section 107 of the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), 42 U.S.C. Section 9607; and

WHEREAS, the Grantee is not a Potentially Responsible Party under Section 107 of CERCLA, 42 USC Section 9607 because {insert description of liability exemption which applies}. This information has been documented in a memorandum that was provided to EPA on {insert date}

NOW, THEREFORE, in consideration of the covenants and promises contained herein, it is mutually agreed by and between the parties as follows:

1. Grantor agrees to grant to Grantee the sum of $_____ {this sum cannot exceed $200,000} to be used by the Grantee for the Remediation Work (the "Project Grant Funds") subject to the terms and conditions herein.

2. Grantee shall carry out the Remediation Work in accordance with the CERCLA Section 104 (k), 42 U.S.C. Section 9604(k); Uniform Administrative Requirements for Grants and Cooperative Agreements to States and Local Governments, 40 CFR Part 31; and all other applicable provisions of federal, state or local law. This includes, but is not limited to, carrying out procurements in compliance with 40 C.F.R. Section 31.36, having a financial management system which complies with 40 C.F.R. Section 31.20, and performing audits in accordance with 40 C.F.R. Section 31.26.

3. Grantee shall carry out the Remediation Work in accordance with the Davis-Bacon Act of 1931 (CERCLA Section 104(g)(1), 40 U.S.C. Section 276a-276a-5 and 42 U.S.C. Section 3222). CERCLA compliance with Davis-Bacon requires payment of Federal prevailing wage rates for construction, repair or alteration work funded in whole or in part with Grant Funds. The Grantee must obtain recent and applicable wage rates from the U.S. Department of Labor and incorporate them into the remediation construction contract.

4. The Grantee shall provide the Grantor with a copy of the Phase I and Phase II Environmental Assessment of the Property performed according to the American Society for Testing and Materials (ASTM) standards (collectively, the "Assessment"). The Grantee shall be responsible for the payment of all costs and expenses related to the Assessment. The Grantee agrees that the Project Grant Funds shall not be used for the payment of any cost or expense related to the Assessment. The Assessment shall include, but is not limited to site background, the threat posed to by the contaminant to public health, welfare and the environment and all past enforcement activities conducted by any governmental agency, and the site testing results.

5. The Grantor shall designate an environmental project manager who shall review and approve of the proposed cleanup and coordinate the work to be performed

using Project Grant Funds. The Grantor's environmental project manager will review the Grantee's remedial planning, design, and engineering documents and review the cleanup activities as they are on-going to ensure that the cleanup is being completed in accordance with all local, State, and Federal requirements and is protective of human health and the environment.

6. The Grantee shall prepare a Community Relations Plan ("CRP") with the assistance and cooperation of the Grantor. The CRP shall include the following:

   a. Copies of interviews conducted with residents and community leaders, local officials, and public interest groups.
   b. Copies of news releases and other information that explains the proposed project, such releases and information to be disseminated throughout the area surrounding the affected area.
   c. Procedures for the establishment of a local information repository at or near the Property that includes public information supplied by both the Grantee and the Grantor related to the proposed Remediation Work. The Grantee shall supply the Grantor with any additional information that would assist the Grantor in documenting the Remediation Work.

7. After the Grantee has prepared the CRP, the Grantee shall draft an analysis of brownfields cleanup alternatives that will include information about the Property and contamination issues (i.e., exposure pathways, identification of contaminant sources, etc.); cleanup standards; applicable laws; alternatives considered; and the proposed cleanup. The evaluation of alternatives must include effectiveness, implementability, and the cost of the cleanup proposed. The Grantee shall submit copies of the draft analysis of brownfields cleanup alternatives to the Grantor for approval. The Grantee agrees to accept advice and suggestions from the Grantor and to incorporate those suggestions or requests for revisions as appropriate.

8. After the Grantor has approved the draft analysis of brownfields cleanup alternatives, the Grantee shall make the document available for review and public comment for a period of not less than thirty (30) days from the date of publication of the public notice.

9. After the public comment period, the Grantee shall incorporate all appropriate comments, in the reasonable discretion of Grantee, into a final analysis of brownfields cleanup alternatives document and prepare a written response to the public comments, if appropriate.

10. After the analysis of brownfields cleanup alternative has been finalized, the Grantee shall prepare a scope of work containing detailed design and construction plans and specifications for the Remediation Work including a budget and work schedule; a health and safety plan (OSHA 1910-120 - 126) and a quality assurance project plan which sets forth the manner and method of collecting samples to assure the complete removal of all hazardous substances that are

located at the Property and are to be removed as a part of the Remediation Work (collectively, such documents are referred to as the "Project Documents") and submit same to Grantor for approval.

11. Prior to the initiation of the Remediation Work, including any cleanup activities, the Grantee must provide to the Grantor copies of all of the state required remedial planning documents and the state's approval of those documents, if required.

12. The Grantee understands and agrees that all of the Project Grant Funds provided by Grantor to Grantee shall be used by the Grantee towards the cleanup and remediation of the Property identified in Exhibit 1. Grantee shall supply the Grantor with design and construction plan and specifications for the redevelopment of the Property and evidence of a firm commitment for a construction loan and permanent financing from an accredited lending institution.

13. The Grantee further understands and agrees that any and all work performed on the Property for which the Project Grant Funds are used and the receipt of any Project Grant Funds under this Agreement is conditioned upon the Grantee's full compliance with the terms and provisions of the Project Documents and this Agreement.

14. The Project Grant Funds shall be payable to the Grantee as reimbursement for allowable expenses incurred by the Grantee based upon the progress of the Remediation Work and in accordance with the approved cleanup project budget (the "Budget"), attached hereto and made a part hereof as Exhibit 2. No reimbursement shall be made to the Grantee without the written approval of the Grantor. The Grantor shall not advance nor be obligated to advance any Project Grant Funds to the Grantee prior to the receipt of properly executed lien waivers.

15. Grantee agrees to use best efforts to keep all expenditures from the Project Grant Funds within the approved Budget. Grantee shall not exceed any of the costs enumerated in the approved Project Budget without the prior written approval of the Grantor.

16. The Grantor may withhold up to ten (10%) percent of each payment requested as a retainage until the Grantee has completed the Remediation Work.

17. The awarding of this Grant shall be subject to:
    a. The Grantor's receipt of a property appraisal from the Grantee.
    b. Opinion of the Grantee's Counsel that the Grantee, if a corporation, is in good standing and that all documents executed by the Grantee are valid and enforceable in accordance with their respective terms.
    c. Written authorization in the form of a resolution, if a corporation, authorizing the Grantee to accept the Project Grant Funds and authorizing

Grantee's representative to execute this Grant Agreement on behalf of the Grantee.

d. Evidence by the Grantee that no outstanding taxes, fees, charges, mortgages, liens, encumbrances or other assessments have been filed or are recorded against the Property.

e. Evidence of insurance coverage with limits of liability as determined by the Grantor's site manager. All insurance coverage required by this section shall remain in full force and effect during the term of this Agreement.

f. Identification of the contractor and subcontractor selected by the Grantee for the Remediation Work.

g. The Grantor's receipt of cleanup project cost breakdown based upon estimates and prices supplied by the Grantee.

The Grantor reserves the right to waive any or all requirements of this section.

18. Grantee shall commence work on the Remediation Work within _____ days from the date of execution of this Agreement and shall complete and perform all of the Remediation Work within 365 days in accordance with the approved Schedule of Work attached hereto and made a part hereof as Exhibit 3.

19. All Remediation Work performed pursuant to this Agreement and with Project Grant Funds shall be performed in a good and workmanlike manner.

20. All material changes or modification to the Remediation Work or the Project Documents shall be approved in writing by the Grantor prior to such change or modification becoming effective. All additional costs incurred, as the result of any change orders shall be the responsibility of the Grantee. In the event that unforeseen conditions are discovered during the implementation of the Remediation Work, the Grantee reserves the right to revise the cleanup action and the Project Documents.

21. Grantee, at its sole cost and expense, and from sources other than Grant Funds, shall be responsible for obtaining all permits, licenses, approvals, certifications and inspections required by federal, state or local law and to maintain such permits, licenses, approvals, certifications and inspections in current status during the term of this Agreement.

22. The Grantee shall:

a. Notify the Grantor when the Remediation Work is complete. The notice shall contain certification or documentation that the Remediation Work is complete and has been performed in accordance with the terms of this Agreement. This notice shall summarize the actions taken, the resources committed and the problems encountered in completion of the project, if

any, and shall be submitted to the Grantor for review and approval before it is finalized.

b. Perform all of its obligations and agreements under this Agreement, and any other agreements or instruments to which the Grantee is a party and which relate to the Project Grant Funds and the Remediation Work.

23. The Grantee agrees to protect, indemnify, defend and hold harmless, the Grantor, its officers, administrators, agents, servants, employees and all other persons or legal entities to whom the Grantor may be liable from, for or against any and all claims, demands, suits, losses, damages, judgments, costs and expenses, whether direct, indirect or consequential and including, but not limited to, all reasonable fees, expenses and charges of attorneys and other professionals, court costs, and other reasonable fees and expenses for bodily injury, including death, personal injury and property damage, arising out of or in connection with the performance of any work or any responsibility or obligation of the Grantee as provided herein and caused in whole or in part by any act, error, or omission of the Grantee, its agents, servants, employees or assigns.

24. The Grantee shall erect a sign on the Property stating that the Remediation Work is being financed in part by RLF Grant Funds and the Grantor and providing the appropriate contacts for obtaining information on activities being conducted at the site and for reporting suspected criminal activities. The sign erected on the Property site shall comply with all requirements of the state and local law applicable to on-premise outdoor advertising as well as 40 CFR Part 35, Subpart O (§35.6105(a)(2)(ii)).

25. If the Grantee sells or transfers the Property prior to completion of the Remediation Work, then, in that event, the Grantee shall immediately repay the entire amount of Project Grant Funds advanced to Grantee to the Grantor.

26. Any forbearance by the Grantee with respect to any of the terms and conditions of this Agreement shall in no way constitute a waiver of any of Grantee's rights or privileges granted hereunder.

27. In the event of a default of any of the terms or conditions of this Agreement, the entire amount of Project Grant Funds disbursed to Grantee shall become immediately due and payable without the necessity of demand from Grantor. The Grantee shall be deemed to be in default under this Agreement upon the occurrence of any or more of the following events (each and "Event of Default"):

a. The Grantee assigns this Agreement or any Project Grant Funds advanced hereunder or any interest herein to a third party or if the Property or any interest is conveyed, assigned or otherwise transferred without the prior written consent of the Grantor.

b. Any representation or warranty made herein or in any report, certificate, financial statement or other instrument furnished in connection with this Agreement shall prove to be false in any material respect.

c. The Grantee defaults in the performance of any term, covenant or condition to be performed hereunder and such default is not remedied within thirty (30) days, unless a longer period of time is reasonably required to cure the default, from and after receipt of written notice by certified mail, return receipt requested, from the Grantor to the Grantee, specifying said default, of, if such default cannot be remedied within that period and remedial effort is not commenced within that period and diligently and continuously pursued, the Grantor shall have the right to proceed by appropriate judicial proceedings to enforce performance or observation of the applicable provisions of this Agreement and/or terminate this Agreement and recover damages from the Grantee to the extent allowed by law.

d. Any proceeding involving the Grantee or the Property, commenced under any bankruptcy or reorganization arrangement, probate, insolvency, readjustment of debt, dissolution or liquidation law of the United States, or any state, but if such proceedings are instituted, no Event of Default shall be deemed to have occurred hereunder unless the Grantor either approves, consents to, or acquiesces in such proceedings, or such proceedings are not dismissed within sixty (60) days.

e. An order, judgment or decree is entered, without the application, approval or consent of the Grantor, by any court of competent jurisdiction approving the appointment of a receiver, trustee or liquidator of the Grantee of all or a substantial part of its assets, and such order, judgment or decree shall continue in effect for a period of sixty (60) days.

Upon the occurrence of any one or more of the Events of Default enumerated above, all amounts of Project Grant Funds disbursed to Grantee by Grantor pursuant to this Agreement shall become due and payable, without presentment, demand, protest or notice of any kind to the Grantor, all of which are hereby expressly waived by the Grantee.

28. The Grantee agrees to maintain financial and programmatic records pertaining to all matters relative to this Agreement in accordance with generally accepted accounting principles and procedures and to retain all of its records and supporting documentation applicable to this Agreement for a period of three (3) years after the completion of the Remediation Work except as follows:

a. If any litigation, claim, negotiation, audit or other action involving the records has been started before the expiration of the three-year period, the records must be retained until completion of the action and resolution of all issues which arise from it, or until the end of the regular three-year period, whichever is later.

b. All such records and supporting documents shall be made available, upon request, for inspection or audit by the Grantor or its representatives.

c. The Grantee must receive permission from the Grantor, in writing, prior to destroying any of these records or documents.

29. The Grantee agrees to permit the Grantor or its designated representative to inspect and/or audit its records and books relative to this Agreement at any time during normal business hours and under reasonable circumstances, upon reasonable notice and to copy therefrom any information that the Grantor desires relevant to this Agreement. The Grantor shall provide written notice to the Grantee prior to the execution of this provision. The Grantee agrees to deliver the records or have the records delivered to the Grantor or its designated representative at an address designated by such party within the _____ {location such as City or County limits}. If the Grantor or its representative finds that the records delivered by the Grantee are incomplete, the Grantee agrees to pay the Grantor or its representative's costs to travel to the Grantee's office or other location where the books or records are located to audit or retrieve the complete records. In addition, all loan related documents are subject to 40 C.F.R. Section 31.42(e).

30. The Grantee will comply with the statutes prohibiting discrimination on the grounds of race, color, national origin, sex and disability. In addition, the Grantee will undertake good faith efforts in compliance with 40 CFR §31.36(e) to give opportunities for qualified Small Business Enterprises (SBE), Minority Business Enterprises (MBE) and Women-Owned Business Enterprises (WBE). The Grantee shall submit a report of such efforts to the Grantor.

31. The Grantee shall not assign or attempt to assign directly or indirectly, any of its rights under this Agreement or under any instrument referred to herein without the prior written consent of the Grantor. The Grantee shall not assign all or any portion of the Property made the subject of this Agreement without the prior written consent of the Grantor.

32. This Agreement is not intended to create or vest any rights in any third party or to create any third party beneficiaries.

33. All amendments to this Agreement shall be in writing and signed by both parties hereto.

34. It is expressly understood that a failure or delay on the part of the Grantee in the performance, in whole or in part, or any of the terms of this Agreement, if such failure is attributable to an Act of God, fire, flood, riot, insurrection, embargo, emergency or governmental orders, regulations, priority, or other limitations or restrictions, or other similar unforeseen causes beyond the reasonable control of such party, the failure or delay shall not constitute a breach or Event of Default

under this Agreement; however, the Grantee shall use its best effort to insure that the Project is completed in a reasonable time without unnecessary delay.

35. The provisions of this Agreement shall inure to the benefit of and be binding upon the parties hereto and their respective successors and assigns.

36. No failure of either party to exercise any power or right given it hereunder or to insist on strict compliance by the other party with its obligations hereunder, and so custom of practice of the parties at variance with the terms hereof shall constitute a waiver of the other party's right to demand at any time exact compliance with the terms hereof.

37. All notices, requests, instructions or other documents to be given hereunder to either party by the other shall be in writing and delivered personally or sent by certified or registered mail, postage prepaid, to the addresses set forth in this Agreement. Any such notice, request, instruction or other document shall be conclusively deemed to have been received and be effective on the date on which personally delivered or, if sent by certified or registered mail, on the day mailed to the parties as follows:

TO THE GRANTOR:

TO THE GRANTEE:

or to such other address as a party may subsequently specify in writing to the other party.

38. If any provision or item of this Agreement is held invalid, such invalidity shall not affect other provisions or items of this Agreement that can be given effect without the invalid provisions or items, and to this end, the provisions of this Agreement are hereby declared severable.

39. Except for any exhibits, attachments, plats or other documents as may be affixed hereto, made a part hereof, and properly identified herewith, this Agreement constitutes the entire contract between the parties, and shall not be otherwise affected by any other purported undertaking, whether written or oral.

IN WITNESS HEREOF, the parties hereto have caused this Agreement to be executed in the name and on behalf of each of them (acting individually or by their respective officers or appropriate legal representatives, as the case may be, hereunto duly authorized) as of the day and year first written above.

GRANTEE:
{name of grantee}
BY:_____
{typed name of signatory – preferable an executive officer}

GRANTOR:
{name of grantor}
BY: _____
{ typed name of signatory – preferable an executive officer such as Mayor}

ATTACHMENT C

44-ACRE REFUGE GATEWAY SITE
PROJECT DOCUMENT REPOSITORY LIST

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US EPA Brownfield Revolving Loan Fund Program
44-acre Wildlife Refuge Gateway
City of Trenton, Wayne County, Michigan

SUMMARY OF PROJECT DOCUMENT REPOSITORY

The following documents are available at the project document repository established at the International Wildlife Refuge (IWR) Alliance offices, located at 9311 Groh Road, Grosse Ile, Michigan.

- *Affirmative Determination of Site & Property Ownership Eligibility for U.S. EPA Brownfield Revolving Loan Fund Utilizing EPA Criteria – 44-acre Refuge Gateway, City of Trenton, Wayne County, Michigan*, Soil and Materials Engineers, Inc. (SME), November 10, 2008.
- *U.S. EPA Acceptance of Affirmative Determination of Site & Property Ownership Eligibility for U.S. EPA Brownfield Revolving Loan Fund Utilizing EPA Criteria – 44-acre Refuge Gateway, City of Trenton, Wayne County, Michigan*, US EPA-Region 5, November 13, 2008.
- *Draft Decision Memorandum: US EPA BRLF Program – 44-acre Refuge Gateway, City of Trenton, Wayne County, Michigan*, SME, February 8, 2009.
- *Quality Assurance/Quality Control Program for Environmental Data Collection, US EPA Brownfield Revolving Loan Fund Grant Program, Cooperative Agreement BL-00E01001, Downriver Community Conference*, SME, January 14, 2009.
- *Community Involvement Plan, US EPA BRLF Program, 44-acre Wildlife Refuge Gateway, City of Trenton, Wayne County, Michigan*, SME, January 14, 2009.
- *Cooperative Agreement BL-00E01001*, Downriver Community Conference (DCC), October 17, 2006.
- *Draft Sub-grant Agreement between the DCC and Wayne County*, DCC, <u>to be signed</u>.
- *Reaffirmation of 2002, Section 20107a Compliance Analysis, DEQ Petition # P2002018571 V, 44-Acre Refuge Gateway, Former Trenton Chemical Facility, Jefferson Avenue, Trenton, Michigan*, Michigan Department of Environmental Quality (MDEQ), January 13, 2009.

Environmental Reports

- *Category N Baseline Environmental Assessment Conducted Pursuant to Section 20126(1)(c) of 1994 PA 451, Part 201, as Amended and the Rules Promulgated Thereunder, Parcel ID #54-02-699-000-2, Former Trenton Chemical Facility, Jefferson Avenue, Michigan 48183, Prepared for Wayne County Department of Public Services, Administrative Division*, The Mannik & Smith Group, Inc., October 31, 2002. This report also includes the following reports as attachments.
    - *Section 7a Compliance Analysis for the Former Trenton Chemical Facility at Jefferson Avenue in Trenton, Michigan*, The Mannik & Smith Group, Inc., October 31, 2002.
    - *Remedial Action Plan and Closure Report, Trenton Chemical Facility, Prepared for Chrysler Corporation*, McLaren Hart Environmental Engineering Corporation, February 12, 1997.
- *Phase II Environmental Site Assessment, International Wildlife Refuge Center*, Camp Dresser & McKee (CDM), October 19, 2005.

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ATTACHMENT D

JANUARY 13, 2009, MDEQ CA REAFFIRMATION LETTER

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STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
SOUTHEAST MICHIGAN DISTRICT OFFICE

JENNIFER M. GRANHOLM
GOVERNOR

STEVEN E. CHESTER
DIRECTOR

January 13, 2009

Mr. Mark J. Quimby
Soil and Materials Engineers, Incorporated
43980 Plymouth Oaks Boulevard
Plymouth, Michigan 48170-2584

Dear Mr. Quimby:

SUBJECT: Reaffirmation of 2002, Section 20107a Compliance Analysis
DEQ Petition #: P200201857LV
44-Acre Refuge Gateway
Former Trenton Chemical Facility
Jefferson Avenue, Trenton, Michigan

The Department of Environmental Quality (DEQ) has received your request to reaffirm the Compliance Analysis previously approved on November 18, 2002. The DEQ has been involved with the Gateway Refuge project since the property was purchased by Wayne County in 2002.

The site has remained unoccupied with the exception of construction activities related to the redevelopment. The current activities and future use of the property fall within the Compliance Analysis previously submitted and approved. The Compliance and Analysis plan stills meets conditions covered by Administrative Rules R299.51001-R299.51021, amended effective December 21, 2002.

If you have any questions regarding this matter, please contact me at the telephone number below. All correspondence in regards to this site should be forwarded to my attention.

Sincerely,

Edward A. Novak, Environmental Quality Analyst
Southeast Michigan District Office
Remediation and Redevelopment Division
586-753-3827

cc: Mr. Paul Owens, DEQ

COMMUNITY INVOLVEMENT PLAN

US EPA Brownfield Revolving Loan Fund Program
44-acre Wildlife Refuge Gateway
City of Trenton, Wayne County, Michigan

I. Overview

The purpose of this Community Involvement Plan (CIP) is to outline how the Downriver Community Conference (DCC) and Wayne County has involved and will continue to involve affected citizens, local officials, and local organizations in the decision-making process regarding the environmental response efforts at the 44-acre Refuge Gateway site (the site). On November 11, 2008, the Downriver Area Brownfield Consortium (DABC), on behalf of the DCC, made an affirmative determination that Wayne County was eligible to receive a $200,000 sub-grant from DCC's U.S. EPA Brownfield Revolving Loan Fund (BRLF) Grant to partially fund eligible environmental response activities at the site. DABC, on behalf of the DCC, serves as the lead organization overseeing the administration of the DCC's BRLF grant program. The US EPA accepted the DCC's affirmative eligibility determination on November 13, 2008.

The 44-acre Refuge Gateway site is located at 5437 West Jefferson Avenue, in the City of Trenton, and occupies approximately 44 acres along the western bank of the Detroit River. The City of Trenton is located within Wayne County and is a member of the DCC and DABC. The site was formerly occupied by the Chrysler Trenton Chemical Facility for 44 years. Since purchasing the site in 2002, Wayne County has worked to redevelop the site into a park and wildlife refuge. The 44-acre Refuge Gateway will be incorporated into the over 5,000-acre Detroit River International Wildlife Refuge (DRIWR). The redeveloped site will consist of a park-like setting with restored woodlands and wetlands, a new Welcome Center facility, nature trails, various site amenities, as well as direct and indirect connections to existing waterways, greenways, and the adjoining Humbug Marsh. The DRIWR is managed by the International Wildlife Refuge (IWR) Alliance, of which Wayne County is a member. The IWR Alliance will manage the environmental response activities, is managing the redevelopment project, and managed many community involvement and outreach activities for the project.

The DABC, on behalf of the DCC, is primarily responsible for implementing and managing project community involvement as described in this CIP. Active residents and institutions in the community are essential resources for the success of the CIP because they hold positions of responsibility within the community. The DCC and Wayne County perceives these citizens and organizations as key points of contact and communication. The success of the environmental remediation and subsequent redevelopment of the site relies on informed citizen involvement in each step of the environmental response process.

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II. Spokesperson and Information Repository

The spokesperson for this project is Ms. Ms. Paula Boase, Program Director, DABC and DCC,, who may be contacted as noted below:

15100 Northline Road
Southgate, Michigan 48195
Telephone: 734-362-7070
Facsimile: 734-281-6661
Email: Paula.Boase@dccwf.org

A local public information repository for the 44-acre Refuge Gateway site project will be established at the DCC. The repository will include the administrative record, a draft copy of the project Decision Memorandum, Analysis of Brownfield Cleanup Alternatives (ABCA), and other project documents and information relevant to the proposed environmental response actions. Repository documents and records can be accessed by personal request at the DCC. Written comments can be submitted to Ms. Boase at the DCC. A list of the project documents in the document repository is attached.

III. Site Description and History

Site Description:

The Refuge Gateway occupies approximately 44 acres along the western bank of the Detroit River located at address 5437 West Jefferson Avenue, in the City of Trenton, Wayne County, Michigan (Figure 1). The legal tax identification number of the site is 54-02-699-000-2. The site is currently being redeveloped into a park and wildlife refuge which will become part of the over 5,000-acre DRIWR. The site will be a hub within the DRIWR and function as a starting point to explore the surrounds and adjacent 465-acre Humbug Marsh.

The site is located in a former industrial and commercial area of Trenton. Known current uses of adjoining sites are summarized in the following table:

Direction	Name	Activity
North and Northeast	Solutia	Industrial plastics and resin manufacturing
East	Trenton Channel, Detroit River	N/A
South	Humbug Marsh	Recreational
West (beyond Jefferson Avenue)	Various commercial businesses	Commercial

Most of the site consists of flat, fallow field. The soil contamination at the site was previously addressed primarily by soil remediation followed by the installation and maintenance of clean soil caps and left in-place former building concrete floor slabs.

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Site History:

The site was formerly occupied by the Trenton Chemical Facility. Chrysler operated the Trenton Chemical Facility for 44 years to manufacture automobile components such as brake pad adhesives, blended oils, paints, sealers, powered metal parts, asbestos brake pads, and phenolic brake pistons. The site previously contained wastewater treatment ponds, various buildings that stored chemicals and waste products, a drum burial area, an oil lagoon, a sludge holding area, and a tank farm that contained above grounds storage tanks (ASTs) and underground storage tanks (USTs). In addition, fill material was placed in low-lying areas on the east portion of the site between 1940 and 1967 to expand the site's eastern shoreline and increase the usable size of the site. Soil and groundwater at the site became contaminated as a result of these historical activities.

Plant deactivation activities began in 1990 and the buildings were removed. Some former building concrete floor slabs were left in place as exposure barriers. A Remedial Action Plan and Closure Report (RAP) was completed for the site in 1997 and the MDEQ granted the site an industrial closure under Part 201 of the NREPA. On-site cleanup activities included the removal or capping of inorganic (asbestos, arsenic, barium, cadmium, lead, cyanide, and thallium) and organic (benzene, chlorobenzene, methylene chloride, toluene, vinyl chloride, and xylene) contaminated soils, and removal of USTs and drums. As part of closure activities the following restrictions were placed on the property deed: 1) soils cannot be removed from the site without characterization, 2) soil and concrete caps must be maintained, and 3) groundwater may not be used as a drinking water source on site.

The site was purchased by Wayne County in 2002 and since that time has been vacant with the exception of construction activities related to its redevelopment into a park and wildlife refuge. The existing site is covered with low-lying vegetation with the exception of an asphalt concrete paved access drive and two former building concrete floor slabs on the north-central portion of the site. The concrete slabs will be covered with clean soil and the existing soil caps will be improved with additional clean soil as part of the planned response activities.

IV. Nature of Threat to Public Health and Environment

The results of multiple previous environmental assessments at the site indicate that historical releases of one or more chemical compounds defined as hazardous substances under the CERCLA and Part 201 have occurred at the site. These hazardous substances pose a threat to the human health, welfare and environment. Specifically, various volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), and metals were measured in soil at concentrations above Part 201 generic residential, commercial, and industrial cleanup criteria.

The site was granted a limited industrial closure by the MDEQ in 1997 based on an approved RAP. The proposed redevelopment of the site as a park and wildlife refuge is not consistent with the industrial use for which the site was previously granted closure. The existing soil and concrete exposure barriers are not protective of human health and the environment for the proposed use of the site as a park and wildlife refuge. The existing soil and concrete exposure barriers at the site must be improved to prevent unacceptable exposure to human health and the

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environment via the dermal contact exposure pathway. A more detailed summary of the environmental conditions of the site is presented in the Decision Memorandum provided in the document repository.

V. Community Profile

The City of Trenton is a member of the DCC and DABC and is located in Wayne County ten miles south of Detroit. The Downriver community of Trenton was founded in 1834. In 1929, a portion of Monguagon Township, called Sibley, was annexed to give Trenton its present size. Trenton became a city in 1957. Trenton's frontage on the Detroit River has played a vital role in the history of the community. Trenton has been the site of shipyards that for years made use of the large stands of oak and other timber, which also made lumbering an important industry in Trenton. Trenton also was once the home of thriving steel and automobile manufacturing.

Today, Trenton is considered a moderately sized city of approximately 20,000 residents. Almost 90 percent of the City is developed with mixed use residential, commercial and industrial land use. As a result, future development in Trenton must include previously developed sites, including brownfield sites. The City has been proactive in identifying brownfield redevelopment sites and facilitating their redevelopment. The City has established an active Brownfield Redevelopment Authority to assist in financing brownfield redevelopment. The City is also working with the DABC and Wayne County to identify and assess brownfield sites, including the former Chrysler Trenton Chemical site, and prepare them for redevelopment.

The redeveloped Refuge Gateway site will be part of the over 5,000-acre DRIWR and provide a natural habitat and park for both the City of Trenton and the surrounding communities to enjoy. The Visitor Center is specifically designed as a center of integration for sustainability and environmental education and natural resource interpretation. The Great Lakes school ship will dock there and make use of the river and refuge as a living laboratory for children. School children from Detroit, Downriver, and all of southeast Michigan will regularly come to the Refuge Gateway for day-long field trips. Wayne County Community College has committed to providing the funding for a classroom and laboratory for university classes. Children and families will be able to walk out of the Visitor Center and enter Humbug Marsh, walk interpretive trails, stop at learning stations, visit observation decks and an outdoor classroom, and much more. The goal is to touch hundreds of thousands of children on an annual basis. In addition, a fishing pier will be constructed to provide for shore fishing for trophy walleye. Detroit River and western Lake Erie are the “walleye capital of the world” and the Refuge Gateway fishing pier will allow children and families who do not have a boat to get a world-class fishing experience. Also, a kayak landing will be constructed at the Refuge Gateway to offer exceptional kayaking through the International Wildlife Refuge and along the Detroit Heritage River Water Trail.

VI. Chronology of Community Involvement

Community involvement has been an on-going element of the Refuge Gateway project. The project has combined unique public-private partnerships for conservation, sustainability, and close-to-home outdoor recreation. The DABC and DCC, on behalf of its communities and

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citizens, promotes the use of private markets, in partnership with the public sector, to solve problems and create economic revitalization opportunities at abandoned and underutilized industrial and commercial properties in downriver communities.

Additional community involvement was centered around DCC's decision to apply for an EPA BRLF grant to provide loans and sub-grants for environmental response actions needed to prepare brownfields sites in downriver communities for redevelopment. The primary goal of the DCC BRLF program is to provide loan or sub-grant funds to the private, public and non-profit sectors to encourage their participation in brownfields redevelopment. This project was considered for a sub-grant because of the significant benefit to the public and the lack of sufficient funds to repay a loan. The community outreach and involvement activities conducted as part of the sub-grant application process are summarized below:

- DABC held a board meeting in public session to discuss the proposed Refuge Gateway redevelopment project.
- DABC board approved the BRLF sub-grant application in public session.

The IWR Alliance has also been heavily involved in soliciting community and stakeholder comment as part of the Refuge Gateway redevelopment project. Over the last three years, the IWR Alliance has held the following public meetings to involve the local community and project stakeholders in the project planning process.

- a public hearing for the approval of the project Schematic Plan,
- a public hearing for the approval of the project Master Plan, and
- a public hearing soliciting public comment on the draft Master Plan.

VII. Key Community Concerns

Similar to many communities in metropolitan Detroit, Wayne County and the City of Trenton experienced economic decline from the late 1970s through the late 1990s. Many businesses, especially manufacturing, were forced to close, leaving buildings abandoned and properties neglected. Although parts of Wayne County and the City of Trenton are now experiencing renewed economic growth, many of the previously abandoned properties remain in disrepair, often contaminated, and off the tax records. The presence and added costs for redeveloping these brownfields is a factor inhibiting the County's and Trenton's continued resurgence.

Abandoned and deteriorating industrial facilities, like the former Chrysler Trenton Chemical site, create a variety of community concerns, such as the following:

- loss of jobs and tax revenue;
- uncontrolled environmental contamination; and
- negative community and neighborhood image.

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DCC has identified the existence of numerous brownfields in member communities, including Trenton, as a major concern. DCC has embarked on an extended campaign to address their brownfield sites; the following activities are examples of their efforts:

- obtained $400,000 in U.S. EPA Assessment Grants to fund environmental assessments in the downriver communities,
- obtained $4,500,000 in U.S. EPA BRLF Grants to fund low interest loans and sub-grants for environmental cleanups at brownfield sites in the member communities,
- actively markets brownfield sites and member communities to developers, and
- looks for opportunities to form public-private partnerships to redevelop brownfield sites

These activities were crucial steps leading to the former Chrysler Trenton Chemical site redevelopment project. Redevelopment of the former Chrysler Trenton Chemical site represents an important opportunity for DCC, Wayne County, and the City of Trenton to remove an eyesore and health and safety hazard, and provide educational and recreational opportunities for County and City residents through development of the site and its incorporation into the DRIWR. The restored woodlands and wetlands, nature trails, and direct and indirect connections to existing waterways, greenways, and the adjoining Humbug Marsh will become an important part of the recreational and educational experience in the surrounding communities.

VIII. Continued Community Involvement

DCC, Wayne County, and the City of Trenton are committed to maintaining community involvement in the Refuge Gateway site redevelopment process. Community involvement activities will include public meetings and hearings held by the DABC approval of key environmental and redevelopment actions in public meetings; public input throughout the site plan review and approval process; and maintenance of the public repository of key documents.

Opportunities for continued public participation in decisions concerning environmental response actions at the site will be provided primarily through the DABC. Environmental response actions at the site will be partially funded with a $200,000 sub-grant from the DCC's U.S. EPA BRLF Grant to Wayne County. The IWR Alliance, on behalf of Wayne County, will manage the implementation of the environmental response activities at the site. As part of both these programs, the IWR Alliance, Wayne County, and the DABC/DCC will engage public notice, public hearing, and informational activities in the community.

In conformance with U.S. EPA guidelines and Act 381 requirements, public notices will be published and disseminated, public hearings will be conducted, and documents and plans will be approved by public bodies in public session prior to initiation of response actions at the site. The following is a summary of those public notices, hearings, and sessions:

- published notice announcing the proposed response actions and the document repository;

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- published notice of the draft Decision Memorandum, Analysis of Brownfield Cleanup Alternatives (ABCA), and other relevant site documents with a 18-day comment period. The 18-day comment period was deemed sufficient because of the long history of community involvement with the project;
- published notice of the public hearing to be held by the DCC at the conclusion of the 18-day comment period to review submitted written comments and accept oral comments on the Decision Memorandum and ABCA;
- submitted comments will be evaluated by the DABC, on behalf of the DCC, and addressed in the final Decision Memorandum which will approve the use of sub-grant funds.

The document repository will be maintained and updated throughout the BRLF-funded environmental response phase of the 44-acre Refuge Gateway site redevelopment project.

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QUALITY ASSURANCE/QUALITY CONTROL PROGRAM
FOR ENVIRONMENTAL DATA COLLECTION

US EPA Brownfield Revolving Loan Fund Grant Program
Cooperative Agreement BL-00E01001
Downriver Community Conference

1.0 INTRODUCTION

The objective of this memorandum is to document the Quality Assurance/Quality Control (QA/QC) program for collection and use of environmental data during non-time critical removal actions (environmental response actions) conducted at brownfield sites funded with a loan(s) or sub-grant from the Downriver Community Conference (DCC)'s Brownfield Revolving Loan Fund (BRLF) Grant awarded by the U.S. Environmental Protection Agency (USEPA). Soil and Materials Engineers, Inc. (SME) of Plymouth, Michigan, developed and documented this project QA/QC program for the DCC.

The DCC consists of the following member communities: City of Dearborn, City of Taylor, City of Monroe, Port of Monroe, City of Riverview, City of Romulus, City of Trenton, City of Wyandotte, City of Gibraltar, Grosse Ile Township, City of Melvindale, the City of Ecorse, and Wayne County, and Monroe County. The Downriver Area Brownfield Consortium (DABC), on behalf of the DCC, manages the BRLF Grant and all brownfield redevelopment projects funded therewith.

The project QA/QC program will follow the requirements and protocols established by the Michigan Department of Environmental Quality (MDEQ) pursuant to Part 201 of the Michigan Natural Resources and Environmental Protection Act, as amended (Part 201). Part 201 defines the cleanup program for contaminated sites within the State of Michigan. The Part 201 QA/QC requirements satisfy the data quality objectives (DQOs) required by the U.S. EPA for response actions funded wholly or in part by BRLF funds. DQOs required by the U.S. EPA for brownfield sites are outlined in the Cooperative Agreement (CA) between the U.S. EPA and the DCC, dated October 17, 2006. The Part 201 QA/QC program requirements and documentation are discussed in further detail below.

2.0 APPLICATION OF MICHIGAN'S CLEANUP PROGRAM QUALITY ASSURANCE REQUIREMENTS

The MDEQ has published guidance documents and operational memoranda that define QA/QC practices, policies, procedures, specifications, and standards required to produce environmental data of sufficient quality to meet Part 201 program objectives. The collective Part 201 QA/QC

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program complies with 40 CFR 31.45 requirements for practices to produce data adequate to meet project objectives and to minimize data loss and are consistent with the requirements of U.S. EPA Order 5360.1, April 1984, as amended. Specifically, this document serves as an "equivalent substitute" for a U.S. EPA approved Quality Assurance Project Plan. The following is a summary of typical U.S. EPA quality assurance program elements and the corresponding MDEQ guidance documents for defining and implementing those elements within the Part 201 program:

Data Generation and Acquisition

Sampling Process Design

- MDEQ Sampling Strategies and Statistics Training Materials, 2002.
- MDEQ Procedure for Collection and Methanol Preservation of Soil Samples for Volatile Organics.
- MDEQ Guidance Groundwater Monitoring.
- MDEQ Guidance Monitoring Well Installation.
- MDEQ Guidance Summary of Aquifer Analysis Methods.

Sampling Methods

- MDEQ RRD Operational Memorandum No. 2 - Sampling and Analysis Guidance, October 22, 2004 - Attachment 5 - Collection of Samples for Comparison to Generic Criteria.
- MDEQ RRD Operational Memorandum No. 2 - Sampling and Analysis Guidance, October 22, 2004 - Attachment 6 - Sampling Methods for Volatile Organic Compounds.
- MDEQ RRD Operational Memorandum No. 2 - Sampling and Analysis Guidance, October 22, 2004 - Attachment 7 - Low Level Mercury Sampling Specifications.

Sample Handling

- MDEQ RRD Operational Memorandum No. 2 - Sampling and Analysis Guidance, October 22, 2004 - Attachment 4 - Sampling Preservation, Sample Handling, and Sample Holding Time Specifications.

Analytical Methods

- MDEQ RRD Operational Memorandum No. 2 - Sampling and Analysis Guidance, October 22, 2004 - Attachment 1 - Targeting Detections Limits and Designated Analytical Methods.

Quality Control

- MDEQ ERD Operational Memorandum No. 13 - Data Quality Objectives.

Instrument Calibration and Frequency

- MDEQ ERD Operational Memorandum No. 13 - Data Quality Objectives.

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Assessment and Oversight

Assessment and Response Actions

- MDEQ RRD Operational Memorandum No. 2 - Sampling and Analysis Guidance, October 22, 2004 - Attachment 8 - Assessments for Sites Contaminated with Petroleum Products.
- MDEQ RRD Operational Memorandum No. 4 - Site Characterization and Remediation Verifications, under development.
- MDEQ ERD Operational Memorandum No. 5 - Environmental Assessments and Audits, September 29, 1991.

Data Validation and Usability

Data Review, Verification, and Validation

- MDEQ ERD Operational Memorandum No. 13 - Data Quality Objectives.

Environmental analysis data will be collected and used to verify the locations and extents of areas of contamination ("hot spots") subject to response actions and to verify successful and complete remediation of contaminated media to applicable and relevant MDEQ cleanup criteria defined in rules promulgated pursuant to Part 201. Samples will be collected, preserved and analyzed, and resulting data will be evaluated and validated, in accordance with the DQO-appropriate methods and procedures specified in MDEQ guidance (see above) applicable to the project.

3.0 U.S. EPA MEMORANDUM OF AGREEMENT FOR MICHIGAN'S CLEANUP PROGRAM UNDER PART 201 OF THE NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT (NREPA).

The relationship between the U.S. EPA RLF Program and the MDEQ Part 201 cleanup program is outlined in a U.S. EPA Superfund Memorandum of Agreement (SMOA) with the State of Michigan. This SMOA is included with this document as Attachment A.

On July 10, 1996, the U.S. EPA and MDEQ entered into SMOA, ***Addendum 1: Brownfields Redevelopment***. The SMOA provides that U.S. EPA "...will not plan or anticipate any federal action against a covered party (owner, operator, generator, or transporter) under the Superfund law when one or more or the following conditions is satisfied: (1) The covered party is a new owner/operator who discloses a Baseline Environmental Assessment (BEA) to the MDEQ and is not otherwise liable for environmental contamination existing on the site. A BEA does not relieve the covered party from its due care obligations under federal and state law, or (2) the covered party conducts its activities on the property consistent with an MDEQ-approved Remedial Action Plan (RAP) for closure." The decision to not take federal action was written to apply to both past and future MDEQ determinations. SME's and the City of Monroe's

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interpretation of this SMOA is that the U.S. EPA supports and encourages use of the Part 201 regulations and program as an equivalent substitute for the U.S. EPA requirements.

4.0 MDEQ INVOLVEMENT

The DABC, on behalf of the DCC, will ensure MDEQ involvement in each brownfield response action funded through the U.S. EPA BRLF Grant. Detailed descriptions of the risk analyses and proposed cleanup criteria; proposed response actions; specific tasks and costs; and proposed environmental sampling, analyses, and QA/QC plans and protocols will be made available to the MDEQ prior to initiation of response actions. This information will be provided to the MDEQ for review and approval via one of the following mechanisms defined in Part 201: Remedial Action Plan (RAP), Plan for Interim Response Designed to Meet Criteria (IRDCP), Response Action Work Plan (e.g. Act 381 Brownfield Work Plan), or Part 20107a Compliance Analysis (CA).

5.0 CONCLUSION

The DABC, on behalf of the DCC, shall require environmental data generation, QA/QC, and reporting activities on brownfields, where environmental response activities are funded with U.S. EPA BRLF Grant funds, to comply with the MDEQ guidance documents and DQOs applicable to the project tasks. At the conclusion of BRLF-funded activities at these brownfields, a report will be prepared to document response actions and demonstrate that the site was successfully remediated to MDEQ cleanup criteria applicable and relevant for the site, target contaminants and exposure pathways, and future use. This will be in the form of an RAP, Closure Report, or equivalent report that will be submitted to MDEQ for review and approval. Reports that document data generation activities shall include the appropriate references to MDEQ QA/QC guidance documents and operational memoranda. All reports will be placed in the Administrative Record for the site, and copies will be sent to the U.S. EPA for placement in the Cooperative Agreement file.

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ATTACHMENT A - SUPERFUND MEMORANDUM OF AGREEMENT

Addendum I: Brownfields Redevelopment

http://www.deq.state.mi.us/documents/deq-rrd-sf-sfmoa1.PDF

Addendum II: Site Assessments

http://www.deq.state.mi.us/documents/deq-rrd-sf-sfmoa2.pdf

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Determination of Site & Property Ownership Eligibility for U.S. EPA Brownfield Revolving Loan Fund Utilizing EPA Criteria

The Downriver Area Brownfield Consortium (DABC) has made an affirmative determination as to the eligibility of Wayne County to receive a $200,000 sub-grant from their U.S. EPA Revolving Loan Fund (RLF) Grant to fund eligible environmental response activities at the Detroit River International Wildlife Refuge Gateway in Trenton, Michigan (the site). The basis for the eligibility determination is presented below.

1. **Identify the proposed sub-grantee:** Wayne County, 600 Randolph, Detroit, MI 48226

2. **Site Name:** Detroit River International Wildlife Refuge Gateway (DRIWR).

   a. Site Address: 5437 West Jefferson Avenue, Trenton, MI 48183. The site occupies approximately 44 acres along the western bank of the Detroit. The legal tax identification number of the site is 54-02-699-000-2.

   b. Operational History and Environmental Concerns: The site was formerly occupied by the Trenton Chemical Facility. Chrysler Corporation (Chrysler) operated the Trenton Chemical Facility for 44 years in the manufacture of automobile components such as brake pad adhesives, blended oils, paints, sealers, powered metal parts, asbestos brake pads, and phenolic brake pistons. The site previously contained wastewater treatment ponds, various buildings that stored chemicals and waste products, a drum burial area, an oil lagoon, a sludge area, and a tank farm that contained above grounds storage tanks (ASTs) and underground storage tanks (USTs). In addition, fill material was placed in low-lying areas on the east portion of the site between 1940 and 1967 to expand the site's eastern shoreline and increase the usable size of the site. Soil and groundwater at the site became contaminated as a result of these historical activities.

   Plant deactivation activities began in 1990 and the buildings were removed but some foundations remain in place. A Remedial Action Plan and Closure Report (RAP) was completed for the site in 1997 and the Michigan Department of Environmental Quality (MDEQ) granted the site an industrial closure under Part 201 of the Michigan Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA). On-site cleanup activities included the removal or capping of inorganic (asbestos, arsenic, barium, cadmium, lead, cyanide, and thallium) and organic (benzene, chlorobenzene, methylene chloride, toluene, vinyl chloride, and xylene) contaminated soils. The closure also included the removal of underground storage tanks and drums and the following deed restrictions: soils cannot be removed from the site without characterization, soil and concrete caps must be maintained, and groundwater may not be used as a drinking water source.

   c. Current Site Use and Activity: The site is currently being redeveloped into a county park and wildlife refuge. The site will include a park-like setting with restored woodlands and wetlands, a new Welcome Center facility, nature trails, various site amenities, as well as direct and indirect connections to existing waterways, greenways, and the adjoining Humbug Marsh. The redevelopment of the site and the construction of the Welcome Center Facility will require the additional capping of select areas of the site to ensure the protection of human health and the environment.

3. **Identify who currently owns the site.**

   a. Current Ownership of Site: Wayne County owns the site and purchased it on December 20, 2002.

   b. Previous Owner of the Site: Wayne County purchased the site from the Chrysler.

4. **Identify how the site became contaminated and, to the extent possible, describe the nature and extent of the contamination.**

   Soil and groundwater at the site were contaminated as a result of releases of hazardous and petroleum substances associated with historical activities described above in Section 2(b). Multiple environmental assessments and remedial actions have been completed at the site starting in the late 1980s with the most recent in 2005. The following summarizes the environmental concerns at the site:

   - Lead concentrations were measured above MDEQ Part 201 Generic Residential Direct Contact Cleanup Criteria and Screening Levels (residential direct contact cleanup criteria) in soil on the east portion of the site.
   - Lead and arsenic concentrations were measured above MDEQ Part 201 residential direct contact cleanup criteria in surface soils in several areas of the site, particularly in the southeast portion where fill material is present.
   - Xylenes and benzo(a)pyrene concentrations were measured above MDEQ Part 201 residential direct contact cleanup criteria in soil in the former tank farm area on the south-central portion of the site.
   - Selenium, silver, mercury, chlorobenzene, naphthalene, 1,2,4-trimethylbenzene, xylene, fluoranthene, and phenanthrene concentrations were measured above MDEQ Part 201 residential groundwater surface water interface (GSI) protection cleanup criteria in soil in several areas of the site, particularly in the southeast portion where fill material is present.
   - Asbestos-containing materials are capped with one foot of clean soil in the northwest "backlot" area of the site.
   - Benzene, chlorobenzene, methylen chloride, vinyl chloride, arsenic, barium, cadmium, lead, and thallium concentrations were measured in groundwater above MDEQ Part 201 residential groundwater surface water interface (GSI) cleanup criteria on the southeast portion of the site.
   - Benzene concentrations were measured in groundwater above MDEQ Part 201 residential drinking water and GSI cleanup criteria in the former tank farm area on the south-central portion of the site. The benzene contamination was demonstrated to be limited to the former tank farm area and did not extend beyond the site property boundaries.

The soil contamination at the site has been addressed primarily by the installation and maintenance of clean soil caps. The MDEQ approved RAP indicated that no further remedial action was necessary for the groundwater contamination on the southeast portion of the site because source material had been removed and estimated constituent concentrations for groundwater venting to the Trenton Channel of the Detroit River were below the Part 201 groundwater surface water interface criteria.

5. Liability for contamination and known ongoing or anticipated environmental enforcement actions related to the brownfield site for which funding is sought.

Wayne County is not liable for contamination at the site under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Wayne County also consulted with the U.S. EPA, regarding potential liability for contamination at the site with respect to CERCLA. Wayne County received a September 25, 2002, letter from the U.S. EPA stating that no further Superfund action was contemplated at the site since contamination at the site had been addressed with the 1997 MDEQ approved RAP. Moreover, the U.S. EPA noted that the RAP completed the requirements outlined in a 1994 Consent Decree issued to Chrysler by the Michigan Department of Natural Resources. Furthermore, the 1994 Consent Decree included a provision by which a prospective purchaser could enter into an agreement with Chrysler and the State of Michigan and receive a covenant-not-to-sue from the State for pre-existing conditions. Prior to purchasing the site, Wayne County executed this provision and received an Administrative Order on Consent, Covenant Not to Sue and Contribution Protection from the Michigan Department of the Attorney General and Chrysler.

Wayne County is also not liable for contamination at the site under Michigan's Part 201 of NREPA. In addition to the activities described above, prior to purchasing the site, Wayne County completed a Category "N" Baseline Environmental Assessment (BEA) and Section 7a Compliance Analysis (CA). The Category "N" BEA stated that Wayne County will not use any significant hazardous substances at the site and that fact formed the basis for delineating pre-existing contamination at the time of purchase from future contamination. The MDEQ reviewed and affirmed that the BEA was adequate for obtaining a liability exemption for the cleanup of pre-existing contamination at the site. The MDEQ also reviewed and affirmed that the CA was consistent with the due care obligations set forth in Section 20107a of the NREPA for the protection of human health.

Future construction activities on the site must comply with the Restrictive Covenant included in the 1997 RAP and specifically must maintain soil cap exposure barriers. Wayne County's primary due care responsibilities during construction of the DRIWR will consist of maintaining and improving soil caps.

6. Timing of Hazardous Substance Disposal:

Wayne County is not liable for contamination at the site and affirms that they have not, at any time, arranged for the disposal of hazardous substances at the site, transported hazardous substances to the site, or caused or contributed to any release of hazardous substances at the site. Disposal of hazardous substances at the site occurred prior to acquisition by Wayne County.

7. **Pre-Purchase Inquiry:**

Prior to Wayne County Ownership in 2003

- Chester Engineers began plant deactivation activities in 1987 on behalf of the Chrysler Corporation.
- McLaren Hart Environmental Engineers Corporation completed the 1997 RAP and associated activities on behalf of the Chrysler Corporation. The RAP completed the requirements of the MDNR Consent Decree which also included the following investigations/reports:
  - Site Assessment Report (1994)
  - Health and Safety Plan (1995)
  - Quality Assurance Project Plan (1995)
  - Sampling and Analysis Plan (1995)
  - Site Assessment Work Plan (1995)
  - Final Site Assessment Summary Report (1995)
- Wayne County conducted All Appropriate Inquiries (AAI) consistent with the standards of an ASTM 1527-00 Phase I ESA. Wayne County evaluated the history of the previous uses of the site and surrounding area. This included obtaining and reviewing the documents listed above that evaluated recognized environmental conditions (RECs) associated with the past uses of the site. This evaluation also included the potential for impact from adjacent properties. Documents were reviewed for accurateness and completeness and sources were verified. Secondly, Wayne County completed a site reconnaissance to verify site conditions. The visit entailed both a visual and physical observation of the site to evaluate existing conditions and the remedial measures implemented by Chrysler to satisfy site-closure pursuant to the conditions of the 1994 consent decree between Chrysler and the MDNR. Lastly, interviews were conducted with local government officials and other individuals with knowledge of past historical uses of the site and the current site conditions. The site is currently vacant and has been vacant since formal closure of the site was initiated in 1994.
- The Mannik & Smith Group, Inc. completed a Category "N" BEA and CA for the site in 2002 on behalf of Wayne County prior to their acquisition of the site.

Subsequent to Wayne County Ownership in 2003

- Camp Dresser & McKee conducted a Phase II ESA of the site in 2005 for Hamilton Anderson Associates on behalf of Wayne County.

8. **Post-Acquisition Uses:**

Since acquiring the site in 2002, Wayne County has worked to redevelop the site into the DRIWR Gateway, a county park and wildlife refuge as described in Section 2(b). The site will continue to be owned by Wayne County and the DRIWR will be managed by the International Wildlife Refuge (IWR) Alliance.

9. Continuing Obligations:

The redevelopment of the site into a county park and wildlife refuge will require the improvement of the soil cap exposure barrier in five areas of the site. The cap improvements will be consistent with the 1994 Consent Judgment, the 1997 RAP, and the restrictive covenants placed on the site.

a. Continuing Releases: Source material has been removed from the site and the 1997 RAP did not require additional actions related to groundwater contamination at the site.

b. Prevent Future Releases: Wayne County will not use any hazardous substances at the site.

c. Prevent or Limit Exposure to Previously Released Hazardous Substances: Wayne County will maintain or improve the existing soil caps at the site to prevent human and environmental exposure to the encapsulated contaminated soil.

d. Wayne County will comply with all land use restrictions and institutional controls at the site.

e. If the liable party is required to conduct additional cleanup actions, Wayne County will assist and cooperate with the cleanup and provide access to the site.

f. Wayne County will comply with all information requests and administrative subpoenas that have or may be issued in connection with the site, and provide all legally required notices.

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
SOUTHEAST MICHIGAN DISTRICT OFFICE

JENNIFER M. GRANHOLM
GOVERNOR

STEVEN E. CHESTER
DIRECTOR

January 13, 2009

Mr. Mark J. Quimby
Soil and Materials Engineers, Incorporated
43980 Plymouth Oaks Boulevard
Plymouth, Michigan 48170-2584

Dear Mr. Quimby:

SUBJECT: Reaffirmation of 2002, Section 20107a Compliance Analysis
DEQ Petition #: P200201857LV
44-Acre Refuge Gateway
Former Trenton Chemical Facility
Jefferson Avenue, Trenton, Michigan

The Department of Environmental Quality (DEQ) has received your request to reaffirm the Compliance Analysis previously approved on November 18, 2002. The DEQ has been involved with the Gateway Refuge project since the property was purchased by Wayne County in 2002.

The site has remained unoccupied with the exception of construction activities related to the redevelopment. The current activities and future use of the property fall within the Compliance Analysis previously submitted and approved. The Compliance and Analysis plan stills meets conditions covered by Administrative Rules R299.51001-R299.51021, amended effective December 21, 2002.

If you have any questions regarding this matter, please contact me at the telephone number below. All correspondence in regards to this site should be forwarded to my attention.

Sincerely,

Edward A. Novak, Environmental Quality Analyst
Southeast Michigan District Office
Remediation and Redevelopment Division
586-753-3827

cc: Mr. Paul Owens, DEQ

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Gerard P. Madej, PE
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J. William Coberly, CET
Andrew J. Emmert, CPA
Sheryl K. Fountain, SPHR
Michael E. Gase, CWI, ASNT III
James M. Harless, PhD, CHMM, RBP
Davie J. Hurlburt, PE
Cheryl Kehres-Dietrich, CGWP
Jeffery M. Krusinga, PE, GE
James M. Less, CIH
Michael S. Meddock, PE
Mark L. Michener, CDT
Larry W. Shook, PE
Thomas H. Skotzke
Michael J. Thelen, PE
John C. Zarzecki, CWI, CDT

January 8, 2009

Mr. Edward Novak
Michigan Department of Environmental Quality
Southeast District Office
27700 Donald Court
Warren, Michigan 48092

RE: Reaffirmation of 2002 Section 20107a Compliance Analysis
MDEQ Petition #: P200201857LV
44-Acre Refuge Gateway
Former Trenton Chemical Facility
Jefferson Ave
Trenton, Michigan
SME Project Number: PE55161B

Dear Mr. Novak:

Soil and Materials Engineer, Inc. (SME) prepared this letter on behalf of Wayne County to request a reaffirmation of the 2002 Section 20107a Compliance Analysis prepared for the above referenced site (the site) as part of U.S. EPA sub-grant requirements. The site is the former Chrysler Trenton Chemical Facility and is being redeveloped into the 44-acre Refuge Gateway, a county park and wildlife refuge. Wayne County purchased the site in 2002. Wayne County submitted a Category N Baseline Environmental Assessment (BEA) and Section 20107a Compliance Analysis (CA) to the Michigan Department of Environmental Quality (MDEQ) in 2002 for determination of adequacy. The BEA and the CA were determined adequate by the MDEQ on November 18, 2002. A copy of the determination letter and the 2002 CA are attached.

Wayne County is applying for a $200,000 sub-grant from the Downriver Community Conference's (DCC's) U.S. EPA Revolving Loan Fund (RLF) Grant to help fund response actions at the site. The use of RLF funds requires MDEQ involvement of the proposed response actions. The response actions funded by the grant will consist of improving the existing exposure barriers by increasing the thickness of the barriers. The U.S. EPA has indicated that the previously approved 2002 CA is sufficient to meet the need for MDEQ involvement if the approval is reaffirmed in the context of current site conditions.

Since Wayne County's purchase of the site in 2002, the site has remained unoccupied with the exception of construction activities related to the redevelopment. Wayne County requests the MDEQ write a letter reaffirming approval of the 2002 CA in the context of current site conditions. Furthermore, Wayne County requests the reference the revised Administrative Rules R299.51001-R299.51021, effective December 21, 2002, which were revised subsequent to the approval of the 2002 CA.

Plymouth
Bay City
Grand Rapids
Kalamazoo
Lansing
Shelby Township
Toledo
Traverse City

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consultants in the geosciences, materials, and the environment

If you have questions regarding this letter, please contact us at (734) 454-9900. SME and Wayne County appreciate your attention to this matter.

Very truly yours,

SOIL AND MATERIALS ENGINEERS, INC.

Mark J. Quimby
Senior Environmental Specialist

Daniel R. Cassidy, CPG
Project Geologist

Attachments:
Affirmative Determination on Petition # P200201857LV
Section 7a Compliance Analysis for Former Trenton Chemical Facility

Distribution:
Mr. Steven A. Alman, Wayne County Parks

T:\PROJ\55000\PE55161B\PE551616B-01082009-LETTER.DOC

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consultants in the geosciences, materials, and the environment

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING

JOHN ENGLER
GOVERNOR

RUSSELL J. HARDING
DIRECTOR

RECEIVED
NOV 21 2002
WAYNE COUNTY DEPARTMENT OF PUBLIC SERVICES

November 18, 2002

DETERMINATION ON
BASELINE ENVIRONMENTAL ASSESSMENT PETITION
INCLUDING COMPLIANCE WITH SECTION 20107a

*WAIVES ALL

Petitioner:

Wayne County Department of Public Services
Attention: Mr. Hugh MacDonald
415 Clifford, 8th Floor
Detroit, Michigan 48226

Petition #: P200201857LV

Determination:

BEA - Affirmed
20107a Obligations - Affirmed

The Department of Environmental Quality (DEQ) has reviewed Petition P200201857LV for a determination on a Baseline Environmental Assessment (BEA). In conjunction with the BEA, you requested DEQ's opinion of whether your Section 20107a Compliance Analysis (Section 7a CA), if implemented as proposed, will be consistent with the due care obligations set forth at Section 20107a of Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA), MCL 324.20107a. The petition was submitted pursuant to Section 20129a of the NREPA, MCL 324.20129a. Based on the petition, including representations made in the affidavits, the BEA, which was completed on October 31, 2002, the Section 7a CA, and supporting materials submitted, the DEQ has determined that the BEA is affirmed and the Section 7a CA is affirmed.

This determination affirms that the BEA is adequate for the purpose of obtaining an exemption from liability pursuant to Section 20126(1)(c). In making this determination, the DEQ is not making any other findings about whether the petitioner is liable or covered by any other exemption from liability under Part 201. This affirmative determination does not alter liability with regard to a subsequent release or threat of release or any exacerbation of existing conditions. The affirmative determination is only for the person and property identified in the petition. The use of the property and any response activity undertaken must be in accordance with the requirements of all applicable or relevant and appropriate state and federal laws and regulations. These affirmative determinations are conditioned on the timely and satisfactory completion of the response activities described in the petition and Section 7a CA. Pursuant to R 299.5919(2), if the petitioner sells or transfers the property, the petitioner is required to disclose the BEA to a subsequent owner or operator in order to be entitled to an exemption from liability.

This affirmative determination is based on the proposed property use and hazardous substance use identified in the BEA and Section 7a CA. The DEQ will maintain an

administrative record of each BEA and Section 7a CA. If at any time you provide the DEQ with post-BEA information related to your BEA or Section 7a CA, the DEQ will retain such information with the administrative record. Such post-BEA information will not be considered part of the BEA or Section 7a CA and acceptance of such information by the DEQ should in no way be construed to mean the DEQ will review or advise the petitioner regarding the adequacy of such information for any purpose.

The Section 7a CA is not a work plan for the purpose of authorizing tax capture pursuant to Section 15(1) the Brownfield Redevelopment Financing Act, 1996 PA 381, MCL 125.2651, *et seq*. In this determination, the DEQ is making no judgment regarding whether the proposed actions are necessary or cost effective.

Notwithstanding this affirmative determination, the petitioner may have responsibility under other laws, including, but not limited to Part 111, Hazardous Waste Management; Part 211, Underground Storage Tank Regulations; Part 213, Leaking Underground Storage Tanks; and Part 615, Supervisor of Wells of the NREPA.

The submitter, as the owner and/or operator of a facility, has the following Due Care responsibilities under Section 20107a of Part 201 and the Due Care Rules, unless covered by the exemptions in Section 20107a(4) or (5):

- Undertake measures as are necessary to prevent exacerbation of the existing contamination.
- Exercise due care by undertaking response activity necessary to mitigate unacceptable exposure to hazardous substances, mitigate fire and explosion hazards due to hazardous substances, and allow for the intended use of the facility in a manner that protects the public health and safety.
- Take reasonable precautions against the reasonable foreseeable acts or omissions of a third party and the consequences that foreseeably could result from those acts or omissions.
- Notify the DEQ if there are discarded or abandoned containers that contain hazardous substances on the property using Form EPQ4476.
- Notify the DEQ if contaminants are migrating off the property using Form EPQ4482.
- Notify the local fire department if there is a fire or explosion hazard.
- Notify utility and easement holders if contaminants could cause unacceptable exposures and/or fire and explosion hazards.

Rule 1003(4) requires a person who is subject to the provisions of Section 20107a to maintain documentation of compliance with these requirements and to provide such documentation to the DEQ upon request. If the property use changes in the future, additional due care measures may be necessary. The property owner and operator must re-evaluate and document their continued compliance with Section 20107a.

The BEA constitutes a response activity, consequently, this determination is subject to Section 20137(4) and (5) of the NREPA.

Authorized signature:

AW Hogarth

Andrew W. Hogarth, Assistant Chief
Remediation and Redevelopment Division

11-18-02
Date

Attachment
cc: Mr. Walter J. Bolt, The Mannik & Smith Group

SECTION 7a COMPLIANCE ANALYSIS FOR THE FORMER TRENTON CHEMICAL FACILITY AT JEFFERSON AVENUE IN TRENTON, MICHIGAN REQUESTED IN CONJUNCTION WITH A BASELINE ENVIRONMENTAL ASSESSMENT

Location:

Parcel I.D. #54-02-699-000-2
Former Trenton Chemical Facility
Located on Jefferson Avenue
Trenton, Michigan 48183

Prepared By:

The Mannik & Smith Group, Inc.
15300 Rotunda Drive, Suite 306
Dearborn, Michigan 48120

October 31, 2002

Prepared For:

Wayne County Department of Public Services
415 Clifford, Eighth Floor
Detroit, Michigan 48226

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Section 7a Compliance Analysis
for the Former Trenton Chemical Facility
at Jefferson Avenue in Trenton, Michigan
Requested in Conjunction with a
Baseline Environmental Assessment

Section 7a(1) of Part 201, Act 451 (1994 PA, as amended) provides that a person who owns or operates property that he/she has knowledge is a facility must: 1) undertake measures to prevent exacerbation of existing contamination; 2) exercise due care by undertaking response activity necessary to mitigate unacceptable exposure to hazardous substances and allow for the intended use of the property in a manner that protects the public health and safety; and 3) take reasonable precautions against the reasonably foreseeable acts or omissions of a third party and the consequences that could result from those acts or omissions. Additionally, pursuant to Section 29a(1), a person may petition the MDEQ for a determination that the proposed use of the property satisfies the person's obligations under Section 7a. This report serves as such a petition for the property currently known as the "Former Trenton Chemical Facility" (subject property) located on Jefferson Avenue in Trenton, Wayne County, Michigan. The information necessary to support this petition is provided in the following four subsections.

1.0 Detailed Characteristics of Property Use

As discussed in Section 3.0 of the BEA report, the intended future development of the subject property is as part of a wildlife preserve and interpretive center. The property is currently unoccupied. Figure 2 in the BEA is a map of the historical subject property use.

2.0 Hazardous Substance Information

Regulated/hazardous substances that are expected to be present in soil and groundwater at the property include those identified in the body of the BEA report and as detailed in historical analytical data referenced in said report. The identified substances include benzene, ethylbenzene, toluene, xylene, lead, arsenic and asbestos in soil, and benzene, chlorobenzene, methylene chloride, vinyl chloride, arsenic, barium, cadmium, lead and thallium in groundwater. The identified substances are assumed to be associated with former processes that took place at the subject property. The subject property has been categorized as a facility as defined by Part 201 due to the presence of elevated levels of lead, arsenic and xylenes in the soils and benzene, chlorobenzene, methylene chloride, vinyl chloride, arsenic, barium, cadmium, lead and thallium in groundwater. Applicable chemical-specific concerns are limited to direct contact with contaminated soils and groundwater and direct contact with and inhalation of airborne contaminated particulates during construction activities.

3.0 Plan for Response Activities (PRA)

Currently there are no active response activities scheduled by the proposed purchaser, Wayne County Parks and Recreation Department, to mitigate exacerbation and/or contact with existing contamination. Appropriate remedial actions have already been implemented. The existing soil cap and restrictive covenant at the subject property currently provide an effective barrier from contact with impacted soils and groundwater. The future development of the subject property as part of a wildlife preserve and interpretive center, which may include building(s), parking lot(s) and landscape cover should continue to provide an effective future barrier to direct contact with soil and also provide for fugitive dust control.

4.0 Evaluation and Demonstration of Compliance with 7a Obligations

Proposed future use of the subject property may include redevelopment as a wildlife preserve and interpretive center, and may include buildings, landscaped areas and parking areas. It is not anticipated that hazardous substances or chemicals will be used or stored at the subject property. Therefore, the proposed use will not exacerbate exiting contamination at the subject property.

5.0 Construction - Compliance Analysis Plan

Exposure Routes: Current subject property conditions, including the soil cap in place and restrictive covenant directives, serve as a barrier to direct contact exposure, drinking water exposure, emissions of volatile organic compounds, if any, and atmospheric entrainment of contaminated particulate matter. During construction activities, contaminated soils may be exposed. Due to the nature of identified contaminants, exposure pathways appear limited to construction workers who may be potentially exposed, directly and/or indirectly, via oral ingestion, inhalation of organic vapors, dermal contact, and inhalation of contaminated airborne soils and particulates; and the general public which may be exposed to organic vapors and contaminated airborne soils and particulates.

Hazardous Substances - Exposure Rates: Exposure frequencies and durations are not expected to exceed rates associated with normal construction activities (e.g., soil excavation, transport, and disposal, surface and subsurface activities). Only trained, authorized personnel will have access to the subject property.

Description of Required Response Activities: Other than appropriate management of excavated soils and extracted shallow groundwater during construction and proper capping of the subject property after completion of construction, no additional response activity is required on behalf of the owner.

Soil Removal Activities: Future development plans for the facility may include construction activities including, but not limited to, excavation of contaminated and non-contaminated soils. Soil relocation shall be performed in accordance with Section 20120c

of Part 201. Soil excavation due to construction requirements will be appropriately managed, in that:

1) the excavated soil will be returned to the excavation, if appropriate;

2) where possible, the soil may be relocated on the subject property and properly contained (e.g., capped);

3) the soil will be characterized to determine proper offsite disposal requirements, and soil requiring offsite disposal will be transported and disposed into an appropriate properly licensed landfill facility (when necessary, soil to be disposed offsite may be temporarily relocated within the site of environmental contamination prior to final offsite disposal); and/or

4) existing exposure barriers that are damaged will be repaired or replaced with an equivalent or more effective alternative, or prior to future use, if a barrier is warranted, one will be placed.

Shallow Groundwater Removal Activities: Future development plans for the facility may include construction activities including, but not limited to, extraction of contaminated and non-contaminated groundwater. Offsite transportation and disposal of groundwater shall be performed in accordance with Section 20120c of Part 201. Groundwater that is extracted due to construction requirements will be appropriately managed, in that:

1) the groundwater will be characterized to determine proper offsite disposal requirements, and will be transported and disposed into an appropriate properly licensed treatment facility (when necessary, groundwater to be disposed offsite may be temporarily containerized and relocated within the site of environmental contamination prior to final offsite disposal);

2) groundwater may be treated at the subject property using appropriate treatment mechanism(s) (i.e. carbon adsorption filtration, air stripping, etc.). If permitted, treated water will be discharged into the public sanitary sewer system and/or transported off site for disposal; and/or

3) existing exposure barriers that are damaged will be repaired or replaced with an equivalent or more effective alternative, or prior to future use, if a barrier is warranted, one will be placed.

Offsite soil and groundwater disposal activities will be recorded by appropriate documentation, including, but not limited to: manifests, trucking logs, receipts, and other required documentation consistent with Section 20120c(6).

Construction Activities: Construction-related hazardous substance storage, handling, and use areas at the facility will be identified. Storage and management of construction-

related hazardous substances will be performed in a manner designed to maintain public and worker safety and environmental health, and in a manner and location that will permit distinguishing between existing contamination and new releases. A plan will be prepared designating appropriate construction-related hazardous substance storage and handling locations. Releases of construction-related hazardous substances will be managed in accordance with procedures described in "Release of Hazardous Materials from Construction Use" below.

Prior to commencement of construction activities, a copy of the approved compliance analysis will be provided to project managers representing contractors and subcontractors involved with subject property construction activities. Post-construction activities by subsurface workers will be preceded by notice to those (e.g. subsurface workers) who may have exposure to the contaminants.

Existing Contamination - Not Previously Known: If existing contamination is encountered during construction activities that was not previously known to exist, and is not consistent with known existing contamination, then such contamination shall be characterized and managed in accordance with Part 201 and/or Part 213 of the NREPA. Contaminated materials (i.e. soil and/or groundwater) will be characterized in place or will be staged in a properly designated area until characterization is completed and appropriate relocation destinations are determined. In addition, all appropriate actions will immediately be taken in accordance with all applicable laws and regulations to prevent, abate, or minimize such release, threat of release, or endangerment. If during performance of construction activities an event occurs that presents an imminent and substantial endangerment through a release or threat of release the Pollution Emergency Alerting System (PEAS, 1-800-292-4706) shall be immediately notified.

Release of Hazardous Materials from Construction Use: If there is a release of hazardous materials from onsite usage during construction activities (e.g., released from temporary storage tanks, etc.), actions consistent with requirements of Part 201 and/or Part 213, as applicable, shall be implemented, including but not limited to: determine the extent and severity of the release; report the release to the Pollution Emergency Alerting System (PEAS, 1-800-292-4706) if subject to reportable quantities or if there is a threat of imminent and substantial endangerment; immediately stop or prevent the release at its source, immediately identify and eliminate any threat of fire or explosion or any direct contact hazards; and diligently pursue response activities necessary to achieve applicable cleanup criteria.

Fugitive Dust Control Plan: The following Fugitive Dust Control Program will be implemented during construction activities.

1) Unpaved Roads and Parking Areas

   Applicant shall apply a dust suppressant to all unpaved roadways. Application frequency shall be at daily intervals, except when the surface is wet or snow covered.

2) Paved Roads and Parking Areas

Applicant shall utilize a sweeper on all paved roads and paved parking areas. Frequency of sweeping on paved roads shall be at daily intervals, except when the surface is wet or snow-covered. Frequency of sweeping on paved parking areas shall be at 30 day intervals except when the surface is wet or snow covered.

3) Recordkeeping

Applicant shall maintain a record of sweeping frequency and frequency of dust suppressant application.

4) Traffic Speeds

Vehicular traffic on all construction roadways shall be limited to a maximum speed of 15 miles per hour and posted near the construction site entrance.

Document Scanning Cover Sheet

Class: ERD **Type:** BEA/Due Care File **Site:** 82000009 **Document Date:** 2002/10/31

Document ID: 73978 **Category:** BEA Report **Title:** Category N BEA - Trenton Chem Fac

Category N BEA - Trenton Chem Fac

2002/10/31

82000009

BEA Report

BEA/Due Care File

73978

ERD

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING

JOHN ENGLER
GOVERNOR

RUSSELL J. HARDING
DIRECTOR

RECEIVED
NOV 21 2002
WAYNE COUNTY DEPARTMENT OF PUBLIC SERVICES

November 18, 2002

DETERMINATION ON
BASELINE ENVIRONMENTAL ASSESSMENT PETITION
INCLUDING COMPLIANCE WITH SECTION 20107a

*WAIVES ALL

Petitioner:

Wayne County Department of Public Services
Attention: Mr. Hugh MacDonald
415 Clifford, 8th Floor
Detroit, Michigan 48226

Petition #: P200201857LV

Determination:

BEA - Affirmed
20107a Obligations - Affirmed

The Department of Environmental Quality (DEQ) has reviewed Petition P200201857LV for a determination on a Baseline Environmental Assessment (BEA). In conjunction with the BEA, you requested DEQ's opinion of whether your Section 20107a Compliance Analysis (Section 7a CA), if implemented as proposed, will be consistent with the due care obligations set forth at Section 20107a of Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA), MCL 324.20107a. The petition was submitted pursuant to Section 20129a of the NREPA, MCL 324.20129a. Based on the petition, including representations made in the affidavits, the BEA, which was completed on October 31, 2002, the Section 7a CA, and supporting materials submitted, the DEQ has determined that the BEA is affirmed and the Section 7a CA is affirmed.

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The BEA constitutes a response activity, consequently, this determination is subject to Section 20137(4) and (5) of the NREPA.

Authorized signature:

AW Hogarth

Andrew W. Hogarth, Assistant Chief
Remediation and Redevelopment Division

11-18-02
Date

Attachment
cc: Mr. Walter J. Bolt, The Mannik & Smith Group

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING

JOHN ENGLER
GOVERNOR

RUSSELL J. HARDING
DIRECTOR

October 15, 2002

Ms. Kathleen Hennessey
DaimlerChrysler Corporation
CIMS 485-13-62
1000 Chrysler Drive
Auburn Hills, Michigan 48326-2766

Mr. Joshua Krammes
Department of Public Works
Wayne County
600 Randolph
Detroit, Michigan 48226

Dear Ms. Hennessey and Mr. Krammes:

SUBJECT: Trenton Chemical Plant, Trenton, Wayne County, Site ID No. 82000009

The enclosed final Administrative Order on Consent, Covenants Not to Sue and Contribution Protection (AOC) regarding the DaimlerChrysler Corporation's (DCX's) Trenton Chemical Plant is provided for your execution. Also enclosed is the Department of Environmental Quality's notification that DCX's remedial action plan for the Trenton Chemical Plant has been reclassified from limited industrial to site-specific.

Please execute all the signature pages enclosed with the AOC and return them to me. I will coordinate the final execution of the settlement with the Department of Attorney General (DAG) upon receipt of the executed signature pages from DCX and Wayne County and forward a fully executed AOC, with original signature pages, to each of you.

It was a pleasure working with you on this project. Please call if you have any questions regarding this settlement.

Sincerely,

Nanette D. Leemon

Nanette D. Leemon
Compliance and Enforcement Section
Remediation and Redevelopment Division
517-373-4828

Enclosures
cc: Mr. Gregory Rose, DCX
Mr. Wes Boschert, DCX
Mr. S. Peter Manning, DAG

In the Matter of:
MDEQ Reference No.: AOC-ERD-02-005

IT IS SO STIPULATED:

WAYNE COUNTY, MICHIGAN

By: Edward H. McNamara
Edward McNamara
Chief Executive Officer

Witness: _____

Dated: 10-28-02

Witness _____

The foregoing instrument was acknowledged before me this 28th day of OCTOBER, 2002, by Edward McNamara, Chief Executive Officer of Wayne County on behalf of Wayne County.

SUSAN V. TAHMASBI
NOTARY PUBLIC WAYNE CO., MI
MY COMMISSION EXPIRES Feb 19, 2007

Susan V. Tahmasbi Notary Public
Wayne County, Michigan
My Commission Expires: 2-19-2007

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ATTACHMENT A – CONSENT DECREE AND CERTIFICATE OF COMPLETION
ATTACHMENT B – DATA AND TECHNICAL REPORTS
ATTACHMENT C – PROPERTY DESCRIPTION
ATTACHMENT D – DECLARATION OF RESTRICTIVE COVENANT

ADMINISTRATIVE ORDER ON CONSENT, COVENANTS NOT TO SUE AND CONTRIBUTION PROTECTION

This ADMINISTRATIVE ORDER ON CONSENT ("Agreement") is executed and entered into by and between Jennifer Granholm, Attorney General of the State of Michigan, ex. rel the Michigan Department of Environmental Quality ("MDEQ"), collectively referred to as "the State", Daimler-DCX Corporation ("DCX"), formerly known as Chrysler Corporation, and Wayne County, Michigan (the "County"). By execution of this Agreement, the State, DCX, and the County stipulate and agree to be bound by all of the recitals, terms and conditions herein.

The MDEQ has issued a Certificate of Completion of Construction of a limited industrial land use-based remedy to DCX based on the MDEQ's determination that all relevant requirements with regard to the former DCX Trenton Chemical facility ("Facility") under the Consent Decree between the State and DCX, dated November 28, 1994 in Case No.94-079112-CE ("Consent Decree") have been satisfied. The Consent Decree and the Certificate of Completion of Construction are attached as Attachment A.

I. DEFINITIONS

The terms used in this Agreement shall have the following meanings:

1.1 "Agreement" means this document, its attachments, and any report, document, or other submittal made pursuant to this document or any attachment hereto. All attachments to this document and other reports, documents, or submittals made under this Agreement are incorporated into and made an enforceable part of the document.

1.2 "Existing Conditions" means any Hazardous Substance detected at any concentration above the residential criteria established pursuant to Section 20120a(1) and (17) of the NREPA in any media, regardless of its location, that is attributable to past releases at the Property and has not been remediated prior to the effective date of this Agreement. For purposes of this definition "past" means it occurred prior to the effective date of this Agreement. Additionally, for further purposes of defining Existing Conditions, the State, DCX and the County agree that all data and technical reports relating to the Property produced to date by DCX, DCX's consultants, the County or the MDEQ that are listed in Attachment B are probative evidence of the nature and extent of Existing Conditions for purposes of this Agreement and shall be admissible as evidence in any proceeding involving a dispute over the same.

1.3 "Facility" means the Property identified in Attachment C and any area, place or property where a hazardous substance, which originated at the Property and is emanating or has emanated from the Property, is present at concentrations that exceed the requirements of Section 20120a(1)(a) or (17) of the NREPA, MCL 324.20120a(1)(a) or (17) or the cleanup criteria for unrestricted residential use under Part 213 of the NREPA, MCL 324.21301 *et. seq*. has been released, deposited, disposed of, or otherwise come to be located.

1.4 "Limited Industrial Criteria" means the cleanup criteria and requirements established under Section 20120a(1)(i) and (17) of the NREPA.

1.5 "NREPA" means the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, MCL 324.101 *et seq*.

1.6 "Part 201" means Part 201, Environmental Remediation, of the NREPA, as amended, MCL, 324.20101 *et seq*., and the administrative rules promulgated hereunder.

1.7 "Post-Existing Conditions" mean environmental contamination associated with the release or threatened release of any Hazardous Substance at the Property that occurs after the effective date of this Agreement.

1.8 "Property" means the former DCX Trenton Chemical property located at 5437 East Jefferson Avenue, Trenton, Wayne County and legally described in Attachment C.

1.9 "Purchase Agreement" means the Purchase Agreement between DCX and the County executed on September 4, 2002.

1.10 All other terms used in this Agreement which are defined in Part 3, Definitions, of the NREPA, MCL 324.301, Part 201 of the NREPA, MCL 324.20101 *et seq*., or the Part 201 Administrative Rules 1990 AACS R 299.51010, *et seq*., shall have the same meaning in this Agreement as in Part 3, Part 201 and the Part 201 Administrative Rules.

II. STATEMENT OF OBJECTIVES

It is the objective of the State of Michigan, and DCX and the County in entering into this Agreement to: (a) provide for the County to purchase the Property without incurring liability for Existing Conditions, if any; and (b) foster the redevelopment and reuse of the Property.

III. AUTHORITY

The Attorney General as the chief legal officer of the State has the authority under the laws of the State to enter into this Agreement.

IV. BACKGROUND INFORMATION CONCERNING THE PROPERTY

4.1 The Property is presently owned by DCX and was historically used for the manufacture of various automotive components, including brake pads, brake pistons, and associated adhesives, oils and sealers. DCX ceased manufacturing activities on the Property and began decommissioning of the production facilities in 1990.

4.2 Releases into the environment of hazardous substances, including lead, asbestos, vinyl chloride, and xylene, on the Property have caused Existing Conditions.

4.3 The Property is a "facility" within the meaning of Part 201 and the Part 201 Administrative Rules.

4.4 DCX has performed Response Activities at the Facility in accordance with the limited industrial land use-based remedial action plan under supervision and approval of the MDEQ.

4.5 The County intends to acquire the Property for redevelopment and reuse. In light of the County's proposed reuse of the Property for recreational purposes (specifically, a wildlife refuge and environmental education center), the MDEQ reevaluated the environmental conditions at the Property and determined that the response activities required to be performed pursuant to the RAP and the Consent Decree assure the protection of the public health, safety and welfare, and the environment relative to the proposed recreational use. Consequently, with the consent of DaimlerChrysler and approval of the MDEQ, the RAP was reclassified on October 10, 2002, as a site-specific remedial action plan pursuant to Section 20120a(2) of Part 201, which allows for industrial and/or recreational use of the Property.

V. FUNDING AND PERFORMING FUTURE SITE RESPONSE ACTION

DCX shall perform all future Response Activities and monitoring at the Facility required under Section 20120b(3) and MAC R 299.5719 to assure the effectiveness and integrity of the Remedial Action, as set forth in the Consent Decree and has filed in accordance with Section 20120b(3) and R 299.5719 the Deed Restrictions set forth in Attachment D.

VI. AFFIRMATIVE COVENANTS, CERTIFICATIONS, AND ADDITIONAL OBLIGATIONS BY DCX CORPORATION AND THE COUNTY

6.1 DCX Corporation hereby certifies that, prior to the effective date of this Agreement, it has fully disclosed or made available to the State and the County all information known to it relating to: (a) the nature and extent of Existing Conditions associated with the Facility; and (b) any other environmental contamination relating to the Facility that may present a risk of harm to the public health, safety or welfare or the environment.

6.2 The County certifies to the best of its knowledge, after reasonable inquiry, that prior to the effective date of this Agreement that it: (a) is financially capable of redeveloping and reusing the Property in accordance with paragraph 6.3; (b) has never owned or operated the Property at any time prior to the execution of the Purchase Agreement; (c) is not affiliated in any way with any person that may be liable under Section 20126 of the NREPA for Existing Conditions at the Property, including DCX and its subsidiaries, successors, directors or officers or any other owner or operator of the Property; and (d) has fully disclosed and made available to the State all information known to it relating to the nature and extent of Existing Conditions associated with the Facility and any other environmental contamination relating to the Facility that may present a risk of harm to the public health, safety or welfare or the environment.

6.3 The County is purchasing the Property from DCX and agrees: (a) to use the Property for recreational purposes, specifically a wildlife refuge and environmental education center; (b) to comply with all applicable state and federal statutes, rules and regulations relating to the storage, handling, use, treatment, discharge, release or disposal of hazardous substances on the Property; (c) that any submission relating to hazardous substances required to be made to any other agency of the federal or state government will also be made to the MDEQ Remediation and Redevelopment Division; and (d) that the redevelopment or reuse of the Property by the County will not result in a release or threat of release.

6.4 DCX and the County agree that within five (5) days of the effective date of this Agreement, they will record or cause to be recorded the Declaration of Restrictive Covenants, approved by the MDEQ and attached hereto as Attachment D, with the Wayne County Register of Deeds. DCX and the County agree that they will provide, or cause to be provided, the MDEQ a true copy of the recorded Declaration of Restrictive Covenants, including liber and page, within ten (10) days of receipt of the recorded instrument from the Wayne County Register of Deeds.

6.5 The County hereby agrees to notify and obtain MDEQ approval thirty (30) days in advance of any new use(s) it intends to make of the Property which is (are) different than or inconsistent with the use(s) identified in Paragraph 6.3. The County further acknowledges and understands that such new use(s) of the Property may require implementation of additional Response Activities, deed restrictions, and/or institutional controls to protect the public health and safety or the environment in light of such new use(s). The County will be responsible for implementing any such additional Response Activities, deed restrictions, and/or institutional controls subject to MDEQ review and approval.

6.6 The County agrees that its ownership, operations or activities at the Property will not interfere with, impair or impede Response Activities required to be undertaken at the Property; will not exacerbate or contribute to Existing Conditions or result in a release or threat of release; and that it will exercise due care and take reasonable precautions with respect to the Existing Conditions and any release or threat of release of hazardous substances.

6.7 In the event that any dispute arises between the State and the County concerning:

A. The release or threat of release of any hazardous substance resulting from the redevelopment or reuse of the Facility;

B. Exacerbation of or contribution to the existing release or threat of release;

C. Interference with, or failure to cooperate with the MDEQ, its contractors, or other persons conducting response activities approved by the MDEQ; or

D. Failure to exercise due care with respect to any release or threat of release at the Facility;

the burden of proof in such a dispute shall be borne by the parties in accordance with Sections 20126(6) and 20129(1) of the NREPA.

VII. COVENANTS NOT TO SUE

7.1 The State hereby covenants not to sue or take any civil, judicial or administrative action against the County (excluding any officers, directors or employees formerly employed by DCX) for any claims arising from: (a) Existing Conditions associated with the Facility, and (b) the acts or omissions of any owner or operator of the Property prior to the effective date of this Agreement that may have contributed to or caused Existing Conditions at the Facility.

7.2 The County hereby covenants not to sue or take any civil, judicial or administrative action against the State, its agencies or their authorized representatives or DCX or its authorized representatives for any claims or losses with respect to the Facility arising from: (a) the Existing Conditions associated with the Facility; (b) any acts or omissions of the State or its authorized representatives or DCX or its authorized representatives prior to the effective date of this Agreement related to the Existing Conditions; (c) Post-Existing Conditions; or (d) off-site disposal, remediation, recycling or reclamation of Hazardous Substances associated with the Facility. The County further agrees not to take any civil, judicial or administrative action to attempt to compel the State to undertake, implement or complete any Response Activity at or related to the Facility.

VIII. CONTRIBUTION PROTECTION

Pursuant to Section 20129(5) of the NREPA, MCL 324.20129(5) and to the extent any claim relates to Existing Conditions, the County shall not be liable for claims for contribution under Section 20126 of the NREPA, MCL 324.20126. the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. 9607 and 9613, or any other state or federal cause of action. This section does not discharge the liability of any other persons liable under Section 20126 of the NREPA, MCL 324.20126 except as provided in Section XVI herein. Any action by the County for contribution from any person not a party to this Agreement relating to Existing Conditions of the Property shall be subordinate to the rights of the State if the State files an action pursuant to Part 201 or other applicable federal or state law, in accordance with Section 20129(9). MCL 324. 20129(9).

IX. VOIDING OF THE AGREEMENT AND REMEDIES FOR BREACH OF THE AGREEMENT

9.1 Paragraphs 7.1 and Section VIII of this Agreement shall become void if the County: (a) violates any of its certifications set forth in Paragraphs 6.2; (b) fails to perform its obligations set forth in Paragraph 6.4: or (c) violates the Restrictive Covenants set forth in Attachment D of this Agreement.

9.2 Except as provided in Paragraph 9.1 and Section X, in the event that a party to this Agreement believes that the other party has not materially complied with the terms of this Agreement, or has otherwise not materially fulfilled its obligations under this Agreement, that party may pursue any remedies available by law.

X. RESERVATION OF RIGHTS

10.1 The covenant stated in Paragraph 7.1 and Contribution Protection stated in Section VIII shall apply to only Existing Conditions. The State reserves the right to take independent judicial or administrative actions against the County for any of the following: (a) to enforce the provisions of this Agreement; (b) Post Existing Conditions associated with the Facility; (c) the exacerbation of or contribution to the Existing Conditions associated with the Property; (d) failure by the County to comply with the deed restrictions set forth in Attachment D; or (e) any other violations of law not relating to the Existing Conditions.

10.2 The parties agree that nothing in this Agreement shall be construed as a statement, representation or finding by the State that the Property is fit for any use other than the use(s) described in Paragraph 6.3.

10.3 Nothing in this Agreement shall in any way limit the power and authority of the State to take appropriate action to: (a) protect public health, safety or welfare or the environment; or (b) prevent, abate or minimize a release or threatened release associated with the Facility, including the authority to undertake Response Activities or to otherwise address Existing or Post-Existing Conditions.

10.4 Except as provided in Section XVI, nothing in this Agreement shall in any way limit or affect the State's right to take judicial or administrative action against any other person(s) who may be liable under Section 20126 of the NREPA, MCL 324.20126.

10.5 Nothing in this Agreement shall affect the duties and obligations that may have with respect to permits or other governmental approval or waive the County's duties and obligations under applicable federal or State law.

10.6 Nothing herein shall be construed as a waiver or modification of Sections 20137(4) and 20137(5) of the NREPA, MCL 324.20137(4) and (5), as those sections may relate to Existing or Post-Existing Conditions.

XI. INDEMNIFICATIONS

11.1 This Agreement shall not be construed as an indemnity by the State for the benefit of the County or any other party.

11.2 The County acknowledges that neither the State of Michigan nor any of its departments, agencies, officials, agents, employees, contractors or representatives are a party to any contract entered into by or on behalf of the County or DCX in carrying out actions pursuant to this Agreement. Neither the County, nor DCX, nor any of their contractors shall be considered an agent of the State.

XII. CONTACT PERSONS FOR COMMUNICATIONS

Any notice or communication required under this Agreement shall be provided to the following:

As to MDEQ:

Edward A. Novak, Environmental Quality Analyst
Remediation and Redevelopment Division,
Michigan Department of Environmental Quality
3058 West Grand Boulevard, Suite 2-3000
Detroit, Michigan 48202
Telephone: (313) 456-4668
Fax: (313) 456-4662

As to DCX: Gregory Rose, Senior Environmental Specialist
Facility Deactivation and Administration
DCX Corporation
2301 Featherstone Road
CIMA 429-02-04
Auburn Hills, Michigan 48326-2808
Telephone: (810) 370-8614

As to Wayne County: Director of Parks Division
Department of Public Services
33175 Ann Arbor Trail
Westland, MI 48185
Telephone: (734) 261-1990

AND

Director of Public Services
415 Clifford Street, 8th Floor
Detroit, MI 48226
Telephone: (313) 224-7700

XIII. MODIFICATIONS

This Agreement shall not be modified unless such modification is in writing and signed by the County, DCX and the Department of Attorney General on behalf of the MDEQ.

XIV. APPLICABLE LAW

All actions required to be taken pursuant to this Agreement shall be undertaken in accordance with the requirements of all applicable State and federal laws and regulations.

XV. APPLICATION

This Agreement is only for the benefit of the parties hereto and their respective successors and assigns. This Agreement shall not be enforceable by, or interpreted to be for the benefit of, any third party.

XVI. SUCCESSORS/ASSIGNS AND DISSOLUTION

16.1 The County shall not further assign any of its benefits, duties and obligations under this Agreement, except as provided in this Section XVI.

16.2 The County may assign its benefits, duties and obligations under this Agreement in connection with the transfer of fee title to all or a portion of the Property, provided that the transferee demonstrates and agrees to those items set forth in Paragraph 16.5 and Attachment D of this Agreement and the State first approves the assignment in writing. Upon consummation of such assignment the transferee assumes responsibility for the obligations of the transferor as set forth in this Agreement. The transferor shall continue to enjoy the protections afforded by the Agreement, but shall, upon approval by the State, be released from the responsibilities imposed by the Agreement upon the transferor's receipt of the State's written approval of the transfer.

16.3 The County may assign the benefits, duties and obligations under this Agreement in connection with a land contract, lease, sublease, or any other form of conveyance which does not constitute transfer of a fee title interest with respect to all or any part of the Property; provided that the transferee demonstrates those items set forth in Paragraph 16.5 and Attachment D of this Agreement and the state first approves or the assignment in writing. In the event of such an assignment, both the transferor and the transferee shall have full rights, duties, obligations and benefits as afforded in this Agreement.

16.4 The State shall not unreasonably withhold any approval under this Section XVI, and shall either grant or deny the approval, in writing, stating the reasons for any denial, within thirty (30) days following its receipt of a written request for approval. The State shall not, as a condition of approval of a transfer, require the expenditure of additional funds for investigation or remediation of Existing Conditions at the Property, except for any investigation necessary to demonstrate that the transferee's proposed use of the Property will not be inconsistent with the obligations of the County as set forth in this Agreement.

16.5 Prior to the assignment of this Agreement, the transferee shall demonstrate to the satisfaction of the MDEQ all of the following:

A. That the transferee is financially capable of redeveloping or reusing the Property in accordance with the covenant not to sue as set forth in this Section XVI;

B. That the transferee is not affiliated in any way with any person that may be liable under Section 20126 of the NREPA for Existing Conditions at the Facility;

C. That the redevelopment or reuse of the Property by the transferee will not do any of the following:

(1) Exacerbate or contribute to Existing Conditions or cause new contamination;
(2) Interfere with the implementation of Response Activities;
(3) Pose health risks related to the release or threat of release to persons who may be present at or in the vicinity of the Facility.

16.6 In the event that the County requests the State to approve the assignment of this Agreement to another person, the County agrees to pay to the State its actual costs of review in an amount not to exceed ten thousand ($10,000) dollars. Upon approval of the transfer and within thirty (30) days of receipt of an invoice from the MDEQ for these costs, the County shall send a certified check made payable to the "State of Michigan - Environmental Response Fund" to the following address:

Revenue Control Unit
Financial and Business Services Division
Michigan Department of Environmental Quality
P.O. Box 30657
Lansing, MI 48909-8157

(Via courier)
525 West Allegan
Constitution Hall
South Tower, 5th Floor
Lansing, MI 48933

The certified check shall reference the Facility name and the MDEQ Reference Number for this Agreement and the ERD Account Number that will be provided by the MDEQ at time of the assignment.

16.7 In no event may the benefits, duties or obligations herein be assigned or transferred to any person or entity that may be liable under Section 20126 of the NREPA, MCL 324.20126 for a release or threat of release at the Facility.

XVII. SEVERABILITY

The provisions of this Agreement shall be severable, and if any provision is declared by a court of competent jurisdiction to be inconsistent with federal or State law, and therefore unenforceable, the remaining provisions of this Agreement shall remain in full force and effect.

XVIII. TERMINATION

This Agreement shall terminate upon the MDEQ certifying that Existing Conditions at the Facility satisfy the residential cleanup criteria established pursuant to Section 20120(1)(a) and (17). The Covenants Not to Sue and Contribution Protection afforded in Sections VII and VIII of this Agreement shall survive the termination of this Agreement and, subject to paragraph 16.7, run with the land.

XIX. EFFECTIVE DATE

This Agreement shall become effective upon the date the County closes on the purchase of the Property from DCX.

XX. SIGNATORIES

Each undersigned individual represents and warrants that he or she is fully authorized by the party he or she represents to enter into this Agreement and to legally bind such party to the terms and conditions of this Agreement.

THE STATE, DCX AND THE COUNTY AGREE TO ALL RECITALS, TERMS AND CONDITIONS HERETOFORE SET FORTH.

ATTACHMENT A

CONSENT DECREE AND CERTIFICATE OF COMPLETION

STATE OF MICHIGAN

JOHN ENGLER, Governor
DEPARTMENT OF ENVIRONMENTAL QUALITY
"Better Service for a Better Environment"
HOLLISTER BUILDING, PO BOX 30473, LANSING MI 48909-7973

INTERNET: www.deq.state.mi.us
RUSSELL J. HARDING, Director

REPLY TO:
ENVIRONMENTAL RESPONSE DIVISION
KNAPPS CENTRE
PO BOX 30426
LANSING MI 48909-7926

July 15, 1998

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Gregory Rose
CIMS 482-00-51
Chrysler Corporation
800 Chrysler Drive
Auburn Hills, MI 48326-2757

Dear Mr. Rose:

SUBJECT: Chrysler Trenton Chemical Plant, Wayne County, Michigan
Certificate of Completion of Construction

This letter serves as the Michigan Department of Environmental Quality's (MDEQ) Certificate of Completion of Construction for the Chrysler Trenton Chemical Plant (Trenton Chemical Plant).

Pursuant to requirements of the Consent Decree, Case No. 94-079112-CE (Decree), dated November 28, 1994, Chrysler Corporation has submitted a remedial action plan (RAP) for the Trenton Chemical Plant. The RAP, which provides for a limited industrial land use-based remedy pursuant to Section 20120a(1)(i) of Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, was approved by the MDEQ on June 11, 1998, subject to the completion of the following requirements:

1. Incorporation of the Addendum to the Chrysler Trenton Chemical Facility Remedial Action Plan.

2. Receipt of a certified copy of the MDEQ-approved restrictive covenant.

Chrysler Corporation has completed the construction phase of the RAP. In addition, the MDEQ has received, under cover of a letter from Howard & Howard dated June 18, 1998, a copy of the time-stamped Restrictive Covenant for the Trenton Chemical Plant site as received by the Wayne County Register of Deeds for recording. Consequently, this letter serves as the Certificate of Completion of Construction for the Trenton Chemical Plant pursuant to Paragraph 28.2 of the Decree.

All of the terms and conditions of the Decree remain in full force and effect. Pursuant to Section XXII (Reimbursement of Costs) and Paragraph 24.4(c) of the Decree, Chrysler Corporation shall reimburse the state's oversight costs within sixty (60) days of receipt of an invoice from the MDEQ.

If you have questions regarding this matter, please call either Mr. Edward Novak, Environmental Response Division, Southeast Michigan District/Detroit Office, at 313-392-6527 or Ms. Nanette Leemon, Compliance and Enforcement Section, Environmental Response Division, at 517-373-4828.

Sincerely,

Alan J. Howard, Chief
Environmental Response Division
517-335-1104

cc: Mr. Daniel Schultz, MDEQ
Ms. Patricia McKay, MDEQ
Mr. Oladipo Oyinsan, MDEQ
Ms. Mary Vanderlaan, MDEQ
Mr. Edward Novak, MDEQ
Ms. Nanette Leemon, MDEQ

ATTACHMENT B

DATA AND TECHNICAL REPORTS

DAIMLER-CHRYSLER CORPORATION
TRENTON CHEMICAL PROPERTY

DATA AND TECHNICAL REPORTS

Soil and Groundwater Investigation Report, Trenton Chemical, dated August 18, 1994

Site Assessment Summary Report, dated My 12, 1995

Remedial Action Plan and Closure Report, Trenton Chemical Site, dated February 12, 1997

Response to Closure Issues, Trenton Chemical Site, dated August 8, 1997

ATTACHMENT C

PROPERTY DESCRIPTION

EXHIBIT "A"

A parcel of land being part of Section 25, Town 4 South, Range 10 East, and Section 30, Town 4 South, Range 11 East, Village of Trenton, Wayne County, Michigan, more particularly described as:

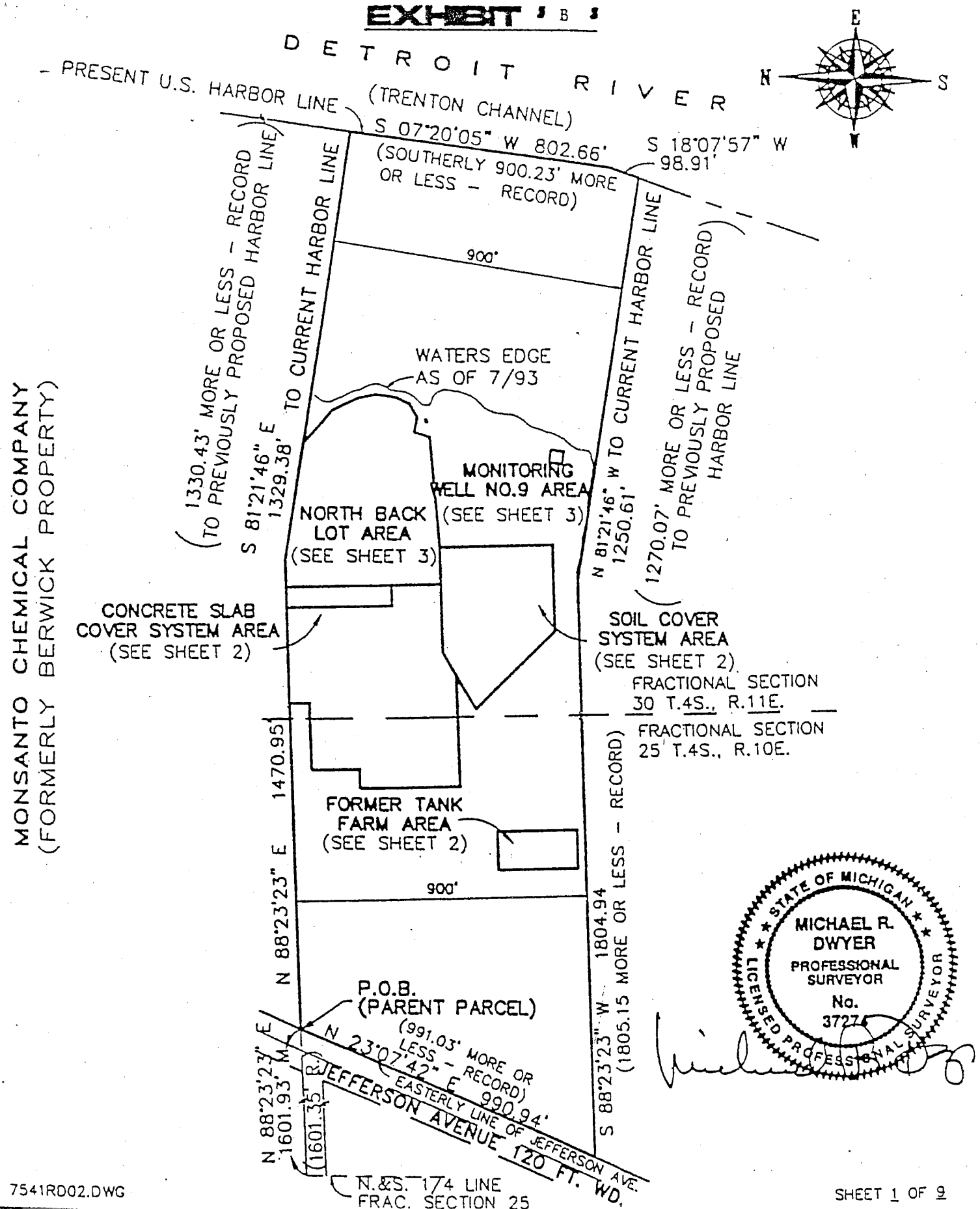
Beginning at a concrete monument situated at the intersection of the Easterly line of West Jefferson Avenue 120 feet wide and a direct Easterly extension of the Northerly boundary line of East Lake Erie Highlands Subdivision according to the plat thereof as recorded in the office of the Register of Deeds for Wayne County, Michigan in Liber 30 of Plats on Page 49, said point of beginning being 1601.35 feet distant Easterly, measured along said Northerly boundary line, and said boundary line extended Easterly, on a course North 88 degrees 23 minutes 23 seconds East from its intersection with the North and South 1/4 line of said Section 25; thence following a direct Easterly extension of said Northerly boundary line of said East Lake Erie Highlands Subdivision on a course
North 88 degrees 23 minutes 23 seconds East and along the South line of the Monsanto Chemical Company land, 1470.95 feet to a point of angle;
thence South 81 degrees 21 minutes 46 seconds East continuing along the South line of the Monsanto Chemical Company land, 1330.43 feet, more or less, to a point on the proposed U.S. Harbor line in the Detroit River; thence Southerly, along the proposed U.S. Harbor line, 900.23 feet more or less, to a point 900 feet Southerly (measured at right angles) of the Southerly line of the Monsanto Chemical Company land;
thence North 81 degrees 21 minutes 46 seconds West 900 feet Southerly of and parallel to the Monsanto Chemical Company land, 1270.07 feet, more or less, to a point of angle;
thence South 88 degrees 23 minutes 23 seconds West continuing 900 feet Southerly of and parallel to the Monsanto Chemical Company land, 1805.15 feet, more or less, to a point on the Easterly line of Jefferson Avenue 120 feet wide; thence Northerly along the Easterly line of West Jefferson Avenue 991.03 feet more or less to the place of beginning, the same being the Northerly 900 feet of that part of the Southeast 1/4 of Section 25, Town 4 South, Range 10 East, lying East of the Toledo Turnpike and South of Monsanto Chemical Company lands (formerly Berwick property) and of that part of the South 1/2 of Fractional Section 30, Town 4 South, Range 11 East, South of the Monsanto Chemical Company lands (formerly Berwick property) Township of Monguagon, Wayne County, Michigan.

7541RD02.DWG

McNEELY&LINCOLN
Associates,Inc.
CIVIL ENGINEERING & LAND SURVEYING
PH. (734) 432-9777 FAX (734) 432-9786
37741 PEMBROKE, LIVONIA, MICHIGAN, 48152

For	McLAREN / HART	Date	08/19/97
Scale	NONE	Drawn By	DAP
Job No.	7541.01	Checked By	MRD

EXHIBIT "B"



7541RD02.DWG

SHEET 1 OF 9

McNEELY&LINCOLN Associates,Inc. CIVIL ENGINEERING & LAND SURVEYING PH. (734) 432-9777 FAX (734) 432-9786 37741 PEMBROKE, LIVONIA, MICHIGAN, 48152	For McLAREN / HART	Date 08/19/97	
	Scale 1" = 400'	Drawn By DAP	
	Job No. 7541.01	Checked By MRD	

FORMER TANK FARM AREA

A parcel of land being part of Section 25, Town 4 South, Range 10 East, City of Trenton, Wayne County, Michigan, more particularly described as:

Commencing at the intersection of the North and South 1/4 line of said Section 25 with the Northerly line East Lake Erie Highlands Subdivision according to the plat thereof as recorded in the office of the Register of Deeds for Wayne County, Michigan, in Liber 30 of Plats on Page 49, and proceeding thence North 88 degrees 23 minutes 23 seconds East, along said Northerly Subdivision line, and said Subdivision line extended Easterly, 1601.93 feet (recorded as 1601.35 feet), to a point on the Easterly line of West Jefferson Avenue (120 feet wide); thence North 88 degrees 23 minutes 23 seconds East, following a direct Easterly extension of said Northerly Subdivision line and along the South line of the Monsanto Chemical Company land, 485.00 feet; thence South 01 degree 36 minutes 37 seconds East, 625.00 feet to the Point of Beginning of the land herein described; thence North 88 degrees 23 minutes 23 seconds East, 121.00 feet; thence South 01 degree 36 minutes 37 seconds East, 250.00 feet; thence South 88 degrees 23 minutes 23 seconds West, 121.00 feet; thence North 01 degree 36 minutes 37 seconds West, 250.00 feet to the Point of Beginning. Containing 0.694 acres of land, more or less.

SOIL COVER SYSTEM AREA

A parcel of land being part of Section 30, Town 4 South, Range 11 East, City of Trenton, Wayne County, Michigan, more particularly described as:

Commencing at the intersection of the North and South 1/4 line of Section 25, Town 4 South, Range 10 East, with the Northerly line East Lake Erie Highlands Subdivision according to the plat thereof as recorded in the office of the Register of Deeds for Wayne County, Michigan, in Liber 30 of Plats on Page 49, and proceeding thence North 88 degrees 23 minutes 23 seconds East, along said Northerly Subdivision line, and said Subdivision line extended Easterly, 1601.93 feet (recorded as 1601.35 feet), to a point on the Easterly line of West Jefferson Avenue (120 feet wide); thence North 88 degrees 23 minutes 23 seconds East, following a direct Easterly extension of said Northerly Subdivision line and along the South line of the Monsanto Chemical Company land, 1320.00 feet;
thence South 01 degree 36 minutes 37 seconds East, 321.00 feet;
thence North 88 degrees 23 minutes 23 seconds East, 64.22 feet;
thence South 01 degree 36 minutes 37 seconds East, 150.08 feet
to the Point of Beginning of the land herein described;
thence North 88 degrees 23 minutes 23 seconds East, 115.99 feet;
thence South 01 degree 36 minutes 37 seconds East, 352.43 feet;
thence South 88 degrees 23 minutes 23 seconds West, 270.00 feet;
thence North 44 degrees 39 minutes 37 seconds West, 350.00 feet;
thence North 60 degrees 04 minutes 31 seconds East, 203.81 feet;
thence North 88 degrees 23 minutes 23 seconds East, 213.51 feet
to the Point of Beginning. Containing 3.217 acres of land, more or less.

754RD103.DWG

McNEELY&LINCOLN
Associates,Inc.
CIVIL ENGINEERING & LAND SURVEYING
PH. (734) 432-9777 FAX (734) 432-9786
37741 PEMBROKE, LIVONIA, MICHIGAN, 48152

For	McLAREN / HART	Date	08/19/97
Scale	NONE	Drawn By	DAP
Job No.	7541.01	Checked By	MRD

CONCRETE SLAB COVER SYSTEM AREA

A parcel of land being part of Section 25, Town 4 South, Range 10 East, and Section 30, Town 4 South, Range 11 East, City of Trenton, Wayne County, Michigan, more particularly described as:

Commencing at the intersection of the North and South 1/4 line of said Section 25 with the Northerly line East Lake Erie Highlands Subdivision according to the plat thereof as recorded in the office of the Register of Deeds for Wayne County, Michigan, in Liber 30 of Plats on Page 49, and proceeding thence
North 88 degrees 23 minutes 23 seconds East, along said Northerly Subdivision line, and said Subdivision line extended Easterly, 1601.93 feet (recorded as 1601.35 feet), to a point on the Easterly line of West Jefferson Avenue (120 feet wide); thence North 88 degrees 23 minutes 23 seconds East, following a direct Easterly extension of said Northerly Subdivision line and along the South line of the Monsanto Chemical Company land, 1020.00 feet to the Point of Beginning of the land herein described;
thence North 88 degrees 23 minutes 23 seconds East, continuing along said South line of the Monsanto Chemical Company land, 300.00 feet;
thence South 01 degree 36 minutes 37 seconds East, 321.00 feet;
thence North 88 degrees 23 minutes 23 seconds East, 64.22 feet;
thence South 01 degree 36 minutes 37 seconds East, 150.08 feet;
thence South 88 degrees 23 minutes 23 seconds West, 213.51 feet;
thence South 60 degrees 04 minutes 31 seconds West, 84.16 feet;
thence South 88 degrees 23 minutes 23 seconds West, 346.62 feet;
thence North 01 degree 36 minutes 37 seconds West, 305.00 feet;
thence North 88 degrees 23 minutes 23 seconds East, 60.00 feet;
thence North 01 degree 36 minutes 37 seconds West, 145.00 feet;
thence North 88 degrees 23 minutes 23 seconds East, 210.00 feet;
thence North 01 degree 36 minutes 37 seconds West, 61.00 feet
to the Point of Beginning. Containing 6.159 acres of land, more or less.

McNEELY&LINCOLN
Associates,Inc.
CIVIL ENGINEERING & LAND SURVEYING
PH. (734) 432-9777 FAX (734) 432-9786
37741 PEMBROKE, LIVONIA, MICHIGAN, 48152

For	McLAREN / HART	Date	08/19/97
Scale	NONE	Drawn By	DAP
Job No.	7541.01	Checked By	MRD

MONITORING WELL No. 9 AREA

A parcel of land being part of Section 30, Town 4 South, Range 11 East, City of Trenton, Wayne County, Michigan, more particularly described as:

Commencing at the intersection of the North and South 1/4 line of Section 25, Town 4 South, Range 10 East, with the Northerly line East Lake Erie Highlands Subdivision according to the plat thereof as recorded in the office of the Register of Deeds for Wayne County, Michigan, in Liber 30 of Plats on Page 49, and proceeding thence North 88 degrees 23 minutes 23 seconds East, along said Northerly Subdivision line, and said Subdivision line extended Easterly, 1601.93 feet (recorded as 1601.35 feet), to a point on the Easterly line of West Jefferson Avenue (120 feet wide); thence North 88 degrees 23 minutes 23 seconds East, following a direct Easterly extension of said Northerly Subdivision line and along the South line of the Monsanto Chemical Company land, 1470.95 feet;
thence South 81 degrees 21 minutes 46 seconds East, continuing along the southerly line of the Monsanto Chemical Company land, 428.80 feet; thence South 08 degrees 38 minutes 14 seconds West, 755.28 feet to the Point of Beginning of the land herein described;
thence South 81 degrees 21 minutes 46 seconds East, 40.00 feet;
thence South 08 degrees 38 minutes 14 seconds West, 40.00 feet;
thence North 81 degrees 21 minutes 46 seconds West, 40.00 feet;
thence North 08 degrees 38 minutes 14 seconds East, 40.00 feet to the Point of Beginning. Containing 0.037 acres of land, more or less.

McNEELY&LINCOLN
Associates,Inc.
CIVIL ENGINEERING & LAND SURVEYING
PH. (734) 432-9777 FAX (734) 432-9786
37741 PEMBROKE, LIVONIA, MICHIGAN, 48152

For	McLAREN / HART	Date	08/19/97
Scale	NONE	Drawn By	DAP
Job No.	7541.01	Checked By	MRD

NORTH BACK LOT AREA

A parcel of land being part of Section 30, Town 4 South, Range 11 East, City of Trenton, Wayne County, Michigan, more particularly described as:

Commencing at the intersection of the North and South 1/4 line of Section 25, Town 4 South, Range 10 East, with the Northerly line East Lake Erie Highlands Subdivision according to the plat thereof as recorded in the office of the Register of Deeds for Wayne County, Michigan, in Liber 30 of Plats on Page 49, and proceeding thence North 88 degrees 23 minutes 23 seconds East, along said Northerly Subdivision line, and said Subdivision line extended Easterly, 1601.93 feet (recorded as 1601.35 feet), to a point on the Easterly line of West Jefferson Avenue (120 feet wide); thence North 88 degrees 23 minutes 23 seconds East, following a direct Easterly extension of said Northerly Subdivision line and along the Southerly line of the Monsanto Chemical Company land, 1384.22 feet to the Point of Beginning of the land herein described;
thence continuing along the Southerly line of the Monsanto Chemical Company land the following two (2) courses:
(1) North 88 degrees 23 minutes 23 seconds East, 86.72 feet and
(2) South 81 degrees 21 minutes 46 seconds East, 369.52 feet;
thence South 50 degrees 15 minutes 45 seconds East, 135.09 feet;
thence South 25 degrees 53 minutes 40 seconds East, 87.86 feet;
thence South 12 degrees 02 minutes 06 seconds East, 54.72 feet;
thence South 08 degrees 42 minutes 33 seconds West, 64.06 feet;
thence South 25 degrees 36 minutes 59 seconds West, 43.75 feet;
thence South 60 degrees 56 minutes 59 seconds West, 47.07 feet;
thence North 78 degrees 55 minutes 36 seconds West, 47.75 feet;
thence South 18 degrees 36 minutes 55 seconds West, 50.10 feet;
thence South 84 degrees 43 minutes 39 seconds West, 345.35 feet;
thence South 88 degrees 23 minutes 23 seconds West, 115.99 feet;
thence North 01 degree 36 minutes 37 seconds West, 471.08 feet
to the Point of Beginning. Containing 5.387 acres of land, more or less.

754RD103.DWG

SHEET 9 OF 9

McNEELY&LINCOLN
Associates,Inc.
CIVIL ENGINEERING & LAND SURVEYING
PH. (734) 432-9777 FAX (734) 432-9786
37741 PEMBROKE, LIVONIA, MICHIGAN, 48152

For	McLAREN / HART	Date	08/19/97
Scale	NONE	Drawn By	DAP
Job No.	7541.01	Checked By	MRD

ATTACHMENT D

DECLARATION OF RESTRICTIVE COVENANT

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING

JOHN ENGLER
GOVERNOR

RUSSELL J. HARDING
DIRECTOR

October 10, 2002

Mr. Gregory Rose
Facility Deactivation and Administration
DaimlerChrysler Corporation
CIMS 429-02-04
800 Chrysler Drive
Auburn Hills, Michigan 48326-2757

Dear Mr. Rose:

SUBJECT: Trenton Chemical Plant, Trenton, Wayne County, Site ID No. 82000009, Reclassification of the Limited Industrial Remedial Action Plan to Site-Specific Remedial Action Plan

This letter is to notify DaimlerChrysler Corporation (DCX) that the Department of Environmental Quality (DEQ) has reclassified the remedial action plan for the former Trenton Chemical Plant from a limited industrial to a site-specific to facilitate the redevelopment of the Trenton Chemical Plant property (Property). The reclassification of the remedial action plan is effective as of the date of this letter. The circumstances that led to and support the reclassification of the remedial action plan follow.

Pursuant to the requirements of the Consent Decree (Consent Decree) dated November 28, 1994 (Case No. 94-079112-CE), McLaren Hart, on behalf of DCX, submitted a limited industrial remedial action plan, dated March 28, 1997, and amended on October 10, 1997 (collectively, the RAP). By letter dated June 11, 1998, the DEQ notified DCX that the RAP satisfied the requirements of Section 20120a(1)(i) of Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA), and was approved by the DEQ, subject to DCX's completion of specified requirements. Those requirements included the recording of land use restrictions that restricted the use of the Property to industrial purposes. The DEQ's approval of the RAP became effective on June 11, 1998, the date upon which DCX filed the land use restrictions with the Wayne County Register of Deeds for recording. Pursuant to Section XXVIII (Certification) of the Consent Decree, the DEQ issued a Certificate of Completion of Construction of the RAP on July 15, 1998.

On September 4, 2002, DCX and Wayne County (County) executed a purchase agreement for the Property that will result in redevelopment of the Property for recreational purposes, more specifically, wildlife refuge and an environmental education center. The DEQ has determined that, based upon the known environmental conditions

at the Property, the response activities being performed pursuant to the RAP and the Consent Decree assure the protection of the public health, safety, and welfare, and the environment relative to the proposed recreational use of the Property. To facilitate redevelopment of the Property for the proposed purposes, the DEQ has, with the consent of DCX, reclassified the RAP as a site-specific remedial action plan, that allows for industrial and/or recreational use of the Property, pursuant to Section 20120a(2) of the NREPA. In further support of the proposed redevelopment, the DEQ is prepared to enter the Administrative Order on Consent, Covenants Not to Sue and Contribution Protection agreement with DCX and Wayne County, MDEQ Reference No. AOC-ERD-02-005 (AOC), and has approved a new restrictive covenant for the Property (attached to the AOC), which will be recorded on the Property and will supersede and rescind the restrictive covenant previously recorded in accordance with the Consent Decree.

If you have further questions or concerns, please contact Ms. Nanette Leemon, Compliance and Enforcement Section, Remediation and Redevelopment Division, at 517-373-4828.

Sincerely,

Jim Sygo, Chief
Remediation and Redevelopment Division
517-335-1104

cc: Mr. Josh Krammes, Wayne County
Mr. Philip L. Schrantz, DEQ
Ms. Patricia A. McKay, DEQ
Mr. Oladipo Oyinsan, DEQ
Ms. Nanette Leemon, DEQ
Mr. Edward Novak, DEQ

DECLARATION OF RESTRICTIVE COVENANT

MDEQ Reference No.: RC-ERD-02-024

This Declaration of Restrictive Covenant (Restrictive Covenant) has been recorded with the Wayne County Register of Deeds for the purpose of protecting the public health, safety, and welfare, and the environment.

DaimlerChrysler, formerly known as Chrysler Corporation, whose address is 1000 Chrysler Drive, Auburn Hills, Michigan 48326-2766, declares that the real estate described in the attached Exhibit A (the "Property") is held and shall be conveyed and occupied subject to the notice, covenants, and restrictions specified herein. This Restrictive Covenant rescinds and supersedes the Declaration of Restrictive Covenant filed by DaimlerChrysler on June 8, 1998, and recorded by the Wayne County Register of Deeds on Liber 29884, Pages 3126.0 to 3135.0.

NOTICE

In accordance with the Consent Decree dated November 28, 1994, in Case No. 94-079112-CE ("Consent Decree"), DaimlerChrysler is implementing the Remedial Action Plan (RAP) approved by the Michigan Department of Environmental Quality (MDEQ) on June 11, 1998, to address environmental contamination at the Property located in Trenton, Wayne County, and legally described in Exhibit A.

Property Tax ID Number: 54-026-99-0002-000

The RAP, which consists of the "Remedial Action Plan and Closure Report" dated February 12, 1997, and the Response to Closure Issues, dated August 8, 1997, prepared by McLaren/Hart Environmental Engineering Corporation, included limited industrial cleanup criteria as allowed for under Section 20120a(1)(i) of Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA), MCL 324.20101, *et seq.* In light of the proposed redevelopment and reuse of the Property for recreational purposes (specifically, wildlife refuge and environmental education center), the MDEQ re-evaluated the environmental conditions at the Property and determined that the response activities required to be performed pursuant to the RAP and the Consent Decree assure the protection of the public health, safety, and welfare, and the environment relative to the proposed recreational use. Consequently, with the consent of DaimlerChrysler and the approval of the MDEQ, the RAP was reclassified on October 10, 2002, as a site-specific remedial action plan pursuant to Section 20120a(2) of the NREPA, which allows for industrial and/or recreational use of the Property.

This Restrictive Covenant has been recorded to: assure the integrity and effectiveness of the RAP; restrict exposures to hazardous substances located on the portions of the Property identified in Exhibit B; and assure that the use of the Property is consistent with the assumptions and basis for the cleanup criteria established pursuant to Section 20120a(2) of the NREPA and the exposure-control measures relied upon in the RAP.

As used herein, the term "Owner" shall mean at any given time the then-current title holder of the Property. All other terms used in this document which are defined in Part 3 or Part 201 of the NREPA and the Part 201 Administrative Rules, 1990 AACS R 299.5101, *et seq.*, shall have the same meaning in this document as in Parts 3 and 201 of the NREPA or the Part 201 Administrative Rules.

COVENANTS AND RESTRICTIONS

NOW THEREFORE DaimlerChrysler, pursuant to the Consent Decree, Section 20120b(4) of the NREPA and the RAP, hereby imposes the following restrictions on the Property and covenants and agrees that:

1. With respect to the entire Property described in Exhibit A, soils may require management in accordance with Section 20120c of the NREPA and, in the event that soils are removed from the site, such soils must be properly characterized.

2. The restrictions contained in paragraphs 3 and 4 shall apply only to these areas of the Property shown on the map in Exhibit B, designated as "Monitoring Well No. 9 Area," "North Back Lot Area," "Soil Cover System Area," "Concrete Slab Cover System Area," and "Former Tank Farm Area," each of which are more particularly described in Exhibit C. Any reference in this document to "restricted activities" or to "restricted activities at the Property" or such similar language shall refer to only those areas described in Exhibits B and C.

3. The Owner shall restrict activities at the Property that may interfere with a response activity, operation and maintenance, monitoring, or other measures necessary to assure the effectiveness and integrity of the remedial action.

4. The Owner shall restrict activities that may result in exposures above levels established in the RAP or that would result in the release of a hazardous substance which was contained as part of the remedial action. These activities include, but are not limited to:

   a. Exposing subsurface soils in the "North Backlot Area," "Soil Cover System Area," and "Concrete Slab Cover System Area" without replacement of an equivalent cap (soil, asphalt, concrete, etc.) on those soils.

   b. Prohibition of building construction on the "Monitoring Well No. 9 Area" without further evaluation or remediation or engineering controls to prevent exceedences of indoor air inhalation criteria.

   c. No intrusive work in the "Former Tank Area" without a site-specific health and safety plan.

5. The Owner shall restrict activities that may result in the use of groundwater as a drinking water source.

6. The Owner shall restrict the uses of the Property to:

   Industrial or recreational uses (e.g., wildlife refuge and environmental education) or any other use that is consistent with the environmental conditions at the Property and the assumptions and basis for the cleanup criteria calculated pursuant to Section 20120a(1)(i) and (2) of the NREPA. Any change from the industrial or recreational uses specified in the RAP or this Restrictive Covenant may necessitate further evaluation of the potential risks to the public health, safety, or welfare, or the environment.

7. The Owner shall provide notice to the MDEQ of the Owner's intent to convey any interest in the Property 14 days prior to consummating the conveyance as required by Section 20120b(4)(c) of the NREPA. A conveyance of title, an easement, or other interest in the Property shall not be consummated by the Owner without adequate and complete provision for compliance with the terms and conditions of the Consent Decree and this Restrictive Covenant.

8. The Owner shall grant to the MDEQ, its designated representatives, and other persons implementing MDEQ-approved response activities the right to enter the Property at reasonable times for the purpose of determining and monitoring compliance with the RAP, including the right to take samples, inspect the operation of the remedial action measures, and inspect records.

The restrictions herein were approved by the MDEQ. The MDEQ, DaimlerChrysler, and the Owner have the right to enforce the restrictions herein in whole or in part by legal action in a court of appropriate jurisdiction. Any rights of DaimlerChrysler to enforce the restrictions herein shall be subordinate to the rights of the MDEQ.

The restrictions and other requirements described in this Restrictive Covenant shall run with the land and shall be binding upon all future Owners, successors, lessees, or assigns and their authorized agents, employees, or persons acting under their direction and control. This Restrictive Covenant shall continue into perpetuity. A copy of this Restrictive Covenant shall be provided to all future Owners, heirs, successors, lessees, assigns, and transferees.

If any provision of this Restrictive Covenant is held to be invalid by any court of competent jurisdiction, the invalidity of such provision shall not affect the validity of any other provisions hereof. All such other provisions shall continue unimpaired in full force and effect.

This Restrictive Covenant shall not be amended, modified, or terminated except by a written instrument executed by and between the Owner, DaimlerChrysler, and the MDEQ at the time of the proposed amendment, modification, or termination. Within five (5) days of executing an amendment, modification, or termination of this Restrictive Covenant, the Owner shall file such amendment, modification, or termination for recording with the Wayne County Register of Deeds. The Owner shall provide to the MDEQ a true copy of the recorded amendment, modification, or termination, including liber and page, within ten (10) days of receipt of the recorded instrument from the Wayne County Register of Deeds.

This Restrictive Covenant does not obviate the Owner's compliance with other federal, state, or local laws or regulations.

The undersigned persons executing this Restrictive Covenant on behalf of DaimlerChrysler represent and certify that they are duly authorized and have been fully empowered by the Owner to execute and deliver this Restrictive Covenant.

IN WITNESS WHEREOF, the said Owner of the above-described Property has caused this Restrictive Covenant to be executed on this ___ day of _____, 2002.

DaimlerChrysler

By: _____
[Name]

Its: _____

Signed in the presence of:

_____ _____
Witness ***[Print or type name]*** Witness ***[Print or type name]***

STATE OF MICHIGAN
COUNTY OF ***[county where owner signs]***

The foregoing instrument was acknowledged before me this ***[date]*** by ***[name of officer or agent, title of officer or agent]*** of DaimlerChrysler, a Delaware corporation, on behalf of the corporation.

_____
Notary Public
[Print or type name]
[Commissioned in] County, [State]

My Commission Expires: _____

Prepared by: ***[Name, Title, and Address]***

Mannik & Smith Group

15300 Rotunda Drive, Suite 306
Dearborn, MI 48120
(313) 271-2223
Fax: (313) 271-3076
www.manniksmithgroup.com

LETTER OF TRANSMITTAL

DATE: 11-1-02	Job No: WYNA7A
ATTENTION: Hugh Macdonald	
RE: Category N BEA	

To: Wayne County Dept. of Public Services
415 Clifford Street, 8th Floor
Detroit, MI 48226

WE ARE SENDING YOU ❑ Attached ❑ Under Separate cover ☑ Via hand delivery following items:

❑ Shop Drawings ❑ Prints ❑ Plans ❑ Samples ❑ Specifications

❑ Copy of Letter ❑ Change Order ❑ As-Noted

COPIES	DATE	NO.	DESCRIPTION
1	11-1-02	1	DRAFT of Category N BEA Report

THESE ARE TRANSMITTED as checked below:

❑ For your signature ❑ Approved as submitted ❑ Resubmit_____ copies for approval

❑ For your use ❑ Approved as noted ❑ Submit_____ copies for distribution

❑ As requested ❑ Returned for corrections ❑ Return_____ corrected prints

❑ For review and comment ❑ _____

❑ FOR BIDS DUE_____20__ ❑ PRINTS RETURNED AFTER LOAN TO US

REMARKS:

Hugh,

Please review the attached report and let me know if there are any changes. This will be finalized on Monday, November 4, 2002. I will meet you at your office or wherever is convenient to you in order to get these notarized.

COPY TO:

SIGNED Walter J. Bolt

PRINTED Walter J. Bolt, C.P.G.
Director of Hydrogeologic Services

At the request of our client, as its agent, and for your convenience, we are transmitting to you the attached information. This transmittal is subject to the following conditions to which you agree by accepting these terms on a reply to this message or using the information in any manner, including but not limited to, copying or using the information for reference.

1. The Mannik & Smith Group, Inc. will not be held liable for the completeness/correctness of the information contained herein or for the condition of the media.
2. Any use or reuse of the original or altered media will be at the recipient's risk and full legal responsibility. To the extent permitted by law, recipient shall indemnify and hold harmless the Mannik & Smith Group, Inc. from any and all claims, liabilities, demands or costs arising out of resulting therefrom.
3. If you discover any errors and/or omissions in the information, you will promptly notify us so that we can make any necessary corrections.
4. For any electronic file(s) attached hereto, we are not responsible for any errors caused by the transmission, your software, or your computer systems.
5. The information contained herein is not to be used on other projects without our express written consent.

Mannik & Smith The Group, Inc.

15300 Rotunda Dr., Suite 306 · Dearborn, MI 48120 · Tel 313 271 2223 · Fax 313 271 3076
www.manniksmithgroup.com

October 31, 2002

Mr. Oladipo Oyinsan
Michigan Department of Environmental Quality
Remediation and Redevelopment Division
Southeast Michigan District Office
38980 Seven Mile Rd.
Livonia, MI 48152-1006

RE: Baseline Environmental Assessment
Former Trenton Chemical Facility
Jefferson Avenue, Trenton, Michigan

Dear Mr. Oyinsan:

Enclosed are two copies of a "Category N" Baseline Environmental Assessment (BEA), a Section 20107a Compliance Analysis, EQP 4445, EQP 4400, EQP 4439, and EQP 4447, prepared on behalf of the Wayne County Department of Public Services, prospective buyer of the above-referenced property. This BEA and supporting documents were prepared in accordance with Section 20129a, Part 201 of the Natural Resources and Environmental Protection Act 451 P.A. 1994, as amended and the rules promulgated thereunder. Also enclosed is a $750.00 check payable to the State of Michigan for the petition fee.

Should you have any questions regarding information supplied within the BEA and supporting material, please call the undersigned at (313) 271-2223.

Sincerely,

THE MANNIK & SMITH GROUP, INC.

Margaret H. Zawacki, E.I.T.
Environmental Engineer I

Walter J. Bolt, C.P.G.
Director of Hydrogeologic Services

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL RESPONSE DIVISION

FOR DEQ USE ONLY
Petition #: _____
Check #: _____
Amount $: _____
Payer: _____
Index: 45021 PCA: 31400 OBJ: 9135

PETITION FOR BASELINE ENVIRONMENTAL ASSESSMENT DETERMINATION and OPTIONAL DETERMINATION OF COMPLIANCE WITH SECTION 20107a (FORM EQP4445(REV.3/99))

(Under the authority of Part 201, 1994 Act 451, as amended, and the Rules promulgated thereunder)

All of the following questions must be answered. If any information is missing, the petition for Baseline Environmental Assessment (BEA) determination ("the petition") will be returned unreviewed.

Name and address of petitioner (individual or legal entity):*
Wayne County Department of Public Services
Mr. Hugh MacDonald
415 Clifford, 8th Floor
Detroit, MI 48226

Status relative to the property:

	Former	Current	Prospective
Owner*	☐	☐	☒
Operator*	☐	☐	☐

Address/location of property where BEA was conducted:
Former Trenton Chemical Facility
Jefferson Avenue
Trenton, MI 48183

County Wayne

Provide the property tax identification number(s) or, if applicable, the ward and item numbers(s) for the property identified in the BEA. Required pursuant to Rule 907. 54026990002

Contact person representing petitioner: Walter J. Bolt Contact's Telephone #: (313) 271-2223

If the address of the petitioner is different from the address that should be used to correspond with the petitioner's contact person, please provide the contact person's address: 15300 Rotunda Drive, Suite 306 Dearborn, MI 48120

Check the appropriate response to each of the following questions.

1. **Is it known that the source of contamination at the property is primarily from any of the following?** (YES / NO)
   - **A leaking underground storage tank (UST) regulated under Part 213, 1994 PA 451, as amended.** ☐ ☒
   - **A licensed landfill or solid waste management facility.** ☐ ☒
   - **A licensed hazardous waste Treatment, Storage, or Disposal Facility.** ☐ ☒
   - **Oil and gas development related activities.** ☐ ☒

The source of the release that resulted in this property becoming a "facility" will determine which DEQ division will review your petition.

2. **Based on the Part 201 Rules, this BEA is a:**
   - **Category N** ☒
   - **Category D** ☐
   - **Category S** ☐

3. **Are USTs or discarded or abandoned containers identified in the BEA?** If yes, this information must be provided on Form EQP4476. (YES / NO) ☐ ☒

*=Terms defined in Glossary (Appendix F)

ELIGIBILITY FOR BEA DETERMINATION

4. **Is the property for which the petition review is being requested a "facility" as defined in Section 20101?** If the answer to this question is no, the property is ineligible for consideration and your petition will be returned. YES ☒ NO ☐

5. **Was the BEA conducted* prior to or within 45 days after the date of purchase*, occupancy, or foreclosure of the property, whichever is earliest and completed* not more than 15 days after the date required by Section 20126(1)(c) or Rule 299.5903(8)?** If the answer to either portion of this question is no, the BEA is invalid. YES ☒ NO ☐

6. **Is this BEA petition being submitted to the DEQ within 6 months after the completion of the BEA?** If the answer to this question is no, pursuant to Section 20129a(1), the petition for a BEA determination is invalid and will be returned to the petitioner. YES ☒ NO ☐

SECTION 20107a COMPLIANCE ANALYSIS

7. **Is the petitioner seeking or does the petitioner intend to seek a determination of compliance with Section 20107a obligations?** This determination must be specifically requested in order for the DEQ to provide its conclusions. A Section 20107a Compliance Analysis may be submitted according to the schedule prescribed in Rule 299.5915 and the Instructions for Preparing and Disclosing BEAs. YES ☒ NO ☐

8. **If you answered yes to number 7 above, have you enclosed a Section 20107a Compliance Analysis now?** YES ☒ NO ☐

REQUIRED MATERIALS

This petition must include the following documents prepared according to DEQ Instructions for Preparing and Disclosing BEAs. The documents should be assembled in the order they are listed. If any of this information is missing, the petition will be returned to you unreviewed. Please indicate whether or not the documents are enclosed.

	YES	NO
• **The $750.00 petition fee.**	☒	☐
• **This form, completed.**	☒	☐
• **The affidavit signed by the petitioner and prepared according to DEQ procedures.**	☒	☐
• **The affidavit signed by the environmental professional who prepared the BEA, and if applicable, the affidavit of the environmental professional who completed the Section 20107a Compliance Analysis.**	☒	☐
• **The BEA prepared according to DEQ Instructions**	☒	☐
• **A Notice Regarding Discarded or Abandoned Containers, if applicable.**	☒	☐
• **A Section 20107a Compliance Analysis, if you answered yes to question 8.**	☒	☐

With my signature below, I certify that this petition and all related materials are complete and accurate to the best of my knowledge and belief. I have read and understand the caution related to curing deficiencies found in the Instructions for Preparing and Disclosing BEAs. I understand that intentionally submitting false information in a petition is a felony and may result in fines of up to $25,000 for each violation.

Signature of Submitter: _____ _____
(Person legally authorized to bind the petitioner*) Date

Name (Typed or Printed) Hugh MacDonald

Title Director of Special Services

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL RESPONSE DIVISION

AFFIDAVIT IN SUPPORT OF A PETITION FOR A BASELINE ENVIRONMENTAL ASSESSMENT DETERMINATION AND OPTIONAL DETERMINATION OF COMPLIANCE WITH SECTION 20107a(FORM EQP4400 (REV.3/99))

(Under the authority of Part 201, 1994 Act 451, as amended, and the Rules promulgated thereunder)

STATE OF MI)
)
COUNTY OF Wayne)

The purpose of this Affidavit is to set forth certain information and documentation to enable the Michigan Department of Environmental Quality (hereinafter the "DEQ") to make the determinations pursuant to Section 20129a of Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act (hereinafter the "NREPA"), 1994 PA 451, as amended, MCL 324.29a. All terms found in this document which are defined in the NREPA, Part 3, Part 201, and the Part 201 Rules, shall have the same meaning as in the statute and the Part 201 Rules.

The undersigned Petitioner, being first duly sworn, deposes and says as follows:

1. **THIS AFFIDAVIT** is executed by the undersigned Walter J. Bolt whose title is, Director of Hydrogeologic Services on behalf of Wayne County Department of Public Services (hereinafter "The Petitioner") located at 415 Clifford, 8th Floor, Detroit, MI 48226.

2. The Petitioner intends to purchase a property located at Jefferson Avenue, Trenton, MI 48183 (hereinafter the "Property") on or about January 1, 2003.

3. The Property referred to in this petition is a "Facility."

Check the appropriate language:

4. ☒ The language in this Affidavit does not deviate from that in the model Affidavit, Form EQP4400 (Rev.3/99).
   ☐ The language in this Affidavit does not deviate from that in the model Affidavit, Form EQP4400 (Rev.3/99) *except as provided for in item #10.*

5. The Baseline Environmental Assessment ("BEA") included in this petition was conducted on September 12, 2002 and completed on October 31, 2002

Check one of the following two options:

☒ The BEA, to the best of the Petitioner's knowledge and belief, reasonably defines the existing conditions and circumstances at the facility so that in the event of a release subsequent to the Petitioner's purchase of the Property, there is a means of distinguishing any new release from existing contamination.

☐ The BEA, to the best of the Petitioner's knowledge and belief, *except as specified in Item #10 of this affidavit,* reasonably defines the existing conditions and circumstances at the facility so that in the event of a release subsequent to the Petitioner's _____ of the Property, there is a means of distinguishing any new release from existing contamination.

6. The Petitioner agrees that the fee accompanying this petition will be deposited into the appropriate state fund, applies to this petition exclusively, and is not refundable, unless the Petition is found to be administratively incomplete and the Petition is not reviewed.

7. The Petitioner agrees that any affirmative determination on the Petition by the DEQ is based on:
   a. The truthfulness and accuracy of the information submitted by the Petitioner.
   b. The proposed use of the property set forth in the Petition.
   c. The proposed hazardous substance(s)use set forth in the Petition.
   d. The Petitioner completing in a timely and satisfactory manner any response activity described in this Petition.
   e. The Petitioner having conducted the BEA prior to or within 45 days after the earlier of the date of purchase, occupancy, or foreclosure, and completing the BEA not more than 15 days after the date required by Section 20126(1)(c) or Rule 299.5903(8).

Check one of the following two options:

8. ☒ The Petitioner's proposed use of the facility will, to the best of the Petitioner's knowledge and belief, satisfy the requirements of Section 20107a of the NREPA.

   ☐ Section 7a determination not requested.

Check one of the following two options:

9. ☐ The Petitioner agrees to undertake in a timely and satisfactory manner the response activities necessary to comply with Section 20107a of the NREPA.

   ☒ Plan for Response Activity not proposed.

[Include if Petitioner is relying on engineering controls an isolation zone and/or stipulated conditions pursuant to Rule 909.]

10. _____

I affirm that the above representations are true and are based upon my personal knowledge and belief after all reasonable inquiry.

I certify that I am legally authorized to execute this Affidavit and to bind the Petitioner to the terms and conditions of this Affidavit.

I understand that intentionally submitting false information to the DEQ is a felony and may result in fines of up to $25,000 for each violation.

I acknowledge that this Affidavit has been provided pursuant to Section 20129a of the NREPA.

_____ _____
Signature of Petitioner or Person Legally Authorized to Bind Petitioner Date

Hugh MacDonald
Print or Type Legal Name

SUBSCRIBED AND SWORN to before me this _____ day of _____, _____, a Notary Public in and for _____ County, Michigan.

_____
Notary Public

My Commission Expires: _____

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL RESPONSE DIVISION

AFFIDAVIT OF ENVIRONMENTAL PROFESSIONAL IN SUPPORT OF A PETITION FOR A BASELINE ENVIRONMENTAL ASSESSMENT DETERMINATION (FORM EQP4439 (REV.3/99))

(Under the authority of Part 201, 1994 Act 451, as amended, and the Rules promulgated thereunder)

STATE OF MI)
)
COUNTY OF Wayne)

The purpose of this Affidavit is to set forth certain information and documentation to enable the Michigan Department of Environmental Quality (hereinafter the "DEQ") to make a determination on a petition for a Baseline Environmental Assessment ("BEA") Determination pursuant to Section 20129a of Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act (hereinafter the "NREPA"), 1994 PA 451, as amended, MCL 324.20129a. All terms found in this document which are defined in the NREPA, Part 3, Part 201, and the Part 201 Rules, shall have the same meaning as in the statute and the Part 201 Rules.

The undersigned affiant, being first duly sworn, deposes and says as follows:

1. **THIS AFFIDAVIT** is executed by the undersigned Walter J. Bolt, whose title is Director of Hydrogeologic Services working for The Mannik & Smith Group, Inc., located at 15300 Rotunda Drive, Suite 306 Dearborn, MI 48120.

2. The affiant was retained by Wayne County Department of Public Services, (hereinafter the "Petitioner") to conduct a BEA on a property located at Jefferson Avenue, Trenton, MI 48183 (hereinafter the "Property").

3. I have 10 years of professional experience in the investigation and remediation of sites of environmental contamination. A copy of my qualifications, including education and work experience, is attached.

Check one of the following two options:

4. ☒ The BEA for the Property was prepared by the affiant. It was conducted on September 12, 2002 and completed on October 31, 2002. To the best of the knowledge and belief of the affiant, and based upon the future hazardous substance use associated with the Petitioner's intended use of the property, the BEA reasonably defines the existing conditions and circumstances at the facility so that in the event of a release subsequent to the Petitioner's purchase of the Property, there is a means of distinguishing the new release from existing contamination.

   ☐ The BEA for the Property was _____ by the affiant. It was conducted on _____ and completed on _____. To the best of the knowledge and belief of the affiant, and based upon the future hazardous substance use associated with the Petitioner's intended use of the property, *with the exception of the stipulation in item #10 of the Petitioner's affidavit which reads:* _____, the BEA reasonably defines the existing conditions and circumstances at the facility so that in the event of a release subsequent to the

Petitioner's _____ of the Property, there is a means of distinguishing the new release from existing contamination.

5. The language in this Affidavit does not deviate from that in the model Affidavit, Form EQP4439 (Rev.3/99).

I affirm to the best of my knowledge and belief that the information contained in the BEA prepared for this Property is true and accurate and that all sample test results and other relevant facility-related analytical data acquired, collected, and analyzed to prepare the BEA are included or referenced in the BEA.

I understand that intentionally submitting false information to the DEQ is a felony and may result in fines of up to $25,000 for each violation.

I certify that I am fully authorized by the Petitioner I represent to execute this Affidavit.

_____ _____

Signature of Environmental Professional Date

Walter J. Bolt
Print or Type Legal Name

SUBSCRIBED AND SWORN to before me this _____ day of _____, _____, a Notary Public in and for _____ County, Michigan.

_____
Notary Public

My Commission Expires: _____

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL RESPONSE DIVISION

AFFIDAVIT OF ENVIRONMENTAL PROFESSIONAL IN SUPPORT OF A PETITION FOR A DETERMINATION OF COMPLIANCE WITH SECTION 20107a (FORM EQP4447 (REV.3/99))

(Under the authority of Part 201, 1994 Act 451, as amended, and the Rules promulgated thereunder)

STATE OF MI)
)
COUNTY OF Wayne)

The purpose of this Affidavit is to set forth certain information and documentation to enable the Michigan Department of Environmental Quality (hereinafter the "DEQ") to make a determination on compliance with Section 20107a of Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act (hereinafter the "NREPA"), 1994 PA 451, as amended, MCL 324.20107a, in conjunction with a Baseline Environmental Assessment ("BEA") Determination pursuant to Section 20129a of the NREPA, MCL 324.20129a. All terms found in this document which are defined in the NREPA, Part 3, Part 201, and the Part 201 Rules shall have the same meaning as in the statute and Part 201 Rules.

The undersigned affiant, being first duly sworn, deposes and says as follows:

1. **THIS AFFIDAVIT** is executed by the undersigned Walter Bolt, whose title is Director of Hydrogeologic Services working for The Mannik & Smith Group, Inc. located at 15300 Rotunda Drive, Suite 306, Dearborn, MI 48120.

2. The affiant was retained by Wayne County Department of Public Services, (hereinafter the "Petitioner") to conduct a BEA on a property located at Jefferson Avenue, Trenton, MI 48183 (hereinafter the "Property").

3. I have 10 years of professional experience in the investigation and remediation of sites of environmental contamination. A copy of my qualifications, including education and work experience, is attached.

4. The Section 7a Compliance Analysis (hereinafter the "Section 7a CA") for the Property was prepared by the affiant and completed on October 31, 2002. The Section 7a CA for the property will, when implemented, to the best of the affiant's knowledge and belief, satisfy the requirements of Section 20107a of the NREPA.

5. The language in this Affidavit does not deviate from that in the model Affidavit, Form EQP4447(Rev.3/99).

I affirm to the best of my knowledge and belief that the information contained in the Section 7a CA prepared for this Property is true and accurate.

I understand that intentionally submitting false information to the DEQ is a felony and may result in fines of up to $25,000 for each violation.

I certify that I am fully authorized by the Petitioner I represent to execute this Affidavit.

_____ _____
Signature of Environmental Professional Date

Walter J. Bolt
Print or Type Legal Name

SUBSCRIBED AND SWORN to before me this _____ day of _____, _____, a Notary Public in and for _____ County, Michigan.

_____
Notary Public
My Commission Expires: _____

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING

JOHN ENGLER
GOVERNOR

RUSSELL J. HARDING
DIRECTOR

RECEIVED
NOV 21 2001
WAYNE COUNTY DEPARTMENT OF PUBLIC SERVICES

November 18, 2002

DETERMINATION ON
BASELINE ENVIRONMENTAL ASSESSMENT PETITION
INCLUDING COMPLIANCE WITH SECTION 20107a

*WAIVES ALL

Petitioner:

Wayne County Department of Public Services
Attention: Mr. Hugh MacDonald
415 Clifford, 8th Floor
Detroit, Michigan 48226

Petition #: P200201857LV

Determination:

BEA - Affirmed
20107a Obligations - Affirmed

The Department of Environmental Quality (DEQ) has reviewed Petition P200201857LV for a determination on a Baseline Environmental Assessment (BEA). In conjunction with the BEA, you requested DEQ's opinion of whether your Section 20107a Compliance Analysis (Section 7a CA), if implemented as proposed, will be consistent with the due care obligations set forth at Section 20107a of Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA), MCL 324.20107a. The petition was submitted pursuant to Section 20129a of the NREPA, MCL 324.20129a. Based on the petition, including representations made in the affidavits, the BEA, which was completed on October 31, 2002, the Section 7a CA, and supporting materials submitted, the DEQ has determined that the BEA is affirmed and the Section 7a CA is affirmed.

This determination affirms that the BEA is adequate for the purpose of obtaining an exemption from liability pursuant to Section 20126(1)(c). In making this determination, the DEQ is not making any other findings about whether the petitioner is liable or covered by any other exemption from liability under Part 201. This affirmative determination does not alter liability with regard to a subsequent release or threat of release or any exacerbation of existing conditions. The affirmative determination is only for the person and property identified in the petition. The use of the property and any response activity undertaken must be in accordance with the requirements of all applicable or relevant and appropriate state and federal laws and regulations. These affirmative determinations are conditioned on the timely and satisfactory completion of the response activities described in the petition and Section 7a CA. Pursuant to R 299.5919(2), if the petitioner sells or transfers the property, the petitioner is required to disclose the BEA to a subsequent owner or operator in order to be entitled to an exemption from liability.

This affirmative determination is based on the proposed property use and hazardous substance use identified in the BEA and Section 7a CA. The DEQ will maintain an

administrative record of each BEA and Section 7a CA. If at any time you provide the DEQ with post-BEA information related to your BEA or Section 7a CA, the DEQ will retain such information with the administrative record. Such post-BEA information will not be considered part of the BEA or Section 7a CA and acceptance of such information by the DEQ should in no way be construed to mean the DEQ will review or advise the petitioner regarding the adequacy of such information for any purpose.

The Section 7a CA is not a work plan for the purpose of authorizing tax capture pursuant to Section 15(1) the Brownfield Redevelopment Financing Act, 1996 PA 381, MCL 125.2651, *et seq*. In this determination, the DEQ is making no judgment regarding whether the proposed actions are necessary or cost effective.

Notwithstanding this affirmative determination, the petitioner may have responsibility under other laws, including, but not limited to Part 111, Hazardous Waste Management; Part 211, Underground Storage Tank Regulations; Part 213, Leaking Underground Storage Tanks; and Part 615, Supervisor of Wells of the NREPA.

The submitter, as the owner and/or operator of a facility, has the following Due Care responsibilities under Section 20107a of Part 201 and the Due Care Rules, unless covered by the exemptions in Section 20107a(4) or (5):

- Undertake measures as are necessary to prevent exacerbation of the existing contamination.
- Exercise due care by undertaking response activity necessary to mitigate unacceptable exposure to hazardous substances, mitigate fire and explosion hazards due to hazardous substances, and allow for the intended use of the facility in a manner that protects the public health and safety.
- Take reasonable precautions against the reasonable foreseeable acts or omissions of a third party and the consequences that foreseeably could result from those acts or omissions.
- Notify the DEQ if there are discarded or abandoned containers that contain hazardous substances on the property using Form EPQ4476.
- Notify the DEQ if contaminants are migrating off the property using Form EPQ4482.
- Notify the local fire department if there is a fire or explosion hazard.
- Notify utility and easement holders if contaminants could cause unacceptable exposures and/or fire and explosion hazards.

Rule 1003(4) requires a person who is subject to the provisions of Section 20107a to maintain documentation of compliance with these requirements and to provide such documentation to the DEQ upon request. If the property use changes in the future, additional due care measures may be necessary. The property owner and operator must re-evaluate and document their continued compliance with Section 20107a.

The BEA constitutes a response activity, consequently, this determination is subject to Section 20137(4) and (5) of the NREPA.

Authorized signature:

AW Hogarth

Andrew W. Hogarth, Assistant Chief
Remediation and Redevelopment Division

11-18-02
Date

Attachment
cc: Mr. Walter J. Bolt, The Mannik & Smith Group

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL RESPONSE DIVISION

FOR DEQ USE ONLY
Petition #: [illegible]
Check #: [illegible]
Amount $: 750.00
Payer: The Mannik & Smith Group, Inc
Index: 45021 PCA: 31400 OBJ: 9135

PETITION FOR BASELINE ENVIRONMENTAL ASSESSMENT DETERMINATION and OPTIONAL DETERMINATION OF COMPLIANCE WITH SECTION 20107a (FORM EQP4445(REV.3/99))

(Under the authority of Part 201, 1994 Act 451, as amended, and the Rules promulgated thereunder)

All of the following questions must be answered. If any information is missing, the petition for Baseline Environmental Assessment (BEA) determination ("the petition") will be returned unreviewed.

Name and address of petitioner (individual or legal entity):*
Wayne County Department of Public Services
Mr. Hugh MacDonald
415 Clifford, 8th Floor
Detroit, MI 48226

Status relative to the property.

	Former	Current	Prospective
Owner*	☐	☐	☒
Operator*	☐	☐	☐

Address/location of property where BEA was conducted:
Former Trenton Chemical Facility
Jefferson Avenue
Trenton, MI 48183

County Wayne

Provide the property tax identification number(s) or, if applicable, the ward and item numbers(s) for the property identified in the BEA. Required pursuant to Rule 907. 54026990002

Contact person representing petitioner Walter J. Bolt Contact's Telephone #: (313) 271-2223

If the address of the petitioner is different from the address that should be used to correspond with the petitioner's contact person, please provide the contact person's address: 16300 Rotunda Drive, Suite 306 Dearborn, MI 48120

Check the appropriate response to each of the following questions.

1. **Is it known that the source of contamination at the property is primarily from any of the following?**

	YES	NO
• **A leaking underground storage tank (UST) regulated under Part 213, 1994 PA 451, as amended.**	☐	☒
• **A licensed landfill or solid waste management facility.**	☐	☒
• **A licensed hazardous waste Treatment, Storage, or Disposal Facility.**	☐	☒
• **Oil and gas development related activities.**	☐	☒

The source of the release that resulted in this property becoming a "facility" will determine which DEQ division will review your petition.

2. **Based on the Part 201 Rules, this BEA is a:**

Category N	☒
Category D	☐
Category S	☐

3. **Are USTs or discarded or abandoned containers identified in the BEA?** If yes, this information must be provided on Form EQP4476.

YES	NO
☐	☒

ELIGIBILITY FOR BEA DETERMINATION

4. **Is the property for which the petition review is being requested a "facility" as defined in Section 20101?** If the answer to this question is no, the property is ineligible for consideration and your petition will be returned. YES ☒ NO ☐

5. **Was the BEA conducted* prior to or within 45 days after the date of purchase*, occupancy, or foreclosure of the property, whichever is earliest and completed* not more than 15 days after the date required by Section 20126(1)(c) or Rule 299.5903(8)?** If the answer to either portion of this question is no, the BEA is invalid. YES ☒ NO ☐

6. **Is this BEA petition being submitted to the DEQ within 6 months after the completion of the BEA?** If the answer to this question is no, pursuant to Section 20129a(1), the petition for a BEA determination is invalid and will be returned to the petitioner. YES ☒ NO ☐

SECTION 20107a COMPLIANCE ANALYSIS

7. **Is the petitioner seeking or does the petitioner intend to seek a determination of compliance with Section 20107a obligations?** This determination must be specifically requested in order for the DEQ to provide its conclusions. A Section 20107a Compliance Analysis may be submitted according to the schedule prescribed in Rule 299.5915 and the Instructions for Preparing and Disclosing BEAs. YES ☒ NO ☐

8. **If you answered yes to number 7 above, have you enclosed a Section 20107a Compliance Analysis now?** YES ☒ NO ☐

REQUIRED MATERIALS

This petition must include the following documents prepared according to DEQ Instructions for Preparing and Disclosing BEAs. The documents should be assembled in the order they are listed. If any of this information is missing, the petition will be returned to you unreviewed. Please indicate whether or not the documents are enclosed.

	YES	NO
• **The $750.00 petition fee.**	☒	☐
• **This form, completed.**	☒	☐
• **The affidavit signed by the petitioner and prepared according to DEQ procedures.**	☒	☐
• **The affidavit signed by the environmental professional who prepared the BEA, and if applicable, the affidavit of the environmental professional who completed the Section 20107a Compliance Analysis.**	☒	☐
• **The BEA prepared according to DEQ Instructions**	☒	☐
• **A Notice Regarding Discarded or Abandoned Containers, if applicable.**	☒	☐
• **A Section 20107a Compliance Analysis, if you answered yes to question 8.**	☒	☐

With my signature below, I certify that this petition and all related materials are complete and accurate to the best of my knowledge and belief. I have read and understand the caution related to curing deficiencies found in the Instructions for Preparing and Disclosing BEAs. I understand that intentionally submitting false information in a petition is a felony and may result in fines of up to $25,000 for each violation.

Signature of Submitter: Hugh MacDonald 11/04/02
(Person legally authorized to bind the petitioner*) Date

Name (Typed or Printed) Hugh MacDonald

Title Director of Special Services

Category N
Baseline Environmental Assessment Conducted Pursuant to Section 20126(1)(c) Of 1994 PA 451, Part 201, as amended and the rules Promulgated thereunder

Location:

Parcel I.D. #54-02-699-000-2
Former Trenton Chemical Facility
Jefferson Avenue
Trenton, Michigan 48183

Prepared For:

Wayne County Department of Public Services
Administration Division
415 Clifford, Eighth Floor
Detroit, Michigan 48226

Completed On:

October 31, 2002

Prepared By:

The Mannik & Smith Group, Inc.
15300 Rotunda Drive, Suite 306
Dearborn, Michigan 48120

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Baseline Environmental Assessment
Conducted Pursuant to Section 20126(1)(c)
of 1994 PA 451, Part 201, as amended,
And the Rules promulgated thereunder

1.0 IDENTIFICATION OF AUTHORS AND DATE OF BEA COMPLETION

Authors: Margaret H. Zawacki, E.I.T.
Environmental Engineer I
The Mannik & Smith Group, Inc.

Walter J. Bolt, C.P.G.
Director of Hydrogeological Services
The Mannik & Smith Group, Inc.

BEA Conducted Date: September 12, 2002

BEA Completion Date: October 31, 2002

2.0 INTRODUCTION

The facility for which this Baseline Environmental Assessment (BEA) has been conducted is known as the former Trenton Chemical Facility (subject property), which is located on Jefferson Avenue in Trenton, Michigan. The prospective buyer of the property is Wayne County Department of Public Services of Detroit, Michigan. Pursuant to Section 29a of Part 201, a person may petition the MDEQ for a determination that the BEA meets the requirements for and exemption from liability under Section 26(1)(c). This BEA is being submitted for a MDEQ determination of adequacy.

The subject property is approximately 33 acres in size and is bordered to the east by the Detroit River, to the north by Solutia, Inc. (formerly Monsanto Chemical, Inc.) a food-grade phosphate manufacturing facility, to the west by Jefferson Avenue and then commercial and residential properties, and to the south by undeveloped land owned by Waste Management, Inc. The only industrial facilities within close proximity of the subject property are Solutia and the Detroit Edison coal fired power plant (just north of Solutia – see Figure 1). Figure 1 depicts the location of the subject property relative to nearby roads and major topographic features.

The subject property has been operated by Chrysler since 1946 and has been used to manufacture

brake pad adhesives, blended oils, paints, sealers, powdered metal parts, asbestos brake pads and phenolic brake pistons. The subject property previously contained wastewater treatment ponds, various buildings that stored chemicals and waste products, a drum burial area, an oil lagoon, a sludge area, and a tank farm that had above ground storage tanks (ASTs) and underground storage tanks (USTs). The subject property shoreline was expanded between the late 1940s and 1967, additional buildings were constructed between 1952 and 1973, and wastewater treatment ponds were constructed in the 1970s. Starting in 1990, Chester Engineers (CE) began performing plant deactivation activities. The buildings have since been removed but some of the foundations remain. Refer to Figure 2 for a historic figure that details the former locations of buildings on the subject property and the main site areas or sections.

2.1 Previous Studies

The following sections summarize some pertinent activities and investigations completed at the subject property. The information presented below is not meant nor intended to replace the whole record, it is merely intended to provide a brief background with respect to the subject property. In preparation of this BEA, MSG has had to rely on a considerable amount of information that was collected by others. As such, MSG can not attest to the veracity of this information. The activities are generally presented in chronological order and include: the initial site deactivation activities performed by CE and reported in 1992, the 1994 Soil and Groundwater Investigation Report and 1995 Site Assessment Summary Report performed by McLaren Hart Environmental Engineering Corporation (MLH), the 1997 MLH Remedial Action Plan and Closure Report (Appendix A), and the 1998 Restrictive Covenant (Appendix B).

2.1.1 CE's Initial Site Deactivation Activities and Previous Remediation

In 1987, the north backlot had a soil cap put into place to contain asbestos-containing materials that had been found in the soil. In 1988, USTs were excavated and removed and surrounding soil was disposed from the tank area, while the south backlot was excavated and drums removed before being backfilled. CE performed duties related to preparing the subject property for future reuse beginning in 1990 including removal of all above ground structures, removal and disposal of stained surficial soils, removal of remaining USTs and ASTs, and dredging of wastewater treatment ponds.

2.1.2 MLH's Site Summary and Site Preparation Activities

MLH performed a soil and groundwater investigation in 1994 and a Site Assessment Summary Report was written in 1995. During this time MLH also performed site preparation activities including: final grading and seeding, repair of manholes, limited building slab removal, removal of piping and debris, removal of concrete pavement, tree removal, removal of railroad track, ties, and posts, lighting fixtures, concrete curbing and interior fencing.

2.1.3 MLH's Remedial Action Plan and Closure Report

In 1997, MLH prepared a Remedial Action Plan and Closure Report for the former Trenton Chemical Facility. Remaining soil and groundwater environmental concerns were addressed and appropriate remedial actions were implemented in accordance with Part 201.

2.1.4 Restrictive Covenant

A restrictive covenant was recorded for the subject property on June 8, 1998. The restrictive covenant stipulated: that soils that are removed from the subject property must be characterized, that activities which would result in exposure of subsurface soils in capped areas are restricted and new cap material must be provided, that activities which would result in groundwater being used as drinking water are restricted, that no intrusive work is to be completed in the former tank area, and that there is to be no construction in the area of monitoring well #9.

2.2 BEA Category

Currently, the property is not being used and the intended future use of the property is for the development of a wildlife preserve and interpretive center. Since the existing and proposed future use of the property will not involve the use of any significant quantities of hazardous substances, a "Category N" BEA was conducted.

3.0 PROPERTY DESCRIPTION AND INTENDED HAZARDOUS SUBSTANCE USE

3.1 Property Description

The subject property is approximately 33 acres in area, and is located in Section 25, Township 4 South, Range 11 East, in the City of Trenton, Wayne County, Michigan (Figure 1). The property is bounded on the north by Solutia Inc., to the south by undeveloped land, to the east by the Detroit River and to the west by Jefferson Avenue. A legal description of the subject property is provided in Appendix C and the tax identification number is 54-02-699-000-2.

3.2 Intended Hazardous Substance Use

As previously mentioned, it is intended that the future use of the subject property will include redeveloping the subject property as part of a wildlife preserve and interpretive center, and as such may include buildings, landscaped areas and parking areas. It is not anticipated that hazardous substances or chemicals will be used or stored at the subject property.

4.0 KNOWN CONTAMINATION

4.1 Known Hazardous Substances Present on the Property

The following sections present a summary of documented soil and groundwater impacts at the subject property and the corresponding remedial actions implemented.

4.1.1 Soil Contamination

Surface soil samples collected by MLH indicated that levels of lead (CAS# 7439921) in the soil from the eastern side of the subject property exceeded the Part 201 Direct Contact Criteria (DCC). An investigation was completed to delineate the affected areas for capping and laboratory analytical results from that investigation are included in Appendix D.

Subsurface soils in several areas of the subject property, particularly in the southeastern portion where fill was present, were also found to have levels of lead and arsenic (CAS# 7440382) that were above DCC. In addition, "synthetic leachate analysis" was performed by MLH in order to determine the potential of lead and/or arsenic entering the groundwater. The results indicated that the amount of leachable lead and leachable arsenic from the soil samples was less than the amount leached from background or native soils. Therefore, MLH concluded that the lead and arsenic impacted soils were eliminated as a pathway for ground water and surface water.

MLH documented that the results of previous sampling events indicated xylenes (CAS#1330207) levels above the MDEQ Soil Saturation Concentration (Csat) in the former tank farm area. A limited subsurface investigation was performed by MLH in 1996 to determine whether free product was present. Four monitoring wells (three near the edge of property, one in the middle of the impacted region) were installed and eight soil borings were advanced. MLH determined, using the monitoring wells, that there was no free product and that VOCs were not migrating off site. The concentrations of benzene (CAS#71432), toluene (CAS#108883), ethylbenzene (CAS#100414) and total xylenes (BTEX) in soils sampled during the limited investigation and in previous investigations were all below direct contact criteria (per MERA Operational #14 dated June 6, 1995). The laboratory analytical data from the investigation at the former tank farm area is included in Appendix E. Since impacted soils were located below the upper level of soil (top 12 inches) a restrictive covenant was put into place in the former tank area which prohibits disturbing or contacting lower soils without appropriate safety measures and prohibits the installation of drinking water wells. The maximum known sampled concentrations of hazardous substances in soil are shown in Table 1.

4.1.2 Ground Water Contamination

According to the Remedial Action Plan, VOCs {benzene, chlorobenzene (CAS#108907), methylene chloride (CAS#75092) and vinyl chloride (CAS#75014)} and inorganics {arsenic (CAS#7440382), barium (CAS#7440393), cadmium (CAS#7440439), lead and thallium (CAS#7440280)} were present at levels greater than the Part 201 Ground Water Surface Water Interface Protection Criteria (GSIPC) in onsite monitoring wells from the southeastern portion of the subject property. Based on MLH's estimated concentration of venting groundwater into the Trenton Channel of the Detroit River, calculated for each parameter, and the fact that the source material had been removed, MLH deemed no remedial action was necessary for the groundwater contamination in the southeast section of the subject property. Appendix F includes the MDEQ letter approving the groundwater mixing zone calculations.

Ground water in the former tank farm area was found by MLH to have levels of benzene that exceeded Residential Drinking Water Criteria in 1996. MLH concluded that the benzene appears to be limited to the former tank farm area and does not extend beyond the subject property boundaries. The laboratory analytical data from the investigation at the former tank farm area is included in Appendix E. Therefore, a restrictive covenant, as mentioned in Section 4.1.1, was put into place for the former tank farm area which prohibits use of groundwater for drinking water and direct contact with groundwater. The maximum known sampled concentrations of hazardous substances in groundwater are shown in Table 2.

4.2 General Location and Extent of Known Contamination

The maximum known hazardous substances identified at the subject property are summarized in Sections 4.1.1 and 4.1.2. Table 1 and 2 show the compounds and their maximum known sampled concentration at the subject property, corresponding historical maps of sampling locations are included in Appendix G.

To reiterate, lead and xylenes were detected in surface soils, and lead and arsenic were detected in subsurface soils, at levels above applicable Part 201 criteria. The presence of lead above criteria appears to be limited to the southeastern portion of the subject property. The presence of xylenes above criteria appears to be limited to the former tank farm area. The subsurface lead and arsenic is located in areas of fill, mainly on the eastern portion of the subject property. Although not mentioned as a continuing concern, the Remedial Action Plan (RAP) indicated that soils with asbestos-containing materials (CAS#1332214) have also been documented in the north backlot area and were capped in 1987 with one foot of fill material.

Concentrations in groundwater of benzene, chlorobenzene, methylene chloride, vinyl chloride, arsenic, barium, cadmium, lead and thallium exceeded applicable Part 201 criteria

in the southeast corner of the subject property and benzene exceeded Part 201 criteria in the former tank area of the subject property.

5.0 LIKELIHOOD OF OTHER CONTAMINATION

Based on the known history of the subject property, and on the results of the previous investigations performed, the regulated substances detected at the subject property have been identified as VOCs and inorganics in soil, and VOCs and inorganics in groundwater. As such, the "facility" designation is based on the above listed compounds present at the subject property, particularly those compounds and metals itemized in Sections 4.1.1 and 4.1.2 which exceed Part 201 criteria.

The source of the compounds upon which the facility designation is based is unknown, but appears to be associated with previous activities at the subject property. Thus, the fact that only those compounds itemized above were detected in the analyzed soil and groundwater samples at concentrations exceeding their respective Part 201 criteria, does not preclude the presence of other hazardous compounds within the soil and groundwater at the subject property. As such the likelihood of other contamination is subject to the limitations detailed in Appendix H.

The future anticipated use of the facility is for the development of a wildlife center and interpretive center. Therefore, the potential for exacerbating existing contamination is considered to be minimal. It is understood that the application of appropriate due care is essential to minimize the potential for exacerbation of existing contamination and to prevent a future release from heretofore unknown existing sources, if present, and/or exacerbation of and exposure to known contaminants.

6.0 ALTERNATIVE APPROACHES

Alternative approaches are not applicable for this "Category N" BEA.

7.0 CONCLUSIONS

As previously indicated, multiple investigations were conducted at the subject property which confirmed the presence of regulated substances in soils and groundwater at concentrations that exceeded applicable Part 201 criteria. Remedial actions have been implemented to minimize further impacts. A Section 20107a compliance analysis details the due care actions for the subject property and is presented in Appendix I.

7.1 Current and Future Contamination

The presence of regulated substances has been confirmed in soils and groundwater at the subject property, especially in areas around the southeast portion of the subject property and the former tank farm area. In summary, the nature, and on a limited basis, the extent and severity of contamination have been qualified and quantified. As a result of the defined conditions at the property, the remedial actions implemented, and the anticipated future use involving no significant hazardous substances used; it is concluded that the characterization of existing conditions at the "Former Trenton Chemical Facility" located on Jefferson

Avenue in Trenton, Michigan is sufficient to provide a basis upon which to "reasonably define existing conditions and circumstances at (the) facility so that...there is a means of distinguishing (a) new release from contamination that existed at the time of (facility) transfer".

8.0 REFERENCES

The following references were utilized in preparation of this BEA.

Part 201 Generic Cleanup Criteria and Screening Levels, MDEQ Operational Memorandum #18, dated May 28, 2000.

Instructions for Preparing and Disclosing Baseline Environmental Assessments and Section 7a Compliance Analyses to the Michigan Department of Environmental Quality and for Requesting Optional Determinations, MDEQ, effective date March 11, 1999.

Remedial Action Plan and Closure Report, Trenton Chemical Site, prepared by McLaren Hart, Corp., for the Chrysler Corporation in cooperation with The Michigan Department of Natural Resources, dated February 12, 1997.

Site Assessment Summary Report, prepared by McLaren Hart, Corp., dated May 12, 1995.

Declaration of Restrictive Covenant, recorded with the Wayne County Register of Deeds, dated June 8, 1998.

TABLE 1

HIGHEST SAMPLED SOIL CONCENTRATIONS

THE MANNIK & SMITH GROUP, INC.

TABLE 1: MAXIMUM KNOWN CONCENTRATIONS IN SOIL
Former Trenton Chemical Facility

Soil Parameter of Concern	CAS #	Location	Sample ID	Concentration (mg/kg)	Sample Date
Lead	7440382	Eastern Portion of Site	AL-7 (0-2')	2100 [1]	Sep-95
Lead	7439921	Subsurface	HB-9 (4-6')	2500 [2]	Oct-94
Arsenic	7439921	Subsurface	HB-9 (4-6')	14 [2]	Oct-94
Total Xylenes	1330207	Former Xylene Tank Farm Area	X-5 (11-13')	660 [1]	Sep-96

Notes:

1). Data contained in *Remedial Action Plan*, prepared by McLaren Hart, Corp., dated February 12, 1997.

2). Data contained in *Site Assessment Summary Report*, prepared by McLaren Hart, Corp., dated May 12, 1995.

TABLE 2

HIGHEST SAMPLED GROUND WATER CONCENTRATIONS

THE MANNIK & SMITH GROUP, INC.

TABLE 2: MAXIMUM KNOWN CONCENTRATIONS IN GROUND WATER
Former Trenton Chemical Facility

Ground Water Parameter of Concern	CAS #	Location	Monitoring Well	Concentration (ppm)	Sample Date
Benzene	71432	southeast corner	MW-9	1.1 [2]	Aug-91
Chlorobenzene	108907	southeast corner	MW-9	0.87 [2]	Aug-91
Methylene Chloride	75092	southeast corner	MWD-9	0.084 [2]	Feb-92
Vinyl Chloride	75014	southeast corner	MW-9	4 [2]	Aug-91
Arsenic	7440382	southeast corner	MWD-8	0.094 [2]	Feb-92
Barium	7440393	southeast corner	MW-3	16 [2]	Aug-91
Cadmium	7440439	southeast corner	MWD-6	0.017 [2]	Feb-92
Lead	7439921	southeast corner	MW-8	0.023 [2]	May-94
Thallium	7440280	southeast corner	MWD-4	0.13 [2]	Nov-91
Benzene	71432	former tank farm area	Z-1	0.028 [1]	Sep-96

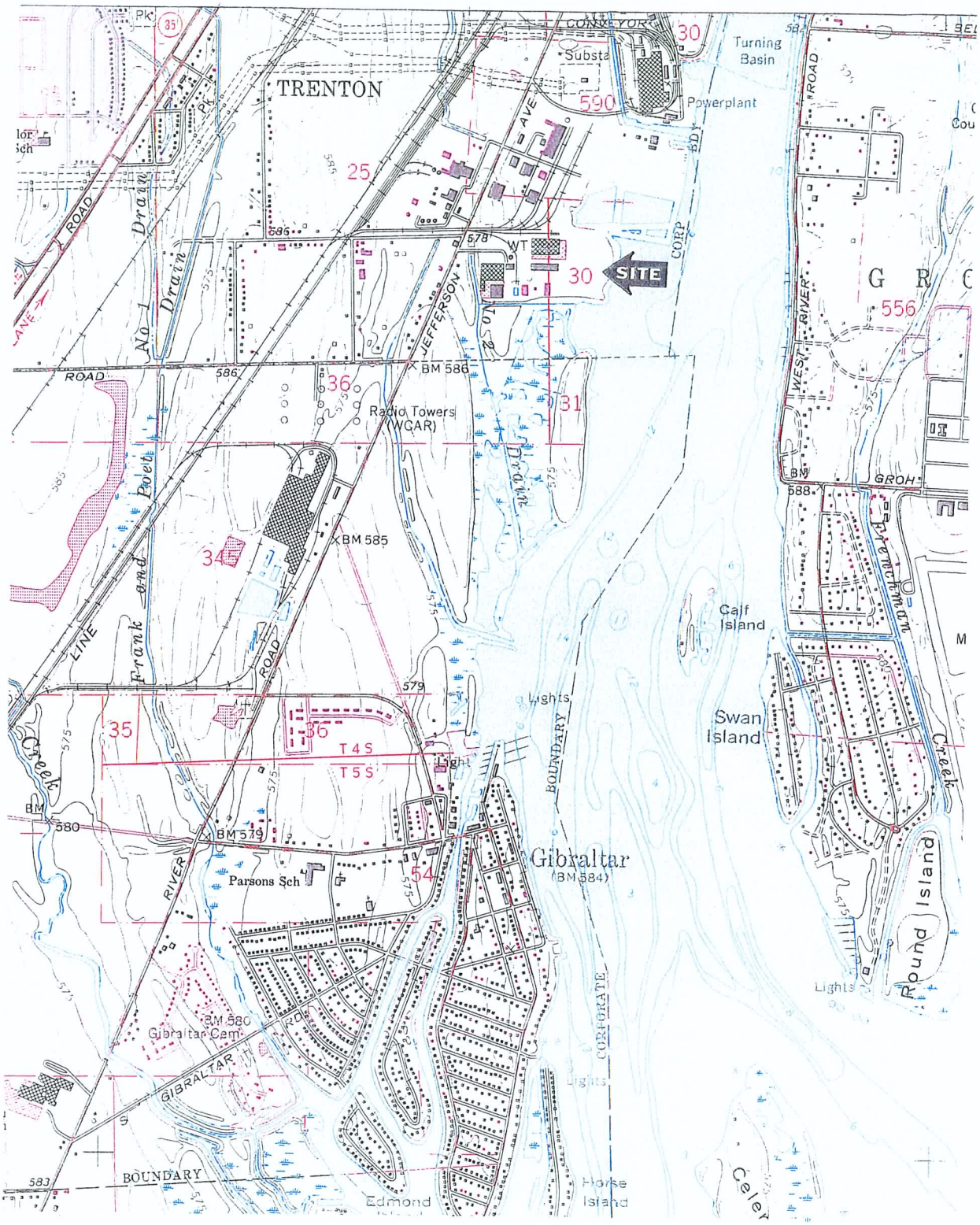
Notes:

1). Data contained in *Remedial Action Plan*, prepared by McLaren Hart, Corp., dated February 12, 1997.

2). Data contained in *Site Assessment Summary Report*, prepared by McLaren Hart, Corp., dated May 12, 1995.

FIGURE 1

SITE LOCATION MAP
THE MANNIK & SMITH GROUP, INC.



N

SCALE 1"=2000'

0' 2000' 4000'

The Mannik & Smith Group, Inc.
15300 Rotunda Drive, Suite 306 Dearborn, Michigan 48120
Telephone: (313) 271-2223

FIGURE 1

SITE LOCATION MAP

DATE	DRAWN BY	DESIGNED BY	PROJECT NO.
9/02	MHZ	WJB	–

FIGURE 2

FORMER SITE USE MAP

THE MANNIK & SMITH GROUP, INC.

MONSANTO CHEMICAL

PARKING
PARKING
STORAGE AREA
OFFICES
OVEN AREA
SAW AREA
FRICTION PRODUCTS BUILDING
CURING AREA
PRESS AREA
OVEN AREA
NORTH BACKLOT
WATER TANK
WATER TANK
OFFICES
OFFICES LUNCH ROOM
POWER HOUSE
STORAGE
INDUSTRIAL STORAGE AREA
CONCRETE PARKING
PISTON MANUFACTURING BUILDING
FORMER SWALE
JEFFERSON AVENUE
MATERIAL HANDLING/ NORTH PARKING LOT
CHEMICAL BUILDING
FORMER WASTEWATER RETENTION PONDS
SLUDGE POND
PROCESS WASTE
APPROXIMATE LIMITS OF FORMER EXCAVATION
SOUTH BACKLOT
MATERIAL STORAGE "RACE TRACK"
WAREHOUSE
LABORATORIES
CONCRETE PARKING
TANK FARM/ ROLLING OIL BUILDING
ROLLING OIL BUILDING
FORMER STORM WATER POND
SHORELINE 1939
DRUM STORAGE PAD
DETROIT RIVER
TANK FARM AREA
CONCRETE
GRAVEL
WASTE TREATMENT PLANT
OVERFLOW POND
MONGUAGON STORM DRAIN
WATER INTAKE STRUCTURE

MCLOUTH STEEL

LEGEND

APPROXIMATE LOCATION OF FENCE

RAILROAD

SCALE
0 100 200 400 FEET

SITE PLAN
FORMER TRENTON CHEMICAL FACILITY
TRENTON, MICHIGAN

PREPARED FOR
CHRYSLER CORPORATION

McLaren Hart
ENVIRONMENTAL ENGINEERING

DATE: /26/91
FIGURE 2-3
DRAWING NUMBER

NOTE:
1. THIS SITE PLAN DEPICTS THE LAYOUT OF STRUCTURES AS THEY EXISTED PRIOR TO FACILITY DEACTIVATION IN 1988.

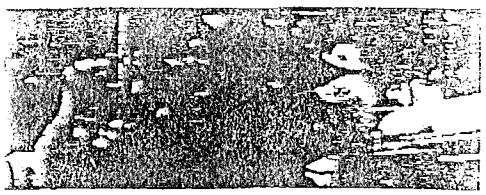
DRAWN BY: DAG
DATE: 02/11/97
CHECKED BY
APPROVED BY
DRAWING NUMBER 280-
REVISIONS
DESCR.
APPR. BY:

APPENDIX A

REMEDIAL ACTION PLAN AND CLOSURE REPORT
THE MANNIK & SMITH GROUP, INC.

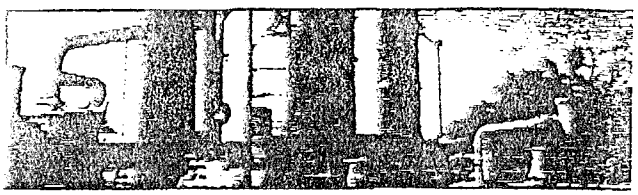
Remedial Action Plan and Closure Report

TRENTON CHEMICAL SITE
TRENTON, MICHIGAN



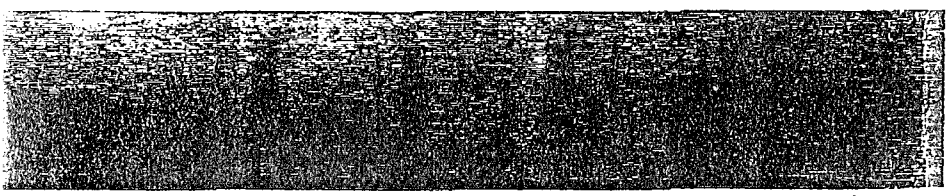
Prepared for:

CHRYSLER CORPORATION



in cooperation with:

Michigan Department of Natural Resources



February 12, 1997

Prepared by:

McLaren Hart

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Vice President

February 12, 1997

Project No. 070803219001.007

REMEDIAL ACTION PLAN AND CLOSURE REPORT TRENTON CHEMICAL SITE TRENTON, MICHIGAN

EXECUTIVE SUMMARY

The Trenton Chemical site (Site), located along the Detroit River, approximately one mile south of the City of Trenton, has a soil lithology that is composed mainly of natural clay-rich soils on the western portion and primarily fill material on the eastern portion of the Site. The fill material in the eastern portion of the Site was placed between 1940 and 1967 to fill low lying areas and increase the useable size of the property. Bedrock depth ranges between 8 and 20 feet below grade (from west to east), with the deepest bedrock being encountered near the Detroit River. Recent measurements show depth to groundwater ranging between 8 and 13 feet below grade both in wells screened in the overburden at the overburden-bedrock interface, and in wells screened in bedrock. The presence of groundwater at the Site however, is variable. The predominantly fine-grained unconsolidated soils preclude a well developed unconsolidated water-bearing unit, and groundwater in the bedrock depends on the degree of fracturing and weathering in the bedrock. Groundwater in the overburden and upper bedrock is apparently connected. On the eastern half of the Site, groundwater flow is toward the Detroit River and the Monguagon Drain. On the western half of the Site, water flows toward the northwest. No groundwater was encountered in the unconsolidated soils in some locations in the central portion of the Site during the investigation.

Soils and groundwater were found to be affected as a result of historical activities at the Site and fill material used to extend the property. Remedial actions have been undertaken to remove and/or isolate industrial materials at the Site. Current analytical data obtained from soil and groundwater sampling at the Site is below the June 6, 1995, Environmental Response Division Operational Memorandum #14, Revision 2, Generic Industrial and Commercial Cleanup Criteria. The Site Summary Report, prepared by McLaren/Hart and dated May 12, 1995, indicates the following issues for soils and groundwater at the Site which are addressed in this Remedial Action Plan for Industrial Closure.

- Localized pockets of soils in the eastern portion of the Site exceed the Generic Industrial and Commercial Cleanup Criteria outlined in the Environmental Response Division Operational Memorandum #14, Revision 2, dated June 6, 1995, for lead.

- The higher metals concentrations, found in both shallow and deep soils, appear to be related to the historical fill brought onto the Site to extend the property and not to material handling activities.

- Areas of higher lead concentrations, present in on-site surface soils above Generic Industrial Cleanup Criteria on the eastern portion of the property, were delineated during site preparation activities. As part of the corrective action leading to Site closure, a soil cover system was placed over the lead-affected area in the South Backlot and restrictive covenants detailing end use limitations have been implemented.

- VOCs and inorganics exceeding the Generic Industrial and Commercial Cleanup Criteria (20X Drinking Water) have been consistently detected during groundwater sampling conducted in the unconsolidated fill materials and bedrock in the southeast corner of the Site. Groundwater

sampling conducted around the impacted monitoring wells MW-9 and MWD-9 indicate that the impacted area is limited in extent and is related to source materials removed during earlier remedial actions. Groundwater leaving the Site and venting into the Trenton Channel has been demonstrated to have no appreciable impact on water quality in the Trenton Channel. Therefore, no further action is warranted to achieve closure.

This "Remedial Action Plan for Generic Industrial Closure Report" completes the requirements outlined in the Consent Decree ordered to Chrysler Corporation on November 25, 1994. The following requirements have been completed:

Site Assessment Report	December 16, 1994
Health and Safety Plan	January 18, 1995
Quality Assurance Project Plan	February 2, 1995
Sampling and Analysis Plan	February 10, 1995
Site Assessment Work Plan	February 10, 1995
Commence Field Investigation	Completed prior to issuance of Consent Decree
Final Site Assessment Summary Report	May 12, 1995
Remedial Action Plan	Refer to Section 4.0 of this Report
Commence Remedial Action	Refer to Section 5.0 of this Report

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1.0 INTRODUCTION

1.1 Purpose of Report

McLaren/Hart Engineers Midwest, Inc. (McLaren/Hart) was retained by Chrysler Corporation (Chrysler) to conduct a site soil and groundwater investigation and to assess and implement remedial actions at the former Acustar, Inc. Trenton Chemical facility, Trenton, Michigan (Site). Findings from the Site investigation have defined the extent of chemical compounds in Site soils and groundwater and have provided the basis for remedial actions that have been performed to achieve a Michigan Department of Environmental Quality (MDEQ) Memorandum 14, Revision 2 (June 6, 1995) Generic Industrial and Commercial closure. Historical remedial actions at the Site are summarized in Section 5.0 of this report and are detailed in the Site Assessment Report prepared by McLaren/Hart dated December 16, 1994.

The objectives of this Report are to:

- Review Site history, geology and hydrogeolgy;
- Assess the applicability of relevant and appropriate regulatory requirements;
- Prepare a Remedial Action Plan (RAP) that outlines corrective actions that would achieve closure of groundwater and soil issues at the Site;
- Detail the scope of work for the corrective actions performed at the Site to implement the objectives set forth in the RAP; and
- Delineate areas of the Site that will require institutional controls in the form of restrictive covenants.

1.2 Report Organization

This report has been divided into six sections as follows:

Section 1.0 - Presents the report introduction and includes the purpose and objectives of the scope of work performed.

Section 2.0 - Presents the Site background and includes Site location, description of the Site and surrounding areas, and historical industrial activities performed at the Site prior to plant closure. This section also includes a discussion on the regional geology, hydrogeology and groundwater quality associated with the Site. The information in this section provides the basis for identifying the principal areas of concern that directed the site investigation.

Section 3.0 - Presents the applicable or relevant and appropriate requirements (ARARs) specific to the Site.

Section 4.0 - Presents the final remedial action plan (RAP) detailing proposed remedial actions to address issues for soils and groundwater at the Site.

Section 5.0 - Discusses the implementation of the remedial actions outlined in the RAP. Included also in this section is a summary of the historical remedial activities that have already been undertaken at the Site. Further details on these activities are discussed in the McLaren/Hart document "Site Assessment Report" dated December 16, 1994.

Section 6.0 - Conclusions

Section 7.0 - References

Appendices of this report present supporting documentation for the work performed between June 1994 and January 1997, including groundwater modeling data, soil cover placement documentation, summarized laboratory analytical data, and quality control information.

2.0 SITE BACKGROUND

McLaren/Hart performed a review of available literature and aerial photographs, and interviewed key personnel to develop an understanding of the Site and chemical use history. Historical aerial photographs were obtained from the facility, private archives, and the Michigan State University Center for Remote Sensing. Regional geologic and hydrogeologic data were compiled from documents available at the Michigan Department of Environmental Quality (MDEQ) Geologic Survey. Information concerning past environmental issues, construction activities, and regulatory inspections were obtained from a review of files at the MDEQ, Wayne County, and City of Trenton. Additional site information is provided in the McLaren/Hart document "Site Assessment Report," December 16, 1994.

2.1 Site Description

The former Acustar, Inc. Trenton Chemical facility is situated along the western bank of the Detroit River about one mile south of the City of Trenton in Wayne County, Michigan. Figure 2-1 is the site location map.

The Site is accessed from Jefferson Avenue and occupies approximately 33 acres. The Site consists of both natural and man-made land deposits. Placement of fill soil along the eastern portion of the Site from at least the early 1940s until the late 1960s has resulted in an increase in useable Site property as illustrated in Figure 2-2. Figure 2-3 illustrates the Site plan and the locations of the former buildings prior to closure and deactivation in 1990.

Following plant closure, all above ground structures were removed from the Site. Several foundations remained to delineate the locations of former buildings. Existing non-building features included a parking lot and railroad spur, concrete and asphalt paved roadways, and an asphalt staging pad constructed as part of the site remedial actions. In 1995 operations were undertaken to prepare the Site for future re-use. These operations are detailed in Section 5.2.4. A portion of foundation associated with the former Wastewater Treatment Plant was left in place at depths greater than 6 feet below grade and therefore, presents no physical obstruction. All physical debris was removed and properly disposed. The Site was degrubbed, graded, and re-vegetated to mitigate erosion.

The municipal Monguagon Stormwater Drain traverses the Site in a north-south direction west of the former *Chemical Building* (Figure 2-3). The onsite portion of this drain flows through an underground culvert. Flow is aboveground south of the Site and parallels the facility's southern boundary until it empties into the Detroit River.

The Site, for the purpose of the Site investigation, was subdivided into eight sub-areas based on plant activities which have taken place in each area. The eight designated sub-areas, as shown on Figure 2-3, are as follows: 1) *South Backlot*; 2) *North Backlot* (separated by a former east-west drainage swale that carried the non-contact cooling water from the Friction Products and Piston Manufacturing facility); 3) *Friction Products Building/Piston Manufacturing Building*; 4) *Wastewater Retention Ponds*; 5)

Industrial Materials Storage Area; 6) *Tank Farm/ Rolling Oil Building Area*; 7) *Chemical Building*; and 8) *Front Yard Materials Storage/Northern Parking Lot Area*.

2.2 Description of Surrounding Area

The island of Grosse Ile and the Detroit River are located east of the Site. The property to the north and northwest is owned by Monsanto Chemical, Inc., which operates a food-grade phosphate manufacturing facility on approximately 20 acres of land. North of the Monsanto property is a coal-fired power plant owned and operated by Detroit Edison. The western edge of the Site borders Jefferson Avenue. Adjacent to the southern property boundary is undeveloped acreage, formerly owned by McLouth Steel (currently owned by Waste Management, Inc.). The Detroit Edison Plant and the Monsanto Plant are the only major industrial facilities within the immediate area of the Site.

2.3 Site History

In 1946, Chrysler applied to the City of Trenton for a building permit to construct the first building on the Site, known as the *Chemical Building*. A number of additional buildings were constructed from 1952 through 1973 and include the *Friction Products Building*, the *Piston Manufacturing Building*, the *Rolling Oil Building*, and *Power House Building*.

The Trenton Chemical facility, which was in operation for approximately 44 years, has manufactured brake pad adhesives for automobiles, blended oils, paints, sealers, powdered metal parts, asbestos brake pads, and phenolic brake pistons.

A review of aerial photographs indicates that fill was placed in the eastern portion of the property from as early as the 1940s through 1967 to extend the property eastward into the river. This practice was common in the Great Lakes and especially the Detroit area. Expansion of the Site shoreline has been mapped based on historical aerial photographs and soil boring logs developed as part of the site investigation (Figure 2-2).

Four *Wastewater Retention Ponds* were constructed in the 1970s, as part of the onsite wastewater treatment facility. Residuals from the ponds were removed and properly disposed in 1990 as part of the plant deactivation activities performed by The Chester Engineers. In 1993, the *Wastewater Retention Ponds* were filled to grade with imported aggregate and clayey fill material, as detailed in McLaren/Hart's Dewatering and Backfill Summary, dated May 24, 1996.

The plant was deactivated in the spring of 1990 and underwent removal of all above ground structures. All issues relating to deactivation of the facility, such as: demolition of buildings and structures; removal of surface stained soils; removal of asbestos in buildings; cleaning of the *Wastewater Retention Ponds*; removal of remaining underground tanks and closure of the remaining above ground tank farm and associated piping, were supervised in 1990 by The Chester Engineers. Any surficial stained soils were removed, characterized, and disposed offsite. Details concerning deactivation can be found in the Deactivation Report prepared by The Chester Engineers in 1992.

2.4 Regional Geology

The Site is situated in the Erie-Huron lowland on the southeast flank of the Michigan Basin. The Michigan Basin is a concentric, depositional and structural basin whose present center lies near Saginaw Bay and has existed in some form since Pre-Cambrian time. The Michigan Basin sedimentary rock consist of Paleozoic sediments overlying igneous and metamorphic crystalline basement. The sediments are 13,000 feet thick in the center of the basin and thin to about 3,000 feet near the edges. Rock units in the basin are like nested layers in a bowl with the youngest consolidated formations on top near the center of the basin and successively older rock units subcropping away from the basin center. Regional dip of the bedrock is usually less than 35 feet per mile, toward the center of the basin (Twenter, 1975).

Within the area of the Trenton Chemical facility, bedrock appears to be composed of Middle Devonian carbonates of either the Dundee Limestone or the Detroit River Formation (Mozola, 1969, Twenter, 1975). Bedrock elevation is about 550 feet above mean sea level (Mozola, 1969).

The Dundee Limestone consists of gray to buff to light brown cherty limestone and dolomite, fine to coarsely crystalline, thin to massively bedded. Siliceous beds, secondary calcite and fossiliferous zones may be present. Frosted quartz grains may be present in the lower basal beds, which are often difficult to distinguish from the underlying Detroit River Formation (Lilienthal, 1978).

The Detroit River Formation consists primarily of dolomite with occasional argillaceous and cherty gray to buff limestone. The Anderdon Formation, in the upper portion of the Detroit River, is a high calcium limestone that cannot be easily distinguished from the overlying Dundee.

These two carbonate units generally show extensive weathering in the subsurface. The carbonates have very irregular surfaces and may show evidence of solution weathering and secondary porosity.

Glacial sediments of the Wisconsin or last ice sheet of the Pleistocene Age unconformably overlie the Devonian carbonate bedrock. Except for a few isolated outcrops, bedrock is not exposed at the surface in the Michigan Basin.

In the vicinity of the Site the glacial deposits consist primarily of lacustrine or lakebed clays and silts, which may show evidence of varving. These lakebed clays were formed through inundation of extensive lowlying areas by the Great Lakes during higher lake levels and also from smaller lake basins, which include small areas of lacustrine sand and clay rich till. Thickness of the unconsolidated sediments varies from 3 to 35 feet (Farrand, 1982).

Glacial drift methane gas can often be present in pockets within the glacial drift in areas of thicker fine grained sediments. These pockets are probably the result of methane migrating vertically upward through bedrock, from oil-bearing strata, which is then trapped by the fine-grained sediments. There is a reported instance of drift gas encountered within three miles of the Trenton facility (MDEQ, 1977).

Surficial topography is generally flat, varying less than 10 feet across the area. The area around the Site may be classified as estuarine (Twenter, 1975), and poorly drained with soils consisting of the Brookston, Blount, Hoytville, Toledo, and Colwood Associations. The Site lies on land described primarily as cut and fill, although the Hoytville silty clay loam and the Metamora sandy loam are present in the southwest corner of the Site (USDA, 1977). Marshland exists to the south of the Site.

Water infiltration in soil ranges from 1 to 2 inches per hour in natural soils. Historical soil conditions within the Detroit and downriver geographic areas prior to development consisted of poorly drained marshy land with numerous channels and wetlands. Community and industrial development has, for the most part, filled-in wetlands and most surface drainage has now been directed toward man-made drains. Nearby drains in the vicinity of the Site include the Monguagon Drain, the Brownstown Creek, and the Frank and Poet Drains.

2.5 Regional Hydrogeology

Regionally, groundwater may be found in both the unconsolidated glacial drift sediments and in the underlying Devonian carbonate system. In most locations, the upper bedrock units behave as one aquifer. Water encountered in bedrock may or may not be connected to the water present within the overlying drift deposits. Water within the glacial till and consolidated bedrock can exist under confined or unconfined (or water table) conditions.

Glacial lake plain sediments are not favorable for the development of moderate to large well yields (Mozola, 1969). However, the glacial sediments may supply small domestic supplies locally if sand lenses are present. Storage capacity of the aquifer would be limited to the particular sand lens tapped and may not produce water during drought conditions. Artesian conditions may be expected if the sand lens is overlain by relatively impermeable clays.

Groundwater in the bedrock of Wayne County generally occurs under artesian conditions (Mozola, 1969). Water within carbonate units most often moves through fractures, joints, bedding planes, and solution cavities caused by weathering. Permeability is controlled by secondary porosity pathways in the rock, and thus, yields in bedrock are highly variable. If the carbonate unit in a particular area has undergone weathering and solution of the rock, permeability may be very high. If the rock has not been exposed, the rock may be almost impermeable to water flow. These changes may occur over tens of feet laterally and make it difficult to predict flow patterns within the rock.

The City of Trenton obtains its water supply from surface water through the Detroit Metro Water Department. Eighty percent (80%) comes from the Fighting Island intake and twenty percent (20%) comes from the Belle Isle intake in the Detroit River which are located upriver from the Site.

2.6 Regional Groundwater Quality

Data pertaining to the regional water quality of the Michigan Basin was compiled by the Western Michigan University Department of Geology in conjunction with a U.S. Environmental Protection

Agency (U.S.EPA) study for underground injection control. In 1974, the United States Geological Survey (USGS) and the Michigan Geological Survey (MGS) sampled 27 wells completed in glacial drift and 36 wells completed in bedrock from both the northern and southern peninsulas of Michigan. The results of this study indicated that with the exception of iron, aluminum, titanium, magnesium, and calcium, the majority of the 86 analytical parameters fell within the concentration ranges of common groundwater (U.S.EPA, 1981). The region encompassing the Site (Southeastern Southern Peninsula) was also characterized by barium and ammonia concentrations above these concentration ranges. Lead was the only parameter found to exceed an established U.S.EPA primary drinking water maximum contaminant level (MCL) during the regional study (13% of the samples tested). Secondary MCLs were exceeded for iron (44% of the samples) and manganese (30% of the samples).

Twenter (1975) examined the chemical water quality of groundwater in the basins of minor streams along the Detroit River. Water from glacial deposits had a dissolved solids concentration ranging from 276 to 1,390 mg/l. Hardness varied from 132 to 318 mg/l. Dissolved solids concentrations in bedrock varied between 157 and 2,820 mg/l. Groundwater in the bedrock aquifer is often hard, with high chloride and sulfate concentrations as well.

In the bedrock aquifers of the Michigan Basin, there is a contact between fresh water existing in the upper portions of the aquifer where flushing action from surface waters is occurring and the saline or unusable water of the lower portions of the aquifer. The Site is near the boundary of the saline portion of the Devonian aquifer (USGS, 1977). This would suggest that natural groundwater conditions within the bedrock groundwater in this area are likely to be somewhat saline.

3.0 IDENTIFICATION OF CHEMICAL, LOCATION AND ACTION-SPECIFIC APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs)

The following section develops ARARs specific to the Trenton Chemical Site. The purpose of the development of these standards is to evaluate selected remedial alternatives against Federal and State requirements. ARARs are defined:

"Applicable Requirements" are those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under Federal or State law that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a site (USEPA 1988).

"Relevant and Appropriate Requirements" are those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under Federal or State law that, while not "applicable" to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a site, address problems or situations sufficiently similar to those encountered at the site that their use is well suited to the particular site (USEPA 1988).

Applicable requirements imply that the jurisdictional prerequisites of a requirement are satisfied by a circumstance of the site or a remedial action. Relevance and appropriateness can be judged by comparing the characteristics of the remedial action, the hazardous substances in question, or the physical circumstances at the site with those addressed by a requirement. In considering the potential relevance or appropriateness of a requirement, it is helpful to consider the origin and objective of the requirement (USEPA 1988).

If relevant and appropriate, a requirement must be complied with to the same degree as applicable requirements. However, there is more discretion in the determination of relevance and appropriateness. It is possible for only part of a requirement to be considered relevant and appropriate and for the rest to be dismissed (USEPA 1988).

Nonpromulgated criteria, advisories or guidance issued by Federal or State agencies do not have ARAR status; however, they may be considered in determining necessary cleanup levels for the protection of public health or the environment. These criteria, advisories, and guidances may be classified as to be considered (TBC) where no specific ARARs exist for a chemical or situation or where ARARs are not sufficient to be protective of public health and the environment (USEPA 1988).

ARARs can be placed into three categories: chemical-specific, location-specific, and action-specific. A definition of these ARARs and identification of potential ARARs for the Trenton Chemical Site are discussed in detail below.

<u>Chemical-Specific ARARs</u>. Chemical-specific ARARs set health-based or risk-based concentration limits or discharge limitations in various environmental media for specific hazardous substances. These requirements generally set protective cleanup levels for the chemicals of concern in the designated media,

or indicate an acceptable level of chemical discharge to an environmental medium occurring as a result of a remedial activity. If a chemical has more than one ARAR, the more stringent requirement is generally complied with. Maximum Contaminant Levels (MCLs) and National Ambient Air Quality Standards are examples of chemical-specific ARARs.

Location-Specific ARARs. Location-specific ARARs restrict the concentrations of hazardous substances or the type of activities conducted at a site based solely on the site's location. Examples of this type of ARAR include floodplains, wetlands, historic properties and sensitive ecosystems or habitats.

Action-Specific ARARs. Action-specific ARARs are those requirements associated with the response actions under consideration for a site. These ARARs generally set performance, design, or other similar action-specific controls or restrictions on particular kinds of activities related to management of hazardous substances (i.e., RCRA requirements). Action-specific ARARs are independent of chemical-specific and location-specific ARARs.

ARARs can be identified only on a site-specific basis. They depend on the detected chemicals at the site, specific site characteristics, and particular remedial actions proposed for the site. Federal and state potential ARARs have been evaluated to determine their suitability for incorporation into a feasibility evaluation of onsite remediation activities at the Trenton Chemical Site. This evaluation is included in Table A.

TABLE A
APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs) AND TO BE CONSIDERED GUIDANCE (TBCs) TRENTON CHEMICAL SITE

ARARs	Legal Citation	Classification	Requirement Synopsis	Applicability to Selected Remedy
I. CHEMICAL SPECIFIC				
A. Soils and Sediment				
1. Michigan Natural Resources and Environmental Protection Act, Part 201, Environmental Response	Part 201 of Act 451 of 1994, as amended	Applicable	Act provides for the identification, risk assessment, and priority evaluation of environmental contamination sites in the state. Rules establish generic, compound-specific soil cleanup concentrations.	Applicable in developing site-specific cleanup goals.
B. Groundwater				
1. Michigan Natural Resources and Environmental Protection Act, Part 201, Environmental Response	Part 201 of Act 451 of 1994, as amended	Applicable	Act provides for the identification, risk assessment, and priority evaluation of environmental contamination sites in the state. Rules provide generic, compound-specific groundwater cleanup concentrations.	Potentially applicable in developing site-specific cleanup goals.
2. Michigan Natural Resources and Environmental Protection Act, Part 31, Water Resources Protection	Part 31 of Act 451 of 1994, as amended	Relevant and Appropriate	Act establishes surface water quality standards for discharges to waters of the State. Establishes guidelines to be used in the development of allowable levels of toxic substances in the waters of the State. Toxic substances are those listed on the 1984 Michigan critical materials register, priority pollutants and hazardous chemicals in 40 CFR Part 122.21 Appendix D.	Rules may be relevant and appropriate to alternatives which require treatment of groundwater on-site and discharge to surface waters (Trenton Channel of the Detroit River).
3. Safe Drinking Water Act	42 USC 300f	Relevant and Appropriate	Regulates water for human consumption. Contains criteria and procedures to assure supply of drinking water and to protect public welfare.	
a. National Primary Drinking Water Standards	40 CFR Part 141 Subparts B and G	Relevant and Appropriate	Regulations establish health-based standards maximum contaminant levels (MCLs) for public water supply systems.	MCLs are relevant and appropriate to groundwater contaminant concentration goals if the water in question is to be used as a drinking water supply. The water present underneath the Site is not used as a drinking water supply.

TABLE A
APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs) AND TO BE CONSIDERED GUIDANCE (TBCs) TRENTON CHEMICAL SITE

ARARs	Legal Citation	Classification	Requirement Synopsis	Applicability to Selected Remedy
b. Maximum Contaminant Level Goals	40 CFR Part 141 Subpart F	Relevant and Appropriate	Regulations establish maximum contaminant level goals (MCLGs) for drinking water quality set at levels of no known or anticipated adverse health effects with an adequate margin of safety.	Estimated potential health risks do not warrant drinking water standards more stringent than MCLs.
c. National Secondary Drinking Water Standards	40 CFR Part 143	Relevant and Appropriate	Regulations establish welfare-based standards for public water systems (secondary maximum contaminant levels).	Secondary MCLs are relevant and appropriate if the water is used as a drinking water supply. The water present underneath the Site is not used as a drinking water supply.
4. Michigan Safe Drinking Water Act	Act 399 of 1976	Relevant and Appropriate	Rules establish standards and criteria for public water supply systems. Incorporates, by reference, MCLs as standards.	May be relevant and appropriate in development of cleanup levels.
5. Federal Water Pollution Control Act, As amended by the Clean Water Act of 1977	33 USC 1251	Applicable	The Act's objective is to restore and maintain the chemical, physical and biological integrity of the Nation's Water.	
a. Water Quality Criteria	40 CFR Part 131	Applicable	Sets criteria for water quality based on toxicity to aquatic organisms and human health.	Water quality criteria are applicable for potential nonpoint discharges to the Trenton Channel of the Detroit River.
b. Toxic Pollutant Effluent Standards	40 CFR Part 129	Relevant and Appropriate	Establishes effluent standards or prohibitions for certain toxic pollutants: aldrin/dieldrin, DDT, endrin, toxaphene, benzidine, PCBs.	

TABLE A
APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs) AND TO BE CONSIDERED GUIDANCE (TBCs) TRENTON CHEMICAL SITE

ARARs	Legal Citation	Classification	Requirement Synopsis	Applicability to Selected Remedy
C. Air				
1. Clean Air Act	42 USC 7401	Relevant and Appropriate	Implements and sets rules for regional air pollution control program. Establishes Ambient Air Quality Standards, administered by the state under Part 55 of Act 451.	
a. National Ambient Air Quality Standards	40 CFR Part 50	Relevant and Appropriate	National limitations on ambient concentrations of pollutants intended to protect public health and welfare.	Potentially relevant and appropriate should selected remedial alternative generate emissions, including fugitive dust emissions.
b. National Emission Standards for Hazardous Air Pollutants	40 CFR Part 61	Relevant and Appropriate	Standards promulgated for air emissions from specific source categories.	Standards are relevant and appropriate for remedial alternatives which are considered specific sources of air emissions. Emissions must meet the chemical-specific standards.
2. Michigan Natural Resources and Environmental Protection Act, Part 55, Air Pollution Control	Part 55 of Act 451 of 1994, as amended	Relevant and Appropriate	State limitations on ambient concentrations of pollutants intended to protect public health and welfare.	Potentially relevant and appropriate should selected remedial alternative generate emissions, including fugitive dust emissions.
3. Wayne County Air Pollution Ordinance	NA	Relevant and Appropriate	Requires reporting and permits for all new sources of emissions in Wayne County. Wayne County Department of the Environment, Air Quality Management Division administers the program.	Permitting is relevant and appropriate for remediation work at the Trenton Chemical Site in Wayne County in which alternatives are selected which may obtain processes or equipment which are potential sources of air emissions.
4. Wayne County Sewer Use Ordinance	NA	Relevant and Appropriate	Requires reporting and permits for all wastewater discharges to Wayne County POTWs.	Permitting is relevant and appropriate for any selected alternative which involves water discharge to combined sewer drains to POTW.

TABI A
APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs) AND TO BE CONSIDERED GUIDANCE (TBCs) TRENTON CHEMICAL SITE

ARARs	Legal Citation	Classification	Requirement Synopsis	Applicability to Selected Remedy
II. LOCATION SPECIFIC				
A. The Endangered Species Act of 1978	16 USC 1531 50 CFR Part 402	To Be Considered	Requires federal agencies to ensure that any action authorized by an agency is not likely to jeopardize the continued existence of any endangered or threatened species or adversely affect its critical habitat.	To be considered in relation to all on-site activities which may affect a critical habitat or endangered species.
B. The Fish and Wildlife Coordination Act	16 USC 661-666C	To Be Considered	Provides for consideration of the impacts on wetlands and protected habitats. Requires consultation when federal department or agency proposes or authorizes any modification of any stream or other water body.	To be considered if remedial alternative results in improvements to the river's banks in the Trenton Channel of the Detroit River. To be considered in relation to any portions of the selected remedy which will be conducted in the undeveloped area.
C. The Fish and Wildlife Conservation Act of 1980	16 USC 2901	To Be Considered	Encourages Federal agencies to promote conservation of non-game fish and wildlife and their habitats.	To be considered in relation to all on-site activities which may affect non-game fish and wildlife or their habitats.
D. Rivers and Harbors Act of 1899 Section 10 Permit	33 USC 403 33 CFR Parts 320 - 330	Relevant and Appropriate	Section 10 requires permit for structures or work in or affecting navigable waters.	May be relevant and appropriate if remedial alternative includes structures or work in or affecting navigable waters.
E. Executive Order on Floodplain Management	EO 11988	Relevant and Appropriate	Requires Federal agencies to evaluate the potential effects of actions they may take in a floodplain to avoid adverse impacts associated with direct and indirect development of a floodplain.	
F. Wilderness Act	16 U.S.C. 1131 50 CFR Part 35.1	Not Applicable	Administer Federally-owned wilderness area to leave unimpacted.	No wilderness area on-site or adjacent to the Site.
G. National Wildlife Refuge System	16 U.S.C. 668	Not Applicable	Restricts activities within a National Wildlife Refuge.	No wildlife refuge area on-site or adjacent to the Site.
H. Scenic River Act	16 USC 1271, 1272 40 CFR Part 6.302C	Not Applicable	Prohibits adverse effects on a scenic river.	The Trenton Channel of the Detroit River is not classified as a scenic river.
I. Resource Conservation and Recovery Act of 1976 (RCRA)	42 USC 6901 40 CFR Part 264.18C	Not Applicable	Prohibition of placement of non-containerized or bulk liquid RCRA hazardous waste within a salt dome formation, underground mine or cave.	The Site does not contain any salt dome formation and/or underground mines or caves used for waste disposal.

TABLE A
APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs) AND TO BE CONSIDERED GUIDANCE (TBCs) TRENTON CHEMICAL SITE

ARARs	Legal Citation	Classification	Requirement Synopsis	Applicability to Selected Remedy
J. Resource Conservation and Recovery Act of 1976 (RCRA)	42 USC 6901 40 CFR Part 264.18(b) 40 CFR Part 761.75	Relevant and Appropriate	Facility must be designed, constructed, operated and maintained to avoid washout if RCRA hazardous waste or PCBs are treated, stored, or disposed within the 100-year floodplain.	
K. Resource Conservation and Recovery Act of 1976 (RCRA)	42 USC 6901 40 CFR Part 264.18(a)	Not Applicable	New treatment, storage, or disposal of RCRA hazardous waste is prohibited within 61 meters (200 feet) of a fault displaced in Holocene time.	Wayne County is not considered seismically active as per 40 CFR Part 264 Appendix VI.
L. Michigan Natural Resources and Environmental Protection Act, Part 303, Goemaere-Anderson Wetland Protection Act	Part 303 of Act 451 of 1994, as amended	Not Applicable	Regulates any activity within wetlands, specifically dredging, filling, and construction, operating, or maintaining any use or development in a wetland. Required technical information and criteria utilized in reviewing proposed activities in a wetland are specified.	Site does not contain any designated wetlands.
M. Michigan Natural Resources and Environmental Protection Act, Part 301, Inland Lake and Streams Act	Part 301 of Act 451 of 1994, as amended	Relevant and Appropriate	Regulates inland lakes and streams. Requires compliance with permit regulations to "dredge or fill bottomland" or to "construct, enlarge, extend, remove or place a structure on bottomland." Specifies the technical information and criteria required for evaluating and reviewing the proposed activities	May be relevant and appropriate for those remedial activities that would involve dredging or filling or placing structures in the area near the Trenton Channel of the Detroit River.
N. Michigan Natural Resources and Environmental Protection Act, Part 31, Water Resources Protection	Part 31 of Act 451 of 1994, as amended	Relevant and Appropriate	Requires state agencies to evaluate the potential effects of actions they may take in a floodplain to avoid adverse impacts associated with development of a floodplain.	

TABLE A
APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs) AND TO BE CONSIDERED GUIDANCE (TBCs)
TRENTON CHEMICAL SITE

ARARs	Legal Citation	Classification	Requirement Synopsis	Applicability to Selected Remedy
III. ACTION SPECIFIC				
A. Health and Safety				
1. Occupational Health and Safety Act	29 CFR Parts 1904, 1910, and 1926	Applicable	Provides occupational safety and health requirements for workers engaged in on-site field activities where there are hazardous materials present.	Applicable to on-site work performed during implementation of selected remedy.
B. Hazardous Waste				
1. United States Department of Transportation Rules for Transportation of Hazardous Materials	49 CFR Parts 107 and 171.1-172.604	Applicable	Regulations for labeling, emergency response, and transport of hazardous materials.	Applicable if off-site shipment of wastes occur during remedial activities.
2. RCRA Land Disposal Regulations	40 CFR Part 268	Applicable	Restrictions on land disposal of hazardous wastes, including PCBs.	Applicable if on- or off-site disposal of sediment, soils, or treatment residues occur during remedial activities.
3. RCRA Subtitle C Hazardous Waste Management	42 USC 6901	Relevant and Appropriate	Regulations for the treatment, storage, and disposal of hazardous waste.	May be relevant and appropriate if the on-site materials (water, soil/sediment, investigative materials) are listed or characteristic wastes under RCRA and the selected remedy constitutes treatment, storage, or disposal as defined by RCRA.
4. RCRA Closure Requirements	40 CFR Part 264	Relevant and Appropriate	Regulations for the closure of RCRA hazardous waste treatment, storage, and disposal facilities.	May be relevant and appropriate to the remedy if RCRA hazardous waste or PCBs are treated, stored or disposed within the 100-year floodplain.
5. Michigan Natural Resources and Environmental Protection Act, Part 115, Solid Waste Management	Part 115 of Act 451 of 1994, as amended	Relevant and Appropriate	Regulations for the generation, transportation, storage, and disposal of non-hazardous waste, including permit requirements.	May be relevant and appropriate to on-site non-hazardous waste treatment, storage, and disposal alternatives, as well as transportation of wastes off-site. Substantive closure requirements may be relevant and appropriate if capping is selected as a remedial alternative. Requirements should be considered should on-site stabilization and disposal be selected as the remedy.

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TABLE A
APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs) AND TO BE CONSIDERED GUIDANCE (TBCs)
TRENTON CHEMICAL SITE

ARARs	Legal Citation	Classification	Requirement Synopsis	Applicability to Selected Remedy
6. Michigan Natural Resources and Environmental Protection Act, Part 111, Hazardous Waste Management	Part 111 of Act 451 of 1994, as amended	Applicable	Regulations for the generation, transportation, treatment, storage, and disposal of hazardous waste. Regulates closure and postclosure for hazardous waste treatment, storage, or disposal facilities. Michigan has interim authorization to administer RCRA in the State under this act.	Applicable to on-site hazardous waste treatment, storage, and disposal alternatives, as well as transportation of wastes off site. May be applicable for closure requirements.
7. Michigan Natural Resources and Environmental Protection Act, Part 121, Liquid Industrial Wastes	Part 121 of Act 451 of 1994, as amended	Relevant and Appropriate	Requires the use of a licensed liquid industrial waste hauler to remove any liquid industrial waste off-site. Liquid industrial waste is defined in part as any liquid waste, other than unpolluted water which results from an industrial or commercial activity.	Substantive requirements may be relevant and appropriate for any water generated during remedial activities requiring off-site disposal.
C. Water				
1. Clean Water Act (CWA) and National Pollution Discharge Elimination System (NPDES) Requirements	33 USC 1251 40 CFR Part 122	Relevant and Appropriate	Regulates discharge of pollutants into navigable waters.	May be relevant and appropriate to remedial alternatives which include discharge of the groundwater to the Trenton Channel of the Detroit River.
2. Michigan Natural Resources and Environmental Protection Act, Part 31, Water Resources Protection	Part 31 of Act 451 of 1994, as amended	Relevant and Appropriate	Regulations which establish surface water quality standards "to protect the public health and welfare, to enhance and maintain the quality of the water, to protect the State's natural resources." Rules authorize a discharge permit system compatible with the Federal NPDES program. The state administers discharge standards as promulgated by the federal NPDES program under this act. Establishes rules for groundwater quality, specifically "to protect the public health and welfare and to maintain the quality of groundwater in all useable aquifers for individual, public, industrial, and agricultural water supplies." Requires hydrogeologic studies before allowing a discharge to groundwater and establishes monitoring requirements.	Rules may be relevant and appropriate to alternatives which require on-site treatment and discharge to surface waters (Trenton Channel of Detroit River). May be relevant and appropriate for any remedial alternative which would require discharge to the surface water. May be relevant and appropriate for any remedial alternative which would require discharge to groundwater.

TABLE A
APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs) AND TO BE CONSIDERED GUIDANCE (TBCs) TRENTON CHEMICAL SITE

ARARs	Legal Citation	Classification	Requirement Synopsis	Applicability to Selected Remedy
3. Michigan Natural Resources and Environmental Protection Act, Part 41, Sewerage Systems	Part 41 of Act 451 of 1994, as amended	Relevant and Appropriate	Provides for supervision and control over sewerage systems.	Substantive requirements may be relevant and appropriate for actions including off-site treatment at the local POTW.
4. Michigan Natural Resources and Environmental Protection Act, Part 201, Environmental Response	Part 201 of Act 451 of 1994, as amended	Applicable	Provides for the identification, risk assessment, and priority evaluation of environmental contamination sites in the State.	Applies to remedial alternatives and selected cleanup standards.
5. Michigan Mineral Well Act	Act 315 of 1969	Relevant and Appropriate	Requires that wells be constructed properly, recorded, and properly plugged upon abandonment. Regulates the construction of wells.	Substantive requirements may be relevant and appropriate for actions requiring well installation.
6. Clean Water Act Dredge or Fill Requirements (Section 404)	33 USC 1251 40 CFR Parts 230-231	Relevant and Appropriate	Requires permits for discharge of dredge or fill material into navigable waters.	May be relevant and appropriate if remedial alternative results in discharge of these materials into navigable waters.
7. Public Health Code	Act 368 of 1978 Part 127	To Be Considered	Regulates construction of private drinking water wells; sets standards for well construction and abandonment, and establishes distance requirements from pollution sources. Gives the Michigan Department of Public Health broad powers to "exercise authority and promulgate rules to safeguard properly the public health; to prevent the spread of diseases and the existence of sources of contamination; and to implement and carry out the powers and duties vested by law in the Department." Also allows the Michigan Department of Public Health to determine when an "imminent danger to the health and lives of individuals exists in this state" and allows the Director to issue an order concerning the imminent health danger. The order shall incorporate the Director's findings and require immediate action necessary to avoid, correct, or remove the imminent danger.	There are no private water supply wells within the City of Trenton.

TABLE A

APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs) AND TO BE CONSIDERED GUIDANCE (TBCs) TRENTON CHEMICAL SITE

ARARs	Legal Citation	Classification	Requirement Synopsis	Applicability to Selected Remedy
D. Air				
1. Michigan Natural Resources and Environmental Protection Act, Part 55, Air Pollution Control	Part 55 of Act 451 of 1994, as amended	Relevant and Appropriate	Defines requirements for construction, modification, reactivation, or installation of air contaminant sources. Sets forth emission limits for specific emission sources and Best Available Control Technology (BACT) requirements for VOC emission sources.	May be relevant and appropriate should selected remedial alternative generate emissions.

TABLE A

APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs) AND TO BE CONSIDERED GUIDANCE (TBCs) TRENTON CHEMICAL SITE

ARARs	Legal Citation	Classification	Requirement Synopsis	Applicability to Selected Remedy
E. Miscellaneous				
1. The Fish and Wildlife Coordination Act	16 USC 661-666C	To Be Considered	Provides for consideration of the impacts on wetlands and protected habitats. Requires consultation when federal department or agency proposes or authorizes any modification of any stream or other water body.	To be considered if remedial alternative results in improvements to the river's banks in the Trenton Channel of the Detroit River. To be considered in relation to any portions of the selected remedy which will be conducted in the undeveloped area.
2. Michigan Natural Resources and Environmental Protection Act, Part 91, Soil Erosion and Sedimentation Control Act	Part 91 of Act 451 of 1994, as amended	Relevant and Appropriate	Requires a soil erosion control and sedimentation plan for any earth changes of one or more acres and/or any earth changes within 500 feet of a lake or stream.	Substantive requirements may be relevant and appropriate for actions including soil erosion and sedimentation control procedures and measures to minimize negative impacts to the Trenton Channel of the Detroit River.
3. Michigan Natural Resources and Environmental Protection Act, Part 17, Environmental Protection Act	Part 17 of Act 451 of 1994, as amended	Relevant and Appropriate	Regulates activities that may pollute, impair, destroy or cause harm to the environment, and provides for declaratory and equitable relief actions and related judicial proceedings.	Substantive requirements may be relevant and appropriate for actions requiring permits and permit review processes.

4.0 REMEDIAL ACTION PLAN

The process of developing a remedial action plan (RAP) involves identifying, screening, and selecting applicable remedial action technologies, based on the media of concern and the remedial action objectives consistent with redeveloping the site for commercial/industrial use. Based on information obtained from site investigations (summarized in McLaren/Hart document "Site Assessment Summary Report," May 12, 1995) the only environmental issues requiring further consideration for the Site are as follows:

- VOCs in On-Site Groundwater (Southeast Corner of the Site);
- Inorganics in On-Site Groundwater (Southeast Corner of the Site);
- Surface Soils (Southeast Corner of the Site); and
- Xylene-Affected Vadose Zone Soils in the Former Tank Farm Area.

4.1 Identification of Remedial Action Objectives

Remedial action objectives for the Trenton Chemical facility were developed for the future protection of local groundwater in the Southeast corner, although it is unlikely that the local groundwater will ever be used for drinking water. Objectives for surface soils in the Southeast corner of the Site and the vadose zone soils in the former Tank Farm Area were developed as well.

The objectives of the selected remedial technology for each on-site media are described below:

4.1.1 Remedial Action Objectives for Groundwater (Southeast Corner of Site)

Groundwater in the southeast corner of the Site flows generally toward the Detroit River. The saturated subsurface soils in this area are comprised mainly of imported fill materials that appear to be in hydraulic communication with the Detroit River.

Site groundwater is not currently utilized as a drinking water source at the Site or in the vicinity and is unlikely to ever be used as a future source of drinking water. However, concentrations of VOCs (benzene, chlorobenzene, methylene chloride and vinyl chloride), and inorganics (arsenic, barium, cadmium, lead and thallium) have been detected in groundwater at levels above Residential GSI Criteria primarily in the southeast corner of the Site.

As specified in Part 201 of Michigan Act 71 (Pt. 201 Sect. 20120a(15)) the discharge of venting groundwater shall comply with requirements promulgated under an alternative method established by rule. Thus, site-specific criteria were developed using the Michigan Rule 57 of the Michigan Water Quality Standards (R323.1057). The rate of groundwater venting to the Trenton Channel of the Detroit River was determined by groundwater elevation data and aquifer performance test data collected from monitoring wells in both the bedrock and drift aquifers.

Based on the analytical data for groundwater samples collected from monitoring wells in the bedrock and the drift aquifers, the concentration of each parameter venting to the Trenton Channel was estimated.

Using guidelines set forth in paragraph 2 of Rule 82 of the Michigan Water Quality Standards (R323.1082), mixing zone concentrations were then calculated. These calculations are mass-balance equations that use the parameter concentration, the venting rate in the groundwater and 25% of the 95% exceedance flow of the surface water to estimate a final concentration in the surface water. (The 95% exceedance flow is generally the lowest observed flow rate over the past ten years.) Calculated surface water concentrations were then evaluated against Michigan Rule 57 levels. (McLaren/Hart Letters to MDEQ, "Mixing Zone Determination Response," and "Mixing Zone Determination Response to Request for Additional Information," dated February 5 and 9, 1996, respectively.)

4.1.2 Remedial Action Objectives for On-Site Soils

Limited areas of surface soils within the eastern portion of the Site contained levels of lead that exceeded the Generic Industrial Direct Contact Criteria outlined in the Michigan Department of Environmental Quality's Memorandum #14, dated June 6, 1995. The selection of a remedial action was based on the objective to minimize or eliminate the routes of exposure to the surface soils.

Data collected at the Site indicate that several areas within the fill material contain levels of total lead within subsurface soils above Industrial Direct Contact Criteria. Soil samples collected from known areas of impacted soil were submitted for synthetic leachate analysis of lead. The results of this analysis indicated that the concentrations of leachable lead in the impacted area was less than the calculated background value derived utilizing the data collected from native soils in the background locations. (See "Site Assessment Summary Report," McLaren/Hart, May 12, 1995 for analysis results.) This suggests that the subsurface soils (and fill material) which remain on-site are not acting as a continued source to potential groundwater impact on-site. The results of this evaluation indicate that the subsurface soils and fill materials which contain lead constituents above Industrial Direct Contact Criteria do not pose a significant risk to groundwater.

4.1.3 Remedial Action Objectives for Vadose Zone Soils and Groundwater in the Former Tank Farm Area

The remedial action objective identified for vadose zone soils affected with volatile organic compounds within the former Tank Farm Area, was closure under Direct Contact Criteria provided in MDEQ's Operational Memorandum #14 dated June 6, 1995. In order to evaluate applicability of closure under this criteria, a limited subsurface investigation was implemented between August and September 1996 to assess residual concentrations of xylene-affected soils (Appendix A). This investigation was later broadened, at the request of MDEQ, when it was discovered that locally infiltrated, trapped water was present in the tank farm fills. This investigation was broadened to include the installation of monitoring wells and the collection of groundwater samples from both the Former Tank Farm Area and along the southern property line of the Site. The range of analytes was also increased, at the request of MDEQ, to include benzene, toluene, ethylbenzene, and xylene (BTEX) compounds. Since groundwater encountered within the Former Tank Farm excavation is localized, infiltrated and trapped water, and the deed restriction for the site will include a restriction for the use of groundwater as drinking water source,

the application of MDEQ's Generic Utility Worker Contact Criteria is applicable to the groundwater issues. [1]

4.2 Remedial Technology Assessment

Several established and proven remedial technologies have been pre-screened and selected for further consideration at the Site to meet the remedial objectives. Applicable technologies were screened based on their ability to mitigate the impacted media and their suitability to Site conditions. The options selected are protective of human health and the environment, implementable, timely and cost-effective. This technical screening of predetermined technologies is presented in Tables B, C, D and E. Developmental information for related costs within the following Remedial Alternatives tables is included in Appendix B.

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[1] Generic Utility Worker Contact Criteria refers to MDEQ's May 14, 1996 addendum to Operational Memoranda #8 and #14, Revision 4 (June 5, 1995) and #14 (June 6, 1995): Draft Interim Generic Utility Worker Groundwater Contact Criteria

TABLE B

Applicability/Implementability of Remedial Alternatives for VOC Issues in Groundwater

Alternative	Duration of Project	Protective of Human Health and Environment	Implementable	Order of Magnitude Cost	Recommended Alternative
In-Situ Bioremediation	2 years	Yes	Yes	$800 K	No
Limited Pump & Treat with Stripping/Carbon	3 months	Yes	Yes	$300 K	No
Air Sparging/SVE	9+ months	Yes	No (soil conditions)	$600 K	No
No Action	Immediate	Yes	Yes	$100 K	Yes

TABLE C

Applicability/Implementability
of
Remedial Alternatives for
Inorganic Issues in Groundwater

Alternative	Duration of Project	Protective of Human Health and Environment	Implementable	Order of Magnitude Cost	Recommended Alternative
Limited Pump & Treat (Ion Exchange)	3 months	Yes	Yes	$225 K	No
Limited Pump & Precipitation/ Flocculation	3 months	Yes	No (VOC concerns)	$290 K	No
No Action	Immediate	Yes	Yes	$100 K	Yes

TABLE D

Applicability/Implementability of Remedial Alternatives for Surface Soils

Alternative	Duration of Project	Protective of Human Health and Environment	Implementable	Order of Magnitude Cost	Recommended Alternative
Excavation and Off-site Disposal	1 year	Yes. Removes affected materials from site.	Yes	$3.4 M	No
Onsite Stabilization	1.5 years	Yes	Yes	$3.2 M	No
Soil Cover System	3 months	Yes. Eliminates exposure pathways.	Yes	$200 K	Yes
Soil Washing/ Flushing	2 years	Yes	Yes	$1.2 M	No
Controlled Access/ Deed Restrictions	Immediate	Yes	Yes	$100 K	Yes

recycled paper

TABLE E

Applicability/Implementability of Remedial Alternatives for Former Tank Farm Area

Alternative	Duration of Project	Protective of Human Health and Environment	Implementable	Order of Magnitude Cost	Recommended Alternative
Excavation and Off-site Disposal	2 months	Yes. Removes affected soils from site.[2]	Yes	$2,305 K	No
Limited Pump and Treat with Stripping/Carbon Adsorption and Vadose Zone Flushing	2 years	Yes	Yes	$425 K	No
Air Sparging and Soil Vapor Extraction	1 year	Yes	Yes	$467 K	No
No Action/Controlled Access/Deed Restriction	Immediate	Yes	Yes	$61 K	Yes

[2]Affected groundwater is localized to tank cavity. Alternative assumes groundwater will be removed as soils are excavated.

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4.3 Site-Specific Remedial Action Approach

Historical remedial responses have mitigated all concerns pertaining to source materials from past operations. Details of the investigations and remedial actions taken are presented in the McLaren/Hart document "Site Assessment Report," December 16, 1994. A full discussion of the remaining issues is provided in the McLaren/Hart document "Site Assessment Summary Report, Trenton Chemical Site," May 12, 1995 and "Subsurface Investigation of Former Xylene Tank Farm" (Appendix A).

Applicable and implementable remedial actions presented in this site-specific RAP include:

- No Action for groundwater (Southeast corner of the Site);
- Limited soil cover system;
- No further action for vadose zone soils and groundwater (Former Tank Farm Area);
- Filing a restrictive covenant restraining activities at the Site which may result in exposures above action levels established in the RAP or may interfere with operation and maintenance measures necessary to assure the effectiveness and integrity of the remedial action.

4.3.1 No Action for Localized Groundwater (Southeast Corner of the Site)

Based on the calculated venting rate, the flow rate of the Trenton Channel, and the parameter concentrations in groundwater, which were based on monitoring data, the resultant concentrations were below the Michigan Rule 57 Criteria. See Appendix C for a full discussion on the calculation. Because the known source materials were removed from the Site, the natural contaminant flushing by groundwater will not result in exceedance of the Michigan Rule 57 Criteria. Therefore, no danger of exceedance exists, and a No Action remedial action approach was selected.

As shown in the technical screening completed in Tables B and C, this alternative is timely, implementable, and is sufficiently protective of human health and the environment. Therefore, it is deemed an acceptable solution for the localized groundwater issues at the southeast corner of the Trenton Chemical Site.

4.3.2 Limited Soil Cover System

The installation of a limited soil cover layer prevents direct contact with any potentially impacted media/surface soils and eliminates risks associated with ingestion and inhalation with these soils. The soil cover system is designed to promote adequate surface drainage, reduce infiltration, and minimize erosion.

Upon completion of the Site preparation activities (Section 5.2), a 6-inch thick layer of imported soils was placed over the designated areas. To ensure that all goals of the soil cover system are met, a lower permeability cohesive soil was utilized.

These areas were graded to meet predesigned surface drainage requirements. The soil cover system also included the placing of adequate quantities of topsoil, followed by fertilizing and seeding to promote growth of vegetative cover.

In order to ensure that future site development or reuse activities do not affect the integrity of the soil cover system and that the barrier to general exposure by direct contact is maintained, a restrictive covenant will be placed on this portion of the Site. The restrictive covenant will be structured so as to forbid disturbances of the soil cover integrity except under site-specific controlled requirements.

The soil cover system and issuance of a restrictive covenant is selected as the remedy to achieve site closure of direct contact soil issues. This alternative is sufficiently protective of human health and the environment, is implementable, timely and cost-effective and is therefore deemed as an acceptable solution for designated on-site surface soils at the former Trenton Chemical facility.

4.3.3 Institutional Controls to Restrict Land Usage: Tank Farm Area

Based on the Limited Soils and Groundwater Investigation implemented to assess the residual concentrations of BTEX compounds in the former Tank Farm (Appendix A) and previous soil borings installed in the former Tank Farm fills, the issues related to the presence of BTEX compounds can be closed under Direct Contact Generic Industrial Criteria. All concentrations of BTEX compounds detected within soils were below Direct Contact Criteria per MERA Operational #14 dated June 6, 1995.

The limited investigation also addressed MDEQ concerns regarding exceedance of C_{sat} Criteria detected in soils samples from previous investigations (i.e. prior to 1996). During the May 1994 investigation three samples (i.e., GS-8, 8-10 feet; GS-9, 8-10 feet; and GS-11, 8-10 feet) indicated the presence of residual concentrations of xylene above the Draft MDEQ C_{sat} Criteria. Additionally, during the 1996 Limited Investigation one sample (i.e., X-5, 11-13 feet) indicated the presence of xylene at a concentration that exceeded C_{sat} Criteria. Monitoring well (Z-1) installed within the former tank cavity fills, demonstrated that although C_{sat} Criteria was exceeded in four samples, free-product is not present in the trapped groundwater and the C_{sat} exceedance appears to be isolated residual material which remained after the tank farm was closed. This finding is consistent with the historical work performed within the former Tank Farm. This work included the limited excavation, removal, and off-site disposal of xylene-affected soils performed concurrently with the removal of the tanks.

It should also be noted that while monitoring well Z-1 indicated the presence of trapped groundwater affected by benzene, ethylbenzene and xylene; only benzene exceeded MDEQ Generic Residential Drinking Water Criteria per MERA operational Memorandum #8 Revision 4 dated June 5, 1996. It should be noted that the detected concentration of benzene was below the Draft Generic Utility Worker Contact Criteria, which is applicable criteria for on-site groundwater. In addition, the monitoring wells installed downgradient from the tank farm (i.e. Monitoring Wells Z-2, Z-3, and Z-4) demonstrated that BTEX compounds were not migrating through the fractured bed rock which lies below the natural upper silty clay aquiclude.

Since existing data indicates that chemically-affected soils are not present in the near surface soils (i.e. at depths less than 12 inches), a restrictive covenant preventing direct contact with groundwater and the

lower soils will be sufficiently protective of human health and the environment. As such, the selected remedy for the former Tank Farm Area will be to deed restrict the area to prevent groundwater usage and direct contact with chemically-affected media, except under site-specific, controlled requirements. This alternative is sufficiently protective of human health and the environment, is implementable, timely and cost-effective. It is therefore deemed as an acceptable solution for the soil and groundwater issues in the former Tank Farm Area.

5.0 GENERIC INDUSTRIAL CLOSURE

5.1 Summary of Site Remedial Actions

During facility deactivation activities and the subsequent Site characterization and investigation, Chrysler Corporation identified and mitigated many of the potential soil and groundwater issues at the Site resulting from previous industrial activities. These remedial activities are as follows:

TABLE F

Completed Remedial Actions

Location	Remedial Action	Date	Issue Mitigated
On-Site Facilities	• Deactivation/ Demolition	1990	Prepared for Future Sale/Reuse of Site
Former Wastewater Retention Ponds	• Residues Removed • Dewatered and Backfilled	1990 January 1994	Removal of Residuals from Former Wastewater Treatment Operations
Tank Farm Area	• UST Removal and Excavation and Off-Site Disposal of Impacted Soils	November 1988	VOCs
South Backlot	• Excavation, Drum Removal and Disposal, Dewatered, and Backfilled	July 1988 through March 1989 December 1993	Debris, Affected Soils and Drum Removal
North Backlot	• Soil Cover System	1987	Asbestos

As a result of these activities, all suspected source materials have been removed from the Site and the potential for direct contact with any remaining site soils has been minimized.

5.1.1 Deactivation of On-Site Facilities

In order to prepare the Site for future reuse, the plant and associated facilities were deactivated in the spring of 1990 and underwent removal of all above-ground structures at that time. All issues relating to deactivation of the facility, such as: demolition of buildings and structures, removal of surface-stained soils, removal of asbestos in buildings, cleaning of below-ground site piping and sewers, cleaning of the *Wastewater Retention Ponds*, removal of remaining underground tanks and closure of the remaining above-ground tank farm and associated piping, were supervised in 1990 by The Chester Engineers.

5.1.2 Former Wastewater Retention Ponds

Residuals in the former *Wastewater Retention Ponds* were removed and the ponds deactivated during the plant closure in 1990. These empty ponds were later filled to grade with imported aggregate and clayey fill material in 1993. The backfilling is detailed in the McLaren/Hart report "Dewatering and Backfill Summary Report," dated May 24, 1996.

5.1.3 Underground Storage Tank Removal

In November 1988, nine underground storage tanks were removed and one was abandoned in-place. Backfilling was completed by February 1989. Seven of these tanks were removed from the underground *Tank Farm Area* and two tanks were removed from the resin tank area which is located north of the *Rolling Oil Building*. The underground storage tank closed in-place is located beneath the maintenance building. In addition to the underground storage tanks, Chrysler excavated and removed affected soils associated with the tank. This material was shipped off-site for disposal. Figure 5-1 shows the locations of these former underground tanks.

The underground tanks removed from the *Tank Farm Area* and the resin tank area were used for storage of xylenes, paints, resins, and other manufacturing process liquids. The underground tank that was abandoned in-place beneath the maintenance building was used for storage of fuel oil.

Soil samples collected during the tank removal, after removal of soils from the *Tank Farm Area*, indicate the presence of aromatic volatile organic compounds in the soil at concentrations below Generic Industrial and Commercial Direct Contact Criteria, MERA Memorandum 14, Revision 2, June 6, 1995 and the draft Interim Generic Utility Worker Groundwater Criteria dated May 14, 1996.

5.1.4 South Backlot Excavation and Backfill

In July of 1988, excavation commenced in the *South Backlot* to remove industrial materials that had been determined to be present during initial investigation activities. Five areas were identified for soil removal as shown on Figure 5-2.

The area encompassed by the remedial excavation covered approximately 2.7 acres and extended from the ground surface to a depth of 2 to 8 feet below the water table. The average depth of the excavation was 13 feet below grade.

Removal actions in the *South Backlot* involved the excavation and offsite disposal/treatment of 1,675 empty drums and 81,224 tons of material. Testing of the excavated soils determined that approximately 145 tons of the total soil tonnage was classified as hazardous, based on EP Toxicity results for barium. Excavated materials were transported to a permitted incinerator, hazardous waste landfill, or industrial waste landfill, as appropriate. Removal and disposal activities were completed in March 1989 and the excavation was backfilled to grade and capped with clayey soil in December 1993.

A description of activities performed as part of the dewatering and backfilling operations are presented in the report entitled, "Dewatering and Backfill Summary Report, Trenton Chemical Plant," dated May 24, 1996.

5.1.5 North Backlot Capping and Drainage Swale Removal

The *North Backlot* has been capped with a one-foot thick soil cap and seeded (Figure 5-3). Prior to capping, samples of surface soils in the *North Backlot* and sediment samples from the drainage swale indicated the presence of asbestos-containing materials. During this capping, the drainage swale that conveyed the non-contact cooling water for the facility was abandoned and a new, underground pipeline discharge to the river was constructed. Soils in the drainage swale were covered with a geotextile fabric and the swale and new discharge line were backfilled with clean fill to prevent exposure or contact with the underlying soils.

As a result of these activities, all suspected source material has been removed from the Site and the potential for direct contact with any remaining site soils has been minimized.

5.2 Summary of Site Preparation Activities

Site preparation activities were performed from April 5, 1995 through August 21, 1995 to prepare Chrysler's former Trenton Chemical Site for reuse. McLaren/Hart provided supervision and oversight for the removal and disposal of non-hazardous construction debris. These activities are summarized in Table G.

The Michigan Department of Environmental Quality was notified of all subcontractors associated with all site preparation activities. The materials removed during these site preparation activities are summarized in Appendix D.

TABLE G
Completed Site Preparation Activities

Location	Activity	Date	Potential Site/Remedial Action
Designated Areas of Site	Final Grading and Seeding	November, 1995	Control of Soil Erosion and Surface Water Runoff
On-Site Storm Sewer	Repair of Manholes	October, 1995	Promote Better Drainage of Surface Water Runoff
Southeast Corner of Backlot	Removal of Former Asphalt Remediation Drum Staging Pad	August, 1995	Recycled Asphalt Replaced with Soil Cover
Select Areas of Site	Limited Building Slab Removal	August, 1995	Field Screened Underlying Surface Soils - No Issue Found Off-Site Disposal of Concrete Materials
Utility Corridor/Utility Trench	Removal of Piping and Debris Asbestos Abatement Disposal of Water	July 1995 Work Plan Verbal Approval from MDEQ: July 16, 1995	Asbestos Abatement Carbon Treatment of Water Treated Water Utilized for Dust Control and to Establish Vegetation
Former Materials Marshalling Area	Removal of Concrete Pavement	June 1995 Work Plan Verbal Approval from MDEQ: June 19, 1995	Field Screened Underlying Surface Soils - No Issue Found Off-Site Disposal of Concrete Materials
Select Areas of Site	Tree Removal and Degrubbing	May, 1995	Chipped for Onsite Mulch
Select Areas of Site	Removal of Posts, Lighting Fixtures, Concrete Curbing, and Interior Fencing	May, 1995	Off-Site Disposal of Posts, Light Bulbs, Light Ballasts, Concrete Curbing, and Fencing
Railroad Track	Removal of Railroad Track and Ties	April, 1995	Off-Site Disposal of Railroad Ties Recycled Steel Rails
Select Areas of Site	Removal of Fire Suppression Equipment	April, 1995	Recycled Associated Steel

5.2.1 South Backlot Asphalt Drum Staging Pad Removal

The asphalt drum staging pads located in the *South Backlot* were removed in anticipation of the soil cover system placement. The asphalt associated with this area and the asphalt removed from the North Parking Area was recycled off-site at the Angelo Iafrate Materials facility located in Warren, Michigan.

5.2.2 Concrete Demolition and Removal

McLaren/Hart's site preparation activities also included limiting concrete slab removal to western areas of the Site. The concrete slabs of the former *Piston Manufacturing Building* and *Friction Products Building* were not disturbed. Any openings within these concrete slabs were filled and repaired with concrete. A final Site Plan (Figure 5-4) details remaining concrete at the Site.

During concrete slab removal operations near the former *Material Storage Area*, an underground utility corridor and utility trench were discovered. Both the utility corridor and utility trench contained residual water which was sampled and analyzed for Michigan Metals, PCBs, volatile organic compounds, and semivolatile organic compounds. The samples were analyzed at Environmental Quality Laboratories located in Sterling Heights, Michigan following sampling methodologies outlined in McLaren/Hart's "Approved Quality Assurance Project Plan," dated February 2, 1995.

Also removed per the approved workplan (McLaren/Hart "Work Plan for Removal of Surface Concrete Structures" June 2, 1995) (Appendix E) was concrete pavement associated with the former Materials Marshalling Area in the southwest corner of the Site.

5.2.3 Utility Corridor/Utility Trench Demolition and Removal

Analytical results from the sampling of the water contained in the utility corridor and utility trench indicated residual concentrations of volatile organic compounds in the water of the utility trench. Results can be found in McLaren/Hart's "Water Management Workplan," (Appendix F).

A workplan for handling the materials was prepared and submitted to the MDEQ on June 23, 1995. Verbal approval of the workplan by the MDEQ was given on July 16, 1995. Water contained in the utility corridor was determined to meet Residential GSI criteria and was used for on-site dust control. Water within the utility trench was removed and treated on-site using primary and secondary liquid phase carbon vessel units. The treated water was stored on-site in a frac tank, sampled and analyzed for Michigan Metals, PCBs, volatile organic compounds, and semivolatile organic compounds at Environmental Quality Laboratories. After the sampling results indicated successful treatment of the utility trench residual water, the stored water was utilized for on-site dust control.

Insulating materials included within the utility trench were sampled and analyzed using Polarized Light Microscopy (PLM) by Analytica Solutions located in Broomfield, Colorado. Results indicated the presence of asbestos containing materials (ACM) in the utility trench. McLaren/Hart subcontracted with Industrial Waste Cleanup (IWC) to perform asbestos abatement work within the utility trench. IWC removed all suspected ACM materials from the utility trench. All removed ACM materials were bagged, placed in a lined roll-off box, and transported to Wayne Disposal located in Canton, Michigan. Also,

water removed from the utility trench was filtered for ACM prior to the previously discussed on-site treatment.

5.2.4 Miscellaneous Site Preparation Activities

Miscellaneous activities were conducted to further prepare the Site for reuse. These activities included tree removal and degrubbing. The removal and proper disposal of Site features such as lighting fixtures, curbing, fencing, railroad track and fire suppression equipment was also completed by McLaren/Hart.

All concrete and miscellaneous debris were transported as non-hazardous waste to Wayne Disposal located in Canton, Michigan. Light bulbs and capacitors were sent to Environmental Recycling of Toledo, Ohio and all steel was transported for recycling to Omni Source located in Toledo, Ohio. Manifests and load tickets for these shipments are included as Appendix G.

5.3 Recent Remedial Activities

5.3.1 No Action for Localized Groundwater Issue

As discussed in Section 4.3.1, the "no action" remedial solution was undertaken based on evaluating groundwater against the site-specific levels developed by the mixing zone calculations. Closure on this issue was granted by the MDEQ in a letter dated April 15, 1996 (Appendix H).

5.3.2 Soil Cover System Placement

In November of 1995, a soil cover system was placed over an area encompassing approximately 97,000 square feet to prevent direct contact with lead-affected soils as detailed in Figure 5-5. Previous investigations indicated lead concentrations exceeding the Generic Industrial and Commercial Cleanup Criteria, Revision 2 dated June 6, 1995. Geoprobe® investigative work was conducted on September 25, 1995 and October 5, 1995 to confirm delineation of areas with lead concentrations exceeding Industrial Criteria (Figure 5-4). Upon final delineation of affected areas, a workplan outlining the scope of work required for the soil cover system placement was developed and approved by the MDEQ on October 18, 1995 (Appendix I).

Prior to the installation of the soil cover system, R.O. Scramstad and Associates, Plymouth, Michigan, conducted a survey of baseline site elevations. The placement of the cover system commenced using imported soil materials analyzed using EPA Methods 8240, 8270, and 8080 (PCBs), per Chrysler corporate procedure as outlined in Appendix J. The material was placed in 3- to 6-inch loose measure uniform lifts and compacted. A final elevation survey was conducted to verify at least six inches of soil covered the specified areas (Figure 5-5).

5.3.3 Tank Farm Area, Institutional Controls

As discussed in Section 4.3.3, additional soil borings and monitoring wells were installed within and around the former Tank Farm Area to evaluate residual concentrations which remained after the tanks and associated soils were removed in November 1988. The data from this investigation showed that

residual concentrations in soils and groundwater were below Generic Industrial Direct Contact Criteria and are confined to the former Tank Farm Area. As such, no further remedial action is deemed necessary for this area and the issues will be closed under Generic Industrial Direct Contact Criteria. Institutional controls will be utilized to prevent the use of groundwater from the area as a drinking water source and direct contact with impacted soils.

6.0 OPERATION AND MAINTENANCE ISSUES AND CONCLUSIONS

6.1 Operation and Maintenance

6.1.1 Operation and Maintenance for On-site Groundwater

As per the conclusions of the Remedial Action Plan, no further groundwater monitoring is deemed necessary at the Trenton Chemical Site. McLaren/Hart has reviewed the historical groundwater monitoring data for the Trenton Chemical site. The groundwater monitoring data includes over five years of data from the site monitoring wells including VOCs, SVOCs, and metals. Based on this data set, the areas of groundwater impact have been defined at the Site. The temporal trends of the data indicate that the concentrations of compounds observed in the wells have generally been decreasing. Modeling of selected compounds venting with the groundwater to the Trenton Channel of the Detroit River was performed using extremely conservative model parameters. The modeling demonstrated that any potential impact to the River by impacted groundwater from the Site is low. However, due to the presence of VOC-affected groundwater on-site, the use of groundwater as a drinking water source will be prohibited through a restrictive covenant (Appendix K).

Additionally, if any future intrusive work is required in this area, work will have to be performed under a site-specific health and safety plan. Intrusive work will also have to be performed by personnel who have received OSHA 40-Hour Health and Safety training. Soils and groundwater generated by intrusive work will have to be properly managed by qualified environmental professionals.

6.1.2 Operation and Maintenance for Soil Cover Systems

Two separate soil cover systems were placed over asbestos- and lead-affected surface soils, to mitigate the potential for human exposure. These cover systems are located in the *North Backlot* (related to asbestos-affected soils) and southern portions (related to lead-affected soils) of the Site. The north soil cover system consists of 1 foot of clean imported fill material, and the south soil cover system consists of a minimum of 6 inches of clean imported fill material, both capable of sustaining vegetative growth. Areas which have eroded should be noted and repaired, areas which contain sparse vegetation should be topsoiled and reseeded, and areas which exhibit surface cracking should be filled and reseeded. Any future modifications to the soils cover system should be reviewed by a qualified consulting engineer to assure that the integrity of the soil cover system is maintained. Any work below surface should be performed by workers who have received OSHA 40 hour health and safety training and all below surface work should be performed under a site-specific health and safety plan. Any future construction or utility work in the area must consider the potential for encountering affected soils and must consider proper handling, treatment, disposal, and/or replacement of the materials encountered. Additionally, future utilities must be designed and installed in a manner which does not create preferential pathways of migration and maintains the integrity of the cover system. The vegetative growth cover should be maintained to minimize erosion due to wind and surface runoff. The soil cover systems can also be modified with placement of additional soils (for achievement of site grading) and are amenable with asphalt paving and above-surface structures or buildings. The placement of trees and shrubs, whereby soils need to be removed for planting purposes, must also be avoided. Additionally, large trees and bushes should not be allowed to establish themselves due to potential root damage to the cover system.

6.1.3 Operation and Maintenance for Concrete Slab Cover System

The concrete slabs that are currently in place in the central area of the property function as a cover system over affected surface soils to mitigate the potential for human exposure. The slab cover system consists of approximately 8 to 10 inches of concrete slab. To ensure the effectiveness of the slab cover, it should only be disturbed under carefully controlled conditions. The slab cover system is amenable with asphalt paving and above surface structures or buildings. In the event that the slab, or portions of it, are to be removed, an equivalent barrier system or remediation technology should be implemented to address affected soils.

Any work done on sewer utilities traversing beneath the slab areas must be performed by OSHA 40-Hour Health and Safety trained personnel under an approved Health and Safety Plan. Care should be taken to monitor air and dust levels during activities and restoration of any disturbed portions of the slab must be undertaken. Any below-surface work undertaken in the slab area should be review by a qualified engineer and must consider the potential for encountering affected soils. Any below-surface work must also consider the proper handling, treatment, disposal and/or replacement of potentially-affected soils, Additionally, any future utilities must be installed in a manner that prevents the creation of pathways of migration.

6.1.4 Schedule and Financial Assurance

To ensure the effectiveness of the soil and concrete slab cover, the cover systems should be reviewed on a routine basis which at a minimum should consist of an annual inspection by the Owner. The Owner has financial responsibility to maintain the cover systems.

6.1.5 Operation and Maintenance for Former Tank Farm Area

The former Tank Farm Area does not contain soils which exceed Industrial Direct Contact Criteria, however some residual concentrations of BTEX compounds can be found in these soils. Additionally, localized trapped groundwater within the tank farm also contains residual concentrations of BTEX constituents below Direct Contact Criteria. As such, no further action is deemed necessary to address this media. However, it will be necessary to assure that the affected media is properly managed. To assure this, a restrictive covenant will be placed on the former Tank Farm Area.

The restriction will prohibit the use of groundwater from this area as a drinking water source on-site. It will require that any intrusive work be performed under a site-specific health and safety plan. Any personnel engaged in intrusive operations will be required to have OSHA 40-Hour Health and Training. Soils and groundwater should be properly managed and intrusive work will have to be managed by a qualified environmental professional.

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6.2 Conclusions

To achieve the objectives defined in this report, Chrysler Corporation has developed and implemented a Remedial Action Plan for both site soils and localized groundwater. As detailed in this report, many interim remedial actions have been completed by Chrysler Corporation over the past nine years. Pursuant to Section VI of the Consent Decree between Chrysler Corporation and Frank J. Kelly, et al:

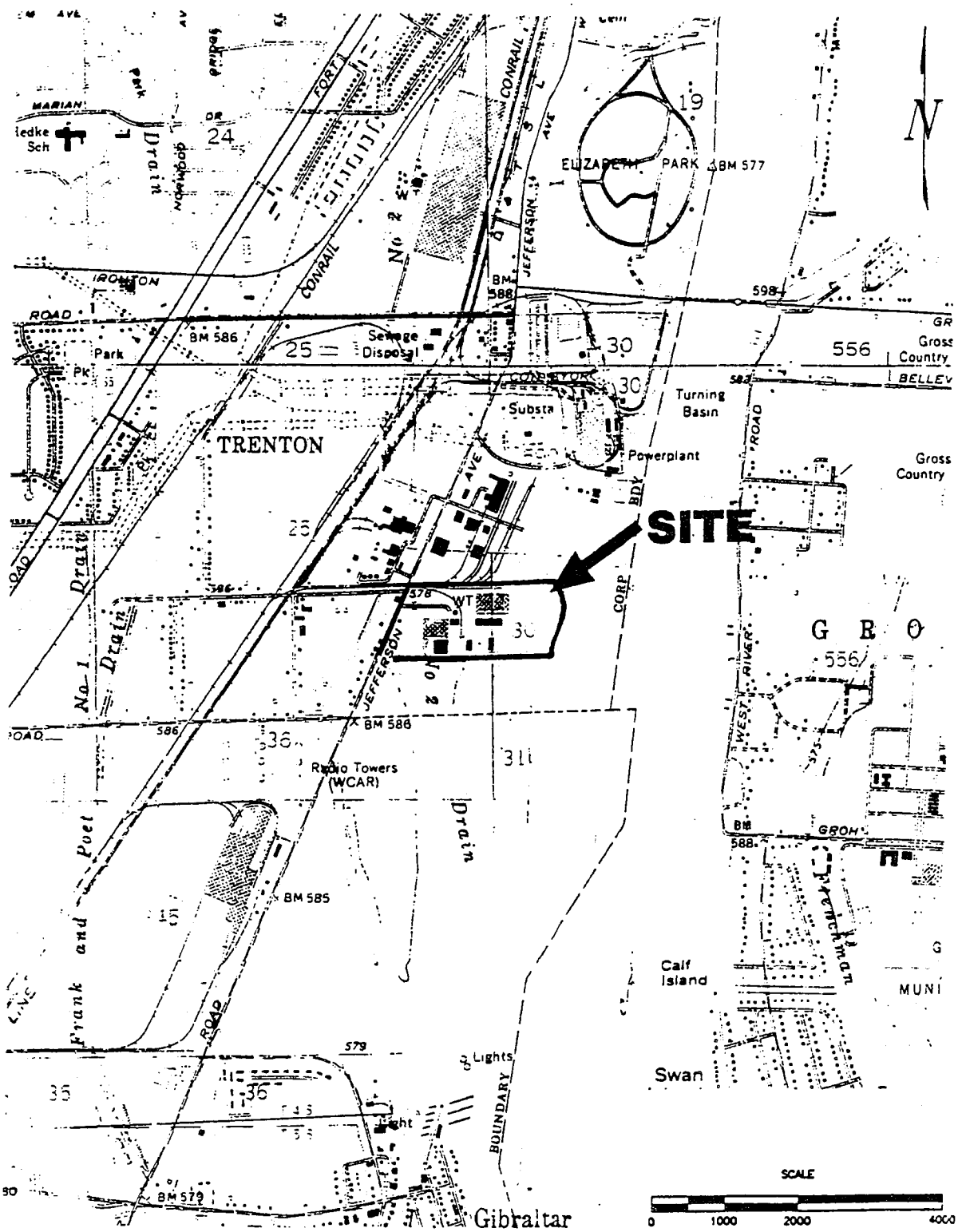
1. The Trenton Chemical Site RAP involved on-site containment of a hazardous substance as a part of the remedy;

2. The estimated annual cost of O&M is $7,500, including monitoring, oversight and other costs necessary to assure the effectiveness and integrity of the remedy; and

3. Chrysler Corporation is financially able to fund the O&M without a financial assurance mechanism as evidenced in its latest annual report, attached.

All environmental issues defined during the Site Assessment and Remedial Action Plan have been completely addressed.

FIGURES



SITE LOCATION PLAN
FORMER TRENTON CHEMICAL FACILITY
TRENTON, MICHIGAN

PREPARED FOR

CHRYSLER CORPORATION

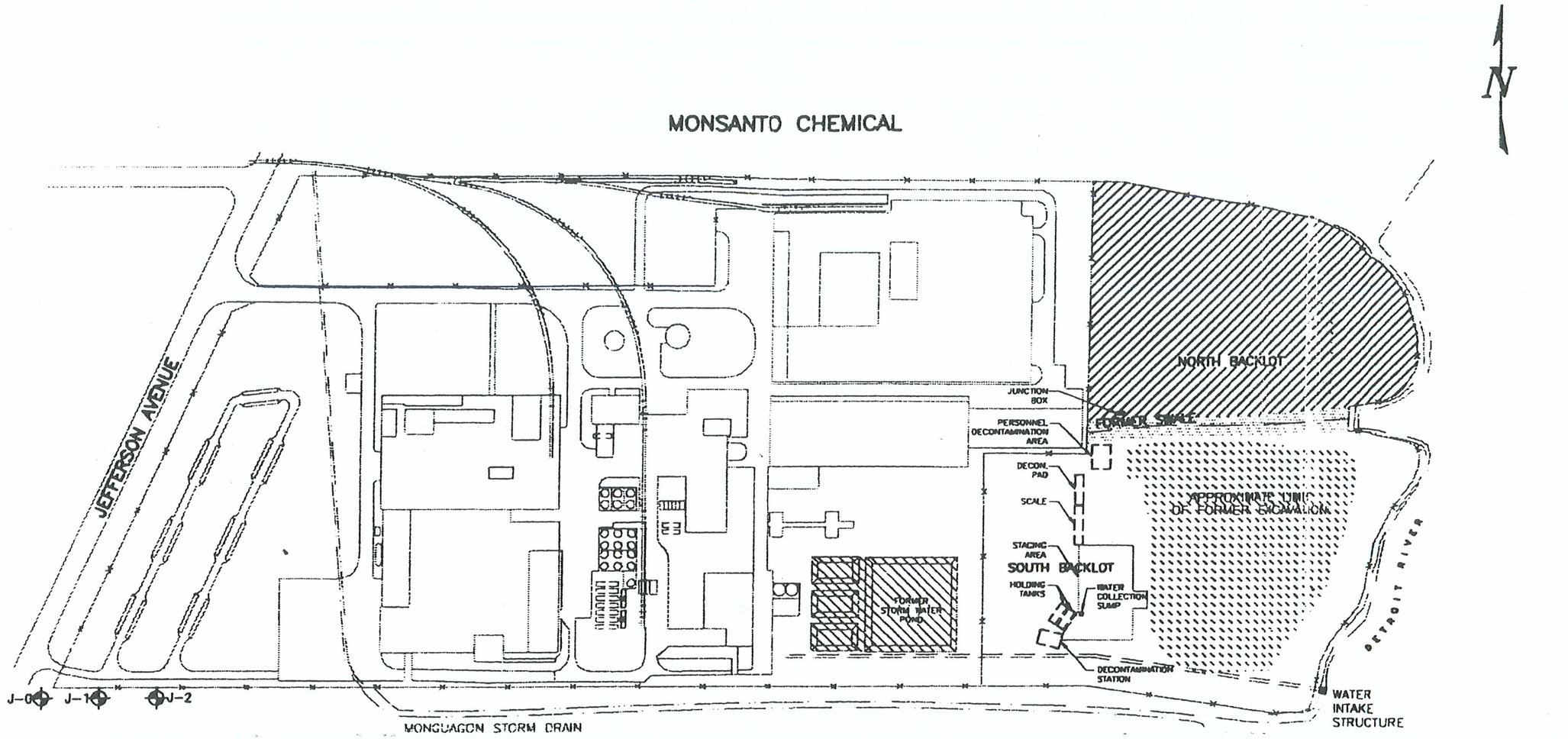
McLaren Hart
ENVIRONMENTAL ENGINEERING CORPORATION

REFERENCE:
U.S. GEOLOGICAL SURVEY, 1981
ROCKWOOD, MICHIGAN–ONTARIO QUADRANGLE

U.S. GEOLOGICAL SURVEY, 1981
WYANDOTTE, MICHIGAN–ONTARIO QUADRANGLE

DATE: 08/18/94	FIGURE 2-1	DRAWING NUMBER 280-A004
SCALE: AS SHOWN		

DRAWN BY: KJP	CHECKED BY	DRAWING NUMBER 280-A004	
DATE 03/22/95	APPROVED BY		
REVISIONS	DESCR.		
No.	APPR. BY:		



MCLOUTH STEEL

LEGEND

- APPROXIMATE LOCATION OF FENCE
- RAILROAD
- NORTH BACKLOT AREA–CAPPED
- DRAINAGE SWALE AREA–REPLACED AND CAPPED
- SOUTH BACKLOT AREA–EXCAVATED, BACKFILLED AND CAPPED
- FORMER STORM WATER POND–BACKFILLED AND CAPPED

SCALE

0 100 200 400 FEET

NORTH BACKLOT CAPPING
FORMER TRENTON CHEMICAL FACILITY
TRENTON, MICHIGAN

PREPARED FOR

CHRYSLER CORPORATION

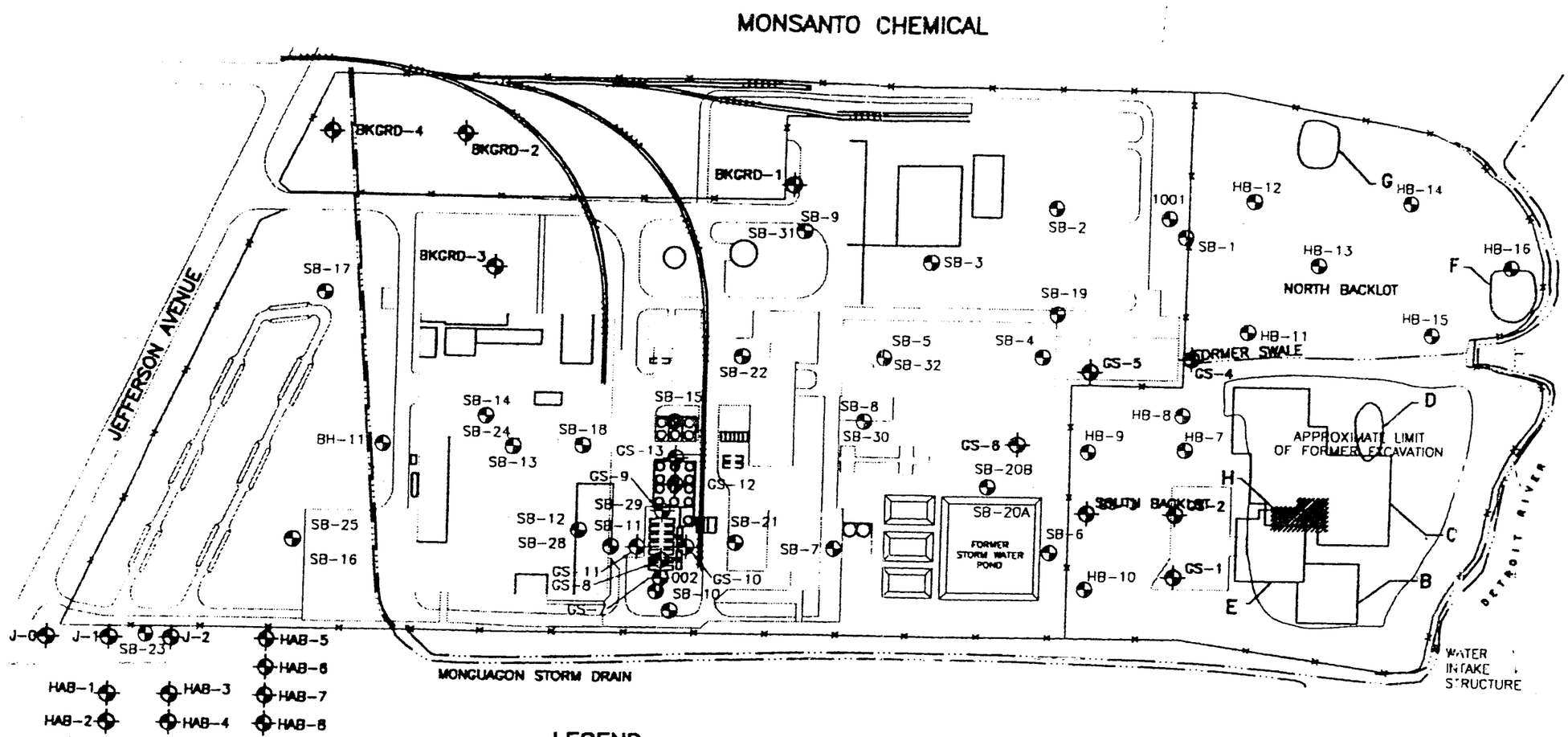
McLaren Hart
ENVIRONMENTAL ENGINEERING CORPORATION

DATE: 12/28/81	FIGURE 3	DRAWING NUMBER 280-8004
SCALE: AS SHOWN		

REVISIONS			
No.	DESCR.	APPR.	BY:

DRAWN BY:			
DATE			
	BJF	CHECKED BY	
	08/18/84	APPROVED BY	

DRAWING NUMBER 280-8004



LEGEND

——⊠——	APPROXIMATE LOCATION OF FENCE
——+++++——	RAILROAD
AREA B	FORMER DRUM BURIAL AREA
AREA C	FORMER DRUM TRENCHES
AREA D	FORMER OIL LAGOON
AREA E	FORMER SOLVENT SOILS
AREA F	NORTH BACKLOT GEOPHYSICAL SIGNATURE
AREA G	NORTH BACKLOT GEOPHYSICAL SIGNATURE
AREA H	FORMER SLUDGE AREA

SCALE

0 100 200 400 FEET

BACKLOT AREAS OF SUSPECTED WASTE ACTIVITIES
FORMER TRENTON CHEMICAL FACILITY
TRENTON, MICHIGAN

PREPARED FOR
CHRYSLER CORPORATION

McLaren Hart
ENVIRONMENTAL ENGINEERING CORP.

DATE: 12/28/91 | FIGURE 5-2 | DRAWING NUMBER

DRAWING NUMBER 280-800

DRAWN BY: BJF
DATE 08/01/94
CHECKED BY
APPROVED BY

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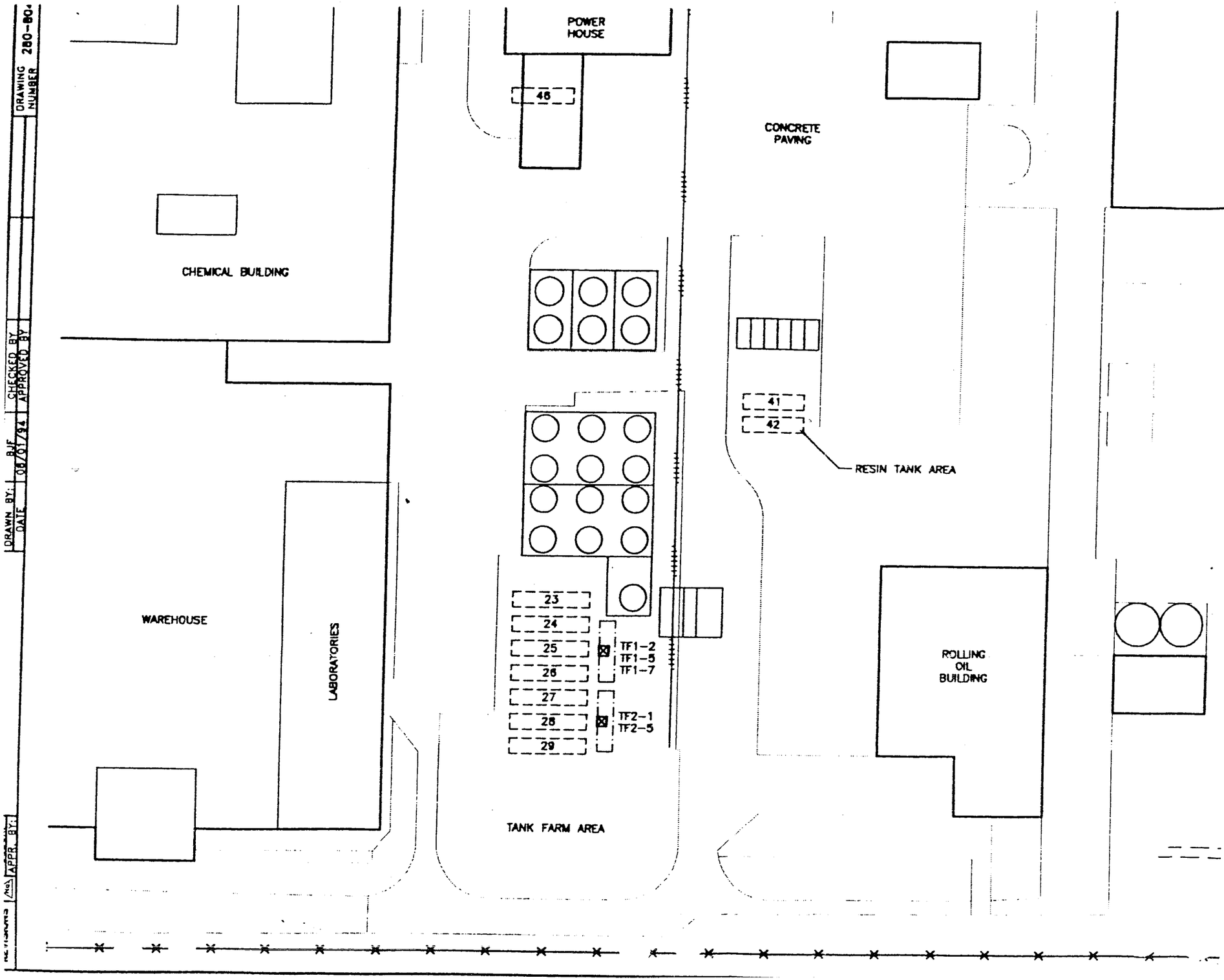


FORMER UNDERGROUND TANK LOCATIONS AND TEST PIT LOCATION PLAN TANK FARM/ROLLING OIL AREA

TRENTON, MICHIGAN

PREPARED FOR

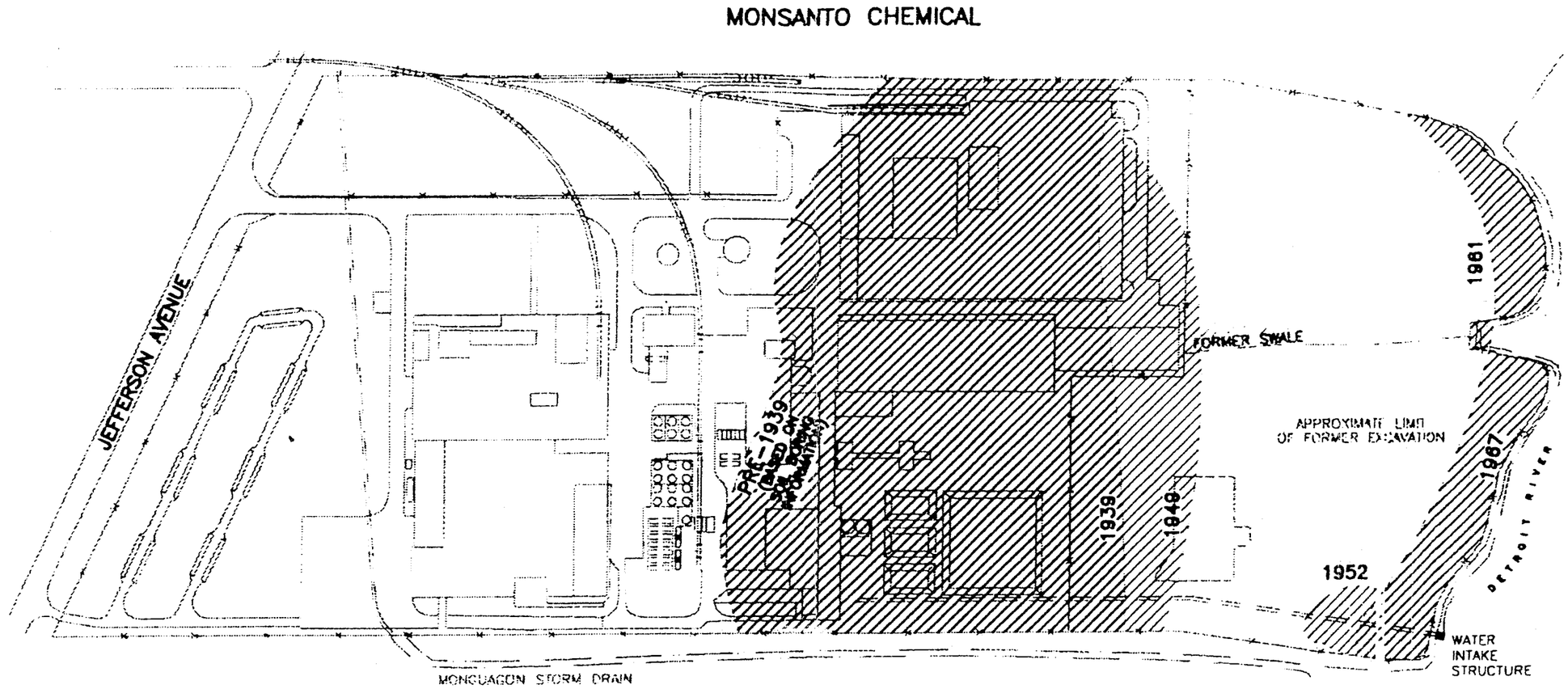
CHRYSLER CORPORATION

McLaren Hart

ENVIRONMENTAL ENGINEER CORPORATION

DATE: 12/19/91 | SCALE: AS SHOWN | FIGURE 5-1 | DRAWING NUMBER 280-8042

DRAWN BY: BJF | DATE: 08/01/94 | CHECKED BY | APPROVED BY | APPR. BY | DRAWING NUMBER 280-80



LEGEND

APPROXIMATE LOCATION OF FENCE

RAILROAD

SCALE

0 100 200 400 FEET

SHORELINE PROGRESSION MAP
1940 TO PRESENT
FORMER TRENTON CHEMICAL FACILITY
TRENTON, MICHIGAN

PREPARED FOR

CHRYSLER CORPORATION

McLaren Hart
ENVIRO ENGINEERING CORPORATION

DATE: 12/26/91

DRAWING NUMBER

DRAWN BY:	B.J.F.	CHECKED BY	
DATE	06/18/94	APPROVED BY	

DRAWING NUMBER 280-8002

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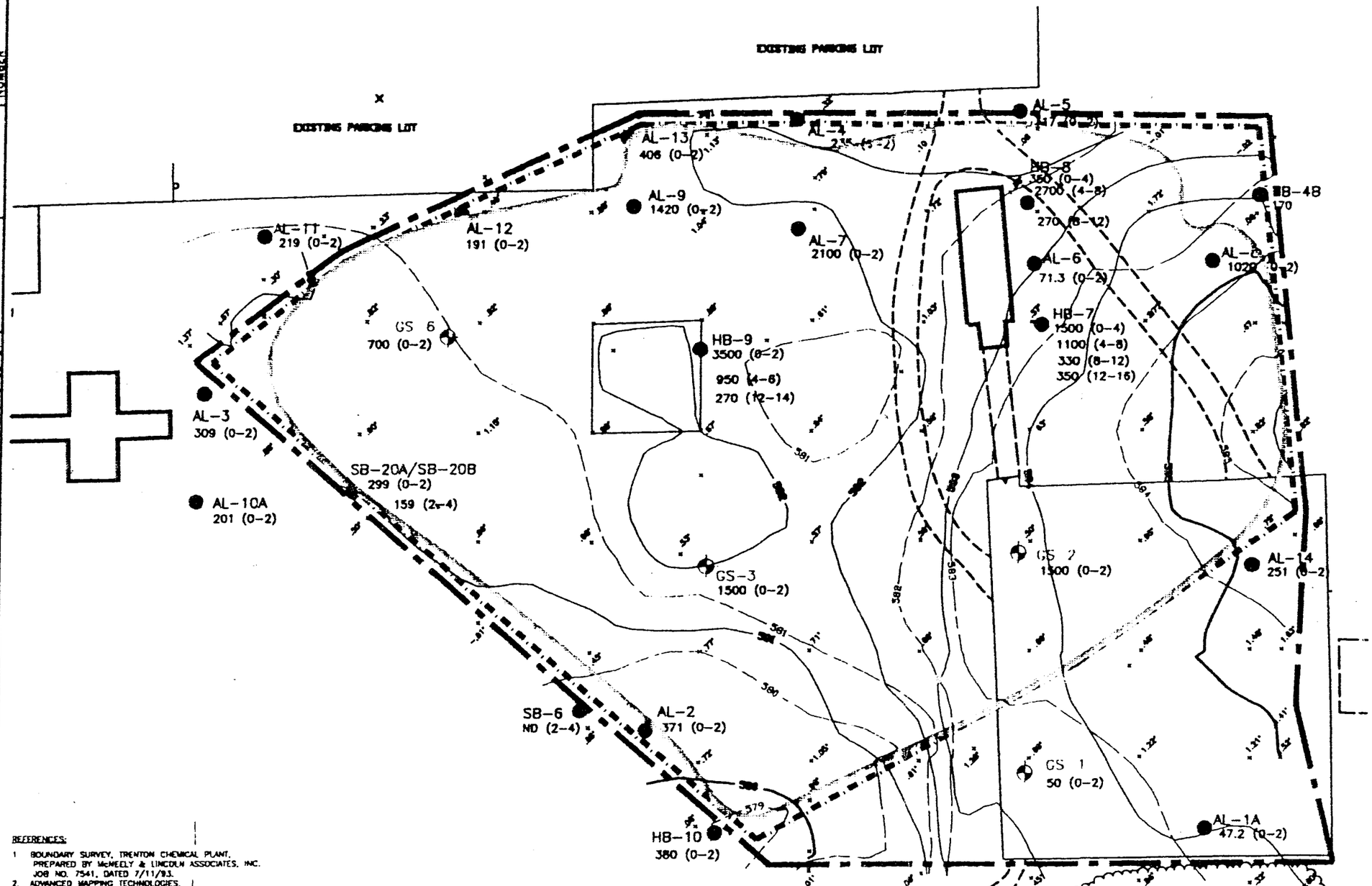


N

LEGEND

- AL-1 / 6.0 — ADDITIONAL SOIL BORING LOCATION (ADDITIONAL SOIL BORING NUMBER; CONCENTRATION (mg/kg))
- B-3-10 / 6.0 — SOIL BORING LOCATION (SOIL BORING NUMBER; CONCENTRATION (mg/kg))
- GS-1 / 6.00 — SOIL SAMPLE LOCATION (SOIL SAMPLE NUMBER; CONCENTRATION (mg/kg))
- LIMIT OF 6" THICK SOIL COVER SYSTEM
- LIMIT OF SOIL PLACEMENT
- 400 ppm Pb CONTOUR INTERVAL
- CONCRETE & EXISTING FOUNDATIONS

NOTE:

DEPTHS ARE IN FEET.

SCALE

0 25 50 100 FEET

REFERENCES:

1. BOUNDARY SURVEY, TRENTON CHEMICAL PLANT, PREPARED BY McNEELY & LINCOLN ASSOCIATES, INC. JOB NO. 7541, DATED 7/11/93.
2. ADVANCED MAPPING TECHNOLOGIES, 519 HURON AVENUE, PORT HURON, MICHIGAN 48060. 313-985-4855
3. PHOTOGRAMMETRIC MAPPING PERFORMED BY ADVANCED MAPPING TECHNOLOGIES FROM 1"=300' SCALE AERIAL PHOTOGRAPHY DATED 03/02/95.

BENCH MARK

RIVER ROAD (JEFFERSON) - TOLEDO AVENUE

BRONZE DISC STAMPED [illegible] & 180, 1954, IN TOP OF CONCRETE POST AT N [illegible] THE INTERSECTION. B.M. IS LOCATED 15.5' S. OF [illegible] OF A SPUR TRACK, 25.0' N. OF THE CENTERLINE OF TOLEDO AVENUE, AND 88.0' W.N.W. OF THE CENTERLINE OF THE INTERSECTION OF THE STREETS ELEV. 577.352

SOIL COVER SYSTEM
DELINEATION & FINAL ELEVATION
TRENTON CHEMICAL FACILITY
TRENTON, MICHIGAN

PREPARED FOR
CHRYSLER CORPORATION

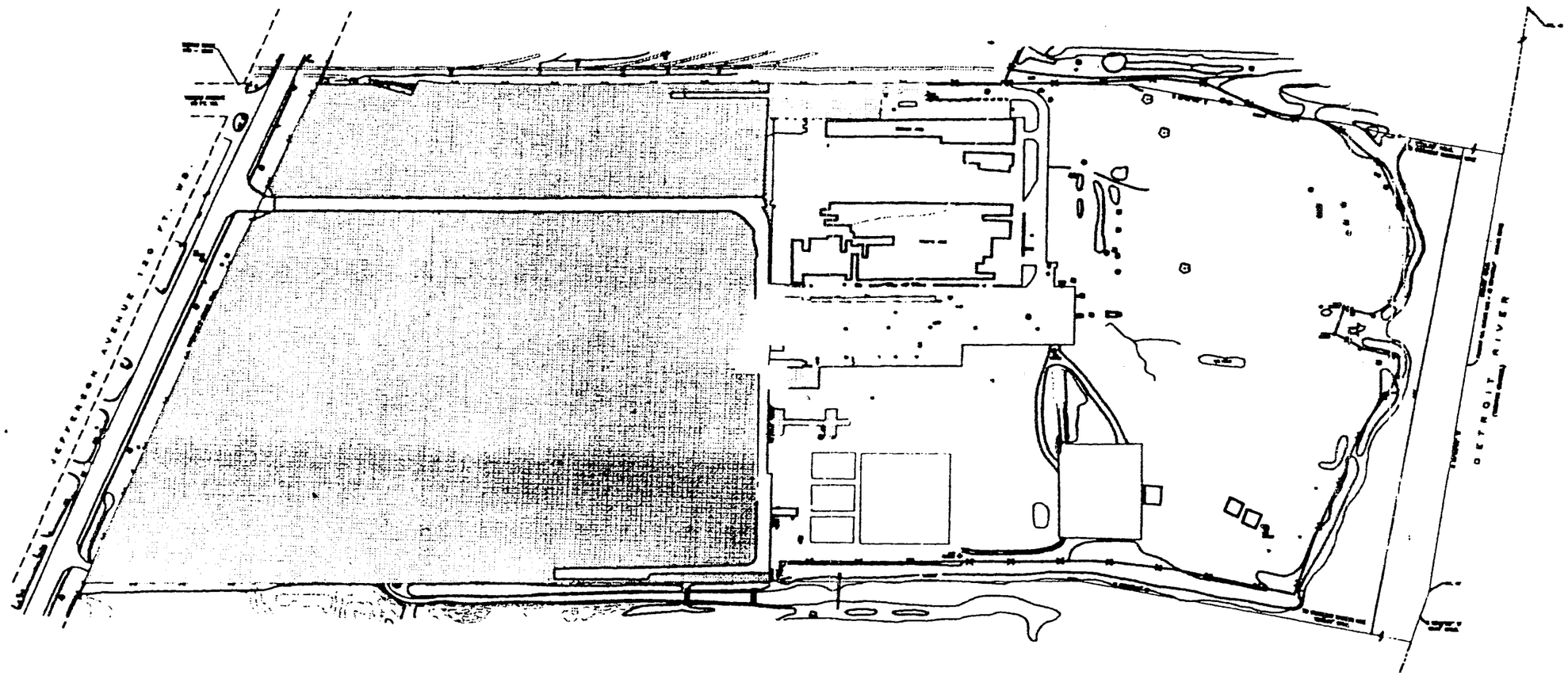
McLaren Art
ENVIRONMENTAL ENGINEERING CORPORATION

DATE: 10/17/95 | FIGURE 5-5 | DRAWING NUMBER

DATE	APPROVED BY	APPR. BY:	NUMBER
05/15/96			32198028

19D003 | PLOT SHEET 5-4 | SHEET 4

MONSANTO CHEMICAL COMPANY
(FORMERLY BERWICK PROPERTY)



AERIAL MAPPING FEATURE LEGEND

LEGEND

SCALE

4	05/12/95	PRELIMINARY CLIENT REVIEW	
3	05/08/95	PRELIMINARY CLIENT REVIEW	
2	04/28/95	PRELIMINARY CLIENT REVIEW	
1	04/18/95	INTERNAL REVIEW	
CHG	DATE	DESCRIPTION	APPROVED

CHRYSLER CORPORATION
TRENTON CHEMICAL FACILITY
TRENTON, MICHIGAN

SITE PLAN

MONSANTO CHEMICAL

PARKING
PARKING
STORAGE AREA
OVEN AREA
SAW AREA
FRICTION PRODUCTS BUILDING
OFFICES
WATER TANK
WATER TANK
CURING AREA
PRESS AREA
OVEN AREA
NORTH BACKLOT
OFFICES
OFFICES LUNCH ROOM
POWER HOUSE
STORAGE
INDUSTRIAL STORAGE AREA
CONCRETE PAVING
PISTON MANUFACTURING BUILDING
FORMER SWALE
CHEMICAL BUILDING
JEFFERSON AVENUE
MATERIAL HANDLING/ NORTH PARKING LOT
MATERIAL STORAGE "RACE TRACK"
FORMER WASTEWATER RETENTION PONDS
SLUDGE POND
PROCESS WASTE
APPROXIMATE LIMITS OF FORMER EXCAVATION
SOUTH BACKLOT
WAREHOUSE
LABORATORIES
CONCRETE PAVING
TANK FARM/ ROLLING OIL BUILDING
ROLLING OIL BUILDING
FORMER STORM WATER POND
SHORELINE 1939
DRUM STORAGE PAD
DETROIT RIVER
TANK FARM AREA
CONCRETE
GRAVEL
WASTE TREATMENT PLANT
OVERFLOW POND
MONGUAGON STORM DRAIN
WATER INTAKE STRUCTURE

MCLOUTH STEEL

LEGEND

APPROXIMATE LOCATION OF FENCE

RAILROAD

SCALE

0 100 200 400 FEET

SITE PLAN
FORMER TRENTON CHEMICAL FACILITY
TRENTON, MICHIGAN

PREPARED FOR
CHRYSLER CORPORATION

McLaren Art
ENVIRONMENTAL ENGINEERING CORPORATION

DATE: 7/26/91
FIGURE 2-3
DRAWING NUMBER

NOTES:
1. THIS SITE PLAN DEPICTS THE LAYOUT OF STRUCTURES AS THEY EXISTED PRIOR TO FACILITY DEACTIVATION IN 1989.

REVISIONS | DESCR. | APPR. | BY:

DRAWN BY: DAG
DATE: 02/11/97
CHECKED BY
APPROVED BY

DRAWING NUMBER 280-

APPENDIX A

SUBSURFACE INVESTIGATION
FORMER TANK FARM

Prepared for:

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Vice President

February 12, 1997

SUBSURFACE INVESTIGATION
CHRYSLER TRENTON CHEMICAL SITE
FORMER TANK FARM
TRENTON, MICHIGAN

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Well Construction Diagrams
Appendix III Analytical Data Sheets/Chain-of-Custody

1.0 INTRODUCTION

This report describes the methodologies and findings from a subsurface investigation at the Chrysler Corporation Trenton Chemical Site in Trenton, Michigan (Site). A Site location plan is shown in Figure 1. The purpose of the investigation was to characterize soil and groundwater conditions at the location of the former tank farm in the southern portion of the Site.

2.0 PROJECT BACKGROUND

At the request of the Michigan Department of Environmental Quality (MDEQ), a limited investigation of the soil and groundwater conditions at the former tank farm in the south central area of the Site was conducted. The purpose of this investigation was to assess the implications of soil samples which were previously collected from this area and which exceeded MDEQ Default Soil Saturation Concentrations (C_{sat})[1] for xylene.

On September 12, 1996 a total of eight soil borings were installed in the vicinity of the former tank farm. Five borings were located in the former tank cavity to evaluate xylene concentrations within the cavity. Three borings were located outside the cavity to provide lateral definition of soil conditions. Samples were analyzed for total xylene only. Results from analysis showed most samples had concentrations less than 20x Industrial Health-Based Drinking Water Values[2] and C_{sat} Screening Levels. However, the sample from boring X-5, located in the center of the former cavity, exceeded the MDEQ Default Soil Saturation Concentrations (C_{sat}) and the 20x Drinking Water Value for xylene. The sample taken from boring X-2, which was also located within the former tank cavity, exceeded the 20x Drinking Water Value for xylene, but was below the C_{sat} Screening Levels. Results of the sampling are discussed in Section 4.3 of this report.

In response to the exceedence of C_{sat} concentrations for xylene, the MDEQ requested the installation of four soil borings and monitoring wells (i.e., one well in the former tank cavity and three along the southern edge of the property). This groundwater evaluation was requested to evaluate the possibility that C_{sat} exceedence could be affecting groundwater and to evaluate the possibility of off-site migration. The MDEQ further requested benzene, toluene, ethylbenzene and xylene (BTEX) analyses for soil and groundwater samples collected from this investigation.

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[1] C_{sat} refers to Michigan Department of Environmental Quality, Tier 1 Soil Saturation Concentrations (C_{sat}) Screening Levels, dated September 4, 1996 unless otherwise noted.

[2] 20x Industrial Health-Based Drinking Water Values refer to Michigan Department of Natural Resources, Environmental Response Division Operational Memorandum No. 14, Revision 2, dated June 6, 1995, Industrial Health-Based 20x Drinking Water Values unless otherwise noted.

In December 1996, to address the above-noted issues, McLaren/Hart installed one boring and monitoring well in the former tank farm cavity and three borings and monitoring wells along the southern edge of the site, (near the Monguagon Drain). Results of the sampling are discussed in Section 4.3 and 4.4 of this report.

3.0 SCOPE OF WORK

The following subsection discusses the scope of work implemented to assess soil and groundwater conditions associated with the former tank farm area.

3.1 Field Activities

Field investigation activities included the following:

- Completion of eight soil test borings (locations X-1 through X-4, X-4B, X-5, X-7 and X-8) within and adjacent to the former tank cavity using a truck-mounted CME 750 drill rig, equipped with 8-inch diameter hollow-stem augers and split spoon capability to evaluate subsurface soils;

- Completion of four soil test borings/monitoring wells (Z-1 through Z-4) using a truck-mounted CME 750 drill rig equipped with 8-inch and 12-inch diameter hollow-stem augers and split spoon capability to evaluate subsurface soils and monitor groundwater within the upper bedrock fractured zone;

- Development of four monitoring wells in the soil boring locations (Z-1 through Z-4);

- Field screening of soil samples for the presence of total volatile organic compounds (VOCs) using an HNu® photoionization detector (PID)[3];

- Sampling of soil boring locations and groundwater monitoring wells;

- Laboratory analysis of selected soil and groundwater samples for BTEX compounds.

3.2 Investigative Methodologies

Investigative methods implemented during McLaren/Hart's subsurface investigation included hollow-stem rotary drilling with subsequent split-spoon soil sampling, soil sample field-screening with an HNu® photoionization detector (PID), groundwater sampling from monitoring wells, laboratory analysis of selected soil and groundwater samples, and surveying. The methodologies employed are detailed in the McLaren/Hart Work Plan dated November 25, 1996 (see Appendix I). Monitoring

---

[3] The PID consisted of a 10.2 eV lamp and was calibrated using isobutylene gas referenced to the 100 ppm benzene standard.

well and soil boring locations are illustrated in Figure 2. Soil boring logs and well construction diagrams are found in Appendix II.

3.3 Laboratory Analysis

Soil and groundwater samples collected at the Site were analyzed for the following parameters:

Parameter	US EPA Method Number
Xylenes	8240
BTEX	8260

All samples were submitted to CompuChem Environmental Corporation, Research Triangle, North Carolina, for laboratory analysis.

Selected soil samples from each boring were submitted for laboratory analysis based on visual, olfactory or field screening evidence of potential chemical impact. The most apparently chemically affected sample from each boring was submitted for analysis.

All samples obtained during this investigation were shipped to the laboratory under chain-of-custody protocols. Field sampling procedures followed the guidelines documented in the "Chrysler Corporation Environmental Contract Laboratory Program Laboratory Specifications Manual."

4.0 INVESTIGATION RESULTS AND SELECTION OF CRITERIA

Both hydrogeologic and environmental conditions were evaluated during the investigation as described in the sections that follow.

4.1 Hydrogeologic Conditions

Hydrogeologic conditions were evaluated during soil boring installation within the former tank cavity and during monitoring well installation adjacent to the Monguagon Drain (Figure 2).

The tank cavity soils encountered during installation of soil test borings X-1, X-2, X-5, X-7, X-8 and monitoring well Z-1 consisted of both native and backfilled materials. Bedrock was encountered at approximate depths ranging from 13 to 15 feet. Surficial soils, which apparently cap the area to depths approximately 5 feet below the surface, are fill consisting of grey-brown silty clay. Below this, the soils encountered within the former tank cavity range from backfilled limestone gravel towards the north and fine to medium sand to the south and east directions. These fills are underlain by native brown to grey silty clay, then clayey sands, and finally dolomitic limestone bedrock. Boring logs are provided in Appendix II. The perched water encountered within the former tank farm cavity is due to porosity created between unconsolidated gravels or sands, resulting in the mounding of water upon a relatively impermeable silty clay.

Surficial silty clay fill was also encountered at monitoring wells Z-2 and Z-3 to depths of approximately 5 and 4 feet below the surface, respectively. Surficial soils at Z-4 are composed of fine to medium sand fill (adjacent sanitary sewer backfill) to a depth of approximately 11 feet. Both fill horizons are underlain by native grey-brown silty clay, then clayey sands, and finally dolomitic limestone bedrock. Fractured and weathered bedrock was penetrated at all four monitoring wells (Z-1 through Z-4). This first bedrock saturated zone was intercepted and screened during monitoring well installation. Monitoring well construction diagrams are provided in Appendix II.

4.2 Selection of Applicable Regulatory Criteria

The Site's planned future use will be consistent with industrial use criteria, thus, soil analytical results have been compared to Direct Contact[4] and 20x Drinking Water values for industrial land use and C_{sat} Screening Levels. Groundwater analytical results have been compared to health-based drinking water values for residential use[5] as a reference to evaluate chemical concentrations for groundwater potentially leaving the site. However, since groundwater is not in an aquifer, is not a potential drinking water source on site, and future site reuse will restrict groundwater use, Generic Utility Worker Groundwater Contact Criteria[6] was used to evaluate groundwater quality onsite.

4.3 Soil Analytical Results

All soil samples were PID field-screened for total VOCs. Field screening results ranged from ambient background levels of 0.4 ppm to instrumentation over range levels of greater than 1000 ppm for soils sampled from the former tank farm area. Screening results from borings Z-2, Z-3 and Z-4, which were installed adjacent to the southern property line along the fence row, indicated no PID readings greater than background levels. Visual and olfactory observations indicated no chemically-affected soils at the three perimeter boring locations. Soil borings X-3, X-4, X-4A, and X-4B, which were used to define the limits of xylene affected soils to the north of the tank cavity, displayed PID readings from background to 2.2 ppm.

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[4] Direct Contact Values refer to Michigan Department of Natural Resources, Environmental Response Division Operational Memorandum No. 8, Revision 4, dated June 5, 1995.

[5] Residential Drinking Water Values refer to Michigan Department of Natural Resources, Environmental Response Division Operational Memorandum No. 8, Revision 4, dated June 5, 1995, Residential Health-Based Drinking Water Values unless otherwise noted.

[6] Generic Utility Worker Groundwater Contact Criteria refers to Michigan Department of Environmental Quality, Environmental Response Division Interim Generic Utility Worker Groundwater Contact Criteria: Addendum to Interim Operational Memoranda #8, Revision 4 and #14, Revision 2, dated May 14, 1996, Utility Worker Contact Values unless otherwise noted.

As discussed previously, soil samples from locations X-1 through X-8, collected September 12, 1996, were analyzed for xylene compounds only. Xylene compounds were detected in 8 of 15 samples submitted. Samples X-1 (7-9 ft), X-1 (13-15 ft), X-2 (13-14.5 ft), X-5 (13-15 ft), X-7 (5-7 ft), X-7 (13-14.5 ft), X-8 (9-11 ft), and X-8 (13-14 ft) contained total xylene concentrations ranging from 0.017 to 10.0 ppm, which are below both the 20x Industrial Health-Based Drinking Water Criteria and the C_{sat} Screening Levels established by the MDEQ. Soil samples X-3 (5-7 ft), X-3 (7-9 ft), X-4 (5-7 ft), X-4B (8-10 ft), and X-4B (12-13.5 ft) contained non-detectable concentrations of xylenes.

Analytical results of the soil sample from X-2 (11-13 ft) showed a total xylene concentration of 260 ppm, which is above the 20x Industrial Health-Based Drinking Water Criteria (200 mg/l), but below the C_{sat} Screening Levels (400 mg/kg) established by the MDEQ. Analytical results of the soil sample from X-5 (11-13 ft) revealed a total xylene concentration of 660 mg/kg. This level is above both the 20x Industrial Drinking Water Criteria and the C_{sat} Screening Levels. The presence of xylenes in concentrations above the C_{sat} value prompted further investigation of the area, including the Z-series soil and groundwater sampling.

Soil samples from locations Z-1 through Z-4, collected December 4 through December 6, 1996, were analyzed for BTEX compounds. Analytical results from soil sample Z-1, located in the former tank cavity, revealed a concentration of 1.40 mg/kg of ethylbenzene and 2.00 mg/kg of xylenes. These levels are below both the 20x Industrial Drinking Water Criteria and below the C_{sat} Screening Levels.

BTEX compounds were not detected in samples from locations Z-2 through Z-4, located along the southern property line, near the Monguagon Drain. Results of the laboratory analyses are presented in Table 1. Laboratory data sheets for these analyses are found in Appendix III.

4.4 Groundwater Analytical Results

Groundwater samples from locations Z-1 through Z-4, collected December 20, 1996, were also analyzed for BTEX compounds. As summarized in Table 2, the presence of benzene (0.028 mg/l), ethylbenzene (0.450 mg/l) and xylenes (0.740 mg/l) was reported in the groundwater sample obtained from well Z-1, located within the former tank cavity. These levels of ethylbenzene, toluene and total xylene are below the Generic Residential Health-Based Drinking Water Criteria established by the MDEQ. However, the detected level of benzene does exceed the Residential Drinking Water value (.005 mg/l). All groundwater samples were found to be below the Generic Utility Worker Groundwater Contact Criteria for all BTEX compounds.

Groundwater samples collected from monitoring wells Z-2, Z-3 and Z-4, which were located along the southern property line, did not contain detectable concentrations of BTEX compounds. Laboratory data sheets for these analyses are found in Appendix III.

4.5 QA/QC Samples

One trip blank was included with each sample shipment to the laboratory, for both soil and groundwater sampling. No target analytes were present in the trip blanks.

5.0 DISCUSSION OF RESULTS AND CONCLUSIONS

5.1 Soil Results and Conclusions

Analytical data obtained from the September 1996 xylene investigation indicate that concentrations of xylene exceeded 20x Drinking Water and C_{sat} criteria in two locations, X-2 and X-5, at depths of 11 to 13 feet. Both borings X-2 and X-5 were installed in the former tank cavity. The lateral extent of xylene present above 20x Drinking Water criteria in soils is defined by historical borings, GS-13, boring 1002, X-3, X-4, X-7, SB-21 and SB-29.

Analytical data obtained from the December 1996 investigations indicate that detected concentrations of ethylbenzene and xylene in boring location Z-1, installed in the former tank cavity, are below 20x Drinking Water and C_{sat} standards. No detectable concentrations of BTEX compounds are present in boring locations Z-2, Z-3 and Z-4 at the south edge of the Site.

The presence of xylene in soils located in the former tank cavity is below Industrial Direct Contact Criteria, the Site's applicable cleanup criteria. As such, no further remedial action is warranted. The extent of affected soils has been determined and control of the affected area will be applied to the Site through deed restrictions.

5.2 Groundwater Results and Conclusions

Groundwater in the subject area was evaluated in December 1996 to determine whether the C_{sat} exceedence had affected groundwater. Monitoring well Z-1 was installed in the former tank cavity, the area of the C_{sat} exceedence. Results from the groundwater sample obtained from monitoring well Z-1 indicate that xylene, ethylbenzene and toluene concentrations do not exceed residential health based drinking water criteria. Benzene concentrations are presently above residential health based drinking water values but below Generic Utility Worker Groundwater Contact Criteria, the applicable onsite groundwater standard. The potential for offsite migration of BTEX compounds was also investigated. No BTEX compounds were detected in monitoring wells Z-2, Z-3, and Z-4 located at the southern edge of the Site.

The presence of benzene in groundwater samples collected from the tank cavity location does not warrant further action. Geology observed on the Site indicates that groundwater flow is not continuous through the unconsolidated glacial deposit from the former tank cavity area to the Site's southern edge and no concentrations of constituents have been observed in monitoring wells located at the Site's perimeter.

TABLES

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
FORMER XYLENE TANK AREA
TRENTON CHEMICAL SITE
TRENTON, MICHIGAN

All concentrations are expressed in parts per million (ppm).

Analyte	Direct Contact Value (1)	Residential Health-Based Drinking Water Value (2)	Sample (3)			
			Z-1	Z-2	Z-3	Z-4
Benzene	9.3	0.005	0.028	<.001	<.001	<.001
Toluene	800.0	1.000	<.025	<.001	<.001	<.001
Ethylbenzene	200.0	0.700	0.450	<.001	<.001	<.001
Xylene (total)	3500.0	10.000	0.740	<.001	<.001	<.001

NOTES:

NA = not available

1. Michigan Department of Environmental Quality, Environmental Response Division Interim Generic Utility Worker Groundwater Contact Criteria: Addendum to Interim Operational Memoranda #8, Revision 4 and #14, Revision 2, dated May 14, 1996, Utility Worker Contact Values.
2. Michigan Department of Natural Resources, Environmental Response Division Operational Memorandum No. 8, Revision 4, dated June 5, 1995, Residential Health-Based Drinking Water Values.
3. Sampling occurred December 20, 1996.

k:\chrys-tc\tc-btex.xlw

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS
FORMER XYLENE TANK AREA
TRENTON CHEMICAL SITE
TRENTON, MICHIGAN

All concentrations are expressed in parts per million (ppm).

Analyte	20x Industrial Health-Based Drinking Water Value (1)	Cast Value (2)	Industrial Direct Contact Value (3)	Sample (4)																		
				X-1	X-1	X-2	X-2	X-3	X-3	X-4	X-4B	X-4B	X-5	X-5	X-7	X-7	X-8	X-8	Z-1	Z-2	Z-3	Z-4
				7-9 ft	13-15 ft	11-13 ft	13-14.5 ft	5-7 ft	7-9 ft	5-7 ft	8-10 ft	12-13.5 ft	11-13 ft	13-15 ft	5-7 ft	13-14.5 ft	9-11 ft	13-14 ft	7-9 ft	10.5-12.5 ft	10.5-12.5 ft	10.5-12.5 ft
Benzene	0.10	770	850	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<.001	<.001	<.001	<.001
Toluene	20.00	620	160,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<.001	<.001	<.001	<.001
Ethylbenzene	14.00	380	72,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.40	<.001	<.001	<.001
Xylene (total)	200.00	400	1,000,000	0.34	0.92	260	10.00	<.001	<.001	<.001	<.001	<.001	660	0.12	0.16	0.24	0.017	0.02	2.00	<.001	<.001	<.001

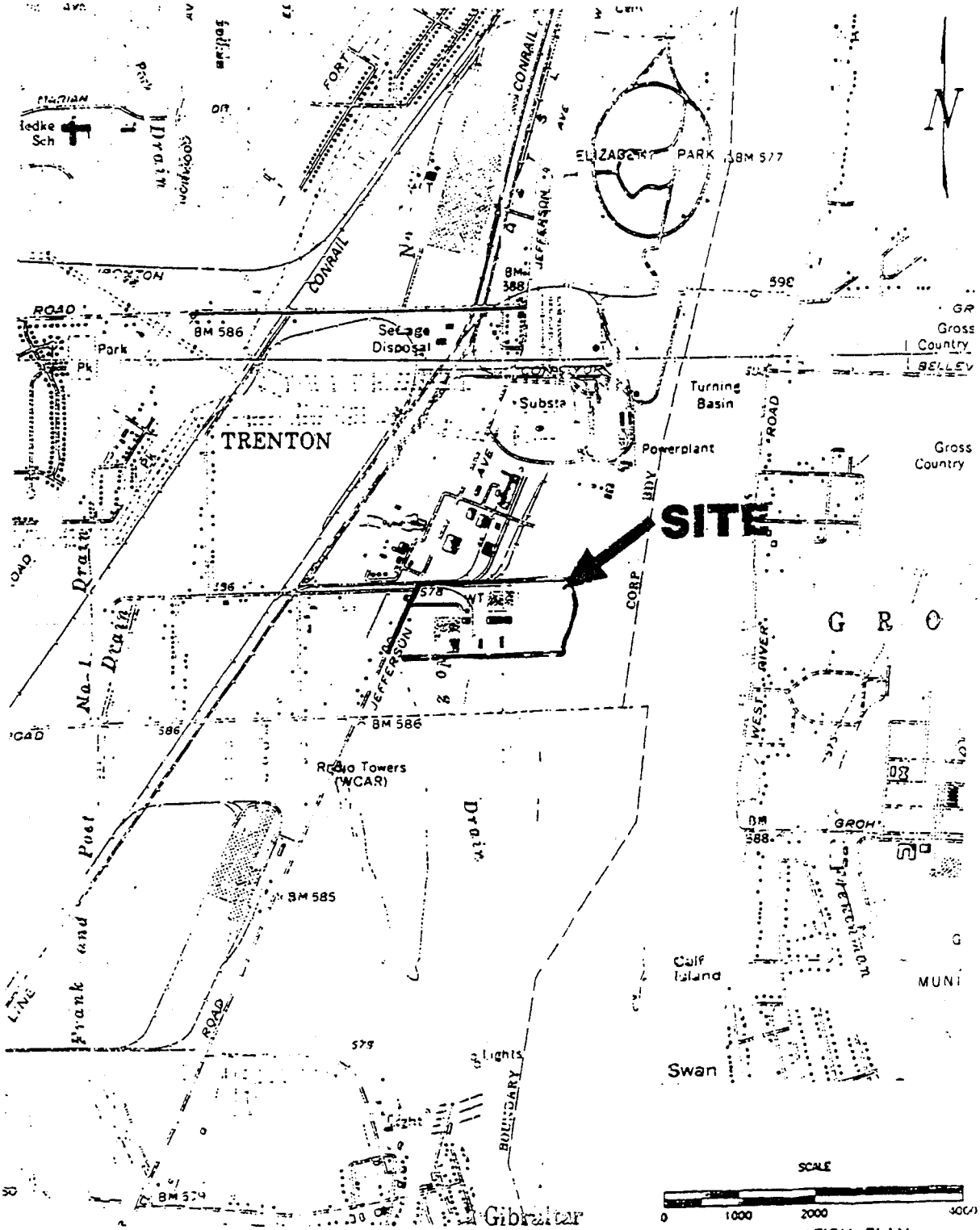
NOTES:

NA: Analyte was not analyzed for.

1. Michigan Department of Natural Resources, Environmental Response Division Operational Memorandum No. 14, Revision 2, dated June 6, 1995, Industrial Health-Based Drinking Water Values x 20.
2. Michigan Department of Environmental Quality, Tier 1 Soil Saturation Concentrations (Cast) Screening Levels, dated September 4, 1996.
3. Michigan Department of Natural Resources, Environmental Response Division Operational Memorandum No. 14, Revision 2, dated June 6, 1995, Industrial Direct Contact Values.
4. X-series installed September 9, 1996;
   Z-series installed December 4-15, 1996.

K:\clays-tolle_trex.xlw

FIGURES



SITE LOCATION PLAN
FORMER TRENTON CHEMICAL FACILITY
TRENTON, MICHIGAN

PREPARED FOR
CHRYSLER CORPORATION

McLaren Hart
ENVIRONMENTAL ENGINEERING CORPORATION

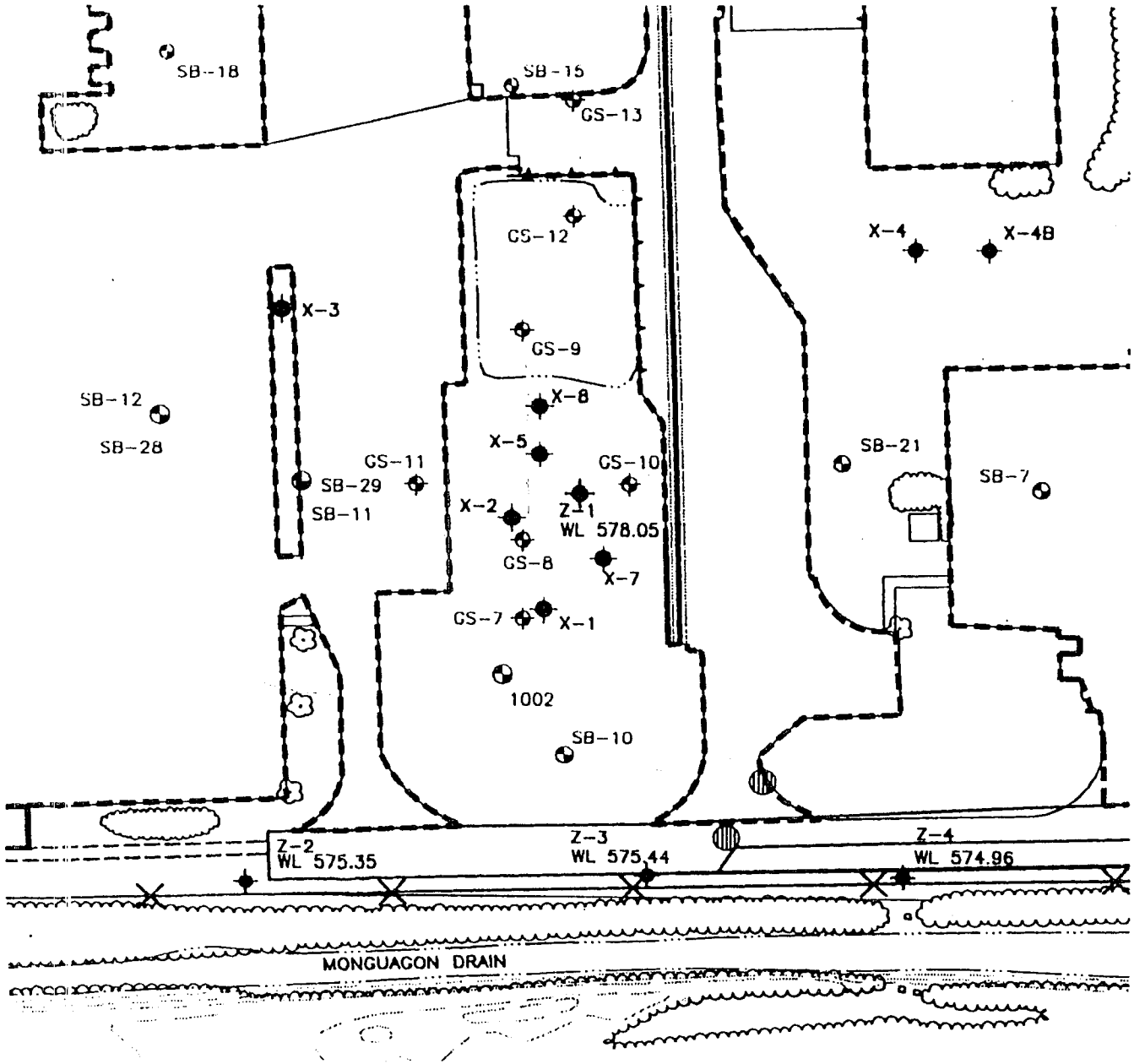
REFERENCE:
U.S. GEOLOGICAL SURVEY, 1981
ROCKWOOD, MICHIGAN–ONTARIO QUADRANGLE

U.S. GEOLOGICAL SURVEY, 1981
WYANDOTTE, MICHIGAN–ONTARIO QUADRANGLE

DATE: 08/13/94	FIGURE	1	DRAWING NUMBER 280-A004
SCALE: AS SHOWN			

DRAWN BY: KJP	CHECKED BY		DRAWING NUMBER 280-A004
DATE 03/22/95	APPROVED BY		

REVISIONS	NO.	DESCR.	APPR.	BY:



LEGEND

- BEDROCK MONITORING WELL LOCATIONS
- EXISTING SOIL BORING LOCATIONS
- MANHOLE
- EDGE OF FORMER CONCRETE
- WL GROUNDWATER ELEVATION

NOTES:
CONCENTRATIONS WHERE WHERE NOTED ARE IN mg/kg.

SCALE
0 40 80 160 FEET

FORMER XYLENE TANK FARM AREA LOCATION MAP
TRENTON CHEMICAL FACILITY
TRENTON, MICHIGAN

PREPARED FOR
CHRYSLER CORPORATION

McLaren Hart
ENVIRONMENTAL ENGINEERING CORPORATION

DATE: 02/11/97	FIGURE 2	DRAWING NUMBER
SCALE: AS SHOWN		3218A011

1.0 PROJECT UNDERSTANDING

This Work Plan describes the proposed scope of work McLaren/Hart will implement on behalf of Chrysler Corporation (Chrysler), to assess groundwater conditions at the former xylene tank farm at the Trenton Chemical site in Trenton, Michigan. As requested by the Michigan Department of Environmental Quality (MDEQ), four soil borings/monitoring wells are required (i.e., one boring/well in the former tank cavity and three borings/wells along the south edge of the site near the Monguagon Drain) to evaluate the exceedance of MDEQ default Soil Saturation Concentrations (C_{sat}) for xylene. The specific methodologies McLaren/Hart will follow to install the borings/wells are provided in the following scope of work sections below, including specific locations, and standard procedural protocol for decontamination between borings, well development, soil classification, soil/groundwater sampling, and surveying.

2.0 SCOPE OF WORK

2.1 Boring/Monitoring Well Installation

Four soil borings and monitoring wells will be installed through overburden soils/fill using a rotary drill rig, equipped with hollow stem augers and air rotary capability for bedrock penetration. A monitoring well will be installed within each soil boring. The three (3) borings/wells along the Monguagon Drain will be placed east of the former tank farm at approximately 100 to 125-foot spacing centers (figure 1). These wells will be constructed using 2-inch diameter PVC risers and well screens. Five foot long screens, with 0.01 inch slots, will be used. It is anticipated that these monitoring wells will be screened within the fractured bedrock zone. Bedrock is anticipated to be encountered at approximately 15 feet bgs and wells are anticipated to be screened between 15 and 20 feet below ground surface (bgs). The monitoring well in the former xylene tank farm will be installed between former soil test borings X-5 and X-7 (Figure 1). This well will be constructed using 6-inch diameter PVC riser and well screen. A five foot long screen, with 0.01 inch slots, will be used. It is anticipated that this monitoring well will be screened to intercept the first saturated zone encountered. This zone is anticipated to be immediately above the bedrock surface at about 12 to 17 feet bgs. A sand pack will be placed around the screen, followed by a one foot bentonite seal. The borehole will then be grouted to surface with a cement/bentonite grout and the wells will finished, at surface, with a locking stick-up type casing.

Decontamination of all drilling equipment will be performed between borings/wells, as to not cross-contaminate between boring locations. This will be accomplished through the use of an on-site high pressure steam cleaner. Actual tooling, that will come in contact with the soil sample core, will be washed in a successive sequence with a non-phosphate detergent and water solution, rinsed in domestic tap water, rinsed with methanol alcohol, and followed by a final rinse of distilled water.

Drilling spoils and groundwater and/or liquids generated from drilling activities will be

temporarily stored in separate 55-gallon DOT drums and will be handled as discussed in section 2.5.

2.2 Soil Sampling

Soils samples will be collected in 2.5 foot intervals throughout the upper soil deposit, using split spoon soil sampling techniques. Soil samples will be visually examined, classified, and logged by a McLaren/Hart geoscientist, in accordance with ASTM D-2487 and D-2488 (Standard Test Method for Classification of Soils for Engineering Purposes and Standard Practice for Description and Identification of Soils/Visual-Manual Procedure). A Photo Ionization Detector (PID) will be used to screen soils samples, auger cuttings, and ambient air for total volatile organic compounds. Soils samples will be handled using clean latex gloves, placed in laboratory-supplied glassware, and stored on ice throughout the sampling event. One soil sample will be selected from each boring and analyzed for toluene, ethylbenzene and total xylene using U.S. EPA Method 8240. Based on PID screening results, visual evidence and/or olfactory evidence, the sample that appears to be the most chemically-affected will be submitted for analytical testing.

Containerized drilling spoils will be sampled for waste characterization and submitted for analytical testing. This sample will be analyzed for Volatile Organic Compounds (VOCs), Semivolatile Organic Compounds (SVOCs), and Metals by Toxicity Characteristic Leaching Procedure (TCLP) and Reactivity, Corrosivity, and Ignitability (RCI). Samples will be shipped to a Chrysler approved laboratory, following chain-of-custody protocols. One trip blank will be included with the sample shipment.

2.2 Monitoring Well Development

Monitoring wells will be developed at least 24 hours after completion using surging, bailing, and/or pumping techniques to remove fines from around the well screen and promote good hydraulic communication with the saturated zone. Temperature, pH, and specific conductance will be monitored during development. Development will be considered complete once these parameters stabilize to within 10% or when the well goes dry. All groundwater evacuated from the wells from the well development will be temporarily stored in 55-gallon DOT drums and handled as discussed in section 2.5.

2.3 Monitoring Well/Water Sampling

Monitoring well sampling will occur at least 24 hours after development. Each well will be gauged prior to purging and sampling. At least three well volumes of standing water will be removed from the monitoring well prior to sampling, in addition to temperature, pH, and specific conductance monitoring. Once these parameters stabilize to within 10%, or the well goes dry, sampling will occur and be performed using disposable polyethylene bailers. Groundwater samples will be transferred into laboratory-supplied glassware and stored on ice throughout the sampling event. Following chain-of-custody protocols samples will be shipped to a Chrysler approved laboratory for analytical testing for

toluene, ethylbenzene, and xylene using U.S. EPA Method 8240. One trip blank will be included with the sample shipment. All groundwater evacuated from the wells will be temporarily stored in 55-gallon DOT drums and handled as discussed in section 2.5.

2.4 Surveying

Upon completion of development, the wells will be surveyed for ground surface, top of protective casing, and top of riser elevation. Elevations will be referenced to the existing site datum and benchmark elevation. Elevations for groundwater surface and top of protective casing will be determined + or - 0.1 feet. The elevation for the top of riser will be determined to + or - 0.1 feet. Monitoring wells will be located in the field using tape measured distance and line-of-site reference. The data will transfer to monitoring well construction diagrams and a soil boring location plan.

2.5 Disposal of Soil Cuttings and Groundwater/Liquids

The disposal of soil cuttings will occur once analytical data from the waste characterization sample is received. McLaren/Hart will make arrangements for off-site disposal of the non-hazardous drums at a Chrysler approved facility. All temporarily staged groundwater/liquids containerized in 55-gallon DOT drums will be disposed at a Chrysler approved facility and will be shipped under the existing non-hazardous waste characterization profiles.

3.0 DURATION OF WORK

The above detailed scope of work for activities associated with the installation of four borings/monitoring wells will be conducted within 2 to 3 working days commencing upon Chrysler and MDEQ approval of this Work Plan. It is anticipated that soil boring/monitoring well installation will require 2 days to complete. Monitoring well development will require 1 day to complete and will be scheduled to occur 24 hours after drilling has been completed. Groundwater sampling will require one day to complete and be scheduled 24 hours after development has occurred. It is expected that sample analytical results will be received within 2 weeks and disposal arrangements will require 2 weeks to complete.

recycled paper

APPENDIX II

SOIL BORING LOGS
WELL CONSTRUCTION DIAGRAMS

SOIL BORING LOG

McLaren Hart

Geologist: Jeff Stump

PROJECT	CHRYSLER TRENTON CHEMICAL	LOCATION	Trenton, Michigan
JOB #	070803219011001	DATE (s) 9/12/96 (f) 9/12/96	TOTAL DEPTH 15.0'
		SUBCONTRACTORS	Toltest, Inc.
SAMPLING METHOD	Split Spoon	EQUIPMENT	CME 750
MONITORING DEVICE	H-nU PID	DRILLERS	Neil Wirton

Depth Below Surface (ft.)	Penetration Test Results: Blows Per 0.5'	Sampler Interval/ Recovery	PID Reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	USCS Designation	Graphic Log	Comments / Notes
				FILL: Silty Clay; (0,20,30); no gravel; little fine to medium sand, poorly graded; mostly medium plastic fines; brown; moist; medium stiff.			
2.0							
4.0							
6.0	5 5 7 8		0.2	FILL: Sand/Gravel; (50,50,0); fine limestone gravel, subround to subangular; fine to medium sand, poorly graded; no fines; brown to grey; saturated, medium dense.			Blind Drilled to 5.0 feet
8.0	10 7 6 4		77.2	FILL: (0,100,0); Sand; no gravel; fine to medium sand; no fines; saturated; medium dense.			
10.0	1 2 22 11		9.0				Odorous with Apparent Staining
				SILTY CLAY with sand (CL): (0,20,80); no gravel; little fine to medium sand, poorly graded; mostly medium plastic fines; brown with grey mottling; dry to moist; stiff.	CL		
12.0			60	SAND with gravel and silt (SP): (20,60,20); some fine gravel, subangular; mostly fine to coarse sand, poorly graded; some medium plastic fines; very pale orange to grey; wet; medium dense.	SP SM		
14.0			19	Same As Above			
				End of Boring at 15.0-feet			Refusal/Bedrock

SOIL BORING LOG

BORING #: X-4

Page 1 of 1

Geologist: Jeff Stumo

McLaren Hart

PROJECT: CHRYSLER TRENTON CHEMICAL

LOCATION: Trenton, Michigan

JOB #: 070803219011001

DATE (s): 9/12/96 (f) 9/12/96

TOTAL DEPTH: 7.0'

SUBCONTRACTORS: Toltest, Inc.

SAMPLING METHOD: Split Spoon

EQUIPMENT: CME 750

MONITORING DEVICE: H-nU PID

DRILLERS: Neil Wirton

Depth Below Surface (ft.)	Penetration Test Results: Blows Per 0.5'	Sampler Interval/ Recovery	PID Reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	USCS Designation	Graphic Log	Comments / Notes
2.0				FILL: Silty Clay (0,20,80); no gravel; little fine to medium sand, poorly graded; mostly medium plastic fines; brown; moist; medium stiff.			
4.0							
6.0			2.0	Same As Above			Blind Drilled to 5.0 feet Odorous with olive grey discoloration
				End of Boring at 7-feet			Abandoned Boring and Moved 19.0 feet East (X-4a)

SOIL BORING LOG

BORING #: X-4A

Page 1 of 1

Geologist: Jeff Stumo

McLaren Hart

PROJECT: CHRYSLER TRENTON CHEMICAL
LOCATION: Trenton, Michigan
JOB #: 070803219011001
DATE (s): 9/12/96 (f) 9/12/96
TOTAL DEPTH: 3.0'
SUBCONTRACTORS: Toltest, Inc.
SAMPLING METHOD: Split Spoon
EQUIPMENT: CME 750
MONITORING DEVICE: H-nU PID
DRILLERS: Neil Wirton

Depth Below Surface (ft.)	Penetration Test Results: Blows Per 0.5'	Sampler Interval/ Recovery	PID Reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	USCS Designation	Graphic Log	Comments / Notes
2.0			2.2	FILL: Sand; (0,90,10); no gravel; mostly fine to medium sand, poorly graded; little fines; brown; moist; loose.			Odorous and Stained Cuttings
				End of Boring at 3-feet			Blind Drilled to 3.0 feet Abandoned Boring and Moved 21.0 feet East (X-4b)

SOIL BORING LOG

BORING #: X-4B

Page 1 of 1

Geologist: Jeff Stumo

McLaren Hart

PROJECT	CHRYSLER TRENTON CHEMICAL	LOCATION	Trenton, Michigan
JOB #	070803219011001	DATE (s) 9/12/96 (f) 9/12/96	TOTAL DEPTH 13.5'
		SUBCONTRACTORS	Toltest, Inc.
SAMPLING METHOD	Split Spoon	EQUIPMENT	CME 750
MONITORING DEVICE	H-nU PID	DRILLERS	Neil Wirton

Depth Below Surface (ft.)	Penetration Test Results: Blows Per 0.5'	Sampler Interval/ Recovery	PID Reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	USCS Designation	Graphic Log	Comments / Notes
				FILL: Silty Clay; (0,20,80); no gravel; little fine to medium sand, poorly graded; mostly medium plastic fines; brown; moist; medium stiff.			
2.0							
4.0							
6.0	1 2 2 2		<1	Same As Above			Blind Drilled to 6.0 feet
8.0	3 4 4 4		<1	POSSIBLE FILL: Silty Clay (0,20,30); no gravel; little fine to medium sand, poorly graded; mostly medium plastic fines; grey with orange mottles; moist; medium stiff; trace organic matter (i.e. wood fragments or roots).			
10.0	2 4 3 4		<1	SILTY CLAY (CL): (0,20,30); no gravel; little fine to medium sand, poorly graded; mostly medium plastic fines; grey with orange mottles; dry to moist; medium stiff.	CL		
12.0	2 4 4 10		<1	SILTY CLAY (CL): (5,20,75); trace fine gravel; little fine to medium sand, poorly graded; mostly medium plastic fines; grey with orange mottles; dry to moist; medium stiff.			
				End of boring at 13.5 feet.			

SOIL BORING LOG

McLaren Hart

BORING #: X-5

Page 1 of 1

Geologist: Jeff Stumo

PROJECT: CHRYSLER TRENTON CHEMICAL

LOCATION: Trenton, Michigan

JOB #: 070803219011001

DATE (s): 9/12/96 (s) 9/12/96

TOTAL DEPTH: 15.5'

SAMPLING METHOD: Split Spoon

SUBCONTRACTORS: Toltest, Inc.

MONITORING DEVICE: H-nU PID

EQUIPMENT: CME 750

DRILLERS: Neil Wirton

Depth Below Surface (ft.)	Penetration Test Results: Blows Per 0.5'	Sampler Interval/ Recovery	PID Reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	USCS Designation	Graphic Log	Comments / Notes
				FILL: Silty Clay (0,20,80); no gravel; little fine to medium sand, poorly graded; mostly medium plastic fines; brown; moist; firm.			
2.0							
4.0							
	1 1 1 1		<1	FILL: Limestone Gravel; (100,0,0); all fine gravel, subround to subangular; no sand; no fines; grey; saturated, very loose.			Blind Drilled to 5.0 feet
6.0							
8.0				FILL: Limestone Gravel/Sand; (50,50,0); fine gravel, subround to subangular; fine to coarse sand, poorly graded; no fines; discolored black; saturated; very loose.			
	1 1 1 1		<1				Black Water
10.0							No Recovery
	1 1 1 1		>1000	Same As Above			
12.0							
	1 1 1 1		7	Same As Above, lighter blackening.			
14.0							
				End of Boring at 15.5-feet			Refusal/Bedrock

SOIL BORING LOG

BORING #: X-7

Page 1 of 1

Geologist: Jeff Stumo

McLaren Hart

PROJECT	CHRYSLER TRENTON CHEMICAL	LOCATION	Trenton, Michigan
JOB #	070803219011001	DATE (s) 9/12/96 (f) 9/12/96	TOTAL DEPTH 14.5'
		SUBCONTRACTORS	Toltest, Inc.
SAMPLING METHOD	Split Spoon	EQUIPMENT	CME 750
MONITORING DEVICE	H-nU PID	DRILLERS	Neil Wirton

Depth Below Surface (ft.)	Penetration Test Results: Blows Per 0.5'	Sampler Interval/ Recovery	PID Reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	USCS Designation	Graphic Log	Comments / Notes
2.0				FILL: Silty Clay; (0,20,30); no gravel; little fine to medium sand, poorly graded; mostly medium plastic fines; brown; moist; medium stiff.			
4.0							
▽	2 2 2 2		>1000	FILL: Sand; (0,95,5); no gravel; all fine to medium sand, poorly graded; trace fines; brown; wet; loose.			Blind Drilled to 5.0 feet
6.0							
	2 3 3 2		>1000	Same As Above			
8.0							
	5 13 3 4		120	SILTY CLAY (CL): (0,20,30); no gravel; little fine to medium sand, poorly graded; mostly medium plastic fines; grey with orange mottles; moist to dry; very stiff.	CL		
10.0							
	3 6 9 15		51	CLAYEY SAND (SC): (5,50,45); trace gravel; mostly fine to coarse sand, poorly graded; some medium plastic fines; very pale orange to grey; saturated; medium dense.	SC		
12.0							
	15 19 25/0		35				
14.0							
				End of Boring at 14.5-feet			Refusal/Bedrock

SOIL BORING LOG

BORING #: X-8

Page 1 of 1

Geologist: Jeff Stumo

McLaren Hart

PROJECT: CHRYSLER TRENTON CHEMICAL

LOCATION: Trenton, Michigan

JOB #: 070803219011001

DATE (s): 9/12/96 (f) 9/12/96

TOTAL DEPTH: 14.5'

SUBCONTRACTORS: Toltest, Inc.

SAMPLING METHOD: Split Spoon

EQUIPMENT: CME 750

MONITORING DEVICE: H-nU PID

DRILLERS: Neil Wirton

Depth Below Surface (ft.)	Penetration Test Results: Blows Per 0.5'	Sampler Interval/ Recovery	PID Reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	USCS Designation	Graphic Log	Comments / Notes
				FILL: Silty Clay; (0,20,80); no gravel; little fine to medium sand, poorly graded; mostly medium plastic fines; brown; moist; medium stiff.			
2.0							
4.0							
	11 12 13 10		5.2	FILL: Limestone Gravel/Sand; (50,50,0); fine gravel, subround to subangular; fine to medium sand, poorly graded; no fines; brown to grey; wet, medium dense.			Blind Drilled to 5.0 feet
6.0							
▽	7 7 11 10		19.2	Same As Above			
8.0							Odorous
	5 4 3 5		52	FILL: Gravelly Sand; (30,40,30); some fine gravel, subround to subangular gravel; some fine to medium sand, poorly graded; some medium plastic fines; saturated.			
10.0							
	6 5 4 3		18.0	Same As Above			
12.0							
	12 8 25/0		35	Same As Above			
14.0							
				End of Boring at 14.5-feet			Refusal/Bedrock

SOIL BORING LOG

BORING #: Z-1

Page 1 of 2

Geologist: Jeff Stumo

McLaren Hart

PROJECT	CHRYSLER TRENTON CHEMICAL	LOCATION	Trenton, Michigan
JOB #	070803219011001	DATE (s) 12/5/96 (f) 12/6/96	TOTAL DEPTH 17.0'
		SUBCONTRACTORS	Toltest, Inc.
SAMPLING METHOD	Split Spoon	EQUIPMENT	CME 750
MONITORING DEVICE	H-nU PID	DRILLERS	Neil Wirton

Depth Below Surface (ft.)	Penetration Test Results: Blows Per 0.5'	Sampler Interval/ Recovery	PID Reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	USCS Designation	Graphic Log	Comments / Notes
				FILL: Silty Clay; (0,20,30); no gravel; little fine to medium sand, poorly graded; mostly medium plastic fines; brown; moist; medium stiff.			
2.0							
4.0							
▽	2 2 2 2		>1000	FILL: Sand; (0,95,5); no gravel; all fine to medium sand, poorly graded; trace fines; brown; wet; loose.			
6.0							
	2 3 3 2		>1000	Same As Above			
8.0							
	5 13 8 4		120	SILTY CLAY (CL): (0,20,80); no gravel; little fine to medium sand, poorly graded; mostly medium plastic fines; grey with orange mottles; moist to dry; very stiff.	CL		
10.0							
	3 6 9 15		51	CLAYEY SAND (SC): (5,50,45); trace gravel; mostly fine to coarse sand, poorly graded; some medium plastic fines; very pale orange to grey; saturated; medium dense.	SC		
12.0							
	15 19 25/0		35				
14.0							Refusal/Bedrock
				Dolomite Bedrock			Air Rotary Drilling to Depth
16.0				Continued			

SOIL BORING LOG

BORING #: Z-1

Page 2 of 2

Geologist: Jeff Stump

McLaren Hart

PROJECT CHRYSLER TRENTON CHEMICAL LOCATION Trenton, Michigan

Depth Below Surface (ft.)	Penetration Test Results: Blows Per 0.5'	Sampler Interval/ Recovery	PID Reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	USCS Designation	Graphic Log	Comments / Notes
16.0		X					
				End of Boring at 17.0-feet			

SOIL BORING LOG

McLaren Hart

Geologist: Jeff Stumo

PROJECT	CHRYSLER TRENTON CHEMICAL	LOCATION	Trenton, Michigan
JOB #	070803219011001	DATE (s) 12/4/96 (f) 12/5/96	TOTAL DEPTH 21.0'
		SUBCONTRACTORS	Toltest, Inc.
SAMPLING METHOD	Split Spoon	EQUIPMENT	CME 750
MONITORING DEVICE	H-nU PID	DRILLERS	Neil Wirton

Depth Below Surface (ft.)	Penetration Test Results: Blows Per 0.5'	Sampler Interval/ Recovery	PID Reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	USCS Designation	Graphic Log	Comments / Notes
	3, 4, 4, 5		<1	FILL: Sand; (0,100,0); no gravel; all little fine to medium sand, poorly graded; trace fines; brown; dry to moist; loose.			
2.0				FILL: Silty Clay; (0,20,80); no gravel; little fine to medium sand, poorly graded; mostly medium plastic fines; grey with orange mottles; moist to dry; very stiff.			
	1, 2, 4, 4		<1				
4.0							
	3, 5, 6, 6		<1	SILTY CLAY (CL): (5,20,75); trace fine gravel; little fine to medium sand, poorly graded; mostly medium plastic fines; grey/brown with trace orange and dark brown mottles; dry; very stiff.	CL		
6.0							
8.0	3, 10, 15, 50/5		<1				
10.0							
	10, 12, 13, 13		<1				
12.0				CLAYEY SAND (SC): (5,50,45); trace fine gravel; mostly fine to coarse sand, poorly graded; some medium plastic fines; very pale orange to grey; saturated; medium dense.	SC		
14.0				Dolomite Bedrock			Bedrock/Refusal Air Rotary Drilling to Depth
16.0							

Continued

SOIL BORING LOG

BORING #: Z-2

Page 2 of 2

Geologist: Jeff Stump

McLaren Hart

PROJECT CHRYSLER TRENTON CHEMICAL LOCATION Trenton, Michigan

Depth Below Surface (ft.)	Penetration Test Results: Blows Per 0.5'	Sampler Interval/ Recovery	PID Reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	USCS Designation	Graphic Log	Comments / Notes
16.0							
18.0							
20.0							
				End of Boring at 21.0-feet			

SOIL BORING LOG

BORING #: L-3

McLaren Hart

Page 1 of 2

Geologist: Jeff Stump

PROJECT	CHRYSLER TRENTON CHEMICAL	LOCATION	Trenton, Michigan
JOB #	070803219011001	DATE (s) 12/4/96 (f) 12/4/96	TOTAL DEPTH 20.5'
		SUBCONTRACTORS	Toltest, Inc.
SAMPLING METHOD	Split Spoon	EQUIPMENT	CME 750
MONITORING DEVICE	H-nU PID	DRILLERS	Neil Wirton

Depth Below Surface (ft.)	Penetration Test Results: Blows Per 0.5'	Sampler Interval/ Recovery	PID Reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	USCS Designation	Graphic Log	Comments / Notes
	3 3 3 4		<1	FILL: Sand; (0,95,5); no gravel; mostly fine to medium sand, poorly graded; trace fines; brown; dry to moist; loose. FILL: Silty Clay; (0,20,80); no gravel; little fine to medium sand, poorly graded; mostly medium plastic fines; grey with orange mottles; moist to dry; medium stiff.			
2.0							
	2 3 3 4		<1				
4.0				SILTY CLAY (CL): (0,15,85); no gravel; little fine to medium sand, poorly graded; mostly medium plastic fines; brown with orange mottles; dry; medium stiff.	CL		
	4 5 8 12		<1	Same As Above; grey/brown with orange mottles; stiff.			
6.0				Fine to Medium Sand Seam (4 to 6-inches)			
8.0	5 8 10 14		<1	SILTY CLAY (CL): (5,15,80); trace fine gravel, subangular; little fine to coarse sand, poorly graded; mostly medium plastic fines; brown/grey with orange mottles; dry; hard.			
10.0							
	8 12 15 21		<1	Same As Above with Larger Gravel			
12.0							
	12 50/6		<1	CLAYEY SAND (SC): (5,50,45); trace fine gravel; mostly fine to coarse sand, poorly graded; some medium plastic fines; very pale orange to grey; moist; loose.	SC		
14.0				Dolomite Bedrock			Bedrock/Refusal Air Rotary Drilling to Depth
16.0				Continued			

SOIL BORING LOG

BORING #: Z-3

Page 2 of 2

Geologist: Jeff Stump

McLaren Hart

PROJECT CHRYSLER TRENTON CHEMICAL LOCATION Trenton, Michigan

Depth Below Surface (ft.)	Penetration Test Results: Blows Per 0.5'	Sampler Interval/ Recovery	PID Reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	USCS Designation	Graphic Log	Comments / Notes
16.0							
18.0							
20.0							
				End of Boring at 20.5-feet			

SOIL BORING LOG

McLaren Hart

Geologist: Jeff Stumo

PROJECT	CHRYSLER TRENTON CHEMICAL	LOCATION	Trenton, Michigan
JOB #	070803219011001	DATE (s) 12/4/96 (f) 12/4/96	TOTAL DEPTH 21.0'
		SUBCONTRACTORS	Toltest, Inc.
SAMPLING METHOD	Split Spoon	EQUIPMENT	CME 750
MONITORING DEVICE	H-nU PID	DRILLERS	Neil Wirton

Depth Below Surface (ft.)	Penetration Test Results: Blows Per 0.5'	Sampler Interval/ Recovery	PID Reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	USCS Designation	Graphic Log	Comments / Notes
	2 3 4 4		<1	FILL: Sand; (0,100,0); no gravel; all little fine to medium samd, poorly graded; no fines; brown; dry to moist; loose.			
2.0							
	2 1 1 1		<1	Same As Above, moist			
4.0							
▽							Saturated
	WOH						
6.0							
8.0	WOH						
10.0							
	1 3 8 14		<1				
12.0				SILTY CLAY (CL): (0,20,80); no gravel; little fine to coarse sand, poorly graded; mostly medium plastic fines; grey with orange mottles; dry; stiff.	CL		
	5 8 20 23		<1	SILTY CLAY (CL): (0,25,75); no gravel; little fine to medium sand, poorly graded; mostly medium plastic fines; grey/brown; dry; hard.			
14.0							
				Dolomite Bedrock			Bedrock/Refusal
16.0							

Continued

SOIL BORING LOG

McLaren Hart

Geologist: Jeff Stumo

PROJECT CHRYSLER TRENTON CHEMICAL LOCATION Trenton, Michigan

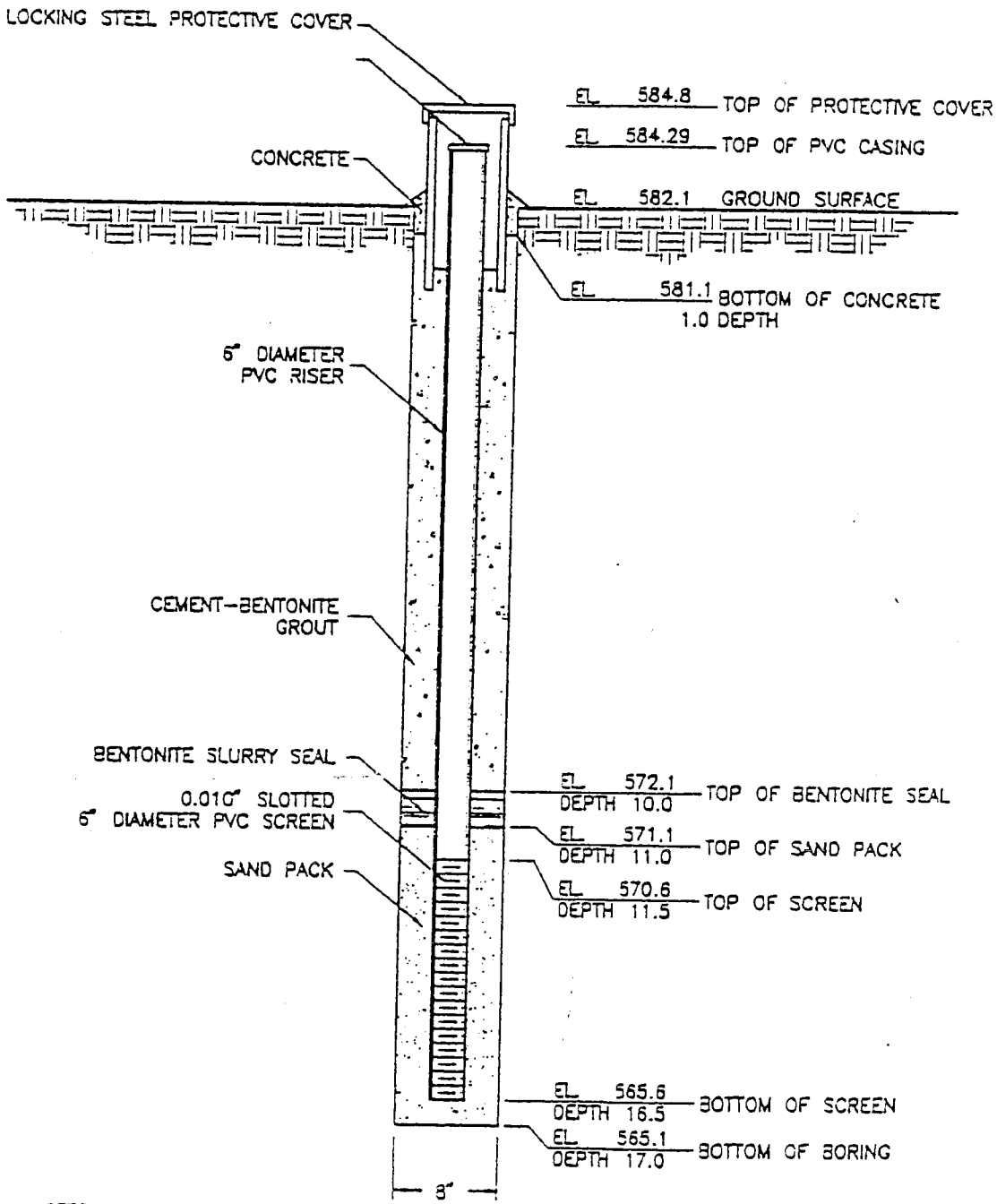
Depth Below Surface (ft.)	Penetration Test Results: Blows Per 0.5'	Sampler Interval/ Recovery	PID Reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	USCS Designation	Graphic Log	Comments / Notes
16.0							Air Rotary Drilling to Depth
18.0							
20.0							
				End of Boring at 21.0-feet			

McLaren Hart
ENVIRONMENTAL ENGINEERING CORPORATION

MONITORING WELL DETAILS

PROJECT NO. 070803219001
WELL NO. Z-1

PROJECT NAME TRENTON CHEMICAL
WELL LOCATION TRENTON, MICHIGAN DATE 12/06/96 BY J. STUMP



NOTES:

1. REFER TO SOIL BORING X-7 FOR SOIL DESCRIPTION
2. DETAIL NOT TO SCALE.
3. ELEVATION DATUM MW-40

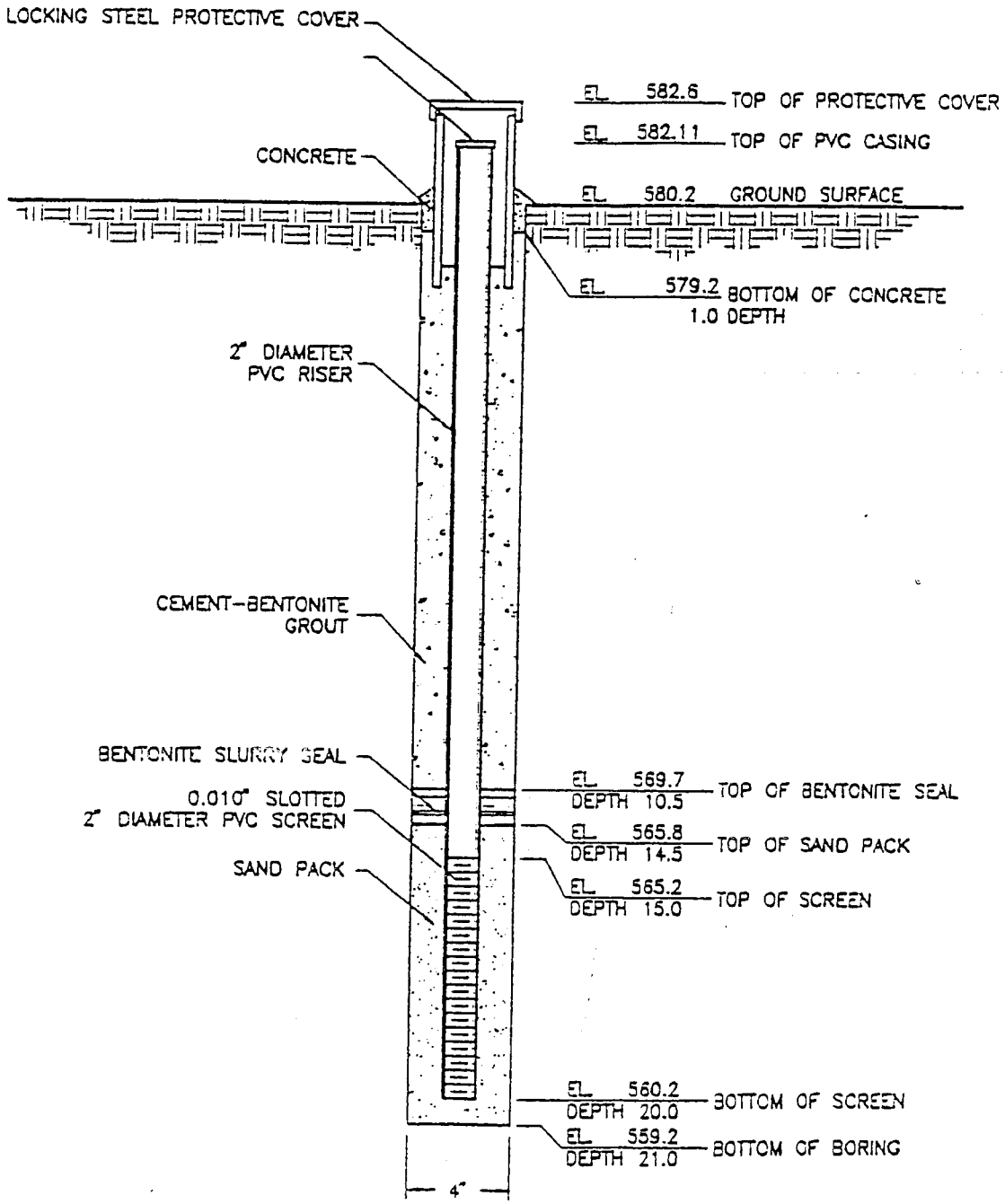
3219A101

McLaren Hart
ENVIRONMENTAL ENGINEERING CORPORATION

MONITORING WELL DETAILS

PROJECT NO. 0708032190011
WELL NO. Z-2

PROJECT NAME TRENTON CHEMICAL
WELL LOCATION TRENTON, MICHIGAN DATE 12/05/96 BY J. STUMP



NOTES:

1. REFER TO SOIL BORING Z-2 FOR SOIL DESCRIPTION.
2. DETAIL NOT TO SCALE.
3. ELEVATION DATUM MW-4D

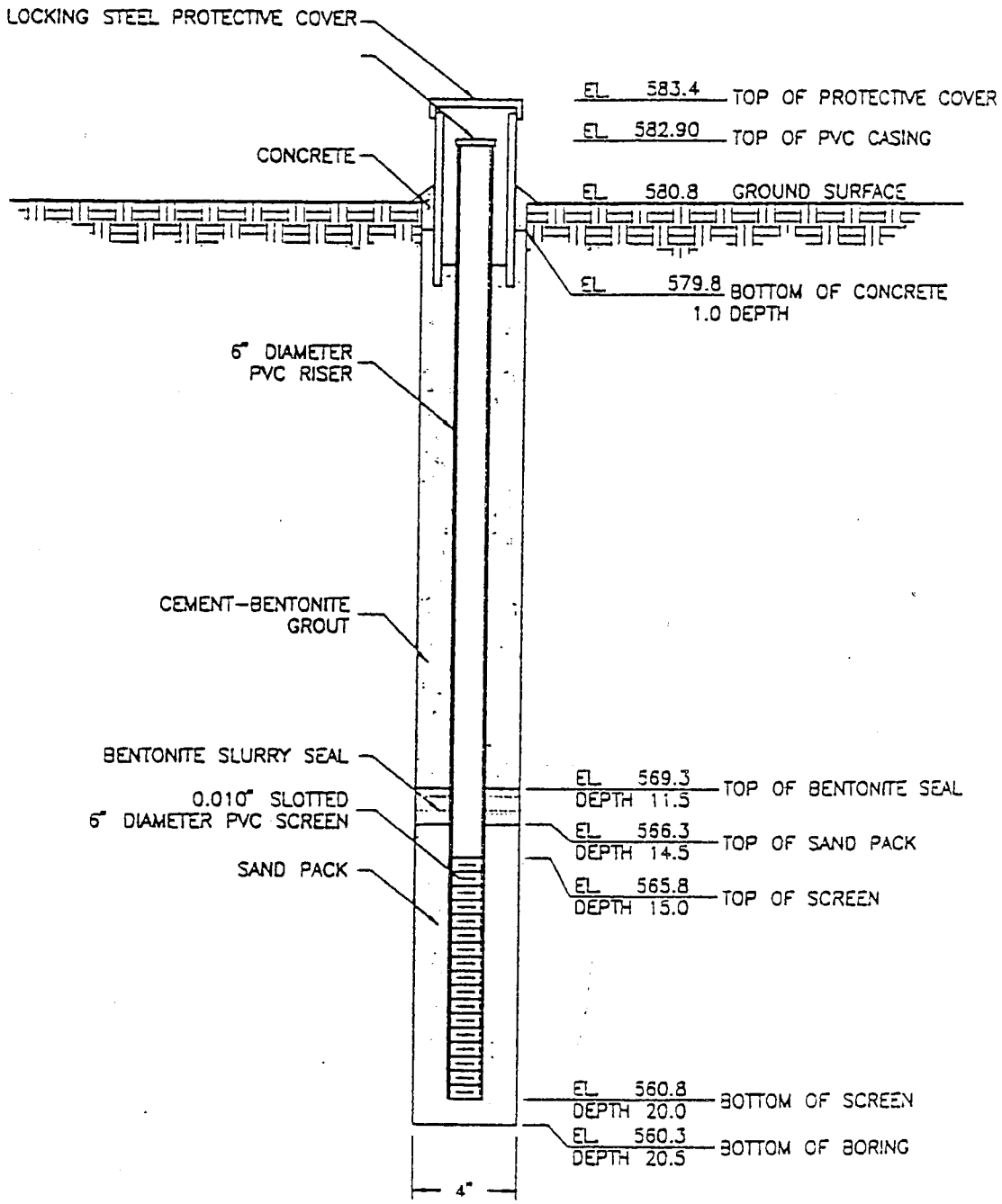
3219A100

McLaren Hart
ENVIRONMENTAL ENGINEERING CORPORATION

MONITORING WELL DETAILS

PROJECT NO. 0708032190011.0
WELL NO. Z-3

PROJECT NAME TRENTON CHEMICAL
WELL LOCATION TRENTON, MICHIGAN DATE 12/04/96 BY J. STUMP



NOTES:

1. REFER TO SOIL BORING Z-3 FOR SOIL DESCRIPTION.
2. DETAIL NOT TO SCALE.
3. ELEVATION DATUM MW-40

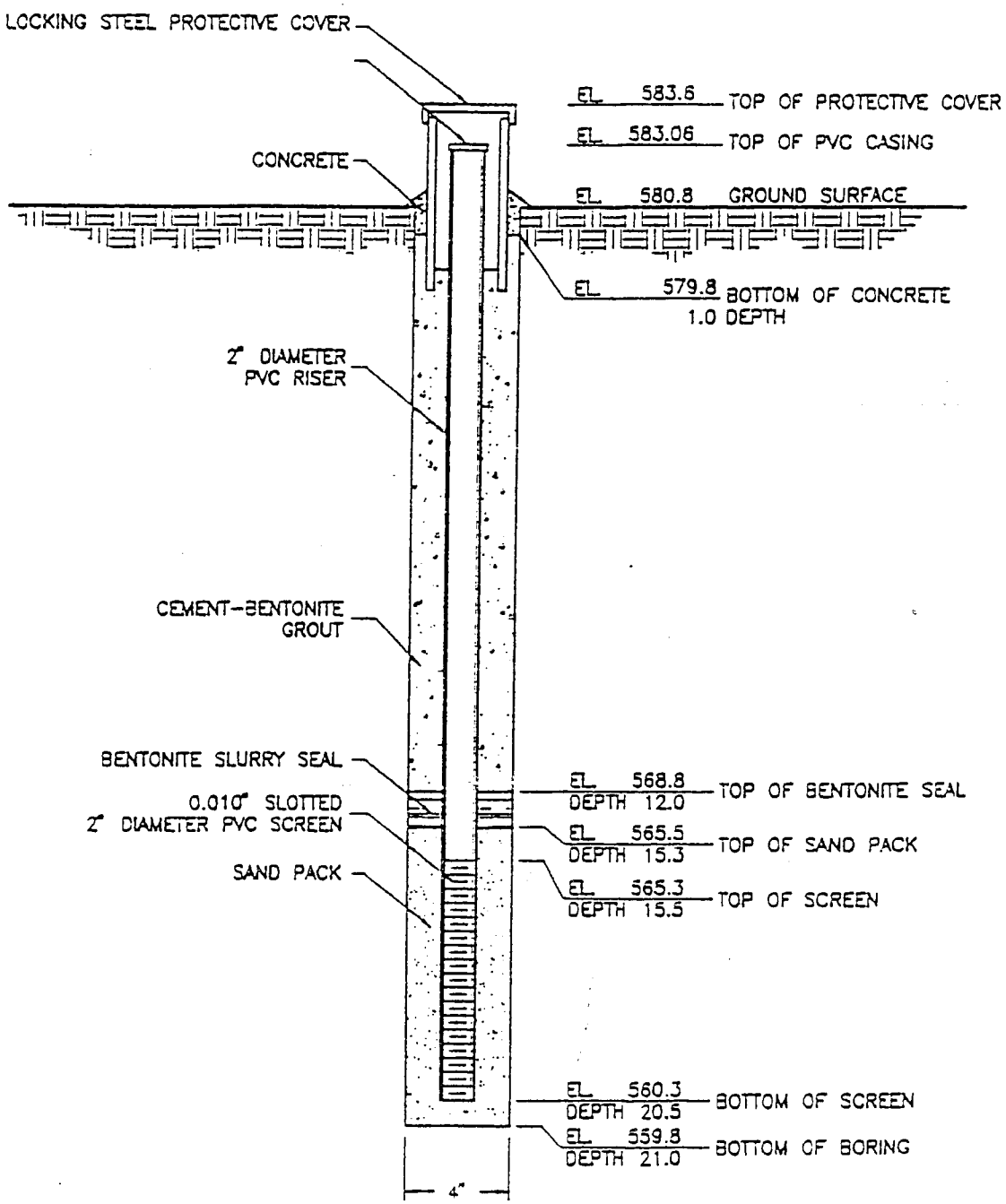
3219A102

McLaren Hart
ENVIRONMENTAL ENGINEERING CORPORATION

MONITORING WELL DETAILS

PROJECT NO. 0708032190011.0
WELL NO. Z-4

PROJECT NAME TRENTON CHEMICAL
WELL LOCATION TRENTON, MICHIGAN DATE 12/04/96 BY J. STUMP



NOTES:

1. REFER TO SOIL BORING Z-4 FOR SOIL DESCRIPTION.
2. DETAIL NOT TO SCALE.
3. ELEVATION DATUM MW-4D

3219A103

APPENDIX III

ANALYTICAL DATA SHEETS/CHAIN OF CUSTODY

CHRYSLER CORPORATION

Chain of Custody

No. 1368 A

puChem Environmental Corporation
Chapel Hill/Nelson Highway
Box 14998
arch Triangle Park, NC 27709-4998
e Number: 1-800-833-5097
Number: (919) 406-1686

Project Name: Trenton Chemical
Site Code:
Release Number:
Chrysler PM: John Singleton

Consultant PM: Paul Przyzaki, M Gaventhart
Address: 1100 Tower Ct. Suite 600, Southfield, MI 48075
Phone: 810 358-0400 Fax: 358-5321

Turnaround Time Request: ~~Call Mgr. Singleton ASAP~~ Standard TAT
Sampler(s): Jeff Thomp

Compound List-Parameter/Method/Bottle Type/Preservative

Matrix Codes: S - Soil; SW - Surface Water; GW - Ground Water; A - Air; Sed. - Sediment; O - Other (specify)

le Identification	Date Collected	Time Collected	Grab (G) or Composite (C)	Matrix Code	Total # of Containers	8240 VOCs	8240 (+xylene BTEX)	Volatiles pH < 2	Metals pH < 2	Cyanide pH > 12	Other	Remarks
-4 (5-7)	9/12	0900	G	S	1	X						
-4B (8-10)	9/12	0955	G	S	1	X						
~~-4B (10-12)~~	~~9/12~~	~~1010~~	~~G~~	~~S~~	~~1~~	~~X~~	NO Sample					
-4B (12-13.5)	9/12	1020	G	S	1	X						
-3 (5-7)	9/12	1040	G	S	1	X						
-3 (7-9)	9/12	1050	G	S	1	X						
-5 (11-13)	9/12	1130	G	S	1		X					
-5 (13-15)	9/12	1140	G	S	1		X					
-8 (9-11)	9/12	1230	G	S	1		X					
-8 (13-14.5)	9/12	1245	G	S	1		X					

Lab Use Only: Volatiles pH < 2; Metals pH < 2; Cyanide pH > 12; Other

Package Deliverables:
r Level 1
r Level 2
r Level 3
eliverables
pecify):

Bottles Relinquished under Airbill No.

Relinquished by:	Date:	Time:	Received by:	Date:	Time:	Custody Seal Intact?
[signature]	9/12	1900	Fed Ex	1900	9/12	Yes No
Relinquished by:	Date:	Time:	Received by:	Date:	Time:	Custody Seal Intact? Yes No
Relinquished by:	Date:	Time:	Received for Laboratory by: [signature]	Date: 9/13/96	Time: 1045	Custody Seal Intact? Yes No

Samples Relinquished under Airbill No. 4794653485

Temperature (corrected) ___ C

Chrysler Corporation 800 Chrysler Drive, CIMS 482-00-51, Auburn Hills, Michigan 48326-2757

bution: White copy: Data package Yellow: Retained by laboratory Pink: Retained by sampler

Revision No. 0

Page of

CHRYSLER CORPORATION

Chain of Custody

№ 11374 A

Chem Environmental Corporation
Chapel Hill/Nelson Highway
Box 14998
Triangle Park, NC 27709-4998
Number: 1-800-833-5097
Number: (919) 406-1686

Project Name: Trenton Chemical
Site Code:
Release Number:
Chrysler PM: John Singleton

Consultant PM: Paul Przybycki
Address: 1000 Wayne St. Suite 600, Southfield MI 48075
Phone: 810 358 4100 Fax: 358 5321

Turnaround Time Request: ~~Call Mobilization~~ Standard TAT
Sampler(s): Jeff Slump

Compound List-Parameter/Method/Bottle Type/Preservative

Matrix Codes: S - Soil; SW - Surface Water; GW - Ground Water; A - Air; Sed. - Sediment; O - Other (specify) Lab Water

Identification	Date Collected	Time Collected	Grab (G) or Composite (C)	Matrix Code	Total # of Containers	8240 VOCs	8240 Volatile (only)	Lab Use Only: Volatiles pH < 2	Metals pH < 2	Cyanide pH > 12	Other	Remarks
-1 (7-9)	9/12	1450	G	S	1		X					
-1 (13-15)	9/12	1520	G	S	1		X					
-2 (11-13)	9/12	1600	G	S	1		X					
-2 (13-14.5)	9/12	1615	G	S	1		X					
-7 (3.5-7)	9/12	1640	G	S	1		X					
-7 (13-14.5)	9/12	1710	G	S	1		X					
360912	9/12	—	—	O	1	X						

Archive All other samples till M/H disposition

1 Full Jar is not Marked

Package Deliverables:
Level 1
Level 2
Level 3
Deliverables (specify):

Bottles Relinquished under Airbill No.

Relinquished by:	Date:	Time:	Received by:	Date:	Time:	Custody Seal Intact?
[signature]	9/12	1900	Fed Ex	9/12	1900	Yes No
Relinquished by:	Date:	Time:	Received by:	Date:	Time:	Custody Seal Intact? Yes No
Relinquished by:	Date:	Time:	Received for Laboratory by: [signature]	Date: 9/13/96	Time: 10:45	Custody Seal Intact? Yes No

Samples Relinquished under Airbill No. 4794465348 5

Temperature (corrected) ___ C

Chrysler Corporation 800 Chrysler Drive, CIMS 482-00-51, Auburn Hills, Michigan 48326-2757

Distribution: White copy: Data package Yellow: Retained by laboratory Pink: Retained by sampler

4D

Revision No. 0
Created: July 17, 1993

Page ___ of ___

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

X-17-9

Project: RFA228

Date Sampled: 09/12/96

Lab Code: COMPU Case No.: 32567 SAS No.: SDG No.: 22821

Matrix: (soil/water) SOIL

Lab Sample ID: 824445

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: G3R24445B52.D

Level: (low/med) LOW

Date Received: 09/13/96

% Moisture: not dec. 15

Date Analyzed: 09/23/96

GC Column:DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/KG

CAS NO.	COMPOUND	DL	CONC	Q
1330-20-7	Xylene (total)	35	340	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

X-113-15

Project: RFA228

Date Sampled: 09/12/96

Lab Code: COMPU Case No.: 32567 SAS No.: SDG No.: 22821

Matrix: (soil/water) SOIL

Lab Sample ID: 824449

Sample wt/vol: 1.0 (g/mL) G

Lab File ID: GH024449A52.D

Level: (low/med) LOW

Date Received: 09/13/96

% Moisture: not dec. 17

Date Analyzed: 09/18/96

GC Column:DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/KG

CAS NO.	COMPOUND	DL	CONC	Q
1330-20-7	Xylene (total)	180	920	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

X-211-13

Project: RFA228

Date Sampled: 09/12/96

Lab Code: COMPU Case No.: 32567 SAS No.: SDG No.: 22821

Matrix: (soil/water) SOIL

Lab Sample ID: 824450

Sample wt/vol: 4.0 (g/mL) G

Lab File ID: C2R24450A52.D

Level: (low/med) MED

Date Received: 09/13/96

% Moisture: not dec. 16

Date Analyzed: 09/20/96

GC Column:DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: 0(uL)

Soil Aliquot Volume: 9 (uL)

CONCENTRATION UNITS: UG/KG

CAS NO.	COMPOUND	DL	CONC	Q
1330-20-7	Xylene (total)	28000	260000	

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

X-213-145

Project: RFA228

Date Sampled: 09/12/96

Lab Code: COMPU Case No.: 32567 SAS No.: SDG No.: 22821

Matrix: (soil/water) SOIL

Lab Sample ID: 824451

Sample wt/vol: 4.0 (g/mL) G

Lab File ID: CR024451A52.D

Level: (low/med) MED

Date Received: 09/13/96

% Moisture: not dec. 11

Date Analyzed: 09/20/96

GC Column:DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: 0(uL)

Soil Aliquot Volume: 100 (uL)

CONCENTRATION UNITS: UG/KG

CAS NO.	COMPOUND	DL	CONC	Q
1330-20-7	Xylene (total)	2400	10000	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

X-35-7

Project: RFA228

Date Sampled: 09/12/96

Lab Code: COMPU Case No.: 32567 SAS No.: SDG No.: 22821

Matrix: (soil/water) SOIL

Lab Sample ID: 824452

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: GH024452A52.D

Level: (low/med) LOW

Date Received: 09/13/96

% Moisture: not dec. 10

Date Analyzed: 09/17/96

GC Column:DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/KG

CAS NO.	COMPOUND	DL	CONC	Q
1330-20-7	Xylene (total)	1		U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

X-37-9

Project: RFA228

Date Sampled: 09/12/96

Lab Code: COMPU Case No.: 32567 SAS No.: SDG No.: 22821

Matrix: (soil/water) SOIL

Lab Sample ID: 824453

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: GH024453A52.D

Level: (low/med) LOW

Date Received: 09/13/96

% Moisture: not dec. 11

Date Analyzed: 09/17/96

GC Column:DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/KG

CAS NO.	COMPOUND	DL	CONC	Q
1330-20-7	Xylene (total)	1		U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

X-45-7

Project: RFA228

Date Sampled: 09/12/96

Lab Code: COMPU Case No.: 32567 SAS No.: SDG No.: 22821

Matrix: (soil/water) SOIL

Lab Sample ID: 824454

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: GH024454A52.D

Level: (low/med) LOW

Date Received: 09/13/96

% Moisture: not dec. 9

Date Analyzed: 09/17/96

GC Column:DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/KG

CAS NO.	COMPOUND	DL	CONC	Q
1330-20-7	Xylene (total)	1		U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

X-4B8-10

Project: RFA228

Date Sampled: 09/12/96

Lab Code: COMPU Case No.: 32567 SAS No.: SDG No.: 22821

Matrix: (soil/water) SOIL

Lab Sample ID: 824455

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: GH024455A52.D

Level: (low/med) LOW

Date Received: 09/13/96

% Moisture: not dec. 19

Date Analyzed: 09/17/96

GC Column:DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/KG

CAS NO.	COMPOUND	DL	CONC	Q
1330-20-7	Xylene (total)	1		U

LA

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

X-4B12-135

Project: RFA228

Date Sampled: 09/12/96

Lab Code: COMPU Case No.: 32567 SAS No.: SDG No.: 22821

Matrix: (soil/water) SOIL

Lab Sample ID: 824456

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: GH024456A52.D

Level: (low/med) LOW

Date Received: 09/13/96

% Moisture: not dec. 18

Date Analyzed: 09/17/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/KG

CAS NO.	COMPOUND	DL	CONC	Q
1330-20-7	Xylene (total)	1		U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

K-511-13

Project: RFA228

Date Sampled: 09/12/96

Lab Code: COMPU Case No.: 32567 SAS No.: SDG No.: 22821

Matrix: (soil/water) SOIL

Lab Sample ID: 824457

Sample wt/vol: 4.0 (g/mL) G

Lab File ID: C2R24457A52.D

Level: (low/med) MED

Date Received: 09/13/96

% Moisture: not dec. 17

Date Analyzed: 09/20/96

GC Column:DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: 0(uL)

Soil Aliquot Volume: 3 (uL)

CONCENTRATION UNITS: UG/KG

CAS NO.	COMPOUND	DL	CONC	Q
1330-20-7	Xylene (total)	84000	660000	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

X-513-15

Project: RFA228

Date Sampled: 09/12/96

Lab Code: COMPU Case No.: 32567 SAS No.: SDG No.: 22821

Matrix: (soil/water) SOIL

Lab Sample ID: 824458

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: GH024458A52.D

Level: (low/med) LOW

Date Received: 09/13/96

% Moisture: not dec. 16

Date Analyzed: 09/17/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/KG

CAS NO.	COMPOUND	DL	CONC	Q
1330-20-7	Xylene (total)	6	120	

FORM I VOA

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

X-75-7

Project: RFA228

Date Sampled: 09/12/96

Lab Code: COMPU Case No.: 32567 SAS No.: SDG No.: 22821

Matrix: (soil/water) SOIL

Lab Sample ID: 824459

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: GH024459A52.D

Level: (low/med) LOW

Date Received: 09/13/96

% Moisture: not dec. 12

Date Analyzed: 09/17/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/KG

CAS NO.	COMPOUND	DL	CONC	Q
1330-20-7	Xylene (total)	6	160	

FORM I VOA

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

X-713-145

Project: RFA228

Date Sampled: 09/12/96

Lab Code: COMPU Case No.: 32567 SAS No.: SDG No.: 22821

Matrix: (soil/water) SOIL

Lab Sample ID: 824460

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: GH024460A52.D

Level: (low/med) LOW

Date Received: 09/13/96

% Moisture: not dec. 9

Date Analyzed: 09/17/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/KG

CAS NO.	COMPOUND	DL	CONC	Q
1330-20-7	Xylene (total)	5	240	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

X-89-11

Project: RFA228

Date Sampled: 09/12/96

Lab Code: COMPU Case No.: 32567 SAS No.: SDG No.: 22821

Matrix: (soil/water) SOIL

Lab Sample ID: 824461

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: GH024461A52.D

Level: (low/med) LOW

Date Received: 09/13/96

% Moisture: not dec. 14

Date Analyzed: 09/17/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/KG

CAS NO.	COMPOUND	DL	CONC	Q
1330-20-7	Xylene (total)	6	17	

FORM I VOA

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

X-813-14

Project: RFA228

Date Sampled: 09/12/96

Lab Code: COMPU Case No.: 32567 SAS No.: SDG No.: 22821

Matrix: (soil/water) SOIL

Lab Sample ID: 824462

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: GH024462A52.D

Level: (low/med) LOW

Date Received: 09/13/96

% Moisture: not dec. 11

Date Analyzed: 09/17/96

GC Column:DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/KG

CAS NO.	COMPOUND	DL	CONC	Q
1330-20-7	Xylene (total)	6	20	

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

TB60912

Project: RFA228

Date Sampled: 09/12/96

Lab Code: COMPU Case No.: 32567 SAS No.: SDG No.: 22836

Matrix: (soil/water) WATER

Lab Sample ID: 824463

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: CN024463B52.D

Level: (low/med) LOW

Date Received: 09/13/96

% Moisture: not dec. _____

Date Analyzed: 09/16/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/L

CAS NO.	COMPOUND	DL	CONC	Q
1330-20-7	Xylene (total)	1		U

32699
27301

50096

COMPUCHEM ENVIRONMENTAL CORPORATION

3306 Chapel Hill/Nelson Highway
Research Triangle Park, NC 27709

1-800-833-5097

CHAIN-OF-CUSTODY RECORD

№ 15612

Ship to: McLaren/Hart Southfield, MI

Project Name: Trenton Chemical

Field Point-of-Contact: Jeff Stump

Telephone No.: 810 358 0400

Sampler Name: Jeff Stump

Sampling for project complete? Y or N (See Note 1)

Carrier: Fed Ex

Airbill No.:

Sampler Signature:

Project-specific (PS) or Batch (B) QC: ____

BOX #1: 1. Surface Water, 2. Ground Water, 3. Leachate, 4. Effluent, 5. Soil / Sediment / Sludge, 6. Trip Blank, 7. Oil, 8. Waste, 9. Other ____

Box #2: A. HCl, B. HNO_3, C. $NaHSO_4$, D. $Na_2S_2O_3$, E. Ice Only, O. Other ____, N. Not Preserved

Box #3: F. Filtered, U. Unfiltered

Box #4: C. CLP 3/90, S. SW-846, W. CWA 600-series, L. Low Conc. CLP, R. Radiological, T. TCLP, O. Other ____

Box #5: H. High, M. Medium, L. Low

	Sample ID (Organics: 9 characters max, Inorganics: 8 characters; See Note 2)	Date: Year: 1992	Time	Box #1 Matrix	Box #2 Preservative	Box #3 Filtered/Unfiltered	Box #4 Method	Box #5 Expect. Conc.	No. of Bottles	Use for Lab QC (MS or DUP)	Organics Analysis: VOA-GC/MS	SV-GC/MS	Pest/PCB-GC	Herb-GC	VOA-GC	Inorganics: Metals	Mercury	Cyanides	Radiologicals	Other: TOC/TOX	O&G/TPH	Phenols	Other	Remarks / Comments
1	Z-4 (0.5-0.5)	0-14	:	S	N	S		L	1			X												Toluene, ethylbenzene & total xylene only!
	Z-3 (0.5-0.5)	0-14	:	S	N			L	1															
	Z-2 (0.5-0.5)	0-14	:	S	N			L	1															
	Z-1 (7-9)	0-15	:	S	N		↓	M	1															
4	Comp-Z	0-16	1500	S	N		T		3			X												VOCs, SVOCs, metals (TCLP) RCI
		/	:																					
1	Trip Blank	/	:				SW				X													Toluene, ethylbenzene & total xylene
		/	:																					
		/	:																					
		/	:																					

Client's Special Instructions: Please note Hold Times + proceed accordingly

Lab: Received In Good Condition? Y or N: Describe Problems, If Any:

#1 Relinquished By: (Sig)	Date: 12/10	#2 Relinquished By: (Sig)	Date:	#3 Relinquished By: (Sig)	Date:	Sample storage time requested? ____ (In days, see Note 3)
Company Name:	Time:	Company Name:	Time:	Company Name:	Time:	
#1 Received By: (Sig) Fed Ex	Date:	#2 Received By: (Sig)	Date: 12-11-92	#3 Received By: (Sig)	Date:	DESTROY or RETURN data after five years of archival? (Circle choice, see Note 4)
Company Name	Time:	Company Name: CompuChem Envir	Time: 10:15	Company Name:	Time:	

Note (1): If 'N' lab will hold samples to await remainder of project maximizing batch size and minimizing QC ratio; if 'Y' lab will begin processing batches now. Note (2): If CLP Inorganics diskette required, ID limited to maximum of six characters. Note (3): Samples stored 60 days after date report mailed at no extra charge. Note (4): All lab copies of data destroyed after five years unless client requests and pays for return of copies, annual storage fee billed in January of year six.

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

Z-1

Project: RFA272

Date Sampled: 12/05/96

Lab Code: COMPU Case No.: 32699 SAS No.: SDG No.: 27301

Matrix: (soil/water) SOIL

Lab Sample ID: 834029

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: GH034029B57.D

Level: (low/med) LOW

Date Received: 12/11/96

% Moisture: not dec. 16

Date Analyzed: 12/13/96

GC Column:DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/KG

CAS NO.	COMPOUND	DL	CONC	Q
71-43-2	Benzene	1		U
108-88-3	Toluene	1		U
100-41-4	Ethylbenzene	6	560	E
1330-20-7	Xylene (total)	12	1000	E

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

Z-1DL

Project: RFA273

Date Sampled: 12/05/96

Lab Code: COMPU Case No.: 32699 SAS No.: SDG No.: 27301

Matrix: (soil/water) SOIL

Lab Sample ID: 834029

Sample wt/vol: 1.0 (g/mL) G

Lab File ID: GR034029C57.D

Level: (low/med) LOW

Date Received: 12/11/96

% Moisture: not dec. 16

Date Analyzed: 12/14/96

GC Column:DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/KG

CAS NO.	COMPOUND	DL	CONC	Q
71-43-2	Benzene	60		U
108-88-3	Toluene	30		U
100-41-4	Ethylbenzene	30	1400	DE
1330-20-7	Xylene (total)	60	2000	D

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

Z-2

Project: RFA273

Date Sampled: 12/04/96

Lab Code: COMPU Case No.: 32699 SAS No.: SDG No.: 27301

Matrix: (soil/water) SOIL

Lab Sample ID: 834028

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: GH034028C57.D

Level: (low/med) LOW

Date Received: 12/11/96

% Moisture: not dec. 15

Date Analyzed: 12/14/96

GC Column:DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/KG

CAS NO.	COMPOUND	DL	CONC	Q
71-43-2	Benzene	1		U
108-88-3	Toluene	1		U
100-41-4	Ethylbenzene	1		U
1330-20-7	Xylene (total)	1		U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

Z-3

Project: RFA273

Date Sampled: 12/04/96

Lab Code: COMPU Case No.: 32699 SAS No.: SDG No.: 27301

Matrix: (soil/water) SOIL

Lab Sample ID: 834027

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: GH034027B57.D

Level: (low/med) LOW

Date Received: 12/11/96

% Moisture: not dec. 14

Date Analyzed: 12/13/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/KG

CAS NO.	COMPOUND	DL	CONC	Q
71-43-2	Benzene	1		U
108-88-3	Toluene	1		U
100-41-4	Ethylbenzene	1		U
1330-20-7	Xylene (total)	1		U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

Z-4

Project: RFA273

Date Sampled: 12/04/96

Lab Code: COMPU Case No.: 32699 SAS No.: SDG No.: 27301

Matrix: (soil/water) SOIL

Lab Sample ID: 834024

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: GH034024B57.D

Level: (low/med) LOW

Date Received: 12/11/96

% Moisture: not dec. 16

Date Analyzed: 12/13/96

GC Column:DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/KG

CAS NO.	COMPOUND	DL	CONC	Q
71-43-2	Benzene	1		U
108-88-3	Toluene	1		U
100-41-4	Ethylbenzene	1		U
1330-20-7	Xylene (total)	1		U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

Z-1

Project:

Date Sampled: 12/20/96

Lab Code: COMPU Case No.: 32699 SAS No.: SDG No.: 00010

Matrix: (soil/water) WATER

Lab Sample ID: 835249

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: CR035249A55.D

Level: (low/med) LOW

Date Received: 12/21/96

% Moisture: not dec. _____

Date Analyzed: 12/30/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 5.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/L

CAS NO.	COMPOUND	DL	CONC	Q
71-43-2	Benzene	50	28	J
108-88-3	Toluene	25		U
100-41-4	Ethylbenzene	50	450	
1330-20-7	Xylene (total)	75	740	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

Z-2

Project:

Date Sampled: 12/20/96

Lab Code: COMPU Case No.: 32699 SAS No.: SDG No.: 00010

Matrix: (soil/water) WATER

Lab Sample ID: 835253

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: CR035253A55.D

Level: (low/med) LOW

Date Received: 12/21/96

% Moisture: not dec. _____

Date Analyzed: 12/30/96

GC Column:DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/L

CAS NO.	COMPOUND	DL	CONC	Q
71-43-2	Benzene	1		U
108-88-3	Toluene	1		U
100-41-4	Ethylbenzene	1		U
1330-20-7	Xylene (total)	1		U

LA

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

Z-3

Project:

Date Sampled: 12/20/96

Lab Code: COMPU Case No.: 32699 SAS No.: SDG No.: 00010

Matrix: (soil/water) WATER

Lab Sample ID: 835254

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: CR035254A55.D

Level: (low/med) LOW

Date Received: 12/21/96

% Moisture: not dec. _____

Date Analyzed: 12/30/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/L

CAS NO.	COMPOUND	DL	CONC	Q
71-43-2	Benzene	1		U
108-88-3	Toluene	1		U
100-41-4	Ethylbenzene	1		U
1330-20-7	Xylene (total)	1		U

LA

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

Z-4

Project:

Date Sampled: 12/20/96

Lab Code: COMPU Case No.: 32699 SAS No.: SDG No.: 00010

Matrix: (soil/water) WATER

Lab Sample ID: 835255

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: CN035255A55.D

Level: (low/med) LOW

Date Received: 12/21/96

% Moisture: not dec. _____

Date Analyzed: 12/30/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/L

CAS NO.	COMPOUND	DL	CONC	Q
71-43-2	Benzene	1		U
108-88-3	Toluene	1		U
100-41-4	Ethylbenzene	1		U
1330-20-7	Xylene (total)	1		U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

TRIPBLANK

Project: RFA273 Date Sampled: 12/06/96

Lab Code: COMPU Case No.: 50096 SAS No.: SDG No.: 27309

Matrix: (soil/water) WATER Lab Sample ID: 834049

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: CN034049B55.D

Level: (low/med) LOW Date Received: 12/11/96

% Moisture: not dec. _____ Date Analyzed: 12/14/96

GC Column:DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/L

CAS NO.	COMPOUND	DL	CONC	Q
108-88-3	Toluene	0.8		U
100-41-4	Ethylbenzene	0.5		U
1330-20-7	Xylene (total)	0.5		U

APPENDIX B

COSTS FOR REMEDIAL ALTERNATIVES

TRENTON CHEMICAL SITE
TABLE 1
COST ESTIMATE

IN-SITU BIOREMEDIATION

VOC Issues in Groundwater

Task	Units	Cost /Unit	Cost
Installation of Wells	1200 Feet	$20 /Foot	$24,000
Capital Costs	1 Lump Sum	$430,000 /Lump Sum	$430,000
Operation & Maintenance	1 Lump Sum	$110,000 /Lump Sum	$110,000
Sampling & Analytical Costs	8 Sampling Event	$5,000 /Event	$40,000
Subtotal			**$604,000**
Contingency 25%			$151,000
Engineering and OverSite Expense			
Project Management/Reports	1 Lump Sum	$60,000 /Lump Sum	$60,000
Subtotal			**$60,000**
Contingency 25%			$15,000
PROJECT TOTAL			$830,000

Notes:
1. Estimates the need for 30 wells to 40' depths and gridded on 50' centers.
2. Includes 8 quarterly reports, 1 closure report and meetings.
3. Estimated time of completion-2 years.
4. Assumes hydrogen peroxide injection for oxygen addition.
5. Costs included have been prepared for budgetary purposes only and should not be considered a cost proposal for completion of work.

TRENTON CHEMICAL SITE
TABLE 2
COST ESTIMATE

LIMITED PUMP & TREAT WITH STRIPPING/CARBON ADSORPTION

VOC Issues in Groundwater

Task	Units	Cost /Unit	Cost
System Design	1	$15,000 /Lump Sum	$15,000
Mobilization/Demobilization	1	$10,000 /Lump Sum	$10,000
Extraction Wells	4	$10,000 /Each	$40,000
Equipment and Piping	1	$90,000 /Lump Sum	$90,000
Installation and Start-up	1	$10,000 /Lump Sum	$10,000
Project Management	1	$6,000 /Lump Sum	$6,000
Closure Verification (Report & Samples)	1	$23,000 /Lump Sum	$23,000
Groundwater Discharge Permit	1	$6,000 /Lump Sum	$6,000
Construction Oversight	1	$15,000 /Lump Sum	$15,000
Subtotal			$215,000
Contingency 25%			$53,750
Operation and Maintenance			
Technician 6hrs/wk	1	$15,000 /Lump Sum	$15,000
Electrical	1	$5,000 /Lump Sum	$5,000
Equipment Replacement	1	$5,000 /Lump Sum	$5,000
Subtotal			$25,000
Contingency 25%			$6,250
PROJECT TOTAL			$300,000

Notes:
1. Estimates the need for four 35' stainless steel wells with pumps.
2. Costs included have been prepared for budgetary purposes only and should not be considered a cost proposal for completion of work.

TRENTON CHEMICAL SITE
TABLE 3
COST ESTIMATE

AIR SPARGING/SOIL VAPOR EXTRACTION

VOCs in Groundwater

Task	Units	Cost /Unit		Cost
System Design	1	$20,000	/Lump Sum	$20,000
Mobilization/Demobilization	1	$10,000	/Lump Sum	$10,000
VEW Pneumatic Piezometers	30	$1,500	/Each	$45,000
Equipment and Piping	1	$175,000	/Lump Sum	$175,000
Installation and Start-up	1	$60,000	/Lump Sum	$60,000
Closure Verification (Report & Samples)	1	$40,000	/Lump Sum	$40,000
Project Management	1	$30,000	/Lump Sum	$30,000
Electrical	1	$37,000	/Lump Sum	$37,000
Air Permitting	1	$6,000	/Lump Sum	$6,000
Field Ins./Site Monitoring	1	$9,000	/Lump Sum	$9,000
Subtotal				**$432,000**
Contingency 25%				$108,000
Operation and Maintenence				
Maintenance	1	$40,000	/Lump Sum	$40,000
Equipment Replacement	1	$8,000	/Lump Sum	$8,000
Subtotal				**$48,000**
Contingency 25%				$12,000
PROJECT TOTAL				**$600,000**

Notes:
1. Estimated time of completion is 1 year.
2. Costs included have been prepared for budgetary purposes only and should not be considered a cost proposal for completion of work.

TRENTON CHEMICAL SITE
TABLE 4
COST ESTIMATE

NO ACTION

VOC Issues in Groundwater/Inorganic Issues in Groundwater

Task	Units	Cost /Unit	Cost
Groundwater Sampling	1	$30,000 /Lump Sum	$30,000
Groundwater Modeling	1	$25,000 /Lump Sum	$25,000
Agency Negotiations	1	$15,000 /Lump Sum	$15,000
Closure Reporting	1	$10,000 /Lump Sum	$10,000
Subtotal			**$80,000**
Contingency 25%			$20,000
PROJECT TOTAL			**$100,000**

Notes:
1. Costs included have been prepared for budgetary purposes only and should not be considered a cost proposal for completion of work.

TRENTON CHEMICAL SITE
TABLE 5
COST ESTIMATE

LIMITED PUMP & TREAT WITH ION EXCHANGE

Inorganic Issues in Groundwater

Task	Units	Cost /Unit	Cost
System Design	1	$10,000 /Lump Sum	$10,000
Mobilization/Demobilization	1	$10,000 /Lump Sum	$10,000
Extraction Wells	4	$10,000 /Each	$40,000
Equipment and Piping	1	$40,000 /Lump Sum	$40,000
Installation and Start-up	1	$10,000 /Lump Sum	$10,000
Project Management	1	$6,000 /Lump Sum	$6,000
Closure Verification (Report & Samples)	1	$23,000 /Lump Sum	$23,000
Groundwater Discharge Permit	1	$6,000 /Lump Sum	$6,000
Construction Oversight	1	$10,000 /Lump Sum	$10,000
Subtotal			$155,000
Contingency 25%			$38,750
Operation and Maintenance			
Technician 6hrs/wk	1	$15,000 /Lump Sum	$15,000
Electrical	1	$5,000 /Lump Sum	$5,000
Equipment Replacement	1	$5,000 /Lump Sum	$5,000
Subtotal			$25,000
Contingency 25%			$6,250
PROJECT TOTAL			$225,000

Notes:
1. Estimates the need for four 35' stainless steel wells with pumps.
2. Costs included have been prepared for budgetary purposes only and should not be considered a cost proposal for completion of work.

TRENTON CHEMICAL SITE
TABLE 6
COST ESTIMATE

LIMITED PUMP & TREAT WITH PRECIPITATION/FLOCCULATION

Inorganic Issues in Groundwater

Task	Units	Cost /Unit	Cost
System Design	1	$10,000 /Lump Sum	$10,000
Mobilization/Demobilization	1	$10,000 /Lump Sum	$10,000
Extraction Wells	4	$10,000 /Each	$40,000
Equipment and Piping	1	$80,000 /Lump Sum	$80,000
Installation and Start-up	1	$10,000 /Lump Sum	$10,000
Project Management	1	$6,000 /Lump Sum	$6,000
Treatment Chemicals	1	$10,000 /Lump Sum	$10,000
Closure Verification (Report & Samples)	1	$23,000 /Lump Sum	$23,000
Groundwater Discharge Permit	1	$6,000 /Lump Sum	$6,000
Construction Oversight	1	$10,000 /Lump Sum	$10,000
Subtotal			$205,000
Contingency 25%			$51,250
Operation and Maintenance			
Technician 6hrs/wk	1	$15,000 /Lump Sum	$15,000
Electrical	1	$5,000 /Lump Sum	$5,000
Equipment Replacement	1	$5,000 /Lump Sum	$5,000
Subtotal			$25,000
Contingency 25%			$6,250
PROJECT TOTAL			$287,500

Notes:
1. Estimates the need for four 35' stainless steel wells with pumps.
2. Costs included have been prepared for budgetary purposes only and should not be considered a cost proposal for completion of work.

TRENTON CHEMICAL SITE
TABLE 7
COST ESTIMATE

EXCAVATION AND OFF-SITE DISPOSAL

Surface Soils

Task	Units	Cost/Unit	Cost
Material Excavation	42,000 c.y.	$4	$168,000
Material Handling	42,000 c.y.	$2	$84,000
Deliver/Place Backfill	42,000 c.y.	$15	$630,000
Grading	42,000 c.y.	$3	$126,000
Off-site Transportation	42,000 c.y.	$23	$966,000
Off-site Disposal	42,000 c.y.	$15	$630,000
Subtotal			**$2,604,000**
Contingency 25%			$651,000
Project Management/Reports	1	$20,000	$20,000
Confirmatory Sampling	250	$345	$86,250
Field Oversight	1	$23,000	$23,000
Field Expenses	1	$5,000	$5,000
Subtotal			$134,250
Contingency 25%			$33,563
PROJECT TOTAL			$3,422,813

Notes:
1. All soils excavated and disposed are assumed to be non-hazardous.
2. Costs included have been prepared for budgetary purposes only and should not be considered a cost proposal for completion of work.

TRENTON CHEMICAL SITE
TABLE 8
COST ESTIMATE

ONSITE STABILIZATION

Surface Soils

Task	Units	Cost/Unit		Cost
Mobilization/Demobilization	1	$110,000	/Lump Sum	$110,000
Site Preparation	1	$35,000	/Lump Sum	$35,000
Construction Costs				
Stabilization	42000 c.y.	$47	/c.y.	$1,974,000
Confirmatory Testing of Stabilized Mix	40 Samples	$1,000	/Sample	$40,000
6" Gravel Cover	4 Acres	$28,000	/Acre	$112,000
Off-Site Disposal Allowance (Haz)	30 Tons	$300	/Ton	$9,000
Collection and Treatment of Organics	1	$100,000	/Lump Sum	$100,000
Verification Testing	1	$36,000	/Lump Sum	$36,000
Lab Treatability and Pilot Test	1	$60,000	/Lump Sum	$60,000
Subtotal				**$2,476,000**
Contingency 25%				$619,000
Project Management/Reports	1	$40,000		$40,000
Field Oversight	1	$46,000		$46,000
Field Expenses	1	$10,000		$10,000
Subtotal				**$96,000**
Contingency 25%				$24,000
PROJECT TOTAL				$3,215,000

Notes:
1. Costs included have been prepared for budgetary purposes only and should not be considered a cost proposal for completion of work.

TRENTON CHEMICAL SITE
TABLE 9
COST ESTIMATE

SOIL COVER SYSTEM

Surface Soils

Task	Units	Cost/Unit		Cost
Cover System Delineation	1	$17,000	/Lump Sum	$17,000
Topsoil Materials	4000 cy	$7	/Cubic yard	$28,000
Clay Materials	6500 ton	$8	/Ton	$52,000
Seeding	11 acres	$1,400	/Acre	$15,400
Grading	8 acres	$575	/Acre	$4,600
Field Surveys	2 events	$3,000	/Event	$6,000
Project Management	1	$20,000	/Lump Sum	$20,000
Construction Oversight	1	$16,000	/Lump Sum	$16,000
Subtotal				**$159,000**
Contingency 25%				$39,750
PROJECT TOTAL				**$198,750**

Notes:
1. Costs included have been prepared for budgetary purposes only and should not be considered a cost proposal for completion of work.

TRENTON CHEMICAL SITE
TABLE 10
COST ESTIMATE

EXCAVATION AND ON-SITE SOIL WASHING

Surface Soils

Task	Units	Cost/Unit	Cost
Material Excavation	42,000 c.y.	$4 /c.y.	$168,000
Material Handling	42,000 c.y.	$2 /c.y.	$84,000
System Design	1	$150,000 /Lump Sum	$150,000
Mobilization/Demobilization	1	$75,000 /Lump Sum	$75,000
Equipment	1	$250,000 /Lump Sum	$250,000
Place as Backfill	42,000 c.y.	$3 /c.y.	$126,000
Installation and Startup	1	$50,000 /Lump Sum	$50,000
Project Management	1	$20,000 /Lump Sum	$20,000
Closure Verification (Report & Samples)	1	$23,000 /Lump Sum	$23,000
Construction Oversight	1	$30,000 /Lump Sum	$30,000
Subtotal			$976,000
Contingency 25%			$244,000
Operation and Maintenance			
Technician 6hrs/wk	1	$15,000 /Lump Sum	$15,000
Electrical	1	$5,000 /Lump Sum	$5,000
Equipment Replacement	1	$5,000 /Lump Sum	$5,000
Subtotal			$25,000
Contingency 25%			$6,250
PROJECT TOTAL			$1,251,250

Notes:
1. All soils excavated and disposed are assumed to be non-hazardous.
2. Costs included have been prepared for budgetary purposes only and should not be considered a cost proposal for completion of work.

TRENTON CHEMICAL SITE
TABLE 11
COST ESTIMATE

NO ACTION/CONTROLLED ACCESS/DEED RESTRICTIONS

Surface Soils

Task	Units	Cost /Unit	Cost
Closure Sampling	1	$30,000 /Lump Sum	$30,000
Fencing	1700 feet	$15 /Foot	$25,500
Agency Negotiations	1	$15,000 /Lump Sum	$15,000
Closure Reporting	1	$10,000 /Lump Sum	$10,000
Subtotal			**$80,500**
Contingency 25%			$20,125
PROJECT TOTAL			**$100,625**

Notes:
1. Costs included have been prepared for budgetary purposes only and should not be considered a cost proposal for completion of work.

TRENTON CHEMICAL SITE
TABLE 12
COST ESTIMATE

EXCAVATION AND OFF-SITE DISPOSAL

Former Tank Farm Area

Task	Units	Cost/Unit	Cost
Material Excavation	28,000 c.y.	$4	$112,000
Material Handling	28,000 c.y.	$2	$56,000
Deliver/Place Backfill	28,000 c.y.	$15	$420,000
Grading	28,000 c.y.	$3	$84,000
Off-site Transportation	28,000 c.y.	$23	$644,000
Off-site Disposal	28,000 c.y.	$15	$420,000
Subtotal			$1,736,000
Contingency 25%			$434,000
Project Management/Reports	1	$20,000	$20,000
Confirmatory Sampling	175	$345	$60,375
Field Oversight	1	$23,000	$23,000
Field Expenses	1	$5,000	$5,000
Subtotal			$108,375
Contingency 25%			$27,094
PROJECT TOTAL			$2,305,469

Notes:
1. All soils excavated and disposed are assumed to be non-hazardous.
2. Costs included have been prepared for budgetary purposes only and should not be considered a cost proposal for completion of work.

TRENTON CHEMICAL SITE
TABLE 13
COST ESTIMATE

ED PUMP & TREAT WITH STRIPPING/CARBON ADSORPTION & VADOSE ZONE SOIL FLUS

Former Tank Farm Area

Task	Units	Cost /Unit	Cost
System Design	1	$30,000 /Lump Sum	$30,000
Mobilization/Demobilization	1	$10,000 /Lump Sum	$10,000
Extraction Wells	20	$5,000 /Each	$100,000
Equipment and Piping	1	$90,000 /Lump Sum	$90,000
Installation and Start-up	1	$20,000 /Lump Sum	$20,000
Project Management	1	$6,000 /Lump Sum	$6,000
Closure Verification (Report & Samples)	1	$23,000 /Lump Sum	$23,000
Groundwater Discharge Permit	1	$6,000 /Lump Sum	$6,000
Construction Oversight	1	$15,000 /Lump Sum	$15,000
Subtotal			**$300,000**
Contingency 25%			$75,000
Operation and Maintenance			
Technician 6hrs/wk	1	$15,000 /Lump Sum	$15,000
Electrical	1	$20,000 /Lump Sum	$20,000
Equipment Replacement	1	$5,000 /Lump Sum	$5,000
Subtotal			**$40,000**
Contingency 25%			$10,000
PROJECT TOTAL			$425,000

Notes:
1. Costs included have been prepared for budgetary purposes only and should not be considered a cost proposal for completion of work.

TRENTON CHEMICAL SITE
TABLE 14
COST ESTIMATE

AIR SPARGING/SOIL VAPOR EXTRACTION

Former Tank Farm Area

Task	Units	Cost /Unit	Cost
System Design	1	$20,000 /Lump Sum	$20,000
Mobilization/Demobilization	1	$10,000 /Lump Sum	$10,000
VEW Pneumatic Piezometers	20	$1,500 /Each	$30,000
Equipment and Piping	1	$117,000 /Lump Sum	$117,000
Installation and Start-up	1	$40,000 /Lump Sum	$40,000
Closure Verification (Report & Samples)	1	$25,000 /Lump Sum	$25,000
Project Management	1	$30,000 /Lump Sum	$30,000
Electrical	1	$25,000 /Lump Sum	$25,000
Air Permitting	1	$6,000 /Lump Sum	$6,000
Field Ins./Site Monitoring	1	$9,000 /Lump Sum	$9,000
Subtotal			**$312,000**
Contingency 25%			$78,000
Operation and Maintenence			
Maintenance	1	$40,000 /Lump Sum	$40,000
Equipment Replacement	1	$6,000 /Lump Sum	$6,000
Subtotal			**$46,000**
Contingency 25%			$11,500
PROJECT TOTAL			$447,500

Notes:
1. Estimated time of completion is 1 year.
2. Costs included have been prepared for budgetary purposes only and should not be considered a cost proposal for completion of work.

TRENTON CHEMICAL SITE
TABLE 15
COST ESTIMATE

NO ACTION/CONTROLLED ACCESS/DEED RESTRICTIONS

Former Tank Farm Area

Task	Units	Cost /Unit	Cost
Closure Sampling	1	$15,000 /Lump Sum	$15,000
Fencing	900 feet	$15 /Foot	$13,500
Agency Negotiations	1	$10,000 /Lump Sum	$10,000
Closure Reporting	1	$10,000 /Lump Sum	$10,000
Subtotal			$48,500
Contingency 25%			$12,125
PROJECT TOTAL			$60,625

Notes:
1. Costs included have been prepared for budgetary purposes only and should not be considered a cost proposal for completion of work.

APPENDIX C

GROUNDWATER DISCHARGE TO THE TRENTON CHANNEL
Mixing Zone Calculations

GROUNDWATER DISCHARGE TO THE TRENTON CHANNEL

Mixing Zone Calculations

Based on historical groundwater elevation data from monitoring wells at the Trenton Chemical site, the hydraulic gradient in the eastern portion of the site in the drift/fill aquifer and in the underlying bedrock aquifer is generally towards the Trenton Channel of the Detroit River to the east. It appears that groundwater in the drift/fill material at the site discharges to the Monguagon Storm Drain as well as the Trenton Channel of the Detroit River. Therefore, groundwater discharge estimates for the drift/fill material include an estimate of discharge to the Monguagon Storm Drain. Groundwater in the bedrock appears to discharge to the Trenton Channel.

The rate of discharge is calculated using the following equation:

$$Q=KIA$$

where Q=discharge rate
K=hydraulic conductivity
I=hydraulic gradient
A=discharge area

For the drift/fill material the maximum K is 41 ft/day, the minimum value of K is 0.25 ft/day. The hydraulic conductivity of the bedrock is estimated between 24.5 ft/day and 0.9 ft/day. The hydraulic gradient is 0.005 ft/ft.

The average saturated thickness of the drift is 6 feet and is exposed to the Trenton Channel over a length of approximately 1800 ft (10,800 sq. ft.). This estimate divides this discharge evenly between discharge to the Monguagon Storm Drain and discharge to the Trenton Channel. The bedrock estimates are based on an affected saturated thickness of 10 feet over a distance of 900 feet for discharge to the Trenton Channel only (9,000 sq. ft.). The total area discharging directly to the Trenton Channel of the Detroit River is 19,800 sq ft.

Based on these values, the discharge from the drift/fill material ranges from 2,214 cu ft/day to 13.5 cu ft/day (11.5 gpm to 0.07 gpm). The discharge from the bedrock ranges from 1,102.5 cu ft/day to 40.5 cu ft/day (5.7 gpm to 0.21 gpm). The total outflow of groundwater from the site ranges from 3,316.5 cu ft/day to 54 cu ft/day (17.2 gpm to 0.28 gpm).

Using only the Trenton Channel of the Detroit River along the site as a discharge area the combined direct discharge ranges from 2,209.5 cu ft/day to 47.3 cu ft/day (11.5 gpm to 0.25 gpm).

The channel flow in the Trenton Channel of the Detroit River was measured at 143,000 cu ft/sec (64,178,400 gpm) in April 1984, which is the second lowest flow rate in the past 10 years. Using the guideline set forth in paragraph 2 of Rule 82 of the Michigan Water Quality Standards for determining mixing zones for discharges to surface waters, the reference flow for the Trenton Channel is calculated as 25% of the 95% exceedance flow. This gives a flow rate of 35,750 cu ft/sec (16,044,600 gpm). The flow of the Monguagon Drain was ignored.

Calculating the mixing of the groundwater discharge and the surface water in the Trenton Channel, including the Monguagon Storm Drain, gives the following ratios:

Discharge: max. flow=17.2 gpm/16,044,600 gpm=0.0000011
min. flow=0.28 gpm/16,044,600 gpm=0.000000017

Using the calculated direct discharge from the site to the Trenton Channel:

Discharge: max. flow=11.5 gpm/16,044,600 gpm=0.0000007
min. flow=0.25 gpm/16,044,600 gpm=0.000000016

The concentrations of the compounds detected in the groundwater samples are multiplied by these ratios to determine the potential for impact to the Trenton Channel of the Detroit River.

APPENDIX D

SITE PREPARATION MATERIAL REMOVAL SUMMARY

TRENTON CHEMICAL
SITE PREPARATION ACTIVITIES SUMMARY REPORT

TASK 1
Demolition and Removal of Concrete from Loading Dock Area and Misc. Site Structures

Item	Unit	Total To Be Removed	Number Removed This Week	Total Removed To Date	% Complete	Comments
Load Dock Foundation Walls	lineal feet	410	0	410	100	Completed
Load Dock Slabs	square yd.	2500	0	2500	100	Completed
Misc Concrete Foundations	unit	8	0	8	100	Completed
Concrete Curbs	lineal feet	490	0	490	100	Completed
Light Pole Bases	unit	12	0	19	158	Completed
Concrete Bumper Blocks	unit	150	0	172	115	Completed
Rail Car Area Foundation Walls	lineal feet	900	0	900	100	Completed
[illegible]posal Trucking & Loading	cubic yd.	750	0	1000	133	Completed
[illegible]ncrete Off-Site Disposal	tons	1000	0	1000	100	Completed

TASK 2
Closure of Fire Hydrants and Post Indicator Valves

Item	Unit	Total To Be Removed	Number Removed This Week	Total Removed To Date	% Complete	Comments
Fire Hydrants	unit	17	0	20	118	Completed
Post Indicator Valves (PIVs)	unit	39	0	44	113	Completed

TASK 3
Clearing and Grubbing of Trees

Item	Unit	Number Removed This Week	Total Removed To Date	% Complete (estimated)	Comments
Trees (greater than 3 inch diameter)	unit	0	120	100	Completed
[illegible]es (less than 3 inch diameter)	acres	0	2	100	Completed

TRENTON CHEMICAL
SITE PREPARATION ACTIVITIES SUMMARY REPORT

TASK 4
Miscellaneous Work

Item	Unit	Total To Be Removed	Number Removed This Week	Total Removed To Date	% Complete	Comments
Guard Posts	unit	375	0	320	85	Completed Originally Over-estimated
Fencing	lineal feet	800	0	800	100	Completed
Floor Tile	lump sum		0	12 drums	100	Completed
6 inch Concrete Slabs for Sumps	lump sum		0	10.25 cu.yds	100	Completed

TASK 5
Removal of Railroad Track and Ties

Item	Unit	Total To Be Removed	Number Removed This Week	Total Removed To Date	% Complete	Comments
Railroad Track and Ties	lineal feet	1680	0	2010	120	Completed
Disposal Trucking & Loading RR Ties	cubic yd.	500	0	320	64	Completed Originally Over-estimated
Disposal RR Ties	tons	100	0	112.1	112	Completed

TRENTON CHEMICAL SITE
ADDITIONAL SITE PREPARATION ACTIVITIES SUMMARY

TASK 12-1:
Demolition, Removal, and Stockpiling of On-Site Concrete and Asphalt

Item	Unit	Total To Be Removed	Amount Removed This Week	Total Removed To Date	% Complete	Comments
Concrete and Asphalt Demolition and Removal	Tons	14,000	0	14,000	100	Completed
Concrete Loadout and Transportation	Tons	12,000	0	12,000	100	Completed
Concrete Off-Site Disposal (Type II Non-Hazardous)	Tons	12,000	0	12,000	100	Completed

TASK 12-2:
Soil/Debris Stockpile Removal

Item	Unit	Total To Be Removed	Amount Removed This Week	Total Removed To Date	% Complete	Comments
Soil Pile Transportation and Loading	Tons	2,000	0	2,000	0	Completed Used On-site
Soil Pile Off-Site Disposal (Type II Non-Hazardous)	Tons	2,000	0	2,000	0	Completed Used On-site

TASK 12-3:
Asphalt Loadout Transportation and Recycling

Item	Unit	Total To Be Removed	Amount Removed This Week	Total Removed To Date	% Complete	Comments
Asphalt Transportation and Loadout	Tons	2,000	0	2,000	100	Completed
Asphalt Off-Site Recycling	Tons	2,000	0	2,000	100	Completed

TRENTON CHEMICAL SITE
ADDITIONAL SITE PREPARATION ACTIVITIES SUMMARY REPORT

TASK 12-4:
Limited Site Grading and Restoration

Item	Unit	Total To Be Complete	Amount Completed This Week	Total Completed To Date	% Complete	Comments
Site Grading	Acres	8	2	8	100	Completed
Imported Topsoil	Cu. Yds.	2,500	0	2,500	100	Completed
Seed and Mulch	Acres	8	0	8	100	Completed

TASK 12-5:
Manhole Repair

Item	Unit	Total To Be Removed	Amount Completed This Week	Total Completed To Date	% Complete	Comments
Repair Manholes	Manholes	15	0	15	100	Completed

TRENTON CHEMICAL SITE
ADDITIONAL SITE PREPARATION ACTIVITIES SUMMARY REPORT

TASK 13-1:
Demolition, Removal, and Stockpiling of On-Site Concrete

Item	Unit	Total To Be Removed	Amount Removed This Week	Total Removed To Date	% Complete	Comments
Concrete Demolition and Removal	Tons	7,850	582	8,367	107	Completed
Concrete Loadout and Transportation	Tons	7,850	582	8,367	107	Completed
Concrete Off-Site Disposal (Type II Non-Hazardous)	Tons	7,850	582	8,367	107	Completed

Asphalt Loadout Transportation and Recycling

Item	Unit	Total To Be Removed	Amount Removed This Week	Total Removed To Date	% Complete	Comments
Asphalt Demolition and Removal	Tons	535	0	535	100	Completed
Asphalt Transportation and Loadout	Tons	535	0	535	100	Completed
Asphalt Off-Site Recycling	Tons	535	0	535	100	Completed

Limited Site Grading and Restoration

Item	Unit	Total To Be Complete	Amount Completed This Week	Total Completed To Date	% Complete	Comments
Imported Topsoil	Cu. Yds.	667	0	667	100	Completed

TRENTON CHEMICAL SITE
ADDITIONAL SITE PREPARATION ACTIVITIES SUMMARY REPORT

TASK 14-4:

Limited Site Grading and Restoration

Item	Unit	Total To Be Complete	Amount Completed This Week	Total Completed To Date	% Complete	Comments
Imported Topsoil	Cu. Yds.	1,193	0	1,193	100	Completed
Imported Clay	Ton	6,047	0	6,047	100	Completed
Seed and Mulch	Acres	1	0	1	100	Completed

APPENDIX E

WORK PLAN FOR REMOVAL OF SURFACE CONCRETE STRUCTURES

1.0 INTRODUCTION AND OBJECTIVE

This workplan outlines the proposed procedures for completion of field operations involved in the demolition, removal, loadout and offsite disposal as Class II debris of the paving material covering portions of the concrete materials marshalling area ("Race Track") and associated road in the southwest corner of the Trenton Chemical Site (Site). Site work will include the limited grading and restoration of the disturbed areas. The objective of the above construction task is to prepare the Site for future reuse by providing the western portion of the Site, which includes the Race Track and associated roadway, with a continuous vegetative cover as shown on Project Drawing (Sheet G-3). As such, it will be necessary to remove and/or level existing concrete and asphalt features which would interrupt the proposed continuous vegetative cover.

2.0 SCOPE OF WORK

The following work items are anticipated for the proposed site preparation activities:

2.1 Demolition, Removal, and Stockpiling On-Site of Concrete and Asphalt Materials

The concrete materials marshalling area ("Race Track") and associated road is located in the southwest corner of the Site. This concrete area, delineated in the field with surface markings, will be demolished and removed. As such, McLaren/Hart will provide all union labor, materials, equipment and supervision necessary to break up and demolish the concrete in this area. Soils underlying asphalt and concrete paving will be monitored/screened utilizing a Photo Ionization Detector (PID). Provided that field screening indicates that the underlying surface soils in direct contact with the asphalt and concrete pavements are not affected by volatile organic compounds (VOCs) and visual and olfactory evidence of chemically affected soils is not apparent, the paving materials will be stockpiled on-site for either off-site disposal as Class II debris or for crushing and processing through a hammer mill at a later date. However, if it appears that the concrete structures are in contact with affected surface soils, the visually affected soils will be removed, stockpiled onsite, and characterized for eventual offsite disposal. Limited quantities of affected vadose zone soils may be contained in DOT approved drums or staged on and covered by visqueen sheeting.

2.2 Grading and Seeding of Disturbed Areas

Existing site materials will be used to fill low-lying areas which remain after concrete removal. Grading will be performed to promote natural drainage and to minimize ponding across the Site. Imported topsoil will be brought onsite to provide soil cover that is of sufficient quality, quantity and thickness to support vegetative growth (2" topsoil). All imported fill materials will be subjected to analytical testing including EPA Methods 8010, 8020, and 8080 (PCBs), prior to use onsite. These newly covered areas will be seeded and mulched. Seeding work will consist of a perennial rye and tall fescue mix (300 lb. per acre) with 27-13-13 fertilizer (100 lb. per acre).

3.0 DURATION OF WORK

The above detailed work for activities associated with the Race Track area will be conducted within a six week period during which other site preparation activities will occur.

APPENDIX F

WATER MANAGEMENT WORK PLAN

1.0 INTRODUCTION AND OBJECTIVE

This Work Plan outlines the proposed water management plan for the collected surface water presently contained within the utility corridor located in the central portion of the Trenton Chemical Site (Site), in Trenton, Michigan (Figure 1). Management and subsequent field activities will include pumping the collected water to an on-site catch basin which will serve as a connection to a former NPDES discharge point. The objective of the above task is to prepare the Site for future reuse by removal and backfilling of the utility corridor. This area of the Site can then be provided with a continuous vegetative cover.

2.0 SCOPE OF WORK

The following work items are anticipated for the proposed site preparation activities:

2.1 Pumping of Water to an On-Site Catch Basin

The utility corridor is located in the central portion of the Site. Connecting the former Friction Products Building with the former Materials Storage Area, Powerhouse and Chemical Building, the utility corridor is approximately 370 lineal feet long, eight feet wide, and eight feet deep and is comprised of reinforced concrete and block walls, bottom and cover. It is estimated that 150,000 to 160,000 gallons of collected surface water is contained in the utility corridor. Sampling has been conducted on the contained water. The corresponding laboratory analytical results are provided in Table 1.

It is proposed to use a trash pump and associated piping to discharge the water directly into an on-site catch basin. The catch basin identified will serve as a connection to a temporary NPDES discharge point. McLaren/Hart will assure that the proper notifications have been made and necessary permits have been obtained. Once work commences, McLaren/Hart will provide a attendant to monitor pumping activities for the duration of discharge. The weir-like configuration of the existing discharge structure will enable close monitoring and control of the water quality upon discharge.

It should be noted that McLaren/Hart has confirmed that there is no physical connection between the utility corridor and the trench (which connected the former Materials Storage Area with the former Tank Farm/Rolling Oil Building) and thus pumping in the utility corridor will not influence any water contained in the trench.

3.0 DURATION OF WORK

The above detailed work for activities associated with the water in the utility corridor will be conducted within a one week period during which other site preparation activities will occur.

APPENDIX G

SUMMARY OF LOAD TICKETS AND MANIFESTS

DNR

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

DO NOT WRITE IN THIS SPACE

ATT. ☐ DIS. ☐ REJ. ☐ PR. ☐

Required under authority of Act 64, P.A. 1979 as amended and Act 136, P.A. 1969

Failure to file is punishable under section 299.548 MCL or Section 10 of Act 136, P.A. 1969

Please print or type

Form Approved. OMB No. 2050-0039 Expires 9-30-94

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MI D 005315816 4 — Manifest Document No.: 001151

2. Page 1 of 1

Information in the shaded areas is not required by Federal law

3. Generator's Name and Mailing Address
CHRYSLER CORP / FORMER TRENTON CHEMICAL
5437 Jefferson
Trenton, MI 48153
MAILING ADDRESS
800 Chrysler Drive
CIMS 482-00-51
AUBURN HILLS, MI 48326

4. Generator's Phone (810) 576-7364

A. State Manifest Document Number: MI 3345906

B. State Generator's ID

5. Transporter 1 Company Name: K+D Industrial Services Inc

6. US EPA ID Number: MI D 072791110

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
ENVIRONMENTAL RECYCLING
5265 Tractor Rd
Toledo OH 43612

10. US EPA ID Number: OH RD 000047139

G. State Facility's ID

H. Facility's Phone

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER). HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a. Non-DOT, Non RCRA Regulated Material (Light Ballasts Containing PCBs) 0266-N	001	DM	55	G		
b.						
c.						
d.						

J. Additional Descriptions for Materials Listed Above

K. Handling Codes for Wastes Listed Above: a/ b/ c/ d/

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR; if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: JOHN E SINGLETON — Signature — Date (Month Day Year): 04/10/96

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: RALPH BERG — Signature — Date (Month Day Year): 04/1/96

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Date (Month Day Year)

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name — Signature — Date (Month Day Year)

GENERATOR — TRANSPORTER — FACILITY

ALL CERTIFICATIONS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN 124 8802 24 HOURS PER DAY

CALL 1 800 292 4706 OR OUT OF STATE AT 517 373 7660 AND THE NATIONAL RESPONSE

DNR

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

DO NOT WRITE IN THIS SPACE

ATT. ☐ DIS. ☐ REJ. ☐ PR. ☐

Required under authority of Act 64 P.A. 1979 as amended and Act 136 P.A. 1969

Failure to file is punishable under section 299.548 MCL or Section 10 of Act 136 P.A. 1969

Please print or type

Form Approved. OMB No. 2050-0039 Expires 9-30-94

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MI D005358064

Manifest Document No.: 011516

2. Page 1 of 1

Information in the shaded areas is not required by Federal law

3. Generator's Name and Mailing Address
CHRYSLER CORP/FORMER TRENTON CHEMICAL
5437 Jefferson
Trenton, MI 48183
MAILING ADDRESS
800 CHRYSLER DRIVE
CIMS 452-00-51
AUBURN HILLS, MI 48326

4. Generator's Phone (810) 576-7364

A. State Manifest Document Number: MI 3345905

B. State Generator's ID

5. Transporter 1 Company Name: K+D Industrial Services Inc

6. US EPA ID Number: MID072790710

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
ENVIRONMENTAL RECYCLING
52605 Tractor Rd
Toledo OH 43612

10. US EPA ID Number: OHR000004739

G. State Facility's ID

H. Facility's Phone

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER). HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a. HAZARDOUS WASTE SOLID, N.O.S. (contains mercury) 9, NA3077, PG III D009-H	001	DM	55	G		
b.						
c.						
d.						

J. Additional Descriptions for Materials Listed Above

K. Handling Codes for Wastes Listed Above: a/ / b/ / c/ / d/ /

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR; if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: John F Singleton — Signature — Date (Month Day Year): 04/10/96

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: RALPH BERG — Signature — Date (Month Day Year): 04/1/96

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Date (Month Day Year)

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name — Signature — Date (Month Day Year)

GENERATOR — TRANSPORTER — FACILITY

MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN ALL CENTS 800 24 HOURS PER DAY. 800 292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE

TRENTON CHEMICAL SITE

Summary of Load Tickets

Materials Removed from Site				
Date	Job Ticket #	Material	Amount	Units
5/11/95	71495	CONCRETE	169.75	tons
5/11/95	71495	RR TIES	280	yds
5/12/95	71264	CONCRETE	882.31	tons
5/15/95	71453	CONCRETE	463.6	tons
5/16/95	71418	CONCRETE	480.48	tons
5/17/95	71401	CONCRETE	685.13	tons
5/18/95	71127	CONCRETE	893.15	tons
5/19/95	71128	CONCRETE	891.83	tons
5/22/95	71624	CONCRETE	902.62	tons
5/23/95	71607	CONCRETE	959.13	tons
5/24/95	71652	RR TIES	40	yds
5/24/95	71652	CONCRETE	695.94	tons
5/25/95	71689	CONCRETE	777.92	tons
5/30/95	71735	CONCRETE	869.23	tons
5/31/95	71749	CONCRETE	899.17	tons
6/1/95	71764	CONCRETE	658.75	tons
6/5/95	71840	CONCRETE	612.66	tons
6/5/95	60595	ASPHALT	239.23	tons
6/6/95	71855	CONCRETE	617.46	tons
6/6/95	60695	ASPHALT	291.29	tons
6/7/95	71871	CONCRETE	684.89	tons
6/7/95	60795	ASPHALT	199.96	tons
6/8/95	71918	CONCRETE	534.88	tons
6/8/95	60895	ASPHALT	293.74	tons
6/9/95	71943	CONCRETE	601.66	tons
6/9/95	60995	ASPHALT	247.91	tons
6/12/95	61295	ASPHALT	754.31	tons
6/13/95	61395	ASPHALT	294.13	tons
6/19/95	61995	CONCRETE	577.46	tons
6/20/95	62095	CONCRETE	509.45	tons
6/21/95	62195	CONCRETE	334.05	tons
6/22/95	62295	CONCRETE	382.27	tons
6/23/95	62395	CONCRETE	348.98	tons
6/26/95	71625	CONCRETE	375.16	tons
6/26/95	2215	ASPHALT	55.06	tons
6/26/95	2216	ASPHALT	55.89	tons
6/26/95	2217	ASPHALT	48.35	tons
6/26/95	2218	ASPHALT	55.58	tons
6/27/95	72273	CONCRETE	275.45	tons
6/28/95	72336	CONCRETE	559.31	tons
6/29/95	72361	CONCRETE	187.35	tons
6/30/95	72382	CONCRETE	193.48	tons
7/5/95	70595	CONCRETE	400.97	tons
7/6/95	70695	CONCRETE	419.27	tons
7/7/95	70795	CONCRETE	222.93	tons
7/10/95	71095	CONCRETE	138.99	tons
7/11/95	71195	CONCRETE	141.63	tons

TRENTON CHEMICAL SITE

Summary of Load Tickets

7/13/95	71395	CONCRETE	143	tons
7/14/95	71495	CONCRETE	51.54	tons
7/18/95	71895	CONCRETE	36.46	tons
7/21/95	72195	CONCRETE	116.15	tons
7/26/95	72695	CONCRETE	133.6	tons
7/27/95	72795	CONCRETE	293.49	tons
7/28/95	72895	CONCRETE	294.76	tons
8/1/95	80195	CONCRETE	325.76	tons
8/2/95	80295	CONCRETE	324.18	tons
8/3/95	80395	CONCRETE	130.45	tons
8/15/95	73109	CONCRETE	78.56	tons
8/18/95	73113	CONCRETE	160.58	tons
8/21/95	73276	CONCRETE	342.67	tons

Materials Brought to Site				
Date	Job Ticket #	Material	Amount	Units
7/6/95	72487	TOPSOIL	80	yds
7/7/95	72508	TOPSOIL	1200	yds
7/10/95	72545	TOPSOIL	1280	yds
7/11/95	71195	CLAY	2408.15	tons
7/12/95	2414	CLAY	1572.15	tons
7/20/95	72095	TOPSOIL	240	yds
7/21/95	72195	TOPSOIL	560	yds
7/26/95	72695	TOPSOIL	600	yds
7/27/95	72795	TOPSOIL	400	yds
10/30/95	74044	CLAY	2013.98	tons
4/12/96	76597	CLAY	53.12	tons

APPENDIX H

MDEQ RESPONSE TO MIXING ZONE CALCULATIONS

STATE OF MICHIGAN

REPLY TO:
SE MICHIGAN DISTRICT HEADQ
ENVIRONMENTAL RESPONSE
33980 W. SEVEN MILE ROAD
LIVONIA, MI 48152-1006

JOHN ENGLER, Governor
DEPARTMENT OF ENVIRONMENTAL QUALITY
HOLLISTER BUILDING, PO BOX 30473, LANSING MI 48909-7973
RUSSELL J. HARDING, Director
ENVIRONMENTAL RESPONSE DIVISION

April 15, 1996

James W. Gell
Senior Geoscientist
McLaren Hart
1000 Town Center, Suite 600
Southfield, MI 48075

SUBJECT: Chrysler–Trenton Mixing Zone Determination

Mr. Gell

The Environmental Response Division (ERD) has reviewed Surface Water Quality Divisions (SWQD) Mixing Zone Evaluation for the Chrysler Trenton Facility. A copy of SWQDs evaluation was sent to you on April 10, 1996.

SWQD has indicated the venting of the organic plume is acceptable. SWQD recommended water quality-based venting groundwater limits (WQBVGLs) for the following inorganic constituents: Barium, Cadmium, Thallium, and Cyanide.

In a recent telephone conversation, Mark Oemke of the SWQD indicated the WQBVGLs should be applied to the *average* plume concentration during a single sampling event. ERDs review of the historical sampling data for these constituents found that the WQBVGLs were occasionally exceed at individual sampling points but the average plume concentration never exceeded the WQBVGLs. Also, trends in the concentrations of Barium, Cadmium, Thallium, and Cyanide have not shown any increase in contaminant levels. Therefore, no further action is required in respect to the venting of the plumes to the Trenton Channel.

For future reference I have enclosed a draft copy of our Operational Memorandum # 17. If you have any questions regarding this matter, please contact me at the Southeast Michigan District Office ~~313~~ 953-1463.

734

734-953-8905

Sincerely,

Thomas P. Cok, Geologist
Environmental Response Division

cc: John Singleton, Chrysler
Mary Vanderlaan ERD
Ed Novak, ERD

Enc.

APPENDIX I

WORK PLAN FOR PLACEMENT OF SOIL COVER SYSTEM

1.0 INTRODUCTION AND OBJECTIVE

This workplan outlines the proposed procedures for completion of field operations at the Chrysler Trenton Chemical Site involved in the:

1. Placement of an engineered soil cover system over specified areas; and
2. Proper grading and seeding of surrounding areas of the Site to achieve controlled drainage and to control erosion of soil cover.

The objective of the above construction task is to prepare the Site for future reuse by providing sufficient cover over the specified affected area so as to prevent direct contact with affected soils. The soil cover system will also mitigate the potential for fugitive dust emissions and also avoid direct contact of surface waters with the affected surface soils.

2.0 SCOPE OF WORK

The following work items are anticipated for the proposed site preparation activities:

2.1 Location of Soil Cover

The location of the proposed soil cover system is identified on Figure D-1. The cover will provide a minimum of 6 inches of compacted in-place soil cover over the affected area to prevent direct contact with the affected soils.

Previous investigations indicated lead concentrations exceeding levels for industrial land-use in certain areas as detailed in Table 1 and Figure D-1. To delineate the clean boundary of the proposed soil cover, surface sampling of soils utilizing the Geoprobe was recently performed. The results of the investigations are included in Table 2 and are indicated on Figure D-1. Laboratory analytical sheets are included as Attachment A. The location of the proposed soil cover system was determined upon consideration of the sampling results.

2.2 Placement of Soil Cover

The material used for the soil cover was obtained from an off-site borrow source and is presently stockpiled on site. Laboratory sampling of the material was performed using EPA Methods 8240, 8270, and 8080 (PCBs). No detectable concentrations of analytes were found. The material will be placed in three 6-8 inch loose measure uniform lifts and compacted using a sheepsfoot roller or equally acceptable roller so as to achieve a dry density of at least 90% of the maximum dry density, as obtained by ASTM D-1557 (Modified Proctor). Moisture will be controlled to $\pm$ 3% of the optimum moisture content as provided by this standard.

Prior to the installation of the soil cover system a survey of baseline elevations will be

undertaken in the affected area. Upon completion of the soil cover system installation, a final elevation survey will be conducted to verify the presence of at least six inches of soil cover over the area. The layout of the soil cover system will be set at a minimum of 5 feet beyond the known limits of affected soils (Figure D-1).

Final approval of the soil cover system will be based on the results of nuclear density tests performed on the final lift of material in accordance with ASTM D-2922.

2.3 Grading and Seeding of Cover and Surrounding Areas

Grading of the soil cover will be performed so as to tie in the cover system with surrounding areas to promote natural drainage and to minimize ponding across the Site. Imported topsoil will be brought onsite to provide soil cover that is of sufficient quality, quantity and thickness to support vegetative growth (approximately 3" topsoil). All imported materials will be subjected to analytical testing for volatile and semi-volatile organic compounds and PCBs, prior to use onsite.

The newly topsoiled areas will be broadcast seeded and mulched. Seeding work will consist of a perennial rye and tall fescue mix (300 lb. per acre) with 27-13-13 fertilizer (100 lb. per acre) or approved equal. Mulch will consist of either fresh hay or small grain straw.

3.0 DURATION OF WORK

The above detailed work for activities associated with the installation of the soil cover system will be conducted within a two week period commencing upon MDEQ approval of this workplan.

TABLE 1

SUMMARY OF ANALYTICAL RESULTS
INORGANIC COMPOUNDS IN SOILS
SOIL COVER SYSTEM DELINEATION
TRENTON CHEMICAL SITE

(All concentrations in mg/kg)

Sample Location	Date	Analyte (Industrial Direct Contact Criteria = 400 mg/kg)	Value
GS-1 (0-2)	May-94	LEAD	50
GS-2 (0-2)	May-94	LEAD	1500
GS-2 (0-2) DUP	May-94	LEAD	500
GS-3 (0-2)	May-94	LEAD	1500
GS-6 (0-2)	May-94	LEAD	700
HB-4B	Nov-88	LEAD	170
HB-7 (0-4)	Nov-88	LEAD	1500
HB-7 (4-8)	Nov-88	LEAD	1100
HB-7 (8-12)	Nov-88	LEAD	350
HB-7 (12-16)	Nov-88	LEAD	350
HB-8 (0-4)	Nov-88	LEAD	350
HB-8 (4-8)	Nov-88	LEAD	2700
HB-8 (8-12)	Nov-88	LEAD	270
HB-9 (0-2)	Nov-88	LEAD	3500
HB-9 (4-5)	Nov-88	LEAD	950
HB-9 (12-14)	Nov-88	LEAD	270
HB-10 (0-2)	Nov-88	LEAD	330
SB-6 (2-4)	Sep-90	LEAD	N.D.
SB-8/SB-30 (0-2)	Sep-90	LEAD	272
SB-8/SB-30 (4-6)	Sep-90	LEAD	24
SB-20A/SB-20B (0-2)	Sep-90	LEAD	299
SB-20A/SB-20B (2-4)	Sep-90	LEAD	159

TABLE 2

SUMMARY OF ANALYTICAL RESULTS
EXTENDED SOIL INVESTIGATION
SOIL COVER SYSTEM DELINEATION
TRENTON CHEMICAL SITE

(All concentrations in mg/kg)

Sample Location	Date	Analyte Industrial Direct Contact Criteria = 400 mg/kg	Value
AL-1A (0-2)	Oct-95	LEAD	47.2
AL-2 (0-2)	Sep-95	LEAD	371
AL-3 (0-2)	Sep-95	LEAD	309
AL-4 (0-2)	Sep-95	LEAD	235
AL-5 (0-2)	Sep-95	LEAD	317
AL-6 (0-2)	Sep-95	LEAD	71.3
AL-7 (0-2)	Sep-95	LEAD	2100
AL-8 (0-2)	Sep-95	LEAD	1020
AL-9 (0-2)	Sep-95	LEAD	1420
AL-10A (0-2)	Oct-95	LEAD	201
AL-11 (0-2)	Oct-95	LEAD	219
AL-12 (0-2)	Oct-95	LEAD	191
AL-13 (0-2)	Oct-95	LEAD	406
AL-14 (0-2)	Oct-95	LEAD	251

ATTACHMENT A

LABORATORY ANALYTICAL RESULTS

CA 95670
Phone 916/852 6600
Fax 916/852 7292

CHAIN OF CUSTODY RECORD 12546

COMPLETE INSTRUCTIONS

Project Name: CHRYSLER - TRENTON CHEMICAL
Project Number: 07020
Project Location: (State) TRENTON, MICHIGAN

FOR LABORATORY USE ONLY
Laboratory Project #: _____ Storage ID: _____
Sample Condition Upon Receipt: Temp: _____ °C _____ Geiger: _____
Custody Seals Present? Yes/No Intact? Yes/No Samples Intact? Yes/No

Sample Disposal (check one)
☐ Laboratory Standard
☐ Other _____

Level of QC (see Slide 2): ☐1 ☐2 ☐3 ☐4 ☐5 ☐6A ☐6B ☐6C ☐6D ☐6E ☐6F ☐7 ☐8 ☐A

Write in Analysis Method →

SAMPLE INFORMATION

FOR LABORATORY USE ONLY Lab ID	Sample ID Number	Date	Time	Description: Locator	Description: Depth	Container(s) #	Container(s) Type	Matrix Type	Pres. Type	TAT	ANALYSES REQUESTED: Lead (7421)							
1	AL-2 (0-2)	7/25/95	1100	AL-2	0-2	1	2oz glass sample	SOIL	—	48 HRS	X							
2	AL-3 (0-2)		1125	AL-3	0-2	1			—		X							
3	AL-4 (0-2)		1315	AL-4	0-2	1			—		X							
4	AL-5 (0-2)		1430	AL-5	0-2	1			—		X							
5	AL-6 (0-2)		1410	AL-6	0-2	1			—		X							
6	AL-7 (0-2)		1355	AL-7	0-2	1			—		X							
7	AL-8 (0-2)		1440	AL-8	0-2	1			—		X							
8	AL-9 (0-2)		1520	AL-9	0-2	1			—		X							
9									—									
10									—									

SEND REPORT TO:
Company Name: McLAREN/MACT.
Client Name: MONA SINGH
Address: 1200 TOWN CENTER, STE 600
SOUTHFIELD, MICHIGAN 48075
Phone (810) 358-0400 Fax (810) 358-5321

BILL TO (if different):
Company Name _____
Address _____
PO # _____
Phone _____ Fax _____

Special Instructions/Comments _____

Sampler Name: [signature]
Relinquished By: [signature] Date/Time 7/25/95 1:22
Relinquished By: _____ Date/Time _____
Relinquished By: _____ Date/Time _____

PPE Worn in Field: LEVEL D
Received By or Method of Shipment/Shipment I.D.: FEDEX 535245252J Date/Time 7/26/95 17:00
Received By or Method of Shipment/Shipment I.D.: [signature] Date/Time 8/2/95 8:30
Received By or Method of Shipment/Shipment I.D.: _____ Date/Time _____

RECEIVED IN GOOD CONDITION Samples cool 4°C on 8/2/95 8:30

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: COMPUCHEM_ENV._CORP._____ Contract: ILM03.0___

Lab Code: COMPU_ Case No.: 31445 SAS No.: _____ SDG No.: 1_____

SOW No.: ILM03.0

EPA Sample No.	Lab Sample ID
AL-2	759759
AL-2D	759765
AL-2S	759762
AL-2S	759761
AL-3	759760
AL-4	759764
AL-5	759766
AL-6	759767
AL-7	759768
AL-8	759769
AL-9	759770

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No YES
If yes - were raw data generated before application of background corrections ? Yes/No NO_

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: [signature] Name: Nick Ross

Date: Oct 29 1995 Title: Inorganic Div. Manager

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

AL-2

Lab Name: COMPUCHEM_ENV._CORP._____ Contract: ILM03.0___

Lab Code: COMPU_ Case No.: 31445_ SAS No.: _____ SDG No.: 1_____

Matrix (soil/water): SOIL_ Lab Sample ID: 759759

Level (low/med): LOW__ Date Received: 09/27/95

% Solids: _86.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	371		*	F

Color Before: BROWN____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:

Duplicate_(AL-2D)

U.S. EPA - CLP

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

AL-3

Lab Name: COMPUCHEM ENV. CORP. Contract: ILM03.0

Lab Code: COMPU Case No.: 31445 SAS No.: SDG No.: 1

Matrix (soil/water): SOIL Lab Sample ID: 759760

Level (low/med): LOW Date Received: 09/27/95

% Solids: 93.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	309		A*	F

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

AL-4

Lab Name: COMPUCHEM_ENV._CORP._____ Contract: ILM03.0___

Lab Code: COMPU_ Case No.: 31445_ SAS No.: _____ SDG No.: 1_____

Matrix (soil/water): SOIL_ Lab Sample ID: 759764

Level (low/med): LOW__ Date Received: 09/27/95

% Solids: _96.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	235		*	F

Color Before: BROWN____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:

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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

AL-6

Lab Name: COMPUCHEM ENV. CORP. Contract: IIM03.0

Lab Code: COMPU Case No.: 31445 SAS No.: SDG No.: 1

Matrix (soil/water): SOIL Lab Sample ID: 759766

Level (low/med): LOW Date Received: 09/27/95

% Solids: 93.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	317		A*	F

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

AL-6

Lab Name: COMPUCHEM_ENV._CORP._____ Contract: ILM03.0___

Lab Code: COMPU_ Case No.: 31445_ SAS No.: _____ SDG No.: 1_____

Matrix (soil/water): SOIL_ Lab Sample ID: 759767

Level (low/med): LOW__ Date Received: 09/27/95

% Solids: _95.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	71.3		*	F

Color Before: BROWN____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:

U.S. EPA - CLP

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

AL-7

Lab Name: COMPUCHEM ENV. CORP. Contract: ILM03.0

Lab Code: COMPU Case No.: 31445 SAS No.: SDG No.: 1

Matrix (soil/water): SOIL Lab Sample ID: 759768

Level (low/med): LOW Date Received: 09/27/95

% Solids: 89.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	2100		*	F

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

AL-3

Lab Name: COMPUCHEM_ENV._CORP._____ Contract: ILM03.0___

Lab Code: COMPU_ Case No.: 31445_ SAS No.: _____ SDG No.: 1_____

Matrix (soil/water): SOIL_ Lab Sample ID: 759769

Level (low/med): LOW__ Date Received: 09/27/95

% Solids: _95.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	1020		*	F

Color Before: BROWN____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:

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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

AL-9

Lab Name: COMPUCHEM ENV. CORP. Contract: ILM03.0

Lab Code: COMPU Case No.: 31445 SAS No.: SDG No.: 1

Matrix (soil/water): SOIL Lab Sample ID: 759770

Level (low/med): LOW Date Received: 09/27/95

% Solids: 94.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	1420		*	F

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

MDT Environmental Laboratories
3093 Gold Chase Drive
Rancho Cordova
CA 95670
Phone 916/852-6600
Fax 916/852-7292

COMPUCHEM
3306 E. CHAPEL HILL, NELSON HWY.
REGENCY TRIANGLE PARK, NC 27709

Order 31445

CHAIN OF CUSTODY RECORD

14139

SEE SIDE 2 FOR COMPLETE INSTRUCTIONS

Project Name: Chrysler-Trenton Chemical
Project Number: 01080
Project Location: (State) TRENTON, MICHIGAN

FOR LABORATORY USE ONLY
Laboratory Project #: _____ Storage ID: _____
Sample Condition Upon Receipt: Temp: _____ °C _____ Gelges: _____
Custody Seals Present? Yes/No Intact? Yes/No Samples Intact? Yes/No

Sample Disposal (check one)
[X] Laboratory Standard
[ ] Other _____

Level of QC (see Side 2): [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ] 6A [ ] 6B [ ] 6C [ ] 6D [ ] 6E [ ] 6F [ ] 7 [ ] 8 [ ] A

Write In Analysis Method →

ANALYSES REQUESTED: (EPA) GRO

SAMPLE INFORMATION

LABORATORY USE ONLY Lab ID	Sample ID Number	Date	Time	Description: Locator	Description: Depth	Container(s) #	Container(s) Type	Matrix Type	Pres. Type	TAT	(EPA) GRO
AL-1	AL-1 (0-2)	10/5/95	1150	AL-1	0-2	1	GLASS	SOIL	—	48	X
AL-1A	AL-1A (0-2)	10/5/95	1210	AL-1A	0-2	1	GLASS	SOIL	—	48	X
AL-13	AL-13 (0-2)	10/5/95	1220	AL-13	0-2	1	GLASS	SOIL	—	48	X
AL-12	AL-12 (0-2)	10/5/95	1230	AL-12	0-2	1	GLASS	SOIL	—	48	X
AL-11	AL-11 (0-2)	10/5/95	1215	AL-11	0-2	1	GLASS	SOIL	—	48	X
AL-10A	AL-10A (0-2)	10/5/95	1255	AL-10A	0-2	1	GLASS	SOIL	—	48	X

Common Analytical Methods: 413.1, 413.2 Long Method, 413.2 Short Method, 418.1 Long Method, 418.1 Short Method, 420.1, 602.2, 603.5, 603.1, 624.2, 601, 602, 604, 608, 610, 624, 625, 8010, 8010, 8010 Mod., 8020, 8021, 8040, 8100, 8150, 8240, 8270, 8310, Acidity, Alkalinity, BTEX, Chloride, CLP (see Side 2), COD, Color, Conductivity, Cornosity, Cyanide, Fluoride, Fluoride, General Mineral, Hex. Chromium, Ion Balance, Metals (write specific metal & method #), Metals 6010, Metals PP, Metals Title 22: TTLC Level, STLC Level (see Side 2), Nitrate, Nitrite, Odor, Org. Lead, Org. Mercury, Percent Moisture, Percent Solid, Perchlorate, pH, Phosphate, Phosphorus, Sulfate, Sulfide, TCLP: VOA, Semivolatile, Metals, Pesticide, TDS, Total Hardness, Total Solids, TPHD, TPHD, TSS

SEND REPORT TO:
Company Name McLaren/Hart
Client Name MONA SINGH
Address 1000 TOWN CENTER, STE. 600
SOUTHFIELD, MI 48075
Phone 810-358-0100 Fax 810-358-7321

BILL TO (if different):
Company Name _____
Address _____
PO # _____
Phone _____ Fax _____

Special Instructions/Comments
SEE FOLLOW QAAP AND SAMPLING PLAN FOR MDL'S AND ANALYSIS PROCEDURES SUBMITTED FOR THIS PROJECT.

Sampler Name: JEFF STUMP
Relinquished By: [signature] Signature: [signature] Date/Time: 10/5/95 1700
Relinquished By: [signature] Date/Time: _____
Relinquished By: _____ Date/Time: _____

PPE Worn in Field: LEVEL D

Received By or Method of Shipment/Shipment I.D.: FED EX 3110625384 Date/Time: 10/5/95
Received By or Method of Shipment/Shipment I.D.: [signature] Date/Time: 10/6/95 8:30am
Received By or Method of Shipment/Shipment I.D.: _____ Date/Time: _____

RECEIVED IN GOOD CONDITION

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: COMPUCHEM_ENV._CORP._____ Contract: SW-846____

Lab Code: COMPU_ Case No.: 31445 SAS No.: _____ SDG No.: 9_____

SOW No.: ILM03.0

EPA Sample No.	Lab Sample ID
AL-1A	762467
AL-10A	762471
AL-11	762470
AL-12	762469
AL-13	762468
AL-14	762462
AL-14D	762466
AL-14S	762464
AL-14S	762463

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No YES
If yes - were raw data generated before application of background corrections ? Yes/No NO_

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Joann C. [illegible] for Name: Mark Ross

Date: October 9, 1995 Title: Inorganic Div. Manager

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

AL-1A

Lab Name: COMPUCHEM_ENV._CORP._____ Contract: SW-846____

Lab Code: COMPU_ Case No.: 31445_ SAS No.: _____ SDG No.: 9_____

Matrix (soil/water): SOIL_ Lab Sample ID: 762467

Level (low/med): LOW__ Date Received: 10/06/95

% Solids: _35.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	47.2			P

Color Before: BROWN____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

AL-10A

Lab Name: COMPUCHEM ENV. CORP. Contract: SW-846

Lab Code: COMPU Case No.: 31445 SAS No.: SDG No.: 9

Matrix (soil/water): SOIL

Lab Sample ID: 762471

Level (low/med): LOW

Date Received: 10/06/95

% Solids: 90.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	201			P

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

AL-11

Lab Name: COMPUCHEM_ENV._CORP. Contract: SW-846

Lab Code: COMPU Case No.: 31445 SAS No.: SDG No.: 9

Matrix (soil/water): SOIL Lab Sample ID: 762470

Level (low/med): LOW Date Received: 10/06/95

% Solids: 89.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	219			P

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

AL-12

Lab Name: COMPUCHEM ENV. CORP. Contract: SW-846

Lab Code: COMPU Case No.: 31445 SAS No.: SDG No.: 9

Matrix (soil/water): SOIL Lab Sample ID: 762469

Level (low/med): LOW Date Received: 10/06/95

% Solids: 92.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	191			P

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

AL-13

Lab Name: COMPUCHEM_ENV._CORP._____ Contract: SW-846____

Lab Code: COMPU_ Case No.: 31445_ SAS No.: _____ SDG No.: 9_____

Matrix (soil/water): SOIL_ Lab Sample ID: 762468

Level (low/med): LOW__ Date Received: 10/06/95

% Solids: _90.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	406			P

Color Before: BROWN____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:

FORM I - IN

ILM03.0

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

AL-14

Lab Name: COMPUCHEM ENV. CORP. Contract: SW-846

Lab Code: COMPU Case No.: 31445 SAS No.: SDG No.: 9

Matrix (soil/water): SOIL

Lab Sample ID: 762462

Level (low/med): LOW

Date Received: 10/06/95

% Solids: 32.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	251			P

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

Duplicate (AL-14D)

FORM I - IN

ILM03.0

APPENDIX J

CHRYSLER CORPORATION'S BACKFILL REQUIREMENTS

SPECIFICATIONS FOR INCOMING BACKFILL

A) All backfill materials coming into a Chrysler facility should be analyzed for potential contaminants.

B) One sample of the backfill material shall be analyzed for every 1,000 cubic yards of material coming on site.

C) Backfill sites providing more than 5,000 cubic yards should be inspected by a Chrysler Representative. Pictures taken, and a sample pulled. Additional samples should be pulled if the site inspection indicates a potential problem.

D) If the backfill materials should come from two or more sources, item (B) should apply for each site.

E) All samples shall be taken and analytical results received before backfill materials are off-loaded at any facility.

F) Should analytical results show possible contaminants, no backfill shall be off-loaded until further inspections are complete.

G) All soil samples are to be analyzed on a dry weight basis.

H) Metals - Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver, Nickel, Copper, Zinc.

I) Volatile Organic Compounds (VOC), and Total Petroleum Hydrocarbons (TPH).

J) Polycylic Aromatic Hydrocarbons (PAH)

K) PCB's

L) Analyze for total contaminant concentrations. If required, then analyze for TCLP concentrations.

This specification applies to all components of Chrysler Corporation in the United States, and shall be subject to specific Regulations which could apply in other jurisdictions (e.g. Canada, Mexico).

APPENDIX K

DECLARATION AND DESCRIPTION OF RESTRICTIVE COVENANT

DECLARATION OF RESTRICTIVE COVENANTS

On March _____, 1997, Chrysler Corporation, whose address is 1000 Chrysler Drive, Auburn Hills, Michigan 48326-2766, declared that the real estate described in the attached Exhibit A ("Property") is held and shall be conveyed and occupied subject to the following notice, covenants and restrictions:

As used herein, the term "Owner" shall mean at any given time the then current title holder of the Property.

NOTICE

The Property is a Michigan Limited Industrial Remedy site remediated pursuant to a Remedial Action Plan (RAP) in accordance with the Consent Decree dated November 28, 1994, in Case No. 94-079112-CE. The remedial action involved on-site containment of a hazardous substance, to wit:

> Petroleum hydrocarbons, in particular Volatile Organic Compounds (VOCs) and lead, are present in subsurface soils in excess of applicable residential criteria.
>
> The Michigan Department of Environmental Quality (MDEQ) has approved the RAP submitted by McLaren/Hart Engineers Midwest, Inc., on _____, including any MDEQ modifications thereto. The RAP requires: continued maintenance of the clay and/or cement barrier in the area defined as "Restrictive Covenant Description" on Exhibit A.

This Restrictive Covenant is being recorded with the Wayne County Register of Deeds for the purpose of protecting public health, safety and welfare and the environment.

COVENANTS AND RESTRICTIONS

1. The Owner shall restrict activities at the Property that may interfere with a response activity, operation and maintenance, monitoring, or other measures necessary to assure the effectiveness and integrity of the remedial action.

2. The Owner shall restrict activities that may result in exposures above levels established in the RAP or that would result in the release of a hazardous substance which was contained as part of the remedial action. Any activities on the Property, including excavation or construction, that may expose subsurface soils which are impacted above Michigan residential cleanup criteria, can be implemented only after approval by the MDEQ.

3. The Owner shall restrict the uses of the Property to:

Industrial or commercial uses consistent with the environmental conditions at the Property or any other use that is consistent with the assumptions and basis for the cleanup criteria calculated pursuant to Section 20120a(1)(i) of Act 451, Part 201. . Any change from the industrial/commercial land use specified in the RAP may necessitate further evaluation of the potential risks to the public health, safety or welfare or the environment.

4. The Owner shall provide notice to the MDEQ of the Owner's intent to convey any interest in the Property prior to consummating the conveyance. A conveyance of title, an easement, or other interest in the property shall not be consummated by the property owner without adequate and complete provision for compliance with the terms and conditions of the Consent Decree.

5. The Owner shall grant to the MDEQ, its designated representatives, and other persons implementing MDEQ approved response activities the right to enter the property at reasonable times for the purpose of determining and monitoring compliance with the RAP, including the right to take samples, inspect the operation of the remedial action measures and inspect records.

6. The restrictions herein were approved by the MDEQ. The MDEQ, Chrysler, and Owner have the right to enforce the restrictions herein in whole or in part by legal action in a court of appropriate jurisdiction. Any rights of Chrysler to enforce the restrictions herein shall be subordinate to the rights of the MDEQ.

7. The restrictions and other requirements described in this Restrictive Covenant shall run with the land and shall be binding upon all future Owners, successors, lessees or assigns and their authorized agents, employees, or persons acting under their direction and control. This Restrictive Covenant shall continue into perpetuity. A copy of this Restrictive Covenant shall be provided to all future Owners, heirs, successors, lessees, assigns and transferees.

8. If any provision of this Restrictive Covenant is held to be invalid by any court of competent jurisdiction, the invalidity of such provision shall not affect the validity of any other provisions hereof. All such other provisions shall continue unimpaired in full force and effect.

9. This Restrictive Covenant shall not be amended, modified, or terminated except by a written instrument executed by and between the Owner, Chrysler, and the MDEQ at the time of the proposed amendment, modification, or termination. Within five (5) days of executing an amendment, modification, or termination of this Restrictive Covenant, the Owner shall record such amendment, modification, or termination with the Wayne County Register of Deeds and within five (5) days thereafter, the Owner shall provide a true copy of the recorded amendment, modification, or termination to the MDEQ.

10. This Restrictive Covenant does not obviate the Owner's compliance with other federal, state or local laws or regulations.

11. The undersigned persons executing this Restrictive Covenant on behalf of the Owner represent and certify that they are duly authorized and have been fully empowered to execute and deliver this Restrictive Covenant.

IN WITNESS WHEREOF, the said Owner of the above-described property has caused this Restrictive Covenant to be executed this _____ day of _____, 1997.

Signed in the presence of:

CHRYSLER CORPORATION

_____ By: _____

_____ Its: _____

Subscribed and sworn to me on this _
day of _____, 1997

_____
Notary Public
_____ County, MI
My Commission Expires: _____

DRAFTED BY AND WHEN RECORDED RETURN TO:

ANTOINETTE BEUCHE
HOWARD & HOWARD ATTORNEYS, P.C.
1400 NORTH WOODWARD AVENUE, STE. 101
BLOOMFIELD HILLS, MI 48034-2856

I:\b315\chrysler\trenton\restrive.org

EXHIBIT 'A'

PARENT PARCEL DESCRIPTION

Land in the City of Trenton, County of Wayne, State of Michigan, described as:

A parcel of land being part of Section 25, Town 4 South, Range 10 East, and Section 30, Town 4 South, Range 11 East, Village of Trenton, Wayne County, Michigan, more particularly described as:

Beginning at a concrete monument situated at the intersection of the Easterly line of West Jefferson Avenue 120 feet wide and a direct Easterly extension of the Northerly boundary line of East Lake Erie Highlands Subdivision according to the plat thereof as recorded in the office of the Register of Deeds for Wayne County, Michigan in Liber 30 of Plats on Page 49, said point of beginning being 1601.35 feet distant Easterly, measured along said Northerly boundary line, and said boundary line extended Easterly, on a course North 88 degrees 23 minutes 23 seconds East from its intersection with the North and South 1/4 line of said Section 25; thence following a direct Easterly extension of said Northerly boundary line of said East Lake Erie Highlands Subdivision on a course North 88 degrees 23 minutes 23 seconds East and along the South line of the Monsanto Chemical Company land, 1470.95 feet to a point of angle; thence South 81 degrees 21 minutes 46 seconds East continuing along the South line of the Monsanto Chemical Company land, 1330.43 feet, more or less, to a point on the proposed U.S. Harbor line in the Detroit River; thence Southerly, along the proposed U.S. Harbor line, 900.23 feet more or less, to a point 900 feet Southerly (measured at right angles) of the Southerly line of the Monsanto Chemical Company land; thence North 81 degrees 21 minutes 46 seconds West 900 feet Southerly of and parallel to the Monsanto Chemical Company land, 1270.07 feet, more or less, to a point of angle; thence South 88 degrees 23 minutes 23 seconds West continuing 900 feet Southerly of and parallel to the Monsanto Chemical Company land, 1805.15 feet, more or less, to a point on the Easterly line of Jefferson Avenue 120 feet wide; thence Northerly along the Easterly line of West Jefferson Avenue 991.03 feet more or less to the place of beginning, the same being the Northerly 900 feet of that part of the Southeast 1/4 of Section 25, Town 4 South, Range 10 East, lying East of the Toledo Turnpike and South of Monsanto Chemical Company lands (formerly Berwick property) and of that part of the South 1/2 of Fractional Section 30, Town 4 South, Range 11 East, South of the Monsanto Chemical Company lands (formerly Berwick property) Township of Monguagon, Wayne County, Michigan.

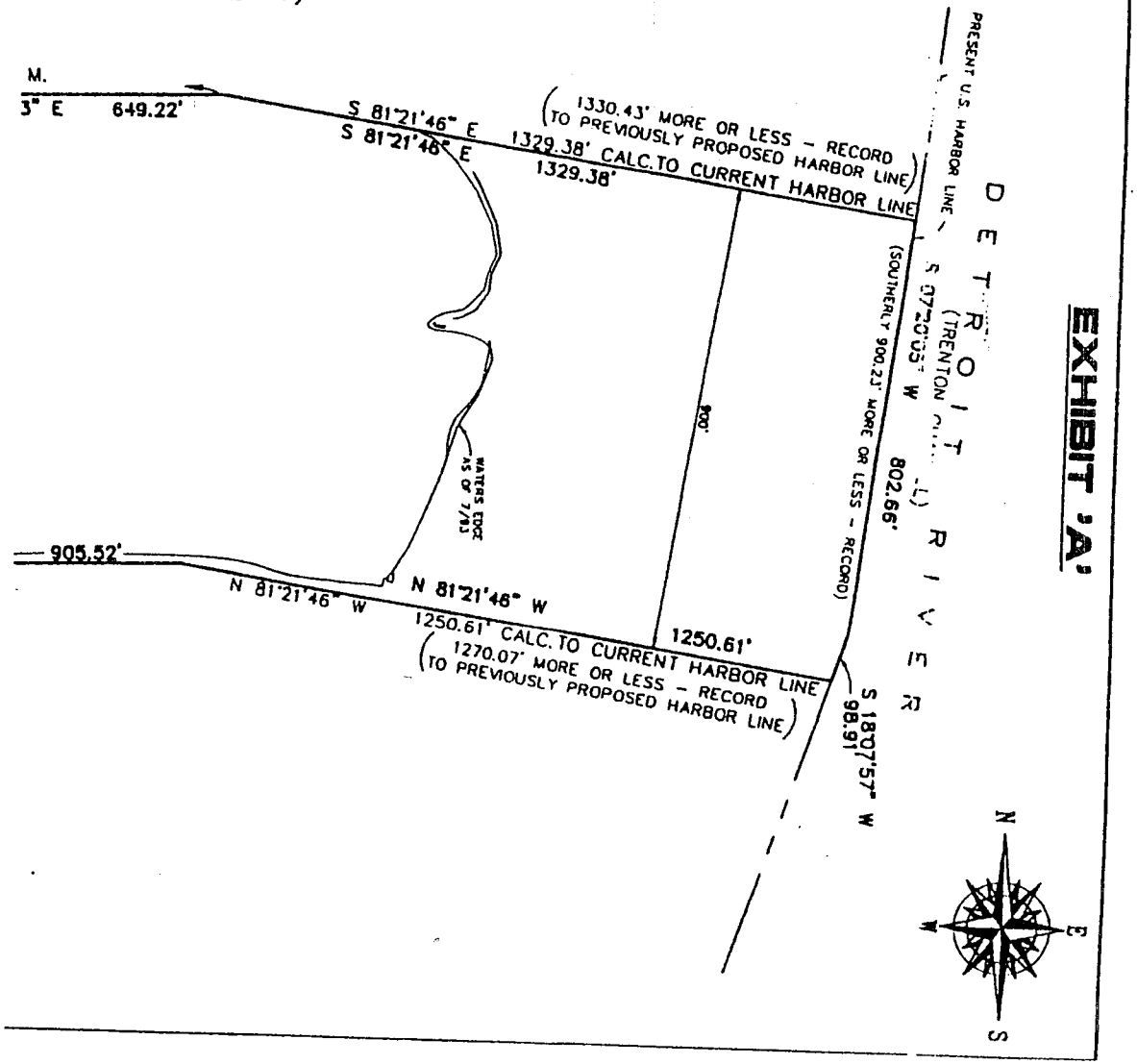
RESTRICTIVE COVENANT DESCRIPTION

Land in the City of Trenton, County of Wayne, State of Michigan, described as:

A parcel of land being part of Section 25, Town 4 South, Range 10 East, and Section 30, Town 4 South, Range 11 East, Village of Trenton, Wayne County, Michigan, more particularly described as:

Commencing at the intersection of the North and South 1/4 line of said Section 25 with the Northerly line East Lake Erie Highlands Subdivision according to the plat thereof as recorded in the office of the Register of Deeds for Wayne County, Michigan in Liber 30 of Plats on Page 49, and proceeding thence North 88 degrees 23 minutes 23 seconds East, along said Northerly Subdivision line, and said Subdivision line extended Easterly, 1601.93 feet (recorded as 1601.35 feet), to a point on the Easterly line of West Jefferson Avenue 120 feet wide; thence North 88 degrees 23 minutes 23 seconds East, following a direct Easterly extension of said Northerly Subdivision line and along the South line of the Monsanto Chemical Company land, 821.15 feet to the point of Beginning of the land herein described; thence continuing
North 88 degrees 23 minutes 23 seconds East 649.22 feet to a point of angle;
thence South 81 degrees 21 minutes 46 seconds East, continuing along the South line of the Monsanto Chemical Company land, 1329.38 feet to the present U.S. Harbor Line in the Detroit River (recorded as 1330.43 feet, more or less, to a point on the proposed U.S. Harbor line in the Detroit River); thence the following two courses along the present U.S. Harbor Line in the Detroit River:
South 07 degrees 20 minutes 05 seconds West 802.66 feet and
South 18 degrees 07 minutes 57 seconds West 98.91 feet (recorded as Southerly, along the proposed U.S. Harbor line, 900.23 feet more or less), to a point 900 feet Southerly (measured at right angles) of the Southerly line of the Monsanto Chemical Company land;
thence North 81 degrees 21 minutes 46 seconds West, 900 feet Southerly of and parallel with the Monsanto Chemical Company land, 1250.61 feet (recorded as 1270.07 feet, more or less), to a point of angle;
thence South 88 degrees 23 minutes 23 seconds West, continuing 900 feet Southerly of and parallel with the Monsanto Chemical Company land, 905.52 feet; thence North 01 degree 36 minutes 37 seconds West 388.00 feet;
thence North 88 degrees 23 minutes 23 seconds East 337.00 feet;
thence North 01 degree 36 minutes 37 seconds West 512.00 feet to the Point of Beginning. Containing 42.41 Acres more or less, including portions of the bottom lands of the Detroit River.

:HEMICAL COMPANY
:ERWICK PROPERTY)



APPENDIX B

MDEQ RESTRICTIVE COVENANT

THE MANNIK & SMITH GROUP, INC.

JUN 11 1998

EXHIBIT "E"

Liber-29884 Page-3126

DECLARATION OF RESTRICTIVE COVENANTS

On June 8, 1998, Chrysler Corporation, whose address is 1000 Chrysler Drive, Auburn Hills, Michigan 48326-2766, declared that the real estate described in the attached Exhibit A ("Property") is held and shall be conveyed and occupied subject to the following notice, covenants and restrictions:

As used herein, the term "Owner" shall mean at any given time the then current title holder of the Property.

$34.00 DEED

RECORDED
FOREST E. YOUNGBLOOD, REGISTER OF DEEDS
WAYNE COUNTY, MI

NOTICE

The Property is a Michigan Limited Industrial Remedy site remediated pursuant to a Remedial Action Plan (RAP) in accordance with the Consent Decree dated November 28, 1994, in Case No. 94-079112-CE. The remedial action involved on-site containment of a hazardous substance, to wit:

> Petroleum hydrocarbons, in particular Volatile Organic Compounds (VOCs) and lead, are present in subsurface soils in excess of the residential criteria established pursuant to Section 20120a(1)(a) of Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Part 201), and defined in Michigan Department of Environmental Quality (MDEQ) Operational Memorandum #8, Revision 4. Cleanup criteria for land use-based remedial action plans are located in the Government Documents section of the State of Michigan Library.

The Michigan Department of Environmental Quality (MDEQ) has approved the RAP submitted by McLaren/Hart Engineers Midwest, Inc., on JUNE 11, 1998, including any MDEQ modifications thereto. The RAP requires: continued maintenance of the clay and/or cement barrier and prohibits the use of groundwater as a drinking water source in the area defined as "Restrictive Covenant Description" on Exhibit A.

This Restrictive Covenant is being recorded with the Wayne County Register of Deeds for the purpose of protecting public health, safety and welfare and the environment.

COVENANTS AND RESTRICTIONS

1. With respect to the entire property described in Exhibit A, in the ev that soils are removed from the site, such soils must be characterized.

2. The restrictions contained in paragraphs 3 and 4 shall apply only to the areas of the Property shown on the map in Exhibit B, designated as "Monitoring Well No. 9 Area", "North Back Lot Area", "Soil Cover System Area", "Concrete Slab Cover

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RECORDED
FOREST E. YOUNGBLOOD, REGISTER OF DEEDS
WAYNE COUNTY, MI
Receipt #22223
$4.00 REMONUMENTATION

R Rec 211 110 11 15 11 W

System Area", and "Former Tank Farm Area", each of which are more particularly described in Exhibit C. Any reference in this document to "restricted activities" or to "restricted activities at the Property" or such similar language shall refer to only those areas described in Exhibits B and C.

3. The Owner shall restrict activities at the Property that may interfere with a response activity, operation and maintenance, monitoring, or other measures necessary to assure the effectiveness and integrity of the remedial action.

4. The Owner shall restrict activities that may result in exposures above levels established in the RAP or that would result in the release of a hazardous substance which was contained as part of the remedial action. These activities include, but are not limited to:

a. Exposing subsurface soils in the "North Backlot Area", "Soil Cover System Area" and "Concrete Slab Cover System Area" without replacement of a cap (soil, asphalt, concrete, etc.) on those soils.

b. Prohibition of building construction on the "Monitoring Well No. 9 Area" without further evaluation or remediation or engineering controls to prevent exceedences of indoor air inhalation criteria.

c. No intrusive work in the "Former Tank Area" without a site specific health and safety plan.

5. The owner shall restrict activities that may result in the use of groundwater as a drinking water source.

6. The Owner shall restrict the uses of the Property to:

Industrial uses consistent with the environmental conditions at the Property or any other use that is consistent with the assumptions and basis for the cleanup criteria calculated pursuant to Section 20120a(1)(i) of Part 201. Any change from the industrial land use specified in the RAP may necessitate further evaluation of the potential risks to the public health, safety or welfare or the environment. By means of illustration, the site conditions are such that the cleanup criteria for a Limited Commercial category RAP are also satisfied, however, the property is currently zoned for industrial purposes. Should the property be zoned for commercial purposes at some future date, the Owner may, at Owner's option, utilize the property for commercial purposes provided that the owner notifies and provides documentation of the change in zoning to the MDEQ via certified mail.

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7. The Owner shall provide notice to the MDEQ of the Owner's intent to convey any interest in the Property 14 days prior to consummating the conveyance as required by Section 20120b(4)(c) of Part 201. A conveyance of title, an easement, or other interest in the property shall not be consummated by the property owner without adequate and complete provision for compliance with the terms and conditions of the Consent Decree.

8. The Owner shall grant to the MDEQ, its designated representatives, and other persons implementing MDEQ approved response activities the right to enter the property at reasonable times for the purpose of determining and monitoring compliance with the RAP, including the right to take samples, inspect the operation of the remedial action measures and inspect records.

9. The restrictions herein were approved by the MDEQ. The MDEQ, Chrysler, and Owner have the right to enforce the restrictions herein in whole or in part by legal action in a court of appropriate jurisdiction. Any rights of Chrysler to enforce the restrictions herein shall be subordinate to the rights of the MDEQ.

10. The restrictions and other requirements described in this Restrictive Covenant shall run with the land and shall be binding upon all future Owners, successors, lessees or assigns and their authorized agents, employees, or persons acting under their direction and control. This Restrictive Covenant shall continue into perpetuity. A copy of this Restrictive Covenant shall be provided to all future Owners, heirs, successors, lessees, assigns and transferees.

11. If any provision of this Restrictive Covenant is held to be invalid by any court of competent jurisdiction, the invalidity of such provision shall not affect the validity of any other provisions hereof. All such other provisions shall continue unimpaired in full force and effect.

12. This Restrictive Covenant shall not be amended, modified, or terminated except by a written instrument executed by and between the Owner, Chrysler, and the MDEQ at the time of the proposed amendment, modification, or termination. Within five (5) days of executing an amendment, modification, or termination of this Restrictive Covenant, the Owner shall record such amendment, modification, or termination with the Wayne County Register of Deeds and within five (5) days thereafter, the Owner shall provide a true copy of the recorded amendment, modification, or termination to the MDEQ.

13. This Restrictive Covenant does not obviate the Owner's compliance with other federal, state or local laws or regulations.

14. The undersigned persons executing this Restrictive Covenant on behalf of the Owner represent and certify that they are duly authorized and have been fully empowered to execute and deliver this Restrictive Covenant.

IN WITNESS WHEREOF, the said Owner of the above-described property has caused this Restrictive Covenant to be executed this 8th day of June, 1998.

Signed in the presence of:

Lynn Y. Buhl
Lynn Y. Buhl

Sharon J. Armstrong
Sharon J. Armstrong

CHRYSLER CORPORATION

By: William J. O'Brien
William J. O'Brien

Its: Vice President, General Counsel and Secretary

Subscribed and sworn to me on this 8th day of June, 1998.

Patricia Lee
Patricia Lee
Notary Public
Oakland County, MI
My Commission Expires: March 6, 2002

DRAFTED BY AND WHEN RECORDED RETURN TO:
ANTOINETTE BEUCHE
HOWARD & HOWARD ATTORNEYS, P.C.
1400 NORTH WOODWARD AVENUE, STE. 101
BLOOMFIELD HILLS, MI 48034-2856

i:\b331\docs\trenton.re5

Liber-29884 Page-3129.0

EXHIBIT B A 3

A parcel of land being part of Section 25, Town 4 South, Range 10 East, and Section 30, Town 4 South, Range 11 East, Village of Trenton, Wayne County, Michigan, more particularly described as:

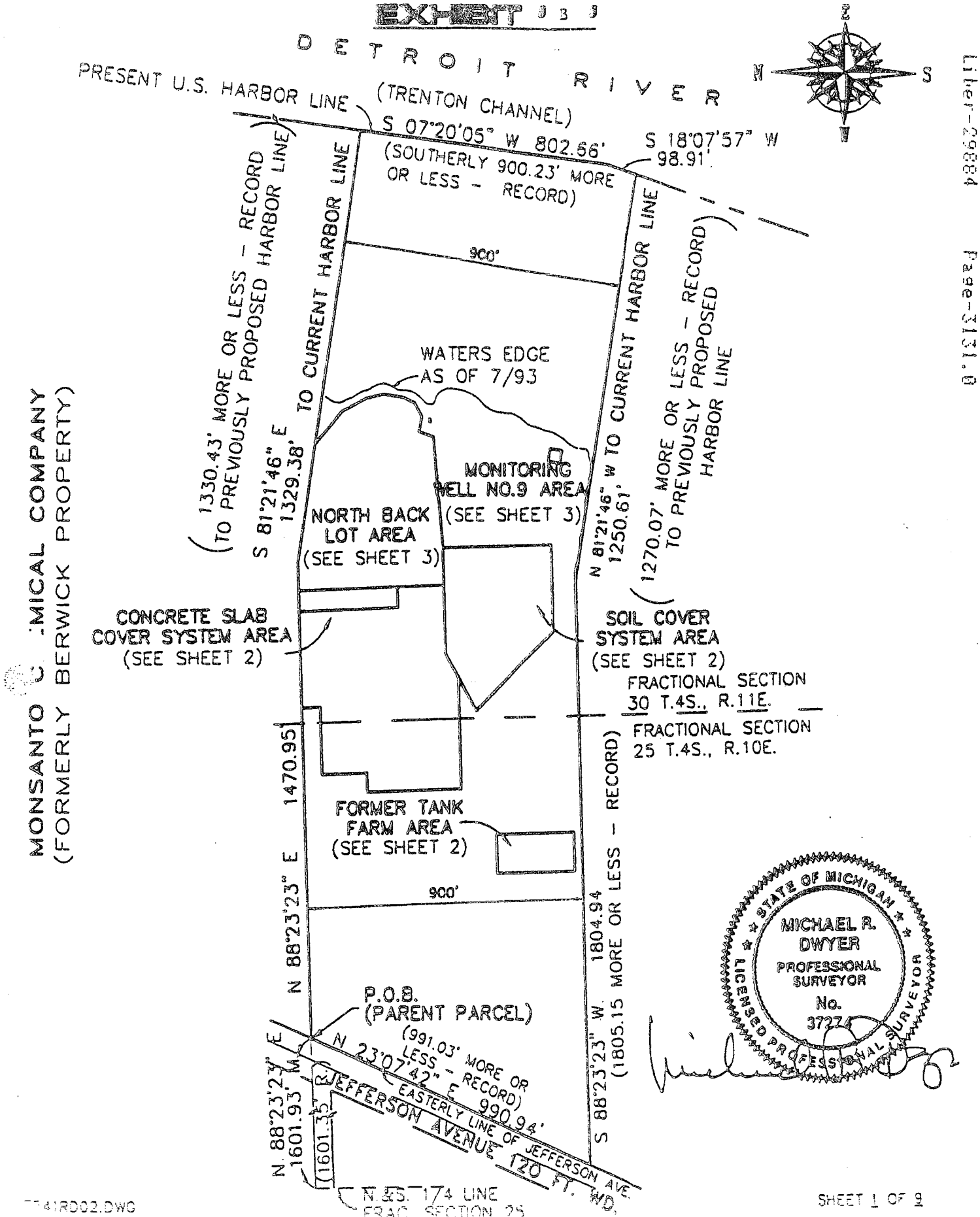
Beginning at a concrete monument situated at the intersection of the Easterly line of West Jefferson Avenue 120 feet wide and a direct Easterly extension of the Northerly boundary line of East Lake Erie Highlands Subdivision according to the plat thereof as recorded in the office of the Register of Deeds for Wayne County, Michigan in Liber 30 of Plats on Page 49, said point of beginning being 1601.35 feet distant Easterly, measured along said Northerly boundary line, and said boundary line extended Easterly, on a course North 88 degrees 23 minutes 23 seconds East from its intersection with the North and South 1/4 line of said Section 25; thence following a direct Easterly extension of said Northerly boundary line of said East Lake Erie Highlands Subdivision on a course
North 88 degrees 23 minutes 23 seconds East and along the South line of the Monsanto Chemical Company land, 1470.95 feet to a point of angle;
thence South 81 degrees 21 minutes 46 seconds East continuing along the South line of the Monsanto Chemical Company land, 1330.43 feet, more or less, to a point on the proposed U.S. Harbor line in the Detroit River; thence Southerly, along the proposed U.S. Harbor line, 900.23 feet more or less, to a point 900 feet Southerly (measured at right angles) of the Southerly line of the Monsanto Chemical Company land;
thence North 81 degrees 21 minutes 46 seconds West 900 feet Southerly of and parallel to the Monsanto Chemical Company land, 1270.07 feet, more or less, to a point of angle;
thence South 88 degrees 23 minutes 23 seconds West continuing 900 feet Southerly of and parallel to the Monsanto Chemical Company land, 1805.15 feet, more or less, to a point on the Easterly line of Jefferson Avenue 120 feet wide; thence Northerly along the Easterly line of West Jefferson Avenue 991.03 feet more or less to the place of beginning, the same being the Northerly 900 feet of that part of the Southeast 1/4 of Section 25, Town 4 South, Range 10 East, lying East of the Toledo Turnpike and South of Monsanto Chemical Company lands (formerly Berwick property) and of that part of the South 1/2 of Fractional Section 30, Town 4 South, Range 11 East, South of the Monsanto Chemical Company lands (formerly Berwick property) Township of Monguagon, Wayne County, Michigan.

7541R002.DWG

McNEELY&LINCOLN
Associates,Inc.
CIVIL ENGINEERING & LAND SURVEYING
PH. (734) 432-9777 FAX (734) 432-9786
37741 PEMBROKE, LIVONIA, MICHIGAN, 48152

For	McLAREN / HART	Date	08/19/97
Scale	NONE	Drawn By	DAP
Job No.	7541.01	Checked By	MRC

EXHIBIT J 3 J



MONSANTO CHEMICAL COMPANY
(FORMERLY BERWICK PROPERTY)

Liber-29884 Page-3131.0

7541RD02.DWG

SHEET 1 OF 9

McNEELY & LINCOLN Associates, Inc. CIVIL ENGINEERING & LAND SURVEYING PH. (734) 432-9777 FAX (734) 432-9786 37741 PEMBROKE LIVONIA MICHIGAN 48152	For McLAREN / HART	Date 08/19/97	
	Scale 1" = 400'	Drawn By DAP	
	Job No. 7541.01	Checked By MRD	

Liber-29884 Page-3132.0

FORMER TANK FARM AREA

A parcel of land being part of Section 25, Town 4 South, Range 10 East, City of Trenton, Wayne County, Michigan, more particularly described as:

Commencing at the intersection of the North and South 1/4 line of said Section 25 with the Northerly line East Lake Erie Highlands Subdivision according to the plat thereof as recorded in the office of the Register of Deeds for Wayne County, Michigan, in Liber 30 of Plats on Page 49, and proceeding thence North 88 degrees 23 minutes 23 seconds East, along said Northerly Subdivision line, and said Subdivision line extended Easterly, 1601.93 feet (recorded as 1601.35 feet), to a point on the Easterly line of West Jefferson Avenue (120 feet wide); thence North 88 degrees 23 minutes 23 seconds East, following a direct Easterly extension of said Northerly Subdivision line and along the South line of the Monsanto Chemical Company land, 485.00 feet; thence South 01 degree 36 minutes 37 seconds East, 625.00 feet to the Point of Beginning of the land herein described; thence North 88 degrees 23 minutes 23 seconds East, 121.00 feet; thence South 01 degree 36 minutes 37 seconds East, 250.00 feet; thence South 88 degrees 23 minutes 23 seconds West, 121.00 feet; thence North 01 degree 36 minutes 37 seconds West, 250.00 feet to the Point of Beginning. Containing 0.694 acres of land, more or less.

SOIL COVER SYSTEM AREA

A parcel of land being part of Section 30, Town 4 South, Range 11 East, City of Trenton, Wayne County, Michigan, more particularly described as:

Commencing at the intersection of the North and South 1/4 line of Section 25, Town 4 South, Range 10 East, with the Northerly line East Lake Erie Highlands Subdivision according to the plat thereof as recorded in the office of the Register of Deeds for Wayne County, Michigan, in Liber 30 of Plats on Page 49, and proceeding thence North 88 degrees 23 minutes 23 seconds East, along said Northerly Subdivision line, and said Subdivision line extended Easterly, 1601.93 feet (recorded as 1601.35 feet), to a point on the Easterly line of West Jefferson Avenue (120 feet wide); thence North 88 degrees 23 minutes 23 seconds East, following a direct Easterly extension of said Northerly Subdivision line and along the South line of the Monsanto Chemical Company land, 1320.00 feet;
thence South 01 degree 36 minutes 37 seconds East, 321.00 feet;
thence North 88 degrees 23 minutes 23 seconds East, 64.22 feet;
thence South 01 degree 36 minutes 37 seconds East, 150.08 feet
to the Point of Beginning of the land herein described;
thence North 88 degrees 23 minutes 23 seconds East, 115.99 feet;
thence South 01 degree 36 minutes 37 seconds East, 352.43 feet;
thence South 88 degrees 23 minutes 23 seconds West, 270.00 feet;
thence North 44 degrees 39 minutes 37 seconds West, 350.00 feet;
thence North 60 degrees 04 minutes 31 seconds East, 203.81 feet;
thence North 88 degrees 23 minutes 23 seconds East, 213.51 feet
to the Point of Beginning. Containing 3.217 acres of land, more or less.

McNEELY&LINCOLN
Associates,Inc.
CIVIL ENGINEERING & LAND SURVEYING
PH. (734) 432-9777 FAX (734) 432-9785
37741 PEMBROKE, LIVONIA, MICHIGAN, 48152

For	McLAREN / HART	Date	08/19/97
Scale	NONE	Drawn By	DAP
Job No.	7541.01	Checked By	MRD

Liber-28884 Page-3133.0

CONCRETE SLAB COVER SYSTEM AREA

A parcel of land being part of Section 25, Town 4 South, Range 10 East, and Section 30, Town 4 South, Range 11 East, City of Trenton, Wayne County, Michigan, more particularly described as:

Commencing at the intersection of the North and South 1/4 line of said Section 25 with the Northerly line East Lake Erie Highlands Subdivision according to the plat thereof as recorded in the office of the Register of Deeds for Wayne County, Michigan, in Liber 30 of Plats on Page 49, and proceeding thence
North 88 degrees 23 minutes 23 seconds East, along said Northerly Subdivision line, and said Subdivision line extended Easterly, 1601.93 feet (recorded as 1601.35 feet), to a point on the Easterly line of West Jefferson Avenue (120 feet wide); thence North 88 degrees 23 minutes 23 seconds East, following a direct Easterly extension of said Northerly Subdivision line and along the South line of the Monsanto Chemical Company land, 1020.00 feet to the Point of Beginning of the land herein described;
thence North 88 degrees 23 minutes 23 seconds East, continuing along said South line of the Monsanto Chemical Company land, 300.00 feet;
thence South 01 degree 36 minutes 37 seconds East, 321.00 feet;
thence North 88 degrees 23 minutes 23 seconds East, 64.22 feet;
thence South 01 degree 36 minutes 37 seconds East, 150.08 feet;
thence South 88 degrees 23 minutes 23 seconds West, 213.51 feet;
thence South 60 degrees 04 minutes 31 seconds West, 84.16 feet;
thence South 88 degrees 23 minutes 23 seconds West, 346.62 feet;
thence North 01 degree 36 minutes 37 seconds West, 305.00 feet;
thence North 88 degrees 23 minutes 23 seconds East, 60.00 feet;
thence North 01 degree 36 minutes 37 seconds West, 145.00 feet;
thence North 88 degrees 23 minutes 23 seconds East, 210.00 feet;
thence North 01 degree 36 minutes 37 seconds West, 61.00 feet
to the Point of Beginning. Containing 6.159 acres of land, more or less.

McNEELY&LINCOLN
Associates,Inc.
CIVIL ENGINEERING & LAND SURVEYING
PH. (734) 432-9777 FAX (734) 432-9786
37741 PEMBROKE, LIVONIA, MICHIGAN, 48152

For	McLAREN / HART	Date	08/19/97
Scale	NONE	Drawn By	DAP
Job No.	7541.01	Checked By	MRD

APPENDIX C

LEGAL DESCRIPTION
THE MANNIK & SMITH GROUP, INC.

EXHIBIT "A"

Property located in the City of Trenton, County of Wayne, Michigan and described as follows:

A parcel of land being part of Section 25, Town 4 South, Range 10 East, and Section 30, Town 4 South, Range 11 East, Village of Trenton, Wayne County, Michigan, more particularly described as: Beginning at a concrete monument situated at the intersection of the Easterly line of West Jefferson Avenue 120 feet wide and a direct Easterly extension of the Northerly boundary line of East Lake Erie Highlands Subdivision according to the plat thereof as recorded in the Office of the Register of Deeds for Wayne County, Michigan, in Liber 30 of Plats on Page 49, said point of beginning being 1601.35 feet distant Easterly, measured along said Northerly boundary line, and said boundary line extended Easterly, and on a course North 88°23'23" East from its intersection with the North and South 1/4 line of said Section 25; thence following a direct Easterly extension of said Northerly boundary line of said East Lake Erie Highlands Subdivision on a course North 88°23'23" East and along the South line of the Monsanto Chemical Company land, 1470.95 feet to a point of angle; thence South 81°21'46" East continuing along the South line of the Monsanto Chemical Company land, 1330.43 feet, more or less, to a point on the proposed U.S. Harbor line in the Detroit River; thence Southerly, along the proposed U.S. Harbor line, 900.23 feet more or less, to a point 900 feet Southerly (measured at right angles) of the Southerly line of the Monsanto Chemical Company land; thence North 81°21'46" West 900 feet Southerly of and parallel to the Monsanto Chemical Company land, 1270.07 feet, more or less, to a point of angle; thence South 88°23'23" West continuing 900 feet Southerly of and parallel to the Monsanto Chemical Company land, 1805.15 feet, more or less, to a point on the Easterly line of Jefferson Avenue 120 feet wide; thence Northerly along the Easterly line of West Jefferson Avenue 991.03 feet more or less to the place of beginning, the same being the Northerly 900 feet of that part of the Southeast 1/4 of Section 25, Town 4 South, Range 10 East, lying East of the Toledo Turnpike and South of Monsanto Chemical Company land (formerly Bewick property) and of that part of the South 1/2 of Fractional Section 30, Town 4 South, Range 11 East, South of the Monsanto Chemical Company lands (formerly Bewick property), Township of Monguagon, Wayne County, Michigan.

This description subject to verification by the Seller and Purchaser from survey and title information.

APPENDIX D

LABORATORY ANALYTICAL DATA – SOIL COVER SYSTEM DELINEATION

THE MANNIK & SMITH GROUP, INC.

CA 95670
Phone 916/052 6600
Fax 916/052 7292

CHAIN OF CUSTODY RECORD 12546

COMPLETE INSTRUCTIONS

Project Name: CHRYSLER - TRENTON CHEMICAL
Project Number: 07010
Project Location: (State) TRENTON, MICHIGAN

FOR LABORATORY USE ONLY
Laboratory Project #: _____ Storage ID: _____
Sample Condition Upon Receipt: Temp: _____ °C _____ Geiger: _____
Custody Seals Present Yes/No Intact? Yes/No Samples Intact? Yes/No

Sample Disposal (check one)
☐ Laboratory Standard
☐ Other _____

Level of QC (see Slide 2): ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6A ☐ 6B ☐ 6C ☐ 6D ☐ 6E ☐ 6F ☐ 7 ☐ 8 ☐ A

Write in Analysis Method →

SAMPLE INFORMATION

ANALYSES REQUESTED

FOR LABORATORY USE ONLY Lab ID	Sample ID Number	Date	Time	Description: Locator	Description: Depth	Container(s): #	Container(s): Type	Matrix Type	Pres. Type	TAT	Lead (7421)								
1	AL-2 (0-2)	7/25/95	1100	AL-2	0-2	1	2 x 55	SOIL	—	48 HRS	X								
2	-3 AL-3 (0-2)		1125	AL-3	0-2	1			—		X								
3	-4 AL-4 (0-2)		1315	AL-4	0-2	1			—		X								
4	-5 AL-5 (0-2)		1430	AL-5	0-2	1			—		X								
5	-6 AL-6 (0-2)		1410	AL-6	0-2	1			—		X								
6	-7 AL-7 (0-2)		1355	AL-7	0-2	1			—		X								
7	-8 AL-8 (0-2)		1410	AL-8	0-2	1			—		X								
8	-9 AL-9 (0-2)		1520	AL-9	0-2	1			—		X								
9											X								
10																			

SEND REPORT TO:
Company Name: McLAREN/HART
Client Name: MONA SINGH
Address: 1000 TOWN CENTER, STE 600
SOUTHFIELD, MICHIGAN 48075
Phone (810) 358-0100 Fax (810) 358-5321

BILL TO (if different):
Company Name _____
Address _____
PO # _____
Phone _____ Fax _____

Special Instructions/Comments _____

Sampler Name: [signature]
Relinquished By: [signature] Date/Time: 7/25/95 1120
Relinquished By: _____ Date/Time: _____
Relinquished By: _____ Date/Time: _____

FTB Worn in Field: LEVEL D
Received By or Method of Shipment/Shipment I.D.: FEDEX 5358452323 Date/Time: 7/26/95 12:00
Received By or Method of Shipment/Shipment I.D.: [signature] Date/Time: 8/2/95 8:30a
Received By or Method of Shipment/Shipment I.D.: _____ Date/Time: _____

RECEIVED IN GOOD CONDITION
Samples on ice 4°C on 8/2/95 8:30a

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: COMPUCHEM ENV. CORP. Contract: ILM03.0

Lab Code: COMPU Case No.: 31445 SAS No.: SDG No.: 1

SOW No.: ILM03.0

EPA Sample No.	Lab Sample ID
AL-2	759759
AL-2D	759765
AL-2S	759762
AL-2S	759761
AL-3	759760
AL-4	759764
AL-5	759766
AL-6	759767
AL-7	759768
AL-8	759769
AL-9	759770

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No YES
If yes - were raw data generated before application of background corrections ? Yes/No NO

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Name: Nick Ross

Date: Oct 29 1995 Title: Analytical Div. Manager

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

AL-2

Lab Name: COMPUCHEM ENV. CORP. Contract: ILM03.0

Lab Code: COMPU Case No.: 31445 SAS No.: SDG No.: 1

Matrix (soil/water): SOIL Lab Sample ID: 759759

Level (low/med): LOW Date Received: 09/27/95

% Solids: 38.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	371		*	P

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

Duplicate (AL-2D)

U.S. EPA - CLP

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

AL-3

Lab Name: COMPUCHEM ENV. CORP. Contract: ILM03.0

Lab Code: COMPU Case No.: 31445 SAS No.: SDG No.: 1

Matrix (soil/water): SOIL Lab Sample ID: 759760

Level (low/med): LOW Date Received: 09/27/95

% Solids: 93.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	309		A*	F

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

AL-4

Lab Name: COMPUCHEM_ENV._CORP._____ Contract: ILM03.0___

Lab Code: COMPU_ Case No.: 31445_ SAS No.: _____ SDG No.: 1_____

Matrix (soil/water): SOIL_ Lab Sample ID: 759764

Level (low/med): LOW__ Date Received: 09/27/95

% Solids: _96.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	235		*	F

Color Before: BROWN____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

AL-5

Lab Name: COMPUCHEM ENV. CORP. Contract: IIM03.0

Lab Code: COMPU Case No.: 31445 SAS No.: SDG No.: 1

Matrix (soil/water): SOIL Lab Sample ID: 759766

Level (low/med): LOW Date Received: 09/27/95

% Solids: 93.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	317		A*	P

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

AL-6

Lab Name: COMPUCHEM ENV. CORP. Contract: ILM03.0

Lab Code: COMPU Case No.: 31445 SAS No.: SDG No.: 1

Matrix (soil/water): SOIL Lab Sample ID: 759767

Level (low/med): LOW Date Received: 09/27/95

% Solids: 95.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	71.3		*	F

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

AL-7

Lab Name: COMPUCHEM_ENV._CORP._____ Contract: ILM03.0___

Lab Code: COMPU_ Case No.: 31445_ SAS No.: _____ SDG No.: 1_____

Matrix (soil/water): SOIL_ Lab Sample ID: 759768

Level (low/med): LOW__ Date Received: 09/27/95

% Solids: _89.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	2100		*	P

Color Before: BROWN____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

AL-3

Lab Name: COMPUCHEM_ENV._CORP._____ Contract: ILM03.0___

Lab Code: COMPU_ Case No.: 31445_ SAS No.: _____ SDG No.: 1_____

Matrix (soil/water): SOIL_ Lab Sample ID: 759769

Level (low/med): LOW__ Date Received: 09/27/95

% Solids: _95.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	1020		*	F

Color Before: BROWN____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

AI-9

Lab Name: COMPUCHEM ENV. CORP. Contract: IIM03.0

Lab Code: COMPU Case No.: 31445 SAS No.: SDG No.: 1

Matrix (soil/water): SOIL Lab Sample ID: 759770

Level (low/med): LOW Date Received: 09/27/95

% Solids: 94.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	1420		*	F

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

MOE Environmental Laboratories
3093 Gold Canal Drive
Rancho Cordova
CA 95670
Phone 916/852-6600
Fax 916/852-7292

COMPUCHEM
3306 E. CHAPEL HILL, NELSON HWY.
RESEARCH TRIANGLE PARK, NC 27709

TYPE 3 PLUS

CHAIN OF CUSTODY RECORD

14139

SEE SIDE 2 FOR COMPLETE INSTRUCTIONS

Project Name: Chrysler-Trenton Chemical
Project Number: 01080
Project Location: (State) TRENTON, MICHIGAN

FOR LABORATORY USE ONLY
Laboratory Project #: _____ Storage ID: _____
Sample Condition Upon Receipt: Temp: _____ °C _____ Geiger: _____
Custody Seals Present Yes/No Intact? Yes/No Samples Intact? Yes/No

Sample Disposal (check one)
[X] Laboratory Standard
[ ] Other _____

Level of QC (see Side 2): [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ] 6A [ ] 6B [ ] 6C [ ] 6D [ ] 6E [ ] 6F [ ] 7 [ ] 8 [ ] A

Write In Analysis Method →

ANALYSES REQUESTED

SAMPLE INFORMATION

LABORATORY USE ONLY Lab ID	Sample ID Number	Date	Time	Description: Locator	Description: Depth	Containers(s): #	Containers(s): Type	Matrix Type	Pres. Type	TAT	8240 (GC/MS)	8270 (GC/MS)								
AL-11	AL-11 (0-2)	10/5/95	1150	AL-11	0-2	1	GLASS	SOIL	—	48	X									
AL-1A	AL-1A (0-2)	10/5/95	1210	AL-1A	0-2	1	GLASS	SOIL	—	48	X									
AL-13	AL-13 (0-2)	10/5/95	1220	AL-13	0-2	1	GLASS	SOIL	—	48	X									
AL-12	AL-12 (0-2)	10/5/95	1230	AL-12	0-2	1	GLASS	SOIL	—	48	X									
AL-1L	AL-1L (0-2)	10/5/95	1215	AL-1L	0-2	1	GLASS	SOIL	—	48	X									
AL-10A	AL-10A (0-2)	10/5/95	1255	AL-10A	0-2	1	GLASS	SOIL	—	48	X									

SEND REPORT TO:
Company Name McLaren/Hart
Contact Name MONA SINGH
Address 1000 TOWN CENTER, STE. 600
SOUTHFIELD, MI 48075
Phone 810-358-0100 Fax 810-358-5321

BILL TO (if different):
Company Name _____
Address _____
PO # _____
Phone _____ Fax _____

Special Instructions/Comments
FOLLOW QAAP AND SAMPLING PLAN FOR MDLS AND ANALYSIS PROCEDURES SUBMITTED FOR THIS PROJECT

Sampler Name: JEFF STUMP
Relinquished By: [signature] Signature: [signature] Date/Time: 10/5/95 1700
Relinquished By: [signature]
Relinquished By:

RECEIVED IN GOOD CONDITION

PPE Worn in Field: LEVEL D
Received By or Method of Shipment/Shipment I.D.: FED EX 3110625284 Date/Time: 10/5/95
Received By or Method of Shipment/Shipment I.D.: [signature] Date/Time: 10/6/95 8:30am
Received By or Method of Shipment/Shipment I.D.: Date/Time:

Common Analytical Methods
413.1
413.2 Long Method
413.2 Short Method
418.1 Long Method
418.1 Short Method
420.1
602.2
603.1
624.2
601
602
604
608
610
624
626
8010
8015
8015 Mod.
8020
8021
8040
8100
8150
8240
8270
8310
Acidity
Alkalinity
BTEX
Chloride
CLP (see Side 2)
COD
Color
Conductivity
Corrosivity
Cyanide
Fluoride
Flashpoint
Hexavalent Chromium
Ion Balance
Metals (write specific metal & method #)
Metals 8010
Metals PP
Metals Title 22:
TTLC Level
STLC Level
(see Side 2)
Nitrate
Nitrite
Odor
Org Lead
Org Mercury
Percent Moisture
Percent Solid
Permeability
pH
Phosphate
Phosphorus
Sulfate
Sulfide
TCLP:
VOA
Semivol
Metals
Pesticide
TDS
Total Hardness
Total Solids
TPHD
TPHD
TSS

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: COMPUCHEM_ENV._CORP._____ Contract: SW-846____

Lab Code: COMPU_ Case No.: 31445 SAS No.: _____ SDG No.: 9_____

SOW No.: ILM03.0

EPA Sample No.	Lab Sample ID
AL-1A	762467
AL-10A	762471
AL-11	762470
AL-12	762469
AL-13	762468
AL-14	762462
AL-14D	762466
AL-14S	762464
AL-14S	762463

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No YES
If yes - were raw data generated before application of background corrections ? Yes/No NO_

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: [illegible] for Name: Mark Ross

Date: October 9, 1995 Title: Inorganic Div. Manager

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

AL-1A

Lab Name: COMPUCHEM ENV. CORP. Contract: SW-846

Lab Code: COMPU Case No.: 31445 SAS No.: SDG No.: 9

Matrix (soil/water): SOIL Lab Sample ID: 762467

Level (low/med): LOW Date Received: 10/06/95

% Solids: 35.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	47.2			P

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

AL-10A

Lab Name: COMPUCHEM ENV. CORP. Contract: SW-846

Lab Code: COMPU Case No.: 31445 SAS No.: SDG No.: 9

Matrix (soil/water): SOIL

Lab Sample ID: 762471

Level (low/med): LOW

Date Received: 10/06/95

% Solids: 90.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	201			P

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

AL-11

Lab Name: COMPUCHEM ENV. CORP. Contract: SW-846

Lab Code: COMPU Case No.: 31445 SAS No.: SDG No.: 9

Matrix (soil/water): SOIL Lab Sample ID: 762470

Level (low/med): LOW Date Received: 10/06/95

% Solids: 89.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	219			P

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

AL-12

Lab Name: COMPUCHEM_ENV._CORP._____ Contract: SW-846____

Lab Code: COMPU_ Case No.: 31445_ SAS No.: _____ SDG No.: 9_____

Matrix (soil/water): SOIL_ Lab Sample ID: 762469

Level (low/med): LOW__ Date Received: 10/06/95

% Solids: _92.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	191			P

Color Before: BROWN____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

AL-13

Lab Name: COMPUCHEM ENV. CORP. Contract: SW-846

Lab Code: COMPU Case No.: 31445 SAS No.: SDG No.: 9

Matrix (soil/water): SOIL

Lab Sample ID: 752468

Level (low/med): LOW

Date Received: 10/06/95

% Solids: 90.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	406			P

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

AL-14

Lab Name: COMPUCHEM ENV. CORP. Contract: SW-846

Lab Code: COMPU Case No.: 31445 SAS No.: SDG No.: 9

Matrix (soil/water): SOIL

Lab Sample ID: 762462

Level (low/med): LOW

Date Received: 10/06/95

% Solids: 32.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	251			P

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

Duplicate (AL-14D)

APPENDIX E

LABORATORY ANALYTICAL DATA – FORMER TANK FARM AREA

THE MANNIK & SMITH GROUP, INC

CHRYSLER CORPORATION

Chain of Custody

No. 1368 A

npuChem Environmental Corporation
6 Chapel Hill/Nelson Highway
Box 14998
earch Triangle Park, NC 27709-4998
ne Number: 1-800-833-5097
Number: (919) 406-1686

Project Name: Trenton Chemical
Site Code:
Release Number:
Chrysler PM: John Singleton

Consultant PM: Paul Przyucki Mr Gaventhart
Address: 1000 Town Ctr. Suite 600 Southfield MI 48075
Phone: 810 358 0400 Fax: 358 5321

naround Time Request: ~~Call Mike Singleton 2/12~~ Standard TAT
pler(s): Jeff Thomas

Compound List-Parameter/Method/Bottle Type/Preservative

Matrix Codes: S - Soil; SW - Surface Water; GW - Ground Water; A - Air; Sed. - Sediment; O - Other (specify)

Sample Identification	Date Collected	Time Collected	Grab (G) or Composite (C)	Matrix Code	Total # of Containers	8240 VOCs	8240 (+xylene)									Lab Use Only: Volatiles pH < 2	Metals pH < 2	Cyanide pH > 12	Other	Remarks
L-4 (5-7)	9/12	0900	G	S	1	X														
L-4B (8-10)	9/12	0955	G	S	1	X														
~~L-4B (10-12)~~	~~9/12~~	~~1010~~	~~G~~	~~S~~	~~1~~	~~X~~	NO Sample													
L-4B (12-13.5)	9/12	1020	G	S	1	X														
L-3 (5-7)	9/12	1040	G	S	1	X														
L-3 (7-9)	9/12	1050	G	S	1	X														
L-5 (11-13)	9/12	1130	G	S	1		X													
L-5 (13-15)	9/12	1140	G	S	1		X													
L-8 (9-11)	9/12	1230	G	S	1		X													
L-8 (13-14.5)	9/12	1245	G	S	1		X													

Package Deliverables:
er Level 1
er Level 2
er Level 3
Deliverables
(specify):

Bottles Relinquished under Airbill No.

Relinquished by:	Date:	Time:	Received by:	Date:	Time:	Custody Seal Intact?
[signature]	9/12	1900	Fed Ex	1900	9/12	Yes No
Relinquished by:	Date:	Time:	Received by:	Date:	Time:	Custody Seal Intact? Yes No
Relinquished by:	Date:	Time:	Received for Laboratory by: [signature]	Date: 9/13/91	Time: 1045	Custody Seal Intact? Yes No

Samples Relinquished under Airbill No. 479465 3485

Temperature (corrected) ____ C

Chrysler Corporation 800 Chrysler Drive, CIMS 482-00-51, Auburn Hills, Michigan 48326-2757

ibution: White copy: Data package Yellow: Retained by laboratory Pink: Retained by sampler

Revision No. 0

CHRYSLER CORPORATION

Chain of Custody

№ 11374 A

nChem Environmental Corporation
Chapel Hill/Nelson Highway
ox 14998
rch Triangle Park, NC 27709-4998
Number: 1-800-433-5097
umber: (919) 406-1686

Project Name: Trenton Chemical
Site Code:
Release Number:
Chrysler PM: John Singleton

Consultant PM: Paul Prapopoti
Address: 1000 Wayne St. Suite 600 Southfield MI 48075
Phone: 810 358 4400 Fax: 358 5321

around Time Request: ~~Call Mapsoough~~ Standard TAT
ler(s): Jeff Stump

Compound List-Parameter/Method/Bottle Type/Preservative

Matrix Codes
S - Soil
SW - Surface Water
GW - Ground Water
A - Air
Sed. - Sediment
O - Other (specify) Lab Water

le Identification	Date Collected	Time Collected	Grab (G) or Composite (C)	Matrix Code	Total # of Containers	8240 VOCs	8240 Halogenated (only)	Lab Use Only: Volatiles pH < 2	Metals pH < 2	Cyanide pH > 12	Other ____	Remarks
-1 (7-9)	9/12	1450	G	S	1		X					
-1 (13-15)	9/12	1500	G	S	1		X					
-2 (11-13)	9/12	1600	G	S	1		X					
-2 (13-14.5)	9/12	1615	G	S	1		X					
-7 (3.5-7)	9/12	1640	G	S	1		X					
-7 (13-14.5)	9/12	1710	G	S	1		X					
B60912	9/12	—	—	O	1	X						

Archive All other samples till M/H disposition

1 Tall Jar is not Marked

Package Deliverables:
Level 1
Level 2
Level 3
liverables
pecify):

Bottles Relinquished under Airbill No.

Relinquished by:	Date:	Time:	Received by:	Date:	Time:	Custody Seal Intact?
	9/12	1900	Fed Ex	9/12	1900	Yes No
Relinquished by:	Date:	Time:	Received by:	Date:	Time:	Custody Seal Intact? Yes No
Relinquished by:	Date:	Time:	Received for Laboratory by:	Date: 9/13/96	Time: 10:45	Custody Seal Intact? Yes No

Samples Relinquished under Airbill No. 4794653485

Temperature (corrected) ___ C

Chrysler Corporation 800 Chrysler Drive, CIMS 482-00-51, Auburn Hills, Michigan 48326-2757

ution: White copy: Data package Yellow: Retained by laboratory Pink: Retained by sampler

40

Revision No. 0
Created: July 17, 1995

Page ___ of ___

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

K-17-9

Project: RFA228

Date Sampled: 09/12/96

Lab Code: COMPU Case No.: 32567 SAS No.: SDG No.: 22821

Matrix: (soil/water) SOIL

Lab Sample ID: 824445

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: G3R24445B52.D

Level: (low/med) LOW

Date Received: 09/13/96

% Moisture: not dec. 15

Date Analyzed: 09/23/96

GC Column:DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/KG

CAS NO.	COMPOUND	DL	CONC	Q
1330-20-7	Xylene (total)	35	340	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

X-113-15

Project: RFA228

Date Sampled: 09/12/96

Lab Code: COMPU Case No.: 32567 SAS No.: SDG No.: 22821

Matrix: (soil/water) SOIL

Lab Sample ID: 824449

Sample wt/vol: 1.0 (g/mL) G

Lab File ID: GH024449A52.D

Level: (low/med) LOW

Date Received: 09/13/96

% Moisture: not dec. 17

Date Analyzed: 09/18/96

GC Column:DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/KG

CAS NO.	COMPOUND	DL	CONC	Q
1330-20-7	Xylene (total)	180	920	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

X-211-13

Project: RFA228

Date Sampled: 09/12/96

Lab Code: COMPU Case No.: 32567 SAS No.: SDG No.: 22821

Matrix: (soil/water) SOIL

Lab Sample ID: 824450

Sample wt/vol: 4.0 (g/mL) G

Lab File ID: C2R24450A52.D

Level: (low/med) MED

Date Received: 09/13/96

% Moisture: not dec. 16

Date Analyzed: 09/20/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: 0 (uL)

Soil Aliquot Volume: 9 (uL)

CONCENTRATION UNITS: UG/KG

CAS NO.	COMPOUND	DL	CONC	Q
1330-20-7	Xylene (total)	28000	260000	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

X-213-145

Project: RFA228

Date Sampled: 09/12/96

Lab Code: COMPU Case No.: 32567 SAS No.: SDG No.: 22821

Matrix: (soil/water) SOIL

Lab Sample ID: 824451

Sample wt/vol: 4.0 (g/mL) G

Lab File ID: CR024451A52.D

Level: (low/med) MED

Date Received: 09/13/96

% Moisture: not dec. 11

Date Analyzed: 09/20/96

GC Column:DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: 0(uL)

Soil Aliquot Volume: 100 (uL)

CONCENTRATION UNITS: UG/KG

CAS NO.	COMPOUND	DL	CONC	Q
1330-20-7	Xylene (total)	2400	10000	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

X-35-7

Project: RFA228

Date Sampled: 09/12/96

Lab Code: COMPU Case No.: 32567 SAS No.: SDG No.: 22821

Matrix: (soil/water) SOIL

Lab Sample ID: 824452

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: GH024452A52.D

Level: (low/med) LOW

Date Received: 09/13/96

% Moisture: not dec. 10

Date Analyzed: 09/17/96

GC Column:DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/KG

CAS NO.	COMPOUND	DL	CONC	Q
1330-20-7	Xylene (total)	1		U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

X-37-9

Project: RFA228

Date Sampled: 09/12/96

Lab Code: COMPU Case No.: 32567 SAS No.: SDG No.: 22821

Matrix: (soil/water) SOIL

Lab Sample ID: 824453

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: GH024453A52.D

Level: (low/med) LOW

Date Received: 09/13/96

% Moisture: not dec. 11

Date Analyzed: 09/17/96

GC Column:DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/KG

CAS NO.	COMPOUND	DL	CONC	Q
1330-20-7	Xylene (total)	1		U

FORM I VOA

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

X-45-7

Project: RFA228

Date Sampled: 09/12/96

Lab Code: COMPU Case No.: 32567 SAS No.: SDG No.: 22821

Matrix: (soil/water) SOIL

Lab Sample ID: 824454

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: GH024454A52.D

Level: (low/med) LOW

Date Received: 09/13/96

% Moisture: not dec. 9

Date Analyzed: 09/17/96

GC Column:DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/KG

CAS NO.	COMPOUND	DL	CONC	Q
1330-20-7	Xylene (total)	1		U

FORM I VOA

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

X-488-10

Project: RFA228

Date Sampled: 09/12/96

Lab Code: COMPU Case No.: 32567 SAS No.: SDG No.: 22821

Matrix: (soil/water) SOIL

Lab Sample ID: 824455

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: GH024455A52.D

Level: (low/med) LOW

Date Received: 09/13/96

% Moisture: not dec. 19

Date Analyzed: 09/17/96

GC Column:DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/KG

CAS NO.	COMPOUND	DL	CONC	Q
1330-20-7	Xylene (total)	1		U

LA

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

X-4312-135

Project: RFA228

Date Sampled: 09/12/96

Lab Code: COMPU Case No.: 32567 SAS No.: SDG No.: 22821

Matrix: (soil/water) SOIL

Lab Sample ID: 824456

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: GH024456A52.D

Level: (low/med) LOW

Date Received: 09/13/96

% Moisture: not dec. 18

Date Analyzed: 09/17/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/KG

CAS NO.	COMPOUND	DL	CONC	Q
1330-20-7	Xylene (total)	1		U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

X-S11-13

Project: REA228

Date Sampled: 09/12/96

Lab Code: COMPU Case No.: 32567 SAS No.: SDG No.: 22821

Matrix: (soil/water) SOIL

Lab Sample ID: 824457

Sample wt/vol: 4.0 (g/mL) G

Lab File ID: C2R24457A52.D

Level: (low/med) MED

Date Received: 09/13/96

% Moisture: not dec. 17

Date Analyzed: 09/20/96

GC Column:DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: 0(uL)

Soil Aliquot Volume: 3 (uL)

CONCENTRATION UNITS: UG/KG

CAS NO.	COMPOUND	DL	CONC	Q
1330-20-7	Xylene (total)	84000	660000	

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

X-513-15

Project: RFA228

Date Sampled: 09/12/96

Lab Code: COMPU Case No.: 32567 SAS No.: SDG No.: 22821

Matrix: (soil/water) SOIL

Lab Sample ID: 824458

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: GH024458A52.D

Level: (low/med) LOW

Date Received: 09/13/96

% Moisture: not dec. 16

Date Analyzed: 09/17/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/KG

CAS NO.	COMPOUND	DL	CONC	Q
1330-20-7	Xylene (total)	6	120	

FORM I VOA

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

X-75-7

Project: RFA228

Date Sampled: 09/12/96

Lab Code: COMPU Case No.: 32567 SAS No.: SDG No.: 22821

Matrix: (soil/water) SOIL

Lab Sample ID: 824459

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: GH024459A52.D

Level: (low/med) LOW

Date Received: 09/13/96

% Moisture: not dec. 12

Date Analyzed: 09/17/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/KG

CAS NO.	COMPOUND	DL	CONC	Q
1330-20-7	Xylene (total)	6	160	

FORM I VOA

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

X-713-145

Project: RFA228

Date Sampled: 09/12/96

Lab Code: COMPU Case No.: 32567 SAS No.: SDG No.: 22821

Matrix: (soil/water) SOIL

Lab Sample ID: 824460

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: GH024460A52.D

Level: (low/med) LOW

Date Received: 09/13/96

% Moisture: not dec. 9

Date Analyzed: 09/17/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/KG

CAS NO.	COMPOUND	DL	CONC	Q
1330-20-7	Xylene (total)	5	240	

FORM I VOA

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

X-89-11

Project: RFA228

Date Sampled: 09/12/96

Lab Code: COMPU Case No.: 32567 SAS No.: SDG No.: 22821

Matrix: (soil/water) SOIL

Lab Sample ID: 824461

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: GH024461A52.D

Level: (low/med) LOW

Date Received: 09/13/96

% Moisture: not dec. 14

Date Analyzed: 09/17/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/KG

CAS NO.	COMPOUND	DL	CONC	Q
1330-20-7	Xylene (total)	6	17	

FORM I VOA

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

X-813-14

Project: RFA228

Date Sampled: 09/12/96

Lab Code: COMPU Case No.: 32567 SAS No.: SDG No.: 22821

Matrix: (soil/water) SOIL

Lab Sample ID: 824462

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: GH024462AS2.D

Level: (low/med) LOW

Date Received: 09/13/96

% Moisture: not dec. 11

Date Analyzed: 09/17/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/KG

CAS NO.	COMPOUND	DL	CONC	Q
1330-20-7	Xylene (total)	6	20	

FORM I VOA

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

TB60912

Project: RFA228

Date Sampled: 09/12/96

Lab Code: COMPU Case No.: 32567 SAS No.: SDG No.: 22836

Matrix: (soil/water) WATER

Lab Sample ID: 824463

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: CN024463B52.D

Level: (low/med) LOW

Date Received: 09/13/96

% Moisture: not dec. _____

Date Analyzed: 09/16/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/L

CAS NO.	COMPOUND	DL	CONC	Q
1330-20-7	Xylene (total)	1		U

FORM I VOA

32699
27301

520096

CHAIN-OF-CUSTODY RECORD

№ 15612

COMPUCHEM ENVIRONMENTAL CORPORATION
3306 Chapel Hill/Nelson Highway
Research Triangle Park, NC 27709
1-800-833-5097

Ship to: McLaren/Hart Southfield, MI

Project Name: Trenton Chemical

Field Point-of-Contact: Jeff Stump

Telephone No.: 810 355 8040

Sampling for project complete? Y or N (See Note 1)

Project-specific (PS) or Batch (B) QC: ____

Carrier: Fed Ex

Airbill No.:

Sampler Name: Jeff Stump

Sampler Signature:

BOX #1: 1. Surface Water, 2. Ground Water, 3. Leachate, 4. Rinsate, 5. Soil / Sediment / Sludge, 6. Trip Blank, 7. Oil, 8. Waste, 9. Other ____

Box #2: A. HCl, B. HNO_3, C. $NaHSO_4$, D. $Na_2S_2O_3$, E. Ice Only, O. Other ____, N. Not Preserved

Box #3: F. Filtered, U. Unfiltered

Box #4: O. CLP 3/00, S. SW-846, W. CWA 600 series, L. Low Conc. CLP, R. Radiological, T. TCLP, O. Other ____

Box #5: H. - High, M. - Medium, L. - Low

	Sample ID (Organics: 8 characters max, Inorganics: 8 characters; See Note 2)	Date: Year: 15	Time	Box #1 Matrix	Box #2 Preservative	Box #3 Filtered/Unfiltered	Box #4 Method	Box #5 Expect Conc.	No. of Bottles	Use for Lab QC (MS or DUP)	Organics Analysis: VOA-GC, MS	SV-GC, MS	Pest / PCB-GC	Herb-GC	VOA-GC	Inorganics: Metals	Mercury	Cyanides	Radiologicals	Other: TDS / TOX	O&G / TPH	Phenols	Other	Remarks / Comments
1	Z-4 (0.5-0.5)	0 14	:	S	N			L	1			X												Toluene, ethylbenzene & total xylene only!
	Z-3 (0.5-0.5)	0 14	:	S	N			L	1															
	Z-2 (0.5-0.5)	0 14	:	S	N			L	1															
	Z-1 (7-9)	0 15	:	S	N			M	1															
4	Comp-Z	0 16	15:00	S	N		T		3			X												VOCs, SVOCs, metals (TCLP) RCT
		/	:																					
1	TRIP BLANK	/	:				SW						X											Toluene, ethylbenzene & total xylene
		/	:																					
		/	:																					
		/	:																					

Client's Special Instructions: Please note Holt times + proceed accordingly

Lab: Received In Good Condition? Y or N: Describe Problems, If Any:

#1 Relinquished By: (Sig)	Date: 12/10	#2 Relinquished By: (Sig)	Date:	#3 Relinquished By: (Sig)	Date:	Sample storage time requested? (In days, see Note 3)
Company Name:	Time:	Company Name:	Time:	Company Name:	Time:	
#1 Received By: (Sig) Fed Ex	Date:	#2 Received By: (Sig)	Date: 12-11-96	#3 Received By: (Sig)	Date:	DESTROY or RETURN data after five years of archival? (Circle choice, see Note 4)
Company Name:	Time:	Company Name: CompuChem Envir	Time: 10:15	Company Name:	Time:	

Note (1): If "N" lab will hold samples to await remainder of project maximizing batch size and minimizing QC ratio; if "Y" lab will begin processing batches now. Note (2): If CLP inorganics diskette required, ID limited to maximum of six characters.

Note (3): Samples stored 60 days after date report mailed at no extra charge. Note (4): All lab copies of data destroyed after five years unless client requests and pays for return of copies, annual storage fee billed in January of year six.

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

Z-1

Project: RFA272

Date Sampled: 12/05/96

Lab Code: COMPU Case No.: 32699 SAS No.: SDG No.: 27301

Matrix: (soil/water) SOIL

Lab Sample ID: 834029

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: GH034029B57.D

Level: (low/med) LOW

Date Received: 12/11/96

% Moisture: not dec. 16

Date Analyzed: 12/13/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/KG

CAS NO.	COMPOUND	DL	CONC	Q
71-43-2	Benzene	1		U
108-88-3	Toluene	1		U
100-41-4	Ethylbenzene	6	560	E
1330-20-7	Xylene (total)	12	1000	E

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

Z-1DL

Project: RFA273

Date Sampled: 12/05/96

Lab Code: COMPU Case No.: 32699 SAS No.: SDG No.: 27301

Matrix: (soil/water) SOIL

Lab Sample ID: 834029

Sample wt/vol: 1.0 (g/mL) G

Lab File ID: GR034029C57.D

Level: (low/med) LOW

Date Received: 12/11/96

% Moisture: not dec. 16

Date Analyzed: 12/14/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/KG

CAS NO.	COMPOUND	DL	CONC	Q
71-43-2	Benzene	60		U
108-88-3	Toluene	30		U
100-41-4	Ethylbenzene	30	1400	DE
1330-20-7	Xylene (total)	60	2000	D

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

Z-2

Project: RFA273

Date Sampled: 12/04/96

Lab Code: COMPU Case No.: 32699 SAS No.: SDG No.: 27301

Matrix: (soil/water) SOIL

Lab Sample ID: 834028

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: GH034028C57.D

Level: (low/med) LOW

Date Received: 12/11/96

% Moisture: not dec. 15

Date Analyzed: 12/14/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/KG

CAS NO.	COMPOUND	DL	CONC	Q
71-43-2	Benzene	1		U
108-88-3	Toluene	1		U
100-41-4	Ethylbenzene	1		U
1330-20-7	Xylene (total)	1		U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

Z-3

Project: RFA273

Date Sampled: 12/04/96

Lab Code: COMPU Case No.: 32699 SAS No.: SDG No.: 27301

Matrix: (soil/water) SOIL

Lab Sample ID: 834027

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: GH034027B57.D

Level: (low/med) LOW

Date Received: 12/11/96

% Moisture: not dec. 14

Date Analyzed: 12/13/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/KG

CAS NO.	COMPOUND	DL	CONC	Q
71-43-2	Benzene	1		U
108-88-3	Toluene	1		U
100-41-4	Ethylbenzene	1		U
1330-20-7	Xylene (total)	1		U

FORM I VOA

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

Z-4

Project: RFA273

Date Sampled: 12/04/96

Lab Code: COMPU Case No.: 32699 SAS No.: SDG No.: 27301

Matrix: (soil/water) SOIL

Lab Sample ID: 834024

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: GH034024357.D

Level: (low/med) LOW

Date Received: 12/11/96

% Moisture: not dec. 16

Date Analyzed: 12/13/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/KG

CAS NO.	COMPOUND	DL	CONC	Q
71-43-2	Benzene	1		U
108-88-3	Toluene	1		U
100-41-4	Ethylbenzene	1		U
1330-20-7	Xylene (total)	1		U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

Z-1

Project:

Date Sampled: 12/20/96

Lab Code: COMPU Case No.: 32699 SAS No.: SDG No.: 00010

Matrix: (soil/water) WATER

Lab Sample ID: 835249

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: CR035249A55.D

Level: (low/med) LOW

Date Received: 12/21/96

% Moisture: not dec. _____

Date Analyzed: 12/30/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 5.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/L

CAS NO.	COMPOUND	DL	CONC	Q
71-43-2	Benzene	50	28	J
108-88-3	Toluene	25		U
100-41-4	Ethylbenzene	50	450	
1330-20-7	Xylene (total)	75	740	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

Z-2

Project:

Date Sampled: 12/20/96

Lab Code: COMPU Case No.: 32699 SAS No.: SDG No.: 00010

Matrix: (soil/water) WATER

Lab Sample ID: 835253

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: CR035253A55.D

Level: (low/med) LOW

Date Received: 12/21/96

% Moisture: not dec. _____

Date Analyzed: 12/30/96

GC Column:DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/L

CAS NO.	COMPOUND	DL	CONC	Q
71-43-2	Benzene	1		U
108-88-3	Toluene	1		U
100-41-4	Ethylbenzene	1		U
1330-20-7	Xylene (total)	1		U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

Z-3

Project:

Date Sampled: 12/20/96

Lab Code: COMPU Case No.: 32699 SAS No.: SDG No.: 00010

Matrix: (soil/water) WATER

Lab Sample ID: 835254

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: CR035254A55.D

Level: (low/med) LOW

Date Received: 12/21/96

% Moisture: not dec. _____

Date Analyzed: 12/30/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/L

CAS NO.	COMPOUND	DL	CONC	Q
71-43-2	Benzene	1		U
108-88-3	Toluene	1		U
100-41-4	Ethylbenzene	1		U
1330-20-7	Xylene (total)	1		U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

Z-4

Project:

Date Sampled: 12/20/96

Lab Code: COMPU Case No.: 32699 SAS No.: SDG No.: 00010

Matrix: (soil/water) WATER

Lab Sample ID: 835255

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: CN035255A55.D

Level: (low/med) LOW

Date Received: 12/21/96

% Moisture: not dec. _____

Date Analyzed: 12/30/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: UG/L

CAS NO.	COMPOUND	DL	CONC	Q
71-43-2	Benzene	1		U
108-88-3	Toluene	1		U
100-41-4	Ethylbenzene	1		U
1330-20-7	Xylene (total)	1		U

FORM I VOA

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

TRIPBLANK

Project: RFA273

Date Sampled: 12/06/96

Lab Code: COMPU Case No.: 50096 SAS No.: SDG No.: 27309

Matrix: (soil/water) WATER

Lab Sample ID: 834049

Sample wt/vol: 25.0 (g/mL) ML

Lab File ID: CN034049B55.D

Level: (low/med) LOW

Date Received: 12/11/96

% Moisture: not dec. _____

Date Analyzed: 12/14/96

GC Column:DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: UG/L

CAS NO.	COMPOUND	DL	CONC	Q
108-88-3--------	Toluene	0.8		U
100-41-4--------	Ethylbenzene	0.5		U
1330-20-7-------	Xylene (total)	0.5		U

APPENDIX F

MDEQ RESPONSE LETTER: MIXING ZONE DETERMINATION

THE MANNIK & SMITH GROUP, INC.

STATE OF MICHIGAN

REPLY TO:
SE MICHIGAN DISTRICT HEADQ
ENVIRONMENTAL RESPONSE
33980 W. SEVEN MILE ROAD
LIVONIA, MI 48152-1008

JOHN ENGLER, Governor
DEPARTMENT OF ENVIRONMENTAL QUALITY
HOLLISTER BUILDING, PO BOX 30473, LANSING MI 48909-7973
RUSSELL J. HARDING, Director
ENVIRONMENTAL RESPONSE DIVISION

April 15, 1996

James W. Gell
Senior Geoscientist
McLaren Hart
1000 Town Center, Suite 600
Southfield, MI 48075

SUBJECT: Chrysler–Trenton Mixing Zone Determination

Mr. Gell

The Environmental Response Division (ERD) has reviewed Surface Water Quality Divisions (SWQD) Mixing Zone Evaluation for the Chrysler Trenton Facility. A copy of SWQDs evaluation was sent to you on April 10, 1996.

SWQD has indicated the venting of the organic plume is acceptable. SWQD recommended water quality-based venting groundwater limits (WQBVGLs) for the following inorganic constituents: Barium, Cadmium, Thallium, and Cyanide.

In a recent telephone conversation, Mark Oemke of the SWQD indicated the WQBVGLs should be applied to the *average* plume concentration during a single sampling event. ERDs review of the historical sampling data for these constituents found that the WQBVGLs were occasionally exceed at individual sampling points but the average plume concentration never exceeded the WQBVGLs. Also, trends in the concentrations of Barium, Cadmium, Thallium, and Cyanide have not shown any increase in contaminant levels. Therefore, no further action is required in respect to the venting of the plumes to the Trenton Channel.

For future reference I have enclosed a draft copy of our Operational Memorandum # 17. If you have any questions regarding this matter, please contact me at the Southeast Michigan District Office ~~313~~ 953-1463.

734

734-953-3905

Sincerely,

Thomas P. Cok, Geologist
Environmental Response Division

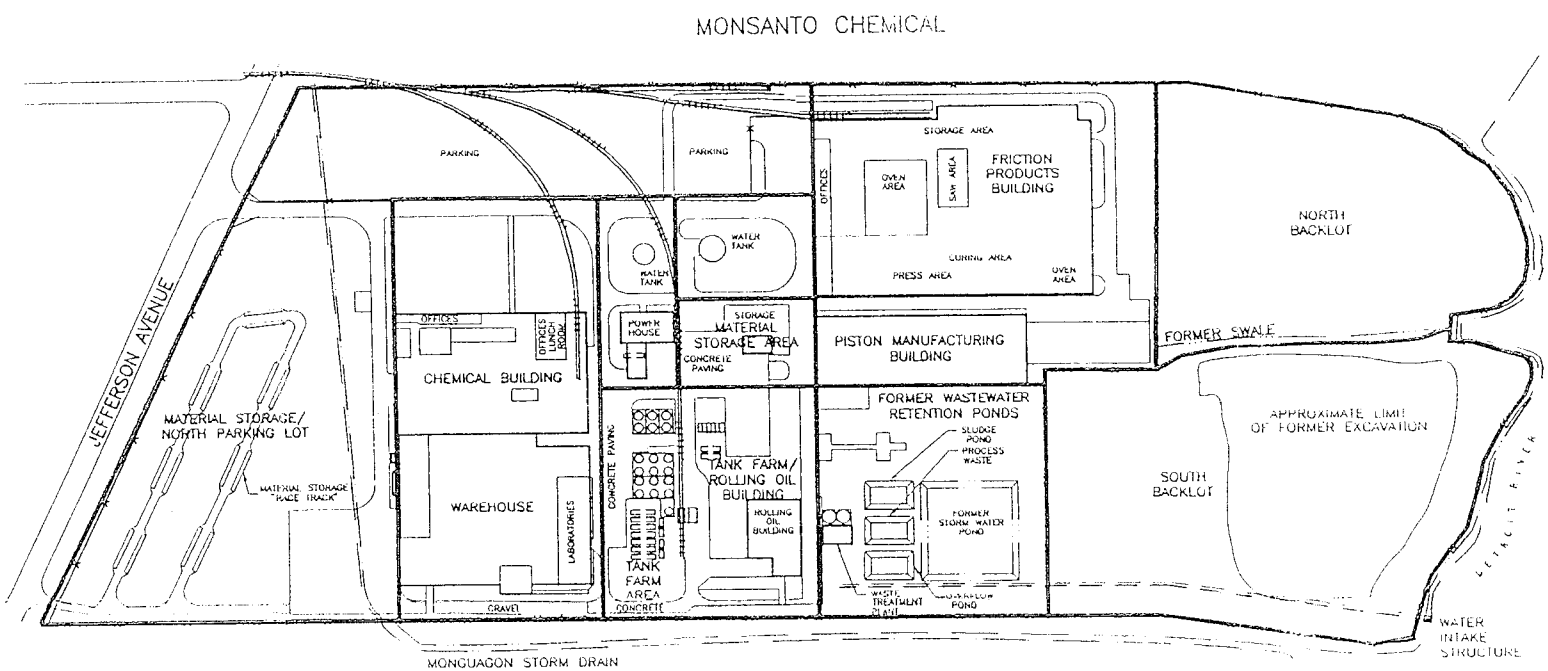
cc: John Singleton, Chrysler
Mary Vanderlaan, ERD
Ed Novak, ERD

Enc.

APPENDIX G

HISTORICAL SAMPLING LOCATION MAPS

THE MANNIK & SMITH GROUP, INC.



LEGEND

APPROXIMATE LOCATION OF FENCE

RAILROAD

SCALE

0 100 200 400

DRAFT

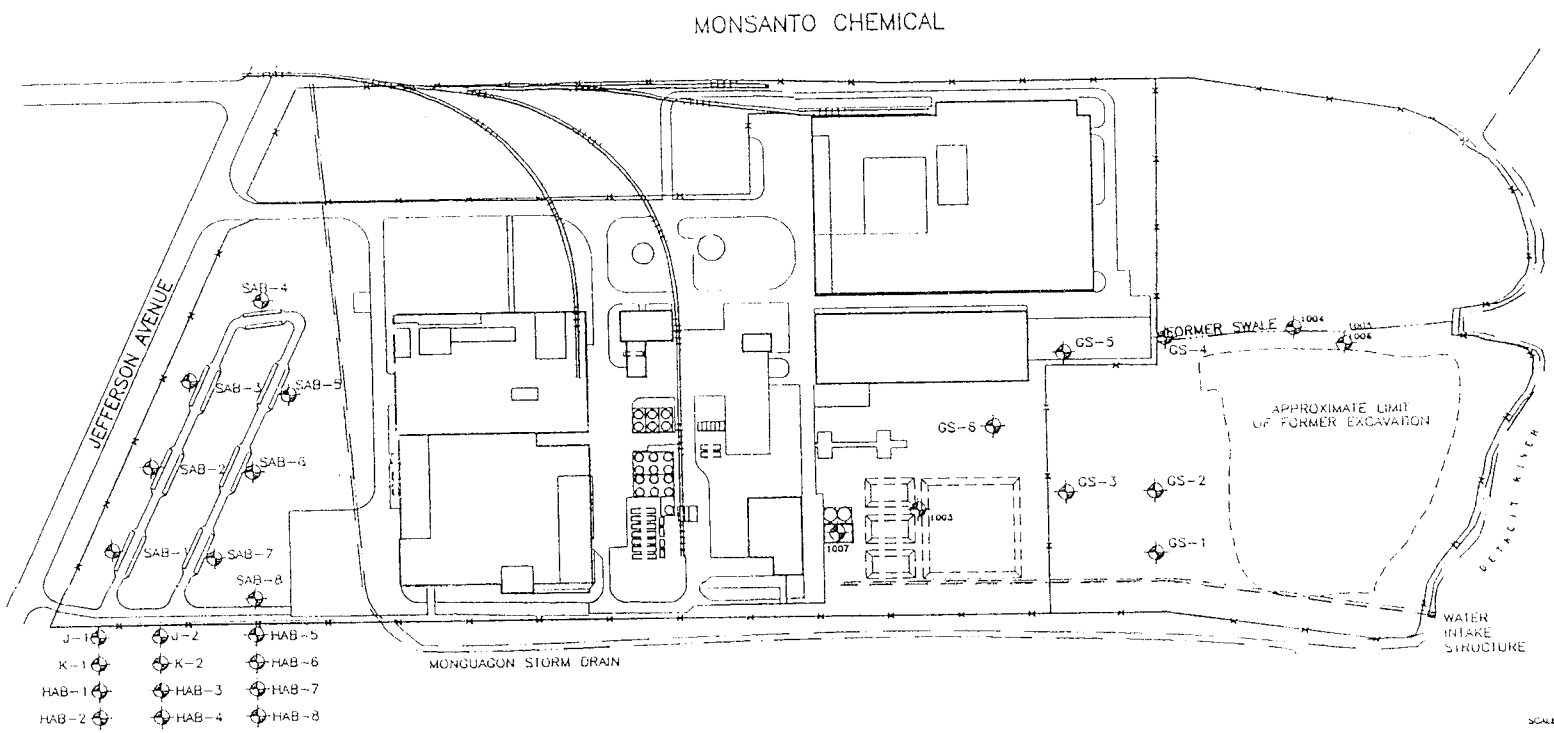
SITE PLAN
TRENTON CHEMICAL FACILITY
TRENTON, MICHIGAN

PREPARED FOR
CHRYSLER CORPORATION

McLaren Hart
ENVIRONMENTAL ENGINEERING CORPORATION

DATE: 12/26/91	FIGURE 2-2	DRAWING NUMBER 280-B001
SCALE: AS SHOWN		

DRAWING NUMBER	280-B001
CHECKED BY	
APPROVED BY	
DRAWN BY	BJF
DATE	08/18/94
REVISIONS	
No.	DESCR.
APPR.	BY



LEGEND

- APPROXIMATE LOCATION OF FENCE
- RAILROAD
- SAB-7 — SHALLOW AUGER BORING LOCATION (SHALLOW AUGER BORING NUMBER)
- 1004 — SEDIMENT SAMPLE LOCATION (SEDIMENT LOCATION NUMBER)
- K-2 — SUFRACE SAMPLE LOCATION (SURFACE SAMPLE NUMBER)

DRAFT

SCALE: 0 100 200 400 FEET

SURFACE/SEDIMENT SAMPLE LOCATION PLAN
TRENTON CHEMICAL FACILITY
TRENTON, MICHIGAN

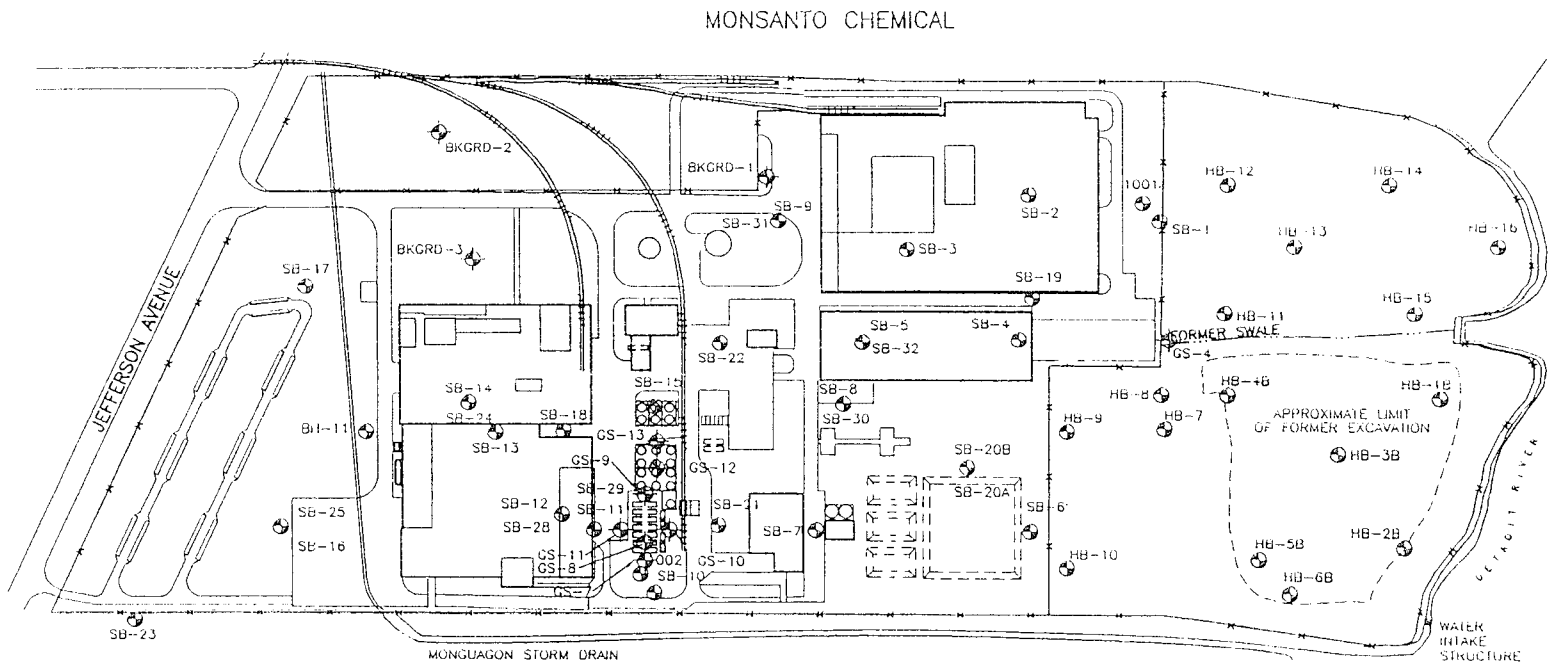
PREPARED FOR
CHRYSLER CORPORATION

McLaren Hart
ENVIRONMENTAL ENGINEERING CORPORATION

DATE: 12/26/91	FIGURE 3-5	DRAWING NUMBER
SCALE: AS SHOWN		280-BC10

REVISIONS	DESCR.	APP'D.	BY:
A			

DRAWN BY: BJF
DATE: 08/01/94
CHECKED BY:
APPROVED BY:
DRAWING NUMBER: 280-BC10



LEGEND

APPROXIMATE LOCATION OF FENCE

RAILROAD

SB-7 SOIL BORING LOCATION
- SOIL BORING NUMBER
(SEE NOTE 1)

NOTES:

1. ALL BORINGS WITH "HB" DESIGNATIONS LOCATED WITHIN THE EXCAVATION BOUNDARY WERE COMPLETED AFTER EXCAVATING AND REPRESENT ONLY THE STRATIGRAPHIC SECTION REMAINING IN THE UNCONSOLIDATED SEDIMENTS.

SCALE
0 100 200 400 FEET

SOIL BORING LOCATION PLAN
TRENTON CHEMICAL FACILITY
TRENTON, MICHIGAN

PREPARED FOR
CHRYSLER CORPORATION

McLaren Hart
ENVIRONMENTAL ENGINEERING COMPANY

DATE: 12/26/91	FIGURE 3-7	DRAWING NUMBER
SCALE: AS SHOWN		280-B012

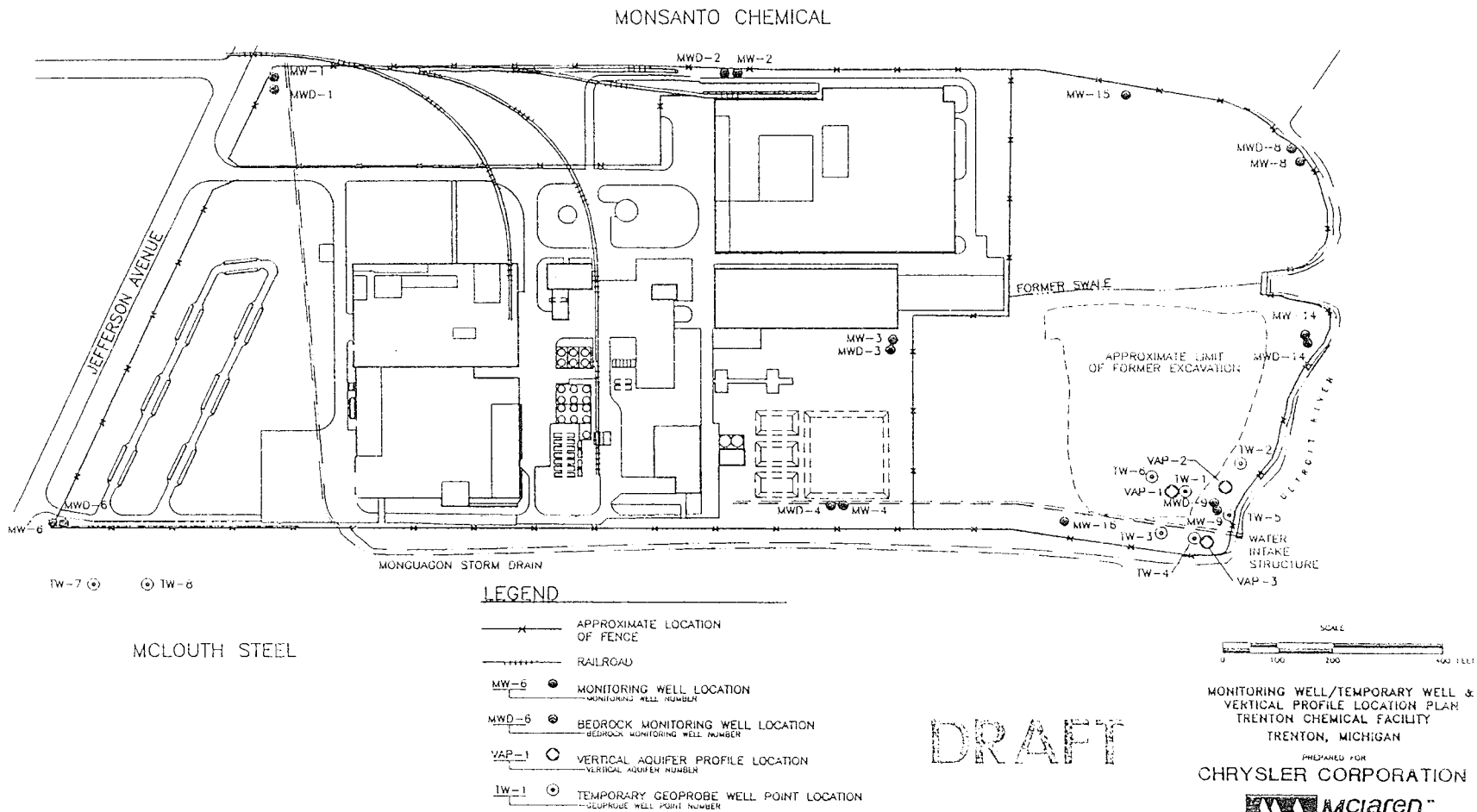
DRAWING NUMBER 280-B012

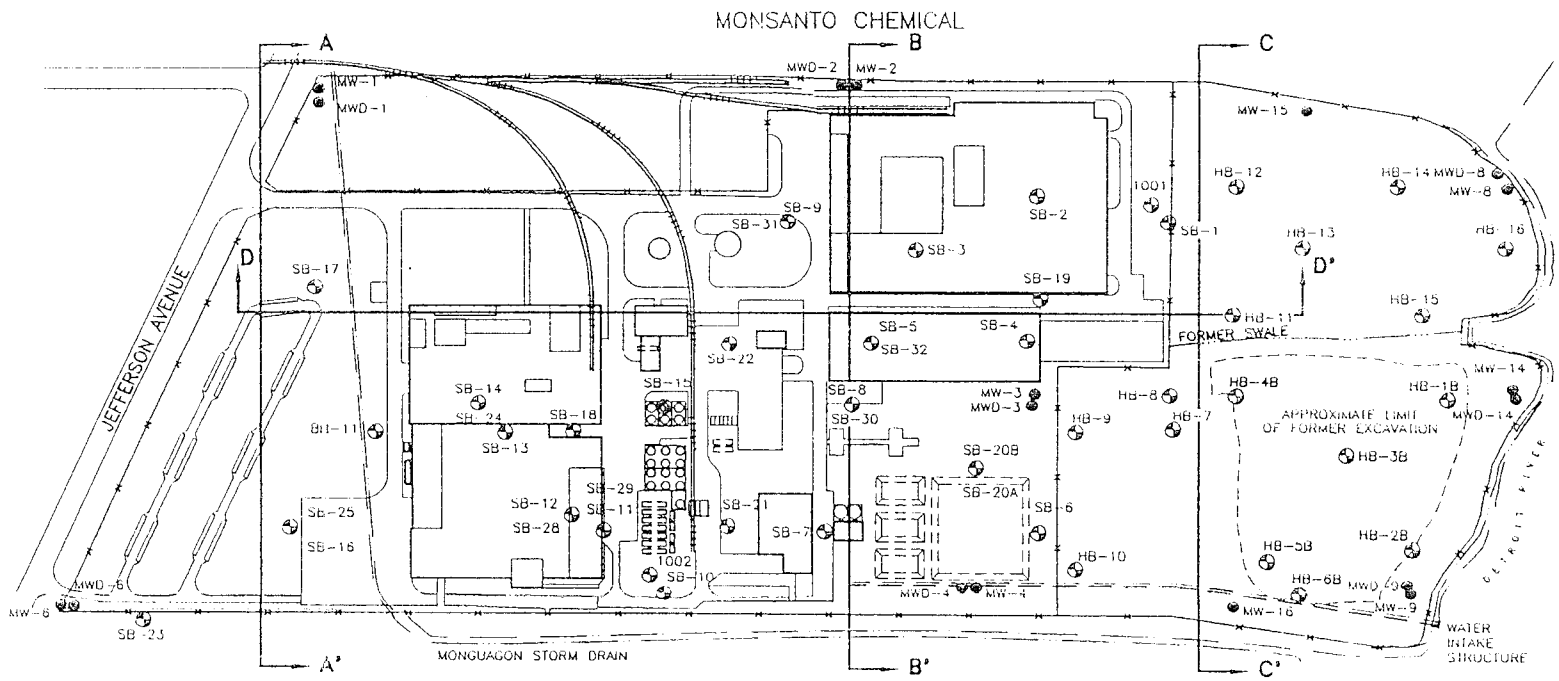
DRAWN BY:	BJF	CHECKED BY
DATE	08/01/94	APPROVED BY

REVISIONS

A	DESCR.	
DATE	APPR.	BY

DRAFT


MONSANTO CHEMICAL
MW-1
MWD-1
MWD-2
MW-2
MW-15
MWD-8
MW-8
JEFFERSON AVENUE
FORMER SWALE
MW-14
MWD-14
APPROXIMATE LIMIT OF FORMER EXCAVATION
MW-3
MWD-3
DETROIT RIVER
TW-2
VAP-2
TW-6
TW-1
VAP-1
MWD-9
MW-9
TW-5
MWD-6
MW-6
MWD-4
MW-4
MW-16
TW-3
WATER INTAKE STRUCTURE
TW-4
VAP-3
MONGUAGON STORM DRAIN
TW-7
TW-8
MCLOUTH STEEL
LEGEND
APPROXIMATE LOCATION OF FENCE
RAILROAD
MW-6 MONITORING WELL LOCATION
MONITORING WELL NUMBER
MWD-6 BEDROCK MONITORING WELL LOCATION
BEDROCK MONITORING WELL NUMBER
VAP-1 VERTICAL AQUIFER PROFILE LOCATION
VERTICAL AQUIFER NUMBER
TW-1 TEMPORARY GEOPROBE WELL POINT LOCATION
GEOPROBE WELL POINT NUMBER
DRAFT
SCALE
0 100 200 400 FEET
MONITORING WELL/TEMPORARY WELL & VERTICAL PROFILE LOCATION PLAN
TRENTON CHEMICAL FACILITY
TRENTON, MICHIGAN
PREPARED FOR
CHRYSLER CORPORATION
McLaren Hart
ENVIRONMENTAL ENGINEERING CORPORATION
DATE: 12/26/91
SCALE: AS SHOWN
FIGURE 3-9
DRAWING NUMBER 280-B113
DRAWING NUMBER 280-B113
DRAWN BY: EJF
DATE 06/02/94
CHECKED BY
APPROVED BY
REVISIONS
DESCR.
APPR. BY:



LEGEND

SB-12 — SOIL BORING LOCATION (SOIL BORING NUMBER)

HB-8 — HAND AUGER BORING LOCATION (HAND AUGER BORING NUMBER)

MW-1 — MONITORING WELL LOCATION (MONITORING WELL NUMBER)

SCALE: 0 100 200 400 FEET

DRAFT

SOIL PROFILE LOCATION PLAN
TRENTON CHEMICAL FACILITY
TRENTON, MICHIGAN

PREPARED FOR
CHRYSLER CORPORATION

McLaren Hart
ENVIRONMENTAL ENGINEERING CORPORATION

DATE: 12/26/91	FIGURE 4-1	DRAWING NUMBER 280-B052
SCALE: AS SHOWN		

REVISIONS	NO.	DESCR.	APPR.	BY

DRAWN BY:	BJF	CHECKED BY	
DATE	06/01/94	APPROVED BY	

DRAWING NUMBER 280-B052

APPENDIX H

CATEGORY-N BEA LIMITATIONS

THE MANNIK & SMITH GROUP, INC.

LIMITATIONS

This Category-N Baseline Environmental Assessment is a site-specific assessment which means it is related to the environmental conditions of the subject property only.

The Mannik & Smith Group, Inc., performed its services in conformance with the care and skill ordinarily used by other reputable environmental consulting firms practicing under similar conditions, at the same time, and in the same or similar locality. In preparing the assessment report, TheMannik & Smith Group, Inc., may have relied on information obtained from or provided by others. The Mannik & Smith Group, Inc., makes no representation or warranty regarding the accuracy or completeness of this information gathered through outside sources or subcontracted services. No warranty, guarantee, or certification of any kind, expressed or implied, at common law or created by statute, is extended, made, or intended by rendering these environmental consulting services or by furnishing this written report. Environmental conditions and regulations are subject to constant change and reinterpretation. One should not assume that any on-site conditions and/or regulatory statutes or rules will remain constant in the future, after The Mannik & Smith Group, Inc., has completed the scope of work for this project. Furthermore, because the facts stated in this report are subject to professional interpretation, differing conclusions could be reached by other professionals.

Contaminants may be hidden in subsurface material, covered by pavement, vegetation, or other substances. Additionally, contamination may not be present in predictable locations. The most that The Mannik & Smith Group, Inc., can do is prepare a logical assessment program to reduce the client's risk of discovering unknown contamination. This risk may be reduced by more extensive exploration on the site. Even with additional exploration, it is not possible to completely eliminate the risk of discovering contamination on-site. It can not be assumed that samples collected and conditions observed are representative of an area that has not been sampled and/or tested.

Some environmental assessments are undertaken to satisfy "due diligence", "all appropriate inquiry," or other regulatory requirements provided in federal, state, or local law. The level of investigation necessary to demonstrate "due diligence" or "all appropriate inquiry" has not been legislatively defined. Although The Mannik & Smith Group, Inc., strives to investigate a site in accordance with the scope of work, it cannot warrant that the work undertaken for this report will satisfy "due diligence", "all appropriate inquiry," or any other similar standard under any federal, state, or local law.

Due to changing environmental regulatory conditions and potential on-site activities after the assessment, the client may rely upon the conclusions within this assessment for a period of six months from the report's issuance date.

Any reports, field data, field notes, laboratory testing, calculations, estimates or other documents prepared by or relied upon by The Mannik & Smith Group, Inc., are the property of The Mannik & Smith Group, Inc. If any of these documents are released or obtained by a party other than the client, The Mannik & Smith Group, Inc., may not discuss the project with that party unless the original contracted client notifies The Mannik & Smith Group, Inc., of the same and The Mannik & Smith Group, Inc., is authorized to disclose the information and to discuss the project with others. Except as otherwise agreed with the client, The Mannik & Smith Group, Inc., further states that it disclaims any duty of any kind or nature to any person or entity other than the client in preparing this report.

The Mannik & Smith Group, Inc., does not assume liability for financial or other losses, or subsequent damage caused by or related to any use of this document.

APPENDIX I

SECTION 7A COMPLIANCE ANALYSIS

THE MANNIK & SMITH GROUP, INC.

SECTION 7a COMPLIANCE ANALYSIS FOR THE FORMER TRENTON CHEMICAL FACILITY AT JEFFERSON AVENUE IN TRENTON, MICHIGAN REQUESTED IN CONJUNCTION WITH A BASELINE ENVIRONMENTAL ASSESSMENT

Location:

Parcel I.D. #54-02-699-000-2
Former Trenton Chemical Facility
Located on Jefferson Avenue
Trenton, Michigan 48183

Prepared By:

The Mannik & Smith Group, Inc.
15300 Rotunda Drive, Suite 306
Dearborn, Michigan 48120

October 31, 2002

Prepared For:

Wayne County Department of Public Services
415 Clifford, Eighth Floor
Detroit, Michigan 48226

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1.0 DETAILED CHARACTERISTICS OF PROPERTY USE 1

2.0 HAZARDOUS SUBSTANCE INFORMATION 1

3.0 PLAN FOR RESPONSE ACTIVITIES 2

4.0 EVALUATION AND DEMONSTRATION OF COMPLIANCE WITH 7a OBLIGATIONS 2

5.0 CONSTRUCTION – COMPLIANCE ANALYSIS 2

Section 7a Compliance Analysis for the Former Trenton Chemical Facility at Jefferson Avenue in Trenton, Michigan Requested in Conjunction with a Baseline Environmental Assessment

Section 7a(1) of Part 201, Act 451 (1994 PA, as amended) provides that a person who owns or operates property that he/she has knowledge is a facility must: 1) undertake measures to prevent exacerbation of existing contamination; 2) exercise due care by undertaking response activity necessary to mitigate unacceptable exposure to hazardous substances and allow for the intended use of the property in a manner that protects the public health and safety; and 3) take reasonable precautions against the reasonably foreseeable acts or omissions of a third party and the consequences that could result from those acts or omissions. Additionally, pursuant to Section 29a(1), a person may petition the MDEQ for a determination that the proposed use of the property satisfies the person's obligations under Section 7a. This report serves as such a petition for the property currently known as the "Former Trenton Chemical Facility" (subject property) located on Jefferson Avenue in Trenton, Wayne County, Michigan. The information necessary to support this petition is provided in the following four subsections.

1.0 Detailed Characteristics of Property Use

As discussed in Section 3.0 of the BEA report, the intended future development of the subject property is as part of a wildlife preserve and interpretive center. The property is currently unoccupied. Figure 2 in the BEA is a map of the historical subject property use.

2.0 Hazardous Substance Information

Regulated/hazardous substances that are expected to be present in soil and groundwater at the property include those identified in the body of the BEA report and as detailed in historical analytical data referenced in said report. The identified substances include benzene, ethylbenzene, toluene, xylene, lead, arsenic and asbestos in soil, and benzene, chlorobenzene, methylene chloride, vinyl chloride, arsenic, barium, cadmium, lead and thallium in groundwater. The identified substances are assumed to be associated with former processes that took place at the subject property. The subject property has been categorized as a facility as defined by Part 201 due to the presence of elevated levels of lead, arsenic and xylenes in the soils and benzene, chlorobenzene, methylene chloride, vinyl chloride, arsenic, barium, cadmium, lead and thallium in groundwater. Applicable chemical-specific concerns are limited to direct contact with contaminated soils and groundwater and direct contact with and inhalation of airborne contaminated particulates during construction activities.

3.0 Plan for Response Activities (PRA)

Currently there are no active response activities scheduled by the proposed purchaser, Wayne County Parks and Recreation Department, to mitigate exacerbation and/or contact with existing contamination. Appropriate remedial actions have already been implemented. The existing soil cap and restrictive covenant at the subject property currently provide an effective barrier from contact with impacted soils and groundwater. The future development of the subject property as part of a wildlife preserve and interpretive center, which may include building(s), parking lot(s) and landscape cover should continue to provide an effective future barrier to direct contact with soil and also provide for fugitive dust control.

4.0 Evaluation and Demonstration of Compliance with 7a Obligations

Proposed future use of the subject property may include redevelopment as a wildlife preserve and interpretive center, and may include buildings, landscaped areas and parking areas. It is not anticipated that hazardous substances or chemicals will be used or stored at the subject property. Therefore, the proposed use will not exacerbate exiting contamination at the subject property.

5.0 Construction - Compliance Analysis Plan

Exposure Routes: Current subject property conditions, including the soil cap in place and restrictive covenant directives, serve as a barrier to direct contact exposure, drinking water exposure, emissions of volatile organic compounds, if any, and atmospheric entrainment of contaminated particulate matter. During construction activities, contaminated soils may be exposed. Due to the nature of identified contaminants, exposure pathways appear limited to construction workers who may be potentially exposed, directly and/or indirectly, via oral ingestion, inhalation of organic vapors, dermal contact, and inhalation of contaminated airborne soils and particulates; and the general public which may be exposed to organic vapors and contaminated airborne soils and particulates.

Hazardous Substances - Exposure Rates: Exposure frequencies and durations are not expected to exceed rates associated with normal construction activities (e.g., soil excavation, transport, and disposal, surface and subsurface activities). Only trained, authorized personnel will have access to the subject property.

Description of Required Response Activities: Other than appropriate management of excavated soils and extracted shallow groundwater during construction and proper capping of the subject property after completion of construction, no additional response activity is required on behalf of the owner.

Soil Removal Activities: Future development plans for the facility may include construction activities including, but not limited to, excavation of contaminated and non-contaminated soils. Soil relocation shall be performed in accordance with Section 20120c

of Part 201. Soil excavation due to construction requirements will be appropriately managed, in that:

1) the excavated soil will be returned to the excavation, if appropriate;

2) where possible, the soil may be relocated on the subject property and properly contained (e.g., capped);

3) the soil will be characterized to determine proper offsite disposal requirements, and soil requiring offsite disposal will be transported and disposed into an appropriate properly licensed landfill facility (when necessary, soil to be disposed offsite may be temporarily relocated within the site of environmental contamination prior to final offsite disposal); and/or

4) existing exposure barriers that are damaged will be repaired or replaced with an equivalent or more effective alternative, or prior to future use, if a barrier is warranted, one will be placed.

Shallow Groundwater Removal Activities: Future development plans for the facility may include construction activities including, but not limited to, extraction of contaminated and non-contaminated groundwater. Offsite transportation and disposal of groundwater shall be performed in accordance with Section 20120c of Part 201. Groundwater that is extracted due to construction requirements will be appropriately managed, in that:

1) the groundwater will be characterized to determine proper offsite disposal requirements, and will be transported and disposed into an appropriate properly licensed treatment facility (when necessary, groundwater to be disposed offsite may be temporarily containerized and relocated within the site of environmental contamination prior to final offsite disposal);

2) groundwater may be treated at the subject property using appropriate treatment mechanism(s) (i.e. carbon adsorption filtration, air stripping, etc.). If permitted, treated water will be discharged into the public sanitary sewer system and/or transported off site for disposal; and/or

3) existing exposure barriers that are damaged will be repaired or replaced with an equivalent or more effective alternative, or prior to future use, if a barrier is warranted, one will be placed.

Offsite soil and groundwater disposal activities will be recorded by appropriate documentation, including, but not limited to: manifests, trucking logs, receipts, and other required documentation consistent with Section 20120c(6).

Construction Activities: Construction-related hazardous substance storage, handling, and use areas at the facility will be identified. Storage and management of construction-

SECTION 7a COMPLIANCE ANALYSIS FOR THE FORMER TRENTON CHEMICAL FACILITY AT JEFFERSON AVENUE IN TRENTON, MICHIGAN REQUESTED IN CONJUNCTION WITH A BASELINE ENVIRONMENTAL ASSESSMENT

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Hazardous Substances - Exposure Rates: Exposure frequencies and durations are not expected to exceed rates associated with normal construction activities (e.g., soil excavation, transport, and disposal, surface and subsurface activities). Only trained, authorized personnel will have access to the subject property.

Description of Required Response Activities: Other than appropriate management of excavated soils and extracted shallow groundwater during construction and proper capping of the subject property after completion of construction, no additional response activity is required on behalf of the owner.

Soil Removal Activities: Future development plans for the facility may include construction activities including, but not limited to, excavation of contaminated and non-contaminated soils. Soil relocation shall be performed in accordance with Section 20120c

of Part 201. Soil excavation due to construction requirements will be appropriately managed, in that:

1) the excavated soil will be returned to the excavation, if appropriate;

2) where possible, the soil may be relocated on the subject property and properly contained (e.g., capped);

3) the soil will be characterized to determine proper offsite disposal requirements, and soil requiring offsite disposal will be transported and disposed into an appropriate properly licensed landfill facility (when necessary, soil to be disposed offsite may be temporarily relocated within the site of environmental contamination prior to final offsite disposal); and/or

4) existing exposure barriers that are damaged will be repaired or replaced with an equivalent or more effective alternative, or prior to future use, if a barrier is warranted, one will be placed.

Shallow Groundwater Removal Activities: Future development plans for the facility may include construction activities including, but not limited to, extraction of contaminated and non-contaminated groundwater. Offsite transportation and disposal of groundwater shall be performed in accordance with Section 20120c of Part 201. Groundwater that is extracted due to construction requirements will be appropriately managed, in that:

1) the groundwater will be characterized to determine proper offsite disposal requirements, and will be transported and disposed into an appropriate properly licensed treatment facility (when necessary, groundwater to be disposed offsite may be temporarily containerized and relocated within the site of environmental contamination prior to final offsite disposal);

2) groundwater may be treated at the subject property using appropriate treatment mechanism(s) (i.e. carbon adsorption filtration, air stripping, etc.). If permitted, treated water will be discharged into the public sanitary sewer system and/or transported off site for disposal; and/or

3) existing exposure barriers that are damaged will be repaired or replaced with an equivalent or more effective alternative, or prior to future use, if a barrier is warranted, one will be placed.

Offsite soil and groundwater disposal activities will be recorded by appropriate documentation, including, but not limited to: manifests, trucking logs, receipts, and other required documentation consistent with Section 20120c(6).

Construction Activities: Construction-related hazardous substance storage, handling, and use areas at the facility will be identified. Storage and management of construction-

related hazardous substances will be performed in a manner designed to maintain public and worker safety and environmental health, and in a manner and location that will permit distinguishing between existing contamination and new releases. A plan will be prepared designating appropriate construction-related hazardous substance storage and handling locations. Releases of construction-related hazardous substances will be managed in accordance with procedures described in "Release of Hazardous Materials from Construction Use" below.

Prior to commencement of construction activities, a copy of the approved compliance analysis will be provided to project managers representing contractors and subcontractors involved with subject property construction activities. Post-construction activities by subsurface workers will be preceded by notice to those (e.g. subsurface workers) who may have exposure to the contaminants.

Existing Contamination - Not Previously Known: If existing contamination is encountered during construction activities that was not previously known to exist, and is not consistent with known existing contamination, then such contamination shall be characterized and managed in accordance with Part 201 and/or Part 213 of the NREPA. Contaminated materials (i.e. soil and/or groundwater) will be characterized in place or will be staged in a properly designated area until characterization is completed and appropriate relocation destinations are determined. In addition, all appropriate actions will immediately be taken in accordance with all applicable laws and regulations to prevent, abate, or minimize such release, threat of release, or endangerment. If during performance of construction activities an event occurs that presents an imminent and substantial endangerment through a release or threat of release the Pollution Emergency Alerting System (PEAS, 1-800-292-4706) shall be immediately notified.

Release of Hazardous Materials from Construction Use: If there is a release of hazardous materials from onsite usage during construction activities (e.g., released from temporary storage tanks, etc.), actions consistent with requirements of Part 201 and/or Part 213, as applicable, shall be implemented, including but not limited to: determine the extent and severity of the release; report the release to the Pollution Emergency Alerting System (PEAS, 1-800-292-4706) if subject to reportable quantities or if there is a threat of imminent and substantial endangerment; immediately stop or prevent the release at its source, immediately identify and eliminate any threat of fire or explosion or any direct contact hazards; and diligently pursue response activities necessary to achieve applicable cleanup criteria.

Fugitive Dust Control Plan: The following Fugitive Dust Control Program will be implemented during construction activities.

1) Unpaved Roads and Parking Areas

   Applicant shall apply a dust suppressant to all unpaved roadways. Application frequency shall be at daily intervals, except when the surface is wet or snow covered.

2) Paved Roads and Parking Areas

Applicant shall utilize a sweeper on all paved roads and paved parking areas. Frequency of sweeping on paved roads shall be at daily intervals, except when the surface is wet or snow-covered. Frequency of sweeping on paved parking areas shall be at 30 day intervals except when the surface is wet or snow covered.

3) Recordkeeping

Applicant shall maintain a record of sweeping frequency and frequency of dust suppressant application.

4) Traffic Speeds

Vehicular traffic on all construction roadways shall be limited to a maximum speed of 15 miles per hour and posted near the construction site entrance.

Document Scanning Cover Sheet

Class: ERD **Type:** BEA/Due Care File **Site:** 82000009 **Document Date:** 2002/10/31

Document ID: 73978 **Category:** BEA Report **Title:** Category N BEA - Trenton Chem Fac

Category N BEA - Trenton Chem Fac

2002/10/31

82000009

BEA Report

BEA/Due Care File

73978

ERD

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

September 25, 2002

Mr. Hugh Macdonald
Director of Special Projects
414 Clifford, 8th Floor
Detroit, MI 48226

Re: Former Trenton Chemical Property in Trenton, MI - Comfort Letter

Dear Mr. Macdonald:

Over the past several months, staff from Michigan's Departments of Attorney General and Environmental Quality (MDEQ) have met with Daimler Chrysler Corporation (Chrysler), the Trust for Public Land and the U.S. Fish and Wildlife Service (USFWS) regarding the disposition of Chrysler's former Trenton Chemical Site at 5437 West Jefferson in Trenton, MI. The property in question occupies 44 acres on the Detroit River and has been designated for inclusion in the Detroit River International Wildlife Refuge. Wayne County will take title to the property and the USFWS will develop and manage the property as an environmental education and cultural center.

As the future owner of the property, Wayne County has expressed concerns over its potential liability with respect to the Comprehensive Environmental Responses, Compensation and Liability Act of 1980, as amended (CERCLA or "Superfund"). This letter is in response to the County's concerns. It is based on the facts presently known to the U.S. Environmental Protection Agency (EPA) and is provided solely for information purposes. For reasons stated below, EPA does not presently contemplate additional Superfund action for this property.

The issues associated with investigating, responding to, and cleaning up contaminated property are often complex. The Superfund program is implemented by EPA; however, in an effort to maximize resources and ensure timely responses, EPA often works closely with the states in responding to properties posing a threat to human health and the environment. After a potential hazardous waste site is reported to EPA, the available information is recorded in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS), EPA's data management system for Superfund. Sites are added to CERCLIS when EPA believes that there may be contamination that warrants action under Superfund.

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If after initial investigation, EPA determines that the contamination does not warrant Superfund action, EPA will archive the site from CERCLIS. This means that EPA believes no further federal response is necessary or appropriate. Archived sites may be returned to the CERCLIS site inventory if new information necessitating further Superfund consideration is discovered.

EPA archived the above-referenced property from the CERCLIS site inventory in 1990, following site evaluation activities by EPA between 1987 and 1990. EPA has determined that the conditions at the property do not warrant federal Superfund involvement. EPA therefore anticipates no need to undertake Superfund enforcement, investigatory, cost recovery or clean up action at this archived property, unless new information, not previously known to EPA regarding this property, is discovered.

At the state level, Chrysler has addressed environmental contamination at the property in accordance with a MDEQ-approved Limited Industrial Remedial Action Plan (RAP) for which MDEQ issued a Certificate of Completion of Construction on July 15, 1998. It is EPA's understanding that contamination will remain at the property and MDEQ has approved the use of exposure barriers which it has determined will effectively eliminate potential exposure pathways to these contaminants. Chrysler will continue to maintain the exposure barriers. Moreover, institutional controls, consisting of land-use and resource-use restrictions, have been recorded with the County Register of Deeds. These safeguards are designed to insure the long-term effectiveness of the exposure barriers.

Lastly, a contaminated ground water plume has been defined beneath the property. This plume is discharging to the Detroit River, but contaminant levels are in full compliance with MDEQ ground water-surface water interface (GSI) criteria.

Based on known environmental conditions at the property, MEQ has determined that the property is suitable for recreational use, consistent with the proposed end use by the USFWS. The acceptability of recreational use assumes that existing exposure barriers, and land- and resource-use restrictions are maintained. Moreover, a 1994 Consent Decree between Chrysler and the State provided for the decommissioning of ten Chrysler facilities, including the Trenton property. The Consent Decree also included a provision by which a prospective purchaser could enter into an agreement with Chrysler and the State and receive a covenant-not-to-sue from the State for preexisting conditions.

Pursuant to Addendum I of the Superfund Memorandum of Agreement (MOA) between MDEQ and EPA, Region 5 will not plan or anticipate any federal action against a covered party (owner, operator, generator or transporter) under Superfund Law when any one or more of a number of listed conditions are satisfied. Satisfaction of one or more of these conditions will provide an added level of comfort to Wayne County, as the covered party, and further exemplifies the ongoing coordination between EPA and MDEQ.

EPA hopes that this comfort letter addresses any concerns you may have regarding the Superfund law prior to taking title to the property. This comfort letter only addresses potential liability issues associated with the Superfund law. It does not address potential liability of the future owner/operator with respect to any other local, State or federal law, including the Federal Water Pollution Control Act, as amended by the Clean Water Act of 1977. EPA congratulates Wayne County, in conjunction with the USFWS, for its initiative in returning the Trenton property to productive use that will provide recreational and educational opportunities to the general public. If you have any questions, please feel free to me at (312) 886-1960 or Mike Gifford of my staff at (312) 886-7257.

Sincerely,

Joseph P. Dufficy, Chief
Brownfields and Early Action Section

cc: Doug Spencer, Schiawassee National Wildlife Refuge
Nanette Leemon, MDEQ
Lauri Elbing, Office of Congressman John Dingell
Laura Lodisio, USEPA

CDM

Phase II Environmental Site Assessment International Wildlife Refuge Center

October 19, 2005

FINAL REPORT

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Executive Summary

Camp Dresser & McKee (CDM) conducted a Phase II Environmental Site Assessment (ESA) for Hamilton Anderson Associates on behalf of Wayne County. The primary objective of the Phase II ESA, at the property located at 5437 West Jefferson Avenue, was to evaluate recognized environmental conditions associated with past uses of the property. CDM focused on potential adverse environmental impacts identified in historical information reviewed by CDM. The Phase II ESA report has been prepared following the suggested format presented in ASTM Designation: E 1903-97 (Reapproved 2002) Standard Guide for Environmental Site Assessments: Phase II Environmental Site Assessment Process and Phase 1 ESA (ASTM Designation E 1527-00.

This Phase II ESA involved the collection of 21 samples from surface and subsurface soils on the subject property. Four soil borings were also advanced at the site to collect core samples for geotechnical analysis.

Analytical tests were selected and performed on each environmental sample based on documented past operations, and chemical substances that would typically be used and waste products generated for those operations. Sampling procedures and quality assurance/quality control protocol applied in the Phase II ESA, are presented in the sampling and analysis plan prepared specifically for the subject property.

Industrial operations at the subject property involved manufactured brake pad adhesives and asbestos brake pads for automobiles; and blended oils, paints, sealers, powdered metal materials and phenolic brake pistons.

Based on soil samples collected at the subject property, analytical analysis shows that the soils contain metals, volatile organics and semi-volatile organics.

Recognized environmental conditions at the subject property are identified as:

- Surface and subsurface soil contaminated with arsenic and lead exceed the Generic Cleanup Criteria (Residential and Commercial 1) concentrations specified in ACT 451 Part 201

  a. Arsenic exceedances are located at GP-1-1, GP-2-1, GP-2-2, GP-3-2, GP-5-2, GP-6-1, and GP-7-2

  b. Lead exceedances located at GP-6-1, GP-8-1

- Surface soil contaminated with benzo(a)pyrene at SS-5 exceed the Generic Cleanup Criteria (Soil-Residential and Commercial 1) concentrations specified in ACT 451 Part 201

- Surface and subsurface soil exceed the Generic Cleanup Criteria (Groundwater Surface Water Interface Protection Criteria) specified in ACT 451 part 201

  a. Selenium exceedances at GP-1-1, GP-1-2, GP-2-1, GP-2-2, GP-3-1, GP-3-2, GP-4-1, GP-6-1, GP-6-2, GP-8-1, and SS-2

  b. Silver exceedances at GP-1-1, GP-1-2, GP-2-1, GP-2-2, GP-3-1, GP-3-2, GP-4-1, GP-4-2, GP-6-1, GP-7-1, GP-7-2, GP-8-1, and GP-8-2

  c. Mercury exceedances at GP-7-1, GP-7-2, SS-2 and SS-5

  d. Chlorobenzene exceedances at GP-7-1, GP-8-1, and GP-8-2

  e. Naphthalene exceedances at GP-5-2

  f. 1,2,4-trimethylbenzene exceedances at GP-7-2

  g. Xylene exeedances at GP-7-2

  h. Fluoranthene exceedances at GP-6-1 and SS-5

  i. Phenanthrene exceedances at SS-5

- Detections of metals in surface and subsurface soil exceed the statewide default background levels.

Four test borings were advanced near the proposed building location to provide a geotechnical analysis of the subsurface conditions. Fill soils were encountered throughout the full depth of the test borings. It does not appear that naturally deposited soils were encountered within the borings and therefore the existing fill material does not appear feasible to support a building in this location.

Section 1
Introduction

1.1 Purpose

In May 2005, Camp Dresser & McKee (CDM) conducted a Phase II Environmental Site Assessment (ESA) at the International Wildlife Refuge located in Trenton, Michigan, to evaluate recognized environmental conditions associated with past uses of the property. This information will assist in making informed decisions about the future development at the property.

1.2 General Scope of Services

Professional environmental services specified in Article 1, Description of Scope, of the Agreement between Hamilton Anderson Associates and CDM, dated January 3, 2005, are noted for CDM to conduct a Phase I and II Environmental Site Assessment and other consulting services at the International Wildlife Refuge.

1.3 Limitations and Exceptions of Assessment

CDM conducted the Phase II ESA described herein in accordance with ASTM guidelines and Standards of Care exercised by environmental consultants performing similar services. No warranties or guarantees, expressed or implied, are made regarding the opinions, findings of fact, conclusions and recommendations presented in this report. CDM assumes no responsibility regarding the completeness, quality or accuracy of information provided to CDM and used in this ESA. CDM has based its opinion and conclusions on information provided to CDM, a limited number of environmental samples, and existing site conditions during the time of the ESA and exercised professional judgment in evaluating the information obtained.

Environmental sampling and analysis were performed in this Phase II ESA utilizing a site-specific work plan. However, no investigative methodology can eliminate the possibility of obtaining incomplete information—through variations in subsurface conditions, for instance. Therefore, all parties using this report should recognize that other environmental issues may exist at the subject property that have not yet been identified. CDM assumes no responsibility for the discovery or remediation of such issues.

1.4 Special Terms and Conditions

The results and conclusions of this Phase II ESA report represent professional opinions regarding environmental conditions at the subject property based on a review of historical information provided by other parties, a site reconnaissance, and the collection and analysis of limited environmental samples.

CDM prepared this report for the exclusive use of the Wayne County. Any others using this report do so at their sole risk without liability to CDM.

Section 2
Site Description and Background

2.1 Site Description

The International Wildlife Refuge Center (subject property), formerly the Trenton Chemical Facility, is located at 5437 West Jefferson Avenue in Trenton, Michigan. This property is approximately 33 acres in size and is situated along the western bank of the Detroit River approximately one mile south of the city limits of Trenton in Wayne County, Michigan (Appendix A/Figure 2.1). Currently, the subject property exists as a vacant field. The Monguagon Stormwater Drain traverses the Site in a north-south direction, while the onsite portion of this drain flows through an underground culvert. South of the subject property, the flow of this drain is above ground and parallels the southern boundary of the property until the stormwater discharges to the Detroit River.

The island of Grosse Ile and the Trenton Channel are located east of the subject property. Solutia Inc. operates a food-grade phosphate manufacturing facility located to the north and northwest of the subject property. The Solutia facility occupies approximately 20 acres of land. North of the Solutia property is a coal-fired power plant owned and operated by Detroit Edison. The western edge of the Site borders Jefferson Avenue. The land adjacent to the southern property boundary of the site is undeveloped and was owned by McLouth Steel and Waste Management. This area called Humburg Marsh, is mitigated wetland to replace wetlands in Wayne County that Waste Management filled to create a landfill. The Detroit Edison Power Plant and the Solutia Phosphate Plant are the only major industrial facilities within the immediate vicinity of the Site.

2.2 Legal Description

The property consists of a parcel of land being part of Section 25, Town 4 South, Range 10 East, and Section 30, Town 4 South, Range 11 East, City of Trenton, Wayne County, Michigan. The tax identification number for the Trenton Chemical Facility Property is 54-02-699-000-2.

Further delineation of various areas within the property (former tank farm, soil cover system area, concrete slab cover system, monitoring well # 9 area, and north back lot) were defined in August 1997 by McNeely & Lincoln Associates, Inc., Civil Engineering and Land Surveying located in Livonia, Michigan. ("Response to Closures Issues, Trenton Chemical Site, Trenton, Michigan").

2.3 Site History and Land Use

In 1946, Chrysler constructed the first building at the Trenton Chemical Facility. Additional buildings were constructed from 1952 through 1973 and included the Friction Products Building, the Piston Building, the Piston Manufacturing building,

the Rolling Oil Building and the building containing the Power House. The Trenton Chemical Facility operated for approximately 44 years, and manufactured brake pad adhesives and asbestos brake pads for automobiles; and blended oils, paints, sealers, powdered metal materials and phenolic brake pistons. In the 1970s, four wastewater retention ponds were constructed as part of the onsite wastewater treatment facility.

In 1990, as part of the facility deactivation activities, residuals from the wastewater retention ponds were removed and properly disposed, all above ground structures were demolished and removed; stained surface soils were removed; asbestos in buildings were removed; underground tanks and above ground tanks and associated piping were removed.

2.4 Historical Constituent Exceedances

Various subsurface investigations were performed by McLaren/Hart Engineers Midwest Inc. at the Former Trenton Chemical Facility property from 1994 through July 1997. These investigations involved the collection and analysis of surface and subsurface soils throughout the subject property (site) coupled with groundwater samples taken from monitoring wells located at the periphery and selected interior areas of the site. Appendix A/Figure 2-2 illustrates historical locations at the site.

Historical documentation regarding contaminants in soil and groundwater at the International Wildlife Refuge Center were provided to CDM by Hamilton Anderson Associates. These documents were reviewed by CDM to evaluate exceedances of chemical constituents at the site:

- Baseline Environmental Assessment Petition P200201857LV Trenton Chemical Facility (Former) Parcel # 54-02-699-002-2 Trenton, Michigan. November 7, 2002.

- Category N Baseline Environmental Assessment Conducted Pursuant to Section 20126(1)(C) of 1994, Part 201 as Amended and the Rules Promulgated There under. Parcel I.D. #54-02-699-000-2, Former Trenton Chemical Facility, Jefferson Ave. Trenton, Michigan 48183. Prepared for Wayne County Department of Public Services, Detroit, Michigan. Prepared by The Mannik & Smith Group, Inc. Dearborn., Michigan 48120. Report Completed October 31, 2002.

- Remedial Action Plan and Closure Report Trenton Chemical Site Trenton, Michigan. Prepared for Chrysler Corporation in Cooperation with the Michigan Department of Natural Resources. Prepared by McLaren/Environmental Engineering Corporation. February 12, 1997.

- Subsurface Investigation Chrysler Trenton Chemical Site Former Tank Farm Trenton, Michigan. Prepared for Chrysler Corporation, Environmental & Energy Affairs, Chrysler Technology Center Auburn Hills, MI 48326. Prepared by McLaren/Hart Engineers Midwest Inc. Southfield, Michigan 48075. February 12, 1997.

- Response to Closure Issues Trenton Chemical Site Trenton, Michigan. Prepared for Chrysler Corporation, Chrysler Technology Center, Auburn Hills, Michigan 48326. Prepared by McLaren/Hart Southfield, Michigan 48075. August 9, 1997.

Locations of environmental sampling, and analytical analysis presenting constituents exceeding Part 201 Criteria are presented in these referenced reports. Based on information presented in the Remedial Action Plan and Closure Report for the Site, the only environmental issues that required further consideration (exceeding direct contact criteria) for the Site were:

- VOCs (benzene, xylene, and chlorobenzene) in on-site groundwater (Southeast corner of the Site);

- Inorganic constituents (vinyl chloride, arsenic, barium, lead, thallium) in on-site groundwater (Southeast corner of the Site);

- Surface Soils (Southeast corner of the Site) contained arsenic and lead; and

- Xylene affected vadose Zone soils in the Former Tank Farm Area.

Contamination issues have been addressed through the implementation of Restrictive Covenants and remedial actions such removal of source material, underground storage tanks, drums and capping several locations where lead and asbestos contamination exists.

Section 3
Phase II Environmental Site Assessment

3.1 Detailed Scope of Work

A detailed site-specific work plan was developed prior to conducting the Phase II Environmental Site Assessment (ESA) at the Former Trenton Chemical Facility site in Trenton, Michigan. The work plan discussed the sampling and quality assurance procedures to be implemented at the site. Specifically, the goals of the Phase II ESA were:

- Review historical documentation to determine areas of environmental concern based on general knowledge of the materials used in historic operations at the site, reported spills, clean-ups, and results from laboratory analysis.

- Conduct a site reconnaissance to review all areas previously identified as having "confirmed or potential contamination" and identify areas to be sampled as part of the Phase II ESA.

- Collect surface soil samples at five locations, and at a depth of 0 to 6 inches below grade. Laboratory analysis includes volatile organic compounds (EPA Method 8260), semi-volatile compounds (EPA Method 8270) and Michigan Ten metals.

- Conduct a geotechnical investigation of subsurface soils by drilling four test borings to a depth of 20 feet, and analyzing the soils for grain size and unconfined compression.

- Advance geoprobe at eight locations to collect subsurface soils at a depth of 0 to 20 feet (or refusal). Laboratory analysis will be conducted on two samples from each location and will include volatile organic compounds (EPA Method 8260), semi-volatile compounds (EPA Method 8270) and Michigan Ten metals. Select samples, based on visual observation, will be analyzed for PCBs (EPA Method 8082).

- Develop a report summarizing the Phase I and II ESAs.

3.2 Supplemental Records Review

Information provided to CDM and reviewed for the subject property included text and figures in the following documents:

- Baseline Environmental Assessment Petition P200201857LV Trenton Chemical Facility (Former) Parcel # 54-02-699-002-2 Trenton, Michigan. November 7, 2002.

- Category N Baseline Environmental Assessment Conducted pursuant to Section 20126(1)(c) of 1994 PA 451, Part 201 as Amended and the Rules Promulgated thereunder Former Trenton Chemical Facility, Trenton, Michigan. Prepared for

Wayne County Department of Public Works by the Mannik & Smith Group Inc. October 31, 2002.

- Remedial Action Plan and Closure Report Trenton Chemical Site Trenton Michigan. Prepared for Chrysler Corporation by McLaren/Hart Environmental Engineering Corporation. February 12, 1997.

- Response to Closure Issues Trenton Chemical Site, Trenton, Michigan. Prepared for Chrysler Corporation by McLaren/Hart. August 8, 1997.

- Subsurface Investigation Chrysler Trenton Chemical Site Former Tank Farm Trenton, Michigan. Prepared for Chrysler Corporation Environmental and Energy Affairs, Chrysler Technology Center Auburn Hills, Michigan. February 12, 1997.

Supplemental records reviewed were obtained from the Michigan Department of Environmental Quality (Warren office).

- Dewatering and Backfill Summary Report, Trenton chemical Site, Trenton, Michigan. Prepared for Chrysler Corporation by McLaren Hart. May 24, 1996.

- Hydrogeological Investigation Interim Report for Chrysler Corporation Trenton, Chemical Facility, Trenton, Michigan. Prepared by Hart Engineers, Inc. June 14, 1988.

3.3 Field Exploration and Methodology

3.3.1 Boreholes

The use of boreholes to collect subsurface samples and determine subsurface soil characteristics was an integral part of the Phase II ESA. The placement of on-site boreholes was based on historical environmental concerns. Subsurface soil sampling via Geoprobe® was performed on May 26, 2005. A total of 8 boreholes were advanced at the subject property; two samples were collected from each boring. A TVA-1000 unit was used to monitor volatile organic compounds in the soil.

Boreholes include:

Borehole	Depth (feet)	Sample Location (Depth, feet)
GP-1	0 to 16'	GP-1-1 (2') GP-1-2 (16')
GP-2	0 to 13'	GP-2-1 (4') GP-2-2 (12' to 13')
GP-3	0 to 14.5'	GP-3-1 (2.5') GP-3-2 (9' to 10")
GP-4	0 to 13.5'	GP-4-1 (4') GP-4-2 (13')
GP-5	0 to 15.5'	GP-5-1 (9') GP-5-2 (4')
GP-6	0 to 14'	GP-6-1 (7.5' to 8') GP-6-2 (13' to 14')
GP-7	0 to 16.5'	GP-7-1 (14') GP-7-2 (16')
GP-8-1	0 to 17.5'	GP-8-1 (6' to 7') GP-8-2 (11.5' to 12')

A field borehole log was constructed for each boring location (**Appendix B**). Each field borehole log presented soil characteristic information including depth below the ground surface (bgs), recovery, sample interval (ft), sample type, moisture content, consistency and a description of the subsurface material. Appendix A/Figure 3-1 presents the locations of the boreholes at the subject property.

Boreholes were advanced by Terra Environmental of Ottawa Lake, Michigan (under contract with CDM) using a Geoprobe® Model 5410. This model has an increased structural strength that allows rods to be pushed 15 to 20 feet deep. Clean plastic liners were used in each boring to collect the subsurface material. Following collection of the subsurface material, the core was cut open and screened for volatile organics. Select soil samples were removed from the plastic liner and placed in appropriate sampling containers for laboratory analysis. Decontamination of equipment was performed between each sampling location.

3.3.2 Surface Soil Samples

A total of five surface soil samples were collected in the vicinity of the former back lot cap area to determine characteristics of the surface soils. Each surface soil location is presented in Appendix A/Figure 3-1.

3.3.3 Geotechnical Investigation

Four test borings were advanced by Strata Drilling using a hollow stem auger drill rig. Split-spoon samples were collected every 2.5 feet to a maximum depth of 20 feet below grade surface. The soil samples were classified per Unified Classification System. Moisture content, dry density and unconfined compressive strength tests were performed by SME on select samples. The geotechnical analysis will be used to

determine the conditions of the subsurface soils and the suitability for support of a building. Geotechnical borehole logs are presented in Appendix C.

Test Boring	Depth (feet)	Sample Location (Depth, feet)
SB-1	0 to 15.5'	2.5', 5', 7.5', 10', 12.5', 15'
SB-2	0 to 15.5'	2.5', 5', 7.5', 10', 12.5', 15'
SB-3	0 to 16'	2.5', 5', 7.5', 10', 12.5', 15'
SB-4	0 to 5'	Abandoned
SB-4R	0 to 14.5'	2.5', 5', 7.5', 10', 12.5', 14.5'

3.3.4 Quality Assurance Protocol

The quality assurance/quality control (QA/QC) program was developed to establish standard procedures for field sampling, chain of custody (COC), laboratory analysis, and reporting. This is accomplished by applying specific QA/QC procedures designed to produce reliable analytical data.

- Field data - will be recorded in field books or data log sheets. All field-generated data will be retained by CDM in permanent files in CDM's Detroit Office (One Woodward Avenue, Ste. 1500, Detroit, Michigan, 48226). Field logs will be included in the CDM Phase II ESA report.

- Sample Numbering - Each sample will be assigned a unique sample number. The sample designations will be as follows:

  SS-1 Surface sample, location 1

  GP-1-1 Geoprobe® sample, location 1, depth 1

  SB-1 Geotechnical Soil Boring, location 1

- Laboratory Data Reporting - The Laboratory will provide a complete data package presenting: laboratory analysis, any deviations from the stated analytical method, any observations that may have had an impact on the analyses, and corrective actions taken, laboratory quality control checks that did not meet the project/laboratory criteria, and a copy of the Analysis Request and the COC form, with all signatures.

- Photograph Log - A log will be kept of all photographs taken during the study (Appendix G).

3.4 Sampling and Chemical Analysis Methodology

Prior to subsurface sampling at the site, underground utility clearances were obtained from MISS DIG-Ticket # B51380694.

Soil samples were collected at surface and subsurface locations throughout the subject property via grab sampling methods, Geoprobe®, and drill rig. Sample locations were selected based on historical information reviewed by CDM and where environmental contaminants were suspected. CDM collected a total of 5 surface (0-6" bgs) and 16 subsurface (0 to 20 ft. bgs) soil samples throughout the property.

Appendix E and F present the laboratory analysis for each soil sample. In general, surface and subsurface soil samples were analyzed for Michigan 10 metals (Methods 6020 and 7470A), volatile organic compounds (Method 8260), and semi-volatile organic compounds (Method 8270). Soil samples GP-6-2 and GP-7-2 were also analyzed for polychlorinated biphenyl compounds (Method 8082), based on visual observations.

All soil samples were analyzed according to methods from United States Environmental Protection Agency (USEPA) and/or standard methods. Soil sample collection, sample handling, analysis, data reduction, validation and reporting were performed under a strict quality assurance/quality control (QA/QC) program. Sample containers and laboratory analysis of soil samples was provided by RTI Laboratories, Inc., which is accredited through the National Environmental Laboratory Accreditation Program (NELAP accreditation number 100314). The CDM site-specific Sampling and Analysis Project Plan details sample collection and handling, equipment decontamination, laboratory methodology and QA/QC procedures.

Matrix spike/Matrix spike duplicates were performed on samples GP-1-1 and SS-1.

3.4.1 Soil Constituent Exceedances

Various contaminants were detected in surface and subsurface soil samples collected during the Phase II ESA. Metal contaminants were ubiquitous throughout the property. Appendix E presents a complete tabular summary of analyte concentrations in soil matrices and compares these concentrations to The State of Michigan's Part 201 Generic Cleanup Criteria and Screening levels (Direct Contact Criteria for Residential and Commercial I, Industrial and Commercial II, III, and IV; and Groundwater Surface Water Interface Protection Criteria).

Soil sample concentrations exceeding the Direct Contact Residential and Commercial I Cleanup Criteria include:

Parameter	GP-1-1 ug/kg	GP-2-1 ug/kg	GP-2-2 ug/kg	GP-3-2 ug/kg	GP-5-2 ug/kg	GP-6-1 ug/kg	GP-7-2 ug/kg	GP-8-1 ug/kg	SS-5 ug/kg	*Direct Contact Res/Com I ug/kg	*Direct Contact Com III ug/kg	*Direct Contact Com IV ug/kg
Arsenic, total	13000	12000	8600	12000	7900	39000	8600	4800	3900	7600	46000	41000
Lead, total	14000	12000	9700	10000	8300	1900000	97000	560000	93000	4.00E+05	4.00E+05	4.00E+05
Benzo(a)pyrene	ND	ND	ND	ND	ND	ND	ND	ND	2000	2000	16000	11000

Soil sample concentrations exceeding the Groundwater Surface Water Interface (GSI) Protection Criteria for subsurface samples include:

Parameter	GP-1-1 ug/kg	GP-1-2 ug/kg	GP-2-1 ug/kg	GP-2-2 ug/kg	GP-3-1 ug/kg	GP-3-2 ug/kg	GP-4-1 ug/kg	GP-4-2 ug/kg	GP-5-2 Ug/kg	GP-6-1 ug/kg	GP-6-2 ug/kg	GP-7-1 ug/kg	GP-7-2 ug/kg	GP-8-1 ug/kg	GP-8-2 ug/kg	SS-2 ug/kg	SS-5 ug/kg	GSI criteria ug/kg
Selenium, total	1900	450	840	670	2500	780	1300	ND	ND	410	550	ND	ND	5300	ND	420	290	400
Silver, total	1400	580	730	660	1300	970	770	670	310	1100	420	560	1300	1400	650	250	ND	500
Mercury, total	89	30	43	44	61	29	57	27	37	73	30	290	330	67	44	110	110	100
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	38000	170	4600	7200	ND	ND	940
Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	9400	ND	ND	ND	ND	370	380	ND	ND	870
1,2,4-trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	160	620	120	ND	ND	ND	570
Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	210	ND	ND	700	ND	ND	ND	ND	700
Fluoranthene	ND	ND	ND	ND	ND	ND	ND	ND	ND	7200	ND	ND	ND	ND	660	ND	6200	5500
Phenanthrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	1800	ND	690	ND	ND	590	ND	5600	5300

3.5 Geotechnical Investigation

Subsurface Exploration Program

Four test borings, SB-1 through SB-4R (SB-4 was abandoned), were drilled near the proposed building location to provide a geotechnical investigation of the subsurface soil conditions. The test borings were drilled to refusal at depths ranging from 14 to 16 feet below ground surface except for SB-4 which was obstructed at a depth of 5 feet. Standard penetration testing was conducted at intervals of about 2.5 feet throughout the drilling.

Locations of the test borings are shown on Appendix A/Figure 3-1, while copies of the field test boring logs are presented in Appendix B.

Subsurface Conditions

The test borings encountered fill soils throughout the full depth of the drilling. It does not appear that any test boring encountered naturally deposited soil which from state soils maps is expected to be Lacustrine clays and silts which are predominate in the area. Further, due to the consistency of the refusal in the fill, an obstruction may exist below the site.

Groundwater was only encountered in Test Borings SB-1 and SB-4R at a depth of about 2.5 ft. below ground surface.

Geotechnical Laboratory Testing

Laboratory tests including grain size testing and unconfined compression testing were conducted on samples of the fill. These results are located in Appendix D.

Preliminary Geotechnical Considerations

The existing miscellaneous fill soils, which exist to a depth of at least 16 ft., are not suitable for support of the building. It should be assumed for conceptual design that the foundations may bear on spread footings after the removal and replacement of the fill soils or on pile foundations driven to a suitable stratum below the fill. However, the limited depth of the test borings and lack of information related to the naturally deposited soils prevent providing additional information on the depth and capacity of the piles or extent of the over-excavation and foundation bearing information.

3.6 Proposed Relocation of Soils

Supplemental soil (from a Woodhaven Michigan site) proposed for soil erosion control was analyzed to determine if the soil was suitable for the subject property. Analytical results indicated that the supplemental soils contained levels of selenium above the groundwater surface water interface (GSI) protection criteria (400 ug/kg), yet below the site specific background selenium levels. CDM requested approval from the Michigan Department of Environmental Quality (MDEQ) to relocate the

soils to the International Wildlife Refuge site. The MDEQ replied in a letter dated August 3, 2005 (Appendix H), stating that the supplemental soils were consistent with the soils at the subject property and therefore were appropriate to be used in a soil erosion control plan at the site.

Section 4
Findings and Conclusions

The following recognized environmental conditions (RECs) were discovered at the subject property.

1. Surface and subsurface soil contaminated with arsenic and lead exceed the Generic Cleanup Criteria (Residential and Commercial 1) concentrations specified in ACT 451 Part 201

    a. Arsenic exceedances located at GP-1-1, GP-2-1, GP-2-2, GP-3-2, GP-5-2, GP-6-1, and GP-7-2

    b. Lead exceedances located at GP-6-1, GP-8-1

2. Surface soil contaminated with benzo(a)pyrene at SS-5 exceed the Generic Cleanup Criteria (Soil-Residential and Commercial 1) concentrations specified in ACT 451 Part 201

3. Surface and subsurface soil exceed the Generic Cleanup Criteria (Groundwater Surface Water Interface Protection Criteria) specified in ACT 451 part 201

    a. Selenium exceedances at GP-1-1, GP-1-2, GP-2-1, GP-2-2, GP-3-1, GP-3-2, GP-4-1, GP-6-1, GP-6-2, GP-8-1, and SS-2

    b. Silver exceedances at GP-1-1, GP-1-2, GP-2-1, GP-2-2, GP-3-1, GP-3-2, GP-4-1, GP-4-2, GP-6-1, GP-7-1, GP-7-2, GP-8-1, and GP-8-2

    c. Mercury exceedances at GP-7-1, GP-7-2, SS-2 and SS-5

    d. Chlorobenzene exceedances at GP-7-1, GP-8-1, and GP-8-2

    e. Naphthalene exceedances at GP-5-2

    f. 1,2,4-trimethylbenzene exceedances at GP-7-2

    g. Xylene exeedances at GP-7-2

    h. Fluoranthene exceedances at GP-6-1 and SS-5

    i. Phenanthrene exceedances at SS-5

3. Surface and subsurface soil contaminated with metals exceed the statewide default background levels.

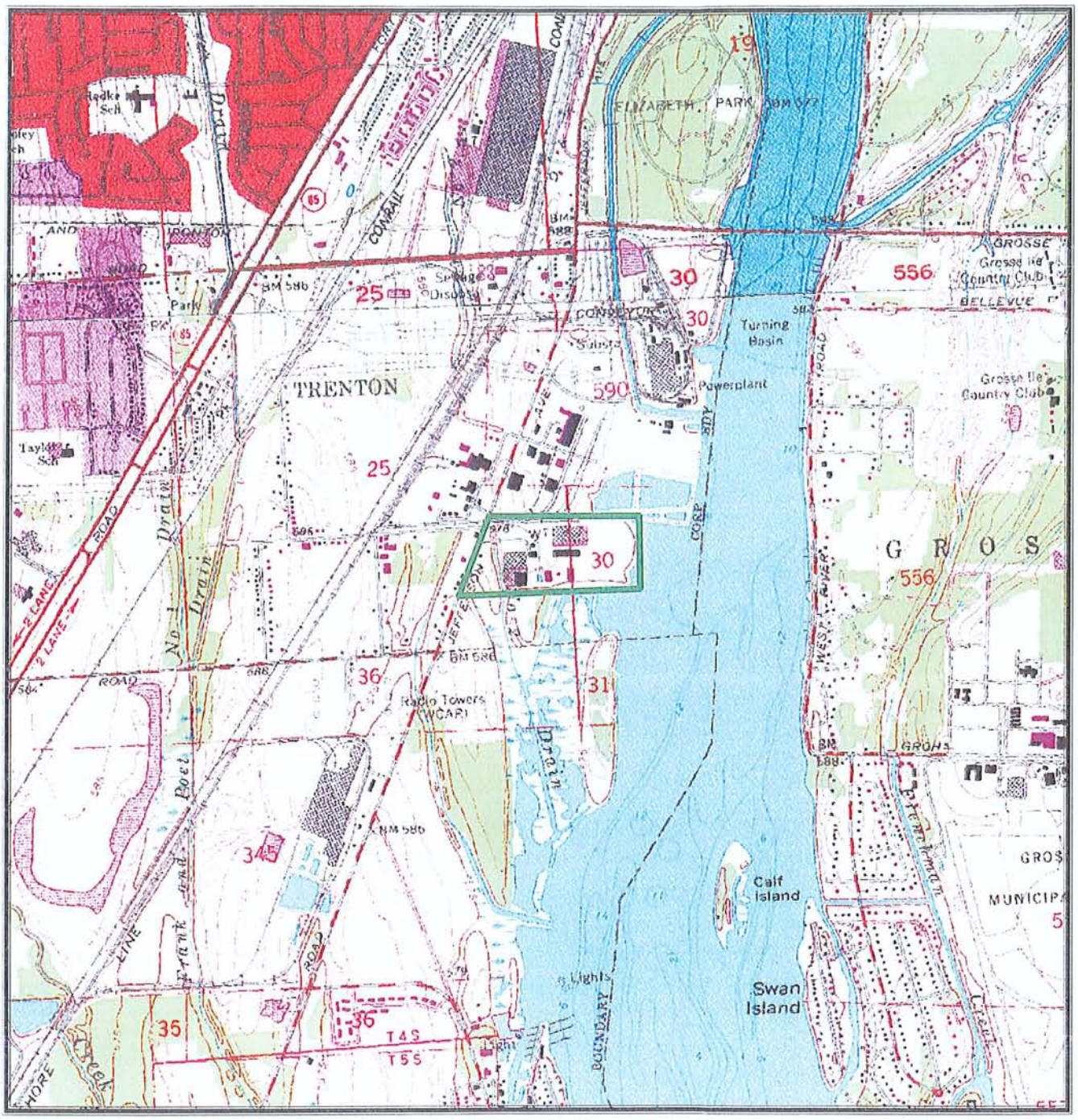
In addition, the geotechnical investigation indicates that existing miscellaneous fill soils present to a depth of at least 16 feet are not suitable for support of the proposed building. It should be assumed for conceptual design that the foundations may bear on spread footings after the removal and replacement of the fill soils or on pile foundations driven to a suitable stratum below the fill.

Section 5
Recommendations

These recommendations presented below are based on CDM's understanding of the environmental condition of the subject property and review of historical information. These recommendations address additional information necessary to identify and quantify surface and subsurface conditions, as they currently exist at the subject property.

- Based on the Restrictive Covenant established for this site, limited activity should be implemented at locations that have historical remedial actions such as removal of source material, underground storage tanks, drums and capping of locations where lead and asbestos contamination existed.

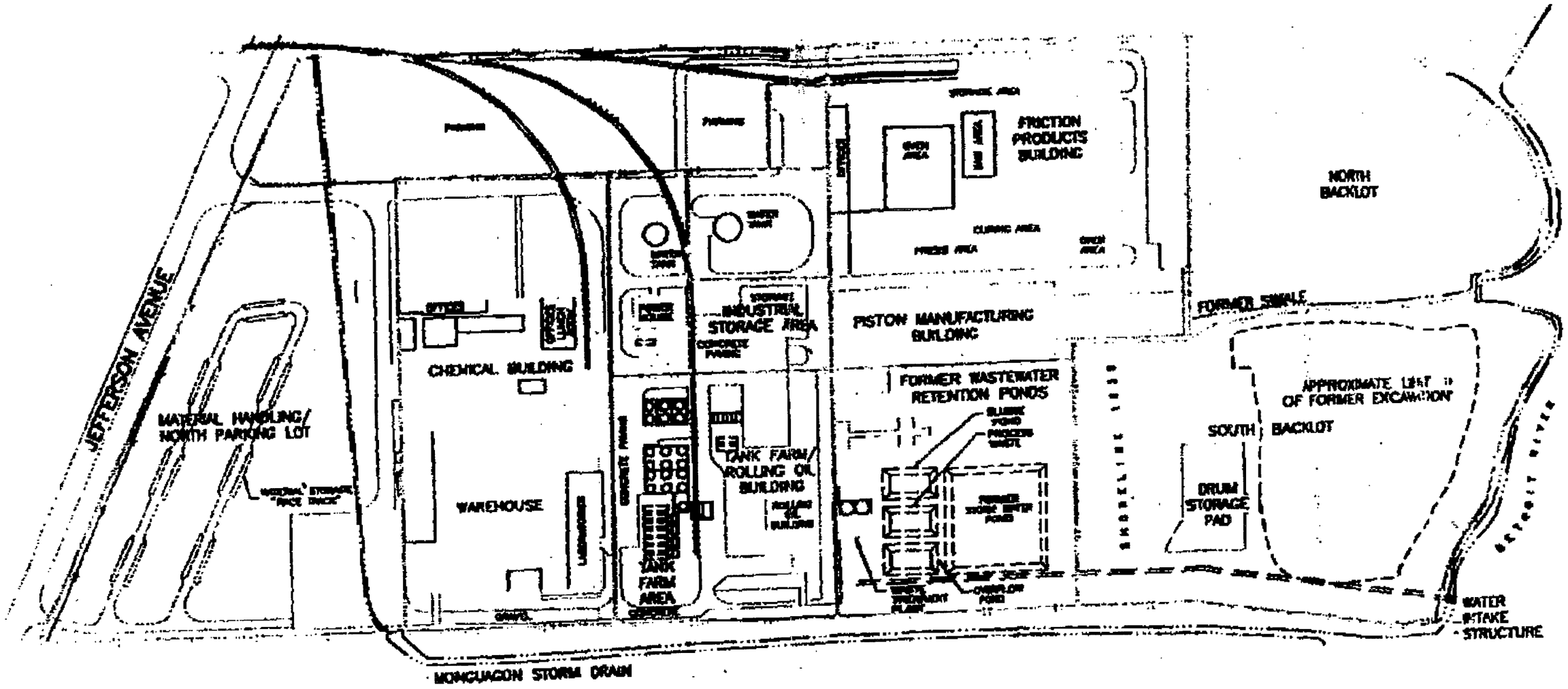
- Additional test borings should be drilled within the footprint of the proposed building location. Each test borings should penetrate any obstruction and be drilled though the lacustrine soils which are expected to exist below the site to bedrock. Plasticity, strength and compressibility testing of the clay should be conducted for final design. In addition, several test borings should be drilled along the alignment of the shoreline protection to assess slope stability and potential settlement of the proposed system.



Taken from the Rockwood and Wyandotte, Michigan
7.5 Series U.S.G.S. Topographic Quadrangles

CDM

FIGURE 2-1
INTERNATIONAL WILDLIFE REFUGE PROJECT
5437 WEST JEFFERSON AVENUE
TRENTON, MICHIGAN

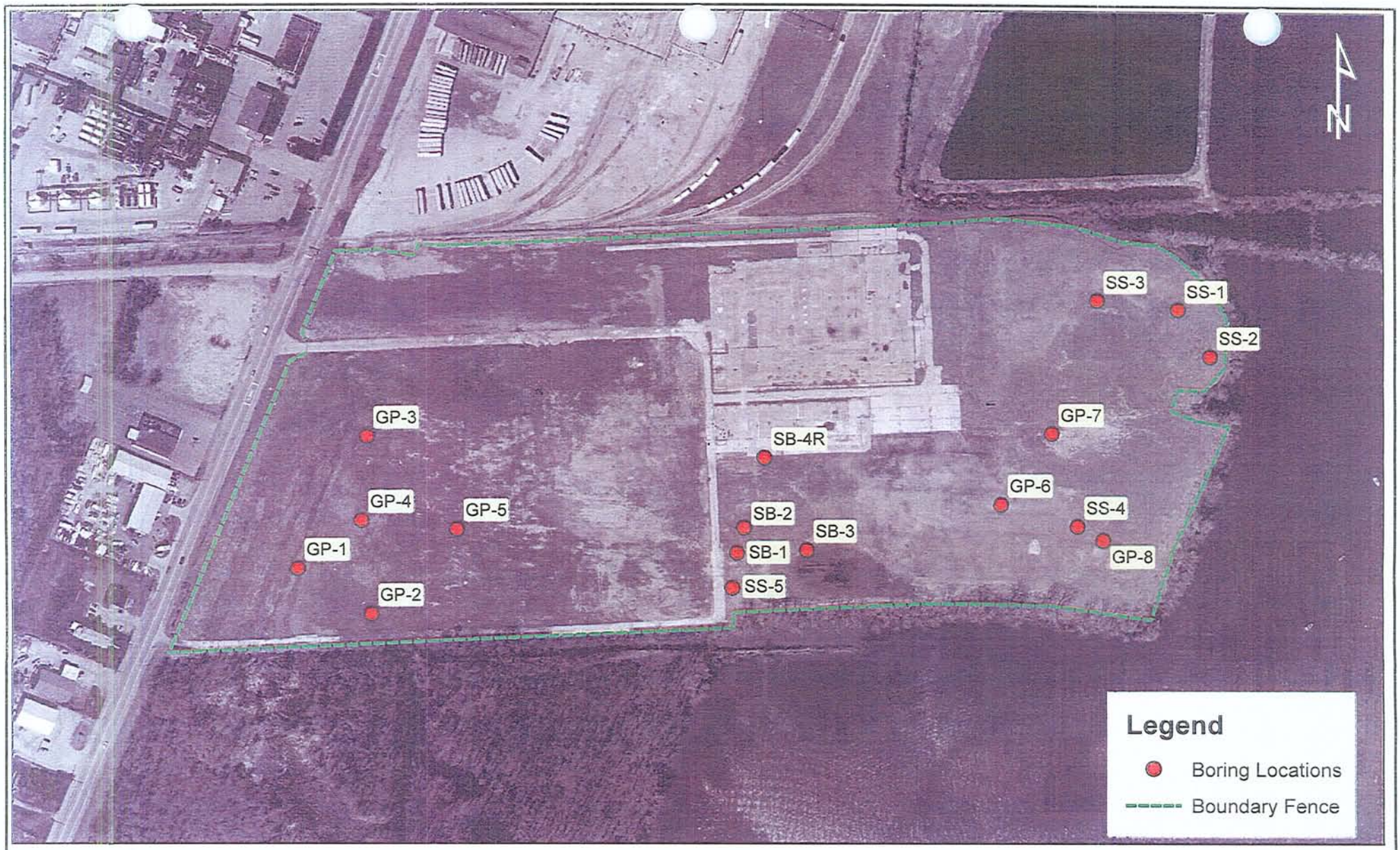


CDM

Figure 2-2 - Former Facility Site Plan

INTERNATIONAL WILDLIFE REFUGE PROJECT
5437 WEST JEFFERSON AVENUE
TRENTON, MICHIGAN

07/20/05



CDM

0 95 190 380 570 760 Feet

Figure 3-1 Soil Boring Locations

INTERNATIONAL WILDLIFE REFUGE PROJECT
5437 WEST JEFFERSON AVENUE
TRENTON, MICHIGAN

07/12/05

CAMP DRESSER & McKEE — Field Borehole Log

Client: Hamilton Anderson Assoc.	Project Name: Trenton Chemical	Project No:	Borehole No: **SB-1** Date: 27-May-05
Project Location: Trenton, MI	Drilling Contractor: Strata Drilling	Drilling Method: "HSA"	Logged By: Ian Gillis/Dan Buss

Depth (Ft.)	Interval	Recovery	Blow Counts	Sample Number	Sample Type	Moisture Content: Dry	Moisture Content: Moist	Moisture Content: Wet	Odor/Gas: Instrument Reading (ppm)	Particle Size Distribution %: Cobbles	Particle Size Distribution %: Gravel	Particle Size Distribution %: Sand	Particle Size Distribution %: Silt	Particle Size Distribution %: Clay	Gradation: Well	Gradation: Poor	Grain Shape: Angular	Grain Shape: SubAngular	Grain Shape: SubRounded	Grain Shape: Rounded	Plasticity: None	Plasticity: Low	Plasticity: Medium	Plasticity: High	Cementation: None	Cementation: Weak	Cementation: Moderate	Cementation: Strong	USCS Group Name or Rock Type	Color	Comments
0																															
0.5																													Top soil	brown	6"-12" Top 6"-12" top soil with brown stones
									PID 17.5																				FILL	gray	12"-18" Fill concrete pieces grey and red
2		0.5	4,7,7,	ss-1	ss	X	X		FID -6.6		1	0.1			x		x				x				x						
3.5																															
4									PID 2.5		X				x		x				x				x				FILL	br /gray	brick, concrete 30% sand dark brown-grey color
		100		ss-2	ss		X		FID 5.8																						
5			7,11,14																												
6									PID 30.5		X	X			x		x				x				x				FILL	dk.gray	bricks and concrete 60%, sand 40%
		90	15,10,12	ss-3	ss			X	FID -2.9																						
8																															
8.5																															
		20	11,10,5	ss-4	ss			X	PID 27.9		X	X			x		x				x				x				FILL	dk.gray	same as above. Dark red & gray brick and gravel fill. Concrete pieces are 80% concrete & brick- 20% sand
10																															
									PID 22.8																						
12		90	10,16,21	ss-5	ss			X	FID 2.6																				FILL	dk.gray	upper 8 " gray medium sand. lower 8" consists of concrete pieces and 10 % sand.
13																															

Total Hole Depth (Ft. BGS): 15.5 Ft. until refusal — Water Encountered at Start of Day (ft. BGS): 2ft 8 inches — Date and Time: 5/27/05 - 10:00 a.m.

Abandonment Method: Natural Collected Material 3' 8"bgs — Water Encountered at Start of Day (ft. BGS): 2.75 ft. — Date and Time: _____

Supplies: _____

Sample Types: Cal=California, SS=Split Spoon, SSS=Sleeved Split Spoon, ST=Shelby Tube, D=Disturbed, A=Auger, HP=HydroPunch, GP=GeoProbe

CAMP DRESSER & McKEE — Field Borehole Log

Client: Hamilton Anderson Assoc. | Project Name: Trenton Chemical | Project No: | Borehole No: **SB-1** | Date: 27-May-05

Project Location: Trenton, MI | Drilling Contractor: Strata Drilling | Drilling Method: HSA | Logged By: Ian Gillis/Dan Buss

Sampling Data						Moisture Content			Odor/ Gas	Particle Size Distribution %					Grada-tion		Grain Shape				Plasticity				Cementation						Comments
Depth (Ft.)	Interval	Recovery	Blow Counts	Sample Number	Sample Type	Dry	Moist	Wet	Instrument Reading (ppm)	Cobbles	Gravel	Sand	Silt	Clay	Well	Poor	Angular	SubAngular	SubRounded	Rounded	None	Low	Medium	High	None	Weak	Moderate	Strong	USCS Group Name or Rock Type	Color	
13																															
14		100	6,17,25	ss-6	ss			X	PID 15 FID-5.8		X	X			x		x				x				x				FILL	Gray	crumbled concrete with 26 % sand fill
15																															REFUSAL at 15.5 FEET bgs

Total Hole Depth (Ft. BGS): 15.5 feet until refusal | Water Encountered at Start of Day (ft. BGS): 2.75 feet | Date and Time: 5/27/05 10:00 A.M.

Abandonment Method: Natural Collapse 3'8" bgs | Water Encountered at Start of Day (ft. BGS): | Date and Time:

Supplies:

Sample Types: Cal=California, SS=Split Spoon, SSS=Sleeved Split Spoon, ST=Shelby Tube, D=Disturbed, A=Auger, HP=HydroPunch, GP=GeoProbe

CAMP DRESSER & McKEE — Field Borehole Log

Client Ha...o. ...nderson Inc.	Project Name: Trenton Chemical site	Borehole No. SB-2
Project Location: Trenton Mi	Drilling Contractor: Strata Drilling	Drilling Method: "HSA"
		Logged By: Gillis/Buss

Depth (Ft.)	Interval	Recovery	Blow Counts	Sample Number	Sample Type	Moisture Content: Dry	Moisture Content: Moist	Moisture Content: Wet	Odor/Gas: Instrument Reading (ppm)	Particle Size Distribution %: Cobbles	Gravel	Sand	Silt	Clay	Gradation: Well	Gradation: Poor	Grain Shape: Angular	SubAngular	SubRounded	Rounded	Plasticity: None	Low	Medium	High	Cementation: None	Weak	Moderate	Strong	USCS Group Name or Rock Type	Color	Comments
0.5																															
1.5		30	6,24,14	ss-1	ss	X			PID 1.4 FID-5.6		X	X	X		x						x								FILL	brown	Silty very f ne sand with some gravel and concrete pieces
2.5																															10% grav 70% sand 20% silt dark brown color
3.5		90	3,6,3	ss-2	ss			X	PID 3.2 FID 186		X	X	X	X	x		x						x		x				FILL	brown	Petroleum odor - same as above dark brown color
5																															20% gravel, 60 % sand and 20 % silt
6		50	7,4,5	ss-3	ss			X	PID2.8 FID 45		X		X	X	x		x						x		x				Fill	brown	Gravelly silty clay fill. 5% gravel, 15% silt 80% clay
7.5																															
8.5		50	5,7,9	ss-4	ss		X				X		X	X															Fill	brown	gravel 5%,silt 15%, Clay 80% .. Some gray mottling.
10																															concrete pieces
11																															
13		50	7,16,24	ss-5	ss		X				X		X	X															Fill	brown	gravel 5%, Silt 15%, Clay 80%. Grey clay over fill

Total Hole Depth (Ft. BGS): 15.5 feet — Water Encountered At Start Of Day (Ft. BGS): _____ — Date and Time: 5/27/2005

Abandonment Method: Natural collapse and backfill — Water Encountered At Start Of Day (Ft. BGS): _____ — Date and Time: 10:25 A.m.

Supplies: _____

Sample Types: Cal=California, SS=Split Spoon, SSS=Sleeved Split Spoon, ST=Shelby Tube, D=Disturbed, A=Auger, HP=HydroPunch, GP=GeoProbe

CAMP DRESSER & McKEE — Field Borehole Log

Client: Hamilton Anderson Assoc.	Project Name: Trenton Chemical	Project No:	Borehole log: SB-2 — 27-May-05
Project Location: Trenton, MI	Drilling Contractor: Strata Drilling	Drilling Method: "HSA"	Logged By: Ian Gillis/Dan Buss

Depth (Ft.)	Interval	Recovery	Blow Counts	Sample Number	Sample Type	Moisture Content: Dry	Moisture Content: Moist	Moisture Content: Wet	Odor/Gas: Instrument Reading (ppm)	Particle Size Distribution %: Cobbles	Particle Size Distribution %: Gravel	Particle Size Distribution %: Sand	Particle Size Distribution %: Silt	Particle Size Distribution %: Clay	Gradation: Well	Gradation: Poor	Grain Shape: Angular	Grain Shape: SubAngular	Grain Shape: SubRounded	Grain Shape: Rounded	Plasticity: None	Plasticity: Low	Plasticity: Medium	Plasticity: High	Cementation: None	Cementation: Weak	Cementation: Moderate	Cementation: Strong	USCS Group Name or Rock Type	Color	Comments
13–14–15			12,22,31	SS-6	SS		X				X		X	X			x				x				x				FILL	brown	brown mottled gray . Gravel 5%, silt 15%, clay 80%. Very angular Gravel in silty clay. Metal piece found.
16			Refusal																												REFUSAL AT 15.5 FEET

Total Hole Depth (Ft. BGS): 15.5 feet — Water Encountered at Start of Day (ft. BGS): NA — Date and Time: NA

Abandonment Method: Natural collapse and backfill — Water Encountered at Start of Day (ft. BGS): _____ — Date and Time: _____

Supplies: _____

Sample Types: Cal=California, SS=Split Spoon, SSS=Sleeved Split Spoon, ST=Shelby Tube, D=Disturbed, A=Auger, HP=HydroPunch, GP=GeoProbe

CAMP DRESSER & McKEE — Field Borehole Log

Client: Ha... t... nderson Assoc. | Project Name: Trenton Chemical Site | Project No: | Borehole No. SB-3

Project Location: Trenton Mi | Drilling Contractor: Strata Drilling | Drilling Method: "HSA" | Logged By: Gillis/Buss

Depth (Ft.)	Interval	Recovery	Blow Counts	Sample Number	Sample Type	Moisture Content: Dry	Moisture Content: Moist	Moisture Content: Wet	Odor/Gas: Instrument Reading (ppm)	Particle Size Distribution %: Cobbles	Gravel	Sand	Silt	Clay	Gradation: Well	Gradation: Poor	Grain Shape: Angular	SubAngular	SubRounded	Rounded	Plasticity: None	Low	Medium	High	Cementation: None	Weak	Moderate	Strong	USCS Group Name or Rock Type	Color	Comments
1 – 2.5		60	6,10,12	ss-1	ss	X	X		PID 0.97 FID -5			X	X		x		x				x				x				FILL	black	Silty sand with glass, brick .sand 90%, silt 10%. 2" top Upper top 4" of sample is a brown silty clay
3.5 – 5		100	4,7,11	ss-2	ss	X	X		PID 3.5 FID 3.8			X	X								x								FILL	black	black layer in contact at upper 3" . Lower sample brown
6 –		100	9,16,19	ss-3	ss	X	X		PID 0.7 FID -5.4				X	X	x							x			x				FILL	brown	Silt 10% clay 90% Fill. Glass-like fragments present.
8 – 8.5 – 10		100	4,7,13	ss-4	ss	X	X		PID 0.35 FID -6.3				X	X									x		x					brown	Silt 10%, clay 90%. Some gray mottling silty clay Possibly native material
11 –		100	7,14,18	ss-5	ss	X	X		PID -2.2 FID -5.0				X	X			x			x		x			x				FILL	brown	Fine glass-like specks, very angular. S: 10% silt clay 90%. Sample 50% brown and 50% clay in the ver
13 – 15		100	9,12,15	ss-6	ss	X	X		PID 0.3 FID -5.1	X			X	X			x			x					x				silty-clay	brn-gry	Silty clay possibly native till. 10% silt and 85% clay

Total Hole Depth (Ft. BGS): 16 feet — Water Encountered At Start Of Day (Ft. BGS): None — Date and Time: 5/27/2005

Abandonment Method: Native collapse to grd. Surface — Water Encountered At Start Of Day (Ft. BGS): _____ — Date and Time: 12:15 P.M.

Supplies: _____

Sample Types: Cal=California, SS=Split Spoon, SSS=Sleeved Split Spoon, ST=Shelby Tube, D=Disturbed, A=Auger, HP=HydroPunch, GP=GeoProbe

CAMP DRESSER & McKEE — Field Borehole Log

Client: Hamilton Anderson Assoc. | Project Name: Trenton Chemical site | Project No: | Borehole No: **SB-3** | Date: 27-May-05

Project Location: Trenton, MI | Drilling Contractor: Strata Drilling | Drilling Method: "HSA" | Logged By: Ian Gillis/Dan Buss

Depth (Ft.)	Interval	Recovery	Blow Counts	Sample Number	Sample Type	Moisture Content: Dry	Moisture Content: Moist	Moisture Content: Wet	Odor/Gas: Instrument Reading (ppm)	Particle Size Distribution %: Cobbles	Gravel	Sand	Silt	Clay	Gradation: Well	Poor	Grain Shape: Angular	SubAngular	SubRounded	Rounded	Plasticity: None	Low	Medium	High	Cementation: None	Weak	Moderate	Strong	USCS Group Name or Rock Type	Color	Comments
13																															
14																															
15																															
16		2"	50 for 2"	ss-7	ss	X	X		PID-3.5 FID-6.6				X	X			x			x	x								TILL	grey	Silty-clay Till. Silt 10%, clay 85% REFUSAL AT 16.0 FEET (No water encountered)
18																															

Total Hole Depth (Ft. BGS): 16.0 Feet | Water Encountered at Start of Day (ft. BGS): _____ | Date and Time: may 27,05

Abandonment Method: Native collapse to grd. Surface | Water Encountered at Start of Day (ft. BGS): _____ | Date and Time: 12:15 P.M.

Supplies: _____

Sample Types: Cal=California, SS=Split Spoon, SSS=Sleeved Split Spoon, ST=Shelby Tube, D=Disturbed, A=Auger, HP=HydroPunch, GP=GeoProbe

CAMP DRESSER & McKEE — Field Borehole Log

Client: Hamilton Anderson @ Assoc. | Project Name: Trenton Chemical site | Project No: | Borehole No. SB-4R

Project Location: Trenton Mi | Drilling Contractor: Strata Drilling | Drilling Method: "HSA" | Logged By: Gillis/Buss

Depth (Ft.)	Interval	Recovery	Blow Counts	Sample Number	Sample Type	Moisture Content: Dry	Moist	Wet	Odor/Gas: Instrument Reading (ppm)	Particle Size Distribution %: Cobbles	Gravel	Sand	Silt	Clay	Gradation: Well	Poor	Grain Shape: Angular	SubAngular	SubRounded	Rounded	Plasticity: None	Low	Medium	High	Cementation: None	Weak	Moderate	Strong	USCS Group Name or Rock Type	Color	Comments
1 – 2.5		40	2,3,9	ss-1	ss			X			X	X			x		x				x				x				FILL	drk.brn	Silty sand fill with clinkers and gravel. TVA-1000 malfunctioning-no PID or FID readings SB-4R water table intercepted 2.5 feet bgs
3.5 – 4		40	8,12,13	ss-2	ss			X X			X	X			x						x				x				FILL	brn-blk	Black wet organic material sand. Odor possibly petroleum upper 3" fine brown sand. Lower black fine sand, clink Strong petroleum odor
5 – 6			4,5,6		ss			X					X	X							x				x						Possibly native material at 6". Strong organic odor. grey clay and black fine sediment.
8			2,2,3		ss			X					X	X								x								brn-gra	Stiff silty brown gray clay. Possibly natural substrate.
10 – 11			6,11,18		ss			X				X																	Fracture Rock	gray	Fractured stone, clay and wet sand. Change from clay to wet stone at about 11.5 feet.
13 – 15			25,50 (1")		ss			X																					ROCK		Strong rain and wind about mid-way through boring REFUSAL OCCURRED AT 14.5 FEET (STONE)

Total Hole Depth (Ft. BGS): 14.5 Feet — Water Encountered At Start Of Day (Ft. BGS): 2.5 — Date and Time: 5/27/2005

Abandonment Method: Collapse of borehole — Water Encountered At Start Of Day (Ft. BGS): — Date and Time: 14:00 P.M.

Supplies:

Sample Types Cal=California, SS=Split Spoon, SSS=Sleeved Split Spoon, ST=Shelby Tube, D=Disturbed, A=Auger, HP=HydroPunch, GP=GeoProbe

CDM

Field Borehole Log

Client:	Hamilton Anderson Associates
Project Location:	5437 West Jefferson Avenue
Project Name:	Phase II Environmental Assessment
Project No:	
Drilling Contractor:	Terra
Drilling Crew:	Chad
Drilling Method:	Truck Mounted GeoProbe
Borehole No:	GP-1
Planned Easting (ft):	
Planned Northing (ft):	

Logged By:	Daniel F. Buss/Yolanda Walton
Date:	May 26, 2005
Water Depth (ft)	Not Reached
Total Depth (ft)	Refusal at 16 Feet bgs
Field Screening	ATM-1000 PID/FID
Additional Comments	Sample GP-1-1 @ 0-2 ft, bgs GP-1-2 @ 16 ft bgs Southwestern area of planned pond

Depth (ft bgs)	Recovery (in)	Sample ID	Sample Time	Structure Type	Moisture Content			Consistency					PID Reading (ppm)	Description
					Dry	Moist	Wet	Very Soft	Soft	Firm	Hard	Very Hard		
0.5 1.0 1.5 2.0		GP-1-1	10:00A.M.		X						X		38.0	Reddish-brown stiff clay brown clay encountered at 2 feet. FID 5.37
2.5 3.0 3.5 4.0													24.0	Reddish-brown stiff clay brown clay encountered at 2-3 feet. From 3-4 feet stiff grayish black clay. FID 3.75
4.5 5.0 5.5 6.0					X					X			5.6	Brown -grey clay. At 6 foot interval a moist sandy clay was encountered. FID 4.8.
6.5 7.0 7.5 8.0 8.5 9.0 9.5 10.0						X			X				6.9	Brown sandy clay encountered at 8 feet. Brown wet sand mix with a stiff brown clay. FID 5.8
10.5 11.0 11.5 12.0					X								0.2	Sandy Clay. FID 5.3

* Planned Coordinates are in Michigan GeoRef (meters)

ALL CONTENTS INCLUDED IN THIS BOREHOLE LOG ARE DRAFT AND SUBJECT TO REVISION
ENFORCEMENT CONFIDENTIAL/PRE-DECISIONAL DRAFT

CDM

Field Borehole Log

Client:	Hamilton Anderson Associates
Project Location:	5437 West Jefferson Avenue
Project Name:	Phase II Environmental Assessment
Project No:	
Drilling Contractor:	Terra
Drilling Crew:	Chad
Drilling Method:	Truck Mounted GeoProbe
Borehole No:	GP-1
Planned Easting (ft):	
Planned Northing (ft):	

Logged By:	Daniel F. Buss/Yolanda Walton
Date:	May 26, 2005
Water Depth (ft)	Not Reached
Total Depth (ft)	Refusal at 16 Feet bgs
Field Screening	ATM-1000 PID/FID
Additional Comments	Sample GP-1-1 @ 0-2 ft,bgs GP-1-2 @ 16 ft. bgs Southwestern area of planned pond

Depth (ft bgs)	Recovery (in)	Sample ID	Sample Time	Structure Type	Moisture Content			Consistency					PID Reading (ppm)	Description
					Dry	Moist	Wet	Very Soft	Soft	Firm	Hard	Very Hard		
12.5 13.0 13.5 14.0							X		X				0.6	Sandy brown clay 12-14 feet. FID 5.3. From 14-16 feet wet gray brown sandy Clay. Rock encountered at 16 feet with refusal. FID 5.3 at 16 feet.
14.5 15.0 15.5 16.0		GP-1-2	10:00A.M.				X		X			X	0.7	14-16 feet wet gray brown sandy Clay. Rock encountered at 16 feet with refusal. FID 5.3. Sample GP-1-2 collected at 16 feet
16.5														
17.0														

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ENFORCEMENT CONFIDENTIAL/PRE-DECISIONAL DRAFT

CDM

Field Borehole Log

Client:	Hamilton Anderson Associates
Project Location:	5437 West Jefferson Avenue
Project Name:	Phase II Environmental Assessment
Project No:	
Drilling Contractor:	Terra
Drilling Crew:	Chad
Drilling Method:	Truck Mounted GeoProbe
Borehole No:	GP-2
Planned Easting (ft):	
Planned Northing (ft):	

Logged By:	Daniel F. Buss/Yolanda Walton
Date:	May 26, 2005
Water Depth (ft)	Not Reached
Total Depth (ft)	Refusal at 13 Feet bgs
Field Screening	ATM-1000 PID/FID
Additional Comments	Sample GP-2-1 @ 0-4 ft, bgs GP-2-2 @ 16 ft. bgs Southeastern area of planned pond

Depth (ft bgs)	Recovery (in)	Sample ID	Sample Time	Structure Type	Moisture Content: Dry	Moisture Content: Moist	Moisture Content: Wet	Consistency: Very Soft	Consistency: Soft	Consistency: Firm	Consistency: Hard	Consistency: Very Hard	PID Reading (ppm)	Description
0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0		GP-2-1	10:55 A.M.		X				X				0.4	Brown sand FID 6.5. Stiff brown clay and at 4 feet white gravel approximately 1-2 inches in size.
4.5, 5.0, 5.5, 6.0					X								0.3	4-6 feet very stiff homogeneous brown clay. FID 5.5
6.5, 7.0, 7.5, 8.0					X					X			0.8	Stiff brown clay observed from 6 to 8 feet. FID 5.4
8.5, 9.0, 9.5, 10.0					X						X		0.3	Stiff grey brown clay. FID 5.8 Sample GP-2-2 Collected at 13 feet. 10:55 A.M.
11.0, 12.0, 12.5, 13.0		GP-2-2	10:55 A.M.		X								0.2	Stiff grey brown to 13 feet. FID 5.9. REFUSAL at 13 ft.

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CDM

Field Borehole Log

Client:	Hamilton Anderson Associates
Project Location:	5437 West Jefferson Avenue
Project Name:	Phase II Environmental Assessment
Project No:	
Drilling Contractor:	Terra
Drilling Crew:	Chad
Drilling Method:	Truck Mounted GeoProbe
Borehole No:	GP-3
Planned Easting (ft):	
Planned Northing (ft):	

Logged By:	Daniel F. Buss/Yolanda Walton
Date:	May 26, 2005
Water Depth (ft)	Not Reached
Total Depth (ft)	Refusal 14.5 feet bgs
Field Screening	ATM-1000 PID/FID
Additional Comments	Sample GP-3-1 @ 2.5 ft.bgs GP-3-2 @ 9-10 bgs ft northern area of planned pond

Depth (ft bgs)	Recovery (in)	Sample ID	Sample Time	Structure Type	Moisture Content			Consistency					PID Reading (ppm)	Description
					Dry	Moist	Wet	Very Soft	Soft	Firm	Hard	Very Hard		
0.5 1.0 1.5					X					X			1.7	Silty clay, gravel rootlets present to 1.5 feet. FID 3.5
2.0		GP-3-1	3:30 P		X				X				1.2	Dark brown sandy, fill present FID 4.1
2.5 3.0					X					X			0.8	Brown silty clay with glass fragments and clinkers. All fill. FID 4.3
3.5 4.0 4.5					X					X			0.2	Silty clay fill with brick, rootlets present. FID 0.9
5.0 5.5					X					X			0.8	5-6 Ft layers of dark brown sand mottled with white streaks. FID 3.5
6.0 6.5 7.0 7.5 8.0														No recovery 6-8 feet
8.5 9.0 9.5		GP-3-2					X		X				0.9	Coarse brown sand/fine gravel (15%) gray mottling. Rootlets. FID 4.3
10.0 10.5 11.0 11.5 12.0						X			X				0.1	Coarse sand gravel size limestone clay-silty sand fill possible road base.

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CDM

Field Borehole Log

Client:	Hamilton Anderson Associates
Project Location:	5437 West Jefferson Avenue
Project Name:	Phase II Environmental Assessment
Project No:	
Drilling Contractor:	Terra
Drilling Crew:	Chad
Drilling Method:	Truck Mounted GeoProbe
Borehole No:	GP-3
Planned Easting (ft):	
Planned Northing (ft):	

Logged By:	Daniel F. Buss/Yolanda Walton
Date:	May 26, 2005
Water Depth (ft)	Not Reached
Total Depth (ft)	Refusal 14.5 feet bgs
Field Screening	ATM-1000 PID/FID
Additional Comments	Sample GP-3-1 @ 2.5 ft, GP-3-2 @ 9=10 ft northern area of planned pond

Depth (ft bgs)	Recovery (in)	Sample ID	Sample Time	Structure Type	Moisture Content			Consistency					PID Reading (ppm)	Description
					Dry	Moist	Wet	Very Soft	Soft	Firm	Hard	Very Hard		
12.5														
13.0														
13.5					X					X			0.1	Entire sample not native material at this 14-14.5 foot interval. Same as 10-12 feet. Refusal @ 14.5 ft. FID 5.6
14.0														
14.5														
15.0														
15.5														

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ENFORCEMENT CONFIDENTIAL/PRE-DECISIONAL DRAFT

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Field Borehole Log

Client:	Hamilton Anderson Associates
Project Location:	5437 West Jefferson Avenue
Project Name:	Phase II Environmental Assessment
Project No:	
Drilling Contractor:	Terra
Drilling Crew:	Chad
Drilling Method:	Truck Mounted GeoProbe
Borehole No:	GP-4
Planned Easting (ft):	
Planned Northing (ft):	

Logged By:	Daniel F. Buss/Yolanda Walton
Date:	May 26, 2005
Water Depth (ft)	Not Reached
Total Depth (ft)	Refusal 13.5 feet bgs
Field Screening	ATM-1000 PID/FID
Additional Comments	Sample GP-4-1 @ 0-4 ft, bgs GP-4-2 @ 13 ft bgs middle area of planned pond

Depth (ft bgs)	Recovery (in)	Sample ID	Sample Time	Structure Type	Moisture Content			Consistency					PID Reading (ppm)	Description
					Dry	Moist	Wet	Very Soft	Soft	Firm	Hard	Very Hard		
0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0		GP-4-1	12:10 A.M.			X				X			0.6	Dry dense brown clay. FID 6.2. Organic 6 in black layer @ 3.5-4 Feet
4.5, 5.0, 5.5						X					X		1.0	Light brown very stiff clay FID 5.2
6.0, 6.5, 7.0, 7.5, 8.0					X						X		0.7	Gray brown very stiff clay. FID 5.0
8.5, 9.0, 9.5					X						X		0.6	Stiff gray clay. FID 4.8
10.0, 11.0						X					X		1.0	Stiff dry gray clay. FID 5.2
12.0, 14.0		GP-4-2	12:10 A.M.										0.7	Gray moist clay mixed with sandy clay. FID 4.8. Refusal at 13.5 feet.
16.0														

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Field Borehole Log

Client:	Hamilton Anderson Associates
Project Location:	5437 West Jefferson Avenue
Project Name:	Phase II Environmental Assessment
Project No:	
Drilling Contractor:	Terra
Drilling Crew:	Chad
Drilling Method:	Truck Mounted GeoProbe
Borehole No:	GP-4
Planned Easting (ft):	
Planned Northing (ft):	

Logged By:	Daniel F. Buss/Yolanda Walton
Date:	May 26, 2005
Water Depth (ft)	Not Reached
Total Depth (ft)	Refusal 13.5 feet bgs
Field Screening	ATM-1000 PID/FID
Additional Comments	Sample GP-4-1 @ 0-4 ft, bgs GP-4-2 @ 13 ft bgs middle area of planned pond

Depth (ft bgs)	Recovery (in)	Sample ID	Sample Time	Structure Type	Moisture Content			Consistency					PID Reading (ppm)	Description
					Dry	Moist	Wet	Very Soft	Soft	Firm	Hard	Very Hard		
0.5														
1.0		GP-4-2	12:105A.M.			X			X				0.7	Gray moist sandy clay mixed with a darker brown sand at 13.5 feet. Refusal at 13.5 feet
1.5														
2.0														
2.5														
3.0														
3.5														
4.0														
4.5														
5.0														
5.5														
6.0														
6.5														
7.0														
7.5														
8.0														
8.5														
9.0														
9.5														
10.0														
10.5														
11.0														
11.5														
12.0														

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Field Borehole Log

Client:	Hamilton Anderson Associates
Project Location:	5437 West Jefferson Avenue
Project Name:	Phase II Environmental Assessment
Project No:	
Drilling Contractor:	Terra
Drilling Crew:	Chad
Drilling Method:	Truck Mounted GeoProbe
Borehole No:	GP-5
Planned Easting (ft):	
Planned Northing (ft):	

Logged By:	Daniel F. Buss/Ian Gillis
Date:	May 26, 2005
Water Depth (ft)	Not Reached
Total Depth (ft)	Refusal 15.5 feet bgs
Field Screening	ATM-1000 PID/FID
Additional Comments	Sample GP-5-1 @ 9 ft, bgs GP-5-2 @ 4 ft bgs eastern area of planned pond

Depth (ft bgs)	Recovery (in)	Sample ID	Sample Time	Structure Type	Moisture Content			Consistency					PID Reading (ppm)	Description
					Dry	Moist	Wet	Very Soft	Soft	Firm	Hard	Very Hard		
0.5, 1.0, 1.5					X				X				0.3	Light brown silty sand. FID 6.3. Possible fill clay
2.0, 2.5, 3.0, 3.5, 4.0		GP-5-2	1:30 P.M.			X					X			Gray brown stiff clay. Possible fill clay
4.5														
5.0, 5.5, 6.0, 6.5, 7.0, 7.5, 8.0					X					X			0.6	Dry sandy clay above a stiff dry gray clay. FID 5.5. Also at 6 feet concrete pieces observed.
8.5		GP-5-1			X					X			1.6	Brown sand lens above 9 feet below stiff clay FID 2.2 GP-5-1-2 collected 9 ft.
9.0, 9.5, 10.0, 10.5, 11.0, 11.5, 12.0					X					X			1.4	Brown gray sand, brown clay between brown gray stiff clay, gravel FID 4.0.

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Field Borehole Log

Client:	Hamilton Anderson Associates
Project Location:	5437 West Jefferson Avenue
Project Name:	Phase II Environmental Assessment
Project No:	
Drilling Contractor:	Terra
Drilling Crew:	Chad
Drilling Method:	Truck Mounted GeoProbe
Borehole No:	GP-5
Planned Easting (ft):	
Planned Northing (ft):	

Logged By:	Daniel F. Buss/Ian Gillis
Date:	May 26, 2005
Water Depth (ft)	Not Reached
Total Depth (ft)	Refusal 15.5 feet bgs
Field Screening	ATM-1000 PID/FID
Additional Comments	Sample GP-5-1 @ 9 ft, bgs GP-5-2 @ 4 ft bgs eastern area of planned pond

Depth (ft bgs)	Recovery (in)	Sample ID	Sample Time	Structure Type	Moisture Content			Consistency					PID Reading (ppm)	Description
					Dry	Moist	Wet	Very Soft	Soft	Firm	Hard	Very Hard		
12.5 13.0 13.5 14.0 14.5 15.0 15.5 16.0							X	X					NA	Wet sandy gray clay mud. Also till embedded with about 50% gravel. Rock encountered at 15.5 feet resulting in refusal.

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Field Borehole Log

Client:	Hamilton Anderson Associates
Project Location:	5437 West Jefferson Avenue
Project Name:	Phase II Environmental Assessment
Project No:	
Drilling Contractor:	Terra
Drilling Crew:	Chad
Drilling Method:	Truck Mounted GeoProbe
Borehole No:	GP-6
Planned Easting (ft):	
Planned Northing (ft):	

Logged By:	Daniel F. Buss/Ian Gillis
Date:	May 26, 2005
Water Depth (ft)	Not Reached
Total Depth (ft)	insufficient sample 14 feet
Field Screening	ATM-1000 PID/FID
Additional Comments	Sample GP-6-1 @ 7.5-8 ft, bgs GP-6-2 @ 13-14 ft bgs Southeastern Swale area

Depth (ft bgs)	Recovery (in)	Sample ID	Sample Time	Structure Type	Moisture Content			Consistency					PID Reading (ppm)	Description
					Dry	Moist	Wet	Very Soft	Soft	Firm	Hard	Very Hard		
0.5 1.0 1.5 2.0					X				X				4.5	Top soil sandy silty clay rootlets present @ 1-2.5 feet brown silty clay and limestone gravel (5-10%). PID 0.5 @ 0-1 ft. FID 4.5-5.0
2.5 3.0 3.5 4.0						X			X				0.5	Light brown sand with 40% gravel. FID 3.5
4.5 5.0 5.5 6.0 6.5 7.0 7.5 8.0		GP-6-1					X		X				0.6	Light brown gravelly sand 40% gravel. FID 6.5. 7.5 -8 feet sandy black organic material. GP-6-1 Collected 7.5 t0 8 feet bgs.
8.5 9.0 9.5 10.0 10.5 11.0							X	X					2.6	From 8.0 feet to 11.5 feet mottled black organic sludge. FID 490.
11.5 12.0							X	X					NA	11.5 to 12 feet brown sandy clay 10 % stone, organic material with rootlets

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CDM

Field Borehole Log

Client:	Hamilton Anderson Associates
Project Location:	5437 West Jefferson Avenue
Project Name:	Phase II Environmental Assessment
Project No:	
Drilling Contractor:	Terra
Drilling Crew:	Chad
Drilling Method:	Truck Mounted GeoProbe
Borehole No:	GP-6
Planned Easting (ft):	
Planned Northing (ft):	

Logged By:	Daniel F. Buss/Ian Gillis
Date:	May 26, 2005
Water Depth (ft)	Not Reached
Total Depth (ft)	insufficient sample 14 feet
Field Screening	ATM-1000 PID/FID
Additional Comments	Sample GP-6-1 @ 7.5-8 ft bgs, GP-6-2 @ 13-14 ft bgs Southeastern Swale area

Depth (ft bgs)	Recovery (in)	Sample ID	Sample Time	Structure Type	Moisture Content: Dry	Moisture Content: Moist	Moisture Content: Wet	Consistency: Very Soft	Consistency: Soft	Consistency: Firm	Consistency: Hard	Consistency: Very Hard	PID Reading (ppm)	Description
12.5							X	X						50% recovery, sandy clay
13.0														
13.5		GP-6-2	4:35 P.M.				X	X						From 13-14 feet sandy silty clay mottled grey (potentially native material). Layered material. Not enough sample for PID and FID readings.
14.0														
14.5														

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CDM

Field Borehole Log

Client:	Hamilton Anderson Associates
Project Location:	5437 West Jefferson Avenue
Project Name:	Phase II Environmental Assessment
Project No:	
Drilling Contractor:	Terra
Drilling Crew:	Chad
Drilling Method:	Truck Mounted GeoProbe
Borehole No:	GP-7
Planned Easting (ft):	
Planned Northing (ft):	

Logged By:	Daniel F. Buss
Date:	May 26, 2005
Water Depth (ft)	Not Reached
Total Depth (ft)	Refusal at 16.4 ft. bgs
Field Screening	ATM-1000 PID/FID
Additional Comments	Sample GP-7-1 @ 14 ft bgs, GP-7-2 @ 16 ft bgs northeastern Swale area

Depth (ft bgs)	Recovery (in)	Sample ID	Sample Time	Structure Type	Moisture Content			Consistency					PID Reading (ppm)	Description
					Dry	Moist	Wet	Very Soft	Soft	Firm	Hard	Very Hard		
0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0					X						X		NA	1 foot brown soil followed by stiff brown clay 3-inch layer powdery white material in brown clay yellow streaks near 4 foot depth in brown clay
4.5, 5.0, 5.5					X						X		NA	Brown clay
6.0, 6.5, 7.0, 7.5, 8.0							X			X			NA	Brownish gray stiff clay fro 8 to 11.5 feet bgs
8.5, 9.0, 9.5, 10.0, 10.5, 11.0, 11.5, 12.0						X				X			NA	Black sand with some gravel @ 11.5 feet (organic odor)

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CDM

Field Borehole Log

Client:	Hamilton Anderson Associates
Project Location:	5437 West Jefferson Avenue
Project Name:	Phase II Environmental Assessment
Project No:	
Drilling Contractor:	Terra
Drilling Crew:	Chad
Drilling Method:	Truck Mounted GeoProbe
Borehole No:	GP-7
Planned Easting (ft):	
Planned Northing (ft):	

Logged By:	Daniel F. Buss
Date:	May 26, 2005
Water Depth (ft)	Not Reached
Total Depth (ft)	Refusal at 16.4 ft bgs
Field Screening	ATM-1000 PID/FID
Additional Comments	Sample GP-7-1 @ 14 ft bgs, GP-7-2 @ 16 ft bgs northeastern Swale area

Depth (ft bgs)	Recovery (in)	Sample ID	Sample Time	Structure Type	Moisture Content			Consistency					PID Reading (ppm)	Description
					Dry	Moist	Wet	Very Soft	Soft	Firm	Hard	Very Hard		
12.5							X			X				Wet gravel
13.0														
13.5		GP-7-1	6:20 P.M.			X			X				3.3	Black organic material with sand interspersed with brown areas FID 127 @ 14 ft. where GP-7-1 was collected.
14.0														
14.5														
15.0														
15.5														
16.0														
16.5		GP-7-2	6:30 P.M.				X		X				3.2	Black sludge-like material mixed with sand and gravel. FID 330. Refusal at 16.4 feet bgs

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CDM

Field Borehole Log

Client:	Hamilton Anderson Associates
Project Location:	5437 West Jefferson Avenue
Project Name:	Phase II Environmental Assessment
Project No:	
Drilling Contractor:	Terra
Drilling Crew:	Chad
Drilling Method:	Truck Mounted GeoProbe
Borehole No:	GP-8
Planned Easting (ft):	
Planned Northing (ft):	

Logged By:	Daniel F. Buss
Date:	May 26, 2005
Water Depth (ft)	Not Reached
Total Depth (ft)	17.5 feet bgs (wet flowing mud)
Field Screening	ATM-1000 PID/FID
Additional Comments	Sample GP-8-1 @ 6-7ft bgs, GP-8-2 @ 11.5-12 ft bgs southeast fill area

Depth (ft bgs)	Recovery (in)	Sample ID	Sample Time	Structure Type	Moisture Content			Consistency					PID Reading (ppm)	Description
					Dry	Moist	Wet	Very Soft	Soft	Firm	Hard	Very Hard		
					X				X				1.0	Top soil -6 in.- 1.5 ft fill brick, clinker, wood 50% coarse sand/gravel. FID 5.1
0.5														
1.0					X					X			1.7	1.5-2 ft brown mottled silty clay 20% sand with pieces of shale FID 4.9
1.5														
2.0														
2.5						X				X			NA	Silty-sand pieces of glass within this fill material
3.0														
3.5						X				X			1.7	Fill material -clinkers in a black sand, red ,brown, gray clay matrix FID 4.3
4.0														
					X					X				
4.5														
5.0														
5.5														
6.0														
6.5		GP-8-1				X				X			5.3	Fill Clinkers, metal, black-brown substrate 6-7 ft pieces of glass FID 4.3 Sample GP-8-1 collected at 6-7 Feet bgs.
7.0														
7.5														
8.0														
8.5														
9.0														
9.5														
10.0							X		X				1.5	Gray clay layers of black/brown sand/gravel Sheen on water FID 130
10.5														
11.0														
11.5		3P-8-2												
12.0														

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CDM

Field Borehole Log

Client:	Hamilton Anderson Associates
Project Location:	5437 West Jefferson Avenue
Project Name:	Phase II Environmental Assessment
Project No:	
Drilling Contractor:	Terra
Drilling Crew:	Chad
Drilling Method:	Truck Mounted GeoProbe
Borehole No:	GP-8
Planned Easting (ft):	
Planned Northing (ft):	

Logged By:	Daniel F. Buss
Date:	May 26, 2005
Water Depth (ft)	Not Reached
Total Depth (ft)	17.5 feet bgs (wet flowing mud)
Field Screening	ATM-1000 PID/FID
Additional Comments	Sample GP-8-1 @ 6-7ft bgs, GP-8-2 @ 11.5-12 ft bgs southeast fill area

Depth (ft bgs)	Recovery (in)	Sample ID	Sample Time	Structure Type	Moisture Content			Consistency					PID Reading (ppm)	Description
					Dry	Moist	Wet	Very Soft	Soft	Firm	Hard	Very Hard		
12.5 13.0 13.5 14.0 14.5 15.0 15.5 16.0							X		X				8.0	From 15.5 -16 feet similar to 8-12 ft. wood, pieces of metal FID 51. Gray clay layers of black/brown sand/gravel.
16.5														
17.0 5.5 6.0 6.5 7.0 7.5 8.0														
8.5														
9.0 9.5 10.0 10.5 11.0 11.5 12.0														

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INPUT DATA IN BLUE TEXT AREAS ONLY!!!

Unconfined Compressive Strength Determination

PROJECT: RTI Laboratories Misc.
LOCATION: CDM Wildlife Refuge
CLIENT: RTI Laboratories Misc.

TESTED BY: GD
CHECKED BY: SNC
DATE: 6/10/2005

Boring: 3
Sample Depth: 10'
Moisture Content (%): 12.8
Dry Density (pcf): 123.8

Sample Description:

Diameter: 1.350 inches
Length: 2.650 inches
Volume (cu. Ft.): 0.0022
Area (square inches): 1.43

Load, P (lb)	Δh, (in.)	Strain, ε	Area, A (sq. in.)	σ, P/A (psf)
12.3	0.011	0.00415	1.437	1232
58.1	0.091	0.03434	1.482	5644
64.9	0.113	0.04264	1.495	6250
77.3	0.15	0.05660	1.517	7336
82	0.168	0.06340	1.528	7726
87.5	0.199	0.07509	1.548	8141
88.7	0.218	0.08226	1.560	8189
91	0.225	0.08491	1.564	8377
91	0.257	0.09698	1.585	8267
88.7	0.276	0.10415	1.598	7994
87.5	0.289	0.10906	1.607	7842
85.3	0.308	0.11623	1.620	7584
82	0.312	0.11774	1.622	7278
80.7	0.317	0.11962	1.626	7147
77.3	0.324	0.12226	1.631	6825
75	0.335	0.12642	1.639	6591
71.6	0.343	0.12943	1.644	6271
70.4	0.357	0.13472	1.654	6128
67	0.362	0.13660	1.658	5819
68.3	0.375	0.14151	1.667	5899

INPUT DATA IN BLUE TEXT AREAS ONLY!!

Unconfined Compressive Strength Determination

PROJECT: RTI Laboratories Misc.
LOCATION: CDM Wildlife Refuge
CLIENT: RTI Laboratories Misc.

TESTED BY: GD
CHECKED BY: SNC
DATE: 6/10/2005

Boring: 3 **Moisture Content (%):** 13.9
Sample Depth: 15 **Dry Density (pcf):** 121.9

Sample Description:

Diameter: 1.350 inches **Volume (cu. Ft.):** 0.0023
Length: 2.770 inches **Area (square inches):** 1.43

Load, P (lb)	Δh, (in.)	Strain, ε	Area, A (sq. in.)	σ, P/A (psf)
20.4	0.012	0.00433	1.438	2043
54.6	0.052	0.01877	1.459	5390
57.9	0.059	0.02130	1.463	5701
71.6	0.089	0.03213	1.479	6971
99	0.158	0.05704	1.518	9391
102.4	0.172	0.06209	1.526	9662
103.6	0.181	0.06534	1.532	9741
107	0.183	0.06606	1.533	10053
112.7	0.195	0.07040	1.540	10539
116.1	0.213	0.07690	1.551	10781
119.4	0.22	0.07942	1.555	11057
123	0.239	0.08628	1.567	11306
126.4	0.256	0.09242	1.577	11540
129.7	0.263	0.09495	1.582	11809
133.1	0.276	0.09964	1.590	12055
136.7	0.296	0.10686	1.603	12282
140	0.32	0.11552	1.618	12457
144.5	0.338	0.12202	1.630	12763
146.8	0.351	0.12671	1.639	12897
150.3	0.37	0.13357	1.652	13100

153.7	0.393	0.14188	1.668	13268
			1.431	#VALUE!

Unconfined Compressive Strength Determination

Load, P (lb)	Δh, (in.)	Strain, ε	Area, A (sq. in.)	σ_v P/A (psf)
		#######	#VALUE!	#VALUE!
		#######	#VALUE!	#VALUE!
		#######	#VALUE!	#VALUE!
		#######	#VALUE!	#VALUE!
		#######	#VALUE!	#VALUE!
		#######	#VALUE!	#VALUE!
		#######	#VALUE!	#VALUE!
		#######	#VALUE!	#VALUE!
		#######	#VALUE!	#VALUE!
		#######	#VALUE!	#VALUE!
		#######	#VALUE!	#VALUE!
		#######	#VALUE!	#VALUE!
		#######	#VALUE!	#VALUE!
		#######	#VALUE!	#VALUE!
		#######	#VALUE!	#VALUE!
		#######	#VALUE!	#VALUE!
		#######	#VALUE!	#VALUE!

INPUT DATA IN BLUE TEXT AREAS ONLY!!!

Unconfined Compressive Strength Determination

PROJECT:	RTI Laboratories Misc.	**TESTED BY:**	GD
LOCATION:	CDM Wildlife Refuge	**CHECKED BY:**	SNC
CLIENT:	RTI Laboratories Misc.	**DATE:**	6/10/2005

Boring:	4	**Moisture Content (%):**	21.3
Sample Depth:	10'	**Dry Density (pcf):**	106.1
Sample Description:			

Diameter:	1.360 inches	**Volume (cu. Ft.):**	0.0023
Length:	2.750 inches	**Area (square inches):**	1.45

Load, P (lb)	Δh, (in.)	Strain, ε	Area, A (sq. in.)	σ, P/A (psf)
		#######	#VALUE!	#VALUE!
		#######	#VALUE!	#VALUE!
		#######	#VALUE!	#VALUE!
		#######	#VALUE!	#VALUE!
		#######	#VALUE!	#VALUE!
		#######	#VALUE!	#VALUE!
		#######	#VALUE!	#VALUE!
		#######	#VALUE!	#VALUE!
		#######	#VALUE!	#VALUE!
3.3	0.01	0.00364	1.458	326
4.7	0.017	0.00618	1.462	463
8.1	0.029	0.01055	1.468	794
10.1	0.037	0.01345	1.473	988
17	0.079	0.02873	1.496	1637
18.4	0.119	0.04327	1.518	1745
20.4	0.132	0.04800	1.526	1925
21.8	0.177	0.06436	1.553	2022
23.8	0.193	0.07018	1.562	2194
25.2	0.313	0.11382	1.639	2214
27.3	0.325	0.11818	1.647	2386

28.6	0.381	0.13855	1.686	2442
			1.453	#VALUE!

Unconfined Compressive Strength Determination

Load, P (lb)	Δh, (in.)	Strain, ε	Area, A (sq. in.)	σ, P/A (psf)
		#######	#VALUE!	#VALUE!
		#######	#VALUE!	#VALUE!
		#######	#VALUE!	#VALUE!
		#######	#VALUE!	#VALUE!
		#######	#VALUE!	#VALUE!
		#######	#VALUE!	#VALUE!
		#######	#VALUE!	#VALUE!
		#######	#VALUE!	#VALUE!
		#######	#VALUE!	#VALUE!
		#######	#VALUE!	#VALUE!
		#######	#VALUE!	#VALUE!
		#######	#VALUE!	#VALUE!
		#######	#VALUE!	#VALUE!
		#######	#VALUE!	#VALUE!
		#######	#VALUE!	#VALUE!
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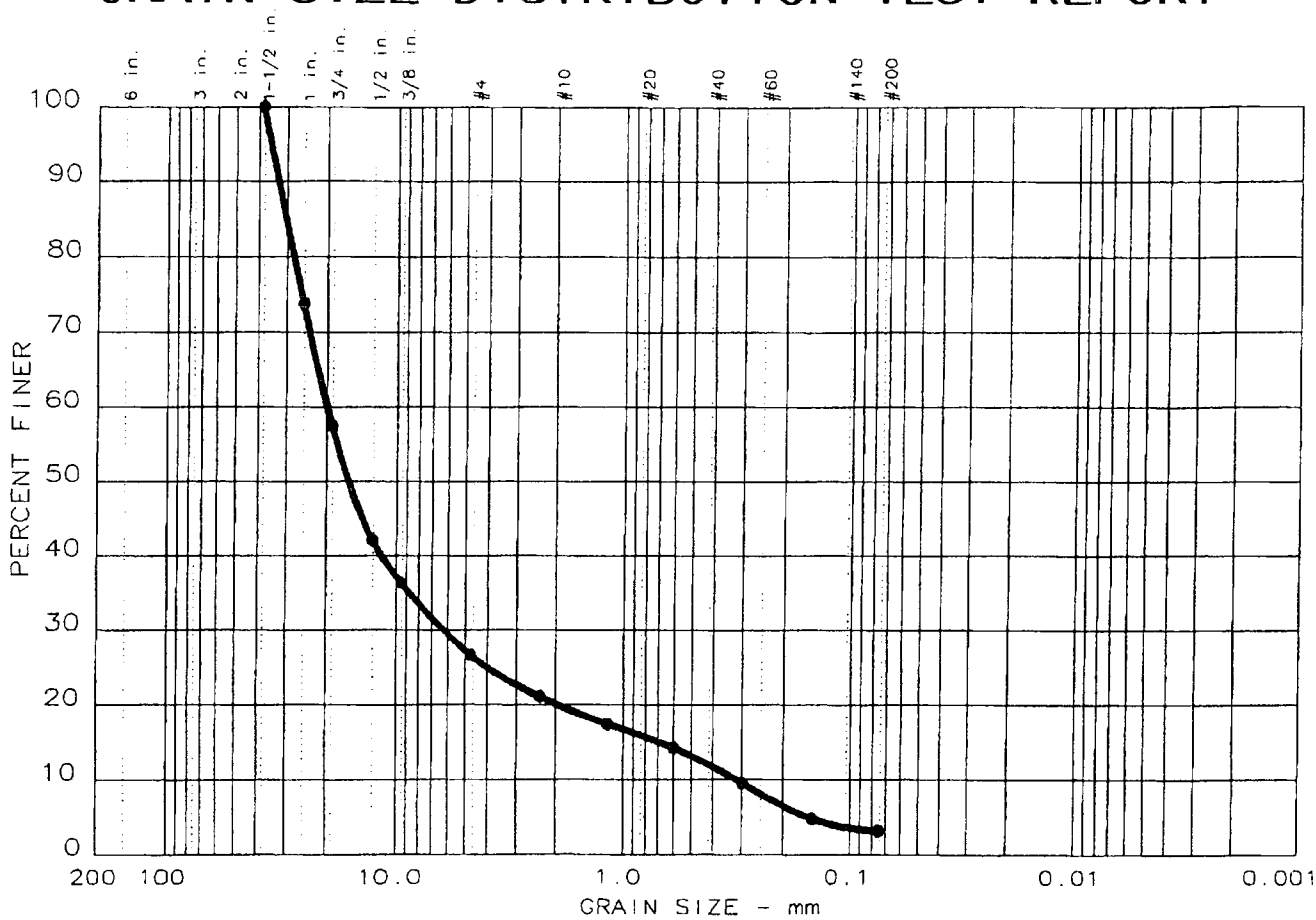
		#######	#VALUE!	#VALUE!

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	73.3	23.5	3.2	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			30.3	20.0	16.1	6.17	0.685	0.317	6.03	63.1

MATERIAL DESCRIPTION	USCS	AASHTO
● Mixed Gravel,Concrete & Brick-So Sand-Tr Silt	GP	

Project No.: PQ 50149
Project: RTI Labs.Misc. RTI Project #05-04859
● Location: CDM-Wildlife Refuge

Date: 6/7/2005

Remarks:
Boring # 1
Depth 2.5'

GRAIN SIZE DISTRIBUTION TEST REPORT

soil and materials engineers, inc.

Fig. No.: _____

GRAIN SIZE DISTRIBUTION TEST REPORT

	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	73.2	24.6	2.2	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			33.7	27.4	24.7	7.04	0.498	0.223	8.13	123.0

MATERIAL DESCRIPTION	USCS	AASHTO
● Mixed Gravel,Concrete & Brick-So Sand-Tr Silt	GP	

Project No.: PQ 50149
Project: RTI Labs.Misc. RTI Project #05-04859
● Location: CDM-Wildlife Refuge

Date: 6/7/2005

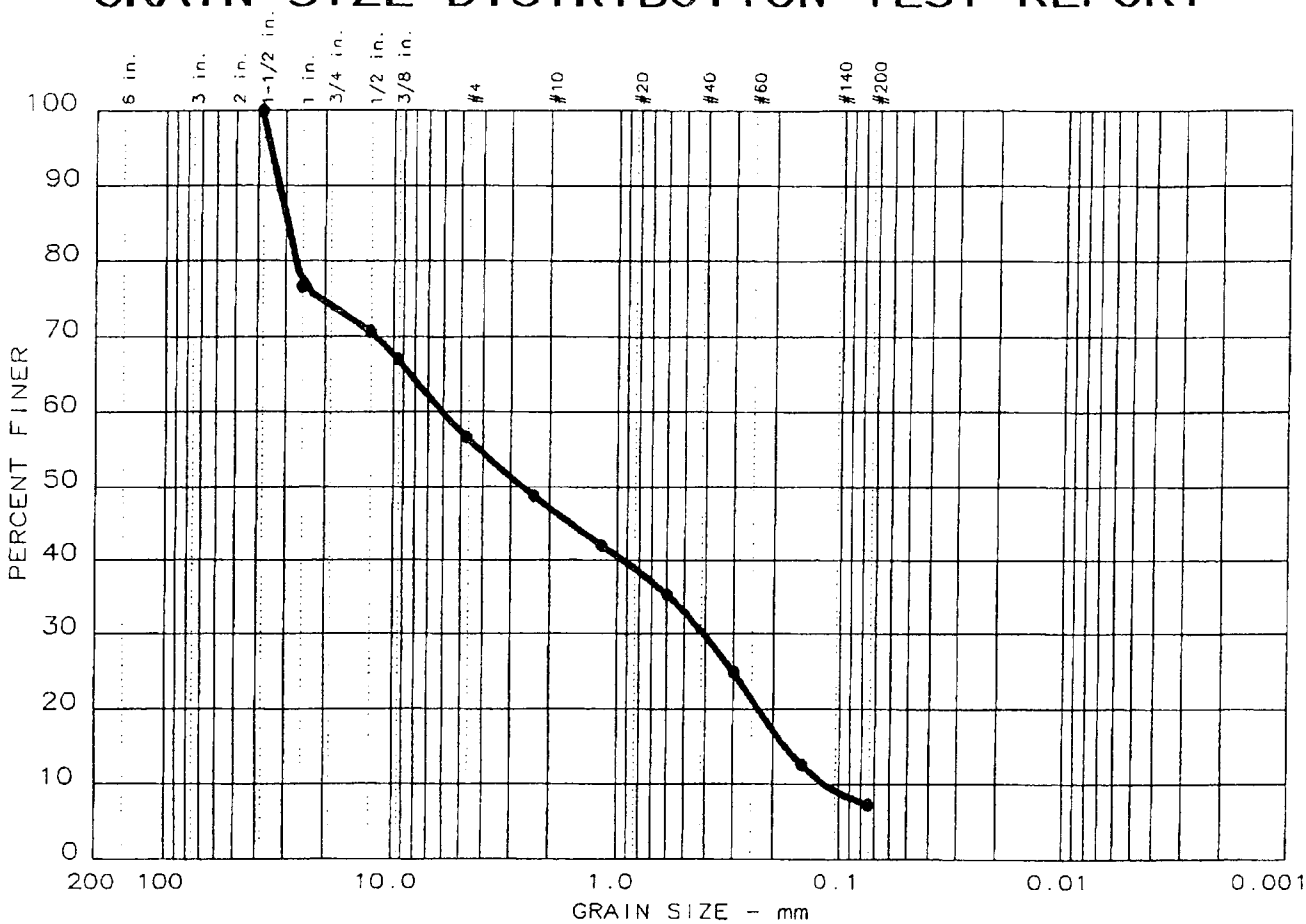
Remarks:
Boring # 1
Depth 5.0'

GRAIN SIZE DISTRIBUTION TEST REPORT

soil and materials engineers, inc.

Fig. No.: _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	43.3	49.4	7.3	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			29.4	6.00	2.65	0.406	0.175	0.117	0.23	51.3

MATERIAL DESCRIPTION	USCS	AASHTO
● Gravelly Sand-Tr/So Silt-Tr Concrete & Brick	SW-SM	

Project No.: PQ 50149
Project: RTI Labs.Misc. RTI Project #05-04859
● Location: CDM-Wildlife Refuge

Date: 6/7/2005

Remarks:
Boring # 1
Depth 7.5'

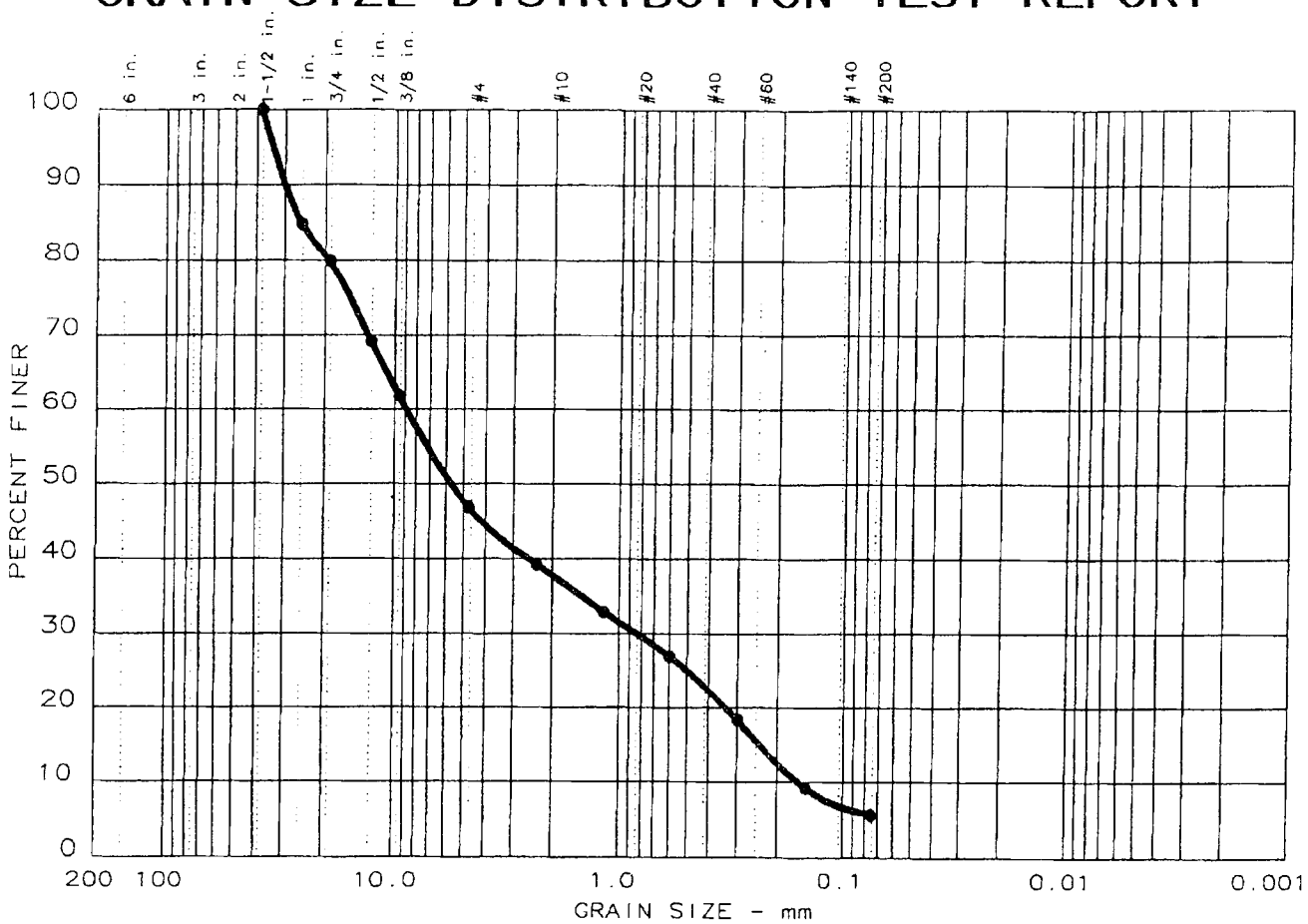
GRAIN SIZE DISTRIBUTION TEST REPORT

soil and materials engineers, inc.

Fig. No.: _____

0 00144

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	53.2	41.2	5.6	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			25.4	8.81	5.68	0.831	0.237	0.162	0.48	54.4

MATERIAL DESCRIPTION	USCS	AASHTO
● Sandy Gravel-Tr/So Silt-Tr Concrete & Brick	GW-GM	

Project No.: PQ 50149
Project: RTI Labs.Misc. RTI Project #05-04859
● Location: CDM-Wildlife Refuge

Date: 6/7/2005

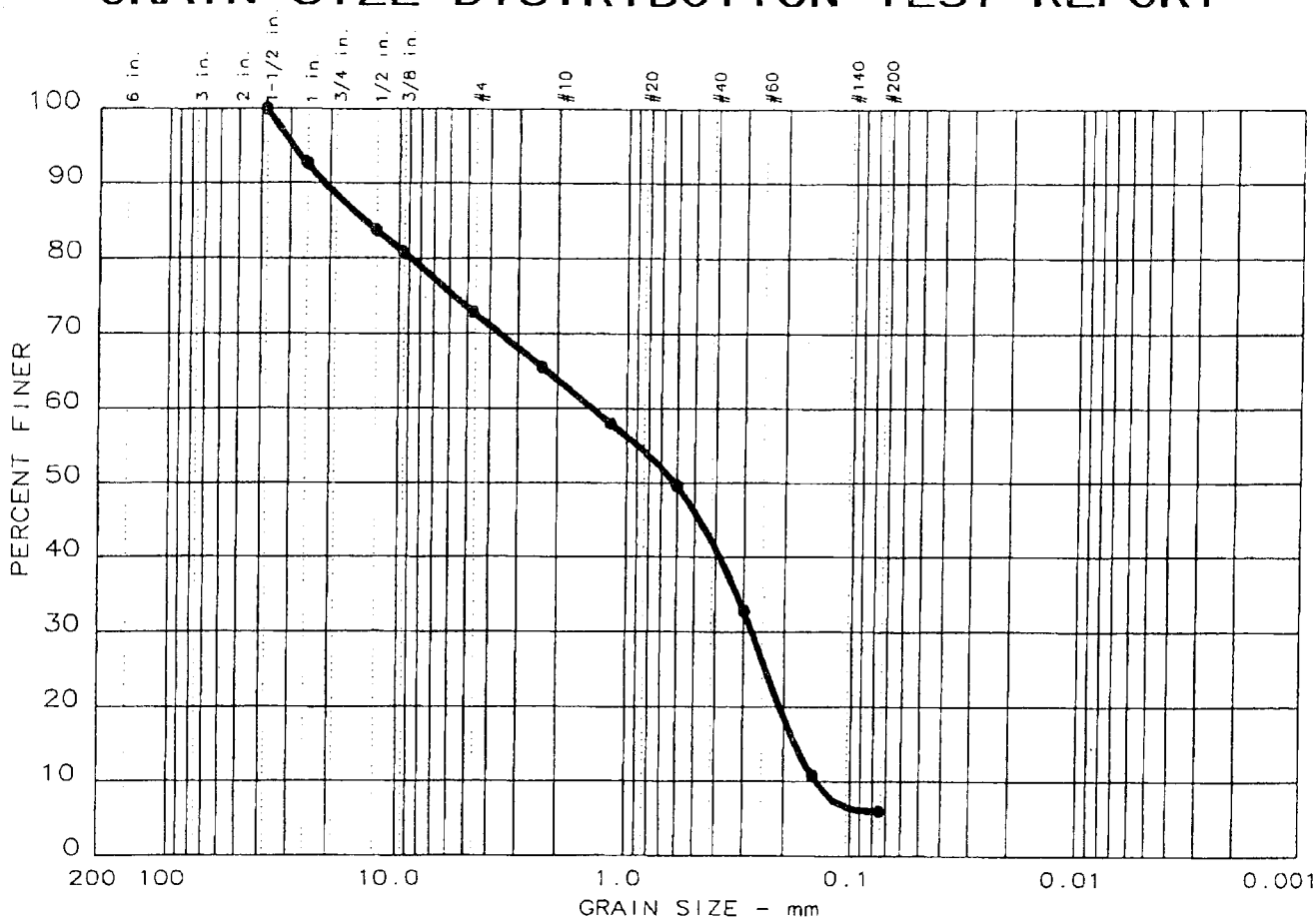
Remarks:
Boring # 1
Depth 10.0'

GRAIN SIZE DISTRIBUTION TEST REPORT
soil and materials engineers, inc.

Fig. No.: _____

0.00238

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	27.1	66.9	6.0	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			14.1	1.41	0.610	0.275	0.177	0.144	0.37	9.8

MATERIAL DESCRIPTION	USCS	AASHTO
● Gravelly Sand-Tr/So Silt-Tr Concrete & Brick	SW-SM	

Project No.: PQ 50149
Project: RTI Labs.Misc. RTI Project #05-04859
● Location: CDM-Wildlife Refuge

Date: 6/7/2005

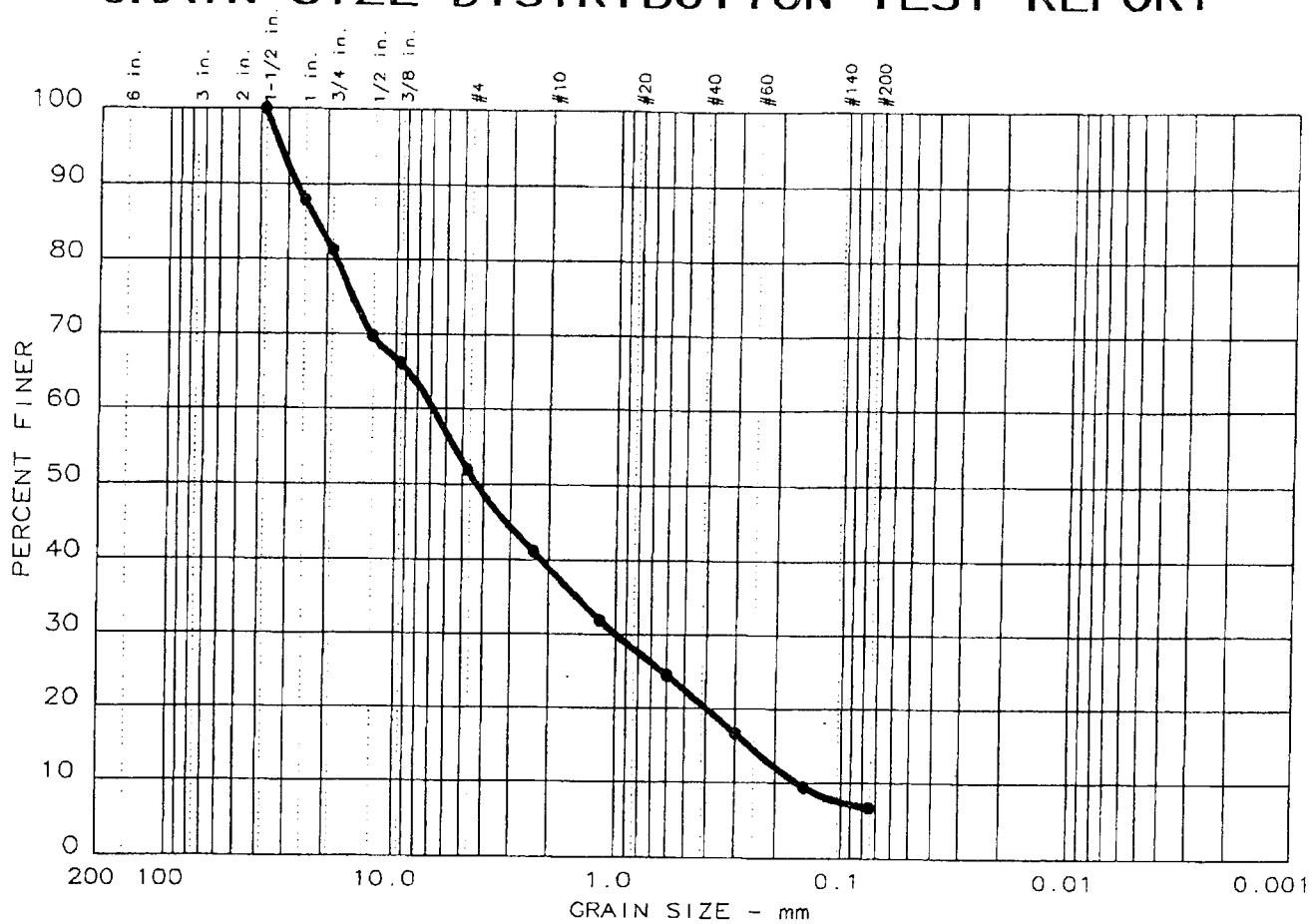
Remarks:
Boring # 1
Depth 12.5'

GRAIN SIZE DISTRIBUTION TEST REPORT

soil and materials engineers, inc.

Fig. No.: _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	48.1	45.2	6.7	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			22.1	6.76	4.27	1.00	0.260	0.160	0.92	42.2

MATERIAL DESCRIPTION	USCS	AASHTO
● Sandy Gravel-Tr/So Silt-Tr Concrete & Brick	GW-GM	

Project No.: PQ 50149
Project: RTI Labs.Misc. RTI Project #05-04859
● Location: CDM-Wildlife Refuge

Date: 6/7/2005

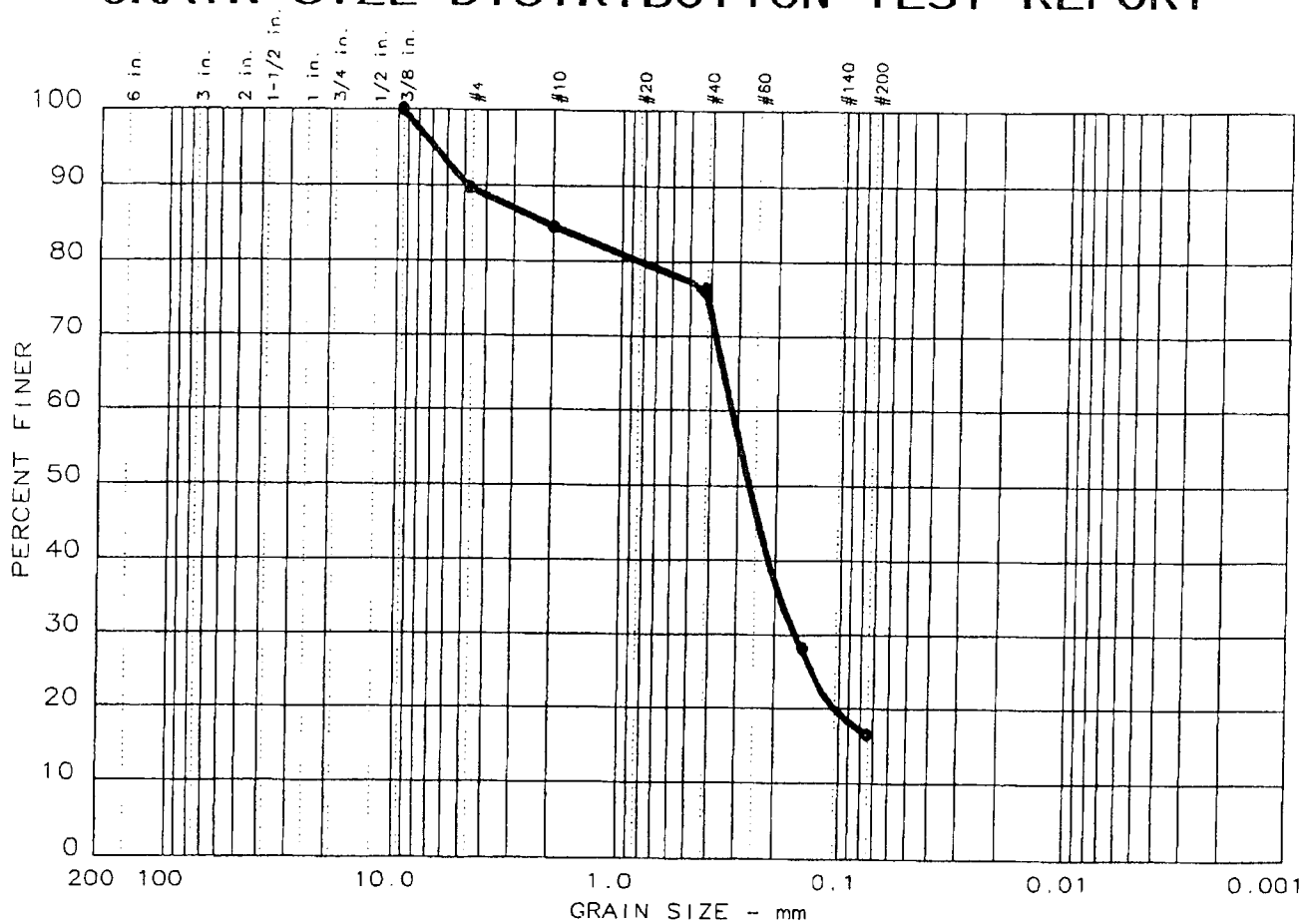
Remarks:
Boring # 1
Depth 15.0'

GRAIN SIZE DISTRIBUTION TEST REPORT

soil and materials engineers, inc.

Fig. No.: _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	10.3	73.1	16.6	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			2.11	0.320	0.265	0.162				

MATERIAL DESCRIPTION	USCS	AASHTO
● Fine/Med.Sand-So Silt-Tr/So Gravel & Organics	SM	

Project No.: PQ 50149
Project: RTI Labs.Misc. RTI Project #05-04859
● Location: CDM-Wildlife Refuge

Date: 6/8/2005

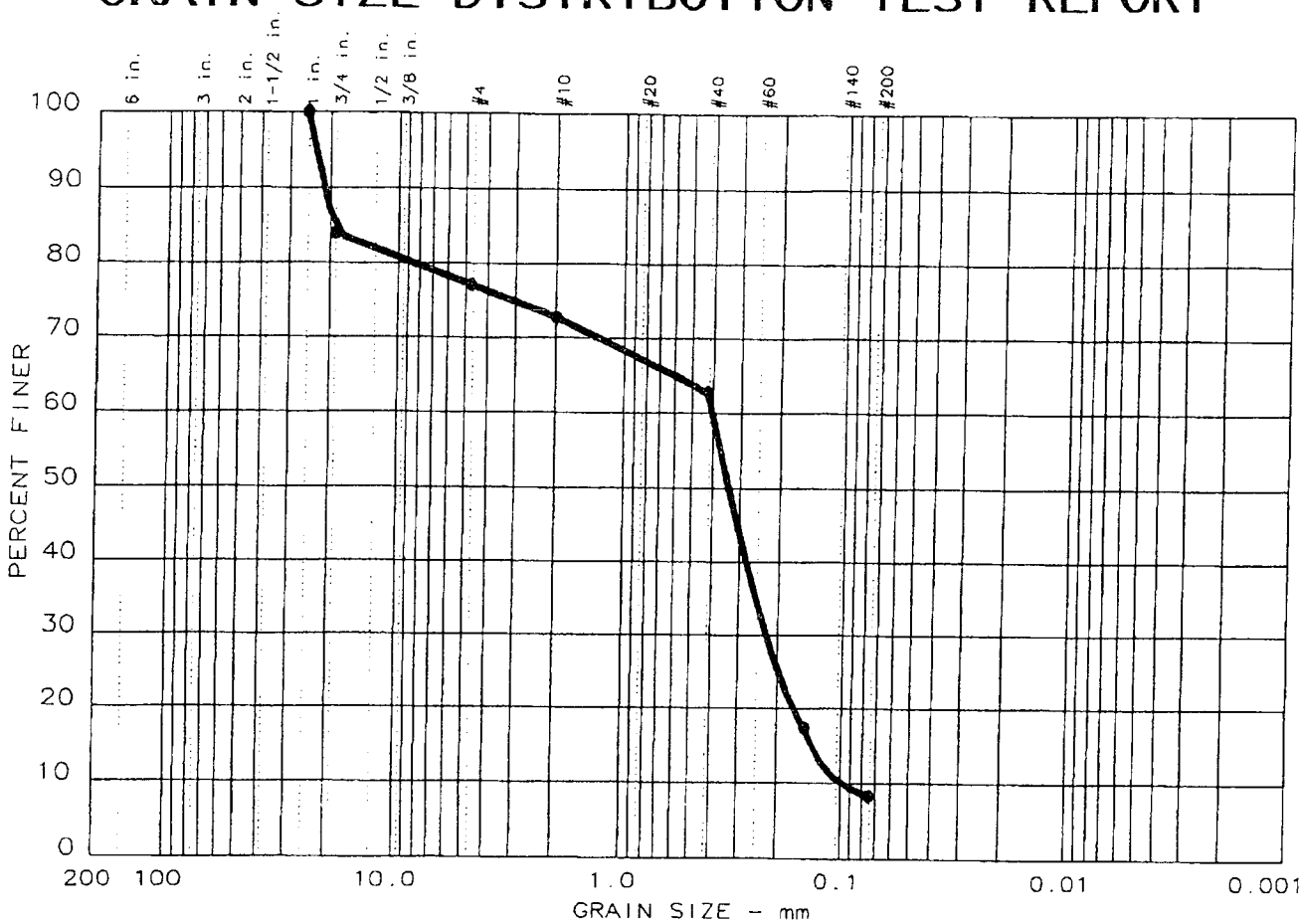
Remarks:
Boring # 2
Depth 2.5'

GRAIN SIZE DISTRIBUTION TEST REPORT

soil and materials engineers, inc.

Fig. No.: _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	22.9	68.8	8.3	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			19.4	0.404	0.337	0.224	0.137	0.0968	1.29	4.2

MATERIAL DESCRIPTION	USCS	AASHTO
● Fine/Med.Sand-So Gravel-Tr/So Silt-Tr organics	SP-SM	

Project No.: PQ 50149
Project: RTI Labs.Misc. RTI Project #05-04859
● Location: CDM-Wildlife Refuge

Date: 6/8/2005

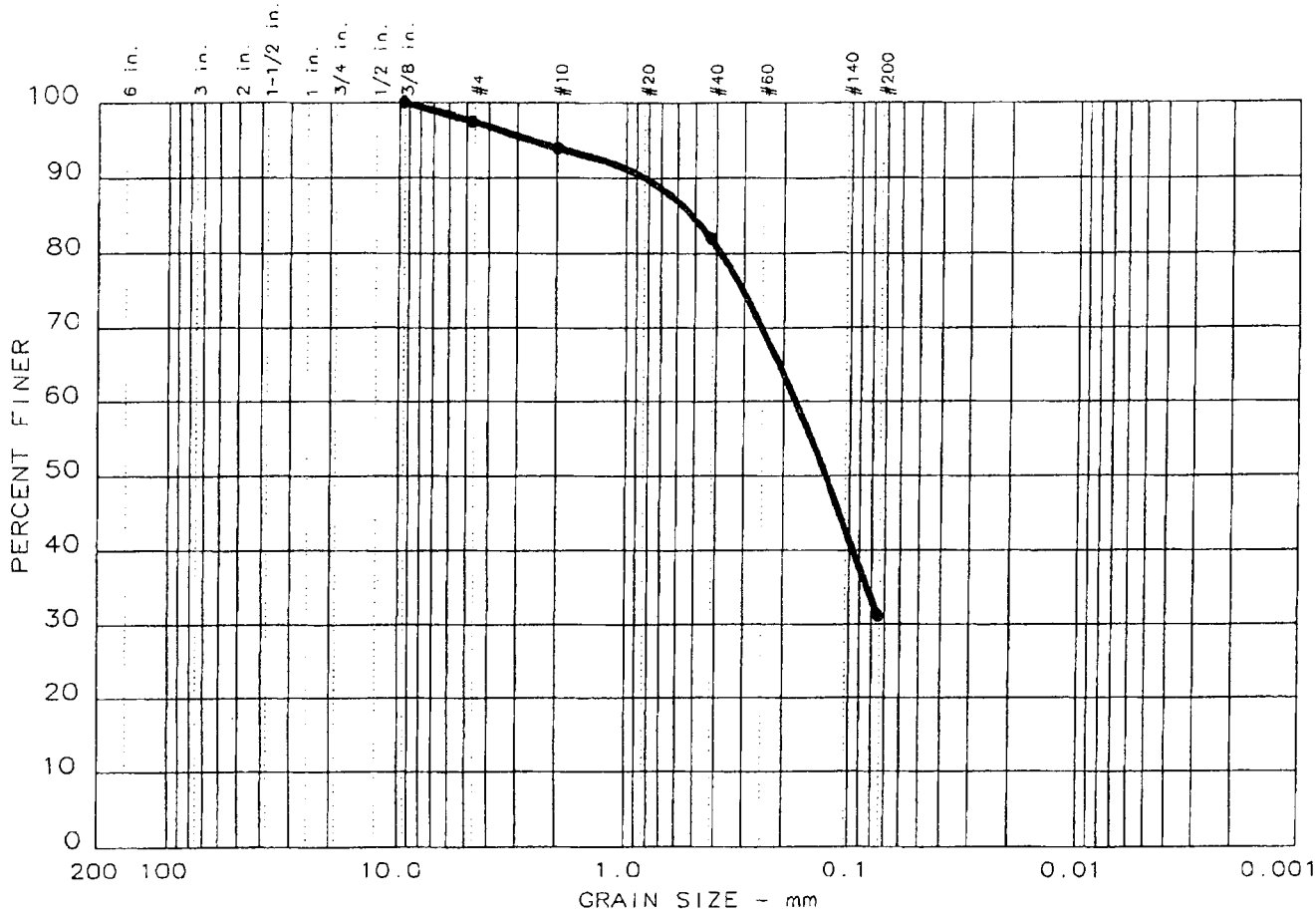
Remarks:
Boring # 2
Depth 5.0'

GRAIN SIZE DISTRIBUTION TEST REPORT

soil and materials engineers, inc.

Fig. No.: _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	2.6	66.3	31.1	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	39	20	0.513	0.176	0.129					

MATERIAL DESCRIPTION	USCS	AASHTO
● Clayey Sand-Tr Gravel	SC	

Project No.: PQ 50149
Project: RTI Labs.Misc. RTI Project #05-04859
● Location: CDM-Wildlife Refuge

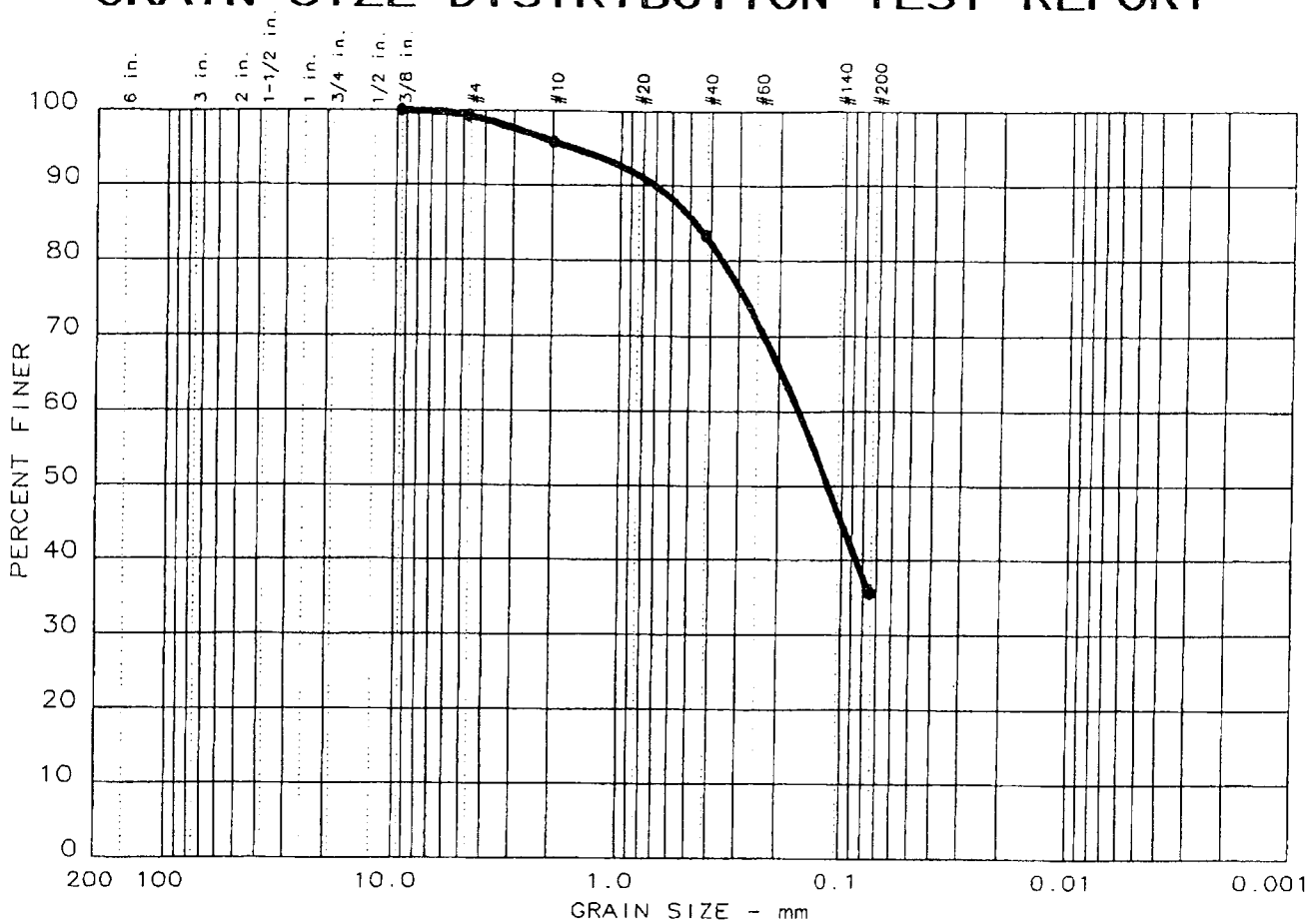
Date: 6/10/2005

Remarks:
Boring # 2
Depth 7.5'

GRAIN SIZE DISTRIBUTION TEST REPORT
soil and materials engineers, inc.

Fig. No.: _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	0.7	63.7	35.6	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	30	13	0.468	0.162	0.117					

MATERIAL DESCRIPTION	USCS	AASHTO
● Clayey F/M Sand-Trace Gravel	SC	

Project No.: PQ 50149
Project: RTI Labs.Misc. RTI Project #05-04859
● Location: CDM-Wildlife Refuge

Date: 6-9-05

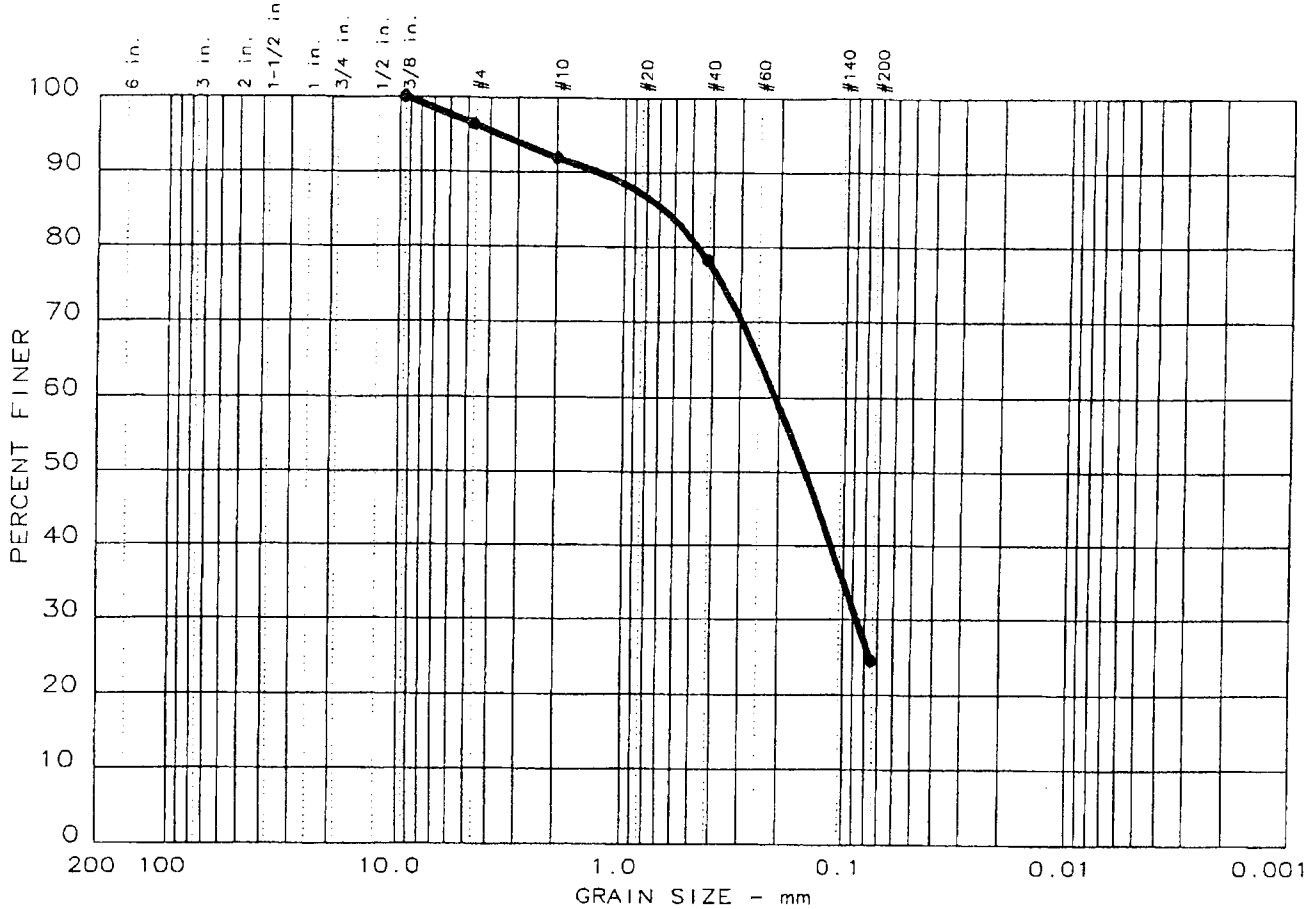
Remarks:
Boring # 2
Depth 10.0'

GRAIN SIZE DISTRIBUTION TEST REPORT

soil and materials engineers, inc.

Fig. No.: _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	3.6	71.9	24.5	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	32	16	0.668	0.207	0.151	0.0869				

MATERIAL DESCRIPTION	USCS	AASHTO
● Fine/Medium Sand-So Clay-Tr Gravel	SC	

Project No.: PQ 50149
Project: RTI Labs.Misc. RTI Project #05-04859
● Location: CDM-Wildlife Refuge

Date: 6/10/2005

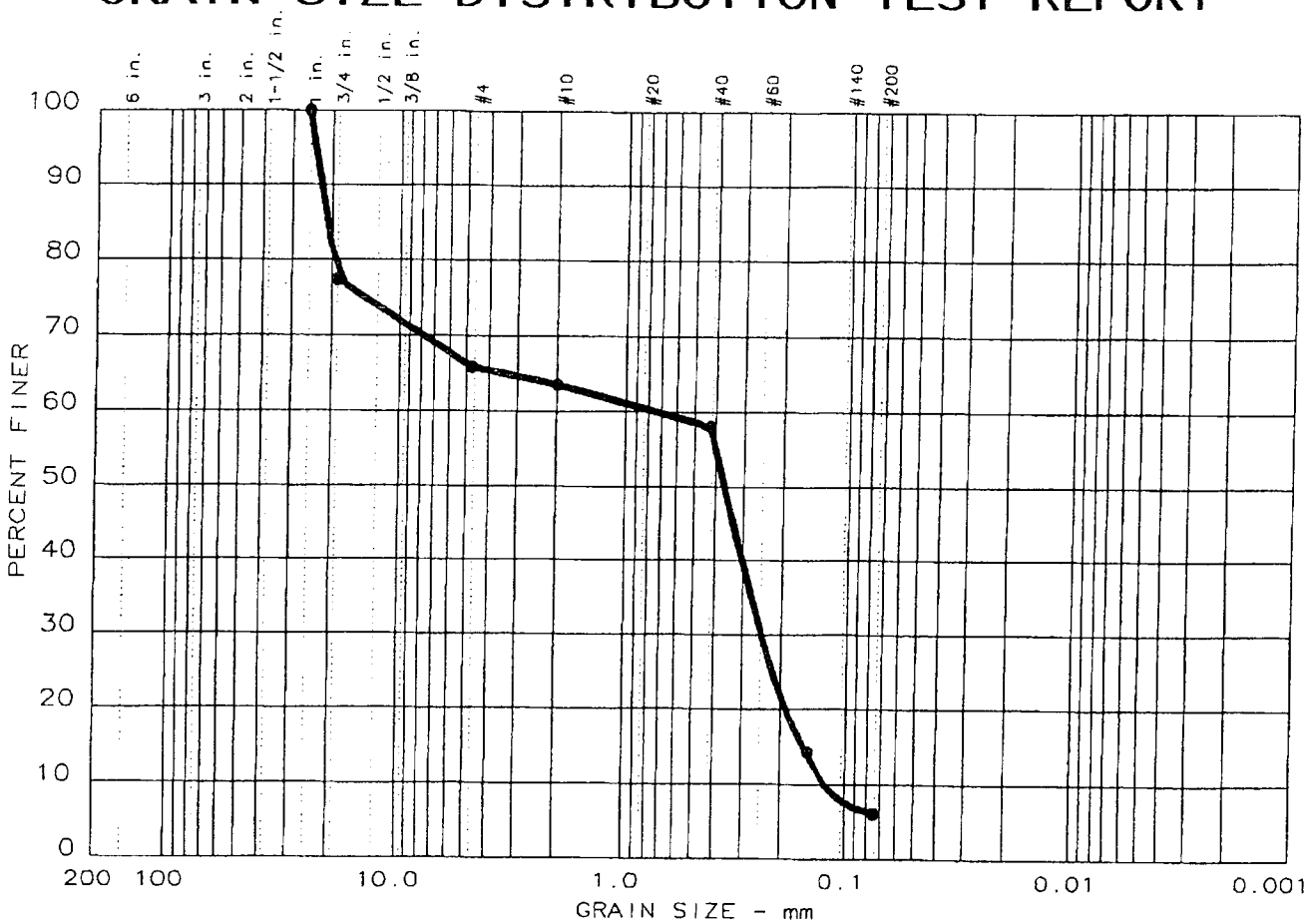
Remarks:
Boring # 2
Depth 12.5'

GRAIN SIZE DISTRIBUTION TEST REPORT

soil and materials engineers, inc.

Fig. No.: _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	34.1	59.7	6.2	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			21.0	0.702	0.366	0.245	0.156	0.123	0.70	5.7

MATERIAL DESCRIPTION	USCS	AASHTO
● Gravelly Sand-Tr/So Silt-Tr Organics-Blk	SP-SM	

Project No.: PQ 50149
Project: RTI Labs.Misc. RTI Project #05-04859
● Location: CDM-Wildlife Refuge

Date: 6/8/2005

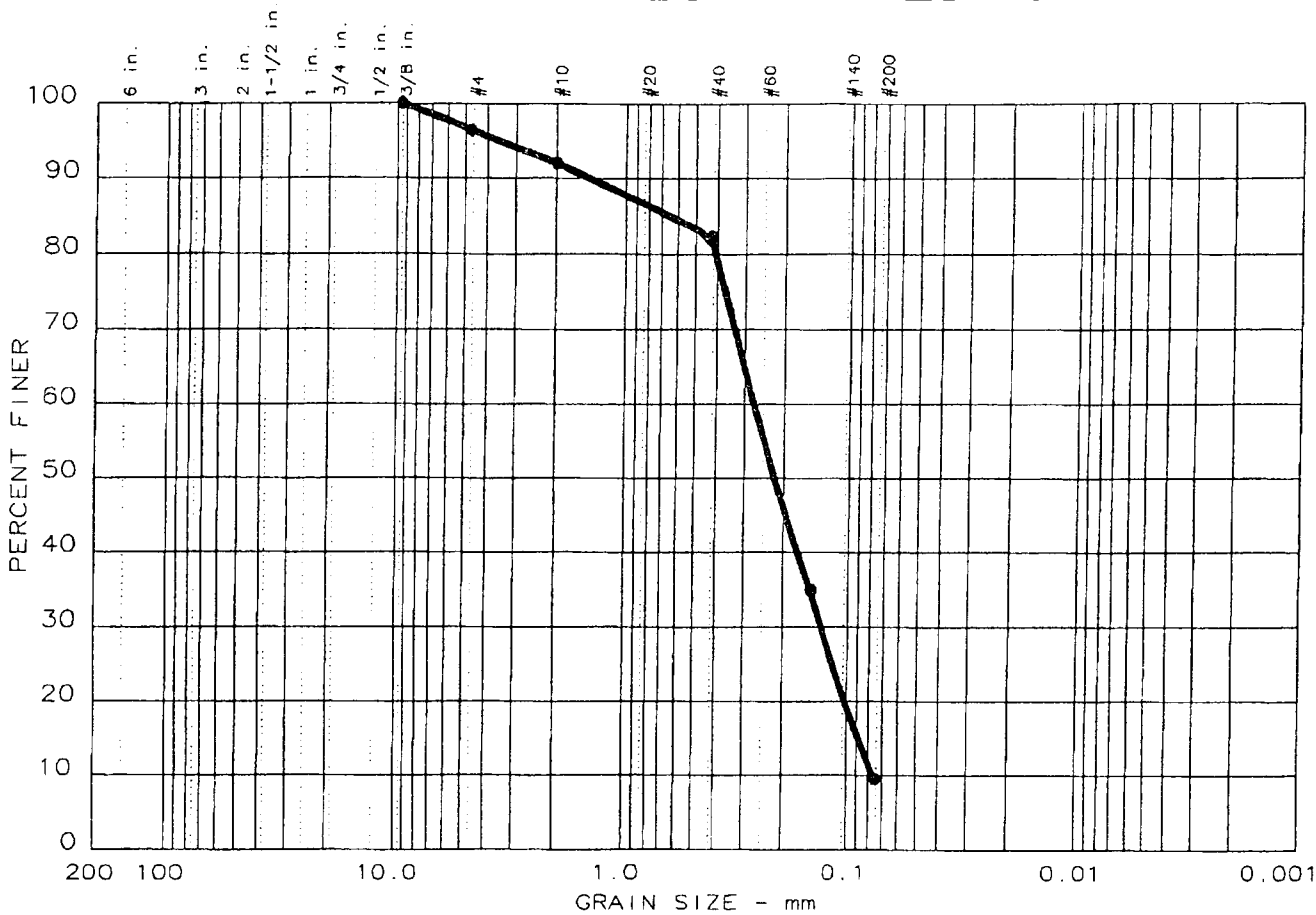
Remarks:
Boring # 3
Depth 2.5'

GRAIN SIZE DISTRIBUTION TEST REPORT

soil and materials engineers, inc.

Fig. No.: _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	3.6	86.9	9.5	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	27	13	0.653	0.272	0.219	0.133	0.0880	0.0758	0.86	3.6

MATERIAL DESCRIPTION	USCS	AASHTO
● Clayey Sand-Trace/Some Silt-Trace Gravel	SP-SC	

Project No.: PQ 50149
Project: RTI Labs.Misc. RTI Project #05-04859
● Location: CDM-Wildlife Refuge

Date: 6-9-05

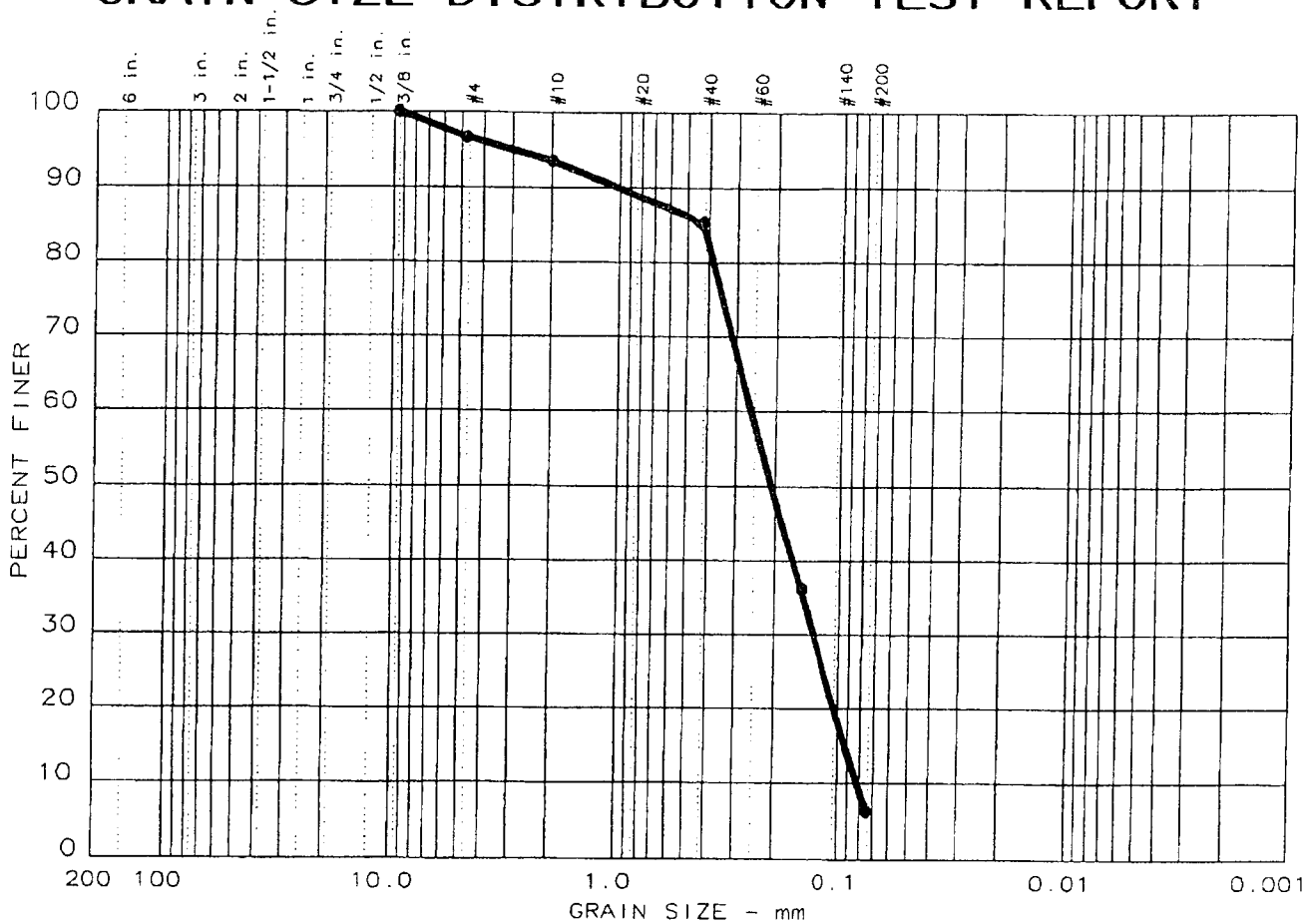
Remarks:
Boring # 3
Depth 5.0'

GRAIN SIZE DISTRIBUTION TEST REPORT

soil and materials engineers, inc.

Fig. No.: _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	3.4	90.3	6.3	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	28	13	0.422	0.257	0.208	0.131	0.0928	0.0818	0.82	3.1

MATERIAL DESCRIPTION	USCS	AASHTO
● Clayey Sand- Trace/Some Silt-Trace Gravel	SP-SC	

Project No.: PQ 50149
Project: RTI Labs.Misc. RTI Project #05-04859
● Location: CDM-Wildlife Refuge

Date: 6-9-05

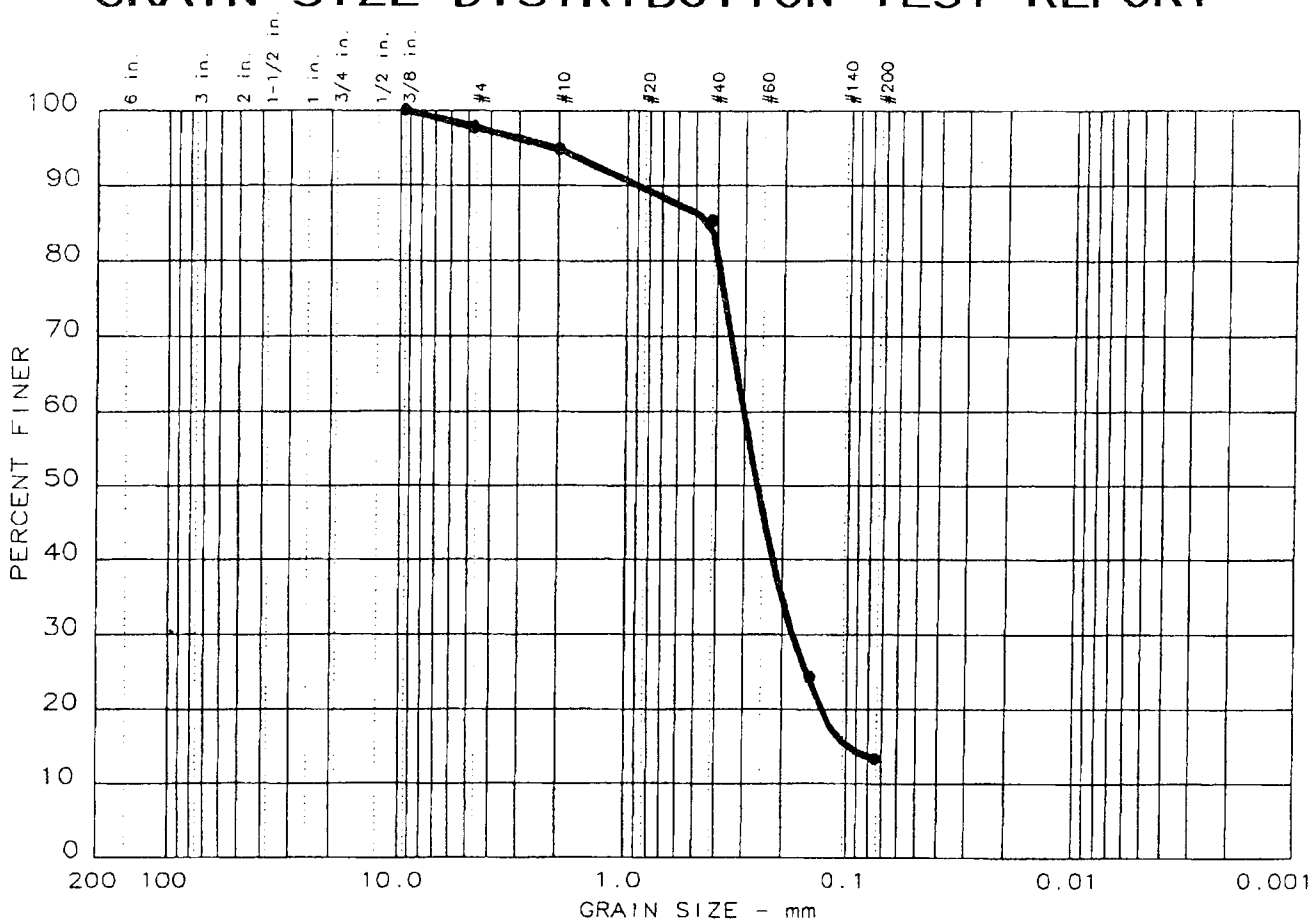
Remarks:
Boring # 3
Depth 7.5'

GRAIN SIZE DISTRIBUTION TEST REPORT

soil and materials engineers, inc.

Fig. No.: _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	2.3	84.3	13.4	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	29	15	0.423	0.302	0.260	0.179	0.0984			

MATERIAL DESCRIPTION	USCS	AASHTO
● Clayey Sand-Some Silt-Trace Gravel	SC	

Project No.: PQ 50149
Project: RTI Labs. Misc. RTI Project #05-04859
● Location: CDM- Wildlife Refuge

Date: 6-13-05

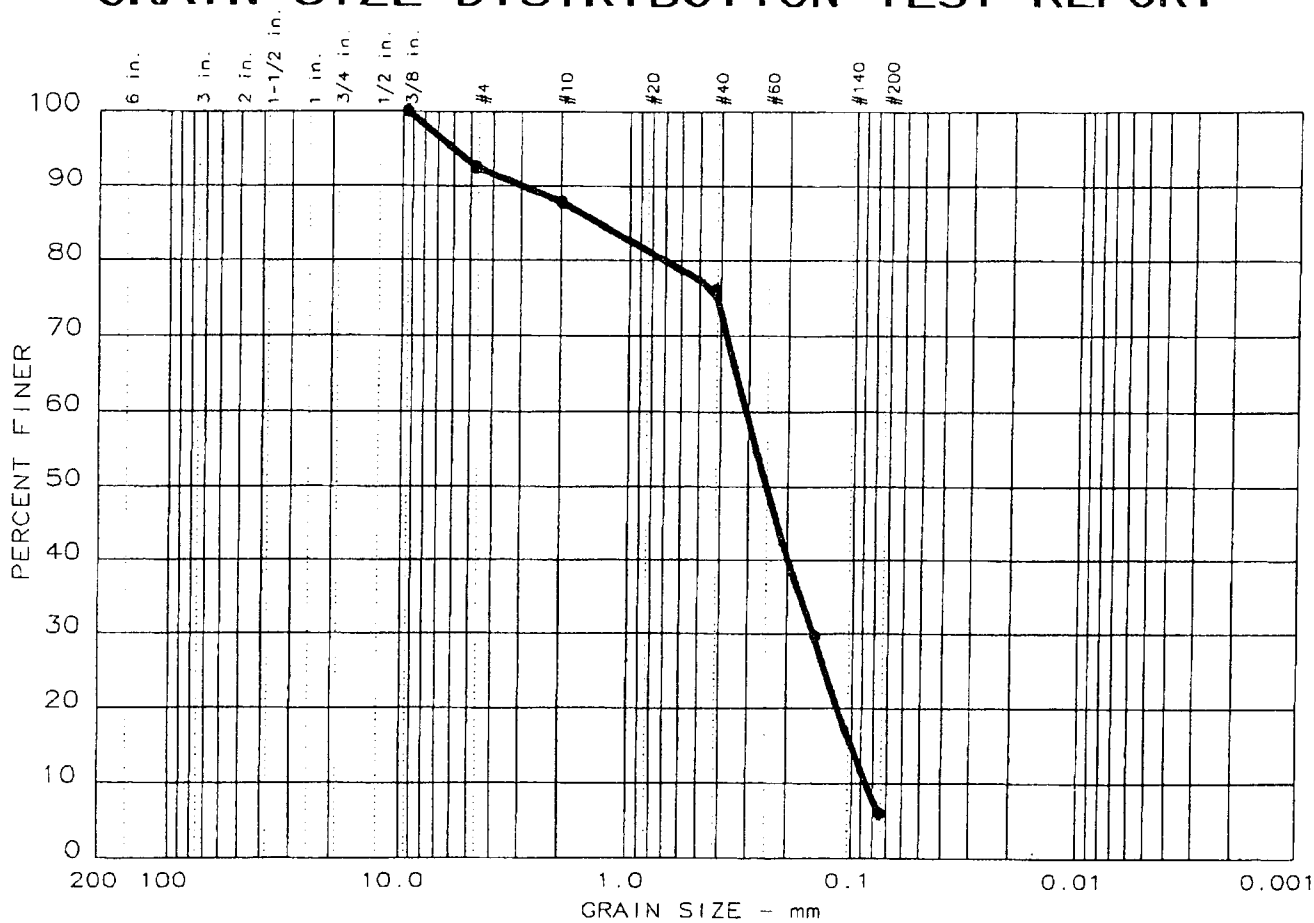
Remarks:
Boring SB 3
Depth 10.0'

GRAIN SIZE DISTRIBUTION TEST REPORT

soil and materials engineers, inc.

Fig. No.: _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	7.5	86.5	6.0	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	27	12	1.36	0.308	0.249	0.152	0.100	0.0852	0.88	3.6

MATERIAL DESCRIPTION	USCS	AASHTO
● Fine Sand-Trac/Some Clay, Silt, and Gravel	SC	SC

Project No.: PQ 50149

Project: RTI Labs. Misc. RTI Project #05-04859

● Location: CDM- Wildlife Refuge

Date: 6-10-05

Remarks:

Boring SB 3

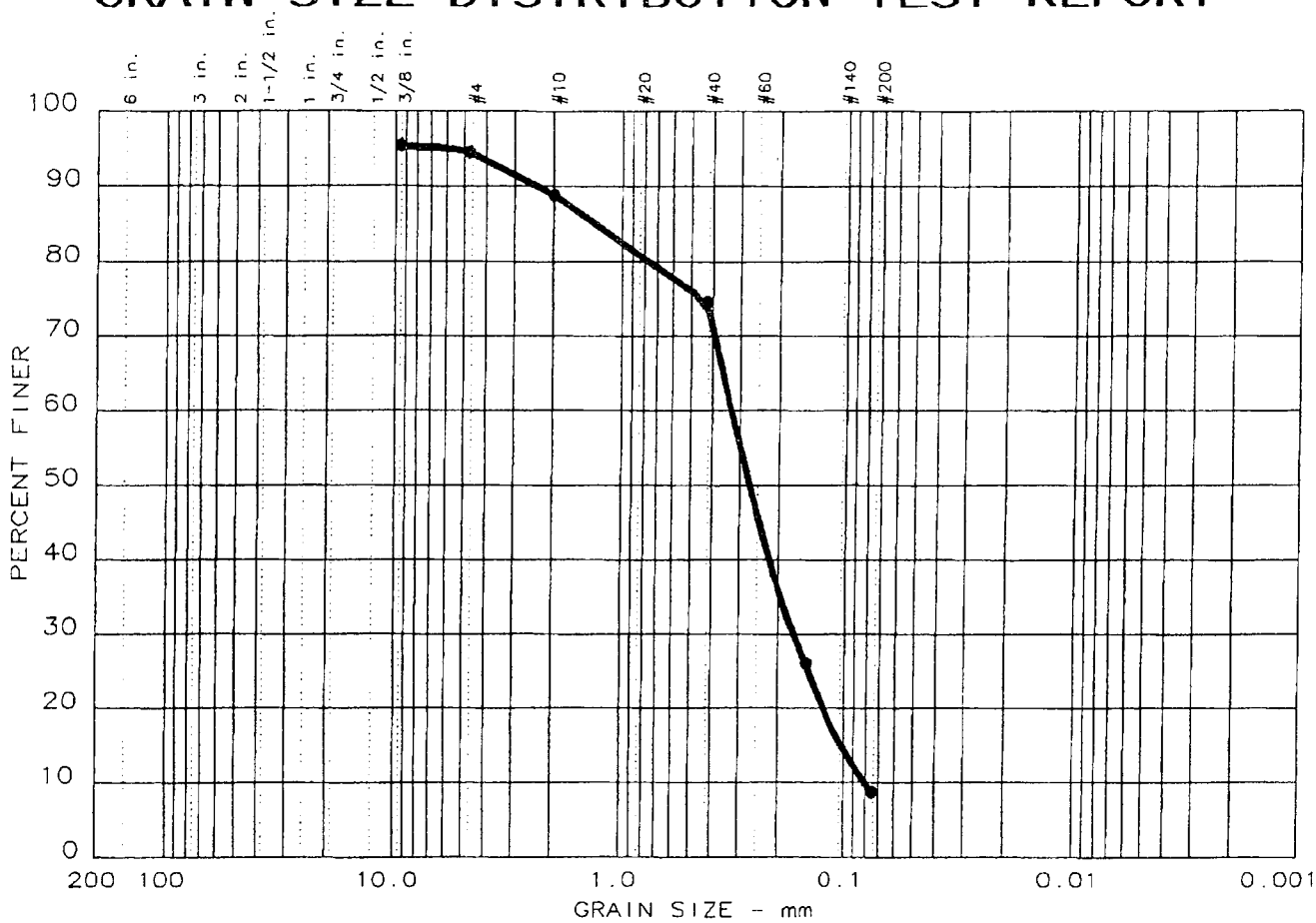
Depth 12.5'

GRAIN SIZE DISTRIBUTION TEST REPORT

soil and materials engineers, inc.

Fig. No.: _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	5.5	85.8	8.7	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	25	11	1.30	0.327	0.270	0.170	0.103	0.0796	1.11	4.1

MATERIAL DESCRIPTION	USCS	AASHTO
● Fine Sand-Trace/Some Clay and Gravel	SC	

Project No.: PQ 50149
Project: RTI Labs. Misc. RTI Project #05-04859
● Location: CDM- Wildlife Refuge

Date: 6-15-05

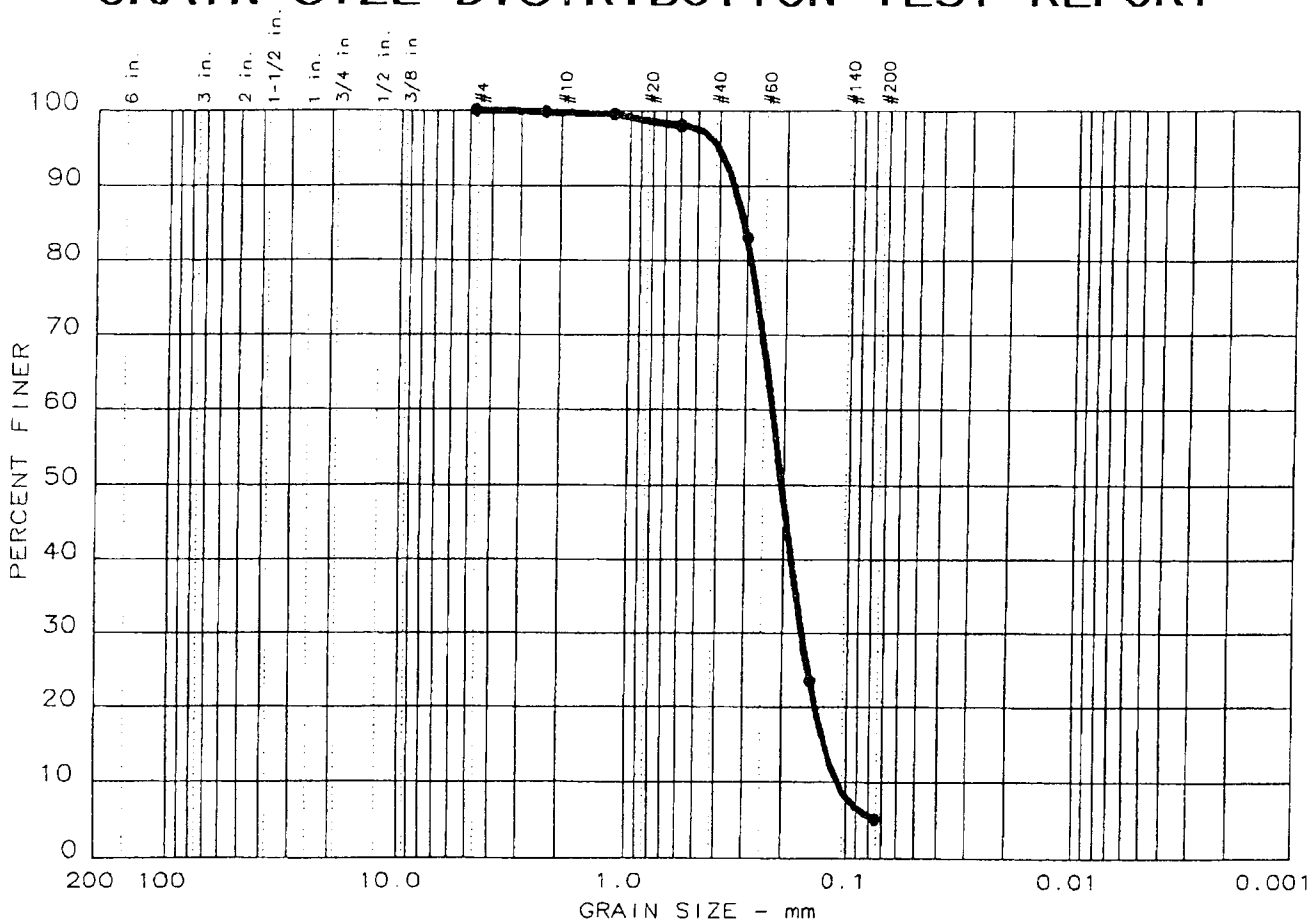
Remarks:
Boring SB 3
Depth 15.0'

GRAIN SIZE DISTRIBUTION TEST REPORT

soil and materials engineers, inc.

Fig. No.: _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	0.0	94.9	5.1	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			0.309	0.226	0.204	0.164	0.128	0.110	1.07	2.1

MATERIAL DESCRIPTION	USCS	AASHTO
● Fine Sand-Tr/So Silt-Brown	SP-SM	

Project No.: PQ 50149
Project: RTI Labs. Misc. RTI Project #05-04859
● Location: CDM- Wildlife Refuge

Date: 6-8-05

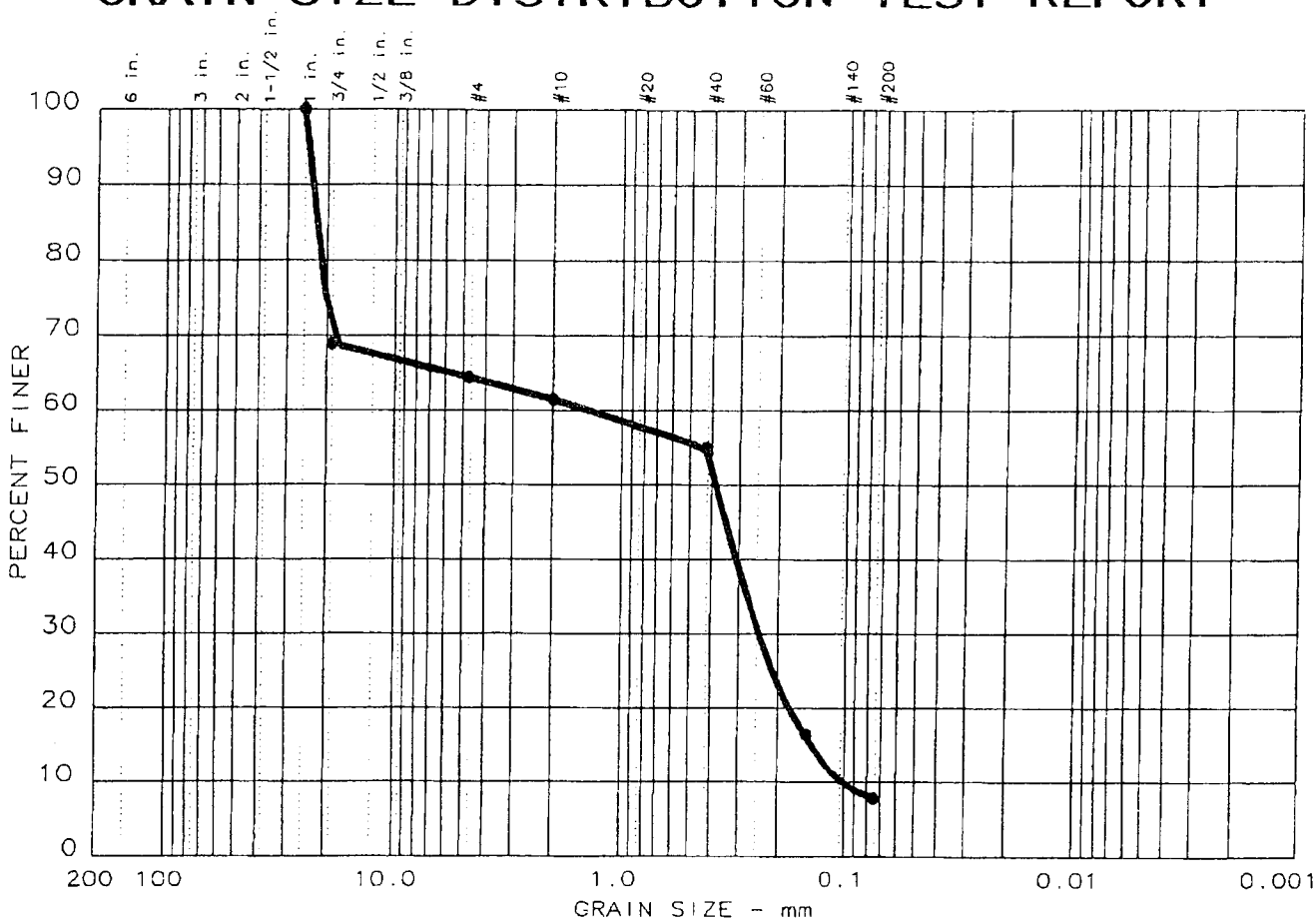
Remarks:
Boring #SB4
Depth 2.5'

GRAIN SIZE DISTRIBUTION TEST REPORT

soil and materials engineers, inc.

Fig. No.: _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	35.5	56.7	7.8	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			22.1	1.39	0.383	0.242	0.141	0.103	0.41	13.5

MATERIAL DESCRIPTION	USCS	AASHTO
● Gravelly Sand-Tr/So Silt-Tr Concrete	SW-SM	

Project No.: PQ 50149
Project: RTI Labs.Misc. RTI Project #05-04859
● Location: CDM-Wildlife Refuge

Date: 6/7/2005

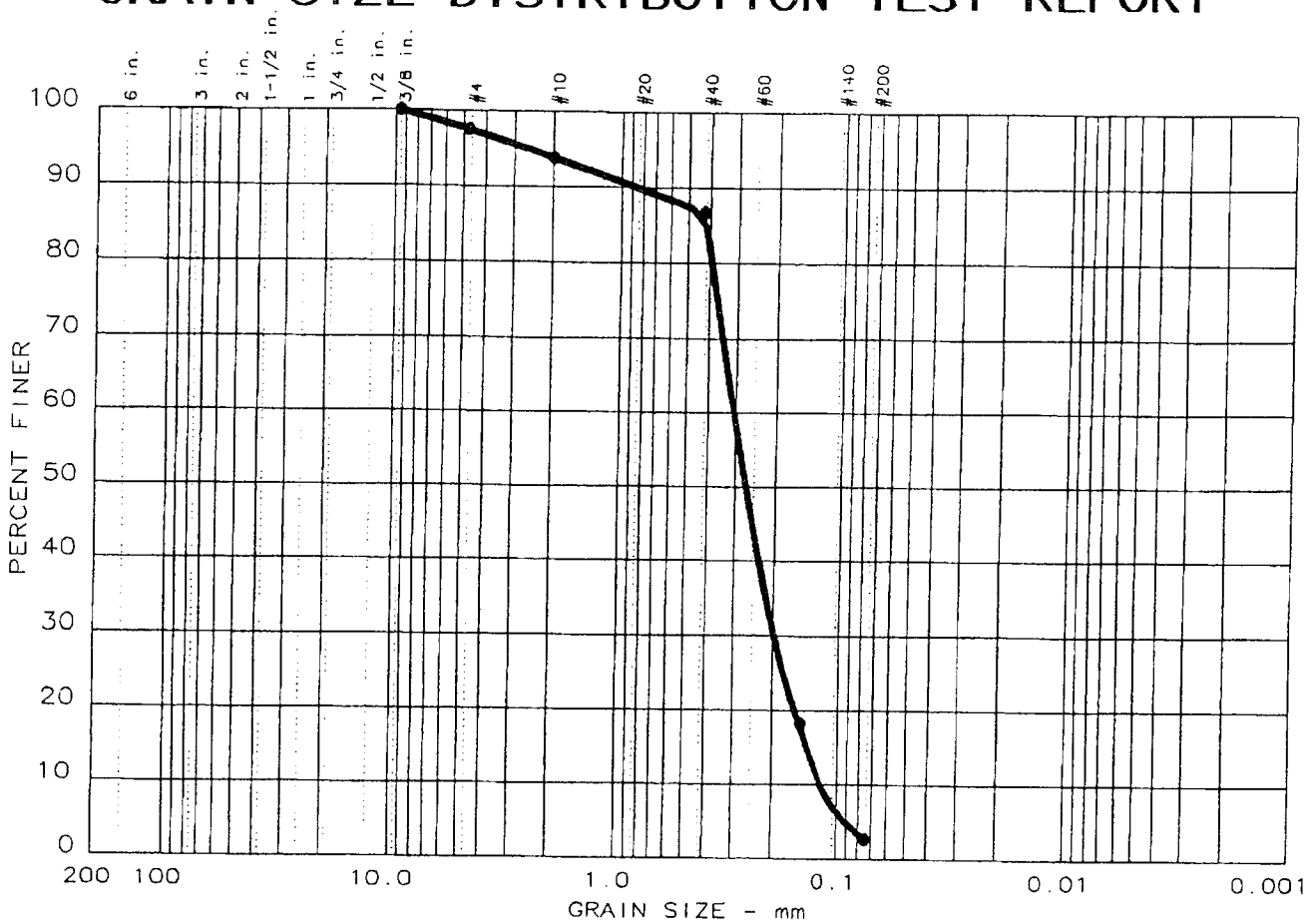
Remarks:
Boring #SB4
Depth 5.0'

GRAIN SIZE DISTRIBUTION TEST REPORT

soil and materials engineers, inc.

Fig. No.: _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	2.5	94.8	2.7	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	33	16	0.416	0.307	0.269	0.197	0.139	0.119	1.06	2.6

MATERIAL DESCRIPTION	USCS	AASHTO
● Fine Sand-Trace Clay and Gravel	SP	

Project No.: PQ 50149
Project: RTI Labs. Misc. RTI Project #05-04859
● Location: CDM- Wildlife Refuge

Date: 6-13-05

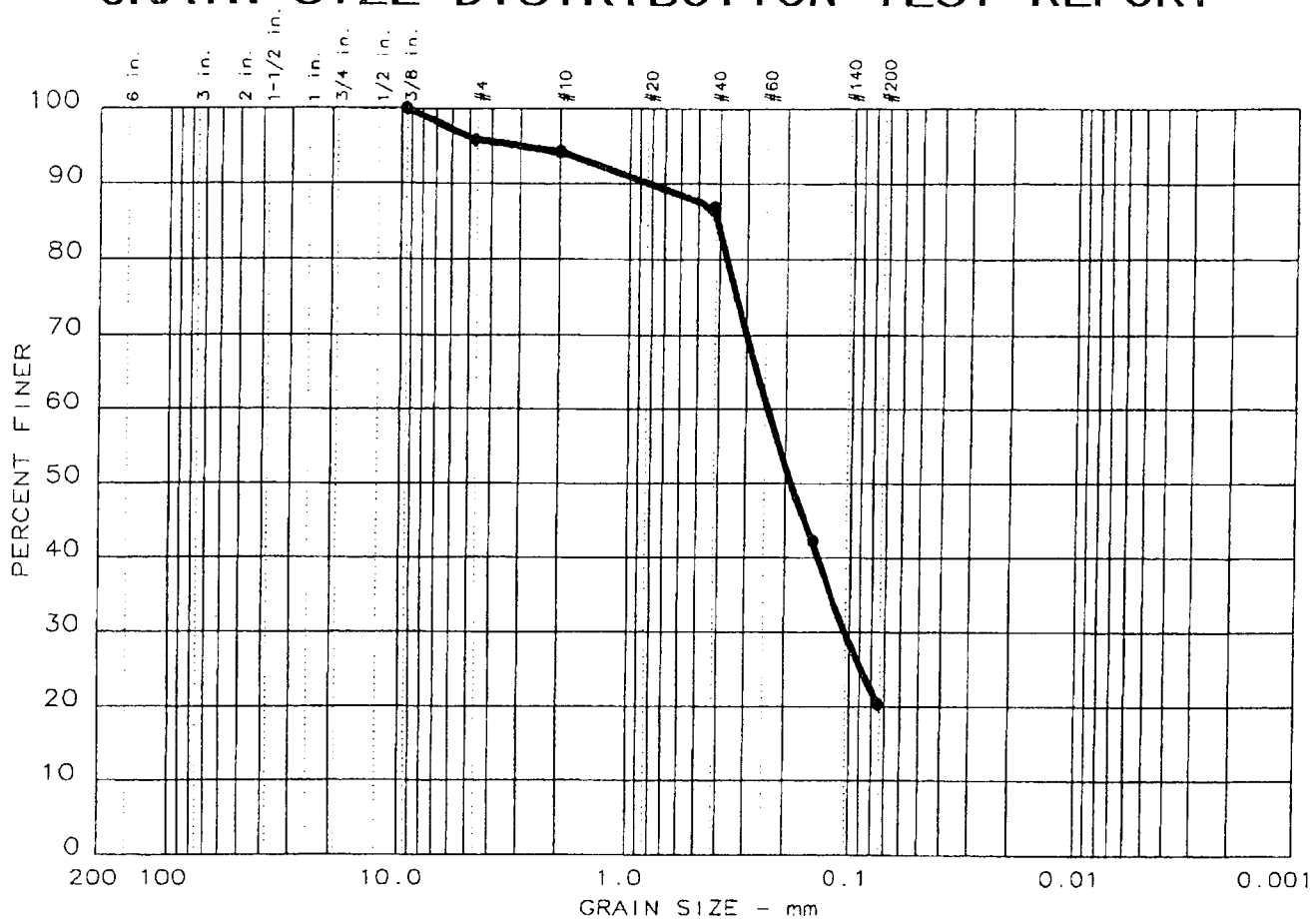
Remarks:
Boring SB 4
Depth 7.50'

GRAIN SIZE DISTRIBUTION TEST REPORT

soil and materials engineers, inc.

Fig. No.: _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	4.2	75.4	20.4	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	38	19	0.409	0.240	0.188	0.105				

MATERIAL DESCRIPTION	USCS	AASHTO
● Clayey Sand-Some Silt-Trace Gravel	SC	

Project No.: PQ 50149
Project: RTI Labs. Misc. RTI Project #05-04859
● Location: CDM- Wildlife Refuge

Date: 6-15-05

Remarks:
Boring 4
Depth 10.0'

GRAIN SIZE DISTRIBUTION TEST REPORT

soil and materials engineers, inc.

Fig. No.: _____

International Wildlife Refuge Project
Summary of Soil Analytical Results

Parameter	SS-1	SS-2	SS-3	SS-4	SS-5	Statewide Default Background Levels	*Direct Contact Res/Com I	*Direct Contact Ind/Com II	*Direct Contact Com III	*Direct Contact Com IV	GSI
	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	
Arsenic, total	5800	6100	5900	6100	3900	5800	7600	37000	46000	41000	70000
Barium, total	49000	54000	58000	57000	130000	75000	3.70E+07	1.80E+08	1.50E+08	1.40E+08	G, X
Cadmium, total	630	1300	540	610	1700	1200	5.50E+05	2.10E+06	2.10E+06	2.10E+06	G, X
Chromium, total	12000	13000	15000	13000	28000	18000	7.90E+08	9.20E+06	1.00E+07	9.60E+06	G, X
Lead, total	24000	33000	16000	17000	93000	21000	4.00E+05	9.00E+05	4.00E+05	4.00E+05	g, m, x
Selenium, total	310	420	ND	340	290	410	2.60E+06	9.60E+06	1.00E+07	1.00E+07	400
Silver, total	ND	250	ND	ND	ND	1000	2.50E+06	9.00E+06	9.80E+06	9.40E+06	500
Copper, total	21000	30000	23000	24000	51000	32000	2.00E+07	7.30E+07	7.90E+07	7.60E+07	g
Zinc, total	59000	84000	57000	61000	140000	47000	1.70E+08	6.30E+08	6.90E+08	6.60E+08	g
Mercury, total	88	110	ND	ND	110	130	1.60E+05	5.80E+05	6.20E+05	6.00E+05	100
Acetone	ND	ND	ND	ND	ND	NA	2.30E+07				34000
Acrylonitrile	ND	ND	ND	ND	ND	NA	16000	74000	1.00E+05	87000	98
Benzene	ND	ND	ND	ND	ND	NA	1.80E+05	4.00E+05	4.00E+05	4.00E+05	4000
Bromobenzene	ND	ND	ND	ND	ND	NA	5.40E+05				na
Bromochloromethane	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
Bromodichloromethane	ND	ND	ND	ND	ND	NA	1.10E+05	4.90E+05	6.80E+05	5.70E+05	id
Bromoform	ND	ND	ND	ND	ND	NA	8.20E+05	8.70E+05	8.70E+05	8.70E+05	id
Bromomethane	ND	ND	ND	ND	ND	NA	3.20E+05	1.00E+06	1.40E+06	1.20E+06	700
n-Butylbenzene	ND	ND	ND	ND	ND	NA	2.50E+06				id
s-butylbenzene	ND	ND	ND	ND	ND	NA	2.50E+06				id
t-Butylbenzene	ND	ND	ND	ND	ND	NA	2.50E+06				na
Carbon disulfide	ND	ND	ND	ND	ND	NA	2.80E+05				id
Carbon tetrachloride	ND	ND	ND	ND	ND	NA	96000	3.90E+05	3.90E+05	3.90E+05	900
Chlorobenzene	ND	ND	ND	ND	ND	NA	2.60E+05	2.60E+05	2.60E+05	2.60E+05	940
Chloroethane	ND	ND	ND	ND	ND	NA	9.50E+05	9.50E+05	9.50E+05	9.50E+05	id
Chloroform	ND	ND	ND	ND	ND	NA	1.20E+06	1.50E+05	1.50E+05	1.50E+05	3400
Chloromethane	ND	ND	ND	ND	ND	NA	1.10E+06	1.10E+06	1.10E+06	1.10E+06	id
Dibromochloromethane	ND	ND	ND	ND	ND	NA	1.10E+05	5.00E+05	6.10E+05	5.80E+05	id
1,2-Dibromo-3-chloropropa	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na

International Wildlife Refuge Project
Summary of Soil Analytical Results

Parameter	SS-1 ug/kg	SS-2 ug/kg	SS-3 ug/kg	SS-4 ug/kg	SS-5 ug/kg	Statewide Default Background Levels ug/kg	*Direct Contact Res/Com I ug/kg	*Direct Contact Ind/Com II ug/kg	*Direct Contact Com III ug/kg	*Direct Contact Com IV ug/kg	GSI
1,2-Dibromoethane	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
Dibromoethane	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	NA	2.10E+05	2.10E+05	2.10E+05	2.10E+05	360
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	NA	1.70E+05	1.70E+05	1.70E+05	1.70E+05	1100
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	NA	4.00E+05	1.90E+06	2.60E+06	2.20E+06	290
t-1,4-dichloro-2-butene	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
Dichlorodofluoromethane	ND	ND	ND	ND	ND	NA	1.00E+06				id
1,1-Dichloroethane	ND	ND	ND	ND	ND	NA	8.90E+05	8.90E+05	8.90E+05	8.90E+05	15000
1,2-Dichloroethane	ND	ND	ND	ND	ND	NA	91000	4.20E+05	5.90E+05	4.90E+05	7200
1,1-Dichloroethene	ND	ND	ND	ND	ND	NA	2.00E+05	5.70E+05	5.70E+05	5.70E+05	1300
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	NA	6.40E+05	6.40E+05	6.40E+05	6.40E+05	12000
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	NA	1.40E+06	1.40E+06	1.40E+06	1.40E+06	30000
1,2-Dichloropropane	ND	ND	ND	ND	ND	NA	1.40E+05	5.50E+05	5.50E+05	5.50E+05	5800
cis-trans-1,3-Dichloroprope	ND	ND	ND	ND	ND	NA	1.00E+04	2.40E+05	3.40E+05	2.90E+05	na
diethyl ether	ND	ND	ND	ND	ND	NA	7.40E+06				id
Ethylbenzene	ND	ND	ND	ND	ND	NA	1.40E+05	1.40E+05	1.40E+05	1.40E+05	360
hexachloroethane	ND	ND	ND	ND	ND	NA	2.30E+05				1800
2-hexane	ND	ND	ND	ND	ND	NA	4.40E+04				na
iodomethane	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
isopropylbenzene	ND	ND	ND	ND	ND	NA	3.90E+05				id
p-isopropyltoluene	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
dichloromethane	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
2-butanone (mek)	ND	ND	ND	ND	ND	NA	2.70E+07				44000
2-metylnaphthalene	ND	ND	ND	ND	ND	NA	8.10E+06				id
4-methyl-2-pentanone (mib	ND	ND	ND	ND	ND	NA	2.70E+06				id
mtbe	ND	ND	ND	ND	ND	NA	1.50E+06				15000
Naphthalene	ND	ND	ND	ND	ND	NA	1.6 E+7	5.20E+07	7.20E+07	6.10E+07	870
n-propylbenzene	ND	ND	ND	ND	ND	NA	2.50E+06				na
styrene	ND	ND	ND	ND	ND	NA	4.00E+05				2200
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	NA	53000	2.40E+05	3.40E+05	2.90E+05	1600
tetrachloroethane	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na

Parameter	SS-1 ug/kg	SS-2 ug/kg	SS-3 ug/kg	SS-4 ug/kg	SS-5 ug/kg	Statewide Default Background Levels ug/kg	*Direct Contact Res/Com I ug/kg	*Direct Contact Ind/Com II ug/kg	*Direct Contact Com III ug/kg	*Direct Contact Com IV ug/kg	GSI
tetrahydrofuran	ND	ND	ND	ND	ND	NA	2.90E+06				220000
Toluene	ND	ND	ND	ND	ND	NA	2.50E+05	2.50E+05	2.50E+05	2.50E+05	2800
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	NA	9.90E+05	1.10E+06	1.10E+06	1.10E+06	1800
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	NA	4.60E+05	4.60E+05	4.60E+05	4.60E+05	4000
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	NA	1.80E+05	8.40E+05	9.20E+05	9.20E+05	6600
Trichloroethene	ND	ND	ND	ND	ND	NA	5.00E+05	5.00E+05	5.00E+05	5.00E+05	4000
trichlorofluoromethane	ND	ND	ND	ND	ND	NA	5.60E+05				na
1,2,3-trichloropropane	ND	ND	ND	ND	ND	NA	8.30E+05				na
1,2,4-trimethylbenzene	ND	ND	ND	ND	ND	NA	1.10E+05				570
1,3,5-trimethylbenzene	ND	ND	ND	ND	ND	NA	9.40E+04				1100
Vinyl Chloride	ND	ND	ND	ND	ND	NA	3800	34000	47000	40000	300
Xylene	ND	ND	ND	ND	ND	NA	1.50E+05	1.50E+05	1.50E+05	1.50E+05	700
Acenaphthene	ND	ND	ND	ND	710	NA	4.10E+07	1.30E+08	1.80E+08	1.50E+08	4400
Acenaphthylene	ND	ND	ND	ND	ND	NA	1.60E+06	5.20E+06	7.20E+06	6.10E+06	id
Anthracene	ND	ND	ND	ND	1700	NA	2.30E+08	7.30E+08	1.00E+09	8.60E+08	id
Benzidine	ND	ND	ND	ND	ND	NA	1000	1000	1000	1000	id
Benzo(a)anthracene	430	ND	ND	540	2000	NA	20000	80000	1.60E+05	1.10E+05	nll
Benzo(a)pyrene	ND	ND	ND	410	2000	NA	2000	8000	16000	11000	nll
Benzo(b)fluoranthene	430	ND	ND	630	3100	NA	20000	80000	1.60E+05	1.10E+05	nll
Benzo(g,h,i)perylene	ND	ND	ND	ND	1800	NA	2.50E+05	7.00E+06	1.40E+07	9.50E+06	nll
Benzo(k)fluoranthene	ND	ND	ND	ND	990	NA	2.00E+05	8.00E+05	1.60E+06	1.10E+06	nll
Benzoic acid	ND	ND	ND	ND	ND	NA	9.90E+08	1.00E+09	1.00E+09	1.00E+09	na
Benzyl alcohol	ND	ND	ND	ND	ND	NA	5.80E+06	5.80E+06	5.80E+06	5.80E+06	na
4-bromophenyl phenyl ethe	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	n
Butyl benzyl phthalate	ND	ND	ND	ND	ND	NA	3.10E+05				26000
4-chloro-3-methylphenol	ND	ND	ND	ND	ND	NA	4.50E+06				330
Bis(2-chloroethoxy)methar	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
Bis(2-Chloroethyl)ether	ND	ND	ND	ND	ND	NA	13000	58000	81000	68000	330
Bis(2-chloroisopropyl)Ethe	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
2-chloronaphthalene	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na

Parameter	SS-1	SS-2	SS-3	SS-4	SS-5	Statewide Default Background Levels	*Direct Contact Res/Com I	*Direct Contact Ind/Com II	*Direct Contact Com III	*Direct Contact Com IV	GSI
	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	
2-chlorophenol	ND	ND	ND	ND	ND	NA	1.40E+06				440
4-chlorophenyl phenyl ethe	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
Chrysene	520	ND	ND	670	3800	NA	2.00E+06	8.00E+06	1.60E+07	1.10E+07	nll
Di-n-butyl phthalate	ND	ND	ND	ND	ND	NA	7.60E+05	7.60E+05	7.60E+05	7.60E+05	11000
Di-n-octyl phthalate	ND	ND	ND	ND	ND	NA	6.90E+06	2.00E+07	3.60E+07	2.60E+07	id
Dibenzo(a,h)anthracene	ND	ND	ND	ND	680	NA	2000	8000	16000	11000	nll
Dibenzofuran	ND	ND	ND	ND	ND	NA	ID	ID	ID	ID	1700
1,2-dichlorobenzene	ND	ND	ND	ND	ND	NA	2.10E+05				360
1,3-dichlorobenzene	ND	ND	ND	ND	ND	NA	1.70E+05				1100
1,4-dichlorobenzene	ND	ND	ND	ND	ND	NA	4.00E+05				290
3,3-dichlorobenzidine	ND	ND	ND	ND	ND	NA	6.60E+03				2000
2,4-Dichlorophenol	ND	ND	ND	ND	ND	NA	6.60E+05	1.80E+06	1.80E+06	1.80E+06	380
Diethyl phthalate	ND	ND	ND	ND	ND	NA	7.40E+05	7.40E+05	7.40E+05	7.40E+05	2200
Dimethyl phthalate	ND	ND	ND	ND	ND	NA	7.90E+05	7.90E+05	7.90E+05	7.90E+05	na
2,4-Dimethylphenol	ND	ND	ND	ND	ND	NA	1.10E+07	3.60E+07	5.10E+07	4.30E+07	7600
2,4-Dinitrotoluene	ND	ND	ND	ND	ND	NA	48000	2.20E+05	3.10E+05	2.60E+05	na
2,6-Dinitrotoluene	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
1,2-Diphenylhydrazine	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
Bis(2-ethylhexyl)phthalate	ND	ND	ND	ND	ND	NA	2.80E+06	1.00E+07	1.00E+07	1.00E+07	nll
Fluoranthene	1200	ND	ND	1800	6200	NA	4.60E+07	1.30E+08	2.40E+08	1.70E+08	5500
Fluorene	ND	ND	ND	ND	700	NA	2.70E+07	8.70E+07	1.20E+08	1.00E+08	5300
Hexachlorobenzene	ND	ND	ND	ND	ND	NA	8900	37000	67000	49000	id
Hexachlorobutadiene	ND	ND	ND	ND	ND	NA	1.00E+05	3.50E+05	3.50E+05	3.50E+05	330
Hexachlorocyclopentadien	ND	ND	ND	ND	ND	NA	7.2 E+5	7.2 E+5	7.2 E+5	7.2 E+5	id
Hexachloroethane	ND	ND	ND	ND	ND	NA	2.30E+05	7.30E+05	1.00E+06	8.60E+05	1800
Indeno(1,2,3-cd)pyrene	ND	ND	ND	ND	2000	NA	20000	80000	1.60E+05	1.10E+05	nll
Isophorone	ND	ND	ND	ND	ND	NA	2.40E+06	2.40E+06	2.40E+06	2.40E+06	11000
2-Methylnaphthalene	ND	ND	ND	ND	ND	NA	8.10E+06	2.60E+07	3.70E+07	3.10E+07	id
Naphthalene	ND	ND	ND	ND	ND	NA	1.6 E+7	5.20E+07	7.20E+07	6.10E+07	870
2-Nitroaniline	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
3-Nitroaniline	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na

Parameter	SS-1 ug/kg	SS-2 ug/kg	SS-3 ug/kg	SS-4 ug/kg	SS-5 ug/kg	Statewide Default Background Levels ug/kg	*Direct Contact Res/Com I ug/kg	*Direct Contact Ind/Com II ug/kg	*Direct Contact Com III ug/kg	*Direct Contact Com IV ug/kg	GSI
4-Nitroaniline	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
Nitrobenzene	ND	ND	ND	ND	ND	NA	1.00E+05	3.40E+05	4.70E+05	3.90E+05	3600
2-Nitrophenol	ND	ND	ND	ND	ND	NA	6.30E+05	2.00E+06	2.90E+06	2.40E+06	id
4-Nitrophenol	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
Methylene chloride	ND	ND	ND	ND	ND	NA	1.30E+06	2.30E+06	2.30E+06	2.30E+06	1.90E+04
N-Nitrosodimethylamine	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
Tetrachloroethene	ND	ND	ND	ND	ND	NA	88000	88000	88000	88000	900
Pentachlorophenol	ND	ND	ND	ND	ND	NA	90000	3.20E+05	9.20E+05	4.90E+05	g, x
Phenanthrene	1100	ND	ND	1200	5600	NA	1.60E+06	5.20E+06	7.20E+06	6.10E+06	5300
Phenol	ND	ND	ND	ND	ND	NA	1.20E+07	1.20E+07	1.20E+07	1.20E+07	4200
Pyrene	1000	ND	ND	1400	5000	NA	2.90E+07	8.40E+07	1.50E+08	1.10E+08	id
2,4,5-Trichlorophenol	ND	ND	ND	ND	ND	NA	2.30E+07	7.30E+07	1.00E+08	8.60E+07	na
2,4,6-Trichlorophenol	ND	ND	ND	ND	ND	NA	7.10E+05	3.30E+06	4.60E+06	3.90E+06	na

International Wildlife Refuge Project
Summary of Soil Analytical Results

Parameter	GP-1-1	GP-1-2	GP-2-1	GP-2-2	GP-3-1	Statewide Default Background Levels	*Direct Contact Res/Com I	*Direct Contact Ind/Com II	*Direct Contact Com III	*Direct Contact Com IV	GSI
	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	
Arsenic, total	13000	5700	12000	8600	7400	5800	7600	37000	46000	41000	70000
Barium, total	49000	31000	55000	56000	120000	75000	3.70E+07	1.80E+08	1.50E+08	1.40E+08	G, X
Cadmium, total	450	160	320	270	980	1200	5.50E+05	2.10E+06	2.10E+06	2.10E+06	G, X
Chromium, total	14000	6800	15000	17000	20000	18000	7.90E+08	9.20E+06	1.00E+07	9.60E+06	G, X
Lead, total	14000	5400	12000	9700	35000	21000	4.00E+05	9.00E+05	4.00E+05	4.00E+05	g, m, x
Selenium, total	1900	450	840	670	2500	410	2.60E+06	9.60E+06	1.00E+07	1.00E+07	400
Silver, total	1400	580	730	660	1300	1000	2.50E+06	9.00E+06	9.80E+06	9.40E+06	500
Copper, total	42000	22000	29000	25000	26000	32000	2.00E+07	7.30E+07	7.90E+07	7.60E+07	g
Zinc, total	130000	40000	95000	67000	130000	47000	1.70E+08	6.30E+08	6.90E+08	6.60E+08	g
Mercury, total	89	30	43	44	61	130	1.60E+05	5.80E+05	6.20E+05	6.00E+05	100
Acetone	ND	ND	ND	ND	ND	NA	2.30E+07				34000
Acrylonitrile	ND	ND	ND	ND	ND	NA	16000	74000	1.00E+05	87000	98
Benzene	ND	ND	ND	ND	ND	NA	1.80E+05	4.00E+05	4.00E+05	4.00E+05	4000
Bromobenzene	ND	ND	ND	ND	ND	NA	5.40E+05				na
Bromochloromethane	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
Bromodichloromethane	ND	ND	ND	ND	ND	NA	1.10E+05	4.90E+05	6.80E+05	5.70E+05	id
Bromoform	ND	ND	ND	ND	ND	NA	8.20E+05	8.70E+05	8.70E+05	8.70E+05	id
Bromomethane	ND	ND	ND	ND	ND	NA	3.20E+05	1.00E+06	1.40E+06	1.20E+06	700
n-Butylbenzene	ND	ND	ND	ND	ND	NA	2.50E+06				id
s-butylbenzene	ND	ND	ND	ND	ND	NA	2.50E+06				id
t-Butylbenzene	ND	ND	ND	ND	ND	NA	2.50E+06				na
Carbon disulfide	ND	ND	ND	ND	ND	NA	2.80E+05				id
Carbon tetrachloride	ND	ND	ND	ND	ND	NA	96000	3.90E+05	3.90E+05	3.90E+05	900
Chlorobenzene	ND	ND	ND	ND	ND	NA	2.60E+05	2.60E+05	2.60E+05	2.60E+05	940
Chloroethane	ND	ND	ND	ND	ND	NA	9.50E+05	9.50E+05	9.50E+05	9.50E+05	id
Chloroform	ND	ND	ND	ND	ND	NA	1.20E+06	1.50E+05	1.50E+05	1.50E+05	3400
Chloromethane	ND	ND	ND	ND	ND	NA	1.10E+06	1.10E+06	1.10E+06	1.10E+06	id

ID - insufficient data to develop criterion
NA - criterion not available
NLL - hazardous substance is not likely to leach under most soil conditions

International Wildlife Refuge Project
Summary of Soil Analytical Results

Parameter	GP-1-1 ug/kg	GP-1-2 ug/kg	GP-2-1 ug/kg	GP-2-2 ug/kg	GP-3-1 ug/kg	Statewide Default Background Levels ug/kg	*Direct Contact Res/Com I ug/kg	*Direct Contact Ind/Com II ug/kg	*Direct Contact Com III ug/kg	*Direct Contact Com IV ug/kg	GSI
Dibromochloromethane	ND	ND	ND	ND	ND	NA	1.10E+05	5.00E+05	6.10E+05	5.80E+05	id
1,2-Dibromo-3-chloropropan	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
1,2-Dibromoethane	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
Dibromoethane	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	NA	2.10E+05	2.10E+05	2.10E+05	2.10E+05	360
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	NA	1.70E+05	1.70E+05	1.70E+05	1.70E+05	1100
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	NA	4.00E+05	1.90E+06	2.60E+06	2.20E+06	290
t-1,4-dichloro-2-butene	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
Dichlorodofluoromethane	ND	ND	ND	ND	ND	NA	1.00E+06				id
1,1-Dichloroethane	ND	ND	ND	ND	ND	NA	8.90E+05	8.90E+05	8.90E+05	8.90E+05	15000
1,2-Dichloroethane	ND	ND	ND	ND	ND	NA	91000	4.20E+05	5.90E+05	4.90E+05	7200
1,1-Dichloroethene	ND	ND	ND	ND	ND	NA	2.00E+05	5.70E+05	5.70E+05	5.70E+05	1300
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	NA	6.40E+05	6.40E+05	6.40E+05	6.40E+05	12000
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	NA	1.40E+06	1.40E+06	1.40E+06	1.40E+06	30000
1,2-Dichloropropane	ND	ND	ND	ND	ND	NA	1.40E+05	5.50E+05	5.50E+05	5.50E+05	5800
cis-trans-1,3-Dichloropropen	ND	ND	ND	ND	ND	NA	1.00E+04	2.40E+05	3.40E+05	2.90E+05	na
diethyl ether	ND	ND	ND	ND	ND	NA	7.40E+06				id
Ethylbenzene	ND	ND	ND	ND	ND	NA	1.40E+05	1.40E+05	1.40E+05	1.40E+05	360
hexachloroethane	ND	ND	ND	ND	ND	NA	2.30E+05				1800
2-hexane	ND	ND	ND	ND	ND	NA	4.40E+04				na
iodomethane	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
isopropylbenzene	ND	ND	ND	ND	ND	NA	3.90E+05				id
p-isopropyltoluene	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
dichloromethane	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
2-butanone (mek)	ND	ND	ND	ND	ND	NA	2.70E+07				44000
2-metylnaphthalene	ND	ND	ND	ND	ND	NA	8.10E+06				id
4-methyl-2-pentanone (mibk)	ND	ND	ND	ND	ND	NA	2.70E+06				id
mtbe	ND	ND	ND	ND	ND	NA	1.50E+06				15000
Naphthalene	ND	ND	ND	ND	ND	NA	1.6 E+7	5.20E+07	7.20E+07	6.10E+07	870

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NLL - hazardous substance is not likely to leach under most soil conditions

Parameter	GP-1-1 ug/kg	GP-1-2 ug/kg	GP-2-1 ug/kg	GP-2-2 ug/kg	GP-3-1 ug/kg	Statewide Default Background Levels ug/kg	*Direct Contact Res/Com I ug/kg	*Direct Contact Ind/Com II ug/kg	*Direct Contact Com III ug/kg	*Direct Contact Com IV ug/kg	GSI
n-propylbenzene	ND	ND	ND	ND	ND	NA	2.50E+06				na
styrene	ND	ND	ND	ND	ND	NA	4.00E+05				2200
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	NA	53000	2.40E+05	3.40E+05	2.90E+05	1600
tetrachloroethane	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
tetrahydrofuran	ND	ND	ND	ND	ND	NA	2.90E+06				220000
Toluene	ND	ND	ND	ND	ND	NA	2.50E+05	2.50E+05	2.50E+05	2.50E+05	2800
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	NA	9.90E+05	1.10E+06	1.10E+06	1.10E+06	1800
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	NA	4.60E+05	4.60E+05	4.60E+05	4.60E+05	4000
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	NA	1.80E+05	8.40E+05	9.20E+05	9.20E+05	6600
Trichloroethene	ND	ND	ND	ND	ND	NA	5.00E+05	5.00E+05	5.00E+05	5.00E+05	4000
trichlorofluoromethane	ND	ND	ND	ND	ND	NA	5.60E+05				na
1,2,3-trichloropropane	ND	ND	ND	ND	ND	NA	8.30E+05				na
1,2,4-trimethylbenzene	ND	ND	ND	ND	ND	NA	1.10E+05				570
1,3,5-trimethylbenzene	ND	ND	ND	ND	ND	NA	9.40E+04				1100
Vinyl Chloride	ND	ND	ND	ND	ND	NA	3800	34000	47000	40000	300
Xylene	ND	ND	ND	ND	ND	NA	1.50E+05	1.50E+05	1.50E+05	1.50E+05	700
Acenaphthene	ND	ND	ND	ND	ND	NA	4.10E+07	1.30E+08	1.80E+08	1.50E+08	4400
Acenaphthylene	ND	ND	ND	ND	ND	NA	1.60E+06	5.20E+06	7.20E+06	6.10E+06	id
Anthracene	ND	ND	ND	ND	ND	NA	2.30E+08	7.30E+08	1.00E+09	8.60E+08	id
Benzidine	ND	ND	ND	ND	ND	NA	1000	1000	1000	1000	id
Benzo(a)anthracene	ND	ND	ND	ND	ND	NA	20000	80000	1.60E+05	1.10E+05	nll
Benzo(a)pyrene	ND	ND	ND	ND	ND	NA	2000	8000	16000	11000	nll
Benzo(b)fluoranthene	ND	ND	ND	ND	ND	NA	20000	80000	1.60E+05	1.10E+05	nll
Benzo(g,h,i)perylene	ND	ND	ND	ND	ND	NA	2.50E+05	7.00E+06	1.40E+07	9.50E+06	nll
Benzo(k)fluoranthene	ND	ND	ND	ND	ND	NA	2.00E+05	8.00E+05	1.60E+06	1.10E+06	nll
Benzoic acid	ND	ND	ND	ND	ND	NA	9.90E+08	1.00E+09	1.00E+09	1.00E+09	na
Benzyl alcohol	ND	ND	ND	ND	ND	NA	5.80E+06	5.80E+06	5.80E+06	5.80E+06	na

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Parameter	GP-1-1 ug/kg	GP-1-2 ug/kg	GP-2-1 ug/kg	GP-2-2 ug/kg	GP-3-1 ug/kg	Statewide Default Background Levels ug/kg	*Direct Contact Res/Com I ug/kg	*Direct Contact Ind/Com II ug/kg	*Direct Contact Com III ug/kg	*Direct Contact Com IV ug/kg	GSI
4-bromophenyl phenyl ether	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	n
Butyl benzyl phthalate	ND	ND	ND	ND	ND	NA	3.10E+05				26000
4-chloro-3-methylphenol	ND	ND	ND	ND	ND	NA	4.50E+06				330
Bis(2-chloroethoxy)methane	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
Bis(2-Chloroethyl)ether	ND	ND	ND	ND	ND	NA	13000	58000	81000	68000	330
Bis(2-chloroisopropyl)Ether	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
2-chloronaphthalene	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
2-chlorophenol	ND	ND	ND	ND	ND	NA	1.40E+06				440
4-chlorophenyl phenyl ether	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
Chrysene	ND	ND	ND	ND	ND	NA	2.00E+06	8.00E+06	1.60E+07	1.10E+07	nll
Di-n-butyl phthalate	ND	ND	ND	ND	ND	NA	7.60E+05	7.60E+05	7.60E+05	7.60E+05	11000
Di-n-octyl phthalate	ND	ND	ND	ND	ND	NA	6.90E+06	2.00E+07	3.60E+07	2.60E+07	id
Dibenzo(a,h)anthracene	ND	ND	ND	ND	ND	NA	2000	8000	16000	11000	nll
Dibenzofuran	ND	ND	ND	ND	ND	NA	ID	ID	ID	ID	1700
1,2-dichlorobenzene	ND	ND	ND	ND	ND	NA	2.10E+05				360
1,3-dichlorobenzene	ND	ND	ND	ND	ND	NA	1.70E+05				1100
1,4-dichlorobenzene	ND	ND	ND	ND	ND	NA	4.00E+05				290
3,3-dichlorobenzidine	ND	ND	ND	ND	ND	NA	6.60E+03				2000
2,4-Dichlorophenol	ND	ND	ND	ND	ND	NA	6.60E+05	1.80E+06	1.80E+06	1.80E+06	380
Diethyl phthalate	ND	ND	ND	ND	ND	NA	7.40E+05	7.40E+05	7.40E+05	7.40E+05	2200
Dimethyl phthalate	ND	ND	ND	ND	ND	NA	7.90E+05	7.90E+05	7.90E+05	7.90E+05	na
2,4-Dimethylphenol	ND	ND	ND	ND	ND	NA	1.10E+07	3.60E+07	5.10E+07	4.30E+07	7600
2,4-Dinitrotoluene	ND	ND	ND	ND	ND	NA	48000	2.20E+05	3.10E+05	2.60E+05	na
2,6-Dinitrotoluene	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
1,2-Diphenylhydrazine	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
Bis(2-ethylhexyl)phthalate	ND	ND	ND	ND	ND	NA	2.80E+06	1.00E+07	1.00E+07	1.00E+07	nll
Fluoranthene	ND	ND	ND	ND	ND	NA	4.60E+07	1.30E+08	2.40E+08	1.70E+08	5500
Fluorene	ND	ND	ND	ND	ND	NA	2.70E+07	8.70E+07	1.20E+08	1.00E+08	5300
Hexachlorobenzene	ND	ND	ND	ND	ND	NA	8900	37000	67000	49000	id

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Parameter	GP-1-1 ug/kg	GP-1-2 ug/kg	GP-2-1 ug/kg	GP-2-2 ug/kg	GP-3-1 ug/kg	Statewide Default Background Levels ug/kg	*Direct Contact Res/Com I ug/kg	*Direct Contact Ind/Com II ug/kg	*Direct Contact Com III ug/kg	*Direct Contact Com IV ug/kg	GSI
Hexachlorobutadiene	ND	ND	ND	ND	ND	NA	1.00E+05	3.50E+05	3.50E+05	3.50E+05	330
Hexachlorocyclopentadiene	ND	ND	ND	ND	ND	NA	7.2 E+5	7.2 E+5	7.2 E+5	7.2 E+5	id
Hexachloroethane	ND	ND	ND	ND	ND	NA	2.30E+05	7.30E+05	1.00E+06	8.60E+05	1800
Indeno(1,2,3-cd)pyrene	ND	ND	ND	ND	ND	NA	20000	80000	1.60E+05	1.10E+05	nll
Isophorone	ND	ND	ND	ND	ND	NA	2.40E+06	2.40E+06	2.40E+06	2.40E+06	11000
2-Methylnaphthalene	ND	ND	ND	ND	ND	NA	8.10E+06	2.60E+07	3.70E+07	3.10E+07	id
Naphthalene	ND	ND	ND	ND	ND	NA	1.6 E+7	5.20E+07	7.20E+07	6.10E+07	870
2-Nitroaniline	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
3-Nitroaniline	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
4-Nitroaniline	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
Nitrobenzene	ND	ND	ND	ND	ND	NA	1.00E+05	3.40E+05	4.70E+05	3.90E+05	3600
2-Nitrophenol	ND	ND	ND	ND	ND	NA	6.30E+05	2.00E+06	2.90E+06	2.40E+06	id
4-Nitrophenol	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
Methylene chloride	ND	ND	ND	ND	ND	NA	1.30E+06	2.30E+06	2.30E+06	2.30E+06	1.90E+04
N-Nitrosodimethylamine	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
Tetrachloroethene	ND	ND	ND	ND	ND	NA	88000	88000	88000	88000	900
Pentachlorophenol	ND	ND	ND	ND	ND	NA	90000	3.20E+05	9.20E+05	4.90E+05	g, x
Phenanthrene	ND	ND	ND	ND	ND	NA	1.60E+06	5.20E+06	7.20E+06	6.10E+06	5300
Phenol	ND	ND	ND	ND	ND	NA	1.20E+07	1.20E+07	1.20E+07	1.20E+07	4200
Pyrene	ND	ND	ND	ND	ND	NA	2.90E+07	8.40E+07	1.50E+08	1.10E+08	id
2,4,5-Trichlorophenol	ND	ND	ND	ND	ND	NA	2.30E+07	7.30E+07	1.00E+08	8.60E+07	na
2,4,6-Trichlorophenol	ND	ND	ND	ND	ND	NA	7.10E+05	3.30E+06	4.60E+06	3.90E+06	na

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Parameter	GP-3-2	GP-4-1	GP-4-2	GP-5-1	GP-5-2	Statewide Default Background Levels	*Direct Contact Res/Com I	*Direct Contact Ind/Com II	*Direct Contact Com III	*Direct Contact Com IV	GSI
	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	
Arsenic, total	12000	5500	5800	6600	7900	5800	7600	37000	46000	41000	70000
Barium, total	89000	50000	78000	61000	45000	75000	3.70E+07	1.80E+08	1.50E+08	1.40E+08	G, X
Cadmium, total	390	240	340	170	190	1200	5.50E+05	2.10E+06	2.10E+06	2.10E+06	G, X
Chromium, total	14000	12000	21000	17000	12000	18000	7.90E+08	9.20E+06	1.00E+07	9.60E+06	G, X
Lead, total	10000	13000	96000	11000	8300	21000	4.00E+05	9.00E+05	4.00E+05	4.00E+05	g, m, x
Selenium, total	780	1300	ND	ND	ND	410	2.60E+06	9.60E+06	1.00E+07	1.00E+07	400
Silver, total	970	770	670	430	310	1000	2.50E+06	9.00E+06	9.80E+06	9.40E+06	500
Copper, total	22000	22000	24000	22000	26000	32000	2.00E+07	7.30E+07	7.90E+07	7.60E+07	g
Zinc, total	64000	62000	64000	60000	58000	47000	1.70E+08	6.30E+08	6.90E+08	6.60E+08	g
Mercury, total	29	57	27	61	37	130	1.60E+05	5.80E+05	6.20E+05	6.00E+05	100
Acetone	ND	ND	ND	ND	ND	NA	2.30E+07				34000
Acrylonitrile	ND	ND	ND	ND	ND	NA	16000	74000	1.00E+05	87000	98
Benzene	ND	ND	ND	ND	ND	NA	1.80E+05	4.00E+05	4.00E+05	4.00E+05	4000
Bromobenzene	ND	ND	ND	ND	ND	NA	5.40E+05				na
Bromochloromethane	ND	ND	ND	ND	ND	NA	NA				na
Bromodichloromethane	ND	ND	ND	ND	ND	NA	1.10E+05	4.90E+05	6.80E+05	5.70E+05	id
Bromoform	ND	ND	ND	ND	ND	NA	8.20E+05	8.70E+05	8.70E+05	8.70E+05	id
Bromomethane	ND	ND	ND	ND	ND	NA	3.20E+05	1.00E+06	1.40E+06	1.20E+06	700
n-Butylbenzene	ND	ND	ND	ND	ND	NA	2.50E+06				id
s-butylbenzene	ND	ND	ND	ND	ND	NA	2.50E+06				id
t-Butylbenzene	ND	ND	ND	ND	ND	NA	2.50E+06				na
Carbon disulfide	ND	ND	ND	ND	ND	NA	2.80E+05				id
Carbon tetrachloride	ND	ND	ND	ND	ND	NA	96000	3.90E+05	3.90E+05	3.90E+05	900
Chlorobenzene	ND	ND	ND	ND	ND	NA	2.60E+05	2.60E+05	2.60E+05	2.60E+05	940
Chloroethane	ND	ND	ND	ND	ND	NA	9.50E+05	9.50E+05	9.50E+05	9.50E+05	id
Chloroform	ND	ND	ND	ND	ND	NA	1.20E+06	1.50E+05	1.50E+05	1.50E+05	3400
Chloromethane	ND	ND	ND	ND	ND	NA	1.10E+06	1.10E+06	1.10E+06	1.10E+06	id

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International Wilaire Refuge Project
Summary of Soil Analytical Results

Parameter	GP-3-2 ug/kg	GP-4-1 ug/kg	GP-4-2 ug/kg	GP-5-1 ug/kg	GP-5-2 ug/kg	Statewide Default Background Levels ug/kg	*Direct Contact Res/Com I ug/kg	*Direct Contact Ind/Com II ug/kg	*Direct Contact Com III ug/kg	*Direct Contact Com IV ug/kg	GSI
Dibromochloromethane	ND	ND	ND	ND	ND	NA	1.10E+05	5.00E+05	6.10E+05	5.80E+05	id
1,2-Dibromo-3-chloropropa	ND	ND	ND	ND	ND	NA	NA				na
1,2-Dibromoethane	ND	ND	ND	ND	ND	NA	NA				na
Dibromoethane	ND	ND	ND	ND	ND	NA	NA				na
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	NA	2.10E+05	2.10E+05	2.10E+05	2.10E+05	360
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	NA	1.70E+05	1.70E+05	1.70E+05	1.70E+05	1100
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	NA	4.00E+05	1.90E+06	2.60E+06	2.20E+06	290
t-1,4-dichloro-2-butene	ND	ND	ND	ND	ND	NA	NA				na
Dichlorodofluoromethane	ND	ND	ND	ND	ND	NA	1.00E+06				id
1,1-Dichloroethane	ND	ND	ND	ND	ND	NA	8.90E+05	8.90E+05	8.90E+05	8.90E+05	15000
1,2-Dichloroethane	ND	ND	ND	ND	ND	NA	91000	4.20E+05	5.90E+05	4.90E+05	7200
1,1-Dichloroethene	ND	ND	ND	ND	ND	NA	2.00E+05	5.70E+05	5.70E+05	5.70E+05	1300
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	NA	6.40E+05	6.40E+05	6.40E+05	6.40E+05	12000
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	NA	1.40E+06	1.40E+06	1.40E+06	1.40E+06	30000
1,2-Dichloropropane	ND	ND	ND	ND	ND	NA	1.40E+05	5.50E+05	5.50E+05	5.50E+05	5800
cis-trans-1,3-Dichloroprope	ND	ND	ND	ND	ND	NA	1.00E+04	2.40E+05	3.40E+05	2.90E+05	na
dietyl ether	ND	ND	ND	ND	ND	NA	7.40E+06				id
Ethylbenzene	ND	ND	ND	ND	ND	NA	1.40E+05	1.40E+05	1.40E+05	1.40E+05	360
hexachloroethane	ND	ND	ND	ND	ND	NA	2.30E+05				1800
2-hexane	ND	ND	ND	ND	ND	NA	4.40E+04				na
iodomethane	ND	ND	ND	ND	ND	NA	NA				na
isopropylbenzene	ND	ND	ND	ND	ND	NA	3.90E+05				id
p-isopropyltoluene	ND	ND	ND	ND	ND	NA	NA				na
dichloromethane	ND	ND	ND	ND	ND	NA	NA				na
2-butanone (mek)	ND	ND	ND	ND	ND	NA	2.70E+07				44000
2-metylnaphthalene	ND	ND	ND	ND	62000	NA	8.10E+06				id
4-methyl-2-pentanone (mib	ND	ND	ND	ND	ND	NA	2.70E+06				id
mtbe	ND	ND	ND	ND	ND	NA	1.50E+06				15000
Naphthalene	ND	ND	ND	ND	9400	NA	1.6 E+7	5.20E+07	7.20E+07	6.10E+07	870

ID - insufficient data to develop criterion
NA - criterion not available
NLL - hazardous substance is not likely to leach under most soil conditions

Parameter	GP-3-2 ug/kg	GP-4-1 ug/kg	GP-4-2 ug/kg	GP-5-1 ug/kg	GP-5-2 ug/kg	Statewide Default Background Levels ug/kg	*Direct Contact Res/Com I ug/kg	*Direct Contact Ind/Com II ug/kg	*Direct Contact Com III ug/kg	*Direct Contact Com IV ug/kg	GSI
n-propylbenzene	ND	ND	ND	ND	ND	NA	2.50E+06				na
styrene	ND	ND	ND	ND	ND	NA	4.00E+05				2200
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	NA	53000	2.40E+05	3.40E+05	2.90E+05	1600
tetrachloroethane	ND	ND	ND	ND	ND	NA	NA				na
tetrahydrofuran	ND	ND	ND	ND	ND	NA	2.90E+06				220000
Toluene	ND	ND	ND	ND	ND	NA	2.50E+05	2.50E+05	2.50E+05	2.50E+05	2800
1,2,3-Trichlorobenzene.	ND	ND	ND	ND	ND	NA	NA				na
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	NA	9.90E+05	1.10E+06	1.10E+06	1.10E+06	1800
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	NA	4.60E+05	4.60E+05	4.60E+05	4.60E+05	4000
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	NA	1.80E+05	8.40E+05	9.20E+05	9.20E+05	6600
Trichloroethene	ND	ND	ND	ND	ND	NA	5.00E+05	5.00E+05	5.00E+05	5.00E+05	4000
trichlorofluoromethane	ND	ND	ND	ND	ND	NA	5.60E+05				na
1,2,3-trichloropropane	ND	ND	ND	ND	ND	NA	8.30E+05				na
1,2,4-trimethylbenzene	ND	ND	ND	ND	ND	NA	1.10E+05				570
1,3,5-trimethylbenzene	ND	ND	ND	ND	ND	NA	9.40E+04				1100
Vinyl Chloride	ND	ND	ND	ND	ND	NA	3800	34000	47000	40000	300
Xylene	ND	ND	ND	ND	ND	NA	1.50E+05	1.50E+05	1.50E+05	1.50E+05	700
Acenaphthene	ND	ND	ND	ND	ND	NA	4.10E+07	1.30E+08	1.80E+08	1.50E+08	4400
Acenaphthylene	ND	ND	ND	ND	ND	NA	1.60E+06	5.20E+06	7.20E+06	6.10E+06	id
Anthracene	ND	ND	ND	ND	ND	NA	2.30E+08	7.30E+08	1.00E+09	8.60E+08	id
Benzidine	ND	ND	ND	ND	ND	NA	1000	1000	1000	1000	id
Benzo(a)anthracene	ND	ND	ND	ND	ND	NA	20000	80000	1.60E+05	1.10E+05	nll
Benzo(a)pyrene	ND	ND	ND	ND	ND	NA	2000	8000	16000	11000	nll
Benzo(b)fluoranthene	ND	ND	ND	ND	ND	NA	20000	80000	1.60E+05	1.10E+05	nll
Benzo(g,h,i)perylene	ND	ND	ND	ND	ND	NA	2.50E+05	7.00E+06	1.40E+07	9.50E+06	nll
Benzo(k)fluoranthene	ND	ND	ND	ND	ND	NA	2.00E+05	8.00E+05	1.60E+06	1.10E+06	nll
Benzoic acid	ND	ND	ND	ND	ND	NA	9.90E+08	1.00E+09	1.00E+09	1.00E+09	na
Benzyl alcohol	ND	ND	ND	ND	ND	NA	5.80E+06	5.80E+06	5.80E+06	5.80E+06	na

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Parameter	GP-3-2 ug/kg	GP-4-1 ug/kg	GP-4-2 ug/kg	GP-5-1 ug/kg	GP-5-2 ug/kg	Statewide Default Background Levels ug/kg	*Direct Contact Res/Com I ug/kg	*Direct Contact Ind/Com II ug/kg	*Direct Contact Com III ug/kg	*Direct Contact Com IV ug/kg	GSI
4-bromophenyl phenyl ethe	ND	ND	ND	ND	ND	NA	NA				n
Butyl benzyl phthalate	ND	ND	ND	ND	ND	NA	3.10E+05				26000
4-chloro-3-methylphenol	ND	ND	ND	ND	ND	NA	4.50E+06				330
Bis(2-chloroethoxy)methan	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
Bis(2-Chloroethyl)ether	ND	ND	ND	ND	ND	NA	13000	58000	81000	68000	330
Bis(2-chloroisopropyl)Ether	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
2-chloronaphthalene	ND	ND	ND	ND	ND	NA	NA				na
2-chlorophenol	ND	ND	ND	ND	ND	NA	1.40E+06				440
4-chlorophenyl phenyl ethe	ND	ND	ND	ND	ND	NA	NA				na
Chrysene	ND	ND	ND	ND	ND	NA	2.00E+06	8.00E+06	1.60E+07	1.10E+07	nll
Di-n-butyl phthalate	ND	ND	ND	ND	ND	NA	7.60E+05	7.60E+05	7.60E+05	7.60E+05	11000
Di-n-octyl phthalate	ND	ND	ND	ND	ND	NA	6.90E+06	2.00E+07	3.60E+07	2.60E+07	id
Dibenzo(a,h)anthracene	ND	ND	ND	ND	ND	NA	2000	8000	16000	11000	nll
Dibenzofuran	ND	ND	ND	ND	ND	NA	ID	ID	ID	ID	1700
1,2-dichlorobenzene	ND	ND	ND	ND	ND	NA	2.10E+05				360
1,3-dichlorobenzene	ND	ND	ND	ND	ND	NA	1.70E+05				1100
1,4-dichlorobenzene	ND	ND	ND	ND	ND	NA	4.00E+05				290
3,3-dichlorobenzidine	ND	ND	ND	ND	ND	NA	6.60E+03				2000
2,4-Dichlorophenol	ND	ND	ND	ND	ND	NA	6.60E+05	1.80E+06	1.80E+06	1.80E+06	380
Diethyl phthalate	ND	ND	ND	ND	ND	NA	7.40E+05	7.40E+05	7.40E+05	7.40E+05	2200
Dimethyl phthalate	ND	ND	ND	ND	ND	NA	7.90E+05	7.90E+05	7.90E+05	7.90E+05	na
2,4-Dimethylphenol	ND	ND	ND	ND	ND	NA	1.10E+07	3.60E+07	5.10E+07	4.30E+07	7600
2,4-Dinitrotoluene	ND	ND	ND	ND	ND	NA	48000	2.20E+05	3.10E+05	2.60E+05	na
2,6-Dinitrotoluene	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
1,2-Diphenylhydrazine	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
Bis(2-ethylhexyl)phthalate	ND	ND	ND	ND	ND	NA	2.80E+06	1.00E+07	1.00E+07	1.00E+07	nll
Fluoranthene	ND	ND	ND	ND	ND	NA	4.60E+07	1.30E+08	2.40E+08	1.70E+08	5500
Fluorene	ND	ND	ND	ND	ND	NA	2.70E+07	8.70E+07	1.20E+08	1.00E+08	5300
Hexachlorobenzene	ND	ND	ND	ND	ND	NA	8900	37000	67000	49000	id

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Parameter	GP-3-2 ug/kg	GP-4-1 ug/kg	GP-4-2 ug/kg	GP-5-1 ug/kg	GP-5-2 ug/kg	Statewide Default Background Levels ug/kg	*Direct Contact Res/Com I ug/kg	*Direct Contact Ind/Com II ug/kg	*Direct Contact Com III ug/kg	*Direct Contact Com IV ug/kg	GSI
Hexachlorobutadiene	ND	ND	ND	ND	ND	NA	1.00E+05	3.50E+05	3.50E+05	3.50E+05	330
Hexachlorocyclopentadiene	ND	ND	ND	ND	ND	NA	7.2 E+5	7.2 E+5	7.2 E+5	7.2 E+5	id
Hexachloroethane	ND	ND	ND	ND	ND	NA	2.30E+05	7.30E+05	1.00E+06	8.60E+05	1800
Indeno(1,2,3-cd)pyrene	ND	ND	ND	ND	ND	NA	20000	80000	1.60E+05	1.10E+05	nll
Isophorone	ND	ND	ND	ND	ND	NA	2.40E+06	2.40E+06	2.40E+06	2.40E+06	11000
2-Methylnaphthalene	ND	ND	ND	ND	18000	NA	8.10E+06	2.60E+07	3.70E+07	3.10E+07	id
Naphthalene	ND	ND	ND	ND	4000	NA	1.6 E+7	5.20E+07	7.20E+07	6.10E+07	870
2-Nitroaniline	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
3-Nitroaniline	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
4-Nitroaniline	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
Nitrobenzene	ND	ND	ND	ND	ND	NA	1.00E+05	3.40E+05	4.70E+05	3.90E+05	3600
2-Nitrophenol	ND	ND	ND	ND	ND	NA	6.30E+05	2.00E+06	2.90E+06	2.40E+06	id
4-Nitrophenol	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
Methylene chloride	ND	ND	ND	ND	ND	NA	1.30E+06	2.30E+06	2.30E+06	2.30E+06	1.90E+04
N-Nitrosodimethylamine	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
Tetrachloroethene	ND	ND	ND	ND	ND	NA	88000	88000	88000	88000	900
Pentachlorophenol	ND	ND	ND	ND	ND	NA	90000	3.20E+05	9.20E+05	4.90E+05	g, x
Phenanthrene	ND	ND	ND	ND	ND	NA	1.60E+06	5.20E+06	7.20E+06	6.10E+06	5300
Phenol	ND	ND	ND	ND	ND	NA	1.20E+07	1.20E+07	1.20E+07	1.20E+07	4200
Pyrene	ND	ND	ND	ND	ND	NA	2.90E+07	8.40E+07	1.50E+08	1.10E+08	id
2,4,5-Trichlorophenol	ND	ND	ND	ND	ND	NA	2.30E+07	7.30E+07	1.00E+08	8.60E+07	na
2,4,6-Trichlorophenol	ND	ND	ND	ND	ND	NA	7.10E+05	3.30E+06	4.60E+06	3.90E+06	na

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Parameter	GP-6-1 ug/kg	GP-6-2 ug/kg	GP-7-1 ug/kg	GP-7-2 ug/kg	GP-8-1 ug/kg	GP-8-2 ug/kg	Statewide Default Background Levels ug/kg	*Direct Contact Res/Com I ug/kg	*Direct Contact Ind/Com II ug/kg	*Direct Contact Com III ug/kg	*Direct Contact Com IV ug/kg	GSI
Arsenic, total	39000	7300	4800	8600	4800	5800	5800	7600	37000	46000	41000	70000
Barium, total	440000	31000	77000	89000	2100000	220000	75000	3.70E+07	1.80E+08	1.50E+08	1.40E+08	G, X
Cadmium, total	9100	280	1400	4600	18000	1200	1200	5.50E+05	2.10E+06	2.10E+06	2.10E+06	G, X
Chromium, total	220000	7900	22000	63000	260000	48000	18000	7.90E+08	9.20E+06	1.00E+07	9.60E+06	G, X
Lead, total	1900000	7700	230000	97000	560000	260000	21000	4.00E+05	9.00E+05	4.00E+05	4.00E+05	g, m, x
Selenium, total	410	550	ND	ND	5300	ND	410	2.60E+06	9.60E+06	1.00E+07	1.00E+07	400
Silver, total	1100	420	560	1300	1400	650	1000	2.50E+06	9.00E+06	9.80E+06	9.40E+06	500
Copper, total	620000	23000	200000	130000	92000	120000	32000	2.00E+07	7.30E+07	7.90E+07	7.60E+07	g
Zinc, total	3300000	50000	88000	260000	410000	110000	47000	1.70E+08	6.30E+08	6.90E+08	6.60E+08	g
Mercury, total	73	30	290	330	67	44	130	1.60E+05	5.80E+05	6.20E+05	6.00E+05	100
Acetone	ND	ND	ND	ND	ND	ND	NA	2.30E+07				34000
Acrylonitrile	ND	ND	ND	ND	ND	ND	NA	16000	74000	1.00E+05	87000	98
Benzene	210	ND	570	170	ND	ND	NA	1.80E+05	4.00E+05	4.00E+05	4.00E+05	4000
Bromobenzene	ND	ND	ND	ND	ND	ND	NA	5.40E+05				na
Bromochloromethane	ND	ND	ND	ND	ND	ND	NA	NA				na
Bromodichloromethane	ND	ND	ND	ND	ND	ND	NA	1.10E+05	4.90E+05	6.80E+05	5.70E+05	id
Bromoform	ND	ND	ND	ND	ND	ND	NA	8.20E+05	8.70E+05	8.70E+05	8.70E+05	id
Bromomethane	ND	ND	ND	ND	ND	ND	NA	3.20E+05	1.00E+06	1.40E+06	1.20E+06	700
n-Butylbenzene	ND	ND	ND	ND	ND	ND	NA	2.50E+06				id
s-butylbenzene	ND	ND	ND	ND	ND	ND	NA	2.50E+06				id
t-Butylbenzene	ND	ND	ND	ND	ND	ND	NA	2.50E+06				na
Carbon disulfide	ND	ND	ND	ND	ND	ND	NA	2.80E+05				id
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	NA	96000	3.90E+05	3.90E+05	3.90E+05	900
Chlorobenzene	ND	ND	38000	170	4600	7200	NA	2.60E+05	2.60E+05	2.60E+05	2.60E+05	940
Chloroethane	ND	ND	ND	ND	ND	ND	NA	9.50E+05	9.50E+05	9.50E+05	9.50E+05	id
Chloroform	ND	ND	ND	ND	ND	ND	NA	1.20E+06	1.50E+05	1.50E+05	1.50E+05	3400
Chloromethane	ND	ND	ND	ND	ND	ND	NA	1.10E+06	1.10E+06	1.10E+06	1.10E+06	id

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Parameter	GP-6-1	GP-6-2	GP-7-1	GP-7-2	GP-8-1	GP-8-2	Statewide Default Background Levels	*Direct Contact Res/Com I	*Direct Contact Ind/Com II	*Direct Contact Com III	*Direct Contact Com IV	GSI
	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	
Dibromochloromethane	ND	ND	ND	ND	ND	ND	NA	1.10E+05	5.00E+05	6.10E+05	5.80E+05	id
1,2-Dibromo-3-chloroprop	ND	ND	ND	ND	ND	ND	NA	NA				na
1,2-Dibromoethane	ND	ND	ND	ND	ND	ND	NA	NA				na
Dibromoethane	ND	ND	ND	ND	ND	ND	NA	NA				na
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	NA	2.10E+05	2.10E+05	2.10E+05	2.10E+05	360
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND	NA	1.70E+05	1.70E+05	1.70E+05	1.70E+05	1100
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	NA	4.00E+05	1.90E+06	2.60E+06	2.20E+06	290
t-1,4-dichloro-2-butene	ND	ND	ND	ND	ND	ND	NA	NA				na
Dichlorodofluoromethane	ND	ND	ND	ND	ND	ND	NA	1.00E+06				id
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	NA	8.90E+05	8.90E+05	8.90E+05	8.90E+05	15000
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	NA	91000	4.20E+05	5.90E+05	4.90E+05	7200
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	NA	2.00E+05	5.70E+05	5.70E+05	5.70E+05	1300
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	NA	6.40E+05	6.40E+05	6.40E+05	6.40E+05	12000
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	NA	1.40E+06	1.40E+06	1.40E+06	1.40E+06	30000
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	NA	1.40E+05	5.50E+05	5.50E+05	5.50E+05	5800
cis-trans-1,3-Dichloroprop	ND	ND	ND	ND	ND	ND	NA	1.00E+04	2.40E+05	3.40E+05	2.90E+05	na
dietyl ether	ND	ND	ND	ND	ND	ND	NA	7.40E+06				id
Ethylbenzene	ND	ND	85	150	ND	ND	NA	1.40E+05	1.40E+05	1.40E+05	1.40E+05	360
hexachloroethane	ND	ND	ND	ND	ND	ND	NA	2.30E+05				1800
2-hexane	ND	ND	ND	ND	ND	ND	NA	4.40E+04				na
iodomethane	ND	ND	ND	ND	ND	ND	NA	NA				na
isopropylbenzene	140	ND	ND	ND	ND	ND	NA	3.90E+05				id
p-isopropyltoluene	ND	ND	ND	ND	ND	ND	NA	NA				na
dichloromethane	ND	ND	ND	ND	ND	ND	NA	NA				na
2-butanone (mek)	ND	ND	1500	2300	ND	ND	NA	2.70E+07				44000
2-metylnaphthalene	ND	ND	ND	ND	430	ND	NA	8.10E+06				id
4-methyl-2-pentanone (m	ND	ND	330	ND	ND	ND	NA	2.70E+06				id
mtbe	ND	ND	ND	ND	ND	ND	NA	1.50E+06				15000
Naphthalene	ND	ND	ND	ND	370	380	NA	1.6 E+7	5.20E+07	7.20E+07	6.10E+07	870

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International Wildlife Refuge Project
Summary of Soil Analytical Results

Parameter	GP-6-1	GP-6-2	GP-7-1	GP-7-2	GP-8-1	GP-8-2	Statewide Default Background Levels	*Direct Contact Res/Com I	*Direct Contact Ind/Com II	*Direct Contact Com III	*Direct Contact Com IV	GSI
	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	
n-propylbenzene	ND	ND	ND	83	ND	ND	NA	2.50E+06				na
styrene	ND	ND	ND	ND	ND	ND	NA	4.00E+05				2200
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	NA	53000	2.40E+05	3.40E+05	2.90E+05	1600
tetrachloroethane	ND	ND	ND	ND	ND	ND	NA	NA				na
tetrahydrofuran	ND	ND	ND	ND	ND	ND	NA	2.90E+06				220000
Toluene	ND	ND	ND	ND	110	ND	NA	2.50E+05	2.50E+05	2.50E+05	2.50E+05	2800
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	ND	NA	NA				na
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	NA	9.90E+05	1.10E+06	1.10E+06	1.10E+06	1800
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	NA	4.60E+05	4.60E+05	4.60E+05	4.60E+05	4000
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	NA	1.80E+05	8.40E+05	9.20E+05	9.20E+05	6600
Trichloroethene	ND	ND	ND	ND	ND	ND	NA	5.00E+05	5.00E+05	5.00E+05	5.00E+05	4000
trichlorofluoromethane	ND	ND	ND	ND	ND	ND	NA	5.60E+05				na
1,2,3-trichloropropane	ND	ND	ND	ND	ND	ND	NA	8.30E+05				na
1,2,4-trimethylbenzene	ND	ND	160	620	120	ND	NA	1.10E+05				570
1,3,5-trimethylbenzene	ND	ND	ND	250	ND	ND	NA	9.40E+04				1100
Vinyl Chloride	ND	ND	ND	ND	ND	ND	NA	3800	34000	47000	40000	300
Xylene	210	ND	ND	700	ND	ND	NA	1.50E+05	1.50E+05	1.50E+05	1.50E+05	700
Acenaphthene	ND	ND	ND	ND	ND	ND	NA	4.10E+07	1.30E+08	1.80E+08	1.50E+08	4400
Acenaphthylene	ND	ND	ND	ND	ND	ND	NA	1.60E+06	5.20E+06	7.20E+06	6.10E+06	id
Anthracene	ND	ND	ND	ND	ND	ND	NA	2.30E+08	7.30E+08	1.00E+09	8.60E+08	id
Benzidine	ND	ND	ND	ND	ND	ND	NA	1000	1000	1000	1000	id
Benzo(a)anthracene	ND	ND	ND	ND	ND	440	NA	20000	80000	1.60E+05	1.10E+05	nll
Benzo(a)pyrene	ND	ND	ND	ND	ND	ND	NA	2000	8000	16000	11000	nll
Benzo(b)fluoranthene	ND	ND	ND	ND	ND	520	NA	20000	80000	1.60E+05	1.10E+05	nll
Benzo(g,h,i)perylene	ND	ND	ND	ND	ND	ND	NA	2.50E+05	7.00E+06	1.40E+07	9.50E+06	nll
Benzo(k)fluoranthene	700	ND	ND	ND	ND	ND	NA	2.00E+05	8.00E+05	1.60E+06	1.10E+06	nll
Benzoic acid	ND	ND	ND	ND	ND	ND	NA	9.90E+08	1.00E+09	1.00E+09	1.00E+09	na
Benzyl alcohol	ND	ND	ND	ND	ND	ND	NA	5.80E+06	5.80E+06	5.80E+06	5.80E+06	na

ID - insufficient data to develop criterion
NA - criterion not available
NLL - hazardous substance is not likely to leach under most soil conditions

International Wildlife Refuge Project
Summary of Soil Analytical Results

Parameter	GP-6-1	GP-6-2	GP-7-1	GP-7-2	GP-8-1	GP-8-2	Statewide Default Background Levels	*Direct Contact Res/Com I	*Direct Contact Ind/Com II	*Direct Contact Com III	*Direct Contact Com IV	GSI
	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	
4-bromophenyl phenyl eth	ND	ND	ND	ND	ND	ND	NA	NA				n
Butyl benzyl phthalate	ND	ND	ND	ND	ND	ND	NA	3.10E+05				26000
4-chloro-3-methylphenol	ND	ND	ND	ND	ND	ND	NA	4.50E+06				330
Bis(2-chloroethoxy)metha	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
Bis(2-Chloroethyl)ether	ND	ND	ND	ND	ND	ND	NA	13000	58000	81000	68000	330
Bis(2-chloroisopropyl)Eth	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
2-chloronaphthalene	ND	ND	ND	ND	ND	ND	NA	NA				na
2-chlorophenol	ND	ND	ND	ND	ND	ND	NA	1.40E+06				440
4-chlorophenyl phenyl eth	ND	ND	ND	ND	ND	ND	NA	NA				na
Chrysene	1800	ND	ND	ND	ND	420	NA	2.00E+06	8.00E+06	1.60E+07	1.10E+07	nll
Di-n-butyl phthalate	ND	ND	ND	ND	ND	ND	NA	7.60E+05	7.60E+05	7.60E+05	7.60E+05	11000
Di-n-octyl phthalate	ND	ND	ND	ND	ND	ND	NA	6.90E+06	2.00E+07	3.60E+07	2.60E+07	id
Dibenzo(a,h)anthracene	ND	ND	ND	ND	ND	ND	NA	2000	8000	16000	11000	nll
Dibenzofuran	ND	ND	ND	ND	ND	ND	NA	ID	ID	ID	ID	1700
1,2-dichlorobenzene	ND	ND	ND	ND	ND	ND	NA	2.10E+05				360
1,3-dichlorobenzene	ND	ND	ND	ND	ND	ND	NA	1.70E+05				1100
1,4-dichlorobenzene	ND	ND	ND	ND	ND	ND	NA	4.00E+05				290
3,3-dichlorobenzidine	ND	ND	ND	ND	ND	ND	NA	6.60E+03				2000
2,4-Dichlorophenol	ND	ND	ND	ND	ND	ND	NA	6.60E+05	1.80E+06	1.80E+06	1.80E+06	380
Diethyl phthalate	ND	ND	ND	ND	ND	ND	NA	7.40E+05	7.40E+05	7.40E+05	7.40E+05	2200
Dimethyl phthalate	ND	ND	ND	ND	ND	ND	NA	7.90E+05	7.90E+05	7.90E+05	7.90E+05	na
2,4-Dimethylphenol	ND	ND	ND	ND	ND	ND	NA	1.10E+07	3.60E+07	5.10E+07	4.30E+07	7600
2,4-Dinitrotoluene	ND	ND	ND	ND	ND	ND	NA	48000	2.20E+05	3.10E+05	2.60E+05	na
2,6-Dinitrotoluene	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
1,2-Diphenylhydrazine	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
Bis(2-ethylhexyl)phthalate	ND	ND	ND	ND	ND	670	NA	2.80E+06	1.00E+07	1.00E+07	1.00E+07	nll
Fluoranthene	7200	ND	ND	ND	ND	660	NA	4.60E+07	1.30E+08	2.40E+08	1.70E+08	5500
Fluorene	ND	ND	ND	ND	ND	ND	NA	2.70E+07	8.70E+07	1.20E+08	1.00E+08	5300
Hexachlorobenzene	ND	ND	ND	ND	ND	ND	NA	8900	37000	67000	49000	id

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International Wildlife Refuge Project
Summary of Soil Analytical Results

Parameter	GP-6-1	GP-6-2	GP-7-1	GP-7-2	GP-8-1	GP-8-2	Statewide Default Background Levels	*Direct Contact Res/Com I	*Direct Contact Ind/Com II	*Direct Contact Com III	*Direct Contact Com IV	GSI
	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	
Hexachlorobutadiene	ND	ND	ND	ND	ND	ND	NA	1.00E+05	3.50E+05	3.50E+05	3.50E+05	330
Hexachlorocyclopentadie	ND	ND	ND	ND	ND	ND	NA	7.2 E+5	7.2 E+5	7.2 E+5	7.2 E+5	id
Hexachloroethane	ND	ND	ND	ND	ND	ND	NA	2.30E+05	7.30E+05	1.00E+06	8.60E+05	1800
Indeno(1,2,3-cd)pyrene	ND	ND	ND	ND	ND	ND	NA	20000	80000	1.60E+05	1.10E+05	nll
Isophorone	ND	ND	ND	ND	ND	ND	NA	2.40E+06	2.40E+06	2.40E+06	2.40E+06	11000
2-Methylnaphthalene	ND	ND	ND	ND	490	ND	NA	8.10E+06	2.60E+07	3.70E+07	3.10E+07	id
Naphthalene	ND	ND	450	ND	840	2100	NA	1.6 E+7	5.20E+07	7.20E+07	6.10E+07	870
2-Nitroaniline	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
3-Nitroaniline	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
4-Nitroaniline	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
Nitrobenzene	ND	ND	ND	ND	ND	ND	NA	1.00E+05	3.40E+05	4.70E+05	3.90E+05	3600
2-Nitrophenol	ND	ND	ND	ND	ND	ND	NA	6.30E+05	2.00E+06	2.90E+06	2.40E+06	id
4-Nitrophenol	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
Methylene chloride	ND	ND	ND	ND	ND	ND	NA	1.30E+06	2.30E+06	2.30E+06	2.30E+06	1.90E+04
N-Nitrosodimethylamine	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	na
Tetrachloroethene	ND	ND	ND	ND	ND	ND	NA	88000	88000	88000	88000	900
Pentachlorophenol	ND	ND	ND	ND	ND	ND	NA	90000	3.20E+05	9.20E+05	4.90E+05	g, x
Phenanthrene	1800	ND	690	ND	ND	590	NA	1.60E+06	5.20E+06	7.20E+06	6.10E+06	5300
Phenol	ND	ND	ND	ND	ND	ND	NA	1.20E+07	1.20E+07	1.20E+07	1.20E+07	4200
Pyrene	4600	ND	ND	ND	ND	590	NA	2.90E+07	8.40E+07	1.50E+08	1.10E+08	id
2,4,5-Trichlorophenol	ND	ND	ND	ND	ND	ND	NA	2.30E+07	7.30E+07	1.00E+08	8.60E+07	na
2,4,6-Trichlorophenol	ND	ND	ND	ND	ND	ND	NA	7.10E+05	3.30E+06	4.60E+06	3.90E+06	na
PCB, 1016	-----	ND	-----	ND	-----	-----	NA					nll
PCB, 1221	-----	ND	-----	ND	-----	-----	NA					nll
PCB, 1232	-----	ND	-----	ND	-----	-----	NA					nll
PCB, 1242	-----	ND	-----	ND	-----	-----	NA					nll
PCB, 1248	-----	ND	-----	ND	-----	-----	NA					nll
PCB, 1254	-----	ND	-----	ND	-----	-----	NA					nll
PCB, 1260	-----	ND	-----	ND	-----	-----	NA					nll

ID - insufficient data to develop criterion
NA - criterion not available
NLL - hazardous substance is not likely to leach under most soil conditions

RTI LABORATORIES, INC.

Environmental Chemical & Microbiological Testing

MMBDC

Report of Analytical Services

Camp Dresser & McKee
Attn: Yolanda Walton
One Woodward Ave., Ste. 1500
Detroit, MI 48226

		RTI Project#:	05-04850
		Date Reported:	06/09/05
		Date Completed:	06/09/05
Permit#:		**Date Received:**	05/27/05
		PO #:	
Report Number:	05-04850-1	**Fax:**	313-963-3130

Project Title: 8260 Scan, 8270 Scan, Metals

Project Description: 16 Soil Samples

Project Name/#: Trenton Chemical Facility

Project Remarks:

Sample Summary

	Sample ID	RTI Sample#	Sample Matrix	Date Collected
1	GP-1-1	05-04850-001	Soil	05/26/05
2	GP-1-2	05-04850-002	Soil	05/26/05
3	GP-2-1	05-04850-003	Soil	05/26/05
4	GP-2-2	05-04850-004	Soil	05/26/05
5	GP-3-1	05-04850-005	Soil	05/26/05
6	GP-3-2	05-04850-006	Soil	05/26/05
7	GP-4-1	05-04850-007	Soil	05/26/05
8	GP-4-2	05-04850-008	Soil	05/26/05
9	GP-5-1	05-04850-009	Soil	05/26/05
10	GP-5-2	05-04850-010	Soil	05/26/05
11	GP-6-1	05-04850-011	Soil	05/26/05
12	GP-6-2	05-04850-012	Soil	05/26/05
13	GP-7-1	05-04850-013	Soil	05/26/05
14	GP-7-2	05-04850-014	Soil	05/26/05
15	GP-8-1	05-04850-015	Soil	05/26/05
16	GP-8-2	05-04850-016	Soil	05/26/05

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RTI LABORATORIES, INC.

Environmental Chemical & Microbiological Testing

MMBDC

Report of Analytical Services

Camp Dresser & McKee
Attn: Yolanda Walton
One Woodward Ave., Ste. 1500
Detroit, MI 48226

		RTI Project#:	05-04850
		Date Reported:	06/09/05
		Date Completed:	06/09/05
Permit#:		**Date Received:**	05/27/05
		PO #:	
Report Number:	05-04850-1	**Fax:**	313-963-3130

Project Title: 8260 Scan, 8270 Scan, Metals
Project Description: 16 Soil Samples
Project Name/#: Trenton Chemical Facility
Project Remarks:

Approved by : _____ Date: 6/10/05

Charles O'Bryan, Director of Quality

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Case Narrative

Analytical Comments for 8270 Scan (Soil), sample 05-04850-012: One of the surrogate compounds exhibited low recovery due to matrix interference

Analytical Comments for 8270 Scan (Soil), sample 05-04850-013: One of the surrogate compounds exhibited low recovery due to matrix interference

RTI LABORATORIES, INC.

Environmental Chemical & Microbiological Testing

RESULTS OF ANALYSIS

Client:	Camp Dresser & McKee			**RTI Project#:**	05-04850
Project:	Trenton Chemical Facility	**Report Number:**	05-04850-1	**Page:**	Page 4 of 90

Sample ID: 05-04850-001; GP-1-1

8260 Scan (Soil-MeOH preserved)

Method(s): 5035, 8260 **Date Analyzed:** 06/02/05 **Analyzed by:** JW

Analyte	Result	PQL	Units
Acetone	ND	1000	ug/kg-dry
Acrylonitrile	ND	250	ug/kg-dry
Benzene	ND	50	ug/kg-dry
Bromobenzene	ND	100	ug/kg-dry
Bromochloromethane	ND	50	ug/kg-dry
Bromodichloromethane	ND	100	ug/kg-dry
Bromoform	ND	100	ug/kg-dry
Bromomethane	ND	100	ug/kg-dry
n-Butylbenzene	ND	50	ug/kg-dry
S-butylbenzene	ND	50	ug/kg-dry
t-Butylbenzene	ND	50	ug/kg-dry
Carbon disulfide	ND	250	ug/kg-dry
Carbon tetrachloride	ND	50	ug/kg-dry
Chlorobenzene	ND	50	ug/kg-dry
Chloroethane	ND	250	ug/kg-dry
Chloroform	ND	50	ug/kg-dry
Chloromethane	ND	250	ug/kg-dry
Dibromochloromethane	ND	250	ug/kg-dry
1,2-Dibromo-3-chloropropane	ND	100	ug/kg-dry
1,2-Dibromoethane (EDB)	ND	50	ug/kg-dry
Dibromomethane	ND	50	ug/kg-dry
1,2-Dichlorobenzene	ND	50	ug/kg-dry
1,3-Dichlorobenzene	ND	50	ug/kg-dry
1,4-Dichlorobenzene	ND	50	ug/kg-dry
t-1,4-Dichloro-2-butene	ND	50	ug/kg-dry
Dichlorodifluoromethane	ND	50	ug/kg-dry
1,1-Dichloroethane	ND	50	ug/kg-dry
1,2-Dichloroethane	ND	50	ug/kg-dry
1,1-Dichloroethene	ND	50	ug/kg-dry
c-1,2-Dichloroethene	ND	50	ug/kg-dry

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Client:	Camp Dresser & McKee			**RTI Project#:**	05-04850
Project:	Trenton Chemical Facility	**Report Number:**	05-04850-1	**Page:**	Page 5 of 90

continued from previous page...

Sample ID: 05-04850-001; GP-1-1

Analyte	Result	PQL	Units
t-1,2-Dichloroethene	ND	50	ug/kg-dry
1,2-Dichloropropane	ND	50	ug/kg-dry
1,3-Dichloropropene (cis&trans)	ND	100	ug/kg-dry
Diethyl Ether	ND	100	ug/kg-dry
Ethyl benzene	ND	50	ug/kg-dry
Hexachloroethane	ND	100	ug/kg-dry
2-Hexanone	ND	250	ug/kg-dry
Iodomethane	ND	50	ug/kg-dry
Isopropylbenzene	ND	50	ug/kg-dry
p-Isopropyltoluene	ND	100	ug/kg-dry
Dichloromethane	ND	250	ug/kg-dry
2-butanone (MEK)	ND	1000	ug/kg-dry
2-Methylnaphthalene	ND	250	ug/kg-dry
4-Methyl-2-pentanone(MIBK)	ND	250	ug/kg-dry
MTBE	ND	250	ug/kg-dry
Naphthalene	ND	250	ug/kg-dry
n-Propylbenzene	ND	50	ug/kg-dry
Styrene	ND	50	ug/kg-dry
1,1,2,2-Tetrachloroethane	ND	100	ug/kg-dry
Tetrachloroethene	ND	50	ug/kg-dry
Tetrahydrofuran	ND	1200	ug/kg-dry
Toluene	ND	50	ug/kg-dry
1,2,3-Trichlorobenzene	ND	250	ug/kg-dry
1,2,4-Trichlorobenzene	ND	100	ug/kg-dry
1,1,1-Trichloroethane	ND	50	ug/kg-dry
1,1,2-Trichloroethane	ND	50	ug/kg-dry
Trichloroethene	ND	50	ug/kg-dry
Trichlorofluoromethane	ND	50	ug/kg-dry
1,2,3-Trichloropropane	ND	50	ug/kg-dry
1,2,4-Trimethylbenzene	ND	100	ug/kg-dry
1,3,5-Trimethylbenzene	ND	100	ug/kg-dry
Vinyl chloride	ND	40	ug/kg-dry
Xylene, Total	ND	150	ug/kg-dry

Analyte	**Result**	**PQL**	**Units**

continued from previous page...

Sample ID: 05-04850-001; GP-1-1

Surrogate Recovery Data

Compound	**% Recovery**	**Acceptable Limits(%)**	**Qualifier**
4-Bromofluorobenzene (SS)	**100**	74 - 121	
Dibromofluoromethane (SS)	**98**	80 - 120	
Toluene-d8 (SS)	**98**	81 - 117	

Method: [illegible] **Date Prepared:** 06/03/05 **Date Analyzed:** 06/09/05 **Analyzed by:** JG3

Acenaphthene	ND	330	ug/kg-dry
Acenaphthylen[illegible]	ND	330	ug/kg-dry
Aniline	ND	330	ug/kg-dry
Anthr[illegible]	ND	330	ug/kg-dry
[illegible]	ND	1300	ug/kg-dry
Benzo(a)anthracene	ND	330	ug/kg-dry
Benzo(a)pyrene	ND	330	ug/kg-dry
Benzo(b)fluoranthene	ND	330	ug/kg-dry
Benzo(ghi)Perylene	ND	330	ug/kg-dry
Benzo(k)fluoranthene	ND	330	ug/kg-dry
Benzoic acid	ND	3300	ug/kg-dry
Benzyl alcohol	ND	3300	ug/kg-dry
4-Bromophenyl phenyl ether	ND	330	ug/kg-dry
Butyl benzyl phthalate	ND	330	ug/kg-dry
4-Chloro-3-methylphenol	ND	330	ug/kg-dry
4-Chloroaniline	ND	330	ug/kg-dry
Bis(2-chloroethoxy)methane	ND	330	ug/kg-dry
Bis(2-chloroethyl)ether	ND	330	ug/kg-dry
Bis(2-chloroisopropyl)ether	ND	330	ug/kg-dry
2-Chloronaphthalene	ND	330	ug/kg-dry
2-Chlorophenol	ND	330	ug/kg-dry
4-Chlorophenyl phenyl ether	ND	330	ug/kg-dry
Chrysene	ND	330	ug/kg-dry
Di-n-butyl phthalate	ND	330	ug/kg-dry
Di-n-octylphthalate	ND	330	ug/kg-dry
Dibenzo(a,h)anthracene	ND	330	ug/kg-dry

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Sample ID: 05-04850-001; GP-1-1

Analyte	Result	PQL	Units
Dibenzofuran	ND	330	ug/kg-dry
1,2-Dichlorobenzene	ND	330	ug/kg-dry
1,3-Dichlorobenzene	ND	330	ug/kg-dry
1,4-Dichlorobenzene	ND	330	ug/kg-dry
3,3'-Dichlorobenzidine	ND	1700	ug/kg-dry
2,4-Dichlorophenol	ND	330	ug/kg-dry
Diethyl phthalate	ND	330	ug/kg-dry
Dimethyl phthalate	ND	330	ug/kg-dry
2,4,-Dimethylphenol	ND	330	ug/kg-dry
4,6-Dinitro-o-Cresol	ND	1700	ug/kg-dry
2,4,-Dinitrophenol	ND	1700	ug/kg-dry
2,4-Dinitrotoluene	ND	330	ug/kg-dry
2,6-Dinitrotoluene	ND	330	ug/kg-dry
1,2-Diphenylhydrazine	ND	330	ug/kg-dry
Bis(2-ethylhexyl)phthalate	ND	330	ug/kg-dry
Fluoranthene	ND	330	ug/kg-dry
Fluorene	ND	330	ug/kg-dry
Hexachlorobenzene	ND	330	ug/kg-dry
Hexachlorobutadiene	ND	330	ug/kg-dry
Hexachlorocyclopentadiene	ND	330	ug/kg-dry
Hexachloroethane	ND	330	ug/kg-dry
Indeno(1,2,3-cd)pyrene	ND	330	ug/kg-dry
Isophorone	ND	330	ug/kg-dry
2-Methylnaphthalene	ND	330	ug/kg-dry
2-Methylphenol	ND	330	ug/kg-dry
3 & 4-Methylphenol	ND	330	ug/kg-dry
Naphthalene	ND	330	ug/kg-dry
2-Nitroaniline	ND	1700	ug/kg-dry
3-Nitroaniline	ND	1700	ug/kg-dry
4-Nitroaniline	ND	1700	ug/kg-dry
Nitrobenzene	ND	330	ug/kg-dry
2-Nitrophenol	ND	330	ug/kg-dry
4-Nitrophenol	ND	1700	ug/kg-dry
N-Nitrosodi-n-propylamine	ND	330	ug/kg-dry

Client:	Camp Dresser & McKee			**RTI Project#:**	05-04850
Project:	Trenton Chemical Facility	**Report Number:**	05-04850-1	**Page:**	Page 8 of 90

Analyte	Result	PQL	Units

continued from previous page...

Sample ID: 05-04850-001; GP-1-1

N-Nitrosodimethylamine	ND	330	ug/kg-dry
N-Nitrosodiphenylamine	ND	330	ug/kg-dry
Pentachlorophenol	ND	330	ug/kg-dry
Phenanthrene	ND	330	ug/kg-dry
Phenol	ND	330	ug/kg-dry
Pyrene	ND	330	ug/kg-dry
1,2,4-Trichlorobenzene	ND	330	ug/kg-dry
2,4,5-Trichlorophenol	ND	330	ug/kg-dry
2,4,6-Trichlorophenol	ND	330	ug/kg-dry

Surrogate Recovery Data

Compound	% Recovery	Acceptable Limits(%)	Qualifier
2,4,6-Tribromophenol (Surr)	40	19 - 122	
2-Fluorobiphenyl (Surr)	51	30 - 115	
2-Fluorophenol (Surr)	56	24 - 113	
d14-Terphenyl (Surr)	49	19 - 122	
d5-Nitrobenzene (Surr)	54	23 - 120	
d6-Phenol (Surr)	58	25 - 121	

Total Metals (Soil)

Method(s): 3050, 6020 **Date Prepared:** 06/01/05 **Date Analyzed:** 06/03/05 **Analyzed by:** AB2

Arsenic, As	**13000**	50	ug/kg-dry
Barium, Ba	**49000**	500	ug/kg-dry
Cadmium, Cd	**450**	50	ug/kg-dry
Chromium, Cr	**14000**	250	ug/kg-dry
Lead, Pb	**14000**	500	ug/kg-dry
Selenium, Se	**1900**	100	ug/kg-dry
Silver, Ag	**1400**	250	ug/kg-dry
Copper, Cu	**42000**	500	ug/kg-dry
Zinc, Zn	**130000**	500	ug/kg-dry

Mercury (Soil)

Method(s): 7471A **Date Prepared:** 06/01/05 **Date Analyzed:** 06/02/05 **Analyzed by:** MB2

Mercury, Hg	**89**	21	ug/kg-dry

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Sample ID: 05-04850-001; GP-1-1

Sample ID: 05-04850-002; GP-1-2

8260 Scan (Soil-MeOH preserved)

Method(s): 5035, 8260 **Date Analyzed:** 06/02/05 **Analyzed by:** JW

Analyte	Result	PQL	Units
Acetone	ND	1000	ug/kg-dry
Acrylonitrile	ND	250	ug/kg-dry
Benzene	ND	50	ug/kg-dry
Bromobenzene	ND	100	ug/kg-dry
Bromochloromethane	ND	50	ug/kg-dry
Bromodichloromethane	ND	100	ug/kg-dry
Bromoform	ND	100	ug/kg-dry
Bromomethane	ND	100	ug/kg-dry
n-Butylbenzene	ND	50	ug/kg-dry
S-butylbenzene	ND	50	ug/kg-dry
t-Butylbenzene	ND	50	ug/kg-dry
Carbon disulfide	ND	250	ug/kg-dry
Carbon tetrachloride	ND	50	ug/kg-dry
Chlorobenzene	ND	50	ug/kg-dry
Chloroethane	ND	250	ug/kg-dry
Chloroform	ND	50	ug/kg-dry
Chloromethane	ND	250	ug/kg-dry
Dibromochloromethane	ND	250	ug/kg-dry
1,2-Dibromo-3-chloropropane	ND	100	ug/kg-dry
1,2-Dibromoethane (EDB)	ND	50	ug/kg-dry
Dibromomethane	ND	50	ug/kg-dry
1,2-Dichlorobenzene	ND	50	ug/kg-dry
1,3-Dichlorobenzene	ND	50	ug/kg-dry
1,4-Dichlorobenzene	ND	50	ug/kg-dry
t-1,4-Dichloro-2-butene	ND	50	ug/kg-dry
Dichlorodifluoromethane	ND	50	ug/kg-dry
1,1-Dichloroethane	ND	50	ug/kg-dry
1,2-Dichloroethane	ND	50	ug/kg-dry
1,1-Dichloroethene	ND	50	ug/kg-dry
c-1,2-Dichloroethene	ND	50	ug/kg-dry

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Sample ID: 05-04850-002; GP-1-2

Analyte	Result	PQL	Units
t-1,2-Dichloroethene	ND	50	ug/kg-dry
1,2-Dichloropropane	ND	50	ug/kg-dry
1,3-Dichloropropene (cis&trans)	ND	100	ug/kg-dry
Diethyl Ether	ND	100	ug/kg-dry
Ethyl benzene	ND	50	ug/kg-dry
Hexachloroethane	ND	100	ug/kg-dry
2-Hexanone	ND	250	ug/kg-dry
Iodomethane	ND	50	ug/kg-dry
Isopropylbenzene	ND	50	ug/kg-dry
p-Isopropyltoluene	ND	100	ug/kg-dry
Dichloromethane	ND	250	ug/kg-dry
2-butanone (MEK)	ND	1000	ug/kg-dry
2-Methylnaphthalene	ND	250	ug/kg-dry
4-Methyl-2-pentanone(MIBK)	ND	250	ug/kg-dry
MTBE	ND	250	ug/kg-dry
Naphthalene	ND	250	ug/kg-dry
n-Propylbenzene	ND	50	ug/kg-dry
Styrene	ND	50	ug/kg-dry
1,1,2,2-Tetrachloroethane	ND	100	ug/kg-dry
Tetrachloroethene	ND	50	ug/kg-dry
Tetrahydrofuran	ND	1200	ug/kg-dry
Toluene	ND	50	ug/kg-dry
1,2,3-Trichlorobenzene	ND	250	ug/kg-dry
1,2,4-Trichlorobenzene	ND	100	ug/kg-dry
1,1,1-Trichloroethane	ND	50	ug/kg-dry
1,1,2-Trichloroethane	ND	50	ug/kg-dry
Trichloroethene	ND	50	ug/kg-dry
Trichlorofluoromethane	ND	50	ug/kg-dry
1,2,3-Trichloropropane	ND	50	ug/kg-dry
1,2,4-Trimethylbenzene	ND	100	ug/kg-dry
1,3,5-Trimethylbenzene	ND	100	ug/kg-dry
Vinyl chloride	ND	40	ug/kg-dry
Xylene, Total	ND	150	ug/kg-dry

Analyte	**Result**	**PQL**	**Units**

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Sample ID: 05-04850-002; GP-1-2

Surrogate Recovery Data

Compound	**% Recovery**	**Acceptable Limits(%)**	**Qualifier**
4-Bromofluorobenzene (SS)	98	74 - 121	
Dibromofluoromethane (SS)	99	80 - 120	
Toluene-d8 (SS)	98	81 - 117	

8270 Scan (Soil)

Method(s): 3545, 8270 **Date Prepared:** 06/03/05 **Date Analyzed:** 06/09/05 **Analyzed by:** JG3

Acenaphthene	ND	330	ug/kg-dry
Acenaphthylene	ND	330	ug/kg-dry
Aniline	ND	330	ug/kg-dry
Anthracene	ND	330	ug/kg-dry
Benzidine	ND	1300	ug/kg-dry
Benzo(a)anthracene	ND	330	ug/kg-dry
Benzo(a)pyrene	ND	330	ug/kg-dry
Benzo(b)fluoranthene	ND	330	ug/kg-dry
Benzo(ghi)Perylene	ND	330	ug/kg-dry
Benzo(k)fluoranthene	ND	330	ug/kg-dry
Benzoic acid	ND	3300	ug/kg-dry
Benzyl alcohol	ND	3300	ug/kg-dry
4-Bromophenyl phenyl ether	ND	330	ug/kg-dry
Butyl benzyl phthalate	ND	330	ug/kg-dry
4-Chloro-3-methylphenol	ND	330	ug/kg-dry
4-Chloroaniline	ND	330	ug/kg-dry
Bis(2-chloroethoxy)methane	ND	330	ug/kg-dry
Bis(2-chloroethyl)ether	ND	330	ug/kg-dry
Bis(2-chloroisopropyl)ether	ND	330	ug/kg-dry
2-Chloronaphthalene	ND	330	ug/kg-dry
2-Chlorophenol	ND	330	ug/kg-dry
4-Chlorophenyl phenyl ether	ND	330	ug/kg-dry
Chrysene	ND	330	ug/kg-dry
Di-n-butyl phthalate	ND	330	ug/kg-dry
Di-n-octylphthalate	ND	330	ug/kg-dry
Dibenzo(a,h)anthracene	ND	330	ug/kg-dry

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Sample ID: 05-04850-002; GP-1-2

Analyte	Result	PQL	Units
Dibenzofuran	ND	330	ug/kg-dry
1,2-Dichlorobenzene	ND	330	ug/kg-dry
1,3-Dichlorobenzene	ND	330	ug/kg-dry
1,4-Dichlorobenzene	ND	330	ug/kg-dry
3,3'-Dichlorobenzidine	ND	1700	ug/kg-dry
2,4-Dichlorophenol	ND	330	ug/kg-dry
Diethyl phthalate	ND	330	ug/kg-dry
Dimethyl phthalate	ND	330	ug/kg-dry
2,4,-Dimethylphenol	ND	330	ug/kg-dry
4,6-Dinitro-o-Cresol	ND	1700	ug/kg-dry
2,4,-Dinitrophenol	ND	1700	ug/kg-dry
2,4-Dinitrotoluene	ND	330	ug/kg-dry
2,6-Dinitrotoluene	ND	330	ug/kg-dry
1,2-Diphenylhydrazine	ND	330	ug/kg-dry
Bis(2-ethylhexyl)phthalate	ND	330	ug/kg-dry
Fluoranthene	ND	330	ug/kg-dry
Fluorene	ND	330	ug/kg-dry
Hexachlorobenzene	ND	330	ug/kg-dry
Hexachlorobutadiene	ND	330	ug/kg-dry
Hexachlorocyclopentadiene	ND	330	ug/kg-dry
Hexachloroethane	ND	330	ug/kg-dry
Indeno(1,2,3-cd)pyrene	ND	330	ug/kg-dry
Isophorone	ND	330	ug/kg-dry
2-Methylnaphthalene	ND	330	ug/kg-dry
2-Methylphenol	ND	330	ug/kg-dry
3 & 4-Methylphenol	ND	330	ug/kg-dry
Naphthalene	ND	330	ug/kg-dry
2-Nitroaniline	ND	1700	ug/kg-dry
3-Nitroaniline	ND	1700	ug/kg-dry
4-Nitroaniline	ND	1700	ug/kg-dry
Nitrobenzene	ND	330	ug/kg-dry
2-Nitrophenol	ND	330	ug/kg-dry
4-Nitrophenol	ND	1700	ug/kg-dry
N-Nitrosodi-n-propylamine	ND	330	ug/kg-dry

Client:	Camp Dresser & McKee			**RTI Project#:**	05-04850
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Analyte	**Result**	**PQL**	**Units**

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Sample ID: 05-04850-002; GP-1-2

N-Nitrosodimethylamine	ND	330	ug/kg-dry
N-Nitrosodiphenylamine	ND	330	ug/kg-dry
Pentachlorophenol	ND	330	ug/kg-dry
Phenanthrene	ND	330	ug/kg-dry
Phenol	ND	330	ug/kg-dry
Pyrene	ND	330	ug/kg-dry
1,2,4-Trichlorobenzene	ND	330	ug/kg-dry
2,4,5-Trichlorophenol	ND	330	ug/kg-dry
2,4,6-Trichlorophenol	ND	330	ug/kg-dry

Surrogate Recovery Data

Compound	**% Recovery**	**Acceptable Limits(%)**	**Qualifier**
2,4,6-Tribromophenol (Surr)	39	19 - 122	
2-Fluorobiphenyl (Surr)	52	30 - 115	
2-Fluorophenol (Surr)	54	24 - 113	
d14-Terphenyl (Surr)	45	19 - 122	
d5-Nitrobenzene (Surr)	54	23 - 120	
d6-Phenol (Surr)	58	25 - 121	

Total Metals (Soil)

Method(s): 3050, 6020 **Date Prepared:** 06/01/05 **Date Analyzed:** 06/03/05 **Analyzed by:** AB2

Arsenic, As	**5700**	50	ug/kg-dry
Barium, Ba	**31000**	500	ug/kg-dry
Cadmium, Cd	**160**	50	ug/kg-dry
Chromium, Cr	**6800**	250	ug/kg-dry
Lead, Pb	**5400**	500	ug/kg-dry
Selenium, Se	**450**	100	ug/kg-dry
Silver, Ag	**580**	250	ug/kg-dry
Copper, Cu	**22000**	500	ug/kg-dry
Zinc, Zn	**40000**	500	ug/kg-dry

Mercury (Soil)

Method(s): 7471A **Date Prepared:** 06/01/05 **Date Analyzed:** 06/02/05 **Analyzed by:** MB2

Mercury, Hg	**30**	17	ug/kg-dry

Client:	Camp Dresser & McKee	**RTI Project#:**	05-04850
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Sample ID: 05-04850-002; GP-1-2

Sample ID: 05-04850-003; GP-2-1

8260 Scan (Soil-MeOH preserved)

Method(s): 5035, 8260 **Date Analyzed:** 06/02/05 **Analyzed by:** JW

Analyte	Result	PQL	Units
Acetone	ND	1000	ug/kg-dry
Acrylonitrile	ND	250	ug/kg-dry
Benzene	ND	50	ug/kg-dry
Bromobenzene	ND	100	ug/kg-dry
Bromochloromethane	ND	50	ug/kg-dry
Bromodichloromethane	ND	100	ug/kg-dry
Bromoform	ND	100	ug/kg-dry
Bromomethane	ND	100	ug/kg-dry
n-Butylbenzene	ND	50	ug/kg-dry
S-butylbenzene	ND	50	ug/kg-dry
t-Butylbenzene	ND	50	ug/kg-dry
Carbon disulfide	ND	250	ug/kg-dry
Carbon tetrachloride	ND	50	ug/kg-dry
Chlorobenzene	ND	50	ug/kg-dry
Chloroethane	ND	250	ug/kg-dry
Chloroform	ND	50	ug/kg-dry
Chloromethane	ND	250	ug/kg-dry
Dibromochloromethane	ND	250	ug/kg-dry
1,2-Dibromo-3-chloropropane	ND	100	ug/kg-dry
1,2-Dibromoethane (EDB)	ND	50	ug/kg-dry
Dibromomethane	ND	50	ug/kg-dry
1,2-Dichlorobenzene	ND	50	ug/kg-dry
1,3-Dichlorobenzene	ND	50	ug/kg-dry
1,4-Dichlorobenzene	ND	50	ug/kg-dry
t-1,4-Dichloro-2-butene	ND	50	ug/kg-dry
Dichlorodifluoromethane	ND	50	ug/kg-dry
1,1-Dichloroethane	ND	50	ug/kg-dry
1,2-Dichloroethane	ND	50	ug/kg-dry
1,1-Dichloroethene	ND	50	ug/kg-dry
c-1,2-Dichloroethene	ND	50	ug/kg-dry

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Project:	Trenton Chemical Facility	**Report Number:** 05-04850-1	**Page:** Page 15 of 90

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Sample ID: 05-04850-003; GP-2-1

Analyte	Result	PQL	Units
t-1,2-Dichloroethene	ND	50	ug/kg-dry
1,2-Dichloropropane	ND	50	ug/kg-dry
1,3-Dichloropropene (cis&trans)	ND	100	ug/kg-dry
Diethyl Ether	ND	100	ug/kg-dry
Ethyl benzene	ND	50	ug/kg-dry
Hexachloroethane	ND	100	ug/kg-dry
2-Hexanone	ND	250	ug/kg-dry
Iodomethane	ND	50	ug/kg-dry
Isopropylbenzene	ND	50	ug/kg-dry
p-Isopropyltoluene	ND	100	ug/kg-dry
Dichloromethane	ND	250	ug/kg-dry
2-butanone (MEK)	ND	1000	ug/kg-dry
2-Methylnaphthalene	ND	250	ug/kg-dry
4-Methyl-2-pentanone(MIBK)	ND	250	ug/kg-dry
MTBE	ND	250	ug/kg-dry
Naphthalene	ND	250	ug/kg-dry
n-Propylbenzene	ND	50	ug/kg-dry
Styrene	ND	50	ug/kg-dry
1,1,2,2-Tetrachloroethane	ND	100	ug/kg-dry
Tetrachloroethene	ND	50	ug/kg-dry
Tetrahydrofuran	ND	1200	ug/kg-dry
Toluene	ND	50	ug/kg-dry
1,2,3-Trichlorobenzene	ND	250	ug/kg-dry
1,2,4-Trichlorobenzene	ND	100	ug/kg-dry
1,1,1-Trichloroethane	ND	50	ug/kg-dry
1,1,2-Trichloroethane	ND	50	ug/kg-dry
Trichloroethene	ND	50	ug/kg-dry
Trichlorofluoromethane	ND	50	ug/kg-dry
1,2,3-Trichloropropane	ND	50	ug/kg-dry
1,2,4-Trimethylbenzene	ND	100	ug/kg-dry
1,3,5-Trimethylbenzene	ND	100	ug/kg-dry
Vinyl chloride	ND	40	ug/kg-dry
Xylene, Total	ND	150	ug/kg-dry

Analyte	**Result**	**PQL**	**Units**

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Sample ID: 05-04850-003; GP-2-1

Surrogate Recovery Data

Compound	**% Recovery**	**Acceptable Limits(%)**	**Qualifier**
4-Bromofluorobenzene (SS)	99	74 - 121	
Dibromofluoromethane (SS)	100	80 - 120	
Toluene-d8 (SS)	98	81 - 117	

8270

Method(s): 3545, 8270 **Date Prepared:** 06/03/05 **Date Analyzed:** 06/09/05 **Analyzed by:** JG3

Acenaphthene	ND	330	ug/kg-dry
Acenaphthylene	ND	330	ug/kg-dry
Aniline	ND	330	ug/kg-dry
Anthracene	ND	330	ug/kg-dry
Benzidine	ND	1300	ug/kg-dry
Benzo(a)anthracene	ND	330	ug/kg-dry
Benzo(a)pyrene	ND	330	ug/kg-dry
Benzo(b)fluoranthene	ND	330	ug/kg-dry
Benzo(ghi)Perylene	ND	330	ug/kg-dry
Benzo(k)fluoranthene	ND	330	ug/kg-dry
Benzoic acid	ND	3300	ug/kg-dry
Benzyl alcohol	ND	3300	ug/kg-dry
4-Bromophenyl phenyl ether	ND	330	ug/kg-dry
Butyl benzyl phthalate	ND	330	ug/kg-dry
4-Chloro-3-methylphenol	ND	330	ug/kg-dry
4-Chloroaniline	ND	330	ug/kg-dry
Bis(2-chloroethoxy)methane	ND	330	ug/kg-dry
Bis(2-chloroethyl)ether	ND	330	ug/kg-dry
Bis(2-chloroisopropyl)ether	ND	330	ug/kg-dry
2-Chloronaphthalene	ND	330	ug/kg-dry
2-Chlorophenol	ND	330	ug/kg-dry
4-Chlorophenyl phenyl ether	ND	330	ug/kg-dry
Chrysene	ND	330	ug/kg-dry
Di-n-butyl phthalate	ND	330	ug/kg-dry
Di-n-octylphthalate	ND	330	ug/kg-dry
Dibenzo(a,h)anthracene	ND	330	ug/kg-dry

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Sample ID: 05-04850-003; GP-2-1

Analyte	Result	PQL	Units
Dibenzofuran	ND	330	ug/kg-dry
1,2-Dichlorobenzene	ND	330	ug/kg-dry
1,3-Dichlorobenzene	ND	330	ug/kg-dry
1,4-Dichlorobenzene	ND	330	ug/kg-dry
3,3'-Dichlorobenzidine	ND	1700	ug/kg-dry
2,4-Dichlorophenol	ND	330	ug/kg-dry
Diethyl phthalate	ND	330	ug/kg-dry
Dimethyl phthalate	ND	330	ug/kg-dry
2,4,-Dimethylphenol	ND	330	ug/kg-dry
4,6-Dinitro-o-Cresol	ND	1700	ug/kg-dry
2,4,-Dinitrophenol	ND	1700	ug/kg-dry
2,4-Dinitrotoluene	ND	330	ug/kg-dry
2,6-Dinitrotoluene	ND	330	ug/kg-dry
1,2-Diphenylhydrazine	ND	330	ug/kg-dry
Bis(2-ethylhexyl)phthalate	ND	330	ug/kg-dry
Fluoranthene	ND	330	ug/kg-dry
Fluorene	ND	330	ug/kg-dry
Hexachlorobenzene	ND	330	ug/kg-dry
Hexachlorobutadiene	ND	330	ug/kg-dry
Hexachlorocyclopentadiene	ND	330	ug/kg-dry
Hexachloroethane	ND	330	ug/kg-dry
Indeno(1,2,3-cd)pyrene	ND	330	ug/kg-dry
Isophorone	ND	330	ug/kg-dry
2-Methylnaphthalene	ND	330	ug/kg-dry
2-Methylphenol	ND	330	ug/kg-dry
3 & 4-Methylphenol	ND	330	ug/kg-dry
Naphthalene	ND	330	ug/kg-dry
2-Nitroaniline	ND	1700	ug/kg-dry
3-Nitroaniline	ND	1700	ug/kg-dry
4-Nitroaniline	ND	1700	ug/kg-dry
Nitrobenzene	ND	330	ug/kg-dry
2-Nitrophenol	ND	330	ug/kg-dry
4-Nitrophenol	ND	1700	ug/kg-dry
N-Nitrosodi-n-propylamine	ND	330	ug/kg-dry

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Sample ID: 05-04850-003; GP-2-1

Analyte	Result	PQL	Units
N-Nitrosodimethylamine	ND	330	ug/kg-dry
N-Nitrosodiphenylamine	ND	330	ug/kg-dry
Pentachlorophenol	ND	330	ug/kg-dry
Phenanthrene	ND	330	ug/kg-dry
Phenol	ND	330	ug/kg-dry
Pyrene	ND	330	ug/kg-dry
1,2,4-Trichlorobenzene	ND	330	ug/kg-dry
2,4,5-Trichlorophenol	ND	330	ug/kg-dry
2,4,6-Trichlorophenol	ND	330	ug/kg-dry

Surrogate Recovery Data

Compound	% Recovery	Acceptable Limits(%)	Qualifier
2,4,6-Tribromophenol (Surr)	39	19 - 122	
2-Fluorobiphenyl (Surr)	49	30 - 115	
2-Fluorophenol (Surr)	51	24 - 113	
d14-Terphenyl (Surr)	46	19 - 122	
d5-Nitrobenzene (Surr)	50	23 - 120	
d6-Phenol (Surr)	55	25 - 121	

Total Metals (Soil)

Method(s): 3050, 6020 **Date Prepared:** 06/01/05 **Date Analyzed:** 06/03/05 **Analyzed by:** AB2

Arsenic, As	**12000**	50	ug/kg-dry
Barium, Ba	**55000**	500	ug/kg-dry
Cadmium, Cd	**320**	50	ug/kg-dry
Chromium, Cr	**15000**	250	ug/kg-dry
Lead, Pb	**12000**	500	ug/kg-dry
Selenium, Se	**840**	100	ug/kg-dry
Silver, Ag	**730**	250	ug/kg-dry
Copper, Cu	**29000**	500	ug/kg-dry
Zinc, Zn	**95000**	500	ug/kg-dry

Mercury (Soil)

Method(s): 7471A **Date Prepared:** 06/01/05 **Date Analyzed:** 06/02/05 **Analyzed by:** MB2

Mercury, Hg	43	21	ug/kg-dry

Client:	Camp Dresser & McKee	**RTI Project#:**	05-04850
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Sample ID: 05-04850-003; GP-2-1

Sample ID: 05-04850-004; GP-2-2

8260 Scan (Soil-MeOH preserved)

Method(s): 5035, 8260 **Date Analyzed:** 06/02/05 **Analyzed by:** JW

Analyte	Result	PQL	Units
Acetone	ND	1000	ug/kg-dry
Acrylonitrile	ND	250	ug/kg-dry
Benzene	ND	50	ug/kg-dry
Bromobenzene	ND	100	ug/kg-dry
Bromochloromethane	ND	50	ug/kg-dry
Bromodichloromethane	ND	100	ug/kg-dry
Bromoform	ND	100	ug/kg-dry
Bromomethane	ND	100	ug/kg-dry
n-Butylbenzene	ND	50	ug/kg-dry
S-butylbenzene	ND	50	ug/kg-dry
t-Butylbenzene	ND	50	ug/kg-dry
Carbon disulfide	ND	250	ug/kg-dry
Carbon tetrachloride	ND	50	ug/kg-dry
Chlorobenzene	ND	50	ug/kg-dry
Chloroethane	ND	250	ug/kg-dry
Chloroform	ND	50	ug/kg-dry
Chloromethane	ND	250	ug/kg-dry
Dibromochloromethane	ND	250	ug/kg-dry
1,2-Dibromo-3-chloropropane	ND	100	ug/kg-dry
1,2-Dibromoethane (EDB)	ND	50	ug/kg-dry
Dibromomethane	ND	50	ug/kg-dry
1,2-Dichlorobenzene	ND	50	ug/kg-dry
1,3-Dichlorobenzene	ND	50	ug/kg-dry
1,4-Dichlorobenzene	ND	50	ug/kg-dry
t-1,4-Dichloro-2-butene	ND	50	ug/kg-dry
Dichlorodifluoromethane	ND	50	ug/kg-dry
1,1-Dichloroethane	ND	50	ug/kg-dry
1,2-Dichloroethane	ND	50	ug/kg-dry
1,1-Dichloroethene	ND	50	ug/kg-dry
c-1,2-Dichloroethene	ND	50	ug/kg-dry

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Sample ID: 05-04850-004; GP-2-2

Analyte	Result	PQL	Units
t-1,2-Dichloroethene	ND	50	ug/kg-dry
1,2-Dichloropropane	ND	50	ug/kg-dry
1,3-Dichloropropene (cis&trans)	ND	100	ug/kg-dry
Diethyl Ether	ND	100	ug/kg-dry
Ethyl benzene	ND	50	ug/kg-dry
Hexachloroethane	ND	100	ug/kg-dry
2-Hexanone	ND	250	ug/kg-dry
Iodomethane	ND	50	ug/kg-dry
Isopropylbenzene	ND	50	ug/kg-dry
p-Isopropyltoluene	ND	100	ug/kg-dry
Dichloromethane	ND	250	ug/kg-dry
2-butanone (MEK)	ND	1000	ug/kg-dry
2-Methylnaphthalene	ND	250	ug/kg-dry
4-Methyl-2-pentanone(MIBK)	ND	250	ug/kg-dry
MTBE	ND	250	ug/kg-dry
Naphthalene	ND	250	ug/kg-dry
n-Propylbenzene	ND	50	ug/kg-dry
Styrene	ND	50	ug/kg-dry
1,1,2,2-Tetrachloroethane	ND	100	ug/kg-dry
Tetrachloroethene	ND	50	ug/kg-dry
Tetrahydrofuran	ND	1200	ug/kg-dry
Toluene	ND	50	ug/kg-dry
1,2,3-Trichlorobenzene	ND	250	ug/kg-dry
1,2,4-Trichlorobenzene	ND	100	ug/kg-dry
1,1,1-Trichloroethane	ND	50	ug/kg-dry
1,1,2-Trichloroethane	ND	50	ug/kg-dry
Trichloroethene	ND	50	ug/kg-dry
Trichlorofluoromethane	ND	50	ug/kg-dry
1,2,3-Trichloropropane	ND	50	ug/kg-dry
1,2,4-Trimethylbenzene	ND	100	ug/kg-dry
1,3,5-Trimethylbenzene	ND	100	ug/kg-dry
Vinyl chloride	ND	40	ug/kg-dry
Xylene, Total	ND	150	ug/kg-dry

Analyte	**Result**	**PQL**	**Units**

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Sample ID: 05-04850-004; GP-2-2

Surrogate Recovery Data

Compound	**% Recovery**	**Acceptable Limits(%)**	**Qualifier**
4-Bromofluorobenzene (SS)	**101**	74 - 121	
Dibromofluoromethane (SS)	**100**	80 - 120	
Toluene-d8 (SS)	**98**	81 - 117	

8270 Scan (Soil)

Method(s): 3545, 8270 **Date Prepared:** 06/03/05 **Date Analyzed:** 06/09/05 **Analyzed by:** JG3

Acenaphthene	ND	330	ug/kg-dry
Acenaphthylene	ND	330	ug/kg-dry
Aniline	ND	330	ug/kg-dry
Anthracene	ND	330	ug/kg-dry
Benzidine	ND	1300	ug/kg-dry
Benzo(a)anthracene	ND	330	ug/kg-dry
Benzo(a)pyrene	ND	330	ug/kg-dry
Benzo(b)fluoranthene	ND	330	ug/kg-dry
Benzo(ghi)Perylene	ND	330	ug/kg-dry
Benzo(k)fluoranthene	ND	330	ug/kg-dry
Benzoic acid	ND	3300	ug/kg-dry
Benzyl alcohol	ND	3300	ug/kg-dry
4-Bromophenyl phenyl ether	ND	330	ug/kg-dry
Butyl benzyl phthalate	ND	330	ug/kg-dry
4-Chloro-3-methylphenol	ND	330	ug/kg-dry
4-Chloroaniline	ND	330	ug/kg-dry
Bis(2-chloroethoxy)methane	ND	330	ug/kg-dry
Bis(2-chloroethyl)ether	ND	330	ug/kg-dry
Bis(2-chloroisopropyl)ether	ND	330	ug/kg-dry
2-Chloronaphthalene	ND	330	ug/kg-dry
2-Chlorophenol	ND	330	ug/kg-dry
4-Chlorophenyl phenyl ether	ND	330	ug/kg-dry
Chrysene	ND	330	ug/kg-dry
Di-n-butyl phthalate	ND	330	ug/kg-dry
Di-n-octylphthalate	ND	330	ug/kg-dry
Dibenzo(a,h)anthracene	ND	330	ug/kg-dry

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Sample ID: 05-04850-004; GP-2-2

Analyte	Result	PQL	Units
Dibenzofuran	ND	330	ug/kg-dry
1,2-Dichlorobenzene	ND	330	ug/kg-dry
1,3-Dichlorobenzene	ND	330	ug/kg-dry
1,4-Dichlorobenzene	ND	330	ug/kg-dry
3,3'-Dichlorobenzidine	ND	1700	ug/kg-dry
2,4-Dichlorophenol	ND	330	ug/kg-dry
Diethyl phthalate	ND	330	ug/kg-dry
Dimethyl phthalate	ND	330	ug/kg-dry
2,4,-Dimethylphenol	ND	330	ug/kg-dry
4,6-Dinitro-o-Cresol	ND	1700	ug/kg-dry
2,4,-Dinitrophenol	ND	1700	ug/kg-dry
2,4-Dinitrotoluene	ND	330	ug/kg-dry
2,6-Dinitrotoluene	ND	330	ug/kg-dry
1,2-Diphenylhydrazine	ND	330	ug/kg-dry
Bis(2-ethylhexyl)phthalate	ND	330	ug/kg-dry
Fluoranthene	ND	330	ug/kg-dry
Fluorene	ND	330	ug/kg-dry
Hexachlorobenzene	ND	330	ug/kg-dry
Hexachlorobutadiene	ND	330	ug/kg-dry
Hexachlorocyclopentadiene	ND	330	ug/kg-dry
Hexachloroethane	ND	330	ug/kg-dry
Indeno(1,2,3-cd)pyrene	ND	330	ug/kg-dry
Isophorone	ND	330	ug/kg-dry
2-Methylnaphthalene	ND	330	ug/kg-dry
2-Methylphenol	ND	330	ug/kg-dry
3 & 4-Methylphenol	ND	330	ug/kg-dry
Naphthalene	ND	330	ug/kg-dry
2-Nitroaniline	ND	1700	ug/kg-dry
3-Nitroaniline	ND	1700	ug/kg-dry
4-Nitroaniline	ND	1700	ug/kg-dry
Nitrobenzene	ND	330	ug/kg-dry
2-Nitrophenol	ND	330	ug/kg-dry
4-Nitrophenol	ND	1700	ug/kg-dry
N-Nitrosodi-n-propylamine	ND	330	ug/kg-dry

Client:	Camp Dresser & McKee	**RTI Project#:**	05-04850
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Sample ID: 05-04850-004; GP-2-2

Analyte	Result	PQL	Units
N-Nitrosodimethylamine	ND	330	ug/kg-dry
N-Nitrosodiphenylamine	ND	330	ug/kg-dry
Pentachlorophenol	ND	330	ug/kg-dry
Phenanthrene	ND	330	ug/kg-dry
Phenol	ND	330	ug/kg-dry
Pyrene	ND	330	ug/kg-dry
1,2,4-Trichlorobenzene	ND	330	ug/kg-dry
2,4,5-Trichlorophenol	ND	330	ug/kg-dry
2,4,6-Trichlorophenol	ND	330	ug/kg-dry

Surrogate Recovery Data

Compound	% Recovery	Acceptable Limits(%)	Qualifier
2,4,6-Tribromophenol (Surr)	33	19 - 122	
2-Fluorobiphenyl (Surr)	42	30 - 115	
2-Fluorophenol (Surr)	39	24 - 113	
d14-Terphenyl (Surr)	44	19 - 122	
d5-Nitrobenzene (Surr)	41	23 - 120	
d6-Phenol (Surr)	43	25 - 121	

Total Metals (Soil)

Method(s): 3050, 6020 **Date Prepared:** 06/01/05 **Date Analyzed:** 06/03/05 **Analyzed by:** AB2

Arsenic, As	**8600**	50	ug/kg-dry
Barium, Ba	**56000**	500	ug/kg-dry
Cadmium, Cd	**270**	50	ug/kg-dry
Chromium, Cr	**17000**	250	ug/kg-dry
Lead, Pb	**9700**	500	ug/kg-dry
Selenium, Se	**670**	100	ug/kg-dry
Silver, Ag	**660**	250	ug/kg-dry
Copper, Cu	**25000**	500	ug/kg-dry
Zinc, Zn	**67000**	500	ug/kg-dry

Mercury (Soil)

Method(s): 7471A **Date Prepared:** 06/01/05 **Date Analyzed:** 06/02/05 **Analyzed by:** MB2

Mercury, Hg	**44**	17	ug/kg-dry

Client:	Camp Dresser & McKee	**RTI Project#:**	05-04850
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Sample ID: 05-04850-004; GP-2-2

Sample ID: 05-04850-005; GP-3-1

8260 Scan (Soil-MeOH preserved)

Method(s): 5035, 8260 **Date Analyzed:** 06/02/05 **Analyzed by:** JW

Analyte	Result	PQL	Units
Acetone	ND	1000	ug/kg-dry
Acrylonitrile	ND	250	ug/kg-dry
Benzene	ND	50	ug/kg-dry
Bromobenzene	ND	100	ug/kg-dry
Bromochloromethane	ND	50	ug/kg-dry
Bromodichloromethane	ND	100	ug/kg-dry
Bromoform	ND	100	ug/kg-dry
Bromomethane	ND	100	ug/kg-dry
n-Butylbenzene	ND	50	ug/kg-dry
S-butylbenzene	ND	50	ug/kg-dry
t-Butylbenzene	ND	50	ug/kg-dry
Carbon disulfide	ND	250	ug/kg-dry
Carbon tetrachloride	ND	50	ug/kg-dry
Chlorobenzene	ND	50	ug/kg-dry
Chloroethane	ND	250	ug/kg-dry
Chloroform	ND	50	ug/kg-dry
Chloromethane	ND	250	ug/kg-dry
Dibromochloromethane	ND	250	ug/kg-dry
1,2-Dibromo-3-chloropropane	ND	100	ug/kg-dry
1,2-Dibromoethane (EDB)	ND	50	ug/kg-dry
Dibromomethane	ND	50	ug/kg-dry
1,2-Dichlorobenzene	ND	50	ug/kg-dry
1,3-Dichlorobenzene	ND	50	ug/kg-dry
1,4-Dichlorobenzene	ND	50	ug/kg-dry
t-1,4-Dichloro-2-butene	ND	50	ug/kg-dry
Dichlorodifluoromethane	ND	50	ug/kg-dry
1,1-Dichloroethane	ND	50	ug/kg-dry
1,2-Dichloroethane	ND	50	ug/kg-dry
1,1-Dichloroethene	ND	50	ug/kg-dry
c-1,2-Dichloroethene	ND	50	ug/kg-dry

Client:	Camp Dresser & McKee	**RTI Project#:**	05-04850
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Sample ID: 05-04850-005; GP-3-1

Analyte	Result	PQL	Units
t-1,2-Dichloroethene	ND	50	ug/kg-dry
1,2-Dichloropropane	ND	50	ug/kg-dry
1,3-Dichloropropene (cis&trans)	ND	100	ug/kg-dry
Diethyl Ether	ND	100	ug/kg-dry
Ethyl benzene	ND	50	ug/kg-dry
Hexachloroethane	ND	100	ug/kg-dry
2-Hexanone	ND	250	ug/kg-dry
Iodomethane	ND	50	ug/kg-dry
Isopropylbenzene	ND	50	ug/kg-dry
p-Isopropyltoluene	ND	100	ug/kg-dry
Dichloromethane	ND	250	ug/kg-dry
2-butanone (MEK)	ND	1000	ug/kg-dry
2-Methylnaphthalene	ND	250	ug/kg-dry
4-Methyl-2-pentanone(MIBK)	ND	250	ug/kg-dry
MTBE	ND	250	ug/kg-dry
Naphthalene	ND	250	ug/kg-dry
n-Propylbenzene	ND	50	ug/kg-dry
Styrene	ND	50	ug/kg-dry
1,1,2,2-Tetrachloroethane	ND	100	ug/kg-dry
Tetrachloroethene	ND	50	ug/kg-dry
Tetrahydrofuran	ND	1200	ug/kg-dry
Toluene	ND	50	ug/kg-dry
1,2,3-Trichlorobenzene	ND	250	ug/kg-dry
1,2,4-Trichlorobenzene	ND	100	ug/kg-dry
1,1,1-Trichloroethane	ND	50	ug/kg-dry
1,1,2-Trichloroethane	ND	50	ug/kg-dry
Trichloroethene	ND	50	ug/kg-dry
Trichlorofluoromethane	ND	50	ug/kg-dry
1,2,3-Trichloropropane	ND	50	ug/kg-dry
1,2,4-Trimethylbenzene	ND	100	ug/kg-dry
1,3,5-Trimethylbenzene	ND	100	ug/kg-dry
Vinyl chloride	ND	40	ug/kg-dry
Xylene, Total	ND	150	ug/kg-dry

Analyte	**Result**	**PQL**	**Units**

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Sample ID: 05-04850-005; GP-3-1

Surrogate Recovery Data

Compound	**% Recovery**	**Acceptable Limits(%)**	**Qualifier**
4-Bromofluorobenzene (SS)	99	74 - 121	
Dibromofluoromethane (SS)	100	80 - 120	
Toluene-d8 (SS)	96	81 - 117	

8270 Scan (Soil)

Method(s): 3545, 8270 **Date Prepared:** 06/03/05 **Date Analyzed:** 06/09/05 **Analyzed by:** JG3

Acenaphthene	ND	330	ug/kg-dry
Acenaphthylene	ND	330	ug/kg-dry
Aniline	ND	330	ug/kg-dry
Anthracene	ND	330	ug/kg-dry
Benzidine	ND	1300	ug/kg-dry
Benzo(a)anthracene	ND	330	ug/kg-dry
Benzo(a)pyrene	ND	330	ug/kg-dry
Benzo(b)fluoranthene	ND	330	ug/kg-dry
Benzo(ghi)Perylene	ND	330	ug/kg-dry
Benzo(k)fluoranthene	ND	330	ug/kg-dry
Benzoic acid	ND	3300	ug/kg-dry
Benzyl alcohol	ND	3300	ug/kg-dry
4-Bromophenyl phenyl ether	ND	330	ug/kg-dry
Butyl benzyl phthalate	ND	330	ug/kg-dry
4-Chloro-3-methylphenol	ND	330	ug/kg-dry
4-Chloroaniline	ND	330	ug/kg-dry
Bis(2-chloroethoxy)methane	ND	330	ug/kg-dry
Bis(2-chloroethyl)ether	ND	330	ug/kg-dry
Bis(2-chloroisopropyl)ether	ND	330	ug/kg-dry
2-Chloronaphthalene	ND	330	ug/kg-dry
2-Chlorophenol	ND	330	ug/kg-dry
4-Chlorophenyl phenyl ether	ND	330	ug/kg-dry
Chrysene	ND	330	ug/kg-dry
Di-n-butyl phthalate	ND	330	ug/kg-dry
Di-n-octylphthalate	ND	330	ug/kg-dry
Dibenzo(a,h)anthracene	ND	330	ug/kg-dry

Client:	Camp Dresser & McKee	**RTI Project#:**	05-04850
Project:	Trenton Chemical Facility	**Report Number:** 05-04850-1	**Page:** Page 27 of 90

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Sample ID: 05-04850-005; GP-3-1

Analyte	Result	PQL	Units
Dibenzofuran	ND	330	ug/kg-dry
1,2-Dichlorobenzene	ND	330	ug/kg-dry
1,3-Dichlorobenzene	ND	330	ug/kg-dry
1,4-Dichlorobenzene	ND	330	ug/kg-dry
3,3'-Dichlorobenzidine	ND	1700	ug/kg-dry
2,4-Dichlorophenol	ND	330	ug/kg-dry
Diethyl phthalate	ND	330	ug/kg-dry
Dimethyl phthalate	ND	330	ug/kg-dry
2,4,-Dimethylphenol	ND	330	ug/kg-dry
4,6-Dinitro-o-Cresol	ND	1700	ug/kg-dry
2,4,-Dinitrophenol	ND	1700	ug/kg-dry
2,4-Dinitrotoluene	ND	330	ug/kg-dry
2,6-Dinitrotoluene	ND	330	ug/kg-dry
1,2-Diphenylhydrazine	ND	330	ug/kg-dry
Bis(2-ethylhexyl)phthalate	ND	330	ug/kg-dry
Fluoranthene	ND	330	ug/kg-dry
Fluorene	ND	330	ug/kg-dry
Hexachlorobenzene	ND	330	ug/kg-dry
Hexachlorobutadiene	ND	330	ug/kg-dry
Hexachlorocyclopentadiene	ND	330	ug/kg-dry
Hexachloroethane	ND	330	ug/kg-dry
Indeno(1,2,3-cd)pyrene	ND	330	ug/kg-dry
Isophorone	ND	330	ug/kg-dry
2-Methylnaphthalene	ND	330	ug/kg-dry
2-Methylphenol	ND	330	ug/kg-dry
3 & 4-Methylphenol	ND	330	ug/kg-dry
Naphthalene	ND	330	ug/kg-dry
2-Nitroaniline	ND	1700	ug/kg-dry
3-Nitroaniline	ND	1700	ug/kg-dry
4-Nitroaniline	ND	1700	ug/kg-dry
Nitrobenzene	ND	330	ug/kg-dry
2-Nitrophenol	ND	330	ug/kg-dry
4-Nitrophenol	ND	1700	ug/kg-dry
N-Nitrosodi-n-propylamine	ND	330	ug/kg-dry

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Sample ID: 05-04850-005; GP-3-1

Analyte	Result	PQL	Units
N-Nitrosodimethylamine	ND	330	ug/kg-dry
N-Nitrosodiphenylamine	ND	330	ug/kg-dry
Pentachlorophenol	ND	330	ug/kg-dry
Phenanthrene	ND	330	ug/kg-dry
Phenol	ND	330	ug/kg-dry
Py[illegible]	ND	330	ug/kg-dry
1,2,4-Trichlorobenzene	ND	330	ug/kg-dry
2,4,5-Trichlorophenol	ND	330	ug/kg-dry
2,4,6-Trichlorophenol	ND	330	ug/kg-dry

Surrogate Recovery Data

Compound	% Recovery	Acceptable Limits(%)	Qualifier
2,4,6-Tribromophenol (Surr)	76	19 - 122	
2-Fluorobiphenyl (Surr)	83	30 - 115	
2-Fluorophenol (Surr)	82	24 - 113	
d14-Terphenyl (Surr)	106	19 - 122	
d5-Nitrobenzene (Surr)	86	23 - 120	
d6-Phenol (Surr)	92	25 - 121	

Total Metals (Soil)

Method(s): 3050, 6020 **Date Prepared:** 06/01/05 **Date Analyzed:** 06/03/05 **Analyzed by:** AB2

Arsenic, As	**7400**	50	ug/kg-dry
Barium, Ba	**120000**	500	ug/kg-dry
Cadmium, Cd	**980**	50	ug/kg-dry
Chromium, Cr	**20000**	250	ug/kg-dry
Lead, Pb	**35000**	500	ug/kg-dry
Selenium, Se	**2500**	100	ug/kg-dry
Silver, Ag	**1300**	250	ug/kg-dry
Copper, Cu	**26000**	500	ug/kg-dry
Zinc, Zn	**130000**	500	ug/kg-dry

Mercury (Soil)

Method(s): 7471A **Date Prepared:** 06/01/05 **Date Analyzed:** 06/02/05 **Analyzed by:** MB2

Mercury, Hg	**61**	20	ug/kg-dry

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Sample ID: 05-04850-005; GP-3-1

Sample ID: 05-04850-006; GP-3-2

8260 Scan (Soil-MeOH preserved)

Method(s): 5035, 8260 **Date Analyzed:** 06/02/05 **Analyzed by:** JW

Analyte	Result	PQL	Units
Acetone	ND	1000	ug/kg-dry
Acrylonitrile	ND	250	ug/kg-dry
Benzene	ND	50	ug/kg-dry
Bromobenzene	ND	100	ug/kg-dry
Bromochloromethane	ND	50	ug/kg-dry
Bromodichloromethane	ND	100	ug/kg-dry
Bromoform	ND	100	ug/kg-dry
Bromomethane	ND	100	ug/kg-dry
n-Butylbenzene	ND	50	ug/kg-dry
S-butylbenzene	ND	50	ug/kg-dry
t-Butylbenzene	ND	50	ug/kg-dry
Carbon disulfide	ND	250	ug/kg-dry
Carbon tetrachloride	ND	50	ug/kg-dry
Chlorobenzene	ND	50	ug/kg-dry
Chloroethane	ND	250	ug/kg-dry
Chloroform	ND	50	ug/kg-dry
Chloromethane	ND	250	ug/kg-dry
Dibromochloromethane	ND	250	ug/kg-dry
1,2-Dibromo-3-chloropropane	ND	100	ug/kg-dry
1,2-Dibromoethane (EDB)	ND	50	ug/kg-dry
Dibromomethane	ND	50	ug/kg-dry
1,2-Dichlorobenzene	ND	50	ug/kg-dry
1,3-Dichlorobenzene	ND	50	ug/kg-dry
1,4-Dichlorobenzene	ND	50	ug/kg-dry
t-1,4-Dichloro-2-butene	ND	50	ug/kg-dry
Dichlorodifluoromethane	ND	50	ug/kg-dry
1,1-Dichloroethane	ND	50	ug/kg-dry
1,2-Dichloroethane	ND	50	ug/kg-dry
1,1-Dichloroethene	ND	50	ug/kg-dry
c-1,2-Dichloroethene	ND	50	ug/kg-dry

Client:	Camp Dresser & McKee	**RTI Project#:**	05-04850
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Sample ID: 05-04850-006; GP-3-2

Analyte	Result	PQL	Units
t-1,2-Dichloroethene	ND	50	ug/kg-dry
1,2-Dichloropropane	ND	50	ug/kg-dry
1,3-Dichloropropene (cis&trans)	ND	100	ug/kg-dry
Diethyl Ether	ND	100	ug/kg-dry
Ethyl benzene	ND	50	ug/kg-dry
Hexachloroethane	ND	100	ug/kg-dry
2-Hexanone	ND	250	ug/kg-dry
Iodomethane	ND	50	ug/kg-dry
Isopropylbenzene	ND	50	ug/kg-dry
p-Isopropyltoluene	ND	100	ug/kg-dry
Dichloromethane	ND	250	ug/kg-dry
2-butanone (MEK)	ND	1000	ug/kg-dry
2-Methylnaphthalene	ND	250	ug/kg-dry
4-Methyl-2-pentanone(MIBK)	ND	250	ug/kg-dry
MTBE	ND	250	ug/kg-dry
Naphthalene	ND	250	ug/kg-dry
n-Propylbenzene	ND	50	ug/kg-dry
Styrene	ND	50	ug/kg-dry
1,1,2,2-Tetrachloroethane	ND	100	ug/kg-dry
Tetrachloroethene	ND	50	ug/kg-dry
Tetrahydrofuran	ND	1200	ug/kg-dry
Toluene	ND	50	ug/kg-dry
1,2,3-Trichlorobenzene	ND	250	ug/kg-dry
1,2,4-Trichlorobenzene	ND	100	ug/kg-dry
1,1,1-Trichloroethane	ND	50	ug/kg-dry
1,1,2-Trichloroethane	ND	50	ug/kg-dry
Trichloroethene	ND	50	ug/kg-dry
Trichlorofluoromethane	ND	50	ug/kg-dry
1,2,3-Trichloropropane	ND	50	ug/kg-dry
1,2,4-Trimethylbenzene	ND	100	ug/kg-dry
1,3,5-Trimethylbenzene	ND	100	ug/kg-dry
Vinyl chloride	ND	40	ug/kg-dry
Xylene, Total	ND	150	ug/kg-dry

Analyte	**Result**	**PQL**	**Units**

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Sample ID: 05-04850-006; GP-3-2

Surrogate Recovery Data

Compound	**% Recovery**	**Acceptable Limits(%)**	**Qualifier**
4-Bromofluorobenzene (SS)	**102**	74 - 121	
Dibromofluoromethane (SS)	**98**	80 - 120	
Toluene-d8 (SS)	**98**	81 - 117	

8270 Scan (Soil)

Method(s): 3545, 8270 **Date Prepared:** 06/03/05 **Date Analyzed:** 06/09/05 **Analyzed by:** JG3

Acenaphthene	ND	330	ug/kg-dry
Acenaphthylene	ND	330	ug/kg-dry
Aniline	ND	330	ug/kg-dry
Anthracene	ND	330	ug/kg-dry
Benzidine	ND	1300	ug/kg-dry
Benzo(a)anthracene	ND	330	ug/kg-dry
Benzo(a)pyrene	ND	330	ug/kg-dry
Benzo(b)fluoranthene	ND	330	ug/kg-dry
Benzo(ghi)Perylene	ND	330	ug/kg-dry
Benzo(k)fluoranthene	ND	330	ug/kg-dry
Benzoic acid	ND	3300	ug/kg-dry
Benzyl alcohol	ND	3300	ug/kg-dry
4-Bromophenyl phenyl ether	ND	330	ug/kg-dry
Butyl benzyl phthalate	ND	330	ug/kg-dry
4-Chloro-3-methylphenol	ND	330	ug/kg-dry
4-Chloroaniline	ND	330	ug/kg-dry
Bis(2-chloroethoxy)methane	ND	330	ug/kg-dry
Bis(2-chloroethyl)ether	ND	330	ug/kg-dry
Bis(2-chloroisopropyl)ether	ND	330	ug/kg-dry
2-Chloronaphthalene	ND	330	ug/kg-dry
2-Chlorophenol	ND	330	ug/kg-dry
4-Chlorophenyl phenyl ether	ND	330	ug/kg-dry
Chrysene	ND	330	ug/kg-dry
Di-n-butyl phthalate	ND	330	ug/kg-dry
Di-n-octylphthalate	ND	330	ug/kg-dry
Dibenzo(a,h)anthracene	ND	330	ug/kg-dry

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Sample ID: 05-04850-006; GP-3-2

Analyte	Result	PQL	Units
Dibenzofuran	ND	330	ug/kg-dry
1,2-Dichlorobenzene	ND	330	ug/kg-dry
1,3-Dichlorobenzene	ND	330	ug/kg-dry
1,4-Dichlorobenzene	ND	330	ug/kg-dry
3,3'-Dichlorobenzidine	ND	1700	ug/kg-dry
2,4-Dichlorophenol	ND	330	ug/kg-dry
Diethyl phthalate	ND	330	ug/kg-dry
Dimethyl phthalate	ND	330	ug/kg-dry
2,4,-Dimethylphenol	ND	330	ug/kg-dry
4,6-Dinitro-o-Cresol	ND	1700	ug/kg-dry
2,4,-Dinitrophenol	ND	1700	ug/kg-dry
2,4-Dinitrotoluene	ND	330	ug/kg-dry
2,6-Dinitrotoluene	ND	330	ug/kg-dry
1,2-Diphenylhydrazine	ND	330	ug/kg-dry
Bis(2-ethylhexyl)phthalate	ND	330	ug/kg-dry
Fluoranthene	ND	330	ug/kg-dry
Fluorene	ND	330	ug/kg-dry
Hexachlorobenzene	ND	330	ug/kg-dry
Hexachlorobutadiene	ND	330	ug/kg-dry
Hexachlorocyclopentadiene	ND	330	ug/kg-dry
Hexachloroethane	ND	330	ug/kg-dry
Indeno(1,2,3-cd)pyrene	ND	330	ug/kg-dry
Isophorone	ND	330	ug/kg-dry
2-Methylnaphthalene	ND	330	ug/kg-dry
2-Methylphenol	ND	330	ug/kg-dry
3 & 4-Methylphenol	ND	330	ug/kg-dry
Naphthalene	ND	330	ug/kg-dry
2-Nitroaniline	ND	1700	ug/kg-dry
3-Nitroaniline	ND	1700	ug/kg-dry
4-Nitroaniline	ND	1700	ug/kg-dry
Nitrobenzene	ND	330	ug/kg-dry
2-Nitrophenol	ND	330	ug/kg-dry
4-Nitrophenol	ND	1700	ug/kg-dry
N-Nitrosodi-n-propylamine	ND	330	ug/kg-dry

Client:	Camp Dresser & McKee	**RTI Project#:**	05-04850
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Sample ID: 05-04850-006; GP-3-2

Analyte	Result	PQL	Units
N-Nitrosodimethylamine	ND	330	ug/kg-dry
N-Nitrosodiphenylamine	ND	330	ug/kg-dry
Pentachlorophenol	ND	330	ug/kg-dry
Phenanthrene	ND	330	ug/kg-dry
Phenol	ND	330	ug/kg-dry
Pyrene	ND	330	ug/kg-dry
1,2,4-Trichlorobenzene	ND	330	ug/kg-dry
2,4,5-Trichlorophenol	ND	330	ug/kg-dry
2,4,6-Trichlorophenol	ND	330	ug/kg-dry

Surrogate Recovery Data

Compound	% Recovery	Acceptable Limits(%)	Qualifier
2,4,6-Tribromophenol (Surr)	67	19 - 122	
2-Fluorobiphenyl (Surr)	91	30 - 115	
2-Fluorophenol (Surr)	84	24 - 113	
d14-Terphenyl (Surr)	105	19 - 122	
d5-Nitrobenzene (Surr)	92	23 - 120	
d6-Phenol (Surr)	93	25 - 121	

Total Metals (Soil)

Method(s): 3050, 6020 **Date Prepared:** 06/01/05 **Date Analyzed:** 06/03/05 **Analyzed by:** AB2

Arsenic, As	**12000**	50	ug/kg-dry
Barium, Ba	**89000**	500	ug/kg-dry
Cadmium, Cd	**390**	50	ug/kg-dry
Chromium, Cr	**14000**	250	ug/kg-dry
Lead, Pb	**10000**	500	ug/kg-dry
Selenium, Se	**780**	100	ug/kg-dry
Silver, Ag	**970**	250	ug/kg-dry
Copper, Cu	**22000**	500	ug/kg-dry
Zinc, Zn	**64000**	500	ug/kg-dry

Mercury (Soil)

Method(s): 7471A **Date Prepared:** 06/01/05 **Date Analyzed:** 06/02/05 **Analyzed by:** MB2

Mercury, Hg	**29**	14	ug/kg-dry

Client:	Camp Dresser & McKee			**RTI Project#:**	05-04850
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Sample ID: 05-04850-006; GP-3-2

Sample ID: 05-04850-007; GP-4-1

8260 Scan (Soil-MeOH preserved)

Method(s): 5035, 8260 **Date Analyzed:** 06/02/05 **Analyzed by:** JW

Analyte	Result	PQL	Units
Acetone	ND	1000	ug/kg-dry
Acrylonitrile	ND	250	ug/kg-dry
Benzene	ND	50	ug/kg-dry
Bromobenzene	ND	100	ug/kg-dry
Bromochloromethane	ND	50	ug/kg-dry
Bromodichloromethane	ND	100	ug/kg-dry
Bromoform	ND	100	ug/kg-dry
Bromomethane	ND	100	ug/kg-dry
n-Butylbenzene	ND	50	ug/kg-dry
S-butylbenzene	ND	50	ug/kg-dry
t-Butylbenzene	ND	50	ug/kg-dry
Carbon disulfide	ND	250	ug/kg-dry
Carbon tetrachloride	ND	50	ug/kg-dry
Chlorobenzene	ND	50	ug/kg-dry
Chloroethane	ND	250	ug/kg-dry
Chloroform	ND	50	ug/kg-dry
Chloromethane	ND	250	ug/kg-dry
Dibromochloromethane	ND	250	ug/kg-dry
1,2-Dibromo-3-chloropropane	ND	100	ug/kg-dry
1,2-Dibromoethane (EDB)	ND	50	ug/kg-dry
Dibromomethane	ND	50	ug/kg-dry
1,2-Dichlorobenzene	ND	50	ug/kg-dry
1,3-Dichlorobenzene	ND	50	ug/kg-dry
1,4-Dichlorobenzene	ND	50	ug/kg-dry
t-1,4-Dichloro-2-butene	ND	50	ug/kg-dry
Dichlorodifluoromethane	ND	50	ug/kg-dry
1,1-Dichloroethane	ND	50	ug/kg-dry
1,2-Dichloroethane	ND	50	ug/kg-dry
1,1-Dichloroethene	ND	50	ug/kg-dry
c-1,2-Dichloroethene	ND	50	ug/kg-dry

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Sample ID: 05-04850-007; GP-4-1

Analyte	Result	PQL	Units
t-1,2-Dichloroethene	ND	50	ug/kg-dry
1,2-Dichloropropane	ND	50	ug/kg-dry
1,3-Dichloropropene (cis&trans)	ND	100	ug/kg-dry
Diethyl Ether	ND	100	ug/kg-dry
Ethyl benzene	ND	50	ug/kg-dry
Hexachloroethane	ND	100	ug/kg-dry
2-Hexanone	ND	250	ug/kg-dry
Iodomethane	ND	50	ug/kg-dry
Isopropylbenzene	ND	50	ug/kg-dry
p-Isopropyltoluene	ND	100	ug/kg-dry
Dichloromethane	ND	250	ug/kg-dry
2-butanone (MEK)	ND	1000	ug/kg-dry
2-Methylnaphthalene	ND	250	ug/kg-dry
4-Methyl-2-pentanone(MIBK)	ND	250	ug/kg-dry
MTBE	ND	250	ug/kg-dry
Naphthalene	ND	250	ug/kg-dry
n-Propylbenzene	ND	50	ug/kg-dry
Styrene	ND	50	ug/kg-dry
1,1,2,2-Tetrachloroethane	ND	100	ug/kg-dry
Tetrachloroethene	ND	50	ug/kg-dry
Tetrahydrofuran	ND	1200	ug/kg-dry
Toluene	ND	50	ug/kg-dry
1,2,3-Trichlorobenzene	ND	250	ug/kg-dry
1,2,4-Trichlorobenzene	ND	100	ug/kg-dry
1,1,1-Trichloroethane	ND	50	ug/kg-dry
1,1,2-Trichloroethane	ND	50	ug/kg-dry
Trichloroethene	ND	50	ug/kg-dry
Trichlorofluoromethane	ND	50	ug/kg-dry
1,2,3-Trichloropropane	ND	50	ug/kg-dry
1,2,4-Trimethylbenzene	ND	100	ug/kg-dry
1,3,5-Trimethylbenzene	ND	100	ug/kg-dry
Vinyl chloride	ND	40	ug/kg-dry
Xylene, Total	ND	150	ug/kg-dry

Analyte	**Result**	**PQL**	**Units**

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Sample ID: 05-04850-007; GP-4-1

Surrogate Recovery Data

Compound	**% Recovery**	**Acceptable Limits(%)**	**Qualifier**
4-Bromofluorobenzene (SS)	105	74 - 121	
Dibromofluoromethane (SS)	101	80 - 120	
Toluene-d8 (SS)	97	81 - 117	

Method(s): 3545, 8270 **Date Prepared:** 06/03/05 **Date Analyzed:** 06/09/05 **Analyzed by:** JG3

Acenaphthene	ND	330	ug/kg-dry
Acenaphthylene	ND	330	ug/kg-dry
Aniline	ND	330	ug/kg-dry
Anthracene	ND	330	ug/kg-dry
Benzidine	ND	1300	ug/kg-dry
Benz[illegible]	ND	330	ug/kg-dry
Benzo(a)pyrene	ND	330	ug/kg-dry
Benzo(b)fluoranthene	ND	330	ug/kg-dry
Benzo(ghi)Perylene	ND	330	ug/kg-dry
Benzo(k)fluoranthene	ND	330	ug/kg-dry
Benzoic acid	ND	3300	ug/kg-dry
Benzyl alcohol	ND	3300	ug/kg-dry
4-Bromophenyl phenyl ether	ND	330	ug/kg-dry
Butyl benzyl phthalate	ND	330	ug/kg-dry
4-Chloro-3-methylphenol	ND	330	ug/kg-dry
4-Chloroaniline	ND	330	ug/kg-dry
Bis(2-chloroethoxy)methane	ND	330	ug/kg-dry
Bis(2-chloroethyl)ether	ND	330	ug/kg-dry
Bis(2-chloroisopropyl)ether	ND	330	ug/kg-dry
2-Chloronaphthalene	ND	330	ug/kg-dry
2-Chlorophenol	ND	330	ug/kg-dry
4-Chlorophenyl phenyl ether	ND	330	ug/kg-dry
Chrysene	ND	330	ug/kg-dry
Di-n-butyl phthalate	ND	330	ug/kg-dry
Di-n-octylphthalate	ND	330	ug/kg-dry
Dibenzo(a,h)anthracene	ND	330	ug/kg-dry

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Sample ID: 05-04850-007; GP-4-1

Analyte	Result	PQL	Units
Dibenzofuran	ND	330	ug/kg-dry
1,2-Dichlorobenzene	ND	330	ug/kg-dry
1,3-Dichlorobenzene	ND	330	ug/kg-dry
1,4-Dichlorobenzene	ND	330	ug/kg-dry
3,3'-Dichlorobenzidine	ND	1700	ug/kg-dry
2,4-Dichlorophenol	ND	330	ug/kg-dry
Diethyl phthalate	ND	330	ug/kg-dry
Dimethyl phthalate	ND	330	ug/kg-dry
2,4,-Dimethylphenol	ND	330	ug/kg-dry
4,6-Dinitro-o-Cresol	ND	1700	ug/kg-dry
2,4,-Dinitrophenol	ND	1700	ug/kg-dry
2,4-Dinitrotoluene	ND	330	ug/kg-dry
2,6-Dinitrotoluene	ND	330	ug/kg-dry
1,2-Diphenylhydrazine	ND	330	ug/kg-dry
Bis(2-ethylhexyl)phthalate	ND	330	ug/kg-dry
Fluoranthene	ND	330	ug/kg-dry
Fluorene	ND	330	ug/kg-dry
Hexachlorobenzene	ND	330	ug/kg-dry
Hexachlorobutadiene	ND	330	ug/kg-dry
Hexachlorocyclopentadiene	ND	330	ug/kg-dry
Hexachloroethane	ND	330	ug/kg-dry
Indeno(1,2,3-cd)pyrene	ND	330	ug/kg-dry
Isophorone	ND	330	ug/kg-dry
2-Methylnaphthalene	ND	330	ug/kg-dry
2-Methylphenol	ND	330	ug/kg-dry
3 & 4-Methylphenol	ND	330	ug/kg-dry
Naphthalene	ND	330	ug/kg-dry
2-Nitroaniline	ND	1700	ug/kg-dry
3-Nitroaniline	ND	1700	ug/kg-dry
4-Nitroaniline	ND	1700	ug/kg-dry
Nitrobenzene	ND	330	ug/kg-dry
2-Nitrophenol	ND	330	ug/kg-dry
4-Nitrophenol	ND	1700	ug/kg-dry
N-Nitrosodi-n-propylamine	ND	330	ug/kg-dry

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Sample ID: 05-04850-007; GP-4-1

Analyte	Result	PQL	Units
N-Nitrosodimethylamine	ND	330	ug/kg-dry
N-Nitrosodiphenylamine	ND	330	ug/kg-dry
Pentachlorophenol	ND	330	ug/kg-dry
Phenanthrene	ND	330	ug/kg-dry
Phenol	ND	330	ug/kg-dry
Pyrene	ND	330	ug/kg-dry
1,2,4-Trichlorobenzene	ND	330	ug/kg-dry
2,4,5-Trichlorophenol	ND	330	ug/kg-dry
2,4,6-Trichlorophenol	ND	330	ug/kg-dry

Surrogate Recovery Data

Compound	% Recovery	Acceptable Limits(%)	Qualifier
2,4,6-Tribromophenol (Surr)	99	19 - 122	
2-Fluorobiphenyl (Surr)	120	30 - 115	
2-Fluorophenol (Surr)	117	24 - 113	
d14-Terphenyl (Surr)	132	19 - 122	
d5-Nitrobenzene (Surr)	124	23 - 120	
d6-Phenol (Surr)	125	25 - 121	

Total Metals (Soil)

Method(s): 3050, 6020 **Date Prepared:** 06/01/05 **Date Analyzed:** 06/03/05 **Analyzed by:** AB2

Arsenic, As	**5500**	50	ug/kg-dry
Barium, Ba	**50000**	500	ug/kg-dry
Cadmium, Cd	**240**	50	ug/kg-dry
Chromium, Cr	**12000**	250	ug/kg-dry
Lead, Pb	**13000**	500	ug/kg-dry
Selenium, Se	**1300**	100	ug/kg-dry
Silver, Ag	**770**	250	ug/kg-dry
Copper, Cu	**22000**	500	ug/kg-dry
Zinc, Zn	**62000**	500	ug/kg-dry

Mercury (Soil)

Method(s): 7471A **Date Prepared:** 06/01/05 **Date Analyzed:** 06/02/05 **Analyzed by:** MB2

Mercury, Hg	**57**	18	ug/kg-dry

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Sample ID: 05-04850-007; GP-4-1

Sample ID: 05-04850-008; GP-4-2

8260 Scan (Soil-MeOH preserved)

Method(s): 5035, 8260 **Date Analyzed:** 06/02/05 **Analyzed by:** JW

Analyte	Result	PQL	Units
Acetone	ND	1000	ug/kg-dry
Acrylonitrile	ND	250	ug/kg-dry
Benzene	ND	50	ug/kg-dry
Bromobenzene	ND	100	ug/kg-dry
Bromochloromethane	ND	50	ug/kg-dry
Bromodichloromethane	ND	100	ug/kg-dry
Bromoform	ND	100	ug/kg-dry
Bromomethane	ND	100	ug/kg-dry
n-Butylbenzene	ND	50	ug/kg-dry
S-butylbenzene	ND	50	ug/kg-dry
t-Butylbenzene	ND	50	ug/kg-dry
Carbon disulfide	ND	250	ug/kg-dry
Carbon tetrachloride	ND	50	ug/kg-dry
Chlorobenzene	ND	50	ug/kg-dry
Chloroethane	ND	250	ug/kg-dry
Chloroform	ND	50	ug/kg-dry
Chloromethane	ND	250	ug/kg-dry
Dibromochloromethane	ND	250	ug/kg-dry
1,2-Dibromo-3-chloropropane	ND	100	ug/kg-dry
1,2-Dibromoethane (EDB)	ND	50	ug/kg-dry
Dibromomethane	ND	50	ug/kg-dry
1,2-Dichlorobenzene	ND	50	ug/kg-dry
1,3-Dichlorobenzene	ND	50	ug/kg-dry
1,4-Dichlorobenzene	ND	50	ug/kg-dry
t-1,4-Dichloro-2-butene	ND	50	ug/kg-dry
Dichlorodifluoromethane	ND	50	ug/kg-dry
1,1-Dichloroethane	ND	50	ug/kg-dry
1,2-Dichloroethane	ND	50	ug/kg-dry
1,1-Dichloroethene	ND	50	ug/kg-dry
c-1,2-Dichloroethene	ND	50	ug/kg-dry

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Sample ID: 05-04850-008; GP-4-2

Analyte	Result	PQL	Units
t-1,2-Dichloroethene	ND	50	ug/kg-dry
1,2-Dichloropropane	ND	50	ug/kg-dry
1,3-Dichlo[illegible]pene (cis&trans)	ND	100	ug/kg-dry
Diethyl Ether	ND	100	ug/kg-dry
Ethyl benzene	ND	50	ug/kg-dry
Hexachloroethane	ND	100	ug/kg-dry
2-Hexanone	ND	250	ug/kg-dry
Iodomethane	ND	50	ug/kg-dry
Isopropylbenzene	ND	50	ug/kg-dry
p-Isopro[illegible]	ND	100	ug/kg-dry
Dichlor[illegible]ethane	ND	250	ug/kg-dry
2-butanone (MEK)	ND	1000	ug/kg-dry
2-Methylnaphthalene	ND	250	ug/kg-dry
4-Methyl-2-pentanone(MIBK)	ND	250	ug/kg-dry
MTBE	ND	250	ug/kg-dry
Naphthalene	ND	250	ug/kg-dry
n-Propylbenzene	ND	50	ug/kg-dry
Styrene	ND	50	ug/kg-dry
1,1,2,2-Tetrachloroethane	ND	100	ug/kg-dry
Tetrachloroethene	ND	50	ug/kg-dry
Tetrahydrofuran	ND	1200	ug/kg-dry
Toluene	ND	50	ug/kg-dry
1,2,3-Trichlorobenzene	ND	250	ug/kg-dry
1,2,4-Trichlorobenzene	ND	100	ug/kg-dry
1,1,1-Trichloroethane	ND	50	ug/kg-dry
1,1,2-Trichloroethane	ND	50	ug/kg-dry
Trichloroethene	ND	50	ug/kg-dry
Trichlorofluoromethane	ND	50	ug/kg-dry
1,2,3-Trichloropropane	ND	50	ug/kg-dry
1,2,4-Trimethylbenzene	ND	100	ug/kg-dry
1,3,5-Trimethylbenzene	ND	100	ug/kg-dry
Vinyl chloride	ND	40	ug/kg-dry
Xylene, Total	ND	150	ug/kg-dry

Analyte	**Result**	**PQL**	**Units**

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Sample ID: 05-04850-008; GP-4-2

Surrogate Recovery Data

Compound	**% Recovery**	**Acceptable Limits(%)**	**Qualifier**
4-Bromofluorobenzene (SS)	**101**	74 - 121	
Dibromofluoromethane (SS)	**101**	80 - 120	
Toluene-d8 (SS)	**96**	81 - 117	

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Method(s): 3545, 8270 **Date Prepared:** 06/03/05 **Date Analyzed:** 06/09/05 **Analyzed by:** JG3

Acenaphthene	ND	330	ug/kg-dry
Acenaphthylene	ND	330	ug/kg-dry
Aniline	ND	330	ug/kg-dry
Anthracene	ND	330	ug/kg-dry
Benzidine	ND	1300	ug/kg-dry
Benzo(a)anthracene	ND	330	ug/kg-dry
Benzo(a)pyrene	ND	330	ug/kg-dry
Benzo(b)fluoranthene	ND	330	ug/kg-dry
Benzo(ghi)Perylene	ND	330	ug/kg-dry
Benzo(k)fluoranthene	ND	330	ug/kg-dry
Benzoic acid	ND	3300	ug/kg-dry
Benzyl alcohol	ND	3300	ug/kg-dry
4-Bromophenyl phenyl ether	ND	330	ug/kg-dry
Butyl benzyl phthalate	ND	330	ug/kg-dry
4-Chloro-3-methylphenol	ND	330	ug/kg-dry
4-Chloroaniline	ND	330	ug/kg-dry
Bis(2-chloroethoxy)methane	ND	330	ug/kg-dry
Bis(2-chloroethyl)ether	ND	330	ug/kg-dry
Bis(2-chloroisopropyl)ether	ND	330	ug/kg-dry
2-Chloronaphthalene	ND	330	ug/kg-dry
2-Chlorophenol	ND	330	ug/kg-dry
4-Chlorophenyl phenyl ether	ND	330	ug/kg-dry
Chrysene	ND	330	ug/kg-dry
Di-n-butyl phthalate	ND	330	ug/kg-dry
Di-n-octylphthalate	ND	330	ug/kg-dry
Dibenzo(a,h)anthracene	ND	330	ug/kg-dry

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Sample ID: 05-04850-008; GP-4-2

Analyte	Result	PQL	Units
Dibenzofuran	ND	330	ug/kg-dry
1,2-Dichlorobenzene	ND	330	ug/kg-dry
1,3-Dichlorobenzene	ND	330	ug/kg-dry
1,4-Dichlorobenzene	ND	330	ug/kg-dry
3,3'-Dichlorobenzidine	ND	1700	ug/kg-dry
2,4-Dichlorophenol	ND	330	ug/kg-dry
Diethyl phthalate	ND	330	ug/kg-dry
Dimethyl phthalate	ND	330	ug/kg-dry
2,4,-Dimethylphenol	ND	330	ug/kg-dry
4,6-Dinitro-o-Cresol	ND	1700	ug/kg-dry
2,4,-Dinitrophenol	ND	1700	ug/kg-dry
2,4-Dinitrotoluene	ND	330	ug/kg-dry
2,6-Dinitrotoluene	ND	330	ug/kg-dry
1,2-Diphenylhydrazine	ND	330	ug/kg-dry
Bis(2-ethylhexyl)phthalate	ND	330	ug/kg-dry
Fluoranthene	ND	330	ug/kg-dry
Fluorene	ND	330	ug/kg-dry
Hexachlorobenzene	ND	330	ug/kg-dry
Hexachlorobutadiene	ND	330	ug/kg-dry
Hexachlorocyclopentadiene	ND	330	ug/kg-dry
Hexachloroethane	ND	330	ug/kg-dry
Indeno(1,2,3-cd)pyrene	ND	330	ug/kg-dry
Isophorone	ND	330	ug/kg-dry
2-Methylnaphthalene	ND	330	ug/kg-dry
2-Methylphenol	ND	330	ug/kg-dry
3 & 4-Methylphenol	ND	330	ug/kg-dry
Naphthalene	ND	330	ug/kg-dry
2-Nitroaniline	ND	1700	ug/kg-dry
3-Nitroaniline	ND	1700	ug/kg-dry
4-Nitroaniline	ND	1700	ug/kg-dry
Nitrobenzene	ND	330	ug/kg-dry
2-Nitrophenol	ND	330	ug/kg-dry
4-Nitrophenol	ND	1700	ug/kg-dry
N-Nitrosodi-n-propylamine	ND	330	ug/kg-dry

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Sample ID: 05-04850-008; GP-4-2

Analyte	Result	PQL	Units
N-Nitrosodimethylamine	ND	330	ug/kg-dry
N-Nitrosodiphenylamine	ND	330	ug/kg-dry
Pentachlorophenol	ND	330	ug/kg-dry
Phenanthrene	ND	330	ug/kg-dry
Phenol	ND	330	ug/kg-dry
Pyrene	ND	330	ug/kg-dry
1,2,4-Trichlorobenzene	ND	330	ug/kg-dry
2,4,5-Trichlorophenol	ND	330	ug/kg-dry
2,4,6-Trichlorophenol	ND	330	ug/kg-dry

Surrogate Recovery Data

Compound	% Recovery	Acceptable Limits(%)	Qualifier
2,4,6-Tribromophenol (Surr)	82	19 - 122	
2-Fluorobiphenyl (Surr)	117	30 - 115	
2-Fluorophenol (Surr)	116	24 - 113	
d14-Terphenyl (Surr)	125	19 - 122	
d5-Nitrobenzene (Surr)	120	23 - 120	
d6-Phenol (Surr)	124	25 - 121	

Total Metals (Soil)

Method(s): 3050, 6020 **Date Prepared:** 06/01/05 **Date Analyzed:** 06/03/05 **Analyzed by:** AB2

Arsenic, As	**5800**	50	ug/kg-dry
Barium, Ba	**78000**	500	ug/kg-dry
Cadmium, Cd	**340**	50	ug/kg-dry
Chromium, Cr	**21000**	250	ug/kg-dry
Lead, Pb	**9600**	500	ug/kg-dry
Selenium, Se	ND	100	ug/kg-dry
Silver, Ag	**670**	250	ug/kg-dry
Copper, Cu	**24000**	500	ug/kg-dry
Zinc, Zn	**64000**	500	ug/kg-dry

Mercury (Soil)

Method(s): 7471A **Date Prepared:** 06/01/05 **Date Analyzed:** 06/02/05 **Analyzed by:** MB2

Mercury, Hg	**27**	18	ug/kg-dry

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Sample ID: 05-04850-008; GP-4-2

Sample ID: 05-04850-009; GP-5-1

8260 Scan (Soil-MeOH preserved)

Method(s): 5035, 8260 **Date Analyzed:** 06/02/05 **Analyzed by:** JW

Analyte	Result	PQL	Units
Acetone	ND	1000	ug/kg-dry
Acrylonitrile	ND	250	ug/kg-dry
Benzene	ND	50	ug/kg-dry
Bromobenzene	ND	100	ug/kg-dry
Bromochloromethane	ND	50	ug/kg-dry
Bromodichloromethane	ND	100	ug/kg-dry
Bromoform	ND	100	ug/kg-dry
Bromomethane	ND	100	ug/kg-dry
n-Butylbenzene	ND	50	ug/kg-dry
S-butylbenzene	ND	50	ug/kg-dry
t-Butylbenzene	ND	50	ug/kg-dry
Carbon disulfide	ND	250	ug/kg-dry
Carbon tetrachloride	ND	50	ug/kg-dry
Chlorobenzene	ND	50	ug/kg-dry
Chloroethane	ND	250	ug/kg-dry
Chloroform	ND	50	ug/kg-dry
Chloromethane	ND	250	ug/kg-dry
Dibromochloromethane	ND	250	ug/kg-dry
1,2-Dibromo-3-chloropropane	ND	100	ug/kg-dry
1,2-Dibromoethane (EDB)	ND	50	ug/kg-dry
Dibromomethane	ND	50	ug/kg-dry
1,2-Dichlorobenzene	ND	50	ug/kg-dry
1,3-Dichlorobenzene	ND	50	ug/kg-dry
1,4-Dichlorobenzene	ND	50	ug/kg-dry
t-1,4-Dichloro-2-butene	ND	50	ug/kg-dry
Dichlorodifluoromethane	ND	50	ug/kg-dry
1,1-Dichloroethane	ND	50	ug/kg-dry
1,2-Dichloroethane	ND	50	ug/kg-dry
1,1-Dichloroethene	ND	50	ug/kg-dry
c-1,2-Dichloroethene	ND	50	ug/kg-dry

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Sample ID: 05-04850-009; GP-5-1

Analyte	Result	PQL	Units
t-1,2-Dichloroethene	ND	50	ug/kg-dry
1,2-Dichloropropane	ND	50	ug/kg-dry
1,3-Dichloropropene (cis&trans)	ND	100	ug/kg-dry
Diethyl Ether	ND	100	ug/kg-dry
Ethyl benzene	ND	50	ug/kg-dry
Hexachloroethane	ND	100	ug/kg-dry
2-Hexanone	ND	250	ug/kg-dry
Iodomethane	ND	50	ug/kg-dry
Isopropylbenzene	ND	50	ug/kg-dry
p-Isopropyltoluene	ND	100	ug/kg-dry
Dichloromethane	ND	250	ug/kg-dry
2-butanone (MEK)	ND	1000	ug/kg-dry
2-Methylnaphthalene	ND	250	ug/kg-dry
4-Methyl-2-pentanone(MIBK)	ND	250	ug/kg-dry
MTBE	ND	250	ug/kg-dry
Naphthalene	ND	250	ug/kg-dry
n-Propylbenzene	ND	50	ug/kg-dry
Styrene	ND	50	ug/kg-dry
1,1,2,2-Tetrachloroethane	ND	100	ug/kg-dry
Tetrachloroethene	ND	50	ug/kg-dry
Tetrahydrofuran	ND	1200	ug/kg-dry
Toluene	ND	50	ug/kg-dry
1,2,3-Trichlorobenzene	ND	250	ug/kg-dry
1,2,4-Trichlorobenzene	ND	100	ug/kg-dry
1,1,1-Trichloroethane	ND	50	ug/kg-dry
1,1,2-Trichloroethane	ND	50	ug/kg-dry
Trichloroethene	ND	50	ug/kg-dry
Trichlorofluoromethane	ND	50	ug/kg-dry
1,2,3-Trichloropropane	ND	50	ug/kg-dry
1,2,4-Trimethylbenzene	ND	100	ug/kg-dry
1,3,5-Trimethylbenzene	ND	100	ug/kg-dry
Vinyl chloride	ND	40	ug/kg-dry
Xylene, Total	ND	150	ug/kg-dry

Analyte	**Result**	**PQL**	**Units**

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Sample ID: 05-04850-009; GP-5-1

Surrogate Recovery Data

Compound	**% Recovery**	**Acceptable Limits(%)**	**Qualifier**
4-Bromofluorobenzene (SS)	109	74 - 121	
Dibromofluoromethane (SS)	101	80 - 120	
Toluene-d8 (SS)	99	81 - 117	

8270 Scan

Method(s): 3545, 8270 **Date Prepared:** 06/03/05 **Date Analyzed:** 06/09/05 **Analyzed by:** JG3

Acenaphthene	ND	330	ug/kg-dry
Acenaphthylene	ND	330	ug/kg-dry
Aniline	ND	330	ug/kg-dry
Anthracene	ND	330	ug/kg-dry
Benzidine	ND	1300	ug/kg-dry
Benzo(a)anthracene	ND	330	ug/kg-dry
Benzo(a)pyrene	ND	330	ug/kg-dry
Benzo(b)fluoranthene	ND	330	ug/kg-dry
Benzo(ghi)Perylene	ND	330	ug/kg-dry
Benzo(k)fluoranthene	ND	330	ug/kg-dry
Benzoic acid	ND	3300	ug/kg-dry
Benzyl alcohol	ND	3300	ug/kg-dry
4-Bromophenyl phenyl ether	ND	330	ug/kg-dry
Butyl benzyl phthalate	ND	330	ug/kg-dry
4-Chloro-3-methylphenol	ND	330	ug/kg-dry
4-Chloroaniline	ND	330	ug/kg-dry
Bis(2-chloroethoxy)methane	ND	330	ug/kg-dry
Bis(2-chloroethyl)ether	ND	330	ug/kg-dry
Bis(2-chloroisopropyl)ether	ND	330	ug/kg-dry
2-Chloronaphthalene	ND	330	ug/kg-dry
2-Chlorophenol	ND	330	ug/kg-dry
4-Chlorophenyl phenyl ether	ND	330	ug/kg-dry
Chrysene	ND	330	ug/kg-dry
Di-n-butyl phthalate	ND	330	ug/kg-dry
Di-n-octylphthalate	ND	330	ug/kg-dry
Dibenzo(a,h)anthracene	ND	330	ug/kg-dry

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Sample ID: 05-04850-009; GP-5-1

Analyte	Result	PQL	Units
Dibenzofuran	ND	330	ug/kg-dry
1,2-Dichlorobenzene	ND	330	ug/kg-dry
1,3-Dichlorobenzene	ND	330	ug/kg-dry
1,4-Dichlorobenzene	ND	330	ug/kg-dry
3,3'-Dichlorobenzidine	ND	1700	ug/kg-dry
2,4-Dichlorophenol	ND	330	ug/kg-dry
Diethyl phthalate	ND	330	ug/kg-dry
Dimethyl phthalate	ND	330	ug/kg-dry
2,4,-Dimethylphenol	ND	330	ug/kg-dry
4,6-Dinitro-o-Cresol	ND	1700	ug/kg-dry
2,4,-Dinitrophenol	ND	1700	ug/kg-dry
2,4-Dinitrotoluene	ND	330	ug/kg-dry
2,6-Dinitrotoluene	ND	330	ug/kg-dry
1,2-Diphenylhydrazine	ND	330	ug/kg-dry
Bis(2-ethylhexyl)phthalate	ND	330	ug/kg-dry
Fluoranthene	ND	330	ug/kg-dry
Fluorene	ND	330	ug/kg-dry
Hexachlorobenzene	ND	330	ug/kg-dry
Hexachlorobutadiene	ND	330	ug/kg-dry
Hexachlorocyclopentadiene	ND	330	ug/kg-dry
Hexachloroethane	ND	330	ug/kg-dry
Indeno(1,2,3-cd)pyrene	ND	330	ug/kg-dry
Isophorone	ND	330	ug/kg-dry
2-Methylnaphthalene	ND	330	ug/kg-dry
2-Methylphenol	ND	330	ug/kg-dry
3 & 4-Methylphenol	ND	330	ug/kg-dry
Naphthalene	ND	330	ug/kg-dry
2-Nitroaniline	ND	1700	ug/kg-dry
3-Nitroaniline	ND	1700	ug/kg-dry
4-Nitroaniline	ND	1700	ug/kg-dry
Nitrobenzene	ND	330	ug/kg-dry
2-Nitrophenol	ND	330	ug/kg-dry
4-Nitrophenol	ND	1700	ug/kg-dry
N-Nitrosodi-n-propylamine	ND	330	ug/kg-dry

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Sample ID: 05-04850-009; GP-5-1

Analyte	Result	PQL	Units
N-Nitrosodimethylamine	ND	330	ug/kg-dry
N-Nitrosodiphenylamine	ND	330	ug/kg-dry
Pentachlorophenol	ND	330	ug/kg-dry
Phenanthrene	ND	330	ug/kg-dry
Phenol	ND	330	ug/kg-dry
Pyrene	ND	330	ug/kg-dry
1,2,4-Trichlorobenzene	ND	330	ug/kg-dry
2,4,5-Trichlorophenol	ND	330	ug/kg-dry
2,4,6-Trichlorophenol	ND	330	ug/kg-dry

Surrogate Recovery Data

Compound	% Recovery	Acceptable Limits(%)	Qualifier
2,4,6-Tribromophenol (Surr)	69	19 - 122	
2-Fluorobiphenyl (Surr)	116	30 - 115	
2-Fluorophenol (Surr)	123	24 - 113	
d14-Terphenyl (Surr)	125	19 - 122	
d5-Nitrobenzene (Surr)	115	23 - 120	
d6-Phenol (Surr)	123	25 - 121	

Total Metals (Soil)

Method(s): 3050, 6020 **Date Prepared:** 06/01/05 **Date Analyzed:** 06/03/05 **Analyzed by:** AB2

Arsenic, As	**6600**	50	ug/kg-dry
Barium, Ba	**61000**	500	ug/kg-dry
Cadmium, Cd	**170**	50	ug/kg-dry
Chromium, Cr	**17000**	250	ug/kg-dry
Lead, Pb	**11000**	500	ug/kg-dry
Selenium, Se	ND	100	ug/kg-dry
Silver, Ag	**430**	250	ug/kg-dry
Copper, Cu	**22000**	500	ug/kg-dry
Zinc, Zn	**60000**	500	ug/kg-dry

Mercury (Soil)

Method(s): 7471A **Date Prepared:** 06/01/05 **Date Analyzed:** 06/02/05 **Analyzed by:** MB2

Mercury, Hg	**61**	20	ug/kg-dry

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Sample ID: 05-04850-010; GP-5-2

8260 Scan (Soil-MeOH preserved)

Method(s): 5035, 8260 **Date Analyzed:** 06/03/05 **Analyzed by:** JW

Analyte	Result	PQL	Units
Acetone	ND	1000	ug/kg-dry
Acr[illegible]	ND	250	ug/kg-dry
Ben[illegible]	ND	50	ug/kg-dry
Bromobenzene	ND	100	ug/kg-dry
Bromochloromethane	ND	50	ug/kg-dry
Bromodichlor[illegible]	ND	100	ug/kg-dry
B[illegible]	ND	100	ug/kg-dry
Bromomethane	ND	100	ug/kg-dry
n-Butylbenzene	ND	50	ug/kg-dry
S-butylbenzene	ND	50	ug/kg-dry
t-Butylbenzene	ND	50	ug/kg-dry
Carbon disulfide	ND	250	ug/kg-dry
Carbon tetrachloride	ND	50	ug/kg-dry
Chlorobenzene	ND	50	ug/kg-dry
Chloroethane	ND	250	ug/kg-dry
Chloroform	ND	50	ug/kg-dry
Chloromethane	ND	250	ug/kg-dry
Dibromochloromethane	ND	250	ug/kg-dry
1,2-Dibromo-3-chloropropane	ND	100	ug/kg-dry
1,2-Dibromoethane (EDB)	ND	50	ug/kg-dry
Dibromomethane	ND	50	ug/kg-dry
1,2-Dichlorobenzene	ND	50	ug/kg-dry
1,3-Dichlorobenzene	ND	50	ug/kg-dry
1,4-Dichlorobenzene	ND	50	ug/kg-dry
t-1,4-Dichloro-2-butene	ND	50	ug/kg-dry
Dichlorodifluoromethane	ND	50	ug/kg-dry
1,1-Dichloroethane	ND	50	ug/kg-dry
1,2-Dichloroethane	ND	50	ug/kg-dry
1,1-Dichloroethene	ND	50	ug/kg-dry
c-1,2-Dichloroethene	ND	50	ug/kg-dry

Analyte	**Result**	**PQL**	**Units**

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Sample ID: 05-04850-010; GP-5-2

t-1,2-Dichloroethene	ND	50	ug/kg-dry
1,2-Dichloropropane	ND	50	ug/kg-dry
1,3-Dichloropropene (cis&trans)	ND	100	ug/kg-dry
Diethyl Ether	ND	100	ug/kg-dry
Ethyl benzene	ND	50	ug/kg-dry
Hexachloroethane	ND	100	ug/kg-dry
2-Hexanone	ND	250	ug/kg-dry
Iodomethane	ND	50	ug/kg-dry
Isopropylbenzene	ND	50	ug/kg-dry
p-Isopropyltoluene	ND	100	ug/kg-dry
Dichloromethane	ND	250	ug/kg-dry
2-butanone (MEK)	ND	1000	ug/kg-dry
2-Methylnaphthalene	**62000**	2500	ug/kg-dry
4-Methyl-2-pentanone(MIBK)	ND	250	ug/kg-dry
MTBE	ND	250	ug/kg-dry
Naphthalene	**9400**	250	ug/kg-dry
n-Propylbenzene	ND	50	ug/kg-dry
Styrene	ND	50	ug/kg-dry
1,1,2,2-Tetrachloroethane	ND	100	ug/kg-dry
Tetrachloroethene	ND	50	ug/kg-dry
Tetrahydrofuran	ND	1200	ug/kg-dry
Toluene	ND	50	ug/kg-dry
1,2,3-Trichlorobenzene	ND	250	ug/kg-dry
1,2,4-Trichlorobenzene	ND	100	ug/kg-dry
1,1,1-Trichloroethane	ND	50	ug/kg-dry
1,1,2-Trichloroethane	ND	50	ug/kg-dry
Trichloroethene	ND	50	ug/kg-dry
Trichlorofluoromethane	ND	50	ug/kg-dry
1,2,3-Trichloropropane	ND	50	ug/kg-dry
1,2,4-Trimethylbenzene	ND	100	ug/kg-dry
1,3,5-Trimethylbenzene	ND	100	ug/kg-dry
Vinyl chloride	ND	40	ug/kg-dry
Xylene, Total	ND	150	ug/kg-dry

Analyte	**Result**	**PQL**	**Units**

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Sample ID: 05-04850-010; GP-5-2

Surrogate Recovery Data

Compound	**% Recovery**	**Acceptable Limits(%)**	**Qualifier**
4-Bromofluorobenzene (SS)	**119**	74 - 121	
Dibromofluoromethane (SS)	**111**	80 - 120	
Toluene-d8 (SS)	**96**	81 - 117	

82[illegible]

Method(s): 3545, 8270 **Date Prepared:** 06/03/05 **Date Analyzed:** 06/09/05 **Analyzed by:** JG3

Acenaphthene	ND	330	ug/kg-dry
Acenaphthylene	ND	330	ug/kg-dry
Aniline	ND	330	ug/kg-dry
Anthracene	ND	330	ug/kg-dry
Benzidine	ND	1300	ug/kg-dry
Benzo(a)anthracene	ND	330	ug/kg-dry
Benzo(a)pyrene	ND	330	ug/kg-dry
Benzo(b)fluoranthene	ND	330	ug/kg-dry
Benzo(ghi)Perylene	ND	330	ug/kg-dry
Benzo(k)fluoranthene	ND	330	ug/kg-dry
Benzoic acid	ND	3300	ug/kg-dry
Benzyl alcohol	ND	3300	ug/kg-dry
4-Bromophenyl phenyl ether	ND	330	ug/kg-dry
Butyl benzyl phthalate	ND	330	ug/kg-dry
4-Chloro-3-methylphenol	ND	330	ug/kg-dry
4-Chloroaniline	ND	330	ug/kg-dry
Bis(2-chloroethoxy)methane	ND	330	ug/kg-dry
Bis(2-chloroethyl)ether	ND	330	ug/kg-dry
Bis(2-chloroisopropyl)ether	ND	330	ug/kg-dry
2-Chloronaphthalene	ND	330	ug/kg-dry
2-Chlorophenol	ND	330	ug/kg-dry
4-Chlorophenyl phenyl ether	ND	330	ug/kg-dry
Chrysene	ND	330	ug/kg-dry
Di-n-butyl phthalate	ND	330	ug/kg-dry
Di-n-octylphthalate	ND	330	ug/kg-dry
Dibenzo(a,h)anthracene	ND	330	ug/kg-dry

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Sample ID: 05-04850-010; GP-5-2

Analyte	Result	PQL	Units
Dibenzofuran	ND	330	ug/kg-dry
1,2-Dichlorobenzene	ND	330	ug/kg-dry
1,3-Dichlorobenzene	ND	330	ug/kg-dry
1,4-Dichlorobenzene	ND	330	ug/kg-dry
3,3'-Dichlorobenzidine	ND	1700	ug/kg-dry
2,4-Dichlorophenol	ND	330	ug/kg-dry
Diethyl phthalate	ND	330	ug/kg-dry
Dimethyl phthalate	ND	330	ug/kg-dry
2,4,-Dimethylphenol	ND	330	ug/kg-dry
4,6-Dinitro-o-Cresol	ND	1700	ug/kg-dry
2,4,-Dinitrophenol	ND	1700	ug/kg-dry
2,4-Dinitrotoluene	ND	330	ug/kg-dry
2,6-Dinitrotoluene	ND	330	ug/kg-dry
1,2-Diphenylhydrazine	ND	330	ug/kg-dry
Bis(2-ethylhexyl)phthalate	ND	330	ug/kg-dry
Fluoranthene	ND	330	ug/kg-dry
Fluorene	ND	330	ug/kg-dry
Hexachlorobenzene	ND	330	ug/kg-dry
Hexachlorobutadiene	ND	330	ug/kg-dry
Hexachlorocyclopentadiene	ND	330	ug/kg-dry
Hexachloroethane	ND	330	ug/kg-dry
Indeno(1,2,3-cd)pyrene	ND	330	ug/kg-dry
Isophorone	ND	330	ug/kg-dry
2-Methylnaphthalene	**18000**	3300	ug/kg-dry
2-Methylphenol	ND	330	ug/kg-dry
3 & 4-Methylphenol	ND	330	ug/kg-dry
Naphthalene	**4000**	330	ug/kg-dry
2-Nitroaniline	ND	1700	ug/kg-dry
3-Nitroaniline	ND	1700	ug/kg-dry
4-Nitroaniline	ND	1700	ug/kg-dry
Nitrobenzene	ND	330	ug/kg-dry
2-Nitrophenol	ND	330	ug/kg-dry
4-Nitrophenol	ND	1700	ug/kg-dry
N-Nitrosodi-n-propylamine	ND	330	ug/kg-dry

Client:	Camp Dresser & McKee	**RTI Project#:**	05-04850
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Sample ID: 05-04850-010; GP-5-2

Analyte	Result	PQL	Units
N-Nitrosodimethylamine	ND	330	ug/kg-dry
N-Nitrosodiphenylamine	ND	330	ug/kg-dry
Pentachlorophenol	ND	330	ug/kg-dry
Phenanthrene	ND	330	ug/kg-dry
Phenol	ND	330	ug/kg-dry
Pyrene	ND	330	ug/kg-dry
1,2,4-Trichlorobenzene	ND	330	ug/kg-dry
2,4,5-Trichlorophenol	ND	330	ug/kg-dry
2,4,6-Trichlorophenol	ND	330	ug/kg-dry

Surrogate Recovery Data

Compound	% Recovery	Acceptable Limits(%)	Qualifier
2,4,6-Tribromophenol (Surr)	67	19 - 122	
2-Fluorobiphenyl (Surr)	117	30 - 115	
2-Fluorophenol (Surr)	107	24 - 113	
d14-Terphenyl (Surr)	139	19 - 122	
d5-Nitrobenzene (Surr)	110	23 - 120	
d6-Phenol (Surr)	107	25 - 121	

Total Metals (Soil)

Method(s): 3050, 6020 **Date Prepared:** 06/01/05 **Date Analyzed:** 06/03/05 **Analyzed by:** AB2

Arsenic, As	**7900**	50	ug/kg-dry
Barium, Ba	**45000**	500	ug/kg-dry
Cadmium, Cd	**190**	50	ug/kg-dry
Chromium, Cr	**12000**	250	ug/kg-dry
Lead, Pb	**8300**	500	ug/kg-dry
Selenium, Se	ND	100	ug/kg-dry
Silver, Ag	**310**	250	ug/kg-dry
Copper, Cu	**26000**	500	ug/kg-dry
Zinc, Zn	**58000**	500	ug/kg-dry

Mercury (Soil)

Method(s): 7471A **Date Prepared:** 06/01/05 **Date Analyzed:** 06/02/05 **Analyzed by:** MB2

Mercury, Hg	37	20	ug/kg-dry

Analyte	**Result**	**PQL**	**Units**

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Sample ID: 05-04850-010; GP-5-2

Sample ID: 05-04850-011; GP-6-1

8260 Scan (Soil-MeOH preserved)

Method(s): 5035, 8260 **Date Analyzed:** 06/03/05 **Analyzed by:** JW

Acetone	ND	1000	ug/kg-dry
Acrylonitrile	ND	250	ug/kg-dry
Benzene	**210**	50	ug/kg-dry
Bromobenzene	ND	100	ug/kg-dry
Bromochloromethane	ND	50	ug/kg-dry
Bromodichloromethane	ND	100	ug/kg-dry
Bromoform	ND	100	ug/kg-dry
Bromomethane	ND	100	ug/kg-dry
n-Butylbenzene	ND	50	ug/kg-dry
S-butylbenzene	ND	50	ug/kg-dry
t-Butylbenzene	ND	50	ug/kg-dry
Carbon disulfide	ND	250	ug/kg-dry
Carbon tetrachloride	ND	50	ug/kg-dry
Chlorobenzene	ND	50	ug/kg-dry
Chloroethane	ND	250	ug/kg-dry
Chloroform	ND	50	ug/kg-dry
Chloromethane	ND	250	ug/kg-dry
Dibromochloromethane	ND	250	ug/kg-dry
1,2-Dibromo-3-chloropropane	ND	100	ug/kg-dry
1,2-Dibromoethane (EDB)	ND	50	ug/kg-dry
Dibromomethane	ND	50	ug/kg-dry
1,2-Dichlorobenzene	ND	50	ug/kg-dry
1,3-Dichlorobenzene	ND	50	ug/kg-dry
1,4-Dichlorobenzene	ND	50	ug/kg-dry
t-1,4-Dichloro-2-butene	ND	50	ug/kg-dry
Dichlorodifluoromethane	ND	50	ug/kg-dry
1,1-Dichloroethane	ND	50	ug/kg-dry
1,2-Dichloroethane	ND	50	ug/kg-dry
1,1-Dichloroethene	ND	50	ug/kg-dry
c-1,2-Dichloroethene	ND	50	ug/kg-dry

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Sample ID: 05-04850-011; GP-6-1

Analyte	Result	PQL	Units
t-1,2-Dichloroethene	ND	50	ug/kg-dry
1,2-Dichloropropane	ND	50	ug/kg-dry
1,3-Dichloropropene (cis&trans)	ND	100	ug/kg-dry
Diethyl Ether	ND	100	ug/kg-dry
Ethyl benzene	ND	50	ug/kg-dry
Hexachloroethane	ND	100	ug/kg-dry
2-Hexanone	ND	250	ug/kg-dry
Iodomethane	ND	50	ug/kg-dry
Isopropylbenzene	**140**	50	ug/kg-dry
p-Isopropyltoluene	ND	100	ug/kg-dry
Dichloromethane	ND	250	ug/kg-dry
2-butanone (MEK)	ND	1000	ug/kg-dry
2-Methylnaphthalene	ND	250	ug/kg-dry
4-Methyl-2-pentanone(MIBK)	ND	250	ug/kg-dry
MTBE	ND	250	ug/kg-dry
Naphthalene	ND	250	ug/kg-dry
n-Propylbenzene	ND	50	ug/kg-dry
Styrene	ND	50	ug/kg-dry
1,1,2,2-Tetrachloroethane	ND	100	ug/kg-dry
Tetrachloroethene	ND	50	ug/kg-dry
Tetrahydrofuran	ND	1200	ug/kg-dry
Toluene	ND	50	ug/kg-dry
1,2,3-Trichlorobenzene	ND	250	ug/kg-dry
1,2,4-Trichlorobenzene	ND	100	ug/kg-dry
1,1,1-Trichloroethane	ND	50	ug/kg-dry
1,1,2-Trichloroethane	ND	50	ug/kg-dry
Trichloroethene	ND	50	ug/kg-dry
Trichlorofluoromethane	ND	50	ug/kg-dry
1,2,3-Trichloropropane	ND	50	ug/kg-dry
1,2,4-Trimethylbenzene	ND	100	ug/kg-dry
1,3,5-Trimethylbenzene	ND	100	ug/kg-dry
Vinyl chloride	ND	40	ug/kg-dry
Xylene, Total	**210**	150	ug/kg-dry

Analyte	**Result**	**PQL**	**Units**

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Sample ID: 05-04850-011; GP-6-1

Surrogate Recovery Data

Compound	% Recovery	Acceptable Limits(%)	Qualifier
4-Bromofluorobenzene (SS)	**109**	74 - 121	
Dibromofluoromethane (SS)	**103**	80 - 120	
Toluene-d8 (SS)	**101**	81 - 117	

8270 Scan (Soil)

Method(s): 3545, 8270 **Date Prepared:** 06/03/05 **Date Analyzed:** 06/09/05 **Analyzed by:** JG3

Acenaphthene	ND	330	ug/kg-dry
Acenaphthylene	ND	330	ug/kg-dry
Aniline	ND	330	ug/kg-dry
Anthracene	ND	330	ug/kg-dry
Benzidine	ND	1300	ug/kg-dry
Benzo(a)anthracene	ND	330	ug/kg-dry
Benzo(a)pyrene	ND	330	ug/kg-dry
Benzo(b)fluoranthene	**700**	330	ug/kg-dry
Benzo(ghi)Perylene	ND	330	ug/kg-dry
Benzo(k)fluoranthene	ND	330	ug/kg-dry
Benzoic acid	ND	3300	ug/kg-dry
Benzyl alcohol	ND	3300	ug/kg-dry
4-Bromophenyl phenyl ether	ND	330	ug/kg-dry
Butyl benzyl phthalate	ND	330	ug/kg-dry
4-Chloro-3-methylphenol	ND	330	ug/kg-dry
4-Chloroaniline	ND	330	ug/kg-dry
Bis(2-chloroethoxy)methane	ND	330	ug/kg-dry
Bis(2-chloroethyl)ether	ND	330	ug/kg-dry
Bis(2-chloroisopropyl)ether	ND	330	ug/kg-dry
2-Chloronaphthalene	ND	330	ug/kg-dry
2-Chlorophenol	ND	330	ug/kg-dry
4-Chlorophenyl phenyl ether	ND	330	ug/kg-dry
Chrysene	**1800**	330	ug/kg-dry
Di-n-butyl phthalate	ND	330	ug/kg-dry
Di-n-octylphthalate	ND	330	ug/kg-dry
Dibenzo(a,h)anthracene	ND	330	ug/kg-dry

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Sample ID: 05-04850-011; GP-6-1

Analyte	Result	PQL	Units
Dibenzofuran	ND	330	ug/kg-dry
1,2-Dichlorobenzene	ND	330	ug/kg-dry
1,3-Dichlorobenzene	ND	330	ug/kg-dry
1,4-Dichlorobenzene	ND	330	ug/kg-dry
3,3'-Dichlorobenzidine	ND	1700	ug/kg-dry
2,4-Dichlorophenol	ND	330	ug/kg-dry
Diethyl phthalate	ND	330	ug/kg-dry
Dimethyl phthalate	ND	330	ug/kg-dry
2,4,-Dimethylphenol	ND	330	ug/kg-dry
4,6-Dinitro-o-Cresol	ND	1700	ug/kg-dry
2,4,-Dinitrophenol	ND	1700	ug/kg-dry
2,4-Dinitrotoluene	ND	330	ug/kg-dry
2,6-Dinitrotoluene	ND	330	ug/kg-dry
1,2-Diphenylhydrazine	ND	330	ug/kg-dry
Bis(2-ethylhexyl)phthalate	ND	330	ug/kg-dry
Fluoranthene	**7200**	1700	ug/kg-dry
Fluorene	ND	330	ug/kg-dry
Hexachlorobenzene	ND	330	ug/kg-dry
Hexachlorobutadiene	ND	330	ug/kg-dry
Hexachlorocyclopentadiene	ND	330	ug/kg-dry
Hexachloroethane	ND	330	ug/kg-dry
Indeno(1,2,3-cd)pyrene	ND	330	ug/kg-dry
Isophorone	ND	330	ug/kg-dry
2-Methylnaphthalene	ND	330	ug/kg-dry
2-Methylphenol	ND	330	ug/kg-dry
3 & 4-Methylphenol	ND	330	ug/kg-dry
Naphthalene	ND	330	ug/kg-dry
2-Nitroaniline	ND	1700	ug/kg-dry
3-Nitroaniline	ND	1700	ug/kg-dry
4-Nitroaniline	ND	1700	ug/kg-dry
Nitrobenzene	ND	330	ug/kg-dry
2-Nitrophenol	ND	330	ug/kg-dry
4-Nitrophenol	ND	1700	ug/kg-dry
N-Nitrosodi-n-propylamine	ND	330	ug/kg-dry

Analyte	Result	PQL	Units

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Sample ID: 05-04850-011; GP-6-1

N-Nitrosodimethylamine	ND	330	ug/kg-dry
N-Nitrosodiphenylamine	ND	330	ug/kg-dry
Pentachlorophenol	ND	330	ug/kg-dry
Phenanthrene	**1800**	330	ug/kg-dry
Phenol	ND	330	ug/kg-dry
Pyrene	**4600**	330	ug/kg-dry
1,2,4-Trichlorobenzene	ND	330	ug/kg-dry
2,4,5-Trichlorophenol	ND	330	ug/kg-dry
2,4,6-Trichlorophenol	ND	330	ug/kg-dry

Surrogate Recovery Data

Compound	% Recovery	Acceptable Limits(%)	Qualifier
2,4,6-Tribromophenol (Surr)	**91**	19 - 122	
2-Fluorobiphenyl (Surr)	**91**	30 - 115	
2-Fluorophenol (Surr)	**72**	24 - 113	
d14-Terphenyl (Surr)	**127**	19 - 122	
d5-Nitrobenzene (Surr)	**81**	23 - 120	
d6-Phenol (Surr)	**87**	25 - 121	

Total Metals (Soil)

Method(s): 3050, 6020 **Date Prepared:** 06/01/05 **Date Analyzed:** 06/03/05 **Analyzed by:** AB2

Arsenic, As	**39000**	50	ug/kg-dry
Barium, Ba	**440000**	500	ug/kg-dry
Cadmium, Cd	**9100**	50	ug/kg-dry
Chromium, Cr	**220000**	250	ug/kg-dry
Lead, Pb	**1900000**	500	ug/kg-dry
Selenium, Se	**410**	100	ug/kg-dry
Silver, Ag	**1100**	250	ug/kg-dry
Copper, Cu	**620000**	500	ug/kg-dry
Zinc, Zn	**3300000**	500	ug/kg-dry

Mercury (Soil)

Method(s): 7471A **Date Prepared:** 06/01/05 **Date Analyzed:** 06/02/05 **Analyzed by:** MB2

Mercury, Hg	**73**	22	ug/kg-dry

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Sample ID: 05-04850-011; GP-6-1

Sample ID: 05-04850-012; GP-6-2

8260 Scan (Soil-MeOH preserved)

Method(s): 5035, 8260 **Date Analyzed:** 06/03/05 **Analyzed by:** JW

Analyte	Result	PQL	Units
Acetone	ND	1000	ug/kg-dry
Acrylonitrile	ND	250	ug/kg-dry
Benzene	ND	50	ug/kg-dry
Bromobenzene	ND	100	ug/kg-dry
Bromochloromethane	ND	50	ug/kg-dry
Bromodichloromethane	ND	100	ug/kg-dry
Bromoform	ND	100	ug/kg-dry
Bromomethane	ND	100	ug/kg-dry
n-Butylbenzene	ND	50	ug/kg-dry
S-butylbenzene	ND	50	ug/kg-dry
t-Butylbenzene	ND	50	ug/kg-dry
Carbon disulfide	ND	250	ug/kg-dry
Carbon tetrachloride	ND	50	ug/kg-dry
Chlorobenzene	ND	50	ug/kg-dry
Chloroethane	ND	250	ug/kg-dry
Chloroform	ND	50	ug/kg-dry
Chloromethane	ND	250	ug/kg-dry
Dibromochloromethane	ND	250	ug/kg-dry
1,2-Dibromo-3-chloropropane	ND	100	ug/kg-dry
1,2-Dibromoethane (EDB)	ND	50	ug/kg-dry
Dibromomethane	ND	50	ug/kg-dry
1,2-Dichlorobenzene	ND	50	ug/kg-dry
1,3-Dichlorobenzene	ND	50	ug/kg-dry
1,4-Dichlorobenzene	ND	50	ug/kg-dry
t-1,4-Dichloro-2-butene	ND	50	ug/kg-dry
Dichlorodifluoromethane	ND	50	ug/kg-dry
1,1-Dichloroethane	ND	50	ug/kg-dry
1,2-Dichloroethane	ND	50	ug/kg-dry
1,1-Dichloroethene	ND	50	ug/kg-dry
c-1,2-Dichloroethene	ND	50	ug/kg-dry

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Sample ID: 05-04850-012; GP-6-2

Analyte	Result	PQL	Units
t-1,2-Dichloroethene	ND	50	ug/kg-dry
1,2-Dichloropropane	ND	50	ug/kg-dry
1,3-Dichloropropene (cis&trans)	ND	100	ug/kg-dry
Diethyl Ether	ND	100	ug/kg-dry
Ethyl benzene	ND	50	ug/kg-dry
Hexachlorobutadiene	ND	100	ug/kg-dry
2-Hexanone	ND	250	ug/kg-dry
Iodomethane	ND	50	ug/kg-dry
Isopropylbenzene	ND	50	ug/kg-dry
p-Isopropyltoluene	ND	100	ug/kg-dry
Dichloromethane	ND	250	ug/kg-dry
2-butanone (MEK)	ND	1000	ug/kg-dry
2-Methylnaphthalene	ND	250	ug/kg-dry
4-Methyl-2-pentanone(MIBK)	ND	250	ug/kg-dry
MTBE	ND	250	ug/kg-dry
Naphthalene	ND	250	ug/kg-dry
n-Propylbenzene	ND	50	ug/kg-dry
Styrene	ND	50	ug/kg-dry
1,1,2,2-Tetrachloroethane	ND	100	ug/kg-dry
Tetrachloroethene	ND	50	ug/kg-dry
Tetrahydrofuran	ND	1200	ug/kg-dry
Toluene	ND	50	ug/kg-dry
1,2,3-Trichlorobenzene	ND	250	ug/kg-dry
1,2,4-Trichlorobenzene	ND	100	ug/kg-dry
1,1,1-Trichloroethane	ND	50	ug/kg-dry
1,1,2-Trichloroethane	ND	50	ug/kg-dry
Trichloroethene	ND	50	ug/kg-dry
Trichlorofluoromethane	ND	50	ug/kg-dry
1,2,3-Trichloropropane	ND	50	ug/kg-dry
1,2,4-Trimethylbenzene	ND	100	ug/kg-dry
1,3,5-Trimethylbenzene	ND	100	ug/kg-dry
Vinyl chloride	ND	40	ug/kg-dry
Xylene, Total	ND	150	ug/kg-dry

Analyte	**Result**	**PQL**	**Units**

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Sample ID: 05-04850-012; GP-6-2

Surrogate Recovery Data

Compound	**% Recovery**	**Acceptable Limits(%)**	**Qualifier**
4-Bromofluorobenzene (SS)	121	74 - 121	
Dibromofluoromethane (SS)	106	80 - 120	
Toluene-d8 (SS)	106	81 - 117	

8270 Scan (Soil)

Method(s): 3545, 8270 **Date Prepared:** 06/03/05 **Date Analyzed:** 06/09/05 **Analyzed by:** JG3

Acenaphthene	ND	330	ug/kg-dry
Acenaphthylene	ND	330	ug/kg-dry
Aniline	ND	330	ug/kg-dry
Anthracene	ND	330	ug/kg-dry
Benzidine	ND	1300	ug/kg-dry
Benzo(a)anthracene	ND	330	ug/kg-dry
Benzo(a)pyrene	ND	330	ug/kg-dry
Benzo(b)fluoranthene	ND	330	ug/kg-dry
Benzo(ghi)Perylene	ND	330	ug/kg-dry
Benzo(k)fluoranthene	ND	330	ug/kg-dry
Benzoic acid	ND	3300	ug/kg-dry
Benzyl alcohol	ND	3300	ug/kg-dry
4-Bromophenyl phenyl ether	ND	330	ug/kg-dry
Butyl benzyl phthalate	ND	330	ug/kg-dry
4-Chloro-3-methylphenol	ND	330	ug/kg-dry
4-Chloroaniline	ND	330	ug/kg-dry
Bis(2-chloroethoxy)methane	ND	330	ug/kg-dry
Bis(2-chloroethyl)ether	ND	330	ug/kg-dry
Bis(2-chloroisopropyl)ether	ND	330	ug/kg-dry
2-Chloronaphthalene	ND	330	ug/kg-dry
2-Chlorophenol	ND	330	ug/kg-dry
4-Chlorophenyl phenyl ether	ND	330	ug/kg-dry
Chrysene	ND	330	ug/kg-dry
Di-n-butyl phthalate	ND	330	ug/kg-dry
Di-n-octylphthalate	ND	330	ug/kg-dry
Dibenzo(a,h)anthracene	ND	330	ug/kg-dry

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Sample ID: 05-04850-012; GP-6-2

Analyte	Result	PQL	Units
Dibenzofuran	ND	330	ug/kg-dry
1,2-Dichlorobenzene	ND	330	ug/kg-dry
1,3-Dichlorobenzene	ND	330	ug/kg-dry
1,4-Dichlorobenzene	ND	330	ug/kg-dry
3,3'-Dichlorobenzidine	ND	1700	ug/kg-dry
2,4-Dichlorophenol	ND	330	ug/kg-dry
Diethyl phthalate	ND	330	ug/kg-dry
Dimethyl phthalate	ND	330	ug/kg-dry
2,4,-Dimethylphenol	ND	330	ug/kg-dry
4,6-Dinitro-o-Cresol	ND	1700	ug/kg-dry
2,4,-Dinitrophenol	ND	1700	ug/kg-dry
2,4-Dinitrotoluene	ND	330	ug/kg-dry
2,6-Dinitrotoluene	ND	330	ug/kg-dry
1,2-Diphenylhydrazine	ND	330	ug/kg-dry
Bis(2-ethylhexyl)phthalate	ND	330	ug/kg-dry
Fluoranthene	ND	330	ug/kg-dry
Fluorene	ND	330	ug/kg-dry
Hexachlorobenzene	ND	330	ug/kg-dry
Hexachlorobutadiene	ND	330	ug/kg-dry
Hexachlorocyclopentadiene	ND	330	ug/kg-dry
Hexachloroethane	ND	330	ug/kg-dry
Indeno(1,2,3-cd)pyrene	ND	330	ug/kg-dry
Isophorone	ND	330	ug/kg-dry
2-Methylnaphthalene	ND	330	ug/kg-dry
2-Methylphenol	ND	330	ug/kg-dry
3 & 4-Methylphenol	ND	330	ug/kg-dry
Naphthalene	ND	330	ug/kg-dry
2-Nitroaniline	ND	1700	ug/kg-dry
3-Nitroaniline	ND	1700	ug/kg-dry
4-Nitroaniline	ND	1700	ug/kg-dry
Nitrobenzene	ND	330	ug/kg-dry
2-Nitrophenol	ND	330	ug/kg-dry
4-Nitrophenol	ND	1700	ug/kg-dry
N-Nitrosodi-n-propylamine	ND	330	ug/kg-dry

Analyte	Result	PQL	Units

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Sample ID: 05-04850-012; GP-6-2

N-Nitrosodimethylamine	ND	330	ug/kg-dry
N-Nitrosodiphenylamine	ND	330	ug/kg-dry
Pentachlorophenol	ND	330	ug/kg-dry
Phenanthrene	ND	330	ug/kg-dry
Phenol	ND	330	ug/kg-dry
Pyrene	ND	330	ug/kg-dry
1,2,4-Trichlorobenzene	ND	330	ug/kg-dry
2,4,5-Trichlorophenol	ND	330	ug/kg-dry
2,4,6-Trichlorophenol	ND	330	ug/kg-dry

Surrogate Recovery Data

Compound	% Recovery	Acceptable Limits(%)	Qualifier
2,4,6-Tribromophenol (Surr)	0	19 - 122	
2-Fluorobiphenyl (Surr)	101	30 - 115	
2-Fluorophenol (Surr)	38	24 - 113	
d14-Terphenyl (Surr)	139	19 - 122	
d5-Nitrobenzene (Surr)	91	23 - 120	
d6-Phenol (Surr)	95	25 - 121	

Total Metals (Soil)

Method(s): 3050, 6020 **Date Prepared:** 06/01/05 **Date Analyzed:** 06/03/05 **Analyzed by:** AB2

Arsenic, As	**7300**	50	ug/kg-dry
Barium, Ba	**31000**	500	ug/kg-dry
Cadmium, Cd	**280**	50	ug/kg-dry
Chromium, Cr	**7900**	250	ug/kg-dry
Lead, Pb	**7700**	500	ug/kg-dry
Selenium, Se	**550**	100	ug/kg-dry
Silver, Ag	**420**	250	ug/kg-dry
Copper, Cu	**23000**	500	ug/kg-dry
Zinc, Zn	**50000**	500	ug/kg-dry

Mercury (Soil)

Method(s): 7471A **Date Prepared:** 06/01/05 **Date Analyzed:** 06/02/05 **Analyzed by:** MB2

Mercury, Hg	**30**	15	ug/kg-dry

Client:	Camp Dresser & McKee			**RTI Project#:**	05-04850
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Sample ID: 05-04850-012; GP-6-2

8082 PCB's (Soil)

Method(s): 3545, 8082 **Date Analyzed:** 06/01/05 **Analyzed by:** MB

Analyte	Result	PQL	Units
Aroclor 1016	ND	8.3	ug/kg-dry
Aroclor 1221	ND	8.3	ug/kg-dry
Aroclor 1232	ND	8.3	ug/kg-dry
Aroclor 1242	ND	8.3	ug/kg-dry
Aroclor 1248	ND	8.3	ug/kg-dry
Aroclor 1254	ND	8.3	ug/kg-dry
Aroclor 1260	ND	8.3	ug/kg-dry

Surrogate Recovery Data

Compound	% Recovery	Acceptable Limits(%)	Qualifier
Decachlorobiphenyl (Surr)	94		
Tetrachloro-m-xylene (surr)	100		

Client:	Camp Dresser & McKee			**RTI Project#:**	05-04850
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Sample ID: 05-04850-013; GP-7-1

8260 Scan (Soil-MeOH preserved)

Method(s): 5035, 8260 **Date Analyzed:** 06/03/05 **Analyzed by:** JW

Analyte	Result	PQL	Units
Acetone	ND	1000	ug/kg-dry
Acrylonitrile	ND	250	ug/kg-dry
Benzene	**570**	50	ug/kg-dry
Bromobenzene	ND	100	ug/kg-dry
Bromochloromethane	ND	50	ug/kg-dry
Bromodichloromethane	ND	100	ug/kg-dry
Bromoform	ND	100	ug/kg-dry
Bromomethane	ND	100	ug/kg-dry
n-Butylbenzene	ND	50	ug/kg-dry
S-butylbenzene	ND	50	ug/kg-dry
t-Butylbenzene	ND	50	ug/kg-dry
Carbon disulfide	ND	250	ug/kg-dry
Carbon tetrachloride	ND	50	ug/kg-dry
Chlorobenzene	**38000**	500	ug/kg-dry
Chloroethane	ND	250	ug/kg-dry
Chloroform	ND	50	ug/kg-dry
Chloromethane	ND	250	ug/kg-dry
Dibromochloromethane	ND	250	ug/kg-dry
1,2-Dibromo-3-chloropropane	ND	100	ug/kg-dry
1,2-Dibromoethane (EDB)	ND	50	ug/kg-dry
Dibromomethane	ND	50	ug/kg-dry
1,2-Dichlorobenzene	ND	50	ug/kg-dry
1,3-Dichlorobenzene	ND	50	ug/kg-dry
1,4-Dichlorobenzene	ND	50	ug/kg-dry
t-1,4-Dichloro-2-butene	ND	50	ug/kg-dry
Dichlorodifluoromethane	ND	50	ug/kg-dry
1,1-Dichloroethane	ND	50	ug/kg-dry
1,2-Dichloroethane	ND	50	ug/kg-dry
1,1-Dichloroethene	ND	50	ug/kg-dry
c-1,2-Dichloroethene	ND	50	ug/kg-dry
t-1,2-Dichloroethene	ND	50	ug/kg-dry
1,2-Dichloropropane	ND	50	ug/kg-dry

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Sample ID: 05-04850-013; GP-7-1

Analyte	Result	PQL	Units
1,3-Dichloropropene (cis&trans)	ND	100	ug/kg-dry
Diethyl Ether	ND	100	ug/kg-dry
Ethyl benzene	**85**	50	ug/kg-dry
Hexachloroethane	ND	100	ug/kg-dry
2-Hexanone	ND	250	ug/kg-dry
Iodomethane	ND	50	ug/kg-dry
Isopropylbenzene	ND	50	ug/kg-dry
p-Isopropyltoluene	ND	100	ug/kg-dry
Dichloromethane	ND	250	ug/kg-dry
2-butanone (MEK)	**1500**	1000	ug/kg-dry
2-Methylnaphthalene	ND	2500	ug/kg-dry
4-Methyl-2-pentanone(MIBK)	**330**	250	ug/kg-dry
MTBE	ND	250	ug/kg-dry
Naphthalene	ND	2500	ug/kg-dry
n-Propylbenzene	ND	50	ug/kg-dry
Styrene	ND	50	ug/kg-dry
1,1,2,2-Tetrachloroethane	ND	100	ug/kg-dry
Tetrachloroethene	ND	50	ug/kg-dry
Tetrahydrofuran	ND	1200	ug/kg-dry
Toluene	ND	50	ug/kg-dry
1,2,3-Trichlorobenzene	ND	250	ug/kg-dry
1,2,4-Trichlorobenzene	ND	100	ug/kg-dry
1,1,1-Trichloroethane	ND	50	ug/kg-dry
1,1,2-Trichloroethane	ND	50	ug/kg-dry
Trichloroethene	ND	50	ug/kg-dry
Trichlorofluoromethane	ND	50	ug/kg-dry
1,2,3-Trichloropropane	ND	50	ug/kg-dry
1,2,4-Trimethylbenzene	**160**	100	ug/kg-dry
1,3,5-Trimethylbenzene	ND	100	ug/kg-dry
Vinyl chloride	ND	40	ug/kg-dry
Xylene, Total	ND	150	ug/kg-dry

Client:	Camp Dresser & McKee			**RTI Project#:**	05-04850
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Analyte	**Result**	**PQL**	**Units**

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Sample ID: 05-04850-013; GP-7-1

Surrogate Recovery Data

Compound	**% Recovery**	**Acceptable Limits(%)**	**Qualifier**
4-Bromofluorobenzene (SS)	121	74 - 121	
Dibromofluoromethane (SS)	107	80 - 120	
Toluene-d8 (SS)	98	81 - 117	

8270 Scan (Soil)

Method(s): 3545, 8270 **Date Prepared:** 06/03/05 **Date Analyzed:** 06/09/05 **Analyzed by:** JG3

Acenaphthene	ND	330	ug/kg-dry
Acenaphthylene	ND	330	ug/kg-dry
Aniline	ND	330	ug/kg-dry
Anthracene	ND	330	ug/kg-dry
Benzidine	ND	1300	ug/kg-dry
Benzo(a)anthracene	ND	330	ug/kg-dry
Benzo(a)pyrene	ND	330	ug/kg-dry
Benzo(b)fluoranthene	ND	330	ug/kg-dry
Benzo(ghi)Perylene	ND	330	ug/kg-dry
Benzo(k)fluoranthene	ND	330	ug/kg-dry
Benzoic acid	ND	3300	ug/kg-dry
Benzyl alcohol	ND	3300	ug/kg-dry
4-Bromophenyl phenyl ether	ND	330	ug/kg-dry
Butyl benzyl phthalate	ND	330	ug/kg-dry
4-Chloro-3-methylphenol	ND	330	ug/kg-dry
4-Chloroaniline	ND	330	ug/kg-dry
Bis(2-chloroethoxy)methane	ND	330	ug/kg-dry
Bis(2-chloroethyl)ether	ND	330	ug/kg-dry
Bis(2-chloroisopropyl)ether	ND	330	ug/kg-dry
2-Chloronaphthalene	ND	330	ug/kg-dry
2-Chlorophenol	ND	330	ug/kg-dry
4-Chlorophenyl phenyl ether	ND	330	ug/kg-dry
Chrysene	ND	330	ug/kg-dry
Di-n-butyl phthalate	ND	330	ug/kg-dry
Di-n-octylphthalate	ND	330	ug/kg-dry
Dibenzo(a,h)anthracene	ND	330	ug/kg-dry

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Sample ID: 05-04850-013; GP-7-1

Analyte	Result	PQL	Units
Dibenzofuran	ND	330	ug/kg-dry
1,2-Dichlorobenzene	ND	330	ug/kg-dry
1,3-Dichlorobenzene	ND	330	ug/kg-dry
1,4-Dichlorobenzene	ND	330	ug/kg-dry
3,3'-Dichlorobenzidine	ND	1700	ug/kg-dry
2,4-Dichlorophenol	ND	330	ug/kg-dry
Diethyl phthalate	ND	330	ug/kg-dry
Dimethyl phthalate	ND	330	ug/kg-dry
2,4,-Dimethylphenol	ND	330	ug/kg-dry
4,6-Dinitro-o-Cresol	ND	1700	ug/kg-dry
2,4,-Dinitrophenol	ND	1700	ug/kg-dry
2,4-Dinitrotoluene	ND	330	ug/kg-dry
2,6-Dinitrotoluene	ND	330	ug/kg-dry
1,2-Diphenylhydrazine	ND	330	ug/kg-dry
Bis(2-ethylhexyl)phthalate	ND	330	ug/kg-dry
Fluoranthene	ND	330	ug/kg-dry
Fluorene	ND	330	ug/kg-dry
Hexachlorobenzene	ND	330	ug/kg-dry
Hexachlorobutadiene	ND	330	ug/kg-dry
Hexachlorocyclopentadiene	ND	330	ug/kg-dry
Hexachloroethane	ND	330	ug/kg-dry
Indeno(1,2,3-cd)pyrene	ND	330	ug/kg-dry
Isophorone	ND	330	ug/kg-dry
2-Methylnaphthalene	ND	330	ug/kg-dry
2-Methylphenol	ND	330	ug/kg-dry
3 & 4-Methylphenol	ND	330	ug/kg-dry
Naphthalene	**450**	330	ug/kg-dry
2-Nitroaniline	ND	1700	ug/kg-dry
3-Nitroaniline	ND	1700	ug/kg-dry
4-Nitroaniline	ND	1700	ug/kg-dry
Nitrobenzene	ND	330	ug/kg-dry
2-Nitrophenol	ND	330	ug/kg-dry
4-Nitrophenol	ND	1700	ug/kg-dry
N-Nitrosodi-n-propylamine	ND	330	ug/kg-dry

Client:	Camp Dresser & McKee	**RTI Project#:**	05-04850
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Sample ID: 05-04850-013; GP-7-1

Analyte	Result	PQL	Units
N-Nitrosodimethylamine	ND	330	ug/kg-dry
N-Nitrosodiphenylamine	ND	330	ug/kg-dry
Pentachlorophenol	ND	330	ug/kg-dry
Phenanthrene	**690**	330	ug/kg-dry
Phenol	ND	330	ug/kg-dry
Pyrene	ND	330	ug/kg-dry
1,2,4-Trichlorobenzene	ND	330	ug/kg-dry
2,4,5-Trichlorophenol	ND	330	ug/kg-dry
2,4,6-Trichlorophenol	ND	330	ug/kg-dry

Surrogate Recovery Data

Compound	% Recovery	Acceptable Limits(%)	Qualifier
2,4,6-Tribromophenol (Surr)	**62**	19 - 122	
2-Fluorobiphenyl (Surr)	**105**	30 - 115	
2-Fluorophenol (Surr)	**0**	24 - 113	
d14-Terphenyl (Surr)	**133**	19 - 122	
d5-Nitrobenzene (Surr)	**96**	23 - 120	
d6-Phenol (Surr)	**102**	25 - 121	

Total Metals (Soil)

Method(s): 3050, 6020 **Date Prepared:** 06/01/05 **Date Analyzed:** 06/03/05 **Analyzed by:** AB2

Arsenic, As	**4800**	50	ug/kg-dry
Barium, Ba	**77000**	500	ug/kg-dry
Cadmium, Cd	**1400**	50	ug/kg-dry
Chromium, Cr	**22000**	250	ug/kg-dry
Lead, Pb	**230000**	500	ug/kg-dry
Selenium, Se	ND	100	ug/kg-dry
Silver, Ag	**560**	250	ug/kg-dry
Copper, Cu	**200000**	500	ug/kg-dry
Zinc, Zn	**88000**	500	ug/kg-dry

Mercury (Soil)

Method(s): 7471A **Date Prepared:** 06/01/05 **Date Analyzed:** 06/02/05 **Analyzed by:** MB2

Mercury, Hg	**290**	15	ug/kg-dry

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Sample ID: 05-04850-013; GP-7-1

Sample ID: 05-04850-014; GP-7-2

8260 Scan (Soil-MeOH preserved)

Method(s): 5035, 8260 **Date Analyzed:** 06/03/05 **Analyzed by:** JW

Analyte	Result	PQL	Units
Acetone	ND	1000	ug/kg-dry
Acrylonitrile	ND	250	ug/kg-dry
Benzene	**170**	50	ug/kg-dry
Bromobenzene	ND	100	ug/kg-dry
Bromochloromethane	ND	50	ug/kg-dry
Bromodichloromethane	ND	100	ug/kg-dry
Bromoform	ND	100	ug/kg-dry
Bromomethane	ND	100	ug/kg-dry
n-Butylbenzene	ND	50	ug/kg-dry
S-butylbenzene	ND	50	ug/kg-dry
t-Butylbenzene	ND	50	ug/kg-dry
Carbon disulfide	ND	250	ug/kg-dry
Carbon tetrachloride	ND	50	ug/kg-dry
Chlorobenzene	**170**	50	ug/kg-dry
Chloroethane	ND	250	ug/kg-dry
Chloroform	ND	50	ug/kg-dry
Chloromethane	ND	250	ug/kg-dry
Dibromochloromethane	ND	250	ug/kg-dry
1,2-Dibromo-3-chloropropane	ND	100	ug/kg-dry
1,2-Dibromoethane (EDB)	ND	50	ug/kg-dry
Dibromomethane	ND	50	ug/kg-dry
1,2-Dichlorobenzene	ND	50	ug/kg-dry
1,3-Dichlorobenzene	ND	50	ug/kg-dry
1,4-Dichlorobenzene	ND	50	ug/kg-dry
t-1,4-Dichloro-2-butene	ND	50	ug/kg-dry
Dichlorodifluoromethane	ND	50	ug/kg-dry
1,1-Dichloroethane	ND	50	ug/kg-dry
1,2-Dichloroethane	ND	50	ug/kg-dry
1,1-Dichloroethene	ND	50	ug/kg-dry
c-1,2-Dichloroethene	ND	50	ug/kg-dry

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Sample ID: 05-04850-014; GP-7-2

Analyte	Result	PQL	Units
t-1,2-Dichloroethene	ND	50	ug/kg-dry
1,2-Dichloropropane	ND	50	ug/kg-dry
1,3-Dichloropropene (cis&trans)	ND	100	ug/kg-dry
Diethyl Ether	ND	100	ug/kg-dry
Ethyl benzene	**150**	50	ug/kg-dry
Hexachlor[illegible]	ND	100	ug/kg-dry
2-Hexanone	ND	250	ug/kg-dry
Iodomethane	ND	50	ug/kg-dry
Isopropylbenzene	ND	50	ug/kg-dry
p-Isopropyltoluene	ND	100	ug/kg-dry
Dichloromethane	ND	250	ug/kg-dry
2-butanone (MEK)	**2300**	1000	ug/kg-dry
2-Methylnaphthalene	ND	250	ug/kg-dry
4-Methyl-2-pentanone(MIBK)	ND	250	ug/kg-dry
MTBE	ND	250	ug/kg-dry
Naphthalene	ND	250	ug/kg-dry
n-Propylbenzene	**83**	50	ug/kg-dry
Styrene	ND	50	ug/kg-dry
1,1,2,2-Tetrachloroethane	ND	100	ug/kg-dry
Tetrachloroethene	ND	50	ug/kg-dry
Tetrahydrofuran	ND	1200	ug/kg-dry
Toluene	ND	50	ug/kg-dry
1,2,3-Trichlorobenzene	ND	250	ug/kg-dry
1,2,4-Trichlorobenzene	ND	100	ug/kg-dry
1,1,1-Trichloroethane	ND	50	ug/kg-dry
1,1,2-Trichloroethane	ND	50	ug/kg-dry
Trichloroethene	ND	50	ug/kg-dry
Trichlorofluoromethane	ND	50	ug/kg-dry
1,2,3-Trichloropropane	ND	50	ug/kg-dry
1,2,4-Trimethylbenzene	**620**	100	ug/kg-dry
1,3,5-Trimethylbenzene	**250**	100	ug/kg-dry
Vinyl chloride	ND	40	ug/kg-dry
Xylene, Total	**700**	150	ug/kg-dry

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Analyte	**Result**	**PQL**	**Units**

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Sample ID: 05-04850-014; GP-7-2

Surrogate Recovery Data

Compound	**% Recovery**	**Acceptable Limits(%)**	**Qualifier**
4-Bromofluorobenzene (SS)	**121**	74 - 121	
Dibromofluoromethane (SS)	**107**	80 - 120	
Toluene-d8 (SS)	**103**	81 - 117	

8270 Scan (Soil)

Method(s): 3545, 8270 **Date Prepared:** 06/03/05 **Date Analyzed:** 06/09/05 **Analyzed by:** JG3

Acenaphthene	ND	330	ug/kg-dry
Acenaphthylene	ND	330	ug/kg-dry
Aniline	ND	330	ug/kg-dry
Anthracene	ND	330	ug/kg-dry
Benzidine	ND	1300	ug/kg-dry
Benzo(a)anthracene	ND	330	ug/kg-dry
Benzo(a)pyrene	ND	330	ug/kg-dry
Benzo(b)fluoranthene	ND	330	ug/kg-dry
Benzo(ghi)Perylene	ND	330	ug/kg-dry
Benzo(k)fluoranthene	ND	330	ug/kg-dry
Benzoic acid	ND	3300	ug/kg-dry
Benzyl alcohol	ND	3300	ug/kg-dry
4-Bromophenyl phenyl ether	ND	330	ug/kg-dry
Butyl benzyl phthalate	ND	330	ug/kg-dry
4-Chloro-3-methylphenol	ND	330	ug/kg-dry
4-Chloroaniline	ND	330	ug/kg-dry
Bis(2-chloroethoxy)methane	ND	330	ug/kg-dry
Bis(2-chloroethyl)ether	ND	330	ug/kg-dry
Bis(2-chloroisopropyl)ether	ND	330	ug/kg-dry
2-Chloronaphthalene	ND	330	ug/kg-dry
2-Chlorophenol	ND	330	ug/kg-dry
4-Chlorophenyl phenyl ether	ND	330	ug/kg-dry
Chrysene	ND	330	ug/kg-dry
Di-n-butyl phthalate	ND	330	ug/kg-dry
Di-n-octylphthalate	ND	330	ug/kg-dry
Dibenzo(a,h)anthracene	ND	330	ug/kg-dry

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Sample ID: 05-04850-014; GP-7-2

Analyte	Result	PQL	Units
Dibenzofuran	ND	330	ug/kg-dry
1,2-Dichlorobenzene	ND	330	ug/kg-dry
1,3-Dichlorobenzene	ND	330	ug/kg-dry
1,4-Dichlorobenzene	ND	330	ug/kg-dry
3,3'-Dichlorobenzidine	ND	1700	ug/kg-dry
2,4-Dichlorophenol	ND	330	ug/kg-dry
Diethyl phthalate	ND	330	ug/kg-dry
Dimethyl phthalate	ND	330	ug/kg-dry
2,4,-Dimethylphenol	ND	330	ug/kg-dry
4,6-Dinitro-o-Cresol	ND	1700	ug/kg-dry
2,4,-Dinitrophenol	ND	1700	ug/kg-dry
2,4-Dinitrotoluene	ND	330	ug/kg-dry
2,6-Dinitrotoluene	ND	330	ug/kg-dry
1,2-Diphenylhydrazine	ND	330	ug/kg-dry
Bis(2-ethylhexyl)phthalate	ND	330	ug/kg-dry
Fluoranthene	ND	330	ug/kg-dry
Fluorene	ND	330	ug/kg-dry
Hexachlorobenzene	ND	330	ug/kg-dry
Hexachlorobutadiene	ND	330	ug/kg-dry
Hexachlorocyclopentadiene	ND	330	ug/kg-dry
Hexachloroethane	ND	330	ug/kg-dry
Indeno(1,2,3-cd)pyrene	ND	330	ug/kg-dry
Isophorone	ND	330	ug/kg-dry
2-Methylnaphthalene	ND	330	ug/kg-dry
2-Methylphenol	ND	330	ug/kg-dry
3 & 4-Methylphenol	ND	330	ug/kg-dry
Naphthalene	ND	330	ug/kg-dry
2-Nitroaniline	ND	1700	ug/kg-dry
3-Nitroaniline	ND	1700	ug/kg-dry
4-Nitroaniline	ND	1700	ug/kg-dry
Nitrobenzene	ND	330	ug/kg-dry
2-Nitrophenol	ND	330	ug/kg-dry
4-Nitrophenol	ND	1700	ug/kg-dry
N-Nitrosodi-n-propylamine	ND	330	ug/kg-dry

Analyte	Result	PQL	Units

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Sample ID: 05-04850-014; GP-7-2

N-Nitrosodimethylamine	ND	330	ug/kg-dry
N-Nitrosodiphenylamine	ND	330	ug/kg-dry
Pentachlorophenol	ND	330	ug/kg-dry
Phenanthrene	ND	330	ug/kg-dry
Phenol	ND	330	ug/kg-dry
[illegible]	ND	330	ug/kg-dry
[illegible]-Trichlorobenzene	ND	330	ug/kg-dry
2,4,5-Trichlorophenol	ND	330	ug/kg-dry
2,4,6-Trichlorophenol	ND	330	ug/kg-dry

Surrogate Recovery Data

Compound	% Recovery	Acceptable Limits(%)	Qualifier
2,4,6-Tribromophenol (Surr)	44	19 - 122	
2-Fluorobiphenyl (Surr)	108	30 - 115	
2-Fluorophenol (Surr)	104	24 - 113	
d14-Terphenyl (Surr)	131	19 - 122	
d5-Nitrobenzene (Surr)	95	23 - 120	
d6-Phenol (Surr)	106	25 - 121	

Total Metals (Soil)

Method(s): 3050, 6020 **Date Prepared:** 06/01/05 **Date Analyzed:** 06/03/05 **Analyzed by:** AB2

Arsenic, As	**8600**	50	ug/kg-dry
Barium, Ba	**89000**	500	ug/kg-dry
Cadmium, Cd	**4600**	50	ug/kg-dry
Chromium, Cr	**63000**	250	ug/kg-dry
Lead, Pb	**97000**	500	ug/kg-dry
Selenium, Se	ND	100	ug/kg-dry
Silver, Ag	**1300**	250	ug/kg-dry
Copper, Cu	**130000**	500	ug/kg-dry
Zinc, Zn	**260000**	500	ug/kg-dry

Mercury (Soil)

Method(s): 7471A **Date Prepared:** 06/01/05 **Date Analyzed:** 06/02/05 **Analyzed by:** MB2

Mercury, Hg	**330**	23	ug/kg-dry

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Sample ID: 05-04850-014; GP-7-2

8082 PCB's (Soil)

Method(s): 3545, 8082 **Date Analyzed:** 06/01/05 **Analyzed by:** MB

Analyte	Result	PQL	Units
Aroclor 1016	ND	8.3	ug/kg-dry
Aroclor 1221	ND	8.3	ug/kg-dry
Aroclor 1232	ND	8.3	ug/kg-dry
Aroclor 1242	ND	8.3	ug/kg-dry
Aroclor 1248	ND	8.3	ug/kg-dry
Aroclor 1254	ND	8.3	ug/kg-dry
Aroclor 1260	ND	8.3	ug/kg-dry

Surrogate Recovery Data

Compound	% Recovery	Acceptable Limits(%)	Qualifier
Decachlorobiphenyl (Surr)	91		
Tetrachloro-m-xylene (surr)	92		

Sample ID: 05-04850-015; GP-8-1

8260 Scan (Soil-MeOH preserved)

Method(s): 5035, 8260 **Date Analyzed:** 06/03/05 **Analyzed by:** JW

Analyte	Result	PQL	Units
Acetone	ND	1000	ug/kg-dry
Acrylonitrile	ND	250	ug/kg-dry
Benzene	ND	50	ug/kg-dry
Bromobenzene	ND	100	ug/kg-dry
Bromochloromethane	ND	50	ug/kg-dry
Bromodichloromethane	ND	100	ug/kg-dry
Bromoform	ND	100	ug/kg-dry
Bromomethane	ND	100	ug/kg-dry
n-Butylbenzene	ND	50	ug/kg-dry
S-butylbenzene	ND	50	ug/kg-dry
t-Butylbenzene	ND	50	ug/kg-dry
Carbon disulfide	ND	250	ug/kg-dry
Carbon tetrachloride	ND	50	ug/kg-dry
Chlorobenzene	**4600**	50	ug/kg-dry
Chloroethane	ND	250	ug/kg-dry
Chloroform	ND	50	ug/kg-dry
Chloromethane	ND	250	ug/kg-dry
Dibromochloromethane	ND	250	ug/kg-dry
1,2-Dibromo-3-chloropropane	ND	100	ug/kg-dry
1,2-Dibromoethane (EDB)	ND	50	ug/kg-dry
Dibromomethane	ND	50	ug/kg-dry
1,2-Dichlorobenzene	ND	50	ug/kg-dry
1,3-Dichlorobenzene	ND	50	ug/kg-dry
1,4-Dichlorobenzene	ND	50	ug/kg-dry
t-1,4-Dichloro-2-butene	ND	50	ug/kg-dry
Dichlorodifluoromethane	ND	50	ug/kg-dry
1,1-Dichloroethane	ND	50	ug/kg-dry
1,2-Dichloroethane	ND	50	ug/kg-dry
1,1-Dichloroethene	ND	50	ug/kg-dry
c-1,2-Dichloroethene	ND	50	ug/kg-dry
t-1,2-Dichloroethene	ND	50	ug/kg-dry
1,2-Dichloropropane	ND	50	ug/kg-dry

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Sample ID: 05-04850-015; GP-8-1

Analyte	Result	PQL	Units
1,3-Dichloropropene (cis&trans)	ND	100	ug/kg-dry
Diethyl Ether	ND	100	ug/kg-dry
Ethyl benzene	ND	50	ug/kg-dry
Hexachloroethane	ND	100	ug/kg-dry
2-Hexanone	ND	250	ug/kg-dry
Iodomethane	ND	50	ug/kg-dry
Isopropylbenzene	ND	50	ug/kg-dry
p-Isopropyltoluene	ND	100	ug/kg-dry
Dichloromethane	ND	250	ug/kg-dry
2-butanone (MEK)	ND	1000	ug/kg-dry
2-Methylnaphthalene	**430**	250	ug/kg-dry
4-Methyl-2-pentanone(MIBK)	ND	250	ug/kg-dry
MTBE	ND	250	ug/kg-dry
Naphthalene	**370**	250	ug/kg-dry
n-Propylbenzene	ND	50	ug/kg-dry
Styrene	ND	50	ug/kg-dry
1,1,2,2-Tetrachloroethane	ND	100	ug/kg-dry
Tetrachloroethene	ND	50	ug/kg-dry
Tetrahydrofuran	ND	1200	ug/kg-dry
Toluene	**110**	50	ug/kg-dry
1,2,3-Trichlorobenzene	ND	250	ug/kg-dry
1,2,4-Trichlorobenzene	ND	100	ug/kg-dry
1,1,1-Trichloroethane	ND	50	ug/kg-dry
1,1,2-Trichloroethane	ND	50	ug/kg-dry
Trichloroethene	ND	50	ug/kg-dry
Trichlorofluoromethane	ND	50	ug/kg-dry
1,2,3-Trichloropropane	ND	50	ug/kg-dry
1,2,4-Trimethylbenzene	**120**	100	ug/kg-dry
1,3,5-Trimethylbenzene	ND	100	ug/kg-dry
Vinyl chloride	ND	40	ug/kg-dry
Xylene, Total	ND	150	ug/kg-dry

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Analyte	**Result**	**PQL**	**Units**

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Sample ID: 05-04850-015; GP-8-1

Surrogate Recovery Data

Compound	**% Recovery**	**Acceptable Limits(%)**	**Qualifier**
4-Bromofluorobenzene (SS)	119	74 - 121	
Dibromofluoromethane (SS)	105	80 - 120	
Toluene-d8 (SS)	100	81 - 117	

8270 Scan (Soil)

Method(s): 3545, 8270 **Date Prepared:** 06/03/05 **Date Analyzed:** 06/09/05 **Analyzed by:** JG3

Acenaphthene	ND	330	ug/kg-dry
Acenaphthylene	ND	330	ug/kg-dry
Aniline	ND	330	ug/kg-dry
Anthracene	ND	330	ug/kg-dry
Benzidine	ND	1300	ug/kg-dry
Benzo(a)anthracene	ND	330	ug/kg-dry
Benzo(a)pyrene	ND	330	ug/kg-dry
Benzo(b)fluoranthene	ND	330	ug/kg-dry
Benzo(ghi)Perylene	ND	330	ug/kg-dry
Benzo(k)fluoranthene	ND	330	ug/kg-dry
Benzoic acid	ND	3300	ug/kg-dry
Benzyl alcohol	ND	3300	ug/kg-dry
4-Bromophenyl phenyl ether	ND	330	ug/kg-dry
Butyl benzyl phthalate	ND	330	ug/kg-dry
4-Chloro-3-methylphenol	ND	330	ug/kg-dry
4-Chloroaniline	ND	330	ug/kg-dry
Bis(2-chloroethoxy)methane	ND	330	ug/kg-dry
Bis(2-chloroethyl)ether	ND	330	ug/kg-dry
Bis(2-chloroisopropyl)ether	ND	330	ug/kg-dry
2-Chloronaphthalene	ND	330	ug/kg-dry
2-Chlorophenol	ND	330	ug/kg-dry
4-Chlorophenyl phenyl ether	ND	330	ug/kg-dry
Chrysene	ND	330	ug/kg-dry
Di-n-butyl phthalate	ND	330	ug/kg-dry
Di-n-octylphthalate	ND	330	ug/kg-dry
Dibenzo(a,h)anthracene	ND	330	ug/kg-dry

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Sample ID: 05-04850-015; GP-8-1

Analyte	Result	PQL	Units
Dibenzofuran	ND	330	ug/kg-dry
1,2-Dichlorobenzene	ND	330	ug/kg-dry
1,3-Dichlorobenzene	ND	330	ug/kg-dry
1,4-Dichlorobenzene	ND	330	ug/kg-dry
3,3'-Dichlorobenzidine	ND	1700	ug/kg-dry
2,4-Dichlorophenol	ND	330	ug/kg-dry
Diethyl phthalate	ND	330	ug/kg-dry
Dimethyl phthalate	ND	330	ug/kg-dry
2,4,-Dimethylphenol	ND	330	ug/kg-dry
4,6-Dinitro-o-Cresol	ND	1700	ug/kg-dry
2,4,-Dinitrophenol	ND	1700	ug/kg-dry
2,4-Dinitrotoluene	ND	330	ug/kg-dry
2,6-Dinitrotoluene	ND	330	ug/kg-dry
1,2-Diphenylhydrazine	ND	330	ug/kg-dry
Bis(2-ethylhexyl)phthalate	ND	330	ug/kg-dry
Fluoranthene	ND	330	ug/kg-dry
Fluorene	ND	330	ug/kg-dry
Hexachlorobenzene	ND	330	ug/kg-dry
Hexachlorobutadiene	ND	330	ug/kg-dry
Hexachlorocyclopentadiene	ND	330	ug/kg-dry
Hexachloroethane	ND	330	ug/kg-dry
Indeno(1,2,3-cd)pyrene	ND	330	ug/kg-dry
Isophorone	ND	330	ug/kg-dry
2-Methylnaphthalene	**490**	330	ug/kg-dry
2-Methylphenol	ND	330	ug/kg-dry
3 & 4-Methylphenol	ND	330	ug/kg-dry
Naphthalene	**840**	330	ug/kg-dry
2-Nitroaniline	ND	1700	ug/kg-dry
3-Nitroaniline	ND	1700	ug/kg-dry
4-Nitroaniline	ND	1700	ug/kg-dry
Nitrobenzene	ND	330	ug/kg-dry
2-Nitrophenol	ND	330	ug/kg-dry
4-Nitrophenol	ND	1700	ug/kg-dry
N-Nitrosodi-n-propylamine	ND	330	ug/kg-dry

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Sample ID: 05-04850-015; GP-8-1

Analyte	Result	PQL	Units
N-Nitrosodimethylamine	ND	330	ug/kg-dry
N-Nitrosodiphenylamine	ND	330	ug/kg-dry
Pentachlorophenol	ND	330	ug/kg-dry
Phenanthrene	ND	330	ug/kg-dry
Phenol	ND	330	ug/kg-dry
Pyrene	ND	330	ug/kg-dry
1,2,4-Trichlorobenzene	ND	330	ug/kg-dry
2,4,5-Trichlorophenol	ND	330	ug/kg-dry
2,4,6-Trichlorophenol	ND	330	ug/kg-dry

Surrogate Recovery Data

Compound	% Recovery	Acceptable Limits(%)	Qualifier
2,4,6-Tribromophenol (Surr)	**92**	19 - 122	
2-Fluorobiphenyl (Surr)	**91**	30 - 115	
2-Fluorophenol (Surr)	**100**	24 - 113	
d14-Terphenyl (Surr)	**100**	19 - 122	
d5-Nitrobenzene (Surr)	**86**	23 - 120	
d6-Phenol (Surr)	**101**	25 - 121	

Total Metals (Soil)

Method(s): 3050, 6020 **Date Prepared:** 06/01/05 **Date Analyzed:** 06/03/05 **Analyzed by:** AB2

Arsenic, As	**4800**	50	ug/kg-dry
Barium, Ba	**2100000**	500	ug/kg-dry
Cadmium, Cd	**18000**	50	ug/kg-dry
Chromium, Cr	**260000**	250	ug/kg-dry
Lead, Pb	**560000**	500	ug/kg-dry
Selenium, Se	**5300**	100	ug/kg-dry
Silver, Ag	**1400**	250	ug/kg-dry
Copper, Cu	**92000**	500	ug/kg-dry
Zinc, Zn	**410000**	500	ug/kg-dry

Mercury (Soil)

Method(s): 7471A **Date Prepared:** 06/01/05 **Date Analyzed:** 06/02/05 **Analyzed by:** MB2

Mercury, Hg	**67**	16	ug/kg-dry

Analyte	**Result**	**PQL**	**Units**

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Sample ID: 05-04850-015; GP-8-1

Sample ID: 05-04850-016; GP-8-2

8260 Scan (Soil-MeOH preserved)

Method(s): 5035, 8260 **Date Analyzed:** 06/03/05 **Analyzed by:** JW

Acetone	ND	1000	ug/kg-dry
Acrylonitrile	ND	250	ug/kg-dry
Benzene	ND	50	ug/kg-dry
Bromobenzene	ND	100	ug/kg-dry
Bromochloromethane	ND	50	ug/kg-dry
Bromodichloromethane	ND	100	ug/kg-dry
Bromoform	ND	100	ug/kg-dry
Bromomethane	ND	100	ug/kg-dry
n-Butylbenzene	ND	50	ug/kg-dry
S-butylbenzene	ND	50	ug/kg-dry
t-Butylbenzene	ND	50	ug/kg-dry
Carbon disulfide	ND	250	ug/kg-dry
Carbon tetrachloride	ND	50	ug/kg-dry
Chlorobenzene	**7200**	50	ug/kg-dry
Chloroethane	ND	250	ug/kg-dry
Chloroform	ND	50	ug/kg-dry
Chloromethane	ND	250	ug/kg-dry
Dibromochloromethane	ND	250	ug/kg-dry
1,2-Dibromo-3-chloropropane	ND	100	ug/kg-dry
1,2-Dibromoethane (EDB)	ND	50	ug/kg-dry
Dibromomethane	ND	50	ug/kg-dry
1,2-Dichlorobenzene	ND	50	ug/kg-dry
1,3-Dichlorobenzene	ND	50	ug/kg-dry
1,4-Dichlorobenzene	ND	50	ug/kg-dry
t-1,4-Dichloro-2-butene	ND	50	ug/kg-dry
Dichlorodifluoromethane	ND	50	ug/kg-dry
1,1-Dichloroethane	ND	50	ug/kg-dry
1,2-Dichloroethane	ND	50	ug/kg-dry
1,1-Dichloroethene	ND	50	ug/kg-dry
c-1,2-Dichloroethene	ND	50	ug/kg-dry

Client:	Camp Dresser & McKee			**RTI Project#:**	05-04850
Project:	Trenton Chemical Facility	**Report Number:**	05-04850-1	**Page:**	Page 82 of 90

continued from previous page...

Sample ID: 05-04850-016; GP-8-2

Analyte	Result	PQL	Units
t-1,2-Dichloroethene	ND	50	ug/kg-dry
1,2-Dichloropropane	ND	50	ug/kg-dry
1,3-Dichloropropene (cis&trans)	ND	100	ug/kg-dry
Diethyl Ether	ND	100	ug/kg-dry
Ethyl benzene	ND	50	ug/kg-dry
Hexachloroethane	ND	100	ug/kg-dry
2-Hexanone	ND	250	ug/kg-dry
Iodomethane	ND	50	ug/kg-dry
Isopropylbenzene	ND	50	ug/kg-dry
p-Isopropyltoluene	ND	100	ug/kg-dry
Dichloromethane	ND	250	ug/kg-dry
2-butanone (MEK)	ND	1000	ug/kg-dry
2-Methylnaphthalene	ND	250	ug/kg-dry
4-Methyl-2-pentanone(MIBK)	ND	250	ug/kg-dry
MTBE	ND	250	ug/kg-dry
Naphthalene	**380**	250	ug/kg-dry
n-Propylbenzene	ND	50	ug/kg-dry
Styrene	ND	50	ug/kg-dry
1,1,2,2-Tetrachloroethane	ND	100	ug/kg-dry
Tetrachloroethene	ND	50	ug/kg-dry
Tetrahydrofuran	ND	1200	ug/kg-dry
Toluene	ND	50	ug/kg-dry
1,2,3-Trichlorobenzene	ND	250	ug/kg-dry
1,2,4-Trichlorobenzene	ND	100	ug/kg-dry
1,1,1-Trichloroethane	ND	50	ug/kg-dry
1,1,2-Trichloroethane	ND	50	ug/kg-dry
Trichloroethene	ND	50	ug/kg-dry
Trichlorofluoromethane	ND	50	ug/kg-dry
1,2,3-Trichloropropane	ND	50	ug/kg-dry
1,2,4-Trimethylbenzene	ND	100	ug/kg-dry
1,3,5-Trimethylbenzene	ND	100	ug/kg-dry
Vinyl chloride	ND	40	ug/kg-dry
Xylene, Total	ND	150	ug/kg-dry

Analyte	**Result**	**PQL**	**Units**

continued from previous page...

Sample ID: 05-04850-016; GP-8-2

Surrogate Recovery Data

Compound	**% Recovery**	**Acceptable Limits(%)**	**Qualifier**
4-Bromofluorobenzene (SS)	114	74 - 121	
Dibromofluoromethane (SS)	103	80 - 120	
Toluene-d8 (SS)	99	81 - 117	

8270 Scan (Soil)

Method(s): 3545, 8270 **Date Prepared:** 06/03/05 **Date Analyzed:** 06/09/05 **Analyzed by:** JG3

Acenaphthene	ND	330	ug/kg-dry
Acenaphthylene	ND	330	ug/kg-dry
Aniline	ND	330	ug/kg-dry
Anthracene	ND	330	ug/kg-dry
Benzidine	ND	1300	ug/kg-dry
Benzo(a)anthracene	**440**	330	ug/kg-dry
Benzo(a)pyrene	ND	330	ug/kg-dry
Benzo(b)fluoranthene	**520**	330	ug/kg-dry
Benzo(ghi)Perylene	ND	330	ug/kg-dry
Benzo(k)fluoranthene	ND	330	ug/kg-dry
Benzoic acid	ND	3300	ug/kg-dry
Benzyl alcohol	ND	3300	ug/kg-dry
4-Bromophenyl phenyl ether	ND	330	ug/kg-dry
Butyl benzyl phthalate	ND	330	ug/kg-dry
4-Chloro-3-methylphenol	ND	330	ug/kg-dry
4-Chloroaniline	ND	330	ug/kg-dry
Bis(2-chloroethoxy)methane	ND	330	ug/kg-dry
Bis(2-chloroethyl)ether	ND	330	ug/kg-dry
Bis(2-chloroisopropyl)ether	ND	330	ug/kg-dry
2-Chloronaphthalene	ND	330	ug/kg-dry
2-Chlorophenol	ND	330	ug/kg-dry
4-Chlorophenyl phenyl ether	ND	330	ug/kg-dry
Chrysene	**420**	330	ug/kg-dry
Di-n-butyl phthalate	ND	330	ug/kg-dry
Di-n-octylphthalate	ND	330	ug/kg-dry
Dibenzo(a,h)anthracene	ND	330	ug/kg-dry

continued from previous page...

Sample ID: 05-04850-016; GP-8-2

Analyte	Result	PQL	Units
Dibenzofuran	ND	330	ug/kg-dry
1,2-Dichlorobenzene	ND	330	ug/kg-dry
1,3-Dichlorobenzene	ND	330	ug/kg-dry
1,4-Dichlorobenzene	ND	330	ug/kg-dry
3,3'-Dichlorobenzidine	ND	1700	ug/kg-dry
2,4-Dichlorophenol	ND	330	ug/kg-dry
Diethyl phthalate	ND	330	ug/kg-dry
Dimethyl phthalate	ND	330	ug/kg-dry
2,4,-Dimethylphenol	ND	330	ug/kg-dry
4,6-Dinitro-o-Cresol	ND	1700	ug/kg-dry
2,4,-Dinitrophenol	ND	1700	ug/kg-dry
2,4-Dinitrotoluene	ND	330	ug/kg-dry
2,6-Dinitrotoluene	ND	330	ug/kg-dry
1,2-Diphenylhydrazine	ND	330	ug/kg-dry
Bis(2-ethylhexyl)phthalate	**670**	330	ug/kg-dry
Fluoranthene	**660**	330	ug/kg-dry
Fluorene	ND	330	ug/kg-dry
Hexachlorobenzene	ND	330	ug/kg-dry
Hexachlorobutadiene	ND	330	ug/kg-dry
Hexachlorocyclopentadiene	ND	330	ug/kg-dry
Hexachloroethane	ND	330	ug/kg-dry
Indeno(1,2,3-cd)pyrene	ND	330	ug/kg-dry
Isophorone	ND	330	ug/kg-dry
2-Methylnaphthalene	ND	330	ug/kg-dry
2-Methylphenol	ND	330	ug/kg-dry
3 & 4-Methylphenol	ND	330	ug/kg-dry
Naphthalene	**2100**	330	ug/kg-dry
2-Nitroaniline	ND	1700	ug/kg-dry
3-Nitroaniline	ND	1700	ug/kg-dry
4-Nitroaniline	ND	1700	ug/kg-dry
Nitrobenzene	ND	330	ug/kg-dry
2-Nitrophenol	ND	330	ug/kg-dry
4-Nitrophenol	ND	1700	ug/kg-dry
N-Nitrosodi-n-propylamine	ND	330	ug/kg-dry

Client:	Camp Dresser & McKee			**RTI Project#:**	05-04850
Project:	Trenton Chemical Facility	**Report Number:**	05-04850-1	**Page:**	Page 85 of 90

Analyte	**Result**	**PQL**	**Units**

continued from previous page...

Sample ID: 05-04850-016; GP-8-2

N-Nitrosodimethylamine	ND	330	ug/kg-dry
N-Nitrosodiphenylamine	ND	330	ug/kg-dry
Pentachlorophenol	ND	330	ug/kg-dry
Phenanthrene	**590**	330	ug/kg-dry
Phenol	ND	330	ug/kg-dry
Pyrene	**590**	330	ug/kg-dry
1,2,4-Trichlorobenzene	ND	330	ug/kg-dry
2,4,5-Trichlorophenol	ND	330	ug/kg-dry
2,4,6-Trichlorophenol	ND	330	ug/kg-dry

Surrogate Recovery Data

Compound	**% Recovery**	**Acceptable Limits(%)**	**Qualifier**
2,4,6-Tribromophenol (Surr)	57	19 - 122	
2-Fluorobiphenyl (Surr)	76	30 - 115	
2-Fluorophenol (Surr)	98	24 - 113	
d14-Terphenyl (Surr)	84	19 - 122	
d5-Nitrobenzene (Surr)	72	23 - 120	
d6-Phenol (Surr)	78	25 - 121	

Total Metals (Soil)

Method(s): 3050, 6020 **Date Prepared:** 06/01/05 **Date Analyzed:** 06/03/05 **Analyzed by:** AB2

Arsenic, As	**5800**	50	ug/kg-dry
Barium, Ba	**220000**	500	ug/kg-dry
Cadmium, Cd	**1200**	50	ug/kg-dry
Chromium, Cr	**48000**	250	ug/kg-dry
Lead, Pb	**260000**	500	ug/kg-dry
Selenium, Se	ND	100	ug/kg-dry
Silver, Ag	**650**	250	ug/kg-dry
Copper, Cu	**120000**	500	ug/kg-dry
Zinc, Zn	**110000**	500	ug/kg-dry

Mercury (Soil)

Method(s): 7471A **Date Prepared:** 06/01/05 **Date Analyzed:** 06/02/05 **Analyzed by:** MB2

Mercury, Hg	44	20	ug/kg-dry

Client:	Camp Dresser & McKee			**RTI Project#:**	05-04850
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Sample ID: 05-04850-016; GP-8-2

8082 PCB's (Soil)

Method(s): 3545, 8082 **Date Analyzed:** 06/01/05 **Analyzed by:** MB

Analyte	Result	PQL	Units
Aroclor 1016	ND	8.3	ug/kg-dry
Aroclor 1221	ND	8.3	ug/kg-dry
Aroclor 1232	ND	8.3	ug/kg-dry
Aroclor 1242	ND	8.3	ug/kg-dry
Aroclor 1248	ND	8.3	ug/kg-dry
Aroclor 1254	ND	8.3	ug/kg-dry
Aroclor 1260	ND	8.3	ug/kg-dry

Surrogate Recovery Data

Compound	% Recovery	Acceptable Limits(%)	Qualifier
Decachlorobiphenyl (Surr)	101		
Tetrachloro-m-xylene (surr)	83		

Quality Control (QC) Data

Blank(s)

	Analyte	Batch#	Blank Result	Units
1	Organic Extraction	WS05-08684		
2	Organic Extraction	WS05-08806		
3	Mercury, Hg	WS05-08873	ND	ug/L
4	Organic Extraction	WS05-08891		

8260 H2O BLANK

64	Dibromofluoromethane (SS)	WS05-08895	98	%
65	Toluene-d8 (SS)	WS05-08895	96	%
66	4-Bromofluorobenzene (SS)	WS05-08895	97	%

All other parameters in this testgroup are non-detect at the MDL

8082 PCB's (Soil)

8	Tetrachloro-m-xylene (surr)	WS05-08858	93	%
9	Decachlorobiphenyl (Surr)	WS05-08858	86	%

All other parameters in this testgroup are non-detect at the MDL.

8270 Scan (Soil)

70	2-Fluorophenol (Surr)	WS05-09006	67	%
71	d6-Phenol (Surr)	WS05-09006	69	%
72	d5-Nitrobenzene (Surr)	WS05-09006	66	%
73	2-Fluorobiphenyl (Surr)	WS05-09006	63	%
74	2,4,6-Tribromophenol (Surr)	WS05-09006	52	%
75	d14-Terphenyl (Surr)	WS05-09006	69	%

All other parameters in this testgroup are non-detect at the MDL.

Total Metals (Soil)

All parameters in this testgroup are non-detect at the MDL.

Laboratory Control Sample(s) (LCS)

	Analyte	Batch#	%Recovery	Limits
1	Mercury, Hg	WS05-08873	89	75 to 125

RTI LABORATORIES, INC.

Client:	Camp Dresser & McKee			**RTI Project#:**	05-04850
Project:	Trenton Chemical Facility	**Report Number:**	05-04850-1	**Page:**	Page 88 of 90

	Analyte	Batch#	%Recovery	Limits
8260 H2O LCS FULL LIST				
1	1,1-Dichloroethene	WS05-08895	94.6	70 to 130
2	Benzene	WS05-08895	97.8	70 to 130
3	Trichloroethene	WS05-08895	100	70 to 130
4	Toluene	WS05-08895	101	70 to 130
5	Chlorobenzene	WS05-08895	103	70 to 130
6	Dibromofluoromethane (SS)	WS05-08895	95	
7	Toluene-d8 (SS)	WS05-08895	97	
8	4-Bromofluorobenzene (SS)	WS05-08895	99	
8082 PCB's (Soil)				
1	Aroclor 1016	WS05-08858	82.8	70 to 130
2	Aroclor 1260	WS05-08858	78.4	70 to 130
3	Tetrachloro-m-xylene (surr)	WS05-08858	84.5	70 to 130
4	Decachlorobiphenyl (Surr)	WS05-08858	87.3	70 to 130
8270				
1	Phenol	WS05-09006	64	5 to 112
2	2-Chlorophenol	WS05-09006	64	23 to 134
3	1,4-Dichlorobenzene	WS05-09006	60	20 to 124
4	N-Nitrosodi-n-propylamine	WS05-09006	64	10 to 230
5	1,2,4-Trichlorobenzene	WS05-09006	60	44 to 142
6	4-Chloro-3-methylphenol	WS05-09006	64	22 to 147
7	Acenaphthene	WS05-09006	64	47 to 145
8	4-Nitrophenol	WS05-09006	56	10 to 132
9	2,4-Dinitrotoluene	WS05-09006	64	39 to 139
10	Pyrene	WS05-09006	64	52 to 115
Total Metals (Soil)				
1	Arsenic, As	WS05-08920	99.4	90 to 110
2	Barium, Ba	WS05-08920	99.1	90 to 110
3	Cadmium, Cd	WS05-08920	96.3	90 to 110
4	Chromium, Cr	WS05-08920	99.3	90 to 110
5	Lead, Pb	WS05-08920	101	90 to 110
6	Selenium, Se	WS05-08920	93.8	90 to 110
7	Silver, Ag	WS05-08920	97.2	90 to 110
8	Copper, Cu	WS05-08920	98.7	90 to 110
9	Zinc, Zn	WS05-08920	96.1	90 to 110

Matrix Spike/Matrix Spike Duplicate(s) (MS/MSD)

	Analyte	Spiked Sample ID#	Sample Result	Spike Added	Units	MS Result	MSD Result	MS %Recv.	MSD %Recv.	%RPD	MS/MSD Limits
	Matrix: **Soil**										
1	Mercury, Hg	05-04850-009	0.5	2	ug/Kg	2.26	2.21	88	85.5	2.2	75 to 125
	8260 H2O MS FULL LIST										
1	1,1-Dichloroethene	05-04850-009	0	10	ug/L	10.61	9.8	106	98	7.9	70 to 130
2	Benzene	05-04850-009	0	10	ug/L	9.87	9.64	98.7	96.4	2.4	70 to 130
3	Chlorobenzene	05-04850-009	0	10	ug/L	10.28	10.06	103	101	2.2	70 to 130
4	Toluene	05-04850-009	0	10	ug/L	9.78	9.82	97.8	98.2	0.4	70 to 130
5	Trichloroethene	05-04850-009	0	10	ug/L	9.69	9.47	96.9	94.7	2.3	70 to 130
	8082 PCB's (Soil)										
1	Aroclor 1016	05-04753-016	0	1	ug/kg	0.7977	0.99454	79.8	99.5	* 22	70 to 130
2	Aroclor 1260	05-04753-016	0	1	ug/kg	0.7553	0.9048	75.5	90.5	18	70 to 130

Surrogate	Spiked Sample ID#	QC Type	% Recovery	Acceptable Limits(%)
Decachlorobiphenyl (Surr)	05-04753-016	MS	99	70 - 130
Decachlorobiphenyl (Surr)	05-04753-016	MSD	99	70 - 130
Tetrachloro-m-xylene (surr)	05-04753-016	MS	85	70 - 130
Tetrachloro-m-xylene (surr)	05-04753-016	MSD	92	70 - 130

	8270										
1	1,2,4-Trichlorobenzene	05-04857-001	0	25	mu/kg	15	15	60	60	0	44 to 142
2	1,4-Dichlorobenzene	05-04857-001	0	25	mu/kg	15	14	60	56	6.9	20 to 124
3	2,4-Dinitrotoluene	05-04857-001	0	25	mu/kg	14	15	56	60	6.9	39 to 139
4	2-Chlorophenol	05-04857-001	0	25	mu/kg	16	15	64	60	6.5	23 to 134
5	4-Chloro-3-methylphenol	05-04857-001	0	25	mu/kg	16	15	64	60	6.5	22 to 147
6	4-Nitrophenol	05-04857-001	0	25	mu/kg	14	15	56	60	6.9	10 to 132
7	Acenaphthene	05-04857-001	0	25	mu/kg	17	16	68	64	6.1	47 to 145
8	N-Nitrosodi-n-propylamine	05-04857-001	0	25	mu/kg	15	15	60	60	0	10 to 230
9	Phenol	05-04857-001	0	25	mu/kg	16	16	64	64	0	5 to 112
10	Pyrene	05-04857-001	13	25	mu/kg	19	19	* 24	* 24	0	52 to 115
	Total Metals (Soil)										
1	Arsenic, As	05-04850-001	11650	50000	ug/kg	73150	57500	123	91.7	* 24	70 to 130
2	Barium, Ba	05-04850-001	43000	50000	ug/kg	87300	84700	88.6	83.4	3	70 to 130
3	Cadmium, Cd	05-04850-001	394	50000	ug/kg	43600	42100	86.4	83.4	3.5	70 to 130
4	Chromium, Cr	05-04850-001	11800	50000	ug/kg	57300	56000	91	88.4	2.3	70 to 130
5	Copper, Cu	05-04850-001	36900	50000	ug/kg	73700	72300	73.6	70.8	1.9	70 to 130

RTI LABORATORIES, INC.

Environmental Chemical & Microbiological Testing

Client:	Camp Dresser & McKee	**RTI Project#:**	05-04850
Project:	Trenton Chemical Facility	**Report Number:** 05-04850-1	**Page:** Page 90 of 90

Total Metals (Soil)

	Analyte	Spiked Sample ID#	Sample Result	Spike Added	Units	MS Result	MSD Result	MS %Recv.	MSD %Recv.	%RPD	MS/MSD Limits
6	Lead, Pb	05-04850-001	12000	50000	ug/kg	58400	55900	92.8	87.8	4.4	70 to 130
7	Selenium, Se	05-04850-001	1630	50000	ug/kg	58300	54700	113	106	6.4	70 to 130
8	Silver, Ag	05-04850-001	1220	50000	ug/kg	43850	42800	85.3	83.2	2.4	70 to 130
9	Zinc, Zn	05-04850-001	116000	50000	ug/kg	153000	150000	74	* 68	2	70 to 130

* Data point outside established quality control limits.

Notes:

E:	Exceedance of acceptable limit	**MDL:**	Method detection limit
mg/kg:	milligram per kilogram	**B:**	Analyte detected in both the sample and the Laboratory Method Blank
mg/L:	milligram per liter	**DIL:**	Diluted out (below level of detection)
ug/kg:	microgram per kilogram	**Q:**	Sample held beyond acceptable holding time
ug/L:	microgram per liter	**PQL:**	Practical quantitation level; lowest level of reportable detection for this sample
N/A:	Not applicable	**Y:**	The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate
ND:	None detected or less than PQL		
H:	result higher than the High Limit	**MI:**	Matrix interferences prevent accurate determination
L:	result lower than the Low Limit	**DUP:**	Values confirmed by duplicate analysis of sample

CHAIN OF CUSTODY RECORD

PAGE: 1 OF 2

RTI LABORATORIES, INC.

A2LA Cert #570.01/02 | NELAC Cert #000973 | MBE Cert #R-8150-2-424 | 8(a) / Small Disadvantaged Business

MAIN LAB & HEADQUARTERS
RTI LABORATORIES, INC.
31628 Glendale Street
Livonia, MI 48150-1827
Phone (734) 422-8000
Fax (734) 422-5342
www.rtilab.com

Please Include Email Address of Report Recipient Whenever Possible !!!

SUBMITTING COMPANY: CAMP Dresser & McKee Inc. (CDM)

REPORT TO: Yolanda Walton

BILL TO: CDM-Detroit Office Attn: Yolanda Walton

PROJECT NAME: Trenton Chemical Facility

PROJECT #:

QUOTE #:

COMPANY: CDM

PHONE: 313 963-1313

FAX:

EMAIL:

SPECIAL INSTRUCTIONS / COMMENTS: Any Questions - Call Yolanda Walton @ CDM Detroit Office 313 963 1313

05-04850

SAMPLER'S PRINTED NAME: Daniel F Buss

SAMPLER'S SIGNATURE: Daniel F Buss

ITEM #	SAMPLE I.D.	DATE SAMPLED	TIME SAMPLED	AIR	SOLID	FLUID	VOLUME	SAMPLE DESCRIPTION	NBR OF CONTAINERS	VOC	Semi VOC	10 Metals						COMMENTS Methanol Preserved Weights HOT Sample Notation etc.
1	CP-1-1	5/26	10:00		✓				3	X	X	X						Analyze for VOC, Semi-VOA
2	CP-1-2	5/26	10:00		✓				3									& Mich 10 Metals
3	CP-2-1	5/26	10:55		✓				3									At each Location,
4	CP-2-2	5/26	10:55		✓				3									the 3 Sample Containers
5	CP-3-1	5/26	3:30		✓				3									are in a Zip-Lock
6	CP-3-2	5/26	3:30		✓				3									bag
7	CP-4-1	5/26	—		✓				3									
8	CP-4-2	5/26	12:15		✓				3									Est. Time Sample 12:15
9	CP-5-1	5/26	1:30		✓				3									
10	CP-5-2	5/26	—		✓				3									

Relinquished By	Date	Time	Received By	Date	Time
Daniel F Buss	5/27/05	10:15	Jenn Stephenson	5/27/05	1015
Jenn Stephenson	5/27	1315	[illegible]	5/27	16:00

TAT: Standard ☐ RUSH: Next BD ☐ 2nd BD ☐ 3rd BD ☐

Note: RUSH requests will incur surcharges!

FOR LAB USE ONLY

Were samples preserved ☐ in field ☐ in lab ☐ N/A

Were samples filtered ☐ in field ☐ in lab ☐ N/A

Temp of samples 4-4 °C On Wet Ice ? Y

Comments: No F/C Pb per DV# Yolanda Walton (phone call) 5/27/05

Distribution: White and Yellow - Lab; Pink - Field

See reverse side for Laboratory Terms and Conditions of service

CHAIN OF CUSTODY RECORD

PAGE: 2 OF: 2

RTI LABORATORIES, INC.

A2LA Cert #570.01/02 | NELAC Cert #000973 | MBE Cert #R-8150-2-424 | 8(a) / Small Disadvantaged Business

MAIN LAB & HEADQUARTERS
RTI LABORATORIES, INC.
31628 Glendale Street
Livonia, MI 48150-1827
Phone (734) 422-8000
Fax (734) 422-5342
www.rtilab.com

Please Include Email Address of Report Recipient Whenever Possible !!!

SUBMITTING COMPANY: CAMP Dresser & McKee Inc. (CDM)

REPORT TO: Yolanda Watton

BILL TO: CDM Detroit Office Attn: Yolanda Watton

PROJECT NAME: Trenton Chemical Facility

PROJECT #:

QUOTE #:

COMPANY: CDM

SPECIAL INSTRUCTIONS / COMMENTS: Any questions Call Yolanda Watton @ CDM office 313 963 1313

PHONE: 313 963 1313

FAX:

EMAIL:

05-04850

SAMPLER'S PRINTED NAME: Daniel F Buss

SAMPLER'S SIGNATURE: Daniel F Buss

ITEM #	SAMPLE I.D.	DATE SAMPLED	TIME SAMPLED	AIR	SOLID	FLUID	VOLUME	SAMPLE DESCRIPTION	NBR OF CONTAINERS	5 VOCs	7 VOCs	10 Methyl						COMMENTS Methanol Preserved Weights HOT Sample Notation etc.
1	GP-6-1	5/26	9:15						3	X	X	X						
2	GP-6-2	5/26	9:35						3									
3	GP-7-1	5/26	6:20						3									
4	GP-7-2	5/26	6:30						3									
5	GP-8-1	5/26	5:30						3									
6	GP-8-2	5/26	5:35															
7																		
8																		
9																		
10																		

Relinquished By:	Date	Time	Received By:	Date:	Time:
Daniel F Buss	5/27	10:00	Jim Stephenson	5/27	10:00
Jim Stephenson	5/27	1315	[illegible]	5/27	16:00
Relinquished By:	Date	Time	Received By:	Date:	Time:

TAT: Standard ☐ RUSH: Next BD ☐ 2nd BD ☐ 3rd BD ☐

Note: RUSH requests will incur surcharges!

FOR LAB USE ONLY

Were samples preserved ☐ in field ☐ in lab ☐ N/A

Were samples filtered ☐ in field ☐ in lab ☐ N/A

Temp of samples 4-11 °C On Wet Ice ? Y

Comments:

Distribution: White and Yellow - Lab; Pink - Field

See reverse side for Laboratory Terms and Conditions of service

RTI LABORATORIES, INC.

Environmental Chemical & Microbiological Testing

Report of Analytical Services

Camp Dresser & McKee
Attn: Jennifer Fanson
One Woodward Ave., Ste. 1500
Detroit, MI 48226

		RTI Project#:	05-04857
		Date Reported:	06/06/05
		Date Completed:	06/06/05
Permit#:		**Date Received:**	05/28/05
		PO #:	
Report Number:	05-04857-1	**Fax:**	313-963-3130

Project Title: VOC, SVOC, Mi Metals
Project Description: 5 Soil Sample 5/27/05
Project Name/#: Trenton Chemical Facility
Project Remarks:

Sample Summary

	Sample ID	RTI Sample#	Sample Matrix	Date Collected
1	SS-1	05-04857-001	Soil	05/27/05
2	SS-2	05-04857-002	Soil	05/27/05
3	SS-3	05-04857-003	Soil	05/27/05
4	SS-4	05-04857-004	Soil	05/27/05
5	SS-5	05-04857-005	Soil	05/27/05

Approved by : Charles O'Bryan Date: 6/6/05

Charles O'Bryan, Director of Quality

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Email: information@rtilab.com Website: rtilab.com

RTI LABORATORIES, INC.

Environmental Chemical & Microbiological Testing

MMDDC CERTIFIED

RESULTS OF ANALYSIS

Client:	Camp Dresser & McKee			**RTI Project#:**	05-04857
Project:	Trenton Chemical Facility	**Report Number:**	05-04857-1	**Page:**	Page 2 of 30

Sample ID: 05-04857-001; SS-1

8260 Scan (Soil-MeOH preserved)

Method(s): 5035, 8260 **Date Analyzed:** 06/03/05 **Analyzed by:** JW

Analyte	Result	PQL	Units
Acetone	ND	1000	ug/kg-dry
Acrylonitrile	ND	250	ug/kg-dry
Benzene	ND	50	ug/kg-dry
Bromobenzene	ND	100	ug/kg-dry
Bromochloromethane	ND	50	ug/kg-dry
Bromodichloromethane	ND	100	ug/kg-dry
Bromoform	ND	100	ug/kg-dry
Bromomethane	ND	100	ug/kg-dry
n-Butylbenzene	ND	50	ug/kg-dry
S-butylbenzene	ND	50	ug/kg-dry
t-Butylbenzene	ND	50	ug/kg-dry
Carbon disulfide	ND	250	ug/kg-dry
Carbon tetrachloride	ND	50	ug/kg-dry
Chlorobenzene	ND	50	ug/kg-dry
Chloroethane	ND	250	ug/kg-dry
Chloroform	ND	50	ug/kg-dry
Chloromethane	ND	250	ug/kg-dry
Dibromochloromethane	ND	250	ug/kg-dry
1,2-Dibromo-3-chloropropane	ND	100	ug/kg-dry
1,2-Dibromoethane (EDB)	ND	50	ug/kg-dry
Dibromomethane	ND	50	ug/kg-dry
1,2-Dichlorobenzene	ND	50	ug/kg-dry
1,3-Dichlorobenzene	ND	50	ug/kg-dry
1,4-Dichlorobenzene	ND	50	ug/kg-dry
t-1,4-Dichloro-2-butene	ND	50	ug/kg-dry
Dichlorodifluoromethane	ND	50	ug/kg-dry
1,1-Dichloroethane	ND	50	ug/kg-dry
1,2-Dichloroethane	ND	50	ug/kg-dry
1,1-Dichloroethene	ND	50	ug/kg-dry
c-1,2-Dichloroethene	ND	50	ug/kg-dry

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Sample ID: 05-04857-001; SS-1

Analyte	Result	PQL	Units
t-1,2-Dichloroethene	ND	50	ug/kg-dry
1,2-Dichloropropane	ND	50	ug/kg-dry
1,3-Dichloropropene (cis&trans)	ND	100	ug/kg-dry
Diethyl Ether	ND	100	ug/kg-dry
Ethyl benzene	ND	50	ug/kg-dry
Hexachloroethane	ND	100	ug/kg-dry
2-Hexanone	ND	250	ug/kg-dry
Iodomethane	ND	50	ug/kg-dry
Isopropylbenzene	ND	50	ug/kg-dry
p-Isopropyltoluene	ND	100	ug/kg-dry
Dichloromethane	ND	250	ug/kg-dry
2-butanone (MEK)	ND	1000	ug/kg-dry
2-Methylnaphthalene	ND	250	ug/kg-dry
4-Methyl-2-pentanone(MIBK)	ND	250	ug/kg-dry
MTBE	ND	250	ug/kg-dry
Naphthalene	ND	250	ug/kg-dry
n-Propylbenzene	ND	50	ug/kg-dry
Styrene	ND	50	ug/kg-dry
1,1,2,2-Tetrachloroethane	ND	100	ug/kg-dry
Tetrachloroethene	ND	50	ug/kg-dry
Tetrahydrofuran	ND	1200	ug/kg-dry
Toluene	ND	50	ug/kg-dry
1,2,3-Trichlorobenzene	ND	250	ug/kg-dry
1,2,4-Trichlorobenzene	ND	100	ug/kg-dry
1,1,1-Trichloroethane	ND	50	ug/kg-dry
1,1,2-Trichloroethane	ND	50	ug/kg-dry
Trichloroethene	ND	50	ug/kg-dry
Trichlorofluoromethane	ND	50	ug/kg-dry
1,2,3-Trichloropropane	ND	50	ug/kg-dry
1,2,4-Trimethylbenzene	ND	100	ug/kg-dry
1,3,5-Trimethylbenzene	ND	100	ug/kg-dry
Vinyl chloride	ND	40	ug/kg-dry
Xylene, Total	ND	150	ug/kg-dry

Client:	Camp Dresser & McKee			**RTI Project#:**	05-04857
Project:	Trenton Chemical Facility	**Report Number:**	05-04857-1	**Page:**	Page 4 of 30

Analyte	**Result**	**PQL**	**Units**

continued from previous page...

Sample ID: 05-04857-001; SS-1

Surrogate Recovery Data

Compound	**% Recovery**	**Acceptable Limits(%)**	**Qualifier**
4-Bromofluorobenzene (SS)	**108**	74 - 121	
Dibromofluoromethane (SS)	**103**	80 - 120	
Toluene-d8 (SS)	**98**	81 - 117	

8270 Scan (Soil)

Method(s): 3545, 8270 **Date Prepared:** 06/02/05 **Date Analyzed:** 06/06/05 **Analyzed by:** JG3

Acenaphthene	ND	330	ug/kg-dry
Acenaphthylene	ND	330	ug/kg-dry
Aniline	ND	330	ug/kg-dry
Anthracene	ND	330	ug/kg-dry
Benzidine	ND	1300	ug/kg-dry
Benzo(a)anthracene	**430**	330	ug/kg-dry
Benzo(a)pyrene	ND	330	ug/kg-dry
Benzo(b)fluoranthene	**430**	330	ug/kg-dry
Benzo(ghi)Perylene	ND	330	ug/kg-dry
Benzo(k)fluoranthene	ND	330	ug/kg-dry
Benzoic acid	ND	3300	ug/kg-dry
Benzyl alcohol	ND	3300	ug/kg-dry
4-Bromophenyl phenyl ether	ND	330	ug/kg-dry
Butyl benzyl phthalate	ND	330	ug/kg-dry
4-Chloro-3-methylphenol	ND	330	ug/kg-dry
4-Chloroaniline	ND	330	ug/kg-dry
Bis(2-chloroethoxy)methane	ND	330	ug/kg-dry
Bis(2-chloroethyl)ether	ND	330	ug/kg-dry
Bis(2-chloroisopropyl)ether	ND	330	ug/kg-dry
2-Chloronaphthalene	ND	330	ug/kg-dry
2-Chlorophenol	ND	330	ug/kg-dry
4-Chlorophenyl phenyl ether	ND	330	ug/kg-dry
Chrysene	**520**	330	ug/kg-dry
Di-n-butyl phthalate	ND	330	ug/kg-dry
Di-n-octylphthalate	ND	330	ug/kg-dry
Dibenzo(a,h)anthracene	ND	330	ug/kg-dry

continued from previous page...

Sample ID: 05-04857-001; SS-1

Analyte	Result	PQL	Units
Dibenzofuran	ND	330	ug/kg-dry
1,2-Dichlorobenzene	ND	330	ug/kg-dry
1,3-Dichlorobenzene	ND	330	ug/kg-dry
1,4-Dichlorobenzene	ND	330	ug/kg-dry
3,3'-Dichlorobenzidine	ND	1700	ug/kg-dry
2,4-Dichlorophenol	ND	330	ug/kg-dry
Diethyl phthalate	ND	330	ug/kg-dry
Dimethyl phthalate	ND	330	ug/kg-dry
2,4,-Dimethylphenol	ND	330	ug/kg-dry
4,6-Dinitro-o-Cresol	ND	1700	ug/kg-dry
2,4,-Dinitrophenol	ND	1700	ug/kg-dry
2,4-Dinitrotoluene	ND	330	ug/kg-dry
2,6-Dinitrotoluene	ND	330	ug/kg-dry
1,2-Diphenylhydrazine	ND	330	ug/kg-dry
Bis(2-ethylhexyl)phthalate	ND	330	ug/kg-dry
Fluoranthene	**1200**	330	ug/kg-dry
Fluorene	ND	330	ug/kg-dry
Hexachlorobenzene	ND	330	ug/kg-dry
Hexachlorobutadiene	ND	330	ug/kg-dry
Hexachlorocyclopentadiene	ND	330	ug/kg-dry
Hexachloroethane	ND	330	ug/kg-dry
Indeno(1,2,3-cd)pyrene	ND	330	ug/kg-dry
Isophorone	ND	330	ug/kg-dry
2-Methylnaphthalene	ND	330	ug/kg-dry
2-Methylphenol	ND	330	ug/kg-dry
3 & 4-Methylphenol	ND	330	ug/kg-dry
Naphthalene	ND	330	ug/kg-dry
2-Nitroaniline	ND	1700	ug/kg-dry
3-Nitroaniline	ND	1700	ug/kg-dry
4-Nitroaniline	ND	1700	ug/kg-dry
Nitrobenzene	ND	330	ug/kg-dry
2-Nitrophenol	ND	330	ug/kg-dry
4-Nitrophenol	ND	1700	ug/kg-dry
N-Nitrosodi-n-propylamine	ND	330	ug/kg-dry

continued from previous page...

Sample ID: 05-04857-001; SS-1

Analyte	Result	PQL	Units
N-Nitrosodimethylamine	ND	330	ug/kg-dry
N-Nitrosodiphenylamine	ND	330	ug/kg-dry
Pentachlorophenol	ND	330	ug/kg-dry
Phenanthrene	**1100**	330	ug/kg-dry
Phenol	ND	330	ug/kg-dry
Pyrene	**1000**	330	ug/kg-dry
1,2,4-Trichlorobenzene	ND	330	ug/kg-dry
2,4,5-Trichlorophenol	ND	330	ug/kg-dry
2,4,6-Trichlorophenol	ND	330	ug/kg-dry

Surrogate Recovery Data

Compound	% Recovery	Acceptable Limits(%)	Qualifier
2,4,6-Tribromophenol (Surr)	54	19 - 122	
2-Fluorobiphenyl (Surr)	60	30 - 115	
2-Fluorophenol (Surr)	64	24 - 113	
d14-Terphenyl (Surr)	56	19 - 122	
d5-Nitrobenzene (Surr)	66	23 - 120	
d6-Phenol (Surr)	67	25 - 121	

Total Metals (Soil)

Method(s): 3050, 6020 **Date Prepared:** 06/02/05 **Date Analyzed:** 06/03/05 **Analyzed by:** AV

Arsenic, As	**5800**	50	ug/kg-dry
Barium, Ba	**49000**	500	ug/kg-dry
Cadmium, Cd	**630**	50	ug/kg-dry
Chromium, Cr	**12000**	250	ug/kg-dry
Lead, Pb	**24000**	500	ug/kg-dry
Selenium, Se	**310**	100	ug/kg-dry
Silver, Ag	ND	250	ug/kg-dry
Copper, Cu	**21000**	500	ug/kg-dry
Zinc, Zn	**59000**	500	ug/kg-dry

Mercury (Soil)

Method(s): 7471A **Date Prepared:** 06/02/05 **Date Analyzed:** 06/03/05 **Analyzed by:** MB2

Mercury, Hg	**88**	83	ug/kg-dry

Analyte	**Result**	**PQL**	**Units**

continued from previous page...

Sample ID: 05-04857-001; SS-1

Sample ID: 05-04857-002; SS-2

8260 Scan (Soil-MeOH preserved)

Method(s): 5035, 8260 **Date Analyzed:** 06/03/05 **Analyzed by:** JW

Acetone	ND	1000	ug/kg-dry
Acrylonitrile	ND	250	ug/kg-dry
Benzene	ND	50	ug/kg-dry
Bromobenzene	ND	100	ug/kg-dry
Bromochloromethane	ND	50	ug/kg-dry
Bromodichloromethane	ND	100	ug/kg-dry
Bromoform	ND	100	ug/kg-dry
Bromomethane	ND	100	ug/kg-dry
n-Butylbenzene	ND	50	ug/kg-dry
S-butylbenzene	ND	50	ug/kg-dry
t-Butylbenzene	ND	50	ug/kg-dry
Carbon disulfide	ND	250	ug/kg-dry
Carbon tetrachloride	ND	50	ug/kg-dry
Chlorobenzene	ND	50	ug/kg-dry
Chloroethane	ND	250	ug/kg-dry
Chloroform	ND	50	ug/kg-dry
Chloromethane	ND	250	ug/kg-dry
Dibromochloromethane	ND	250	ug/kg-dry
1,2-Dibromo-3-chloropropane	ND	100	ug/kg-dry
1,2-Dibromoethane (EDB)	ND	50	ug/kg-dry
Dibromomethane	ND	50	ug/kg-dry
1,2-Dichlorobenzene	ND	50	ug/kg-dry
1,3-Dichlorobenzene	ND	50	ug/kg-dry
1,4-Dichlorobenzene	ND	50	ug/kg-dry
t-1,4-Dichloro-2-butene	ND	50	ug/kg-dry
Dichlorodifluoromethane	ND	50	ug/kg-dry
1,1-Dichloroethane	ND	50	ug/kg-dry
1,2-Dichloroethane	ND	50	ug/kg-dry
1,1-Dichloroethene	ND	50	ug/kg-dry
c-1,2-Dichloroethene	ND	50	ug/kg-dry

continued from previous page...

Sample ID: 05-04857-002; SS-2

Analyte	Result	PQL	Units
t-1,2-Dichloroethene	ND	50	ug/kg-dry
1,2-Dichloropropane	ND	50	ug/kg-dry
1,3-Dichloropropene (cis&trans)	ND	100	ug/kg-dry
Diethyl Ether	ND	100	ug/kg-dry
Ethyl benzene	ND	50	ug/kg-dry
Hexachloroethane	ND	100	ug/kg-dry
2-Hexanone	ND	250	ug/kg-dry
Iodomethane	ND	50	ug/kg-dry
Isopropylbenzene	ND	50	ug/kg-dry
p-Isopropyltoluene	ND	100	ug/kg-dry
Dichloromethane	ND	250	ug/kg-dry
2-butanone (MEK)	ND	1000	ug/kg-dry
2-Methylnaphthalene	ND	250	ug/kg-dry
4-Methyl-2-pentanone(MIBK)	ND	250	ug/kg-dry
MTBE	ND	250	ug/kg-dry
Naphthalene	ND	250	ug/kg-dry
n-Propylbenzene	ND	50	ug/kg-dry
Styrene	ND	50	ug/kg-dry
1,1,2,2-Tetrachloroethane	ND	100	ug/kg-dry
Tetrachloroethene	ND	50	ug/kg-dry
Tetrahydrofuran	ND	1200	ug/kg-dry
Toluene	ND	50	ug/kg-dry
1,2,3-Trichlorobenzene	ND	250	ug/kg-dry
1,2,4-Trichlorobenzene	ND	100	ug/kg-dry
1,1,1-Trichloroethane	ND	50	ug/kg-dry
1,1,2-Trichloroethane	ND	50	ug/kg-dry
Trichloroethene	ND	50	ug/kg-dry
Trichlorofluoromethane	ND	50	ug/kg-dry
1,2,3-Trichloropropane	ND	50	ug/kg-dry
1,2,4-Trimethylbenzene	ND	100	ug/kg-dry
1,3,5-Trimethylbenzene	ND	100	ug/kg-dry
Vinyl chloride	ND	40	ug/kg-dry
Xylene, Total	ND	150	ug/kg-dry

Client:	Camp Dresser & McKee			**RTI Project#:**	05-04857
Project:	Trenton Chemical Facility	**Report Number:**	05-04857-1	**Page:**	Page 9 of 30

Analyte	**Result**	**PQL**	**Units**

continued from previous page...

Sample ID: 05-04857-002; SS-2

Surrogate Recovery Data

Compound	**% Recovery**	**Acceptable Limits(%)**	**Qualifier**
4-Bromofluorobenzene (SS)	112	74 - 121	
Dibromofluoromethane (SS)	101	80 - 120	
Toluene-d8 (SS)	99	81 - 117	

8270 Scan (Soil)

Method(s): 3545, 8270 **Date Prepared:** 06/02/05 **Date Analyzed:** 06/06/05 **Analyzed by:** JG3

Acenaphthene	ND	330	ug/kg-dry
Acenaphthylene	ND	330	ug/kg-dry
Aniline	ND	330	ug/kg-dry
Anthracene	ND	330	ug/kg-dry
Benzidine	ND	1300	ug/kg-dry
Benzo(a)anthracene	ND	330	ug/kg-dry
Benzo(a)pyrene	ND	330	ug/kg-dry
Benzo(b)fluoranthene	ND	330	ug/kg-dry
Benzo(ghi)Perylene	ND	330	ug/kg-dry
Benzo(k)fluoranthene	ND	330	ug/kg-dry
Benzoic acid	ND	3300	ug/kg-dry
Benzyl alcohol	ND	3300	ug/kg-dry
4-Bromophenyl phenyl ether	ND	330	ug/kg-dry
Butyl benzyl phthalate	ND	330	ug/kg-dry
4-Chloro-3-methylphenol	ND	330	ug/kg-dry
4-Chloroaniline	ND	330	ug/kg-dry
Bis(2-chloroethoxy)methane	ND	330	ug/kg-dry
Bis(2-chloroethyl)ether	ND	330	ug/kg-dry
Bis(2-chloroisopropyl)ether	ND	330	ug/kg-dry
2-Chloronaphthalene	ND	330	ug/kg-dry
2-Chlorophenol	ND	330	ug/kg-dry
4-Chlorophenyl phenyl ether	ND	330	ug/kg-dry
Chrysene	ND	330	ug/kg-dry
Di-n-butyl phthalate	ND	330	ug/kg-dry
Di-n-octylphthalate	ND	330	ug/kg-dry
Dibenzo(a,h)anthracene	ND	330	ug/kg-dry

continued from previous page...

Sample ID: 05-04857-002; SS-2

Analyte	Result	PQL	Units
Dibenzofuran	ND	330	ug/kg-dry
1,2-Dichlorobenzene	ND	330	ug/kg-dry
1,3-Dichlorobenzene	ND	330	ug/kg-dry
1,4-Dichlorobenzene	ND	330	ug/kg-dry
3,3'-Dichlorobenzidine	ND	1700	ug/kg-dry
2,4-Dichlorophenol	ND	330	ug/kg-dry
Diethyl phthalate	ND	330	ug/kg-dry
Dimethyl phthalate	ND	330	ug/kg-dry
2,4,-Dimethylphenol	ND	330	ug/kg-dry
4,6-Dinitro-o-Cresol	ND	1700	ug/kg-dry
2,4,-Dinitrophenol	ND	1700	ug/kg-dry
2,4-Dinitrotoluene	ND	330	ug/kg-dry
2,6-Dinitrotoluene	ND	330	ug/kg-dry
1,2-Diphenylhydrazine	ND	330	ug/kg-dry
Bis(2-ethylhexyl)phthalate	ND	330	ug/kg-dry
Fluoranthene	ND	330	ug/kg-dry
Fluorene	ND	330	ug/kg-dry
Hexachlorobenzene	ND	330	ug/kg-dry
Hexachlorobutadiene	ND	330	ug/kg-dry
Hexachlorocyclopentadiene	ND	330	ug/kg-dry
Hexachloroethane	ND	330	ug/kg-dry
Indeno(1,2,3-cd)pyrene	ND	330	ug/kg-dry
Isophorone	ND	330	ug/kg-dry
2-Methylnaphthalene	ND	330	ug/kg-dry
2-Methylphenol	ND	330	ug/kg-dry
3 & 4-Methylphenol	ND	330	ug/kg-dry
Naphthalene	ND	330	ug/kg-dry
2-Nitroaniline	ND	1700	ug/kg-dry
3-Nitroaniline	ND	1700	ug/kg-dry
4-Nitroaniline	ND	1700	ug/kg-dry
Nitrobenzene	ND	330	ug/kg-dry
2-Nitrophenol	ND	330	ug/kg-dry
4-Nitrophenol	ND	1700	ug/kg-dry
N-Nitrosodi-n-propylamine	ND	330	ug/kg-dry

continued from previous page...

Sample ID: 05-04857-002; SS-2

Analyte	Result	PQL	Units
N-Nitrosodimethylamine	ND	330	ug/kg-dry
N-Nitrosodiphenylamine	ND	330	ug/kg-dry
Pentachlorophenol	ND	330	ug/kg-dry
Phenanthrene	ND	330	ug/kg-dry
Phenol	ND	330	ug/kg-dry
Pyrene	ND	330	ug/kg-dry
1,2,4-Trichlorobenzene	ND	330	ug/kg-dry
2,4,5-Trichlorophenol	ND	330	ug/kg-dry
2,4,6-Trichlorophenol	ND	330	ug/kg-dry

Surrogate Recovery Data

Compound	% Recovery	Acceptable Limits(%)	Qualifier
2,4,6-Tribromophenol (Surr)	53	19 - 122	
2-Fluorobiphenyl (Surr)	59	30 - 115	
2-Fluorophenol (Surr)	62	24 - 113	
d14-Terphenyl (Surr)	53	19 - 122	
d5-Nitrobenzene (Surr)	62	23 - 120	
d6-Phenol (Surr)	65	25 - 121	

Total Metals (Soil)

Method(s): 3050, 6020 **Date Prepared:** 06/02/05 **Date Analyzed:** 06/03/05 **Analyzed by:** AV

Arsenic, As	**6100**	50	ug/kg-dry
Barium, Ba	**54000**	500	ug/kg-dry
Cadmium, Cd	**1300**	50	ug/kg-dry
Chromium, Cr	**13000**	250	ug/kg-dry
Lead, Pb	**33000**	500	ug/kg-dry
Selenium, Se	**420**	100	ug/kg-dry
Silver, Ag	**250**	250	ug/kg-dry
Copper, Cu	**30000**	500	ug/kg-dry
Zinc, Zn	**84000**	500	ug/kg-dry

Mercury (Soil)

Method(s): 7471A **Date Prepared:** 06/02/05 **Date Analyzed:** 06/03/05 **Analyzed by:** MB2

Mercury, Hg	**110**	100	ug/kg-dry

continued from previous page...

Sample ID: 05-04857-002; SS-2

Sample ID: 05-04857-003; SS-3

8260 Scan (Soil-MeOH preserved)

Method(s): 5035, 8260 **Date Analyzed:** 06/03/05 **Analyzed by:** JW

Analyte	Result	PQL	Units
Acetone	ND	1000	ug/kg-dry
Acrylonitrile	ND	250	ug/kg-dry
Benzene	ND	50	ug/kg-dry
Bromobenzene	ND	100	ug/kg-dry
Bromochloromethane	ND	50	ug/kg-dry
Bromodichloromethane	ND	100	ug/kg-dry
Bromoform	ND	100	ug/kg-dry
Bromomethane	ND	100	ug/kg-dry
n-Butylbenzene	ND	50	ug/kg-dry
S-butylbenzene	ND	50	ug/kg-dry
t-Butylbenzene	ND	50	ug/kg-dry
Carbon disulfide	ND	250	ug/kg-dry
Carbon tetrachloride	ND	50	ug/kg-dry
Chlorobenzene	ND	50	ug/kg-dry
Chloroethane	ND	250	ug/kg-dry
Chloroform	ND	50	ug/kg-dry
Chloromethane	ND	250	ug/kg-dry
Dibromochloromethane	ND	250	ug/kg-dry
1,2-Dibromo-3-chloropropane	ND	100	ug/kg-dry
1,2-Dibromoethane (EDB)	ND	50	ug/kg-dry
Dibromomethane	ND	50	ug/kg-dry
1,2-Dichlorobenzene	ND	50	ug/kg-dry
1,3-Dichlorobenzene	ND	50	ug/kg-dry
1,4-Dichlorobenzene	ND	50	ug/kg-dry
t-1,4-Dichloro-2-butene	ND	50	ug/kg-dry
Dichlorodifluoromethane	ND	50	ug/kg-dry
1,1-Dichloroethane	ND	50	ug/kg-dry
1,2-Dichloroethane	ND	50	ug/kg-dry
1,1-Dichloroethene	ND	50	ug/kg-dry
c-1,2-Dichloroethene	ND	50	ug/kg-dry

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Sample ID: 05-04857-003; SS-3

Analyte	Result	PQL	Units
t-1,2-Dichloroethene	ND	50	ug/kg-dry
1,2-Dichloropropane	ND	50	ug/kg-dry
1,3-Dichloropropene (cis&trans)	ND	100	ug/kg-dry
Diethyl Ether	ND	100	ug/kg-dry
Ethyl benzene	ND	50	ug/kg-dry
Hexachloroethane	ND	100	ug/kg-dry
2-Hexanone	ND	250	ug/kg-dry
Iodomethane	ND	50	ug/kg-dry
Isopropylbenzene	ND	50	ug/kg-dry
p-Isopropyltoluene	ND	100	ug/kg-dry
Dichloromethane	ND	250	ug/kg-dry
2-butanone (MEK)	ND	1000	ug/kg-dry
2-Methylnaphthalene	ND	250	ug/kg-dry
4-Methyl-2-pentanone(MIBK)	ND	250	ug/kg-dry
MTBE	ND	250	ug/kg-dry
Naphthalene	ND	250	ug/kg-dry
n-Propylbenzene	ND	50	ug/kg-dry
Styrene	ND	50	ug/kg-dry
1,1,2,2-Tetrachloroethane	ND	100	ug/kg-dry
Tetrachloroethene	ND	50	ug/kg-dry
Tetrahydrofuran	ND	1200	ug/kg-dry
Toluene	ND	50	ug/kg-dry
1,2,3-Trichlorobenzene	ND	250	ug/kg-dry
1,2,4-Trichlorobenzene	ND	100	ug/kg-dry
1,1,1-Trichloroethane	ND	50	ug/kg-dry
1,1,2-Trichloroethane	ND	50	ug/kg-dry
Trichloroethene	ND	50	ug/kg-dry
Trichlorofluoromethane	ND	50	ug/kg-dry
1,2,3-Trichloropropane	ND	50	ug/kg-dry
1,2,4-Trimethylbenzene	ND	100	ug/kg-dry
1,3,5-Trimethylbenzene	ND	100	ug/kg-dry
Vinyl chloride	ND	40	ug/kg-dry
Xylene, Total	ND	150	ug/kg-dry

Analyte	Result	PQL	Units

continued from previous page...

Sample ID: 05-04857-003; SS-3

Surrogate Recovery Data

Compound	% Recovery	Acceptable Limits(%)	Qualifier
4-Bromofluorobenzene (SS)	111	74 - 121	
Dibromofluoromethane (SS)	105	80 - 120	
Toluene-d8 (SS)	98	81 - 117	

8270 Scan (Soil)

Method(s): 3545, 8270 **Date Prepared:** 06/02/05 **Date Analyzed:** 06/06/05 **Analyzed by:** JG3

Acenaphthene	ND	330	ug/kg-dry
Acenaphthylene	ND	330	ug/kg-dry
Aniline	ND	330	ug/kg-dry
Anthracene	ND	330	ug/kg-dry
Benzidine	ND	1300	ug/kg-dry
Benzo(a)anthracene	ND	330	ug/kg-dry
Benzo(a)pyrene	ND	330	ug/kg-dry
Benzo(b)fluoranthene	ND	330	ug/kg-dry
Benzo(ghi)Perylene	ND	330	ug/kg-dry
Benzo(k)fluoranthene	ND	330	ug/kg-dry
Benzoic acid	ND	3300	ug/kg-dry
Benzyl alcohol	ND	3300	ug/kg-dry
4-Bromophenyl phenyl ether	ND	330	ug/kg-dry
Butyl benzyl phthalate	ND	330	ug/kg-dry
4-Chloro-3-methylphenol	ND	330	ug/kg-dry
4-Chloroaniline	ND	330	ug/kg-dry
Bis(2-chloroethoxy)methane	ND	330	ug/kg-dry
Bis(2-chloroethyl)ether	ND	330	ug/kg-dry
Bis(2-chloroisopropyl)ether	ND	330	ug/kg-dry
2-Chloronaphthalene	ND	330	ug/kg-dry
2-Chlorophenol	ND	330	ug/kg-dry
4-Chlorophenyl phenyl ether	ND	330	ug/kg-dry
Chrysene	ND	330	ug/kg-dry
Di-n-butyl phthalate	ND	330	ug/kg-dry
Di-n-octylphthalate	ND	330	ug/kg-dry
Dibenzo(a,h)anthracene	ND	330	ug/kg-dry

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Sample ID: 05-04857-003; SS-3

Analyte	Result	PQL	Units
Dibenzofuran	ND	330	ug/kg-dry
1,2-Dichlorobenzene	ND	330	ug/kg-dry
1,3-Dichlorobenzene	ND	330	ug/kg-dry
1,4-Dichlorobenzene	ND	330	ug/kg-dry
3,3'-Dichlorobenzidine	ND	1700	ug/kg-dry
2,4-Dichlorophenol	ND	330	ug/kg-dry
Diethyl phthalate	ND	330	ug/kg-dry
Dimethyl phthalate	ND	330	ug/kg-dry
2,4,-Dimethylphenol	ND	330	ug/kg-dry
4,6-Dinitro-o-Cresol	ND	1700	ug/kg-dry
2,4,-Dinitrophenol	ND	1700	ug/kg-dry
2,4-Dinitrotoluene	ND	330	ug/kg-dry
2,6-Dinitrotoluene	ND	330	ug/kg-dry
1,2-Diphenylhydrazine	ND	330	ug/kg-dry
Bis(2-ethylhexyl)phthalate	ND	330	ug/kg-dry
Fluoranthene	ND	330	ug/kg-dry
Fluorene	ND	330	ug/kg-dry
Hexachlorobenzene	ND	330	ug/kg-dry
Hexachlorobutadiene	ND	330	ug/kg-dry
Hexachlorocyclopentadiene	ND	330	ug/kg-dry
Hexachloroethane	ND	330	ug/kg-dry
Indeno(1,2,3-cd)pyrene	ND	330	ug/kg-dry
Isophorone	ND	330	ug/kg-dry
2-Methylnaphthalene	ND	330	ug/kg-dry
2-Methylphenol	ND	330	ug/kg-dry
3 & 4-Methylphenol	ND	330	ug/kg-dry
Naphthalene	ND	330	ug/kg-dry
2-Nitroaniline	ND	1700	ug/kg-dry
3-Nitroaniline	ND	1700	ug/kg-dry
4-Nitroaniline	ND	1700	ug/kg-dry
Nitrobenzene	ND	330	ug/kg-dry
2-Nitrophenol	ND	330	ug/kg-dry
4-Nitrophenol	ND	1700	ug/kg-dry
N-Nitrosodi-n-propylamine	ND	330	ug/kg-dry

Analyte	**Result**	**PQL**	**Units**

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Sample ID: 05-04857-003; SS-3

N-Nitrosodimethylamine	ND	330	ug/kg-dry
N-Nitrosodiphenylamine	ND	330	ug/kg-dry
Pentachlorophenol	ND	330	ug/kg-dry
Phenanthrene	ND	330	ug/kg-dry
Phenol	ND	330	ug/kg-dry
Pyrene	ND	330	ug/kg-dry
1,2,4-Trichlorobenzene	ND	330	ug/kg-dry
2,4,5-Trichlorophenol	ND	330	ug/kg-dry
2,4,6-Trichlorophenol	ND	330	ug/kg-dry

Surrogate Recovery Data

Compound	**% Recovery**	**Acceptable Limits(%)**	**Qualifier**
2,4,6-Tribromophenol (Surr)	**49**	19 - 122	
2-Fluorobiphenyl (Surr)	**57**	30 - 115	
2-Fluorophenol (Surr)	**62**	24 - 113	
d14-Terphenyl (Surr)	**57**	19 - 122	
d5-Nitrobenzene (Surr)	**62**	23 - 120	
d6-Phenol (Surr)	**65**	25 - 121	

Total Metals (Soil)

Method(s): 3050, 6020 **Date Prepared:** 06/02/05 **Date Analyzed:** 06/03/05 **Analyzed by:** AV

Arsenic, As	**5900**	50	ug/kg-dry
Barium, Ba	**58000**	500	ug/kg-dry
Cadmium, Cd	**540**	50	ug/kg-dry
Chromium, Cr	**15000**	250	ug/kg-dry
Lead, Pb	**16000**	500	ug/kg-dry
Selenium, Se	ND	100	ug/kg-dry
Silver, Ag	ND	250	ug/kg-dry
Copper, Cu	**23000**	500	ug/kg-dry
Zinc, Zn	**57000**	500	ug/kg-dry

Mercury (Soil)

Method(s): 7471A **Date Prepared:** 06/02/05 **Date Analyzed:** 06/03/05 **Analyzed by:** MB2

Mercury, Hg	ND	120	ug/kg-dry

Analyte	Result	PQL	Units

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Sample ID: 05-04857-003; SS-3

Sample ID: 05-04857-004; SS-4

8260 Scan (Soil-MeOH preserved)

Method(s): 5035, 8260 **Date Analyzed:** 06/03/05 **Analyzed by:** JW

Acetone	ND	1000	ug/kg-dry
Acrylonitrile	ND	250	ug/kg-dry
Benzene	ND	50	ug/kg-dry
Bromobenzene	ND	100	ug/kg-dry
Bromochloromethane	ND	50	ug/kg-dry
Bromodichloromethane	ND	100	ug/kg-dry
Bromoform	ND	100	ug/kg-dry
Bromomethane	ND	100	ug/kg-dry
n-Butylbenzene	ND	50	ug/kg-dry
S-butylbenzene	ND	50	ug/kg-dry
t-Butylbenzene	ND	50	ug/kg-dry
Carbon disulfide	ND	250	ug/kg-dry
Carbon tetrachloride	ND	50	ug/kg-dry
Chlorobenzene	ND	50	ug/kg-dry
Chloroethane	ND	250	ug/kg-dry
Chloroform	ND	50	ug/kg-dry
Chloromethane	ND	250	ug/kg-dry
Dibromochloromethane	ND	250	ug/kg-dry
1,2-Dibromo-3-chloropropane	ND	100	ug/kg-dry
1,2-Dibromoethane (EDB)	ND	50	ug/kg-dry
Dibromomethane	ND	50	ug/kg-dry
1,2-Dichlorobenzene	ND	50	ug/kg-dry
1,3-Dichlorobenzene	ND	50	ug/kg-dry
1,4-Dichlorobenzene	ND	50	ug/kg-dry
t-1,4-Dichloro-2-butene	ND	50	ug/kg-dry
Dichlorodifluoromethane	ND	50	ug/kg-dry
1,1-Dichloroethane	ND	50	ug/kg-dry
1,2-Dichloroethane	ND	50	ug/kg-dry
1,1-Dichloroethene	ND	50	ug/kg-dry
c-1,2-Dichloroethene	ND	50	ug/kg-dry

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Sample ID: 05-04857-004; SS-4

Analyte	Result	PQL	Units
t-1,2-Dichloroethene	ND	50	ug/kg-dry
1,2-Dichloropropane	ND	50	ug/kg-dry
1,3-Dichloropropene (cis&trans)	ND	100	ug/kg-dry
Diethyl Ether	ND	100	ug/kg-dry
Ethyl benzene	ND	50	ug/kg-dry
Hexachloroethane	ND	100	ug/kg-dry
2-Hexanone	ND	250	ug/kg-dry
Iodomethane	ND	50	ug/kg-dry
Isopropylbenzene	ND	50	ug/kg-dry
p-Isopropyltoluene	ND	100	ug/kg-dry
Dichloromethane	ND	250	ug/kg-dry
2-butanone (MEK)	ND	1000	ug/kg-dry
2-Methylnaphthalene	ND	250	ug/kg-dry
4-Methyl-2-pentanone(MIBK)	ND	250	ug/kg-dry
MTBE	ND	250	ug/kg-dry
Naphthalene	ND	250	ug/kg-dry
n-Propylbenzene	ND	50	ug/kg-dry
Styrene	ND	50	ug/kg-dry
1,1,2,2-Tetrachloroethane	ND	100	ug/kg-dry
Tetrachloroethene	ND	50	ug/kg-dry
Tetrahydrofuran	ND	1200	ug/kg-dry
Toluene	ND	50	ug/kg-dry
1,2,3-Trichlorobenzene	ND	250	ug/kg-dry
1,2,4-Trichlorobenzene	ND	100	ug/kg-dry
1,1,1-Trichloroethane	ND	50	ug/kg-dry
1,1,2-Trichloroethane	ND	50	ug/kg-dry
Trichloroethene	ND	50	ug/kg-dry
Trichlorofluoromethane	ND	50	ug/kg-dry
1,2,3-Trichloropropane	ND	50	ug/kg-dry
1,2,4-Trimethylbenzene	ND	100	ug/kg-dry
1,3,5-Trimethylbenzene	ND	100	ug/kg-dry
Vinyl chloride	ND	40	ug/kg-dry
Xylene, Total	ND	150	ug/kg-dry

Analyte	**Result**	**PQL**	**Units**

continued from previous page...

Sample ID: 05-04857-004; SS-4

Surrogate Recovery Data

Compound	**% Recovery**	**Acceptable Limits(%)**	**Qualifier**
4-Bromofluorobenzene (SS)	107	74 - 121	
Dibromofluoromethane (SS)	103	80 - 120	
Toluene-d8 (SS)	96	81 - 117	

8270 Scan (Soil)

Method(s): 3545, 8270 **Date Prepared:** 06/02/05 **Date Analyzed:** 06/06/05 **Analyzed by:** JG3

Acenaphthene	ND	330	ug/kg-dry
Acenaphthylene	ND	330	ug/kg-dry
Aniline	ND	330	ug/kg-dry
Anthracene	ND	330	ug/kg-dry
Benzidine	ND	1300	ug/kg-dry
Benzo(a)anthracene	**540**	330	ug/kg-dry
Benzo(a)pyrene	**410**	330	ug/kg-dry
Benzo(b)fluoranthene	**630**	330	ug/kg-dry
Benzo(ghi)Perylene	ND	330	ug/kg-dry
Benzo(k)fluoranthene	ND	330	ug/kg-dry
Benzoic acid	ND	3300	ug/kg-dry
Benzyl alcohol	ND	3300	ug/kg-dry
4-Bromophenyl phenyl ether	ND	330	ug/kg-dry
Butyl benzyl phthalate	ND	330	ug/kg-dry
4-Chloro-3-methylphenol	ND	330	ug/kg-dry
4-Chloroaniline	ND	330	ug/kg-dry
Bis(2-chloroethoxy)methane	ND	330	ug/kg-dry
Bis(2-chloroethyl)ether	ND	330	ug/kg-dry
Bis(2-chloroisopropyl)ether	ND	330	ug/kg-dry
2-Chloronaphthalene	ND	330	ug/kg-dry
2-Chlorophenol	ND	330	ug/kg-dry
4-Chlorophenyl phenyl ether	ND	330	ug/kg-dry
Chrysene	**670**	330	ug/kg-dry
Di-n-butyl phthalate	ND	330	ug/kg-dry
Di-n-octylphthalate	ND	330	ug/kg-dry
Dibenzo(a,h)anthracene	ND	330	ug/kg-dry

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Sample ID: 05-04857-004; SS-4

Analyte	Result	PQL	Units
Dibenzofuran	ND	330	ug/kg-dry
1,2-Dichlorobenzene	ND	330	ug/kg-dry
1,3-Dichlorobenzene	ND	330	ug/kg-dry
1,4-Dichlorobenzene	ND	330	ug/kg-dry
3,3'-Dichlorobenzidine	ND	1700	ug/kg-dry
2,4-Dichlorophenol	ND	330	ug/kg-dry
Diethyl phthalate	ND	330	ug/kg-dry
Dimethyl phthalate	ND	330	ug/kg-dry
2,4,-Dimethylphenol	ND	330	ug/kg-dry
4,6-Dinitro-o-Cresol	ND	1700	ug/kg-dry
2,4,-Dinitrophenol	ND	1700	ug/kg-dry
2,4-Dinitrotoluene	ND	330	ug/kg-dry
2,6-Dinitrotoluene	ND	330	ug/kg-dry
1,2-Diphenylhydrazine	ND	330	ug/kg-dry
Bis(2-ethylhexyl)phthalate	ND	330	ug/kg-dry
Fluoranthene	**1800**	330	ug/kg-dry
Fluorene	ND	330	ug/kg-dry
Hexachlorobenzene	ND	330	ug/kg-dry
Hexachlorobutadiene	ND	330	ug/kg-dry
Hexachlorocyclopentadiene	ND	330	ug/kg-dry
Hexachloroethane	ND	330	ug/kg-dry
Indeno(1,2,3-cd)pyrene	ND	330	ug/kg-dry
Isophorone	ND	330	ug/kg-dry
2-Methylnaphthalene	ND	330	ug/kg-dry
2-Methylphenol	ND	330	ug/kg-dry
3 & 4-Methylphenol	ND	330	ug/kg-dry
Naphthalene	ND	330	ug/kg-dry
2-Nitroaniline	ND	1700	ug/kg-dry
3-Nitroaniline	ND	1700	ug/kg-dry
4-Nitroaniline	ND	1700	ug/kg-dry
Nitrobenzene	ND	330	ug/kg-dry
2-Nitrophenol	ND	330	ug/kg-dry
4-Nitrophenol	ND	1700	ug/kg-dry
N-Nitrosodi-n-propylamine	ND	330	ug/kg-dry

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Sample ID: 05-04857-004; SS-4

Analyte	Result	PQL	Units
N-Nitrosodimethylamine	ND	330	ug/kg-dry
N-Nitrosodiphenylamine	ND	330	ug/kg-dry
Pentachlorophenol	ND	330	ug/kg-dry
Phenanthrene	**1200**	330	ug/kg-dry
Phenol	ND	330	ug/kg-dry
Pyrene	**1400**	330	ug/kg-dry
1,2,4-Trichlorobenzene	ND	330	ug/kg-dry
2,4,5-Trichlorophenol	ND	330	ug/kg-dry
2,4,6-Trichlorophenol	ND	330	ug/kg-dry

Surrogate Recovery Data

Compound	% Recovery	Acceptable Limits(%)	Qualifier
2,4,6-Tribromophenol (Surr)	**50**	19 - 122	
2-Fluorobiphenyl (Surr)	**55**	30 - 115	
2-Fluorophenol (Surr)	**60**	24 - 113	
d14-Terphenyl (Surr)	**51**	19 - 122	
d5-Nitrobenzene (Surr)	**60**	23 - 120	
d6-Phenol (Surr)	**62**	25 - 121	

Total Metals (Soil)

Method(s): 3050, 6020 **Date Prepared:** 06/02/05 **Date Analyzed:** 06/03/05 **Analyzed by:** AV

Arsenic, As	**6100**	50	ug/kg-dry
Barium, Ba	**57000**	500	ug/kg-dry
Cadmium, Cd	**610**	50	ug/kg-dry
Chromium, Cr	**13000**	250	ug/kg-dry
Lead, Pb	**17000**	500	ug/kg-dry
Selenium, Se	**340**	100	ug/kg-dry
Silver, Ag	ND	250	ug/kg-dry
Copper, Cu	**24000**	500	ug/kg-dry
Zinc, Zn	**61000**	500	ug/kg-dry

Mercury (Soil)

Method(s): 7471A **Date Prepared:** 06/02/05 **Date Analyzed:** 06/03/05 **Analyzed by:** MB2

Mercury, Hg	ND	120	ug/kg-dry

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Sample ID: 05-04857-004; SS-4

Sample ID: 05-04857-005; SS-5

8260 Scan (Soil-MeOH preserved)

Method(s): 5035, 8260 **Date Analyzed:** 06/03/05 **Analyzed by:** JW

Analyte	Result	PQL	Units
Acetone	ND	1000	ug/kg-dry
Acrylonitrile	ND	250	ug/kg-dry
Benzene	ND	50	ug/kg-dry
Bromobenzene	ND	100	ug/kg-dry
Bromochloromethane	ND	50	ug/kg-dry
Bromodichloromethane	ND	100	ug/kg-dry
Bromoform	ND	100	ug/kg-dry
Bromomethane	ND	100	ug/kg-dry
n-Butylbenzene	ND	50	ug/kg-dry
S-butylbenzene	ND	50	ug/kg-dry
t-Butylbenzene	ND	50	ug/kg-dry
Carbon disulfide	ND	250	ug/kg-dry
Carbon tetrachloride	ND	50	ug/kg-dry
Chlorobenzene	ND	50	ug/kg-dry
Chloroethane	ND	250	ug/kg-dry
Chloroform	ND	50	ug/kg-dry
Chloromethane	ND	250	ug/kg-dry
Dibromochloromethane	ND	250	ug/kg-dry
1,2-Dibromo-3-chloropropane	ND	100	ug/kg-dry
1,2-Dibromoethane (EDB)	ND	50	ug/kg-dry
Dibromomethane	ND	50	ug/kg-dry
1,2-Dichlorobenzene	ND	50	ug/kg-dry
1,3-Dichlorobenzene	ND	50	ug/kg-dry
1,4-Dichlorobenzene	ND	50	ug/kg-dry
t-1,4-Dichloro-2-butene	ND	50	ug/kg-dry
Dichlorodifluoromethane	ND	50	ug/kg-dry
1,1-Dichloroethane	ND	50	ug/kg-dry
1,2-Dichloroethane	ND	50	ug/kg-dry
1,1-Dichloroethene	ND	50	ug/kg-dry
c-1,2-Dichloroethene	ND	50	ug/kg-dry

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Sample ID: 05-04857-005; SS-5

Analyte	Result	PQL	Units
t-1,2-Dichloroethene	ND	50	ug/kg-dry
1,2-Dichloropropane	ND	50	ug/kg-dry
1,3-Dichloropropene (cis&trans)	ND	100	ug/kg-dry
Diethyl Ether	ND	100	ug/kg-dry
Ethyl benzene	ND	50	ug/kg-dry
Hexachloroethane	ND	100	ug/kg-dry
2-Hexanone	ND	250	ug/kg-dry
Iodomethane	ND	50	ug/kg-dry
Isopropylbenzene	ND	50	ug/kg-dry
p-Isopropyltoluene	ND	100	ug/kg-dry
Dichloromethane	ND	250	ug/kg-dry
2-butanone (MEK)	ND	1000	ug/kg-dry
2-Methylnaphthalene	ND	250	ug/kg-dry
4-Methyl-2-pentanone(MIBK)	ND	250	ug/kg-dry
MTBE	ND	250	ug/kg-dry
Naphthalene	ND	250	ug/kg-dry
n-Propylbenzene	ND	50	ug/kg-dry
Styrene	ND	50	ug/kg-dry
1,1,2,2-Tetrachloroethane	ND	100	ug/kg-dry
Tetrachloroethene	ND	50	ug/kg-dry
Tetrahydrofuran	ND	1200	ug/kg-dry
Toluene	ND	50	ug/kg-dry
1,2,3-Trichlorobenzene	ND	250	ug/kg-dry
1,2,4-Trichlorobenzene	ND	100	ug/kg-dry
1,1,1-Trichloroethane	ND	50	ug/kg-dry
1,1,2-Trichloroethane	ND	50	ug/kg-dry
Trichloroethene	ND	50	ug/kg-dry
Trichlorofluoromethane	ND	50	ug/kg-dry
1,2,3-Trichloropropane	ND	50	ug/kg-dry
1,2,4-Trimethylbenzene	ND	100	ug/kg-dry
1,3,5-Trimethylbenzene	ND	100	ug/kg-dry
Vinyl chloride	ND	40	ug/kg-dry
Xylene, Total	ND	150	ug/kg-dry

Analyte	**Result**	**PQL**	**Units**

continued from previous page...

Sample ID: 05-04857-005; SS-5

Surrogate Recovery Data

Compound	**% Recovery**	**Acceptable Limits(%)**	**Qualifier**
4-Bromofluorobenzene (SS)	**111**	74 - 121	
Dibromofluoromethane (SS)	**106**	80 - 120	
Toluene-d8 (SS)	**99**	81 - 117	

8270 Scan (Soil)

Method(s): 3545, 8270 **Date Prepared:** 06/02/05 **Date Analyzed:** 06/06/05 **Analyzed by:** JG3

Acenaphthene	**710**	330	ug/kg-dry
Acenaphthylene	ND	330	ug/kg-dry
Aniline	ND	330	ug/kg-dry
Anthracene	**1700**	330	ug/kg-dry
Benzidine	ND	1300	ug/kg-dry
Benzo(a)anthracene	**2000**	330	ug/kg-dry
Benzo(a)pyrene	**2000**	330	ug/kg-dry
Benzo(b)fluoranthene	**3100**	330	ug/kg-dry
Benzo(ghi)Perylene	**1800**	330	ug/kg-dry
Benzo(k)fluoranthene	**990**	330	ug/kg-dry
Benzoic acid	ND	3300	ug/kg-dry
Benzyl alcohol	ND	3300	ug/kg-dry
4-Bromophenyl phenyl ether	ND	330	ug/kg-dry
Butyl benzyl phthalate	ND	330	ug/kg-dry
4-Chloro-3-methylphenol	ND	330	ug/kg-dry
4-Chloroaniline	ND	330	ug/kg-dry
Bis(2-chloroethoxy)methane	ND	330	ug/kg-dry
Bis(2-chloroethyl)ether	ND	330	ug/kg-dry
Bis(2-chloroisopropyl)ether	ND	330	ug/kg-dry
2-Chloronaphthalene	ND	330	ug/kg-dry
2-Chlorophenol	ND	330	ug/kg-dry
4-Chlorophenyl phenyl ether	ND	330	ug/kg-dry
Chrysene	**3800**	330	ug/kg-dry
Di-n-butyl phthalate	ND	330	ug/kg-dry
Di-n-octylphthalate	ND	330	ug/kg-dry
Dibenzo(a,h)anthracene	**680**	330	ug/kg-dry

continued from previous page...

Sample ID: 05-04857-005; SS-5

Analyte	Result	PQL	Units
Dibenzofuran	ND	330	ug/kg-dry
1,2-Dichlorobenzene	ND	330	ug/kg-dry
1,3-Dichlorobenzene	ND	330	ug/kg-dry
1,4-Dichlorobenzene	ND	330	ug/kg-dry
3,3'-Dichlorobenzidine	ND	1700	ug/kg-dry
2,4-Dichlorophenol	ND	330	ug/kg-dry
Diethyl phthalate	ND	330	ug/kg-dry
Dimethyl phthalate	ND	330	ug/kg-dry
2,4,-Dimethylphenol	ND	330	ug/kg-dry
4,6-Dinitro-o-Cresol	ND	1700	ug/kg-dry
2,4,-Dinitrophenol	ND	1700	ug/kg-dry
2,4-Dinitrotoluene	ND	330	ug/kg-dry
2,6-Dinitrotoluene	ND	330	ug/kg-dry
1,2-Diphenylhydrazine	ND	330	ug/kg-dry
Bis(2-ethylhexyl)phthalate	ND	330	ug/kg-dry
Fluoranthene	**6200**	330	ug/kg-dry
Fluorene	**700**	330	ug/kg-dry
Hexachlorobenzene	ND	330	ug/kg-dry
Hexachlorobutadiene	ND	330	ug/kg-dry
Hexachlorocyclopentadiene	ND	330	ug/kg-dry
Hexachloroethane	ND	330	ug/kg-dry
Indeno(1,2,3-cd)pyrene	**2000**	330	ug/kg-dry
Isophorone	ND	330	ug/kg-dry
2-Methylnaphthalene	ND	330	ug/kg-dry
2-Methylphenol	ND	330	ug/kg-dry
3 & 4-Methylphenol	ND	330	ug/kg-dry
Naphthalene	ND	330	ug/kg-dry
2-Nitroaniline	ND	1700	ug/kg-dry
3-Nitroaniline	ND	1700	ug/kg-dry
4-Nitroaniline	ND	1700	ug/kg-dry
Nitrobenzene	ND	330	ug/kg-dry
2-Nitrophenol	ND	330	ug/kg-dry
4-Nitrophenol	ND	1700	ug/kg-dry
N-Nitrosodi-n-propylamine	ND	330	ug/kg-dry

continued from previous page...

Sample ID: 05-04857-005; SS-5

Analyte	Result	PQL	Units
N-Nitrosodimethylamine	ND	330	ug/kg-dry
N-Nitrosodiphenylamine	ND	330	ug/kg-dry
Pentachlorophenol	ND	330	ug/kg-dry
Phenanthrene	**5600**	330	ug/kg-dry
Phenol	ND	330	ug/kg-dry
Pyrene	**5000**	330	ug/kg-dry
1,2,4-Trichlorobenzene	ND	330	ug/kg-dry
2,4,5-Trichlorophenol	ND	330	ug/kg-dry
2,4,6-Trichlorophenol	ND	330	ug/kg-dry

Surrogate Recovery Data

Compound	% Recovery	Acceptable Limits(%)	Qualifier
2,4,6-Tribromophenol (Surr)	**56**	19 - 122	
2-Fluorobiphenyl (Surr)	**53**	30 - 115	
2-Fluorophenol (Surr)	**58**	24 - 113	
d14-Terphenyl (Surr)	**41**	19 - 122	
d5-Nitrobenzene (Surr)	**57**	23 - 120	
d6-Phenol (Surr)	**61**	25 - 121	

Total Metals (Soil)

Method(s): 3050, 6020 **Date Prepared:** 06/02/05 **Date Analyzed:** 06/03/05 **Analyzed by:** AV

Arsenic, As	**3900**	50	ug/kg-dry
Barium, Ba	**130000**	500	ug/kg-dry
Cadmium, Cd	**1700**	50	ug/kg-dry
Chromium, Cr	**28000**	250	ug/kg-dry
Lead, Pb	**93000**	500	ug/kg-dry
Selenium, Se	**290**	100	ug/kg-dry
Silver, Ag	ND	250	ug/kg-dry
Copper, Cu	**51000**	500	ug/kg-dry
Zinc, Zn	**140000**	500	ug/kg-dry

Mercury (Soil)

Method(s): 7471A **Date Prepared:** 06/02/05 **Date Analyzed:** 06/03/05 **Analyzed by:** MB2

Mercury, Hg	**110**	100	ug/kg-dry

Quality Control (QC) Data

Blank(s)

	Analyte	Batch#	Blank Result	Units
1	Organic Extraction	WS05-08806		
2	Mercury, Hg	WS05-08930	0.06	ug/L

8260 H2O BLANK

64	Dibromofluoromethane (SS)	WS05-08895	98	%
65	Toluene-d8 (SS)	WS05-08895	96	%
66	4-Bromofluorobenzene (SS)	WS05-08895	97	%

All other parameters in this testgroup are non-detect at the MDL.

Total Metals (Soil)

All parameters in this testgroup are non-detect at the MDL.

8270 Scan (Soil)

70	2-Fluorophenol (Surr)	WS05-09006	67	%
71	d6-Phenol (Surr)	WS05-09006	69	%
72	d5-Nitrobenzene (Surr)	WS05-09006	66	%
73	2-Fluorobiphenyl (Surr)	WS05-09006	63	%
74	2,4,6-Tribromophenol (Surr)	WS05-09006	52	%
75	d14-Terphenyl (Surr)	WS05-09006	69	%

All other parameters in this testgroup are non-detect at the MDL.

Laboratory Control Sample(s) (LCS)

	Analyte	Batch#	%Recovery	Limits
1	Mercury, Hg	WS05-08930	82.5	75 to 125

8260 H2O LCS FULL LIST

1	1,1-Dichloroethene	WS05-08895	94.6	70 to 130
2	Benzene	WS05-08895	97.8	70 to 130
3	Trichloroethene	WS05-08895	100	70 to 130
4	Toluene	WS05-08895	101	70 to 130
5	Chlorobenzene	WS05-08895	103	70 to 130
6	Dibromofluoromethane (SS)	WS05-08895	95	

Matrix Spike/Matrix Spike Duplicate(s) (MS/MSD)

	Analyte	Spiked Sample ID#	Sample Result	Spike Added	Units	MS Result	MSD Result	MS %Recv.	MSD %Recv.	%RPD	MS/MSD Limits
	Matrix: **Soil**										
1	Mercury, Hg	05-04857-001	0.91	2	ug/Kg	2.08	2.14	*58.5	* 61.5	2.8	75 to 125
	8260 H2O MS FULL LIST										
1	1,1-Dichloroethene	05-04850-009	0	10	ug/L	10.61	9.8	106	98	7.9	70 to 130
2	Benzene	05-04850-009	0	10	ug/L	9.87	9.64	98.7	96.4	2.4	70 to 130
3	Chlorobenzene	05-04850-009	0	10	ug/L	10.28	10.06	103	101	2.2	70 to 130
4	Toluene	05-04850-009	0	10	ug/L	9.78	9.82	97.8	98.2	0.4	70 to 130
5	Trichloroethene	05-04850-009	0	10	ug/L	9.69	9.47	96.9	94.7	2.3	70 to 130
	Total Metals (Soil)										
1	Arsenic, As	05-04857-001	5000	100000	mg/kg	104000	100000	99	95	3.9	75 to 125
2	Barium, Ba	05-04857-001	42000	100000	mg/kg	133000	127000	91	85	4.6	75 to 125
3	Cadmium, Cd	05-04857-001	540	100000	mg/kg	91000	86000	90.5	85.5	5.6	75 to 125
4	Chromium, Cr	05-04857-001	10000	100000	mg/kg	117000	113000	107	103	3.5	75 to 125
5	Copper, Cu	05-04857-001	18000	100000	mg/kg	128000	125000	110	107	2.4	75 to 125
6	Lead, Pb	05-04857-001	21000	100000	mg/kg	113000	109000	92	88	3.6	75 to 125
7	Selenium, Se	05-04857-001	270	100000	mg/kg	100000	96000	99.7	95.7	4.1	75 to 125
8	Silver, Ag	05-04857-001	100	100000	mg/kg	90000	86000	89.9	85.9	4.5	75 to 125
9	Zinc, Zn	05-04857-001	51000	100000	mg/kg	145000	138000	94	87	4.9	75 to 125
	8270										
1	1,2,4-Trichlorobenzene	05-04857-001	0	25	mu/kg	15	15	60	60	0	44 to 142
2	1,4-Dichlorobenzene	05-04857-001	0	25	mu/kg	15	14	60	56	6.9	20 to 124
3	2,4-Dinitrotoluene	05-04857-001	0	25	mu/kg	14	15	56	60	6.9	39 to 139
4	2-Chlorophenol	05-04857-001	0	25	mu/kg	16	15	64	60	6.5	23 to 134
5	4-Chloro-3-methylphenol	05-04857-001	0	25	mu/kg	16	15	64	60	6.5	22 to 147
6	4-Nitrophenol	05-04857-001	0	25	mu/kg	14	15	56	60	6.9	10 to 132
7	Acenaphthene	05-04857-001	0	25	mu/kg	17	16	68	64	6.1	47 to 145
8	N-Nitrosodi-n-propylamine	05-04857-001	0	25	mu/kg	15	15	60	60	0	10 to 230
9	Phenol	05-04857-001	0	25	mu/kg	16	16	64	64	0	5 to 112
10	Pyrene	05-04857-001	13	25	mu/kg	19	19	*24	* 24	0	52 to 115

* Data point outside established quality control limits.

RTI LABORATORIES, INC.

Client:	Camp Dresser & McKee			**RTI Project#:**	05-04857
Project:	Trenton Chemical Facility	**Report Number:**	05-04857-1	**Page:**	Page 30 of 30

Notes:

E:	Exceedance of acceptable limit	**MDL:**	Method detection limit
mg/kg:	milligram per kilogram	**B:**	Analyte detected in both the sample and the Laboratory Method Blank
mg/L:	milligram per liter	**DIL:**	Diluted out (below level of detection)
ug/kg:	microgram per kilogram	**Q:**	Sample held beyond acceptable holding time
ug/L:	microgram per liter	**PQL:**	Practical quantitation level; lowest level of reportable detection for this sample
N/A:	Not applicable	**Y:**	The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate
ND:	None detected or less than PQL		
H:	result higher than the High Limit	**MI:**	Matrix interferences prevent accurate determination
L:	result lower than the Low Limit	**DUP:**	Values confirmed by duplicate analysis of sample

31628 GLENDALE LIVONIA, MI 48150 (734) 422-8000 FAX (734) 422-5342
Email: information@rtilab.com Website: rtilab.com

CHAIN OF CUSTODY REC

PAGE: | OF:

05-0705-1

RTI LABORATORIES, INC.

A2LA Cert #570.01/02 | NELAC Cert #000973 | MBE Cert #R-8150-2-424 | 8(a) / Small Disadvantaged Business

MAIN LAB & HE RS
RTI LABORATORIES, INC.
31628 Glendale Street
Livonia, MI 48150-1827
Phone (734) 422-8000
Fax (734) 422-5342
www.rtilab.com

Please Include Email Address of Report Recipient Whenever Possible !!!

SUBMITTING COMPANY: Camp Dresser & McKee INC COM	REPORT TO: Yolanda Walton	BILL TO: CDM
PROJECT NAME: Trenton Chemical Facility / PROJECT #: / QUOTE #:	COMPANY: COM	Attn: Yolanda Walton
SPECIAL INSTRUCTIONS / COMMENTS:	PHONE: 313 963 1313	
	FAX:	EMAIL:
SAMPLER'S PRINTED NAME: Daniel F Buss	SAMPLER'S SIGNATURE: Daniel F Buss	

ITEM #	SAMPLE I.D.	DATE SAMPLED	TIME SAMPLED	AIR	SOLID	FLUID	VOLUME	SAMPLE DESCRIPTION	NBR OF CONTAINERS	VOC	Semi-VOA	Mech. Metals						COMMENTS Methanol Preserved Weights HOT Sample Notation etc.
1	SS-1	5/27	4:25		✓					✓	✓	✓						
2	SS-2	5/27	4:15		✓					✓	✓	✓						
3	SS-3	5/27	4:30		✓					✓	✓	✓						
4	SS-4	5/27	4:45		✓					✓	✓	✓						
5	SS-5	5/27	4:55		✓					✓	✓	✓						
6																		
7																		
8																		
9																		
10																		

Relinquished By:	Date	Time	Received By:	Date:	Time:
Daniel F Buss	5/27	1728	Jim Stephens	5/27/05	1728
Jim Stephens	5/27/05	1915	Kathy Gonda	5/28/05	0830
Relinquished By:	Date	Time	Received By:	Date:	Time:

TAT: Standard ☐ RUSH: Next BD ☐ 2nd BD ☐ 3rd BD ☐

Note: RUSH requests will incur surcharges!

FOR LAB USE ONLY

Were samples preserved ☐ in field ☐ in lab ☐ N/A

Were samples filtered ☐ in field ☐ in lab ☐ N/A

Temp of samples 4.4-6.8°C On Wet Ice ? Y

Comments:

Distribution: White and Yellow - Lab; Pink - Field

See reverse side for Laboratory Terms and Conditions of service

Photograph 1. Sign displayed on the western fence near the gate accessing the Former Trenton Chemical Facility Site.

Photograph 2. Location of Geoprobe® sample GP-1-1 and GP-1-2. This sampling location was placed in the southwestern area of the site considered for a constructed wetland

Photograph 3. This photograph is taken looking northeast from sampling location GP-1 presenting the vehicle mounted geoprobe® unit and a Detroit Edison power producing facility in the background. The table was used to evaluate core samples and complete data logs of subsurface samples.

Photograph 4. Both inorganic and organic vapors emanating from subsurface samples were measured using a portable TVA-1000 vapor analyzer. This instrument incorporated a Photo ionization detector and a flame ionization detector.

Photograph 5. Geoprobe® location GP-2 is being sampled in the southeastern area of the future constructed wetlands area.

Photograph 6. Geoprobe® GP-4 sampling location is near the middle of the future basin in the western area of the Former Trenton Chemical Site.

Photograph 7. Geoprobe location GP-3 is located in the future basin area to the north of GP-4. A large mound of dirt can be seen directly to the north near the site access gate.

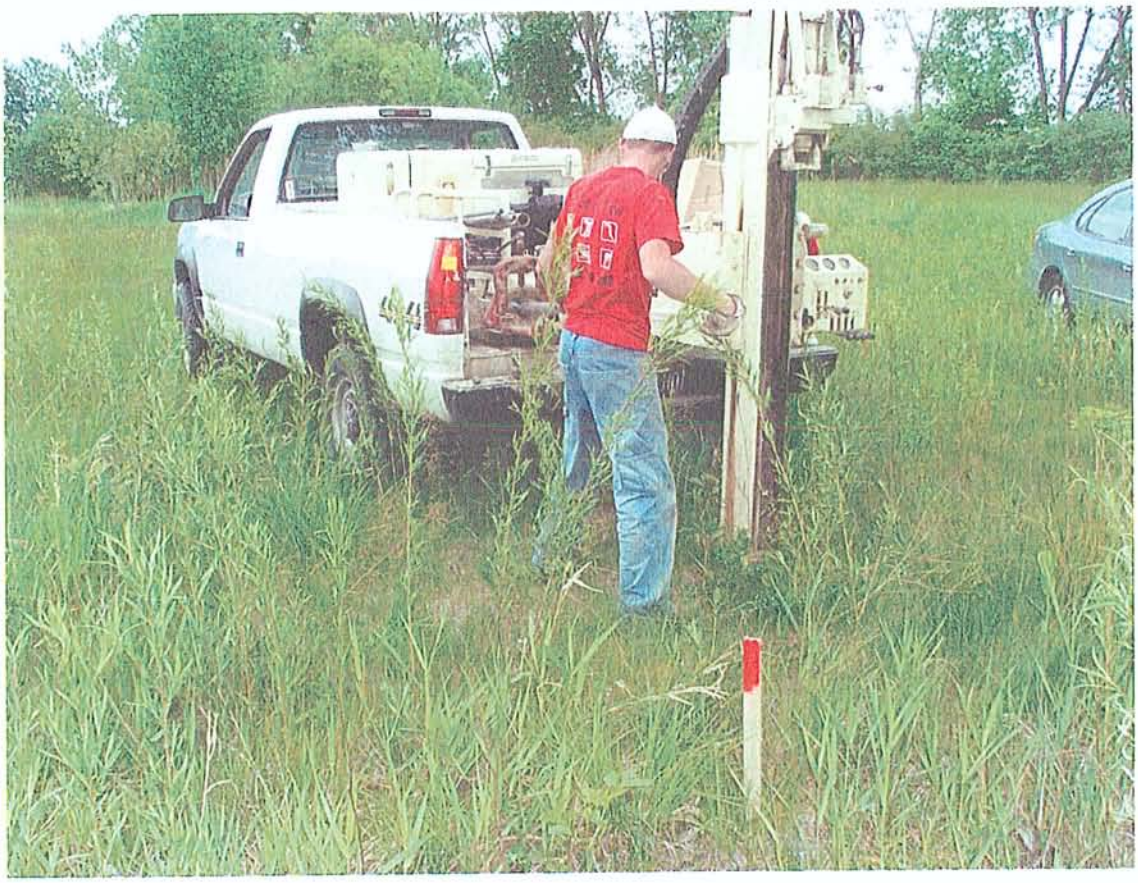
Photograph 8. A mowed area exists near the middle of the western portion of the site. Immediately to the north is the DTE Energy Trenton Channel Power Plant, which is a major fossil-energy conversion facility.

Photograph 9. The eastern-capped area is vegetated with similar plant species as the western part of the site. This is a view of the site looking to the east from the approximate middle of the subject property.

Photograph 10. GP-5 is located to the east of GP-4 in the proposed future basin area.

Photograph 11. This view presents the eastern portion of the subject property looking to the east from GP-5. A low-lying area with a stand of trees can be seen to the southeast on the site.

Photograph 12. This area is near soil boring SB-1. A stand of small trees interspersed with various marsh grasses occupies this area of the site. Based on the conceptual site plan for future development, this area is in the approximate location of the proposed building.



Photograph 13. GP-6 is located in the eastern part of the site near the proposed channel and swale area as presented in the conceptual development site plan. This Geoprobe location is immediately to the east of the area presented in Figure 12.

Photograph 14. Soil boring samples were collected with a hollow stem auger and split spoon. This is the location of SB-1. Surface soil sample SS-5 was collected in the low lying wooded area immediately to the southeast of SB-1.

Photograph 15. A CDM geologist is classifying soil characteristics in the split spoon samples collected at soil boring locations SB-1 through SB-4R. A concrete pad extends north/south with utility manholes immediately to the west of the conceptual building location.

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
SOUTHEAST MICHIGAN DISTRICT OFFICE

'ENNIFER M. GRANHOLM
GOVERNOR

STEVEN E. CHESTER
DIRECTOR

August 3, 2005

Mr. Todd King
CDM
One Woodward Avenue, Suite 1500
Detroit, Michigan 48226

Dear Mr. King:

SUBJECT: International Wildlife Refuge Center (IWRC)
Trenton, Wayne County, Michigan

The Department of Environmental Quality (DEQ0 has reviewed your letter of August 3, 2005, received by this office via electronic mail on August 3, 2005. Your letter and our previous telephone discussions concerned the use of relocated soils at the IWRC site. The DEQ concurs with your opinion that the relocated soils in regards to the selenium concentrations are consistent with the IWRC site background for selenium. Furthermore the plan for the use of the relocated soils as berm material in accordance with a soil erosion control plan is an appropriate use at the site.

If you have any questions regarding this matter, please contact me at the telephone number below. All correspondence in regards to this site should be forwarded to my attention.

Sincerely,

Edward A. Novak, EQA 12
Southeast Michigan District Office
Remediation and Redevelopment Division
586-753-3827

cc: Mr. Steven Kitler, DEQ