REMEDIAL ACTION REPORT

Summit National Superfund Site
Deerfield Township of Portage County, Ohio

PRINTED ON
OCT 31 1995

OCTOBER 1995
REF. NO. 2372 (65)
This report is printed on recycled paper.

CONESTOGA-ROVERS & ASSOCIATES

CRA
Consulting Engineers

CONESTOGA-ROVERS & ASSOCIATES LIMITED
651 Colby Drive
Waterloo, Ontario, Canada N2V 1C2
(519) 884-0510 Colby Office Fax: (519) 884-0525
(519) 725-3313 Bathurst Office (519) 725-1394

October 31, 1995

Reference No. 2372-40

Mr. Anthony Rutter
Director, Waste Management Division
Remedial Project Manager
U.S. Environmental Protection Agency
77 West Jackson Boulevard
Chicago, Illinois
U.S.A. 60604

Mr. Regan S. Williams
State Project Coordinator
Ohio EPA - Division of
Emergency & Remedial Response
2110 East Aurora Road
Twinsburg, Ohio
U.S.A. 44087

Gentlemen:

Re: Notice of Completion of Remedial Action and
Remedial Action Report
Summit National Superfund Site
Deerfield Township of Portage County, Ohio

In accordance with Paragraph XXVI.B. of the Consent Decree for the Summit National Superfund Site (Site) in Deerfield Township of Portage County, Ohio and the United States Environmental Protection Agency (USEPA) Preliminary Closeout Report dated September 18, 1995 for the Remedial Action completed at the Site, the Summit National Facility Trust Fund (SNFT) hereby submits the Notice of Completion of Remedial Action and two copies of the Remedial Action Report for the Site. Following USEPA and Ohio Environmental Protection Agency (OEPA) review of the Remedial Action Report, it is requested that USEPA and OEPA issue the Certification of Completion in accordance with Paragraph XXVI.B. of the Consent Decree.

Based on completion of the final Site cover on August 4, 1995, the Remedial Action at the Site was completed approximately 16 months ahead of the USEPA and OEPA approved remedial construction schedule for the Site. In addition, the Remedial Design/Remedial Action (RD/RA) for the Site was completed approximately 50 months after the effective date of the Consent Decree (June 11, 1991), which is less than the 56 months provided for in Paragraph XVII of the Consent Decree for forgiveness of penalties. The efforts of USEPA and OEPA during the RD/RA contributed to the timely completion of this project, for which we are grateful.

October 31, 1995 Reference No. 2372-40

Should you have any questions, please do not hesitate to contact the undersigned.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

Jack Michels

Jack Michels, P. Eng.

SW/dm/225
Encl.

c.c.: James Morris - USEPA Regional Counsel
Assistant Attorney General, Land and Natural Resources Division, US Department of Justice
Supervisor, Office of Corrective Action, Director, State, Ohio Environmental Protection Agency
Timothy J. Kern, Attorney General, State of Ohio
Richard McAvoy - Black & Veatch Waste Science Technology, Inc.
Gary Gifford
Patrick Steerman
Kenneth Walanski
Douglas Haynam
Richard G. Shepherd (without attachments)
Steve Whillier

TABLE OF CONTENTS

Page

1.0 INTRODUCTION 1

2.0 CHRONOLOGY OF EVENTS 4

3.0 REMEDIAL ACTION MANAGEMENT 5
- 3.1 CONSTRUCTION MANAGEMENT 5
- 3.2 REMEDIAL CONTRACTORS 5
- 3.3 AGENCY OVERSIGHT 6
- 3.4 SITE SECURITY 6

4.0 REMEDIAL CONSTRUCTION ACTIVITIES 7
- 4.1 GROUNDWATER TREATMENT SYSTEM 7
- 4.2 GROUNDWATER EXTRACTION SYSTEM 9
- 4.3 SOIL REMOVAL AND TREATMENT 12
- 4.4 FINAL SITE COVER 14
- 4.5 WELL INSTALLATION AND ABANDONMENT 15

5.0 OPERATION, MAINTENANCE, AND MONITORING PLAN 17

6.0 CONSTRUCTION QUALITY CONTROL AND PERFORMANCE STANDARDS 18
- 6.1 CONSTRUCTION QUALITY CONTROL 18
- 6.2 PERFORMANCE STANDARDS 19
- 6.2.1 Groundwater Treatment System 19
- 6.2.2 Groundwater Extraction System 19
- 6.2.3 Soil Removal and Treatment 20
- 6.2.4 Final Site Cover 20
- 6.2.5 Well Installation and Abandonment 20

7.0 FINAL INSPECTION 22
- 7.1 PRE-FINAL INSPECTION 22
- 7.2 FINAL INSPECTION 22
- 7.3 PRELIMINARY CLOSEOUT REPORT 23

LIST OF FIGURES

		Following Page
FIGURE 2.1	SCHEDULE OF EVENTS	4

LIST OF TABLES

TABLE 2.1	CHRONOLOGY OF EVENTS	4

LIST OF APPENDICES

APPENDIX A	CONSTRUCTION REPORT GROUNDWATER TREATMENT SYSTEM
APPENDIX B	CONSTRUCTION REPORT GROUNDWATER EXTRACTION SYSTEM
APPENDIX C	CONSTRUCTION REPORT SOIL REMOVAL AND TREATMENT
APPENDIX D	CONSTRUCTION REPORT FINAL SITE COVER
APPENDIX E	CONSTRUCTION REPORT WELL INSTALLATION AND ABANDONMENT
APPENDIX F	PRE-FINAL AND FINAL INSPECTION MEETING MINUTES
APPENDIX G	PRELIMINARY CLOSEOUT REPORT

1.0 INTRODUCTION

The United States Environmental Protection Agency (USEPA), Ohio Environmental Protection Agency (OEPA) and Potentially Responsible Parties (PRPs) participated in negotiations leading to the Settling Defendants' agreement in 1988 to perform Remedial Design/Remedial Action (RD/RA) for the Summit National Superfund Site (Site), which work is embodied in a Consent Decree and the Appendices thereto (Consent Decree). The Consent Decree became effective on June 11, 1991.

Pursuant to the Consent Decree, the Settling Defendants have formed the Summit National Facility Trust (SNFT) and have empowered the Trustees to provide for the performance of the RD/RA. Conestoga-Rovers & Associates (CRA) were retained by SNFT as the primary consultant to SNFT for the RD/RA for the Site.

The Site is located at the intersection of Ohio Route 225 and U.S. Route 224, in Deerfield Township of Portage County, Ohio, approximately 45 miles southeast of Cleveland, Ohio, and 20 miles west of Youngstown, Ohio.

In June 1993, CRA submitted the Final Design Report and Remedial Construction Work Plan (RC Work Plan) for the Site to USEPA and OEPA for final approval on behalf of SNFT. These reports presented the final design and construction work plan for the RA to be conducted at the Site. On June 22, 1993, USEPA and OEPA approved the Final Design Report and RC Work Plan for the Site, and granted approval to commence the remedial construction activities at the Site.

The Final Design Report and RC Work Plan provided for implementation of the RC activities in five phases and within time limits as follows:

i) Phase 1 - construction of a groundwater treatment system (GWTS), to be completed within 12 months of approval of the final design submission by USEPA and OEPA;

ii) Phase 2 - construction of a groundwater extraction system (GWES), to be completed within 18 months of approval of the final design submission by USEPA and OEPA;

iii) Phase 3 - soil removal and treatment (SRT), including on-Site treatment of designated soils, drum excavation removal and disposal, underground storage tank (UST) removal and disposal, demolition of on-Site structures, and Site regrading, to be completed within 34 months of approval of the final design submission by USEPA and OEPA;

iv) Phase 4 - construction of a permeable final Site cover, to be completed within 41 1/2 months of approval of the final design submission by USEPA and OEPA; and

v) Phase 5 - abandonment of existing monitoring wells and piezometers, and construction of new monitoring wells, piezometers, extraction wells and a potable water supply well, to be completed within 17 months of approval of the final design submission by USEPA and OEPA.

This Remedial Action Report summarizes the field activities pertaining to Phases 1 to 5 of the RA, and is organized as follows:

i) Section 1.0 - presents the purpose, background information, and layout of the report;

ii) Section 2.0 - presents a chronology of events leading to the completion of the RA at the Site;

iii) Section 3.0 - presents details of the management activities during Phases 1 to 5 of the RA;

iv) Section 4.0 - presents details of the remedial construction activities;

v) Section 5.0 - presents details of the long-term Operation, Maintenance, and Monitoring Plan (OMMP) for the Site.

vi) Section 6.0 - presents details of the performance standards and construction quality control; and

vii) Section 7.0 - presents details of the final Site inspection;

This RA Report has been prepared based on the USEPA Fact Sheet entitled, "Remedial Action Report, Documentation for Operable Unit Completion" dated June 1992 (Publication 9355.0-39FS), as required by USEPA.

2.0 CHRONOLOGY OF EVENTS

A chronology of major events from the effective date of the Consent Decree to completion of the RA is provided on Table 2.1. Figure 2.1 presents a summary comparison of the schedule of events specified in the Consent Decree to the actual schedule of events.

TABLE 2.1

CHRONOLOGY OF EVENTS
REMEDIAL DESIGN/REMEDIAL ACTION

SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Date	*Activity*
Remedial Design	
• June 11, 1991	Effective Date of Consent Decree
• July 26, 1991	SNFT Submitted Remedial Design (RD) Work Plan to USEPA and OEPA
• August 23, 1991	SNFT Submitted Design Criteria Document (DCD) to USEPA and OEPA
• September 20, 1991	USEPA and OEPA Approval of Sediment Removal Interim Response Action Work Plan
• October 1991	Sediment Removal Interim Response Action
• November 14, 1991	OEPA Approval of RD Work Plan
• October to December 1991	Pre-Design Investigations
• June 2, 1992	USEPA Approval of RD Work Plan
• June 4, 1992	SNFT Submitted Preliminary Design Submission to USEPA and OEPA
• September 1992	Foundation Investigation for Groundwater Treatment Building
• November 12, 1992	SNFT Submitted Pre-Final Design Submission to USEPA and OEPA
• March 2, 1993	SNFT Submitted Final Design Submission to USEPA and OEPA
• June 22, 1993	USEPA and OEPA Approval of Final Design Submission
Remedial Action	
• June 30, 1993	SNFT Awarded Contract to Environmental Construction, Inc. (ECI) for Construction of Groundwater Treatment System
• June 30, 1993	SNFT Awarded Contract to Frontz Drilling, Inc. (Frontz) for Well Installation and Abandonment
• July 22, 1993	ECI and Frontz Mobilized to Site to Commence Construction
• November 23, 1993	SNFT Awarded Soil Removal and Treatment Contract to Sevenson Environmental Services (SES)
• December 30, 1993	Completed Phase I, II, and III Well Installation and Abandonment

TABLE 2.1

CHRONOLOGY OF EVENTS
REMEDIAL DESIGN/REMEDIAL ACTION

SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

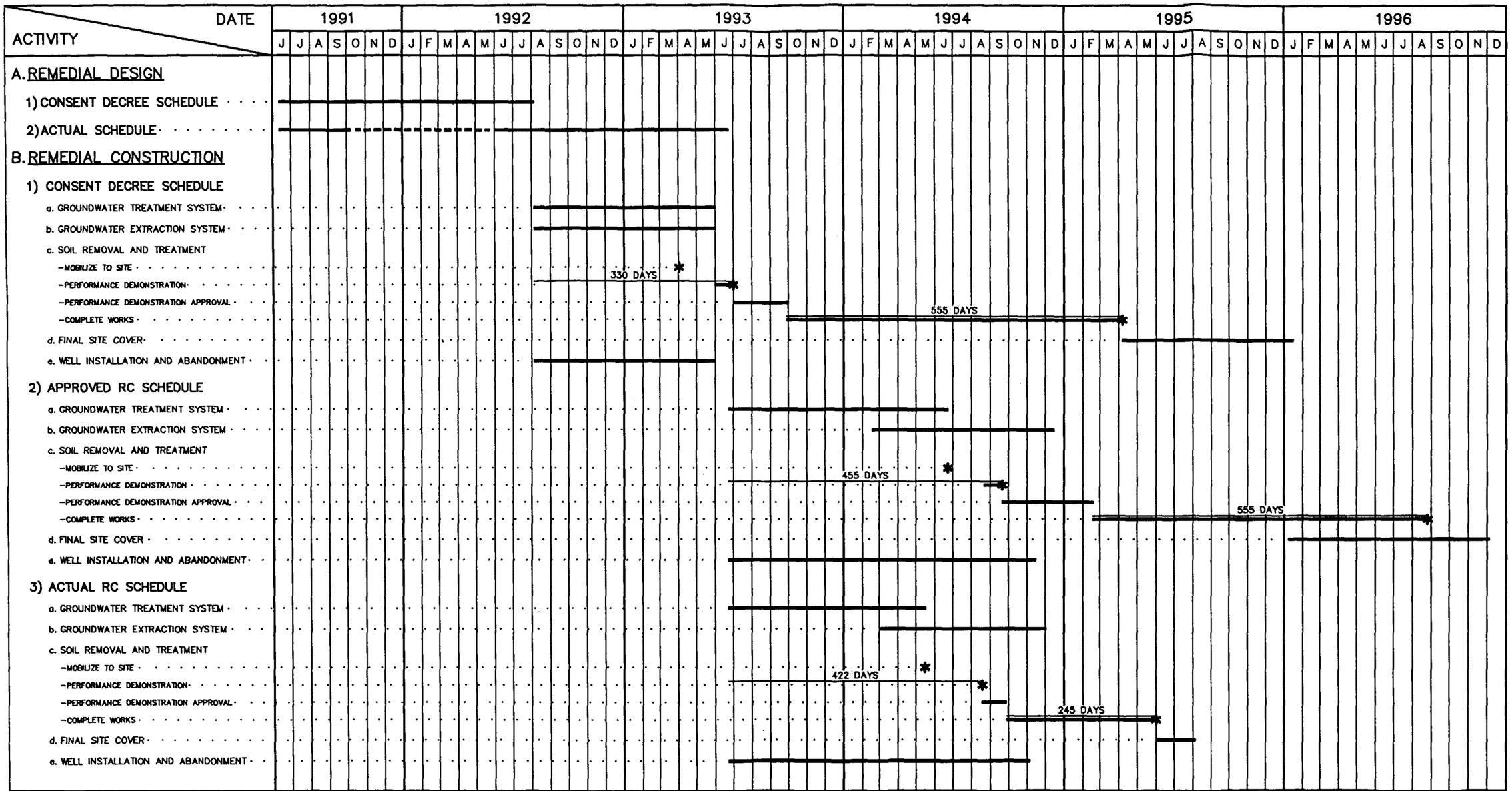
Date	*Activity*
Remedial Action (continued)	
• March 3, 1994	SNFT Awarded Groundwater Extraction System Contract to SES
• March 24, 1994	SES Mobilized to Site to Commence Groundwater Extraction System Construction
• May 5, 1994	SES Commenced Construction Activities Related to Soil Removal and Treatment Contract
• May 16, 1994	Completed Commissioning of Groundwater Treatment System
• May 19, 1994	Obtained USEPA and OEPA Approval to Commence Discharge of Treated Water and Commenced Treatment and Discharge of Surface Water from on-Site East Pond
• June 9, 1994	SNFT Commenced Treatment and Discharge of Groundwater from Wet Well Excavation
• July 25, 1994	Commenced Phase IV Well Installation
• August 15 - 18, 1994	Preliminary Performance Demonstration Burn
• September 8 - 9, 1994	Performance Demonstration Burn
• September 9, 1994	Completed Pipe and Media Drain Installation
• September 26, 1994	USEPA and OEPA Approval to Commence Incineration of On-Site Soils
• September 28, 1994	Commenced On-Site Incineration of Site Soils
• November 7, 1994	Commenced Groundwater Hydraulic Monitoring
• November 7 to 17, 1994	SNFT Conducted Startup Round of Groundwater Sampling
• November 22, 1994	Obtained Revised Inorganic Compound Discharge Limits for the Groundwater Treatment System from OEPA
• December 1, 1994	Commenced Extraction of Groundwater from Intermediate Unit Extraction Wells
• April 3, 1995	Completed on-Site Incineration of Soils
• April 26, 1995	SNFT Submitted Assessment of Groundwater Containment to USEPA and OEPA

TABLE 2.1

CHRONOLOGY OF EVENTS
REMEDIAL DESIGN/REMEDIAL ACTION

SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Date	*Activity*
Remedial Action (continued)	
• May 9, 1995	Shut Down Extraction Wells
• May 15, 1995	SNFT Awarded Contract to D&M Oil Field Services DBA D&M Contracting Co. for Installation of Final Site Cover
• June 1, 1995	Commenced Installation of Final Site Cover
• June 19 to July 18, 1995	Installed Additional Monitoring Wells, Abandoned Extraction Wells
• July 28, 1995	Pre-Final Site Inspection
• August 4, 1995	Completed Installation of Final Site Cover
• August 17, 1995	SNFT Awarded contract to TreaTek-CRA Company for Provision of Operation and Maintenance Services at the Site
• August 23, 1995	Final Site Inspection
• September 8, 1995	TreaTek-CRA Company Commenced Operation and Maintenance of the Site for SNFT
• September 18, 1995	USEPA Preliminary Closeout Report
• November 2, 1995	SNFT Submitted Notice of Completion of Remedial Action, Remedial Action Report, and Operation, Maintenance, and Monitoring Plan to USEPA and OEPA



LEGEND

CONTINUOUS ACTIVITY

DISPUTE RESOLUTION

MILESTONE EVENT

figure 2.1

SCHEDULE OF EVENTS
SUMMIT NATIONAL SUPERFUND SITE
Deerfield, Ohio

CRA

2372 (65) OCT 31/95(W) REV.0 (S-43)

3.0 REMEDIAL ACTION MANAGEMENT

3.1 CONSTRUCTION MANAGEMENT

CRA was retained by SNFT to provide oversight and management of the RA construction activities. CRA's responsibilities included Site supervision, Site inspections, and liaison with the remedial contractors, SNFT, USEPA, OEPA, and adjacent property owners. As a minimum, one CRA representative was on Site for the duration of the RA construction activities.

3.2 REMEDIAL CONTRACTORS

SNFT retained remedial contractors for implementation of the five phases of the RA at the Site. The remedial contractors were selected by a competitive bidding process, and consisted of the following contractors:

	Phase of Construction	*Remedial Contractor*
1.	Groundwater Treatment System	Environmental Construction, Inc., Talmadge, Ohio
2.	Groundwater Extraction system	Sevenson Environmental Services, Inc., Niagara Falls, New York
3.	Soil Removal and Treatment	Sevenson Environmental Services, Inc., Niagara Falls, New York
4.	Final Site Cover	D&M Oilfield Services D.B.A. D&M Construction Co., Randolph, Ohio
5.	Well Installation and Abandonment	Frontz Drilling Co., Wooster, Ohio

The remedial contractors retained subcontractors, as necessary, to perform specialized portions of the RA. Details of the subcontractors retained are presented in Appendices A to E for each phase of the RA, respectively.

3.3 AGENCY OVERSIGHT

Black and Veatch Waste Science & Technology Corporation (B&V) provided oversight activities for USEPA during the RA construction activities. In addition to weekly attendance at the Site by B&V, USEPA and OEPA were kept informed of Site activities through correspondence, weekly and monthly progress meeting minutes, and quarterly progress reports.

3.4 SITE SECURITY

Mid-American Security Services Inc. provided security for the Site premises during all phases of the RC activities at the Site. After covering the Site with the first layer of clean imported final soil cover, security of the Site was maintained by locking unattended Site gates. All workers and visitors were required to sign in and out at the Site entrance every day. Daily Site sign-in sheets have been retained by SNFT.

4.0 REMEDIAL CONSTRUCTION ACTIVITIES

As detailed in Sections 1 and 2, the RA at the Site was performed in five phases. Specific details of each phase of the RA are provided in Appendices A to E and on the As-Recorded Drawings. A summary of the work performed for each phase of the RA is provided below.

4.1 GROUNDWATER TREATMENT SYSTEM

The first phase of the RA to be implemented at the Site, as required by the Consent Decree, was the construction and commissioning of a GWTS at the Site and associated activities. Installation of the groundwater treatment system phase of the RA consisted of the following major activities:

i) contractor procurement and award of contract;

ii) mobilization of labor, plant, materials, and equipment to the Site;

iii) development and implementation of a Site-Specific Health and Safety Plan (HASP) by the selected remedial contractor for construction of the groundwater treatment system;

iv) development of the Site support area including:

a) creation of a clean, level area for location of temporary Site offices, parking, decontamination facility, personnel hygiene facilities, and support trailers;

b) collection and staging of existing on-Site drums at the temporary drum staging areas; and

c) demolition of the coal tipple structure and loading for the sediment stockpile and transporting the material, soil, and debris to temporary staging stockpiles;

v) development of the work area for construction of the GWTS including:

a) rerouting of existing surface water drainage pathway around the work area;

b) excavation of pond sediments from the portion of the east pond entering the work area; and

c) excavation and regrading of the work area, and placing a 6-inch layer of clean imported soil over the work area;

vi) construction of the GWTS including:

a) installation of piles to support the GWTS building;

b) construction of reinforced concrete foundations and floor slabs for the GWTS building;

c) construction of the GWTS building, including process room, electrical control room, laboratory, offices, maintenance room, and a reinforced concrete chemical unloading pad;

d) installation of the GWTS treatment equipment and associated utilities;

vii) construction of the GWTS discharge pipe and rip rap apron;

viii) finishing of the work area including:

a) construction of gravel access roads;

b) importing and placing of clean loam soil and topsoil for the permeable 2-foot thick final Site cover, and seeding, fertilizing, and mulching; and

c) installation of a new access gate in the existing perimeter security fence for permanent access to the GWTS building;

ix) commissioning the GWTS;

x) demobilization of contractors labor, plant, materials and equipment from the Site; and

xi) completed modifications to the groundwater treatment system to enhance the performance and operation and maintenance of the treatment system.

Specific details of the groundwater treatment system construction activities are provided in Appendix A.

4.2 GROUNDWATER EXTRACTION SYSTEM

The second phase of the RA to be implemented at the Site, as required by the Consent Decree, was the construction and commissioning of a GWES at the Site, and associated activities. Installation of the GWES phase of the RA consisted of the following activities:

i) mobilization of labor, plant, materials, equipment, and temporary support facilities to the Site;

ii) development and implementation of a Site-specific Health and Safety Plan by the selected remedial contractor for construction of the GWES;

iii) relocation of the south drainage ditch;

iv) relocation of the south perimeter security fence;

v) partial dewatering of the east pond to facilitate the following activities:

a) removal of a 2-foot depth of pond sediments in Grids 2-8, 3-8, and 4-8, and stockpiling the sediments at the contaminated soil staging area in Grids 2-4, 2-5, and 2-6; and

b) relocation of the east pond retaining berm to west of the GWES work area;

vi) excavation of the top two feet of contaminated soils from Grids 1-9 and 5-9, and from the portions of Grids 4-8, 6-4, 6-6, and 6-7 within the GWES work area, and hauling and temporary stockpiling of these contaminated soils at the contaminated soil staging area in Grids 2-4, 2-5, and 2-6;

vii) importation and placing of two feet of clean common fill in Grids 1-9 and 5-9, and vegetating these grids;

viii) demolition to grade of the Watson House in Grid 1-9 and placing the demolition debris on Site to be used as backfill under the final Site cover;

ix) regrading the alignment of the proposed pipe and media drain to create a level work area;

x) excavation for and installation of the wet well manhole in Grid 6-5, and installation of temporary pumping facilities to the on-Site groundwater treatment facility to facilitate construction of the pipe and media drain;

xi) excavation for placing and backfilling of the pipe and media drain, commencing at the wet well;

xii) excavation for and installation of access manholes along the alignment of the pipe and media drain;

xiii) installation of water and compressed air forcemains, and control and power conduits;

xiv) regrading of the work area to pregrade elevations of the final soil cover;

xv) importation and placing an 18-inch thick clean final soil cover within the GWES work area, and topsoiling and vegetating the work area;

xvi) construction of an on-Site gravel maintenance road;

xvii) construction of the riprap lined east drainage ditch;

xviii) construction of extraction well chambers to enclose the extraction wells and extraction well mechanical and electrical components;

xix) installation of mechanical and electrical components for the extraction wells, wet well, and access manholes;

xx) commissioning the completed GWES and GWTS; and

xxi) demobilization of labor, plant, materials, and equipment from the Site.

Based on an evaluation of the effectiveness of the groundwater extraction system after operation of the extraction wells for a period of five months, as discussed in Section 6.2.2, the extraction well pumps were shut down on May 9, 1995 and were either converted to monitoring wells or abandoned, and additional monitoring wells were installed at the Site.

Specific details of the groundwater extraction system remedial construction activities are provided in Appendix B.

4.3 SOIL REMOVAL AND TREATMENT

The third phase of the RA to be implemented at the Site, as required by the Consent Decree, was the soil removal and treatment and associated activities. The soil removal and treatment phase of the RA consisted of the following activities:

i) preparation and submission of submittals by the Contractor selected to perform the soil removal and treatment activities describing design details in addition to those provided in the Final Design Report and RC Work Plan, for review and approval of USEPA and OEPA;

ii) development, implementation, and maintenance of a Site-specific Health and Safety Plan;

iii) operation and maintenance of an equipment decontamination facility, contaminated soil staging area, personnel decontamination facility, drum staging area, Site offices, emergency first-aid facility, mobile wastewater treatment facility, and sanitary facilities;

iv) air modeling to determine the impact of incinerator emissions on ambient air;

v) design, supply, and on-Site installation and shakedown of a mobile incinerator;

vi) completion of a performance demonstration of the mobile incinerator;

vii) demolition and on-Site disposal of existing utility poles, buried pipe, abandoned incinerator, sheds, OEPA trailer, abandoned weigh scale and buildings, abandoned truck, and other miscellaneous structures and objects;

viii) emptying and on- or off-Site treatment, as determined by on-Site groundwater treatment system capability, of contents of underground storage tanks;

ix) removal, dismantling, and on-Site disposal of abandoned underground storage tanks;

x) in place abandonment of two underground concrete tanks;

xi) excavation and on-Site incineration of visibly contaminated soil from a stockpile in Grid No. 5-5 generated by USEPA/OEPA during a previous emergency cleanup, and on-Site backfilling of soil from the same stockpile that was not visibly contaminated;

xii) excavation, overpacking, sampling, fingerprinting, characterization, waste handling, preparation, and off-Site treatment/disposal of buried drums/containers and their contents;

xiii) excavation and on-Site incineration of visibly contaminated soil immediately associated with excavated drums and containers and around or below excavated underground storage tanks;

xiv) excavation and on-Site incineration of the upper two feet of soil in designated grids;

xv) excavation, handling, consolidation, and on-Site incineration of soils and sediments (which include the top two feet of soils from Grid Nos. 1-9 and 5-9, parts of Grid Nos. 6-4, 6-6, 6-7, and 4-8, and sediments from the east part of the East Pond) stockpiled in the contaminated soil staging area by the groundwater extraction system contractor;

xvi) emptying drill cuttings contained in drums generated by USEPA/OEPA during previous investigations of the Site and staged by the groundwater treatment plant contractor on the contaminated soil staging area, crushing emptied drums, removing soil samples

and jars from on-Site storage shed (Grid No. 1-1) and OEPA trailer (Grid No. 1-2), and backfilling all on the Site;

xvii) removal of water from the East and West Ponds and on-Site treatment of removed water at the on-Site groundwater treatment plant;

xviii) excavation and on-Site incineration of upper two feet of sediments from the East and West Ponds;

xix) on-Site backfilling and compaction of incinerated soils and sediments;

xx) construction of protective concrete casing around existing on-Site wells and piezometers;

xxi) regrading the Site to the base of the final soil cover; and

xxii) project closeout including:

a) decommissioning of incinerator and associated facilities,
b) final decontamination of all Site equipment and facilities, and
c) demobilization from Site.

Specific details of the soil removal and treatment construction activities are provided in Appendix C.

4.4 FINAL SITE COVER

The fourth phase of the RA to be implemented at the Site, as required by the Consent Decree, was the construction of a permeable final soil Site cover. The final Site cover phase of the RA consisted of the following activities:

i) mobilization of labor, plant, materials, equipment, and support facilities to the Site;

ii) development and implementation of a Site-specific Health and Safety Plan to address safety requirements for installation of the remaining final soil cover at the Site by the selected remedial contractor;

iii) importation and placement of 18 inches of clean sandy loam;

iv) importation and placement of six inches of clean topsoil to complete the 24-inch final Site cover;

v) establishing a vegetative cover on the final soil cover; and

vi) demobilization of labor, plant, materials and equipment from the Site.

In addition to the final Site cover activities specified in the Final Design Report, the off-Site road drainage ditches between the adjacent west and north asphalt roads and the Site security fence were regraded, topsoiled, and seeded.

Specific details of the final Site cover construction activities are provided in Appendix D.

4.5 WELL INSTALLATION AND ABANDONMENT

The fifth phase of the RA to be implemented at the Site, as required by the Consent Decree, was the installation and abandonment of monitoring wells, piezometers, extraction wells and a potable water supply well at the Site, and associated activities. The well installation and abandonment initial scope of work as detailed in the Final Design Report and RC Work Plan consisted of the following major activities:

i) mobilization of labor, plant, materials, and equipment to the Site;

ii) development and implementation of a Site-specific Health and Safety Plan by the selected drilling contractor for abandonment/installation of piezometers, monitoring wells, and extraction wells;

iii) installation of the potable water supply well in Grid 1-7, and closing and abandoning the Tipple Well in Grid 2-3, piezometer P1-6 in Grid 1-6, and monitoring well MX-1 in Grid 1-8, prior to commencement of the groundwater treatment system phase of the RA;

iv) installation of new monitoring wells and piezometers both on and off Site;

v) abandonment of existing monitoring wells and piezometers both on and off Site;

vi) installation of extraction wells adjacent to the pipe and media drain;

vii) adjustment of the surface casings of the four existing wells to remain, to compensate for the change in final ground elevations; and

viii) demobilization of labor, plant, materials, and equipment from the Site.

In addition to the scope of work specified in the final design submission, based on an evaluation of the effectiveness of the groundwater extraction system after operation of the extraction wells for a period of five months, as discussed in Section 6.2.2, the extraction wells were abandoned or converted to monitoring wells and 12 additional monitoring wells were installed.

Specific details of the well installation and abandonment activities are provided in Appendix E.

5.0 OPERATION, MAINTENANCE, AND MONITORING PLAN

The Draft OMMP presented as Appendix L of the RC Work Plan was revised to include the as-constructed details of the RA activities. The OMMP includes for the long-term operation, maintenance, and monitoring of six subsystems at the Site as follows:

i) groundwater extraction/collection subsystem;
ii) groundwater treatment subsystem;
iii) treated water discharge subsystem;
iv) computer subsystem;
v) building subsystem; and
vi) Site cover subsystem.

Details of the operation, maintenance, and monitoring of these subsystems are included in the final OMMP submitted to USEPA and OEPA under separate cover.

In addition to the above subsystems, the OMMP also includes the long-term groundwater quality and hydraulic monitoring program for the Site. The long-term groundwater quality and hydraulic monitoring commenced at the Site in November 1994, prior to commencement of groundwater extraction from the groundwater extraction wells.

Upon completion of the work performed for each phase of the RA, the essential requirements of the OMMP were respectively implemented.

6.0 CONSTRUCTION QUALITY CONTROL AND PERFORMANCE STANDARDS

6.1 CONSTRUCTION QUALITY CONTROL

Construction quality control was provided during all phases of remedial construction in accordance with the Remedial Construction Quality Assurance Project Plans (RC QAPPs) included in the USEPA and OEPA approved RC Work Plan for the Site. Specific details of construction quality control testing for each phase of the remedial construction are provided in Appendices A to E. In addition to the subcontractors retained by the remedial contractors, SNFT retained the following subcontractors to perform specific quality control testing activities at the Site:

Testing	*Contractor*
Geotechnical and Concrete	• R&R International, Akron, Ohio
Air Analytical	• Schrader Analytical and Consulting Laboratories Inc. Detroit, Michigan
Soil Analytical	• Bowser-Morner, Dayton, Ohio • Haliburton-NUS Laboratory, Pittsburgh, Pennsylvania • Quanterra, Canton, Ohio
Water Analytical	• Halliburton-NUS Laboratory, Pittsburgh, Pennsylvania
Final Site Survey and Monitoring Well Survey	• Wellert Corporation Wadsworth, Ohio

Survey control was provided by each remedial contractor and was confirmed by CRA on-Site personnel.

In accordance with the RC QAPPs, Construction Quality Control Logs were completed by the remedial contractors and submitted to CRA on-Site personnel on a daily basis. The daily Construction Quality Control Logs have been retained by SNFT.

6.2 PERFORMANCE STANDARDS

Performance standards specified in the final design submissions were met during all phases of the remedial action as detailed below.

6.2.1 Groundwater Treatment System

Based on the May 18, 1994 Substantive Permit issued by OEPA for the Site and the OEPA November 22, 1994 revised effluent limits for the Site, the groundwater treatment system is performing as expected, and generally better than expected. Groundwater treatment system effluent reports have been submitted to USEPA and OEPA in accordance with the OEPA Substantive Permit for the Site.

6.2.2 Groundwater Extraction System

SNFT submitted an evaluation of the groundwater extraction system to USEPA and OEPA on April 26, 1995. Based on the evaluation of the groundwater extraction system evaluation, the pipe and media drain is effectively containing the Site-related groundwater in the Water Table Unit (WTU) at the south Site boundary and the southern portions of the east and west Site boundaries, as required by the Consent Decree. However, the extraction wells installed in the Intermediate Unit (IU) and commissioned on December 1, 1994 were not providing an effective horizontal area of capture to contain groundwater in the IU at the Site boundary due to the now demonstrated low permeability of the IU. In addition, the extraction wells were or would in the long-term, draw contaminants from the WTU into the IU, along portions of the pipe and

media drain. The April 26, 1995 evaluation also concluded that the groundwater drawdown created by the pipe and media drain in the WTU induces a natural upward gradient from the IU to the pipe and media drain. Based on the April 26, 1995 evaluation and discussions with SNFT and CRA, USEPA and OEPA approved the shutdown of the extraction wells at the Site (verbally on May 3, 1995 and letter dated May 11, 1995).

6.2.3 Soil Removal and Treatment

Based on the successful incineration performance demonstration conducted at the Site from September 8 and 9, 1994 as reported to USEPA and OEPA in the Performance Demonstration Report dated September 23, 1994, full-scale incineration of specified Site soils commenced in September 28, 1994. All soils specified to be treated were incinerated at the Site during the period September 28, 1994 to April 3, 1995. Analytical results of the treated soils, incinerator performance standards, and air monitoring conducted at the Site, as further detailed in Appendix C, indicate that all performance standards specified for the on-Site soil treatment were attained.

6.2.4 Final Site Cover

The final Site cover, consisting of 18 inches of sandy loam and 6 inches of topsoil, provides a permeable final Site cover as specified for the Site. Specific details of the final Site cover are provided in Appendix D.

6.2.5 Well Installation and Abandonment

Based on the results of the groundwater quality and hydraulic monitoring program conducted at the Site and reported to USEPA and OEPA on February 1, 1995 (Startup Round of Groundwater Monitoring), April 26, 1995 (Assessment of Groundwater Containment) and August 24, 1995 (Hydraulic Monitoring and Second Round of Groundwater Quality Monitoring), the monitoring wells and piezometers installed at the Site

provide adequate data for assessment of the groundwater remedial component of the RA. However, based on shutting down the extraction wells as discussed in Section 6.2.2, additional monitoring wells were installed on and off Site in June and July 1995 to provide better definition of the groundwater in the IU and the Upper Sharon Unit. Monitoring of the monitoring wells and piezometers will continue in accordance with the operation, maintenance, and monitoring requirements for the Site as further detailed in Section 5.

7.0 FINAL INSPECTION

7.1 PRE-FINAL INSPECTION

On July 28, 1995, USEPA and OEPA conducted a pre-final RA Site inspection. Attendees at the pre-final RA Site inspection were as follows:

Name	*Representing*
Anthony Rutter	USEPA
Regan Williams	OEPA
Richard McAvoy	B&V (USEPA's oversight contractor)
Gary Gifford	SNFT
Jack Michels	CRA
Stephen Hayle	CRA

Minutes of the pre-final RA Site inspection were prepared by CRA and distributed to all attendees. A copy of the pre-final RA Site inspection minutes are included in Appendix F. The only deficiency noted during the pre-final RA Site inspection was the 7-foot high perimeter Site security fence (an 8-foot high fence is specified in the Consent Decree). Based on a letter to USEPA and OEPA dated August 10, 1995, USEPA and OEPA approved the 7-foot high perimeter security fence at the Site.

7.2 FINAL INSPECTION

On August 23, 1995, USEPA and OEPA conducted a final RA Site inspection. Attendees at the final RA Site inspection were as follows:

Name	*Representing*
Anthony Rutter	USEPA
Regan Williams	OEPA
Richard McAvoy	B&V
Gary Gifford	SNFT

Jack Michels	CRA
Stephen Hayle	CRA

Minutes of the final RA Site inspection were prepared by CRA and distributed to all attendees. A copy of the final RA Site inspection minutes are included in Appendix F. No deficiencies in the RA were identified during the final RA Site inspection and the RA was considered completed.

7.3 PRELIMINARY CLOSEOUT REPORT

Based on the pre-final and final inspections detailed in Section 7.1 and 7.2, respectively, USEPA prepared a Preliminary Closeout Report dated September 18, 1995 for the Site. A copy of the Preliminary Closeout Report is included in Appendix G.

A

APPENDIX A

CONSTRUCTION REPORT
GROUNDWATER TREATMENT SYSTEM

FINAL CONSTRUCTION REPORT
GROUNDWATER TREATMENT SYSTEM

Summit National Superfund Site
Deerfield Township of Portage County, Ohio

OCTOBER 1995
REF. NO. 2372 (60)
This report is printed on recycled paper.

CONESTOGA-ROVERS & ASSOCIATES

TABLE OF CONTENTS

Page

1.0 INTRODUCTION 1

2.0 SCOPE OF WORK 3

3.0 SITE PERSONNEL 6
- 3.1 CONSTRUCTION MANAGEMENT 6
- 3.1.1 Testing and Inspecting 6
- 3.1.2 Process Control 6
- 3.2 CONTRACTOR 6
- 3.3 AGENCY OVERSIGHT 7
- 3.4 SITE SECURITY 7

4.0 MOBILIZATION AND DEMOBILIZATION 8

5.0 SITE PREPARATION 9
- 5.1 CLEARING AND GRUBBING 9
- 5.2 DRUM STAGING 9
- 5.3 COAL TIPPLE 10
- 5.4 VEHICLE DECONTAMINATION FACILITY 10
- 5.5 RELOCATION OF SEDIMENT AND RUBBLE STOCKPILES 10

6.0 EARTHWORKS 11
- 6.1 WORK AREA 11
- 6.2 ROAD DRAINAGE DITCH REGRADING 11

7.0 GROUNDWATER TREATMENT SYSTEM 13
- 7.1 PILED FOUNDATIONS 13
- 7.2 CONCRETE FOUNDATIONS AND SLABS AND UNDER FLOOR UTILITIES 13
- 7.3 BUILDING 14
- 7.4 GWTS EQUIPMENT 15
- 7.5 TREATED WATER DISCHARGE SYSTEM 16

8.0 COMMISSIONING AND STARTUP 18
- 8.1 COMMISSIONING PLAN AND STARTUP 18
- 8.2 STATIC TESTING 18
- 8.3 OPERATIONAL TESTING 19

9.0 TREATMENT SYSTEM PERFORMANCE AND EVALUATION 20
- 9.1 TREATMENT SYSTEM PERFORMANCE 20
- 9.1.1 Operational Difficulties 21
- 9.1.2 Effluent Monitoring 22

TABLE OF CONTENTS

Page

9.2 TREATMENT SYSTEM EVALUATION 24
9.3 OPERATION AND MAINTENANCE ACTIVITIES 25
9.4 MODIFICATIONS 26
9.4.1 Polymer Addition 26
9.4.2 Sludge Management 27
9.4.3 Noise Barrier 28
9.4.4 Work Platforms 28
9.4.5 Bag Filters 28
9.4.6 GAC Backwash 28
9.4.7 Wet Well Level Control 29
9.4.8 Laboratory Furniture 29
9.5 OPERATION, MAINTANCE, AND MONITORING 29

10.0 HEALTH AND SAFETY 31

LIST OF TABLES

		Following Text
TABLE 1.0	AS RECORDED DRAWINGS	

LIST OF APPENDICES

ATTACHMENT A	APPROVALS AND OEPA SUBSTANTIVE PERMIT
ATTACHMENT B	PERMITS
ATTACHMENT C	PILE DRIVING SUMMARY
ATTACHMENT D	GEOTECHNICAL DATA
ATTACHMENT E	CONCRETE TESTING REPORTS
ATTACHMENT F	COMMISSIONING PLAN

1.0 INTRODUCTION

The Final Construction Report contained herein is included as Attachment A of the Remedial Action Report (RA Report) for the Summit National Superfund Site (Site) in Deerfield, Ohio, and summarizes the field activities pertaining to Phase 1 of the RA, namely, the construction and start-up of the Groundwater Treatment System (GWTS) at the Site. Construction of the GWTS and related activities commenced on July 22, 1993 and was substantially completed on May 16, 1994, 37 days ahead of the United States Environmental Protection Agency (USEPA) and Ohio Environmental Protection Agency (OEPA) approved Remedial Construction (RC) schedule. Treatment and off-Site discharge of pond and construction related surface water commenced on May 19, 1994 in accordance with the OEPA May 18, 1994 Substantive Permit for the Site (included in Attachment A) and as approved by USEPA and OEPA. USEPA and OEPA approval to commence discharge of treated water was confirmed by CRA in a letter dated May 19, 1994 (included in Attachment A).

During the first 15 months of operation from May 1994 to September 1995 (interim operation of the plant during which time the groundwater extraction system was constructed, the soil excavation and thermal treatment was completed, and the Site cover was constructed), the treatment plant continued to treat extracted groundwater and collected on-Site surface water. During the interim operation period, the performance of GWTS was evaluated to determine treatment effectiveness and modifications to the treatment system were undertaken to enhance the operation of the groundwater treatment system.

This report is organized as follows:

i) Section 1.0 - presents the purpose, background information and layout of the final construction report;

ii) Section 2.0 - outlines the scope of work performed for construction of the GWTS;

iii) Section 3.0 - presents details of the Site management during the construction of the GWTS;

iv) Section 4.0 - presents details of the mobilization and demobilization activities;

v) Section 5.0 - presents details of the Site preparation;

vi) Section 6.0 - presents the earthwork activities for preparation of the work area and Site drainage systems;

vii) Section 7.0 - presents details of the construction of the GWTS building, the installation of the groundwater treatment equipment and process controls, and installation of the treated water discharge system;

viii) Section 8.0 - presents details of the commissioning and startup activities;

ix) Section 9.0 - outlines the GWTS performance and evaluation, the operation and maintenance activities conducted during the interim operation period, including, the modifications to the GWTS equipment to enhance the operation of the Site and Manning requirements; and

x) Section 10.0 - presents the health and safety activities for the construction of the GWTS.

A set of As-Recorded Drawings which show the as-constructed details for the GWTS are included as an attachment with this report, and consist of the drawings presented on Table 1.0.

2.0 SCOPE OF WORK

The first phase of the RA to be implemented at the Site, as required by the Consent Decree, was the construction and commissioning of a GWTS at the Site. The USEPA and OEPA approved RC schedule required the GWTS to be constructed and commissioned within 12 months of USEPA and the OEPA approval of the Final Design Report for the Site.

Installation of the GWTS phase of the RA consisted of the following activities:

i) contractor procurement and award of contract;

ii) mobilization of labor, plant, materials and equipment to the Site;

iii) development and implementation of a Site-Specific Health and Safety Plan (HASP) by the selected remedial contractor for construction of the GWTS;

iv) development of the Site support area including:

   a) creation of a clean, level area for location of temporary Site offices, parking, decontamination facility, personnel hygiene facilities and support trailers;

   b) collection and staging of existing on-Site drums at the temporary drum staging areas; and

   c) demolition of the coal tipple structure and loading for the sediment stockpile and transporting the material, soil, and debris to temporary staging stockpiles;

v) development of the work area for construction of the GWTS including:

   a) rerouting of existing surface water drainage pathway around the work area;

b) excavation of pond sediments from the portion of the east pond entering the work area; and

c) excavation and regrading of the work area, and placing a 6-inch layer of clean imported soil over the work area;

vi) construction of the GWTS including:

a) installation of piles to support the GWTS building;

b) construction of reinforced concrete foundations and floor slabs for the GWTS building;

c) construction of the GWTS building, including process room, electrical control room, laboratory, offices, maintenance room and a reinforced concrete chemical unloading pad; and

d) installation of the GWTS treatment equipment and associated utilities;

vii) construction of the GWTS discharge pipe and riprap apron;

viii) finishing of the work area including:

a) construction of gravel access roads;

b) importing and placing of clean loam soil and topsoil for the permeable 2-foot thick final Site cover, and seeding, fertilizing and mulching; and

c) installation of a new access gate in the existing perimeter security fence for permanent access to the GWTS building;

ix) commissioning the GWTS; and

x) demobilization of labor, plant, materials and equipment from the Site.

3.0 SITE PERSONNEL

3.1 CONSTRUCTION MANAGEMENT

CRA was retained by SNFT to provide construction management for the construction of the GWTS. CRA's responsibilities included Site supervision, Site inspections, and liaison with the remedial contractor, SNFT, USEPA, and OEPA. A representative from CRA was on Site for the entire duration of the construction activities.

3.1.1 Testing and Inspecting

Huntingdon/Empire Soils Investigations, Inc. (Empire) of Groton, New York was retained by SNFT, under the direction of CRA, for inspection and approval of the foundation conditions of the GWTS building. R&R International (R&R) of Akron, Ohio was retained by SNFT, under the direction of CRA, to provide geotechnical and concrete testing services.

3.1.2 Process Control

Anik Systems Ltd. (Anik) of Toronto, Ontario was retained by SNFT, under the direction of CRA, to provide programming services for the programmable logic control system for the operation of the GWTS, as well as to assist with the control commissioning of the GWTS.

3.2 CONTRACTOR

Environmental Construction Inc. (ECI) of Tallmadge, Ohio, was retained by SNFT as the remedial contractor for the construction of the GWTS. ECI, as general contractor, retained various subcontractors to install the treatment building, groundwater treatment equipment, and install the required ancillary equipment including piping, fittings, valves, electrical components and controls. A listing of subcontractors retained by ECI to

perform specific components of the GWTS remedial construction were as follows:

i) W.M. Brode Co., of Newcomerstown, Ohio (steel piling subcontractor);
ii) Akron Concrete of Akron, Ohio (concrete subcontractor);
iii) Wolfe Electric & Construction, Inc. of Mogadore, Ohio (electrical subcontractor);
iv) Central Technology Company of North Canton, Ohio (instrumentation subcontractor);
v) Kline & Kavali of Kent, Ohio (mechanical subcontractor);
vi) Freedom Iron Works of Akron, Ohio, and Keller-Hall Erectors of Akron, Ohio, (prefabricated steel building erectors); and
vii) Behlen Building Corp. of Nebraska (prefabricated metal building supplier).

3.3 AGENCY OVERSIGHT

Black and Veatch Waste Science and Technology Corporation (B&V) provided oversight activities for USEPA during the construction activities. In addition to weekly attendance at the Site by B&V, USEPA and OEPA were kept informed of Site activities through correspondence, weekly progress meeting minutes, monthly progress meetings and quarterly progress reports.

3.4 SITE SECURITY

Mid-American Security Services Inc. provided security for the Site premises during all RC activities at the Site. All workers and visitors were required to sign in and out at the Site entrance every day. Daily Site sign-in sheets have been retained by SNFT.

4.0 MOBILIZATION AND DEMOBILIZATION

ECI mobilized personnel, tools, equipment, and materials to the Site on July 22, 1993, after being given the Notice to Proceed on June 30, 1993. The support area was regraded and office trailers and utility hookups were installed in the Site support area by ECI. A gravel access road and parking area also were constructed in the Site support area by ECI during mobilization.

ECI decontaminated and demobilized their heavy equipment from the Site in December 1993. Demobilization of the remaining equipment from the Site was completed during the week of May 17, 1994.

5.0 SITE PREPARATION

5.1 CLEARING AND GRUBBING

Prior to commencing clearing and grubbing, the work areas and exclusion zones within Grids 1-3, 1-4, 1-5, 1-6, 1-7, 1-8, 2-3, 2-6, 2-7, 2-8, 4-1, 4-2, 5-2, 5-3, and 6-3 were delineated, and the work area and Site support area were surveyed by ECI. Delineation of the Grids is shown on Drawing C2. Clearing and grubbing operations within Grids 1-3, 2-3, 3-3, 2-3 (site support area) and Grids 1-6, 1-7, 1-8, 2-7 (work area) commenced on July 22, 1993 and continued through to July 31, 1993. All cleared and grubbed materials were transferred to Grid 4-2 for disposal under the final Site cover. Chainsaws were used to reduce the larger diameter trees into manageable pieces. The clearing was accomplished with a Cat D-5 dozer which pushed the grubbed material and debris to the old coal tipple, where it was loaded with a Cat 225 shovel into a dump truck and transferred to the debris/rubble stockpile area. Following the clearing and leveling of the Site support area, a 6-inch layer of imported crushed gravel was placed to provide a clean area for the parking of personnel vehicles and the Site support offices.

5.2 DRUM STAGING

Prior to commencing the demolition of a portion of the coal tipple, ECI relocated approximately 60 drums containing soil cuttings, decontamination wastewater and used personal protective equipment (PPE) that had been left on Site from previous remedial work activities. Drum staging activities were carried out in Level C PPE. The drums were transferred using a forklift truck with sling attachment onto wooden pallets where they were secured for transfer. The pallets were then transferred by the forklift truck to Grid 2-4 for temporary storage.

5.3 COAL TIPPLE

The eastern half of the coal tipple in Grid 2-3 was demolished on July 26 and 27, 1993 to facilitate construction of the vehicle decontamination facility. A PC400 excavator with a hydraulic hammer attachment was used to break up the concrete foundation. The Cat 225 shovel then excavated and loaded the debris into a dump truck which then transferred the material to the stockpile placement area in Grid 4-2.

5.4 VEHICLE DECONTAMINATION FACILITY

ECI constructed a reinforced concrete vehicle decontamination facility complete with a 4-foot by 4-foot sump in Grid 2-3 for the decontamination of vehicles and equipment used for the RC activities, commencing on July 29, 1993. Concrete was placed for the slab on August 9, 1993 and for the approach slabs on August 10, 1993. Installation of a 1 1/4-inch High Density Polyethylene (HDPE) forcemain water service from the on-Site potable well was completed on August 27, 1993. Details of the vehicle decontamination facility are presented on Drawing C5.

5.5 RELOCATION OF SEDIMENT AND RUBBLE STOCKPILES

ECI loaded and hauled the existing sediment stockpiles in Grids 1-6, 1-7 and 2-7, and the rubble/grubbing stockpile in Grid 2-7 to the stockpile area in Grids 4-1, 4-2, 5-2 and 6-3, from July 25 to 27, 1993. The stockpile area is delineated on Drawing C2.

6.0 EARTHWORKS

6.1 WORK AREA

Excavation and regrading of the work area to subgrade elevation and placement of clean imported soil over the regraded work area to provide a clean work surface commenced on July 27, 1993 and was completed on August 6, 1993. From August 6 to 13, 1993, ECI rerouted the existing surface water drainage pathway through Grid 2-7 by excavating a drainage swale along the south and west side of the work area in Grids 1-6 and 2-6, to divert any surface water runoff away from the work area and into the east pond.

Dewatering of the east pond was not required during the construction activities as the east pond water levels remained low enough to allow work to proceed without the need to dewater the east pond. Pond sediments that were within the work area in Grids 2-7 and 2-8 were excavated and transferred to the contaminated soil staging area.

Parking areas received a 12-inch thick layer of loam, over which was laid a 12-inch thick layer of crushed limestone (ODOT#4). Landscaped areas received an 18-inch thick layer of loam, over which was laid a 6-inch layer of topsoil. Landscaping of the work areas, complete with topsoil and seeding, was completed by October 24, 1993.

6.2 ROAD DRAINAGE DITCH REGRADING

CRA obtained approval from the Ohio Department of Transportation (ODOT) on December 2, 1993 to regrade the ditch on the north side of the Site along U.S. Route 224. ECI commenced ditch regrading operations on December 6, 1993 and completed the ditch regrading on December 8, 1993. Included in Attachment B, is a copy of the Road Allowance Work Permit issued by ODOT for the ditch regrading. Approximately 350 cubic yards of material was excavated from the road drainage ditch and

stockpiled in Grid 1-1. This material was used for fill under the final Site cover.

7.0 GROUNDWATER TREATMENT SYSTEM

7.1 PILED FOUNDATIONS

Construction of the GWTS building commenced with the installation of the H-piles by W.M. Brode Co. (Brode) on August 16, 1993 and was completed on August 19, 1993. Brode mobilized a diesel pile driver to the Site to advance the piles into the bedrock at the locations and orientation required by the design. The piles were then cut to the required elevation to ensure proper embedment in the reinforced concrete grade beams and floor slabs. A copy of the pile driving summary is included in Attachment C and the pile locations and orientations are shown on Drawing C8.

After installation of the H-Piles, proofrolling of the excavated foundation was performed on August 19, 1993 and observed by Empire. An additional 12 inches of soft subgrade material was removed from the south east corner of the excavation in the vicinity of the old drainage swale and was backfilled with structural fill. To protect the subgrade from construction traffic and to keep the work area clean, a 12- to 29-inch lift of crushed stone (ODOT#4) then was placed and compacted within the treatment building footprint.

Once the foundation walls for the treatment building were installed, backfilling outside the treatment building footprint up to the required subgrade with native material and compacting the native material was completed and the work area was then covered with imported loam final soil cover.

7.2 CONCRETE FOUNDATIONS AND SLABS AND UNDER FLOOR UTILITIES

Akron Concrete (Akron) formed the concrete grade beams from August 30 to October 1, 1993. Akron first placed a concrete working surface at grade for the layout and forming of the grade beams. After placing one side of the pre-designed forms, Akron installed the steel reinforcing bars in accordance with the design. The forms were then closed, plumbed and

leveled. The concrete for the grade beams was placed on September 23 and October 1, 1993. The forms were stripped on September 28 and October 4, 1993, respectively. ECI commenced backfilling and compaction of the structural granular fill between the grade beams from September 28 to October 4, 1993.

Kline and Kavali then installed the under-floor plumbing for the sinks, toilet and shower in the washroom. Following the inspection of the under floor plumbing by the Portage County building inspector, backfilling was completed in the office area, and the office concrete floor slab was placed on October 19, 1993.

Upon completion of the backfilling within the grade beams on October 15, 1993, Akron formed and placed the individual reinforced concrete floor slabs for the carbon adsorbers and for the bio-tower on October 21, 1993. Akron then formed and placed the remaining reinforced concrete slab-on-grade treatment plant floors. Reinforcing cross ties connecting the slab-on-grade to the grade beams were embedded in the concrete to transfer the lateral loads imposed on the grade beams by the pre-engineered building system. Once the floor slabs were completed, Akron formed and placed the reinforced concrete wall for the containment cell for the acid and caustic storage tanks.

Akron formed and placed the concrete for the exterior parking slab, door landings and chemical unloading pad on May 3, 1994.

A copy of the geotechnical testing data and concrete testing reports are included in Attachments D and E, respectively. The as-constructed details of the GWTS foundation and floor are shown on Drawing C10.

7.3 BUILDING

Based on a proposal by ECI, SNFT substituted an equivalent pre-engineered steel building for the engineered building concept shown in the Final Design Report. The pre-engineered steel building was delivered to the Site on November 22, 1993. Erection of the steel building by

Freedom Iron Works commenced on December 1, 1993. Freedom Iron Works were replaced by Keller-Hall Erectors on February 18, 1994 due to non-performance, and Keller-Hall Erectors continued and completed the erection of the building. The exterior wall and roof paneling were completed on March 2, 1994, and the interior wall panels of the plant were completed on March 23, 1994.

Once the exterior of the building was enclosed, the office partitions were erected and the related mechanical and electrical services were roughed in. The installation of the grid for the suspended ceiling, lights and ventilation diffuser, ceiling tiles, and painting of the office partitions and doors were completed by April 6, 1994. ECI continued with the installation of interior and exterior trim, as well as repairing and completing punch list items until May 6, 1994.

In accordance with Section 6.5 of the Final Design Report, relevant construction permits were acquired. Copies of the permits, which include the Zoning Permit, the Building Occupancy Permit Building and Permits for Plumbing, Heating/Ventilating and Air Conditioning, Septic System and Electrical Work, as issued by the Portage County Division of Building Inspection, are presented in Attachment B. The building occupancy permit was issued by the Portage County Building Inspector on June 1, 1994, a copy of which also is included in Attachment B.

7.4 GWTS EQUIPMENT

During the period of August 1, 1993 through February 28, 1994, the groundwater treatment equipment was sourced by ECI from various suppliers. ECI submitted shop drawings and equipment information to CRA for review and approval prior to final ordering and fabrication. The major equipment items delivered and installed on Site are as follows:

Description	Supplier	Delivery Date	Installation Date
• bio-tower	Lancey/US Filter Corp.	Oct. 29/93	Oct. 29/93
• carbon adsorbers	Encotech	Nov. 22/93	Nov. 22/93
• acid tank	Edwards	Feb. 28/94	Mar. 21/94
• caustic tank	Adamson	Mar. 28/94	Mar. 29/94
• equalization/aeration tank	Edwards	Feb. 28/94	Mar. 21/94
• inclined plate settler	Parkson	Dec. 23/93	Mar. 23/94
• sand filter	Parkson	Dec. 23/94	Mar. 26/94
• sludge tank	Nalgene	Jan. 14/94	Apr. 8/94
• sludge dewatering	Draimad	Mar. 15/94	Apr. 27/94
• surge tanks 2 and 3	Nalgene	Jan. 14/94	Mar. 21/94
• surge tank 1	Edwards	Feb. 28/94	Mar. 21/94

Installation of all related electrical and mechanical connections continued through to May 3, 1994. Vapor phase carbon adsorbers were installed on the equalization/aeration tank and the biotower vapor discharges, as specified in Section 6.2 of the Final Design Report. Vapor phase carbon adsorbers were not installed on the inclined plate settler and the sand filter, as specified in Section 6.2 of the Final Design Report. Details of the GWTS equipment installed are presented on Drawing C16.

7.5 TREATED WATER DISCHARGE SYSTEM

The treated water discharge system from the GWTS building was installed on October 6 and 7, 1993. The 6-inch diameter butt welded HDPE discharge pipe was installed by Kline and Kavali and pressure tested to 100 psi. After it was determined there were no leaks, the pipe trench was backfilled and the pipe was covered with a 2-inch thick by 4-foot wide styrofoam insulation where the soil cover over the discharge pipe was less than 3 feet. Details of the discharge pipe installation are shown on Drawing C4.

A rirap apron was constructed for the discharge pipe at the northeast corner of the Site, allowing the treated water being discharged on Site to drain freely into the road drainage ditch at the northeast corner of the Site.

8.0 COMMISSIONING AND STARTUP

8.1 COMMISSIONING PLAN AND STARTUP

During the construction activities for the groundwater treatment system, CRA prepared a Commissioning Plan for SNFT, for commissioning and startup activities. The Commissioning Plan is presented in Attachment F. The groundwater treatment system was commissioned in accordance with the Commissioning Plan during the period of May 6 to 16, 1994.

8.2 STATIC TESTING

On March 8, 1994 the aqueous phase carbon adsorbers were filled with potable water, imported from Rick's Water Service, Alliance, Ohio, to static leak test the aqueous phase granular activated carbon (GAC) adsorber tanks and associated piping. The adsorber fittings and manways and associated piping were visually inspected for water leaks. Once it was determined that the carbon adsorber tanks and associated piping were leak free, the stored water was used to slurry reactivated granular activated carbon from bulk delivery trucks into the carbon vessels.

Commencing on May 6, 1994 the treatment system tankage and piping were leak tested in accordance with the Commissioning Plan presented in Attachment F. Hydrostatic testing and flow-through testing were undertaken using potable water supplied from the on-Site potable water supply well. The tanks were sequentially filled to capacity and inspected for leakage. There was no leakage found from the tanks and associated connections. During the tank testing program, the associated piping and transfer pumps were individually leak tested and operated. Upon completion of the leak testing program, the tanks remained full of water for the flow-through testing of the pumps, meters, valves, piping, and other equipment.

Upon completion of the installation of the control instruments and the associated control wiring, the control circuits were tested for continuity. Field calibration of the instruments was performed by Central Technology Company (CTC) for ECI. The completed electric power system was inspected and approved by both the Portage County Electrical Inspector and by Ohio Edison, the electric supply utility.

8.3 OPERATIONAL TESTING

Upon verification that the electrical control and instrumentation systems were complete, Anik loaded the control system software and began verification of the control program and control functions. Initially, potable water was recirculated through the plant at various flow rates to test the flow control and instrumentation. The operational testing verified that the calibration and setup of the control instruments were accurate and the treatment of groundwater could commence.

Water from the on-Site east pond was pumped through the system and discharged to the Mod-U-Tank in Grid 1-9 that was set up by Sevenson Environmental Services, the Soil Removal and Treatment (SRT) contractor, to further test the GWTS equipment, evaluate the treatment efficiency, and generate treated quench water for the SRT contract.

Treatment of the east pond water with direct discharge commenced on May 19, 1994, following receipt of the OEPA Substantive Permit dated May 18, 1994 and USEPA and OEPA verbal approval on May 19, 1994 to commence discharge of treated water.

9.0 TREATMENT SYSTEM PERFORMANCE AND EVALUATION

9.1 TREATMENT SYSTEM PERFORMANCE

Water treated by the GWTS has been as follows:

i) on-Site pond water from May 19 to June 8, 1994;

ii) on-Site pond water and/or groundwater from the excavation to install the pipe and media drain from June 9, 1994 to September 8, 1994;

iii) on-Site pond water and/or groundwater from the completed pipe and media drain from September 9, 1994 to November 30, 1994;

iv) on-Site surface water and/or groundwater from the pipe and media drain and extraction wells from December 1, 1994 to May 9, 1995;

v) on-Site surface water and/or groundwater from the pipe and media drain from May 9, 1995 to August 4, 1995;

vi) groundwater from the pipe and media drain only, commencing on August 4, 1995; and

vii) monitoring and extraction well installation, development and pump testing water.

The average monthly flow rate into the GWTS has varied from a high of 35 gallons per minute (gpm) during the initial start up of the treatment system in May 1994 to 7 gpm for August 1995. The initial higher flow rate is attributed to the initial dewatering and treatment of the pond water in preparation for the construction of the pipe and media drain.

9.1.1 Operational Difficulties

The plant was down for a total of 20 days during the interim operation period of May 1994 to September 1995. During this period the plant experienced several down periods, primarily due to a lack of influent water typically caused by a failure in the temporary pumping system that was set up by the contractor installing the pipe and media drain system. Once the on-Site surface ponds were dewatered in early June 1994, a temporary piping and control system was utilized by the groundwater extraction system contractor to transfer to the treatment plant the groundwater collected during the installation of the pipe and media drain. Once the forcemain, wet well pumps and controls were operational (September 1994), down time of the treatment plant for lack of influent water was eliminated.

The plant did experience several down times of an extended nature (more than a few hours) summarized as follows:

Date	*Description*
October 21 to 28, 1994	Replacement of carbon in the carbon adsorbers and cleaning of the sand filter, the Surge Tank #2 and the Equalization/Aeration (E/A) Tank.
January 6 and 7, 1995	Cleaning of the E/A Tank, the two Surge Tanks, and pumping out of the Sludge Tank.
January 14 , 1995	Repair of the control valve on the E/A tank.
February 24, 1995	Replacement of Pump P3.
April 8, 1995	Replacement of Pump P3.
May 28, 1995	Maintenance of Pump P2.

During the down time periods, the water level in the wet well was known to be above the invert of the pipe and media drain (the design operating level is one foot below the pipe and media drain invert level in the wet well). Also, the water level in the wet well was above the design operating level during periods when the reduced treatment capacity of the clarifier limited the amount of groundwater that could be fully pretreated to a maximum of 37 gpm. After the plant was down for any length of time, the "catch up" capability was limited to the net difference between the system influent flow and the treatment plant flow capacity. In addition, the need to periodically backwash the carbon adsorbers due to the carry over of suspended solids from the sand filter resulted in reduced flow further limiting the "catch-up" ability of the treatment system. On March 22, 1995, a design error identified by Parkson Corporation in the clarifier was corrected and the full pretreatment capacity of the plant to 50 gpm in accordance with the design criteria was established on March 22, 1995. The wet well has been maintained in a dewatered state (below the invert of the pipe and media drain) since July 1994, except when the treatment system was down for routine maintenance activities.

9.1.2 Effluent Monitoring

From commencement of treatment and discharge of Site related water, the treatment plant influent and effluent has been sampled and analyzed in accordance with the following schedule:

	Frequency of Effluent Sampling and Analysis	
Sampling Period	*Organic Compounds*	*Inorganic Compounds*
May 20 - June 14, 1994	twice weekly	twice weekly
June 15 - August 15, 1994	weekly	weekly
August 15 - November 30, 1994	monthly	weekly
December 1, 1994 - Present	monthly	monthly

The OEPA May 18, 1994 Substantive Permit only requires monthly effluent sampling unless discharge limits are exceeded. OEPA verbally approved revised inorganic discharge limits on November 22, 1994. Analytical results were reported monthly to USEPA and OEPA, or more frequently when the discharge limits were exceeded. A copy of the Substantive Permit and the approved inorganic discharge limit are presented in Attachment A.

During the period of May 18 to November 30, 1994, select inorganic compounds exceeded the OEPA May 18, 1994 Substantive Permit discharge requirements requiring weekly sampling and reporting of these sampling events in accordance with the reporting requirements of the OEPA May 18, 1994 Substantive Permit for the Site. Based on the November 22, 1994 revised inorganic discharge limits for the Site (see Attachment A for letter dated November 29, 1994 confirming the OEPA revised inorganic discharge limits), no discharge limits have been exceeded from November 1994 to present.

The treatment plant is performing generally better than designed for removal of the inorganic parameters. The steady state treatment plant influent hydraulic and chemistry conditions in the extracted groundwater were attained for inorganic parameters in August 1995 once the soil cover was constructed and only groundwater from the pipe and media drain was being pumped into the treatment system.

Operation of the bio-tower, as anticipated during the design, is not required at this time due to the lack of organics in the extracted groundwater. The bio-tower will only be brought on line once the total concentration of acetone and methyl ethyl ketone are above 1 to 2 milligrams per litre (μg/L) in the influent, which is anticipated 2.6 years after commencement of the operation of the groundwater extraction system. At that time, removal of the organics by the carbon system alone would no longer be economical.

9.2 TREATMENT SYSTEM EVALUATION

As a result of the operation and maintenance activities experienced during the assessment period as summarized in Section 9.1.1, and specifically the requirements to backwash the carbon adsorption units and replace the carbon due to fouling with inorganics which was not anticipated during the design, the efficiency of the treatment system clarifier and sand filter were questioned. Further, it was determined in December 1994 that the treatment system was overloaded with accumulated inorganic solids. As a result, the contents of the sludge tank were removed and disposed of off Site in January 1995. At the same time the process tanks were drained and cleaned of other accumulated inorganic solids. As the consistency of the sludge tank material (3,900 gallons) removed was 50 percent solids, it is safe to assume the solids had been carrying over from the sludge tank and were being recycled through the treatment system resulting in increasingly higher solids loading which resulted in the carry over to the carbon adsorbers.

The removal of the accumulated solids as well as a modification to the sludge handling system discussed in Section 9.0 resulted in the stabilization of solids loading and solids removal. To determine the removal efficiencies of the clarifier, sand filter, and sludge management system, performance evaluation sampling was conducted on February 21 and 23, and on March 14 and 17, 1995 across the treatment system at the following sample locations:

Date	*Location*
February 21 and 23, 1995	• influent sample port • E/A tank effluent • clarifier sludge effluent • surge tank #1 discharge (supernatant from clarifier)
March 14 and 17, 1995	• influent sample port • E/A tank effluent • surge Tank No. 1 discharge

- clarifier sludge effluent
- sand filter effluent
- primary carbon adsorber effluent
- primary carbon adsorber effluent (treated effluent)
- sample of dewatered sludge

The performance evaluation sampling demonstrated that the pretreatment system is removing 95 to 99 percent of the total iron, however, some iron is being carried over to the carbon absorbers as indicated by the low levels of total iron after the carbon adsorbers. This condition has required frequent backwashing of the carbon adsorber(s). On March 22, 1995, the inclined plate clarifier was modified such that its full hydraulic capacity is about 50 gpm. By optimizing the influent pH by the addition of sodium hydroxide and by further refining the dosage of the anionic polymer electrolyte solution added to the clarifier, the inorganic removal efficiency is being further improved.

9.3 OPERATION AND MAINTENANCE ACTIVITIES

Upon the commencement of interim operation of the GWTS on May 19, 1994, routine operation and maintenance activities commenced. The operation, maintenance and monitoring requirements for the Site are detailed in the Operation, Maintenance and Monitoring Plan (OMMP) for the Site. The Draft OMMP presented as Attachment L of the RC Work Plan was revised to include the as-constructed details of the GWTS. The revised Draft OMMP incorporating the GWTS as-constructed details was submitted to USEPA and OEPA on September 15, 1994 for general comments. USEPA comments on the September 15, 1995 Draft OMMP are addressed in the final OMMP. The OMMP forms the basis of the operation, maintenance, and monitoring activities for the GWTS.

During the interim operation period from September 1994 to May 1995, additional operation and maintenance activities were required due to the continuing RC activities being performed at the Site, as well as

monitoring of additional wastewater sources (e.g. east pond) and transferring treated water to the Mod-U-Tank for use by the SRT contractor as required. The final shakedown of each treatment component, as well as the need to change the operational characteristics of the treatment system to determine optimal pump and valve settings, and chemical addition dosages, and to make adjustments to the treatment system to accommodate the treatment of the non-steady flow conditions also was accomplished. Other activities carried out at the Site during the interim operational period included the establishment of vendor and supplier lists required for treatment plant supplies and subcontractors to perform non-routine maintenance as required and plant modifications as deemed necessary.

9.4 MODIFICATIONS

During the interim operation period, specific modifications were made to the GWTS and GWES to improve treatment efficiency and reduce routine and non-routine maintenance activities and frequencies. The modifications to the GWTS included the following:

i) automatic polymer addition system;
ii) sludge management
iii) maintenance noise barrier;
iv) additional work platforms;
v) pre-carbon bag filters;
vii) carbon adsorber backwash system;
vi) wet well continuous level control and PLC programming; and
viii) additional laboratory furniture;

9.4.1 Polymer Addition

In order to efficiently settle out the inorganic solids in the clarifier a temporary polymer electrolyte injection system was installed. The nutrient mixing tank and injection pump for future use with the bio-tower along with the existing flash mixer assembly on the clarifier were utilized.

Flexible tubing from the injection pump was installed on July 30, 1994 to convey the polymer electrolyte solution to the flash mixer on the clarifier. A series of jar tests conducted during early August 1994 determined the type of polymer to use and the dosage required to achieve the optimum solids settling in the clarifier. Typically, based on visual appearance, the polymer dosage varies from 3 to 8 ppm.

Based on the success of the temporary polymer addition system, a permanent polymer addition system was installed to render the nutrient tank for its intended use for the mixture and supply of nutrients to the bio-tower system.

9.4.2 Sludge Management

The discharge point of the inclined plate settler sludge pump was relocated from the top of the sludge tank to the bottom of the tank. By injecting the sludge to the bottom of the sludge tank, suspended solids that settled in the clarifier do not need to settle again in the sludge tank, hence reducing the amount of suspended solids carry over through the sludge tank overflow back to the E/A Tank.

The operation of the sludge dewatering system and disposal of the dewatered sludge bags proved to be labor intensive during the operation period. The sludge dewatering bags were unloaded from the bag dewatering unit and placed on the floor trench grate for further dewatering prior to placement on-Site under the final Site cover or in the sludge disposal container. To facilitate draining, storage and handling of the sludge bags, a sludge dewatering platform was installed inside the GWTS building, under which the sludge disposal container and onto which the sludge dewatering unit was relocated, thus allowing for direct loading of the dewatered bags into the sludge disposal container.

9.4.3 Noise Barrier

A noise barrier was constructed to separate the air compressor from the maintenance/process area. The barrier wall which initially was included in the design, was not initially constructed due to adjustments in the building dimensions as a result of the revised prefabricated building and the placement of the electrical room wall and the maintenance room door.

9.4.4 Work Platforms

Additional work platforms were installed to provide ready access for inspection and maintenance of the process tanks and equipment. The need for ready access was not anticipated or addressed during the design, however, during the interim operation period access to the top of the E/A tank (occasional), the clarifier (daily), the sludge tank (occasionally), and the sand filter (daily) was necessary.

9.4.5 Bag Filters

Carry-over of solids from the sand filter to the aqueous phase GAC adsorbers has required frequent backwashing of the GAC units and resulted in the replacement of the carbon beds. To further protect the GAC adsorbers and reduce the need to backwash the GAC units, two bag filter units were installed before the GAC units to prefilter the effluent from the sand filter. The filter bags are changed on an as required basis to maintain the flow-through treatment capacity of the GWTS.

9.4.6 GAC Backwash

As facilities for backwashing the GAC units were not included in the GWTS design, the addition of a 250-gpm backwash pump and 8,000-gallon backwash storage tank was incorporated into the GWTS.

9.4.7 Wet Well Level Control

During the interim operation period, upset conditions which resulted in the carry-over of solids from the sand filter to the GAC units and frequent backwashing of the GAC units was caused by changing flow rates and solids loading through the clarifier. The changing flow rates are a direct result of the automatic on/off control of the wet well and the low groundwater influent rate to the pipe and media drain. As a result, the control of the wet well was changed from on/off control to continuous level control and the programmable logic controller (PLC) software was modified to address this continuous level operation.

9.4.8 Laboratory Furniture

The additional laboratory furniture was incorporated into the laboratory to facilitate organization of the laboratory equipment.

9.5 OPERATION, MAINTANCE, AND MONITORING

Based on the treatment plant operational experience from May 1994 to September 1995, the operation, maintenance, and monitoring activities in the OMMP generally reflect the operation and maintenance tasks required for the GWTS. Specific housekeeping requirements, such as cleaning floors, windows and washrooms, maintaining office supplies, etc., which are not specifically referenced in the OMMP, are undertaken on a routine basis.

During July and August 1995, SNFT solicited bids from operation and maintenance contractors for the performance of operation and maintenance services for the Site. On August 7, 1995, SNFT awarded a contract to TreaTek-CRA Company (Maintenance Contractor) for the services

and Treatek-CRA commenced operation and maintenance of the Site for SNFT on September 8, 1995.

10.0 HEALTH AND SAFETY

The construction of the GWTS and related activities were conducted in accordance with ECI's Site-specific Health and Safety Plan (HASP). The HASP provided specific information regarding air monitoring, use of personnel protective clothing and equipment, work area designations, hospital routes and emergency numbers. A copy of the HASP was kept on Site and was made available to all Site personnel and visitors.

ECI maintained a Health and Safety Officer (HSO) at the Site during any potentially hazardous work activities. The HSO performed the air monitoring on and around the Site and ensured that all on-Site personnel were properly informed and trained as required by the HASP.

Based on the air monitoring data, the action levels for the volatile organic compounds (VOC) and dust were not exceeded during any of the GWTS work activities.

TABLE 1

AS RECORDED DRAWINGS
GROUNDWATER TREATMENT SYSTEM
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Drawing No.	*Rev. No.*	*Date*	*Title*
C1	0	October 1995	PRE-CONSTRUCTION CONDITIONS (NOT USED)
C2	0	October 1995	WORK AREAS
C3	0	October 1995	GRADING PLAN
C4	0	October 1995	SITE SECTIONS
C5	0	October 1995	SITE WORK DETAILS
C6	0	October 1995	EROSION CONTROL
C7	0	October 1995	CHEMICAL UNLOADING PAD (NOT USED)
C8	0	October 1995	FOUNDATION PLAN PILE LAYOUT
C9	0	October 1995	FLOOR PLAN
C10	0	October 1995	FOUNDATIONS SECTIONS
C11	0	October 1995	NORTH AND EAST ELEVATIONS
C12	0	October 1995	WEST AND SOUTH ELEVATIONS
C13	0	October 1995	SECTIONS AND DETAILS
C14	0	October 1995	STRUCTURAL ROOF PLAN
C15	0	October 1995	ROOM, DOOR, AND WINDOW SCHEDULE
C16	0	October 1995	PROCESS EQUIPMENT LAYOUT
C17	0	October 1995	MECHANICAL SECTIONS "B" AND "C"
C18	0	October 1995	MECHANICAL SECTIONS "A" AND "D"
C19	0	October 1995	HYDRAULIC GRADIENT
C20	0	October 1995	HVAC AND PLUMBING LAYOUT
C21	0	October 1995	SITE ELECTRICAL SERVICE
C22	0	October 1995	LIGHTING AND RECEPTACLES
C23	0	October 1995	MOTOR AND DISCONNECT LOCATION
C24	0	October 1995	MCC LAYOUT AND SINGLE LINE DIAGRAM
C25	0	October 1995	PLC AND I/O LAYOUT
C26	0	October 1995	I/O CABINET AND CONTROL STATIONS
C27	0	October 1995	PROCESS AND INSTRUMENTATION DIAGRAM
S1	0	October 1995	PLATFORMS AND SECTIONS
S2	0	October 1995	PLATFORMS AND SECTIONS
Sheets 1 to 19	0	October 1993	BEHLEN MANUFACTURING CO. BUILDING DRAWINGS

ATTACHMENT A

APPROVALS AND OEPA SUBSTANTIVE PERMIT

OhioEPA
State of Ohio Environmental Protection Agency
Northeast District Office
2110 E. Aurora Road
Twinsburg, Ohio 44087-1969
(216) 425-9171
FAX (216) 487-0769

George V. Voinovich
Governor
Donald R. Schregardus
Director

May 18, 1994

RE: SUMMIT NATIONAL
PORTAGE COUNTY
OHIO ID #267-0779

Mr. Jack Michels, P.E.
Conestoga-Rovers & Associates, Ltd.
651 Colby Drive
Waterloo, Ontario
Canada N2V 1C2

Dear Mr. Michels:

Enclosed is the Substantive Permit for the Summit National ground water treatment plant.

Your acceptance of the conditions specified in this document will satisfy the remaining Ohio EPA concerns over the Quality Assurance Project Plan for the Operation, Maintenance and Monitoring Plan and will represent Ohio EPA approval of the O & M QAPP.

Please feel free to call Dennis Lee of the Division of Surface Water (DSW) at (216) 963-1133 should you have any questions about the requirements of the Substantive Permit.

Sincerely,

Regan S. Williams
Environmental Scientist
Division of Emergency and Remedial Response

enclosures

RSW.wk

cc: Steve Love, DERR, NEDO
Dennis Lee, DSW, NEDO
Anthony Rutter, USEPA, Region V

Printed on recycled paper

Authorization to Discharge to Summit National

In compliance with the provisions of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et. seq.) and the Ohio Water Pollution Control Act (Ohio Revised Code Section 6111),

SUMMIT NATIONAL

is authorized by the Ohio Environmental Protection Agency, hereafter referred to as "Ohio EPA", to discharge from the treatment system located in Deerfield Township, Portage County, Ohio to an unnamed tributary to Berlin Reservoir via a roadside ditch in accordance with the conditions specified below.

A.1. **FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS FOR THE E.H. SUMMIT NATIONAL**

Summit National (the entity) is authorized to discharge in accordance with the following limitations and monitoring requirements from the wastewater treatment works (outfall 001), beginning on the first day of authorized discharge and lasting until 60 months from the date of issuance. See paragraph C for a description of the required sampling station location.

EFFLUENT CHARACTERISTIC			DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
			Concentration Specified Units		Loading kg/day			
Reporting Code	Units	Parameter	30 Day	Daily	30 Day	Daily	Meas. Frequency	Sample Type
81552	µg/l	Acetone	927	927	-	-	1/Month	Grab
34030	µg/l	Benzene	7	7	-	-	1/Month	Grab
34496	µg/l	1,1-Dichloroethane	7	7	-	-	1/Month	Grab
34531	µg/l	1,2-Dichloroethane	21	21	-	-	1/Month	Grab
34501	µg/l	1,1-Dichloroethylene	5	5	-	-	1/Month	Grab
38676	µg/l	1,2-Dichloroethylene	26	26	-	-	1/Month	Grab
34371	µg/l	Ethylbenzene	5	5	-	-	1/Month	Grab
34423	µg/l	Methylene Chloride	5	5	-	-	1/Month	Grab
81596	µg/l	Methyl Isobutyl Ketone	15	15	-	-	1/Month	Grab
81595	µg/l	Methyl Ethyl Ketone	442	442	-	-	1/Month	Grab
34010	µg/l	Toluene	5	5	-	-	1/Month	Grab
34506	µg/l	1,1,1-Trichloroethane	12	12	-	-	1/Month	Grab
39180	µg/l	Trichloroethylene	5	5	-	-	1/Month	Grab
81551	µg/l	Xylene, Total	6	6	-	-	1/Month	Grab
77247	µg/l	Benzoic Acid	10	10	-	-	1/Month	Grab
39100	µg/l	Bis(2-ethylhexyl) Phthalate	10	10	-	-	1/Month	Grab
34408	µg/l	Isophrone, Total	10	10	-	-	1/Month	Grab
77416	µg/l	2-Methylnaphthalene	10	10	-	-	1/Month	Grab
34696	µg/l	Naphthalene	10	10	-	-	1/Month	Grab
34452	µg/l	P-Chloro-M-Cresol	10	10	-	-	1/Month	Grab
34606	µg/l	2,4-Dimethylphenol	10	10	-	-	1/Month	Grab
78395	µg/l	2-Methylphenol	10	10	-	-	1/Month	Grab
78396	µg/l	4-Methylphenol	10	10	-	-	1/Month	Grab
34694	µg/l	Phenol	10	10	-	-	1/Month	Grab
01097	µg/l	Antimony, Total (Sb)	5	5	-	-	1/Month	Grab
01002	µg/l	Arsenic, Total (As)	7	7	-	-	1/Month	Grab
01045	µg/l	Iron, Total (Fe)	300	300	-	-	1/Month	Grab
01105	µg/l	Aluminium, Total (Al)	536	536	-	-	1/Month	Grab
01007	µg/l	Barium Total (Ba)	219	219	-	-	1/Month	Grab
00916	mg/l	Calcium, Total (Ca)	201785	201785	-	-	1/Month	Grab
01032	µg/l	Chromium, Hexavalent (Cr +6)	5	5	-	-	1/Month	Grab
01037	µg/l	Cobalt, Total (Co)	14	14	-	-	1/Month	Grab
01042	µg/l	Copper, Total (Cu)	2	2	-	-	1/Month	Grab
01051	µg/l	Lead, Total (Pb)	1	1	-	-	1/Month	Grab
00927	mg/l	Magnesium, Total (Mg)	72151	72151	-	-	1/Month	Grab
01056	µg/l	Manganese, Dissolved (Mn)	6818	6818	-	-	1/Month	Grab
01065	µg/l	Nickel, Dissolved (Ni)	14	14	-	-	1/Month	Grab
00937	mg/l	Potassium, Total (K)	6415	6415	-	-	1/Month	Grab
01092	µg/l	Zinc, Total (Zn)	188	188	-	-	1/Month	Grab
50050	MGD	Flow Rate	-	-	-	-	Daily	Grab

C. Samples (outfall 001) shall be taken from a 1" hose bib following surge tank #3, just upstream of the 6" HDPE gravity discharge pipe.

D. At least one month before authorized discharge begins, Summit National shall notify the Industrial Permits Section, Division of Surface Water, Ohio EPA Northeast District Office, of the starting date of discharge.

E. Effluent limitations may be revised in order to meet water quality standards after a stream use determination and wasteload allocation are completed and approved. These limitations and discharge requirements may be modified to comply with any applicable water quality effluent limitations.

F. Special Conditions:

1. The effluent shall, at all times, be free of substances:

   A. In amounts that will settle to form putrescent, or otherwise objectionable, sludge deposits; or that will adversely affect aquatic life or water fowl;

   B. Of an oily, greasy, or surface-active nature, and of other floating debris, in amounts that will form noticeable accumulations of scum, foam or sheen;

   C. In amounts that will alter the natural color or odor of the receiving water to such degree as to create a nuisance;

   D. In amounts that either singly or in combination with other substances are toxic to human, animal, or aquatic life;

   E. In amounts that are conductive to the growth of aquatic weeds or algae to the extent that such growths become inimical to more desirable forms of aquatic life, or create conditions that are unsightly, or constitute a nuisance in any other fashion;

   F. In amounts that will impair designated instream or downstream water uses.

2. Monitoring data required by this document shall be reported on a monthly basis to the Ohio EPA, Northeast District Office, Division of Surface Water. Individual reports for each month are to be received no late than the 15th of the next month.

3. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored flow. Test procedures for the analysis of pollutants shall conform to regulation 40 CFR 136, "Test Procedures For the Analysis of Pollutants" unless other test procedures have been specified in this permit. The entity shall periodically calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at intervals to insure accuracy of measurements.

4. Definitions:

   A. The "daily load limitation" is the total discharge by weight during any calendar day. If only one sample is taken during a day, the weight of pollutant discharge calculated from it is the daily load.

   B. The "daily concentration limitation" means the arithmetic average of all the determinations of concentration made during the day. If only one sample is taken during the day, its concentration is the daily concentration.

C. The "30-day load limitation" is the total discharge by weight during any 30-day period divided by the number of days in the 30-day period that the facility was in operation. If only one sample is taken in a 30-day period, the weight of pollutant sample is taken in a 30-day period, the weight of pollutant discharge calculated from it is the 30-day load. If more than one sample is taken during one 30-day period, the 30-day load is calculated by determining the daily load for each day sampled, totaling the daily loads for the 30-day period and dividing by the number of days sampled.

D. The "30-day concentration limitation" means the arithmetic average (weighted by flow) of all the determinations of daily concentration made during the 30-day period. If only one sample is taken during the 30-day period, its concentration is the 30-day concentration for that 30-day period.

E. Absolute limitations. compliance with limitations having descriptions of "shall not be less than, "nor greater than," "shall not exceed," "minimum," or "maximum" shall be determined from any single value for effluent samples and/or measurements collected.

F. 1. "MGD" means million gallons per day.

2. "mg/l" means milligrams per liter.

3. "ug/l" means micrograms per liter.

G. "Bypass" means the intentional diversion of waters from any portion of a treatment facility.

H. "Severe property damage" means substantial physical damage to property, damager to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe damage does not man economic loss caused by delays in production.

5. Facility Operation and Quality Control:

All wastewater treatment works shall be operated in a manner consistent with the following:

A. At all times, the entity shall maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems installed or used by the entity necessary to achieve compliance with these terms and conditions. The determination of what constitutes proper operation and maintenance will consider, but not be limited to, effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the discharge conditions.

B. The entity shall effectively monitor the operation and efficiency of treatment and control facilities and the quantity and quality of the treated discharge.

C. Maintenance of wastewater treatment works that results in degradation of effluent quality shall be scheduled during non-critical water quality periods and shall be carried out in a manner approved by the Ohio EPA as specified in Paragraph 8 entitled "UNAUTHORIZED DISCHARGES".

6. Recording of Results:

For each measurement of sample taken pursuant to the requirements contained herein, the entity shall record the following information:

A. The exact place, date, and time of sampling;

B. The person(s) who performed the sampling or measurements;

C. The date and time the analyses were performed on those samples;

D. The person(s) who performed the analyses;

E. The analytical techniques or methods used; and

F. The results of all analyses and measurements.

7. Right of entry:

The entity shall allow authorized representatives of the Ohio EPA and U.S. EPA upon the presentation of credentials:

A. To enter upon the entity's premises where an effluent source is located or in which any records are required to be kept under the terms and conditions contained herein, and

B. At reasonable times to have access to and copy any records required to be kept under the terms and conditions contained herein; to inspect any monitoring equipment or monitoring method required herein; and to sample for any pollutants.

C. To enter upon the entity's premises to inspect at reasonable times any collection, treatment, pollution management, or discharge facilities required herein.

8. Unauthorized Discharges:

A. Unless specifically authorized, deliberate by-passing or diverting of wastewater from the treatment works is prohibited except when necessary:

1. To prevent loss of life, personal injury, or severe property damage;

2. To prevent damage to treatment works or processes; or

3. To allow essential maintenance to be performed according to a schedule approved in writing by the Ohio EPA district office.

B. While typical unauthorized discharges are those resulting from pipeline breaks, equipment malfunctions or failures, operator errors, accidents, process interruptions, or power failures, all unauthorized discharges shall be according to the following procedure:

1. Report within one hour of discovery to Ohio EPA by calling (toll free) 1-800-282-9378.

2. For these telephone reports, the following must be included:

a. the times at which the discharge occurred and was discovered;

b. the approximate amount and the characteristics of the discharge;

c. the stream(s) affected by the discharge;

d. the circumstances which created the discharge;

e. the names and telephone numbers of the persons who have knowledge of these circumstances;

f. what remedial steps are being taken; and

g. the names and telephone numbers of the persons responsible for such remedial steps.

3. These reports shall be confirmed in writing within one day of the discharge and submitted to the Ohio EPA Northeast District Office. This report should include the information required under "NONCOMPLIANCE NOTIFICATION".

9. Noncompliance Notification:

A. Effluent limitations:

If the entity is unable to meet any effluent limitations specified herein, the entity shall submit a written report to the Ohio EPA Southeast District Office within one day of becoming aware of the conditions. The report shall include the following:

1. The limitation(s) which has been violated;

2. The extent of the violation(s);

3. The cause of the violation(s);

4. The period of the violation(s) including exact dates and times;

5. If uncorrected, the anticipated time the violation(s) is expected to continue; and

6. Steps being taken to reduce, eliminate and/or prevent recurrence of the violation(s).

10. Adverse Impact:

In the event of either an unauthorized discharge or a violation of effluent limitations, the entity shall take all reasonable steps to minimize or correct any adverse impact on the environment. this may include accelerated or additional monitoring to determine the extent of the impact of unauthorized discharge or the violation of limitations. If such additional monitoring is performed, the data collected shall be included in a written report submitted to the Ohio EPA Northeast District Office.

11. Authorized Discharges:

All discharges authorized herein shall be consistent with the terms and conditions contained herein. The discharge of any pollutant more frequently than, or at a level in excess of, that authorized in Paragraphs A.1. through B.2., "Final Effluent Limitations and Monitoring Requirements for Summit National shall constitute a violation of the terms and conditions contained herein.

12. Discharge Changes:

The following changes must be reported to the Ohio EPA Northeast District Office as soon as practicable.

A. For all treatment works, any significant change in character of the discharge which the entity knows or has reason to believe has occurred or will occur. Notification of changes or anticipated noncompliance does not stay any permit condition.

B. For non-publicly owned treatment works, any proposed facility expansions, production increases, or process modifications, which will result in new, different, or increased discharges of pollutants.

13. Oil and Hazardous Liability:

Nothing in this section shall be construed to preclude the institution of any legal action or relive the entity from any responsibilities, liabilities, or penalties to which the entity is or may be subject under Section 311 of the Act.

14. State Laws and Regulations:

Nothing in this section shall be construed to preclude the institution of any legal action nor relieve the entity from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by Section 510 of the Act.

15. Records Retention:

The entity shall retain all of the following records for the wastewater treatment works for a minimum of three years, including:

A. All sampling and analytical records (including internal sampling data not reported);

B. All original recordings from any continuous monitoring instrumentation;

C. All instrumentation, calibration and maintenance records; and

D. All plant operation and maintenance records.

E. All reports required by these discharge specifications.

These periods will be extended during the course of any unresolved litigation, or when so requested by the Regional Administrator or the Ohio EPA. The three year period for retention of records shall start from the date of sample, measurement, report or application.

16. The parameters listed below have had effluent limitations established that are below the practical quantification level (PQL) of the 40 CFR 136 promulgated analytical procedures for those parameters. In accordance with ORC 6111.13, if a discharge limit is set below the PQL, any analytical result reported at or below the PQL shall be considered to be in compliance with that limit. All analytical results, even those below the PQL, shall be reported. Analytical results below the method detection limit shall be reported as below detection using reporting code "AA".

Parameter	PQL
Copper, Total	5.0 µg/l
Lead, Total	5.0 µg/l

CRA
Consulting Engineers

CONESTOGA-ROVERS & ASSOCIATES LIMITED
651 Colby Drive
Waterloo, Ontario, Canada N2V 1C2
(519) 884-0510 Colby Office Fax: (519) 884-0525
(519) 725-3313 Bathurst Office (519) 725-1394

May 19, 1994

ORIGINAL
This Document Previously
Transmitted By Telecopier

Reference No. 2372-10

Mr. Anthony Rutter
Director, Waste Management Division
Remedial Project Manager
U.S. Environmental Protection Agency
77 West Jackson Boulevard
Chicago, Illinois
U.S.A. 60604

Mr. Regan S. Williams
State Project Coordinator
Ohio EPA - Division of
Emergency & Remedial Response
2110 East Aurora Road
Twinsburg, Ohio
U.S.A. 44087

Gentlemen:

Re: Discharge of Treated Water
Groundwater Treatment System
Summit National Superfund Site
Deerfield, Ohio

In confirmation of our conference call on May 19, 1994, the Summit National Facility Trust (SNFT) will commence discharge of treated water from the Groundwater Treatment System at the Summit National Superfund Site (Site) in Deerfield, Ohio today. Initially, pond water from the East Pond at the Site will be treated and discharged, followed by groundwater extracted during construction of the Wet Well and pipe and media drain at the Site.

For the first month of treatment and discharge of water from the Site, the treatment plant effluent will be analyzed twice a week (which exceeds the Ohio Environmental Protection Agency (OEPA) requirements for monthly sampling) for the Target Compound List/Target Analyte List (TCL/TAL) compounds listed in the attached table using method SW 846. As discussed during the May 19 conference call, analyzing the treatment plant effluent by EPA Methods 601, 602, 624, 625, 608 and Atomic Absorption, Graphite Furnace (Priority Pollutants) as required by the Statement of Work for the Site will not provide analysis of all parameters listed in the attached table. Therefore, analysis of treated plant effluent will be in accordance with SW 846. The revised effluent monitoring requirements will be incorporated into the Operation, Maintenance and Monitoring (O&M) Quality Assurance Project Plan (QAPP) for the Site and resubmitted to the United States Environmental Protection Agency (USEPA) and OEPA for approval.

May 19, 1994 Reference No. 2372-10

As discussed during the May 19 conference call, also included in the attached table are the detection limits proposed for the TCL/TAL parameters to be monitored in the treatment plant effluent. Some of these limits are based on instrument detection limits and may be affected by sample matrix interferences. Therefore, the detection limits listed in the attached table may need to be revisited following receipt of some Site-specific data.

Should you have any questions, please do not hesitate to contact the undersigned.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

for Jack Michels, P. Eng.

JM/ec/76
Encl.

c.c.: Peter Felitti - USEPA Regional Counsel (1 copy)
Assistant Attorney General, Land and Natural Resources Division, US Department of Justice (1 copy)
Supervisor, Office of Corrective Action, Director, State, Ohio Environmental Protection Agency (1 copy)
Christopher Korleski, Attorney General, State of Ohio (1 copy)
Richard McAvoy - Black & Veatch Waste Science Technology, Inc. (1 copy)
Gary Gifford (1 copy)
Patrick S. Steerman (1 copy)
Kenneth A. Walanski (1 copy)
Douglas G. Haynam (1 copy)
Rick Shepherd (1 copy)
Steve Whillier (1 copy)

EFFLUENT QUALITY
APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

From Table 6.2 of the Final Design Report

Chemical	QAPP TQL: TCL/TAL Analyses (Revised # May19,1994) (µg/L)	QAPP TQL: Priority Pollutant Analyses (µg/L)	OEPA Discharge Requirements (May 18, 1994) (µg/L)	SNFT Groundwater Treatment System: Maximum Estimated Influent Concentration (µg/L)	SNFT Groundwater Treatment System: Calculated Effluent Concentration (µg/L)	EPA Water Quality Standards: Drinking Water Standards: Maximum Contaminant Level MCL (µg/L)	EPA Water Quality Standards: Drinking Water Standards: Proposed Maximum Contaminant Level pMCL (µg/L)	EPA Water Quality Standards: For The Protection of Aquatic Life: Freshwater Protection Acute/Chronic (µg/L)	EPA Water Quality Standards: For The Protection of Human Life: AWQC Water and Fish Ingestion (µg/L)	EPA Water Quality Standards: For The Protection of Human Life: AWQC Fish Only Ingestion (µg/L)	Effluent Target Level HI of 1 Based on Individual Compounds (µg/L)	Ohio Water Quality Standards: Public Water Supply (µg/L)	Ohio Water Quality Standards: Aquatic Life Habitat(6): 30-Day Average (µg/L)	Ohio Water Quality Standards: Human Health 30-Day Average (µg/L)
Organic Compounds														
Acetone	50		927	46,347	927						3,500		78,000	
Benzene	5	5	7	7		5								
1,1-Dichloroethane	5	5	7	359	7						3,500			
1,2-Dichloroethane	5	5	21	1,049	21	5(1,5)		118,000/20,000(1)	0.94(1,2)/0.38(5)	243(1,2)/98.6(5)		3.80	3,500	990
1,1-Dichloroethylene	5	5	5	2	<1	7(1,5)		11,600(1,2)	0.033(1,2)/0.057(5)	1.85(1,2)/3.2(5)	315	0.57	78	32
1,2-Dichloroethylene	5	5	26	1,223	24	70							310	
Ethylbenzene	5	5	5	26	1	700(3)		32,000(1,2)	1,400(1,2)/3,120(5)	3,280(1,2)/28,720(5)	3,500	3,100	62	29,000
Methylene Chloride	5	5	5	145	3	5		11,000(1)	0.19(1)/4.7(5)	15.7(1)/1,578(5)	2,100		430	
Methyl Ethyl Ketone	50		442	22,103	442						1,750		7,100	
Methyl Isobutyl Ketone	10		15	756	15						1,750			
Toluene	5	5	5	260	5	1000(3)		17,500(1)	14,300(1,2)/6,765(5)	424,000(1,2)/201,300(5)	7,000	10,000	1,700	300,000
1,1,1-Trichloroethane	5	5	12	602	12	200(1,5)			18,400(1,2,5)	1,030,000(1,2,5)	70,000	200	88	1,030,000
Trichloroethylene	5	5	5	1.5		5(6)								
Xylene (Total)	5		6	289	6	10,000(3)								
Base/Neutral Compounds														
Bis(2-Ethylhexyl)Phthalate	10	10	10	1	<1	6		400/360(4)	1.76(5)	5.9(5)	700	18	8.4	59
Isophorone	10	10	10	38	1			117,000(1,2)	5,200(1,2)/8.4(5)	520,000(1,2)/598(5)	7,000			
2-Methyl Naphthalane	10		10	1	<1									
Naphthalene	10	10	10	1	<1			2,300/620(2)			140		44	
Acid Compounds														
4 Chloro 3 Methyl Phenol	10	10	10	2	<1									
2,4-Dimethyl Phenol	10	10	10	1	<1			2,120(2)	400(5)		700			
2-(O-Cresol) Methyl Pheno	10		10	3	<1						1,750		22	
4-(P-Cresol) Methyl Phenol	10		10	20	<1						1,750		6.2	
Phenol	10	10	10	158	3			10,200/2,560(1)	300(1,5)	46,163 ppm(5)	21,000	1	200	

EFFLUENT QUALITY
APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

From Table 6.2 of the Final Design Report

Chemical	QAPP TQL: TCUTAL Analyses (Revised # May19,1994) (µg/L)	QAPP TQL: Priority Pollutant Analyses (µg/L)	OEPA Discharge Requirements (May 18, 1994) (µg/L)	SNFT Groundwater Treatment System: Maximum Estimated Influent Concentration (µg/L)	SNFT Groundwater Treatment System: Calculated Effluent Concentration (µg/L)	EPA Water Quality Standards: Drinking Water Standards: Maximum Contaminant Level MCL (µg/L)	EPA Water Quality Standards: Drinking Water Standards: Proposed Maximum Contaminant Level pMCL (µg/L)	EPA Water Quality Standards: For The Protection of Aquatic Life: Freshwater Protection Acute/Chronic (µg/L)	EPA Water Quality Standards: For The Protection of Human Life: AWQC Water and Fish Ingestion (µg/L)	EPA Water Quality Standards: For The Protection of Human Life: AWQC Fish Only Ingestion (µg/L)	Effluent Target Level HI of 1 Based on Individual Compounds (µg/L)	Ohio Water Quality Standards: Public Water Supply (µg/L)	Ohio Water Quality Standards: Aquatic Life Habitat(6): 30-Day Average (µg/L)	Ohio Water Quality Standards: Human Health 30-Day Average (µg/L)
Inorganic Compounds														
Antimony	7	60	5	5 *	5 *	6(6)		9,000/1,600(1) and 88/30(4)	14(1,5)	4,400(5)	14	14	190	4,300
Arsenic	3	10	7	7 *	7 *	50(3)	50(1)	360/190(1)	0.0022(1)/0.018(5)	0.018(1)/0.14(5)	35	50	190	
Iron	100		300	149,690 *	300 *	300(1)		11,000(2.5)	300(2,5)			300	1,000	
Aluminum	200		536	536 *	536 *			750/87(5)						
Barium	200		219	219 *	219 *	2000(6)			1,000(5)		2,450	1,000		
Calcium	5,000		201,785	403,571 *	201,785 *									
Chrome	10													
Cobalt	10		14	14 *	14 *									
Copper	1	25	2	2 *	2 *		1,300(5)	9/6.5(5)	1,000(5)		1,295	1,000	12	52
Lead	1	3	1	1 *	1 *	50(3)		82/3.2(1)	50(1,2,5)		49	50	6.9	54
Magnesium	5,000		72,151	144,301 *	72,151 *									
Manganese (dissolved)	15		6,818	6,818 *	6,818 *				30(5)	100(2)	3,500	50		
Nickel (dissolved)	20	40	14	14 *	14 *	100(6)		789/87.7(5)	610(5)	4,600(5)	700	610	170	700
Potassium	5,000		6,415	12,829 *	6,415 *						7,000			
Zinc	20	50	188	188 *	188 *	5,000(1)		65/58.9(5)	5,000(5)			5,000	110	410

Notes: # Revised per May 19,1994 conference call
* Based on filtered samples

Consulting Engineers

CONESTOGA-ROVERS & ASSOCIATES LIMITED
651 Colby Drive
Waterloo, Ontario, Canada N2V 1C2
(519) 884-0510 Colby Office Fax: (519) 884-0525
(519) 725-3313 Bathurst Office (519) 725-1394

November 29, 1994

Reference No. 6029-40

Mr. Phil Rhodes
Division of Surface Waste (DSW)
Ohio Environmental Protection Agency
2110 East Aurora Road
Twinsburg, Ohio
U.S.A. 44087

Dear Mr. Rhodes:

Re: Analytical Results
Groundwater Treatment System Discharge
Summit National Superfund Site
Deerfield, Ohio

Preliminary analytical results for the November 16, 1994 influent and effluent samples from the groundwater treatment system at the Summit National Superfund Site (Site) in Deerfield, Ohio, were received from the project laboratory on November 28, 1994, and are summarized on the attached Table 1. At the time of sampling on November 16, 1994, groundwater was being pumped to the groundwater treatment system from the pipe and media drain. Analytical results for pH, hardness, Total Suspended Solids (TSS) and Total Dissolved Solids (TDS) also are provided on Table 1.

For the November 16 influent and effluent samples, only the inorganic compounds were analyzed for. Based on the discharge sample, the concentrations of four inorganic compounds (copper, magnesium, nickel and potassium) exceed the Ohio Environmental Protection Agency (OEPA) May 18, 1994 discharge requirements. However, based on the proposed revised discharge limits (per discussion with OEPA on November 22, 1994) no discharge limits were exceeded.

Commencing December 1, 1994, sampling of the treatment plant effluent for inorganic, organic, base/neutral and acid compounds analyses will be conducted in consideration of the proposed revised discharge limits discussed with OEPA on November 22, 1994. The revised discharge limits and designated compounds for analyses, as we understand from our discussion on November 22, 1994, are as summarized on the attached Table 1. The analytical results will continue to be reported to the United States Environmental Protection Agency and OEPA in

November 29, 1994 Reference No. 6029-40

accordance with the OEPA May 18, 1994 Substantive Permit, until receipt from OEPA of a revised OEPA Substantive Permit.

Should the revised discharge limits and designated compounds for analyses not be as summarized in the attached Table 1, or should OEPA and/or USEPA require sampling, analyses and/or reporting different from that proposed in the above paragraph, please do not hesitate to contact the undersigned at your earliest convenience. Also, we look forward to receipt of the revised OEPA Substantive Permit.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

Jack Michels

Jack Michels, P. Eng.

RB/dm/23
Encl.

c.c.: Anthony Rutter
Regan Williams
Richard McAvoy
Gary Gifford
Patrick Steerman
Kenneth Walanski
Douglas Haynam
Jeroen Winterink

TABLE 1

INFLUENT / EFFLUENT MONITORING

GROUNDWATER TREATMENT SYSTEM
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

			Oct-94						Nov-94			
			10/16/94		10/30/94		10/31/94		11/8/94		11/16/94	
Chemical	*OEPA Discharge Limits May 18, 1994 Substantive Permit*	*OEPA Discharge Limits Proposed Revised Permit*	*Influent From Wet Well 10/16/94 JAW-106 Prelim.*	*Discharge Sample 10/16/94 JAW-105 Prelim.*	*Influent From Wet Well 10/30/94 JAW-110 Prelim.*	*Discharge Sample 10/30/94 JAW-109 Prelim.*	*Influent From Wet Well 10/31/94 SMH-112 Prelim.*	*Discharge Sample 10/31/94 SMH-113 Prelim.*	*Influent From Wet Well 11/8/94 JAW-115 Prelim.*	*Dischage Sample 11/8/94 JAW-114 Prelim.*	*Influent From Wet Well 11/16/94 JAW-118 Prelim.*	*Discharge Sample 11/16/94 JAW-117 Prelim.*
Organic Compounds (ug/L)												
Acetone	927	NC	NA	NA	NA	NA	NA	NA	24	ND(10)	NA	NA
Benzene	7	NC	NA	NA	NA	NA	NA	NA	ND(5)	ND(5)	NA	NA
1,1-Dichloroethane	7	NC	NA	NA	NA	NA	NA	NA	9	ND(5)	NA	NA
1,2-Dichloroethane	21	NC	NA	NA	NA	NA	NA	NA	10	ND(5)	NA	NA
1,1-Dichloroethylene	5	NC	NA	NA	NA	NA	NA	NA	ND(5)	ND(5)	NA	NA
1,2-Dichloroethylene	26	NC	NA	NA	NA	NA	NA	NA	ND(5)	ND(5)	NA	NA
Ethylbenzene	5	NC	NA	NA	NA	NA	NA	NA	ND(5)	ND(5)	NA	NA
Methylene Chloride	5	NC	NA	NA	NA	NA	NA	NA	ND(5)	ND(5)	NA	NA
Methyl Ethyl Ketone	442	NC	NA	NA	NA	NA	NA	NA	ND(10)	ND(10)	NA	NA
Methyl Isobutyl Ketone	15	NC	NA	NA	NA	NA	NA	NA	ND(10)	ND(10)	NA	NA
Toluene	5	NC	NA	NA	NA	NA	NA	NA	ND(5)	ND(5)	NA	NA
1,1,1-Trichloroethane	12	NC	NA	NA	NA	NA	NA	NA	11	ND(5)	NA	NA
Trichloroethylene	5	NC	NA	NA	NA	NA	NA	NA	ND(5)	ND(5)	NA	NA
Xylene (Total)	6	NC	NA	NA	NA	NA	NA	NA	ND(5)	ND(5)	NA	NA
Base/Neutral Compounds (ug/L)												
Bis(2-Ethylhexyl)Phthalate	10	NC	NA	NA	NA	NA	NA	NA	ND(10)	ND(10)	NA	NA
Isophorone	10	NC	NA	NA	NA	NA	NA	NA	ND(10)	ND(10)	NA	NA
2-Methyl Naphthalane	10	NC	NA	NA	NA	NA	NA	NA	ND(10)	ND(10)	NA	NA
Naphthalene	10	NC	NA	NA	NA	NA	NA	NA	ND(10)	ND(10)	NA	NA
Acid Compounds (ug/L)												
4 Chloro 3 Methyl Phenol	10	NC	NA	NA	NA	NA	NA	NA	ND(10)	ND(10)	NA	NA
2,4-Dimethyl Phenol	10	NC	NA	NA	NA	NA	NA	NA	ND(10)	ND(10)	NA	NA
2-(O-Cresol) Methyl Phenol	10	NC	NA	NA	NA	NA	NA	NA	ND(10)	ND(10)	NA	NA
4-(P-Cresol) Methyl Phenol	10	NC	NA	NA	NA	NA	NA	NA	ND(10)	ND(10)	NA	NA
Phenol	10	NC	NA	NA	NA	NA	NA	NA	ND(10)	ND(10)	NA	NA

TABLE 1
INFLUENT / EFFLUENT MONITORING
GROUNDWATER TREATMENT SYSTEM
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

			Oct-94						Nov-94			
			10/16/94		10/30/94		10/31/94		11/8/94		11/16/94	
Chemical	*OEPA Discharge Limits May 18, 1994 Substantive Permit*	*OEPA Discharge Limits Proposed Revised Permit*	*Influent From Wet Well 10/16/94 JAW-106 Prelim.*	*Discharge Sample 10/16/94 JAW-105 Prelim.*	*Influent From Wet Well 10/30/94 JAW-110 Prelim.*	*Discharge Sample 10/30/94 JAW-109 Prelim.*	*Influent From Wet Well 10/31/94 SMH-112 Prelim.*	*Discharge Sample 10/31/94 SMH-113 Prelim.*	*Influent From Wet Well 11/8/94 JAW-115 Prelim.*	*Dischage Sample 11/8/94 JAW-114 Prelim.*	*Influent From Wet Well 11/16/94 JAW-118 Prelim.*	*Discharge Sample 11/16/94 JAW-117 Prelim.*
Inorganic Compounds (µg/L)												
Antimony	5	30	ND(8)	ND(8)	ND(7)	12	ND(7)	ND(7)	ND(7)	ND (7)	ND(8)	ND(9)
Arsenic	7	190	3	ND(3)	ND(3)	27	ND(4)	29 *	ND(4)	ND(3)	ND(3)	ND(4)
Iron	300	1,000	98,000	ND(20)	75,000	50	66,000	20	100,000	40	76,000	80
Aluminum	536	*	170	ND(50)	ND(50)	30	120	ND(50)	80	200	ND(50)	120
Barium	219	500	23	11	26	240	27	170	14	66	19	44
Calcium	201,785	*	460,000	120,000	540,000	580,000	500,000	390,000	400,000	250,000	400,000	150,000
Chromium		NC	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
Chromium VI	5	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	14	*	20	10	20	10	20	30	ND(10)	ND(10)	20	10
Copper	2	90	7	6	12	9	9	7	15	4	23	6
Lead	1	50	11	ND(5)	52	ND(1)	1	ND(1)	6	ND(2)	10	ND(2)
Magnesium	72,151	*	160,000	120,000	170,000	180,000	160,000	180,000	150,000	150,000	140,000	140,000
Manganese	6,818	*	8,100	410	16,000	16,000	14,000	4,900	6,200	1,200	7,000	1,800
Nickel	14	200	20	ND(20)	40	60	40	110	ND(20)	30	30	30
Potassium	6,415	*	7,700	7,800	7,500	8,900	7,800	8,300	7,300	8,700	7,700	8,400
Zinc	188	200	310	20	330	ND(10)	150	ND(10)	160	ND(10)	150	ND(10)
General Chemistry												
pH (1)			NA	7.98	6.15	7.75	6.46	8.25	6.14	8.20	6.32	7.91
Hardness, Total (as mg/L CaCO3)			2,700	820	2,200	2,400	2,100	1,800	1,800	NA	1,800	1,100
Total Suspended Solids (mg/L)			44	ND(10)	NA	NA	NA	NA	ND(10)	NA	11	ND(10)
Total Dissolved Solids (mg/L)			3,200	3,000	NA	NA	NA	NA	2,840	NA	2,600	2,700

Note: (1) Field Measurement.
* Monitor only.
NA Not analyzed.
NC No change.
ND Not detected.

ATTACHMENT B

PERMITS

PORTAGE COUNTY OCCUPANCY CERTIFICATE

COMMERCIAL • INDUSTRIAL

OWNERS NAME SUMMIT NATIONAL

MAY 31, 1994
DATE ISSUED

ADDRESS 8186 SR-224

DEERFIELD
TOWNSHIP

BUSINESS NAME SUMMIT NATIONAL

93 CB 1727
JOB NUMBER

ADDRESS 8186 SR-224

OPERATOR ENVIRONMENTAL CONSTRUCTION

USE GROUP B & F-2

OCCUPANCY LOAD 50

TYPE CONSTRUCTION 3-B

THIS CERTIFIES THAT THIS BUILDING CONFORMS TO THE APPLICABLE PROVISIONS OF THE OBBC AND CHAMPTERS 3781. AND 3791 OF THE REVISED CODE.

FIRE CHIEF

David L. Drew

BUILDING DEPARTMENT DIRECTOR

County of Portage

BUILDING PERMIT

THIS PERMIT MUST BE

POSTED ON ROAD SIDE OF PROPERTY

PORTAGE

No. 93CB1727 **Lot No.** _____

Name Summit National Superfund Site

Location 8186 SR 224

Footer _____

Metal Ground _____

H.V.A.C. _____

Foundation _____

Electric _____

Plumbing _____

Before Rock Lath or Dry Wall-Frame _____

Final _____

Township Deerfield

Type of Const. Water treatment plant

CALL FOR THESE INSPECTIONS

_____

Building Inspector

Portage County, Ohio

PC-1003

DATE 8-20-93

PORTAGE COUNTY INSPECTION SLIP
449 S. MERIDIAN ST.
RAVENNA, OHIO 44266

PC-132 Rev. 9/

TOWNSHIP: Deerfield

BUILDING				ELECTRIC				HEATING	
ftr	fdn	r	f	s	u	r	f	r	f
			✓						

BUILDING #: 93-CB-1727 ELECTRIC #: HEATING #:

OWNER: Summit National Superfund Site

ADDRESS: 8186 St. Rt. 224

DIRECTIONS:

CONTRACTOR: Environmental Co. PHONE:

CALL DATE: 5/25/94 TIME REQUEST: 5/26/94

APPROVED [✓] DISAPPROVED [ ] RE-INSPECTION [ ]

REMARKS: Water Treatment Plant

① EMER. LIGHTING UNIT DID NOT WORK

5/31/94 SIGNATURE: FINCH

5

PORTAGE COUNTY INSPECTION SLIP
449 S. MERIDIAN ST.
RAVENNA, OHIO 44266

PC-132 Rev. 9/8

TOWNSHIP: DEERFIELD

BUILDING				ELECTRIC				HEATING	
ftr	fdn	r	f	s	u	r	f	r	f
				✓					

BUILDING #: 93CB1727 ELECTRIC #: 93CE2310 HEATING #:

OWNER: SUMMIT NATIONAL Superfund

ADDRESS: 8186 ST RT 224

DIRECTIONS:

CONTRACTOR: WOLFE E PHONE:

CALL DATE: 3-3-94 TIME REQUEST: 3-3-94

APPROVED [X] DISAPPROVED [ ] RE-INSPECTION [X] B.A.

REMARKS: WATER TREATMENT PLANT

400 Amp SIGNATURE: [illegible]

PORTAGE COUNTY INSPECTION SLIP
449 S. MERIDIAN ST.
RAVENNA, OHIO 44266

PC-132 Rev. 9/

TOWNSHIP: Deerfield

BUILDING				ELECTRIC				HEATING	
ftr	fdn	r	f	s	u	r	f	r	f

STEEL INSPECTION

BUILDING #: 93CB 1727 ELECTRIC #: HEATING #:

OWNER: Summit National Superfund Site

ADDRESS: 8186 St Rt 224

DIRECTIONS:

CONTRACTOR: Environmental Const. PHONE:

CALL DATE: 2-22-94 TIME REQUEST: 2-23-94

APPROVED [X] AS noted DISAPPROVED [ ] RE-INSPECTION [ ]

REMARKS: 4,940 Sq Ft. Water Environmental Plant
Not not complete At time of Inspection

SIGNATURE: [signature] 2-23-94

PORTAGE COUNTY INSPECTION SLIP
449 S. MERIDIAN ST.
RAVENNA, OHIO 44266

PC . 2 Rev. 9/

TOWNSHIP: Deerfield

BUILDING				ELECTRIC				HEATING	
ftr	fdn	r	f	s	u	r	f	r	

Office

BUILDING #: 93CB1727 ELECTRIC #: 93CE2310 HEATING #:

OWNER: Summit National Superfund Site

ADDRESS: 8186 SR-224

DIRECTIONS:

CONTRACTOR: [illegible] Elec. PHONE:

CALL DATE: 3-11-94 TIME REQUEST: 3-11-94

APPROVED [X] DISAPPROVED [ ] RE-INSPECTION [ ]

REMARKS: 4,940 Sq. Ft. Water Treatment Plant
Office Area Partition [illegible]

SIGNATURE: [signature]

PORTAGE COUNTY INSPECTION SLIP
449 S. MERIDIAN ST.
RAVENNA, OHIO 44266

PC-132 Rev. 9/8

TOWNSHIP: Deerfield

BUILDING				ELECTRIC				HEATING	
ftr	fdn	r	f	s	u	r	f	r	f
								✓	

BUILDING #: 93CB1727 ELECTRIC #: HEATING #: 94CH

OWNER: Summit National Superfund Site

ADDRESS: 8186 St Rt 224

DIRECTIONS:

CONTRACTOR: Tri County PHONE:

CALL DATE: 3-14-94 TIME REQUEST: 3-14-94

APPROVED [X] DISAPPROVED [ ] RE-INSPECTION [ ]

REMARKS: 4940 sq ft. W.T.P. Heat Permit R

SIGNATURE: [illegible] 3-14-94

STATE OF OHIO
DEPARTMENT OF INDUSTRIAL RELATIONS
Division of Pressure Piping Inspection

CERTIFICATE OF PIPING INSPECTION

CERTIFICATE NO. 138079

Type of System Comp. Air

Operating Pressure 100

Issued To Summit Nat'l

Test Pressure 240#

Location 8186 S.R. 224

Inspector [illegible]

Deerfield Twp.

Inspected 5-3-94

GOVERNOR

Chief of Division

TO BE KEPT AT PROJECT LOCATION

COUNTY OF PORTAGE 449 S. Meridian
Ravenna, OH 44266

ELECTRIC

APPROVED

DATE 3-11-94

SIGNED [illegible]

OFFICE
PART. Rough

PC-2178

COUNTY OF PORTAGE 449 S. Meridian
Ravenna, OH 44266

ELECTRIC

APPROVED

DATE 8-20-93

SIGNED [illegible]

RACE / Concrete etc.

PC-2178

COUNTY OF PORTAGE 449 S. Meridian
Ravenna, OH 44266

ELECTRIC

APPROVED

DATE 8-26-93

SIGNED [illegible]

Temp

PC-2178

PORTAGE COUNTY INSPECTION SLIP
449 S. MERIDIAN ST.
RAVENNA, OHIO 44266

PC-132 Rev. 9

TOWNSHIP: Deerfield

BUILDING				ELECTRIC				HEATING	
ftr	fdn	r	f	s	u	r	f	r	f
		✓							

BUILDING #: 93CB1727 ELECTRIC #: _____ HEATING #: _____

OWNER: Summit National Superfund Site

ADDRESS: 8186 ST Rt 224

DIRECTIONS: _____

CONTRACTOR: Environmental C PHONE: _____

CALL DATE: 3-14-94 TIME REQUEST: 3-14-94.

APPROVED [X] DISAPPROVED [ ] RE-INSPECTION [ ]

REMARKS: 4,940 Sq ft Water Trt Plant

SIGNATURE: DPS 3-14-94

T5

PORTAGE COUNTY INSPECTION SLIP
449 S. MERIDIAN ST.
RAVENNA, OHIO 44266

PC-132 Rev. 9

TOWNSHIP: Deerfield

BUILDING				ELECTRIC				HEATING	
ftr	fdn	r	f	s	u	r	f	r	f
				✓					

BUILDING #: 93CB1727 ELECTRIC #: 93CB2310 HEATING #: _____

OWNER: Summit National Superfund Site

ADDRESS: 8186 ST Rt 224

DIRECTIONS: _____

CONTRACTOR: [illegible] PHONE: _____

CALL DATE: 3-30-93 TIME REQUEST: 3-30-93

APPROVED [X] DISAPPROVED [ ] RE-INSPECTION [ ]

REMARKS: 4,940 Sq ft Water Treatment Plant
Using (1) 200 amp service, 100 amp hooked up and added a 100 amp service about 800' E. of fence

SIGNATURE: [illegible] 3-30-93

Behlen Mfg. Company

U.L. 90 Uplift Rating

Owner: Summit National Facility Trust Fund
8186 St. Rt. 224 (Waterloo Rd.)
Deerfield, Ohio 44411

Reference No. D3443 Owner SUPERFUND SITE

Dealer/Builder N.E. WALSH CONST. CO. Building Location DEERFIELD, OH

Facility: Ground Water Treatment System
Summit National Superfund Site
Deerfield Township of Portage County, Ohio

Behlen Mfg. Company hereby certifies that the 24 Gage Behlen Standing Seam Roof System has been tested by Underwriters Laboratories, Inc. in accordance with the Standard "Tests for Wind Uplift Resistance of Roof Assemblies", UL580, and has been assigned a Wind Uplift Class 90 designation.

Construction and installation details and other information relating to this system can be found in the erection plans prepared for this project, and the "Building Materials Directory" of the Underwriters Laboratories, Inc., under Construction No. 174 (Wind Uplift - Class 90).

REGISTERED PROFESSIONAL ENGINEER
ALAN D. BLAIR
E-4544
STATE OF NEBRASKA

By Alan D. Blair Date 4/14/94

Behlen Mfg. Co.
P.O. Box 569
Columbus, NE 68602

MR-509
Rev. 5-82

Environmental Construction, Inc.
1405 Newton Street
Tallmadge, Ohio 44278

County Portage Dist. 4

S.R. 224 Section 13.52

C-1

POR 224 - 1007

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
PERMIT

Subject to all of the terms, conditions and restrictions printed or written below, and on the reverse side hereof, permission is hereby granted to John Vasi & Summit National Superfund Site
8186 US @24, Deerfield, OH 44411

To construct a new drive approach at location and offsets as shown on revised plans approved by ODOT. The drive will have a minimum of 25 ft. radius and be paved as per ODOT specifications. Install drainage facilities as per plan. The ODOT letter of 9-21-93 will be part of permit. All work to conform to ODOT specifications. Maintain positive drainage.

The provisions and conditions as outlined on the reverse side of this permit shall be applicable to the work to be done under this permit, including maintaining traffic and the use of barricades and lights for the safety of the traveling public, according to the requirements set forth in the Manual of Uniform Traffic Control, unless otherwise herein stipulated.

This work to be performed at no cost to the State of Ohio. All disturbed State right of way areas must be restored to the complete satisfaction of the Deputy Director or his authorized agent.

This permit is not a substitute for satisfying the rights of any other party that may have an interest in the underlying fee.

Portage County along US 224, E of SR 225.

This permit to be in possession of employees in charge of work at all times. To be shown upon request to any employee of the Department of Transportation

*in accordance with the attached plans.

No work shall be done under this permit until the party or parties to whom it is granted shall have communicated with and received instructions from Mr. Tom Harris, Superintendent

District Deputy Director of Transportation 4285 SR 44, Rootstown, Ohio

Phone: 325 - 7996

This permit shall be void unless the work herein contemplated shall have been completed before 3-31-94

Dated this 24th day of November, 19 93

DISTRICT DEPUTY DIRECTOR OF TRANSPORTATION

TWO WORKING DAYS BEFORE YOU DIG
Call 800-362-[illegible]
TOLL FREE
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS MUST BE CALLED DIRECTLY

DOT-1[illegible] Ohio Revised Code Section 5515.01

ATTACHMENT C

PILE DRIVING SUMMARY

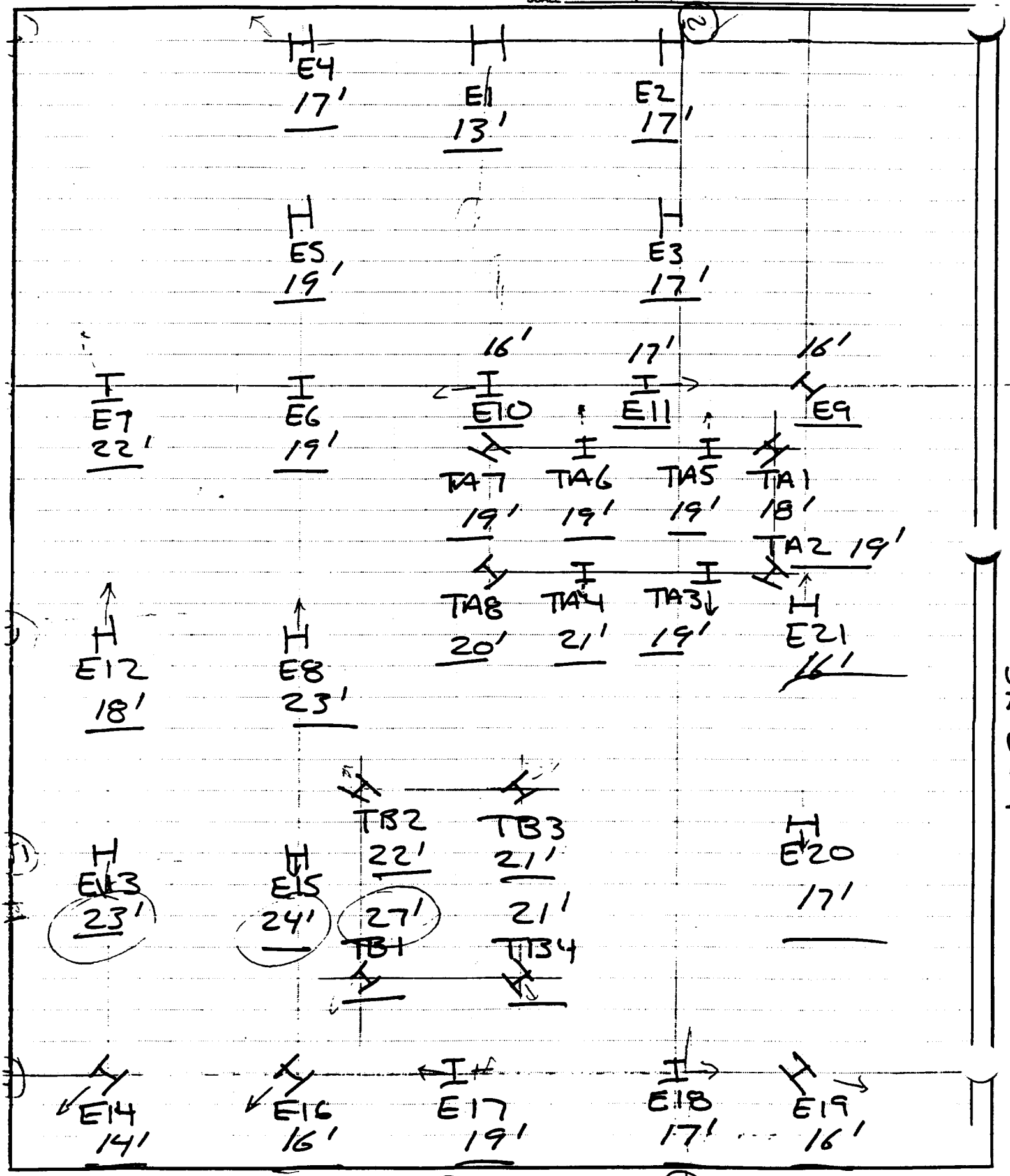
PILE DRIVING SUMMARY

GROUNDWATER TREATMENT SYSTEM
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

PILE ID	LOCATION	LEGNTH	BATTER DIRECTION	SPLICE	PILE SHOE	FIELD CUT
	Building					
E1	line A @ line 4	13	none	none	yes	yes
E2	line A @ line 2	17	north west	none	yes	yes
E3	line 2 between A & B	17	none	none	yes	yes
E4	line A @ line 5	17	south west	none	yes	yes
E5	line 5 between A & B	19	none	none	yes	yes
E6	line 5 @ line B	19	none	none	yes	yes
E7	line 7 @ line B	22	none	none	yes	yes
E8	line 5 west of line D	23	west	yes	yes	yes
E9	line 1@ line B	16	north west	none	yes	yes
E10	line B south of line 4	16	south	none	yes	yes
E11	line B south of line 3	17	north	none	yes	yes
E12	line 7 east of line D	18	west	none	yes	yes
E13	line 7 east of line F	23	east	yes	yes	yes
E14	line H @ line 7	14	south east	none	yes	yes
E15	line 5 east of line F	24	east	yes	yes	yes
E16	line H @ line 5	16	south east	none	yes	yes
E17	line H south of line 4	19	south	none	yes	yes
E18	line H south of line 3	17	north	none	yes	yes
E19	line H @ line 1	16	north east	none	yes	yes
E20	line 1 east of line F	17	east	none	yes	yes
E21	line 1 east of line D	16	west	none	yes	yes
	Carbon Adsorbers					
TA1	north west corner	18	north west	none	yes	yes
TA2	north east corner	19	north east	none	yes	yes
TA3	east side	19	east	none	yes	yes
TA4	east side	21	east	none	yes	yes
TA5	west side	19	west	none	yes	yes
TA6	west side	19	west	none	yes	yes
TA7	south west corner	19	south west	none	yes	yes
TA8	south east corner	20	south east	none	yes	yes
	BioTower					
TB1	south east corner	27	south east	yes	yes	yes
TB2	south west corner	22	south west	yes	yes	yes
TB3	north west corner	21	north west	none	yes	yes
TB4	north east corner	21	north east	none	yes	yes
	totals	621		5	33	33

THE W. M. BRODE CO.
100 Elizabeth Str
NEWCOMERSTOWN, OH. 43832
(614) 498-5121

SHEET NO. _____ OF _____
CALCULATED BY SKVB DATE _____
CHECKED BY _____ DATE _____
SCALE TOTAL=621 ft



PRODUCT 204-1 (Single Sheets) 205-1 (Padded) ACCO Inc. Groton Mass. 01471 To Order PHONE-ROLL FREE 1-800-225-6380

THE W. M. BROD[illegible] CO.
100 Elizabeth Stree[illegible]
NEWCOMERSTOWN, OHIO 43832
(614) 498-5121

RECEIVED AUG 2 0 1993

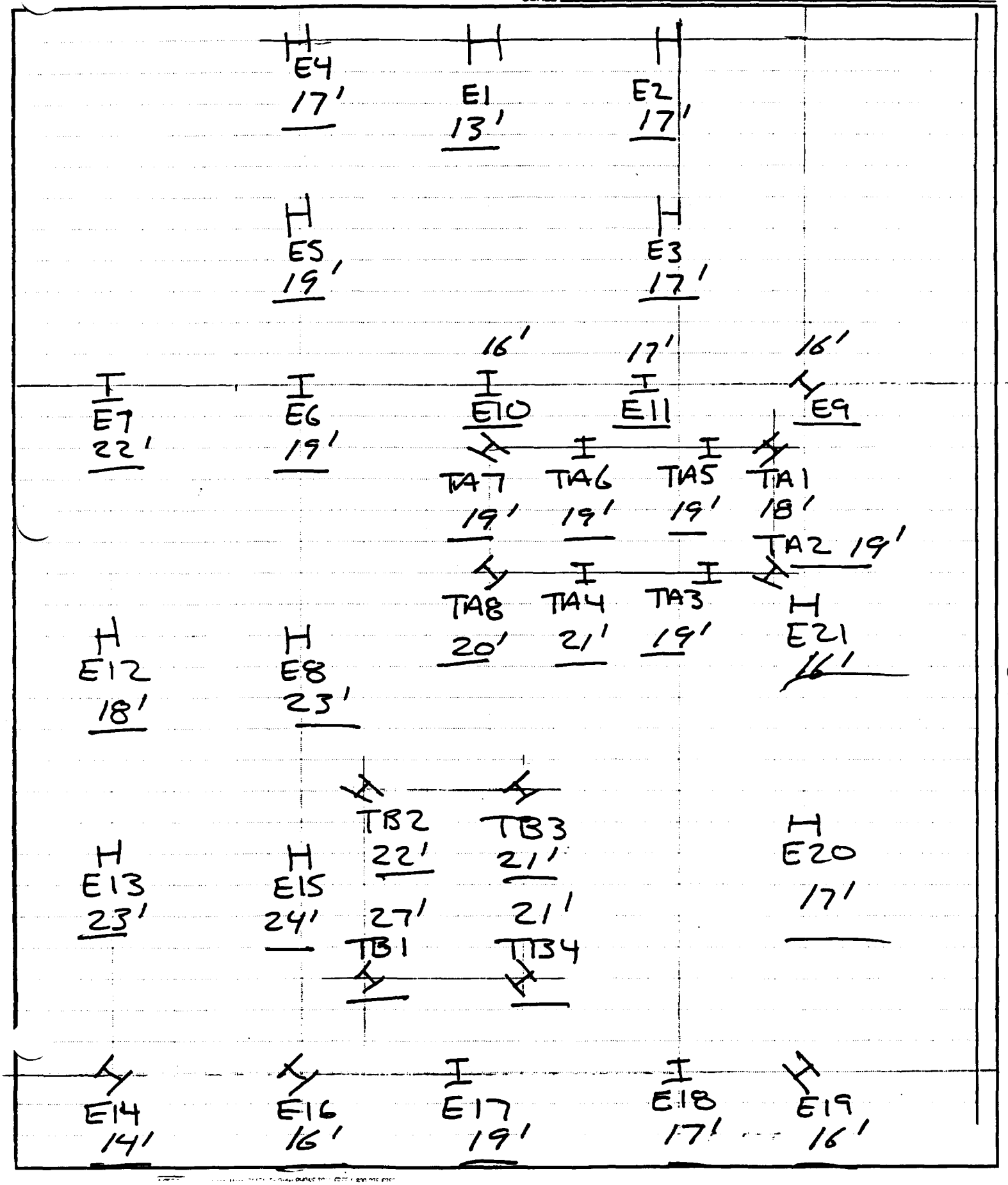
JOB DEERFIELD MILE LENGTH ? 1D

SHEET NO. _____ OF _____

CALCULATED BY SWB DATE _____

CHECKED BY _____ DATE _____

SCALE TOTAL = 621 ft



Aug 10/93

No: E1 Date: ~~8-15-93~~ Proj. No: 93-25

AUG 16 1993

Blows/Ft	Blows/Ft.	Blows/In	
	35	70	25 12
	34	69	25 11
	33	68	25 10
	32	67	25 9
	31	66	25 8
	30	65	25 7
	29	64	20 6
	28	63	20 5
	27	62	20 4
	26	61	20 3
	25	60	18 2
	24	59	15 1
	23	58	
	22	57	
	21	56	
	20	55	
	19	54	
	18	53	
	17	52	
	16	51	
	15	50	
	14	49	
	13	48	
8.9	12	47	
31	11	46	
19	10	45	
10	9	44	
10	8	43	
10	7	42	
	6	41	
	5	40	
	4	39	
	3	38	
	2	37	
	1	36	

Last Foot Driven

Criteria ⇒ 25

Pay 13'

Blows/Ft
80
79
78
77
76
75
74
73
72
71

Driving Record

HP 1253 × 25

Hammer 1200

Mfg. En 22,500

PILE NO: E2 DATE: 8-15 PROJ. NO: 93-25

AUG 16 1993

BLOWS/FT.

	35
	34
	33
	32
	31
	30
	29
	28
	27
	26
	25
	24
	23
	22
	21
	20
	19
	18
51 1/4	17
180	16
132	15
69	14
50	13
38	12
23	11
18	10
17	9
12	8
	7
	6
	5
	4
	3
	2
	1

	70
	69
	68
	67
	66
	65
	64
	63
	62
	61
	60
	59
	58
	57
	56
	55
	54
	53
	52
	51
	50
	49
	48
	47
	46
	45
	44
	43
	42
	41
	40
	39
	38
	37
	36

BLOWS/IN

	12
	11
	10
	9
	8
	7
	6
	5
20	4
20	3
20	2
20	1

LAST FOOT DRIVEN

CRITERIA ⇒ 20

PAY 17'

BLOWS/FT

	80
	79
	78
	77
	76
	75
	74
	73
	72
	71

DRIVING RECORD

HT ____ X ____

HAMMER ____

MFG. EN ____

01-215-10

AUG 16 1993

PILE NO: E3 DATE: ~~8-15~~ PROJ. NO: 93-25

Blows/Ft		Blows/Ft		Blows/In	
	35		70		12
	34		69		11
	33		68		10
	32		67		9
	31		66		8
	30		65		7
	29		64		6
	28		63	20	5
	27		62	20	4
	26		61	20	3
	25		60	20	2
	24		59	20	1
	23		58		
	22		57		
	21		56		
	20		55		
	19		54		
	18		53		
5 1/4"	17		52		
183	16		51		
142	15		50		
55	14		49		
35	13		48		
32	12		47		
32	11		46		
	10		45		
	9		44		
	8		43		
	7		42		
	6		41		
	5		40		
	4		39		
	3		38		
	2		37		
	1		36		

LAST FOOT DRIVEN

CRITERIA ⇒ 20

17

Blows/Ft	
	80
	79
	78
	77
	76
	75
	74
	73
	72
	71

DRIVING RECORD

HT _____ X _____

HAMMER _____

MFG. EN _____

Pile No: E4 Date: ~~8-15~~ Proj. No: 93-23

Blows/Ft		Blows/Ft.		Blows/In	
	35		70		12
	34		69		11
	33		68		10
	32		67		9
	31		66	25	8
	30		65	25	7
	29		64	24	6
	28		63	22	5
	27		62	20	4
	26		61	19	3
	25		60	18	2
	24		59	17	1
	23		58		
	22		57		
	21		56		
	20		55		
	19		54		
	18		53		
	17		52		
6/14"	16		51		
165	15		50		
160	14		49		
134	13		48		
60	12		47		
38	11		46		
	10		45		
	9		44		
	8		43		
	7		42		
	6		41		
	5		40		
	4		39		
	3		38		
	2		37		
	1		36		

17'

16'

Last Foot Driven

Criteria ⇒ 24

Pay 17'

Blows/Ft	
	80
	79
	78
	77
	76
	75
	74
	73
	72
	71

Driving Record

Ht 1253 x 25

Hammer 1200

Mfg. En 22500

AUG 16 1993

Pile No: E6 Date: ~~8-5~~ Proj. No: 93-25

Blows/Ft		Blows/Ft.		Blows/In	
	35		70		12
	34		69	20	11
	33		68	20	10
	32		67	20	9
	31		66	20	8
	30		65	20	7
	29		64	20	6
	28		63	19	5
	27		62	18	4
	26		61		3
	25		60		2
	24		59		1
	23		58		
	22		57		
	21		56		
	20		55		
	19		54		
5/1/4"	18		53		
190	17		52		
161	16		51		
98	15		50		
43	14		49		
22	13		48		
	12		47		
	11		46		
	10		45		
	9		44		
	8		43		
	7		42		
	6		41		
	5		40		
	4		39		
	3		38		
	2		37		
	1		36		

19'

18'

Last Foot Driven

Criteria ⇒ 20

Pay 19'

Blows/Ft	
	80
	79
	78
	77
	76
	75
	74
	73
	72
	71

Driving Record

HP _____ X _____

Hammer _____

Mfg. En _____

AUG 16 1993

Pile No: E6 Date: 8-15 Proj. No: 93-25

Blows/Ft.

Blows/Ft	
	35
	34
	33
	32
	31
	30
	29
	28
	27
	26
	25
	24
	23
	22
	21
	20
5/1/4"	19
195	18
191	17
98	16
108	15
99	14
75	13
	12
	11
	10
	9
	8
	7
	6
	5
	4
	3
	2
	1

	70
	69
	68
	67
	66
	65
	64
	63
	62
	61
	60
	59
	58
	57
	56
	55
	54
	53
	52
	51
	50
	49
	48
	47
	46
	45
	44
	43
	42
	41
	40
	39
	38
	37
	36

Blows/IN

	12
	11
	10
	9
	8
	7
	6
	5
20	4
20	3
20	2
20	1

Last Foot Driven

Criteria ⇒ 20

Pay 19'

Blows/Ft

	80
	79
	78
	77
	76
	75
	74
	73
	72
	71

Driving Record

Ht 1253 x 20

Hammer 1200

Mfg. En 22500

AUG 16 193.

PILE NO: E7 DATE: ~~8-15~~ PROJ. NO: 93-25

Blows/Ft	Blows/Ft.	Blows/In
35	70	12
34	69	11
33	68	10
32	67	9
31	66	8
30	65	7
29	64	6
28	63	20 5
27	62	20 4
26	61	20 3
25	60	21 2
24	59	20 1
5/1/4" 23	58	
180 22	57	
195 21	56	
200 20	55	
185 19	54	
130 18	53	
111 17	52	
102 16	51	
97 15	50	
68 14	49	
49 13	48	
12	47	
11	46	
10	45	
9	44	
8	43	
7	42	
6	41	
5	40	
4	39	
3	38	
2	37	
1	36	

LAST FOOT DRIVEN

CRITERIA ⇒ 20

PAY 22'

Blows/Ft
80
79
78
77
76
75
74
73
72
71

DRIVING RECORD

HT 1253 X 25

HAMMER 1200

MFG. EN 22500

Pile No: 58 Date: ~~8-15~~ Proj. No: 93-28

Blows/Ft	Blows/Ft.	Blows/In
	35	70
	34	69
	33	68
	32	67
	31	66
	30	65
	29	64
	28	63
	27	62
	26	61
	25	60
5/1¼"	24	59
198	23	58
168	22	57
159	21	56
150	20	55
108	19	54
105	18	53
100	17	52
90	16	51
62	15	50
	14	49
	13	48
	12	47
	11	46
	10	45
	9	44
	8	43
	7	42
	6	41
	5	40
	4	39
	3	38
	2	37
	1	36

Blows/In	
	12
	11
	10
	9
	8
	7
	6
20	5
20	4
20	3
20	2
20	1

Last Foot Driven

Criteria ⇒ 20

Pat 23'

Blows/Ft
80
79
78
77
76
75
74
73
72
71

Driving Record

HP 1253 X _____

Hammer 1200

Mfg. En 22500

AUG 17 1993

PILE NO: E9 DATE: ~~8-16~~ PROJ. NO: 93-25

Blows/Ft		Blows/Ft.		Blows/In	
	35		70		12
	34		69	24	11
	33		68	24	10
	32		67	24	9
	31		66	24	8
	30		65	22	7
	29		64	22	6
	28		63	20	5
	27		62	20	4
	26		61	18	3
	25		60		2
	24		59		1
	23		58		
	22		57		
	21		56		
	20		55		
	19		54		
	18		53		
	17		52		
6/14"	16		51		
208	15		50		
169	14		49		
79	13		48		
55	12		47		
29	11		46		
	10		45		
	9		44		
	8		43		
	7		42		
	6		41		
	5		40		
	4		39		
	3		38		
	2		37		
	1		36		

LAST FOOT DRIVEN

CRITERIA ⇒ 24

PAY 16'

Blows/Ft	
	80
	79
	78
	77
	76
	75
	74
	73
	72
	71

DRIVING RECORD

HT _____ X _____

HAMMER _____

MFG. EN _____

AUG 17 1993

Pile No: E10 Date: ~~8-16-93~~ Proj. No: 93-25

Blows/Ft	Blows/Ft	Blows/In
35	70	12
34	69	11
33	68	10
32	67	9
31	66	8
30	65	7
29	64	6
28	63	5
27	62	4
26	61	3
25	60	2
24	59	1
23	58	
22	57	
21	56	
20	55	
19	54	
18	53	
17	52	
16	51	
15	50	
14	49	
13	48	
12	47	
11	46	
10	45	
9	44	
8	43	
7	42	
6	41	
5	40	
4	39	
3	38	
2	37	
1	36	

51 1/4"
126
85
149
64
28
14

Last Hour Driven
Criteria ⇒ 20

Pay 16'

Blows/Ft
80
79
78
77
76
75
74
73
72
71

Driving Record:

HP 1253 X 60

Hammer 1200 FEC

Mfg. En 22,500

AUG 17 1993

Pile No: E-11 Date: ~~8-16-93~~ Proj. No: 93-25

Blows/Ft		Blows/Ft		Blows/In	
	35		70		12
	34		69		11
	33		68		10
	32		67	20	9
	31		66	20	8
	30		65	20	7
	29		64	20	6
	28		63	19	5
	27		62	17	4
	26		61	15	3
	25		60	15	2
	24		59	15	1
	23		58		
	22		57		
	21		56		
	20		55		
	19		54		
	18		53		
51 1/4"	17		52		
168	16		51		
90	15		50		
70	14		49		
44	13		48		
38	12		47		
30	11		46		
24	10		45		
	9		44		
	8		43		
	7		42		
	6		41		
	5		40		
	4		39		
	3		38		
	2		37		
	1		36		

Last Foot Driven

Criteria ⇒ 20

Pay 17'

Blows/Ft	
	80
	79
	78
	77
	76
	75
	74
	73
	72
	71

Driving Record

Ht 1253 X 60

Hammer 1200 FEC

Mfg. En 22,500

Pile No: TA1 Date: ~~8-16~~ AUG Prot. No: 93-25

Blows/Ft		Blows/Ft.		Blows/In	
	35		70		12
	34		69		11
	33		68		10
	32		67		9
	31		66		8
	30		65		7
	29		64		6
	28		63		5
	27		62	20	4
	26		61	20	3
	25		60	20	2
	24		59	20	1
	23		58		
	22		57		
	21		56		
	20		55		
	19		54		
	18		53		
	17		52		
	16		51		
5/1/4"	15		50		
190	14		49		
175	13		48		
98	12		47		
75	11		46		
	10		45		
	9		44		
	8		43		
	7		42		
	6		41		
	5		40		
	4		39		
	3		38		
	2		37		
	1		36		

Last Foot Driven

Criteria ⇒ 20

Pat 18'

Blows/Ft	
	80
	79
	78
	77
	76
	75
	74
	73
	72
	71

Driving Record

Hit _____ X _____

Hammer _____

Mfg. En _____

AUG 11 1998

PILE NO: TA2 DATE: 8-16 PROJ. NO: 93-25

Blows/Ft		Blows/Ft.		Blows/In	
	35		70		12
	34		69		11
	33		68		10
	32		67		9
	31		66		8
	30		65	20	7
	29		64	20	6
	28		63	20	5
	27		62	20	4
	26		61	19	3
	25		60	18	2
	24		59		1
	23		58		
	22		57		
	21		56		
	20		55		
	19		54		
51 1/4"	18		53		
160	17		52		
109	16		51		
68	15		50		
39	14		49		
	13		48		
	12		47		
	11		46		
	10		45		
	9		44		
	8		43		
	7		42		
	6		41		
	5		40		
	4		39		
	3		38		
	2		37		
	1		36		

LAST FOOT DRIVEN

CRITERIA ⇒ 20

PAY 19'

Blows/Ft	
	80
	79
	78
	77
	76
	75
	74
	73
	72
	71

DRIVING RECORD

HT ____ X ____

HAMMER ____

MFG. EN ____

Pile No: JA3 Date: ~~8-16-93~~ Proj. No: _____

Blows/Ft		Blows/Ft		Blows/In	
	35		70		12
	34		69		11
	33		68	75	10
	32		67	25	9
	31		66	25	8
	30		65	20	7
	29		64	18	6
	28		63	18	5
	27		62	18	4
	26		61	15	3
	25		60	15	2
	24		59	15	1
	23		58		16
	22		57		
	21		56		
	20		55		
	19		54		
	18		53		
	17		52		
6/14	16		51		
103	15		50		
60	14		49		
31	13		48		
28	12		47		
27	11		46		
16	10		45		
	9		44		
	8		43		
	7		42		
	6		41		
	5		40		
	4		39		
	3		38		
	2		37		
	1		36		

Last Foot Driven

Criteria ⇒ 25

PAY 18'

Blows/Ft	
	80
	79
	78
	77
	76
	75
	74
	73
	72
	71

Driving Record

Ht 1253 X 60"

Hammer 1200 FEC

Meg. En 22,500

AUG 17 1993

Pile No: TA 4 Date: ~~8-16-93~~ Proj. No: 93-25

Blows/Ft	Blows/Ft.	Blows/In
35	70	12
34	69	11
33	68	10
32	67	9
31	66	8
30	65	7
29	64	6
28	63	5
27	62	4
26	61	3
25	60	2
24	59	1
23	58	
22	57	
21	56	
20	55	
19	54	
18	53	
17	52	
16	51	
15	50	
14	49	
13	48	
12	47	
11	46	
10	45	
9	44	
8	43	
7	42	
6	41	
5	40	
4	39	
3	38	
2	37	
1	36	

5/1/4
189
160
98
53
35
22
20

20
20
20
20
18
15
15

19
18

Last Foot Driven
Criteria ⇒ 20

Pay 21'

Blows/Ft
80
79
78
77
76
75
74
73
72
71

Driving Record

Ht 1253 X 60

Hammer 1200 FEC

Mfg. En 22,500

2312-10

Pile No: TAS Date: ~~8-16-93~~ Proj. No: 93-25

Blows/Ft		Blows/Ft.		Blows/In	
	35		70		12
	34		69	20	11
	33		68	20	10
	32		67	20	9
	31		66	20	8
	30		65	15	7
	29		64	18	6
	28		63	15	5
	27		62	18	4
	26		61	18	3
	25		60	18	2
	24		59	15	1
	23		58		
	22		57		
	21		56		
	20		55		
	19		54		
	18		53		
	17		52		
5/4"	16		51		
160	15		50		
81	14		49		
42	13		48		
34	12		47		
40	11		46		
32	10		45		
16	9		44		
	8		43		
	7		42		
	6		41		
	5		40		
	4		39		
	3		38		
	2		37		
	1		36		

Last Foot Driven

Criteria ⇒ 20

Pay 19'

Blows/Ft
80
79
78
77
76
75
74
73
72
71

Driving Record

HP 1253 X 60

Hammer 1200 FEC

Mfg. En 22,500

Pile No: TA6 Date: ~~8-16-93~~ Proj. No: _____

Blows/Ft	Blows/Ft.	Blows/In
35	70	12
34	69	11
33	68	10
32	67	9
31	66	8
30	65	7
29	64	6
28	63	5
27	62	4
26	61	3
25	60	2
24	59	1
23	58	
22	57	
21	56	
20	55	
19	54	
18	53	
17	52	
16	51	
15	50	
14	49	
13	48	
12	47	
11	46	
10	45	
9	44	
8	43	
7	42	
6	41	
5	40	
4	39	
3	38	
2	37	
1	36	

Blows/Ft
51 1/4
106
83
46
37
36
33
8

Blows/In
20
20
20
28
70

Last Foot Driven Criteria ⇒ 70

Pay 19'

Blows/Ft
80
79
78
77
76
75
74
73
72
71

Driving Record

Hp 1253 × 60

Hammer 1200 FEC

Mfg. En 22,500

AUG 1 1 1995

Pile No: TA-7 Date: ~~8-16-95~~ Proj. No: 93-25

Blows/Ft		Blows/Ft.		Blows/In	
	35		70		12
	34		69		11
	33		68		10
	32		67	20	9
	31		66	20	8
	30		65	20	7
	29		64	20	6
	28		63	20	5
	27		62	18	4
	26		61	18	3
	25		60	18	2
	24		59	18	1
	23		58		
	22		57		
	21		56		
	20		55		
	19		54		
	18		53		
	17		52		
5/1/4"	16		51		
140	15		50		
105	14		49		
75	13		48		
50	12		47		
30	11		46		
20	10		45		
18	9		44		
	8		43		
	7		42		
	6		41		
	5		40		
	4		39		
	3		38		
	2		37		
	1		36		

Last Foot Driven

Criteria ⇒ 20

Pay 19'

Blows/Ft	
	80
	79
	78
	77
	76
	75
	74
	73
	72
	71

Driving Record

HP 1253 × 60

Hammer 1200 FEC

Mfg. En 22,500

Pile No: TA-8 Date: 8-18-8 Proj. No: 93-25

Blows/Ft		Blows/Ft		Blows/In	
	35	70			12
	34	69		20	11
	33	68		20	10
	32	67		20	9
	31	66		20	8
	30	65		20	7
	29	64		18	6
	28	63		18	5
	27	62		18	4
	26	61		19	3
	25	60		18	2
	24	59		18	1
	23	58			
	22	57			
	21	56			
	20	55			
	19	54			
	18	53			
240	17	52			
212	16	51			
123	15	50			
88	14	49			
76	13	48			
49	12	47			
34	11	46			
22	10	45			
16	9	44			
7	8	43			
	7	42			
	6	41			
	5	40			
	4	39			
	3	38			
	2	37			
	1	36			

Last Foot Driven

Criteria ⇒ 20

Pat 20'

Blows/Ft	
	80
	79
	78
	77
	76
	75
	74
	73
	72
	71

Driving Record

Ht. 1253 × 60

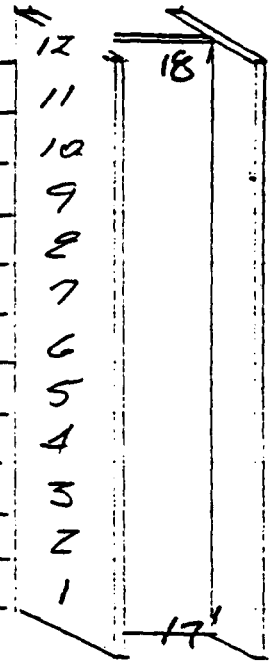
Hammer 1200 FEC

Mfg. En 22,500

AUG 18 1993

Pile No: E-12 Date: ~~8-17~~ Proj. No: 93-25

Blows/Ft		Blows/Ft.		Blows/In	
	35		70		12
	34		69		11
	33		68	20	10
	32		67	20	9
	31		66	20	8
	30		65	20	7
	29		64	20	6
	28		63	20	5
	27		62	20	4
	26		61		3
	25		60		2
	24		59		1
	23		58		
	22		57		
	21		56		
	20		55		
	19		54		
	18		53		
5/1/4"	17		52		
189	16		51		
130	15		50		
99	14		49		
72	13		48		
	12		47		
	11		46		
	10		45		
	9		44		
	8		43		
	7		42		
	6		41		
	5		40		
	4		39		
	3		38		
	2		37		
	1		36		



18'

17'

Last Foot Driven

Criteria ⇒ 20

Pay 18'

Blows/Ft	
	80
	79
	78
	77
	76
	75
	74
	73
	72
	71

Driving Record

HP _____ X _____

Hammer _____

Mfg. En _____

AUG 18 1993

Pile No: E-B Date: 8-17 Proj. No: _____

Blows/Ft	Blows/Ft	Blows/In
	35	12
	34	11
	33	10
	32	9
	31	8
	30	7
	29	6
	28	5
	27	4
	26	3
	25	2
	24	1
1240	23	
198	22	
165	21	
125	20	
90	19	
75	18	
73	17	
101	16	
131	15	
136	14	
120	13	
14	12	
12	11	
	10	
	9	
	8	
	7	
	6	
	5	
	4	
	3	
	2	
	1	

Blows/Ft	Blows/Ft
	70
	69
	68
	67
	66
	65
	64
	63
	62
	61
	60
	59
	58
	57
	56
	55
	54
	53
	52
	51
	50
	49
	48
	47
	46
	45
	44
	43
	42
	41
	40
	39
	38
	37
	36

Blows/In
20
20
20
20
20
20
20
20

Last Foot Driven Criteria ⇒ 20

Pay 23'

Blows/Ft
80
79
78
77
76
75
74
73
72
71

Driving Record

HP 1253 X 60

Hammer 1200 FEC

Wtg. En 22,500

PILE NO: F14 DATE: ~~8-17~~ PROJ. NO: 93-25

Blows/Ft		Blows/Ft.		Blows/In	
	35		70		12
	34		69		11
	33		68		10
	32		67		9
	31		66		8
	30		65		7
	29		64	25	6
	28		63	25	5
	27		62	25	4
	26		61	25	3
	25		60	20	2
	24		59	20	1
	23		58		
	22		57		
	21		56		
	20		55		
	19		54		
	18		53		
	17		52		
	16		51		
	15		50		
5/1/14"	14		49		
255	13		48		
180	12		47		
75	11		46		
	10		45		
	9		44		
	8		43		
	7		42		
	6		41		
	5		40		
	4		39		
	3		38		
	2		37		
	1		36		

LAST FOOT DRIVEN

CRITERIA ⇒ 25

PAY 14'

Blows/Ft	
	80
	79
	78
	77
	76
	75
	74
	73
	72
	71

DRIVING RECORD

HT _____ X _____

HAMMER _____

MFG. EN _____

PILE NO: E15 DATE: ~~8-17~~ PROJ. NO: 93-25

Blows/Ft		Blows/Ft.		Blows/In	
	35		70	20	12
	34		69	20	11
	33		68	20	10
	32		67	20	9
	31		66	20	8
	30		65	18	7
	29		64	18	6
	28		63		5
	27		62		4
	26		61		3
	25		60		2
51 1/4"	24		59		1
189	23		58		
168	22		57		
160	21		56		
152	20 – SPLICE 8-17		55		
135	19		54		
105	18		53		
92	17		52		
89	16		51		
	15		50		
	14		49		
	13		48		
	12		47		
	11		46		
	10		45		
	9		44		
	8		43		
	7		42		
	6		41		
	5		40		
	4		39		
	3		38		
	2		37		
	1		36		

LAST FOOT DRIVEN

CRITERIA ⇒ 20

PAY 24'

Blows/Ft	
	80
	79
	78
	77
	76
	75
	74
	73
	72
	71

DRIVING RECORD

HT _____ X _____

HAMMER _____

MFG. EN _____

8 1993

Pile No: E-16 Date: ~~8-17-93~~ Proj. No: ~~93-25~~

Blows/Ft	Blows/Ft.	Blows/In
35	70	12
34	69	11
33	68	10
32	67	9
31	66	8
30	65	7
29	64	6
28	63	5
27	62	4
26	61	3
25	60	2
24	59	1
23	58	
22	57	
21	56	
20	55	
19	54	
18	53	
17	52	
5/44" 16	51	
150 15	50	
100 14	49	
80 13	48	
60 12	47	
30 11	46	
18 10	45	
9	44	
8	43	
7	42	
6	41	
5	40	
4	39	
3	38	
2	37	
1	36	

20
20
20
20
20

Last Foot Driven Criteria ⇒ 20

Pay 16'

Blows/Ft

80
79
78
77
76
75
74
73
72
71

Driving Record

Hp 1253 X 60

Hammer 1200 FEC

Mfg. En 22,500

Pile No: TB1 Date: 8-17-93 Proj. No:

Blows/Ft		Blows/Ft.		Blows/In	
	35		10		12
	34		09		11
	33		08		10
	32		07		9
	31		06		8
	30		05		7
	29		04		6
	28		03	20	5
	27		02	20	4
	26		01	20	3
	25		00	20	2
5/44"	24		99	20	1
135	23		98		
130	22		97		
130	21		96		
140	20	SPLICE 8-17	95		
130	19		94		
115	18		93		
105	17		92		
101	16		91		
89	15		90		
80	14		89		
68	13		88		
43	12		87		
22	11		86		
18	10		85		
	9		84		
	8		83		
	7		82		
	6		81		
	5		80		
	4		79		
	3		78		
	2		77		
	1		76		

Last Foot Driven

Criteria ⇒ 20 Blows/In

Pay 27'

Blows/Ft	
	80
	79
	78
	77
	76
	75
	74
	73
	72
	71

Driving Record

Hit 1283 x 28

Hammer 1200

Mfg. En

Pile No: TB2 Date: ~~8-17~~ Proj. No: 93-25

Blows/Ft		Blows/Ft.		Blows/In	
	35		70		12
	34		69		11
	33		68		10
	32		67		9
	31		66		8
	30		65		7
	29		64		6
	28		63		5
	27		62		4
	26		61		3
	25		60		2
	24		59		1
	23		58		
5 / 1/4"	22		57		
168	21		56		
130	20	- Splice 8-17	55		
101	19		54		
98	18		53		
89	17		52		
80	16		51		
75	15		50		
	14		49		
	13		48		
	12		47		
	11		46		
	10		45		
	9		44		
	8		43		
	7		42		
	6		41		
	5		40		
	4		39		
	3		38		
	2		37		
	1		36		

Last Foot Driven

Criteria ⇒

Blows/Ft
80
79
78
77
76
75
74
73
72
71

Driving Record

HP 1253 X 20

Hammer 1200

Mfg. En 22500

PILE NO: TB3 DATE: 8-17-93 PROJ. NO: 93-12

Blows/Ft		Blows/Ft.		Blows/In	
	35		70		12
	34		69		11
	33		68		10
	32		67		9
	31		66		8
	30		65		7
	29		64		6
	28		63	24	5
	27		62	24	4
	26		61	24	3
	25		60	24	2
	24		59	24	1
	23		58		
	22		57		
	21		56		
	20		55		
	19		54		
	18		53		
6 1/4"	17		52		
268	16		51		
147	15		50		
90	14		49		
70	13		48		
56	12		47		
30	11		46		
18	10		45		
	9		44		
	8		43		
	7		42		
	6		41		
	5		40		
	4		39		
	3		38		
	2		37		
	1		36		

LAST FOOT DRIVEN

CRITERIA ⇒ 24

PAY 21'

Blows/Ft	
	80
	79
	78
	77
	76
	75
	74
	73
	72
	71

DRIVING RECORD

HT 1253 X 60

HAMMER 1200 FEC

MFG. EN 22,500

AUG 18 1993

PILE NO: TB4 DATE: 8-17 PROJ. NO: 93-25

Blows/Ft		Blows/Ft.		Blows/IN	
	35		70		12
	34		69		11
	33		68		10
	32		67		9
	31		66		8
	30		65		7
	29		64		6
	28		63	20	5
	27		62	20	4
	26		61	20	3
	25		60	20	2
	24		59	20	1
	23		58		
	22		57		
	21		56		
	20		55		
	19		54		
	18		53		
5 1/4"	17		52		
235	16		51		
123	15		50		
89	14		49		
54	13		48		
36	12		47		
24	11		46		
18	10		45		
	9		44		
	8		43		
	7		42		
	6		41		
	5		40		
	4		39		
	3		38		
	2		37		
	1		36		

LAST FOOT DRIVEN

CRITERIA ⇒ 20

PAY 21'

Blows/Ft	
	80
	79
	78
	77
	76
	75
	74
	73
	72
	71

DRIVING RECORD

HT 1253 × 25

HAMMER 1200

MFG. EN 22500

AUG 9 1993

PILE NO: E17 DATE: ~~8-18~~ PROJ. NO: 93-25

Blows/Ft		Blows/Ft.		Blows/In	
	35		70		12
	34		69		11
	33		68		10
	32		67	20	9
	31		66	20	8
	30		65	20	7
	29		64	20	6
	28		63	20	5
	27		62	20	4
	26		61		3
	25		60		2
	24		59		1
	23		58		
	22		57		
	21		56		
	20		55		
5/1/4"	19		54		
198	18		53		
179	17		52		
98	16		51		
79	15		50		
68	14		49		
52	13		48		
	12		47		
	11		46		
	10		45		
	9		44		
	8		43		
	7		42		
	6		41		
	5		40		
	4		39		
	3		38		
	2		37		
	1		36		

LAST FOOT DRIVEN

CRITERIA ⇒ 20

PAY 19'

Blows/Ft	
	80
	79
	78
	77
	76
	75
	74
	73
	72
	71

DRIVING RECORD

HT 1253 X 20

HAMMER 1200

MFG. EN 22500

AUG 5 1993

Pile No: E18 Date: ~~8-8-18~~ Proj. No: 93-25

Blows/Ft		Blows/Ft.		Blows/In	
	35		70		12
	34		69		11
	33		68		10
	32		67		9
	31		66	20	8
	30		65	20	7
	29		64	20	6
	28		63	20	5
	27		62	20	4
	26		61	20	3
	25		60	20	2
	24		59	20	1
	23		58		
	22		57		
	21		56		
	20		55		
	19		54		
	18		53		
5 1/4"	17		52		
189	16		51		
175	15		50		
130	14		49		
110	13		48		
95	12		47		
42	11		46		
	10		45		
	9		44		
	8		43		
	7		42		
	6		41		
	5		40		
	4		39		
	3		38		
	2		37		
	1		36		

Last Foot Driven

Criteria ⇒ 20

Pat 17'

Blows/Ft	
	80
	79
	78
	77
	76
	75
	74
	73
	72
	71

Driving Record

Ht _____ X _____

Hammer _____

Mfg. En _____

Pile No: E-19 Date: 8-18-93 Proj. No: _____

Blows/Ft		Blows/Ft.		Blows/In	
	35		70	25	12
	34		69	24	11
	33		68	20	10
	32		67	20	9
	31		66	20	8
	30		65	20	7
	29		64	20	6
	28		63	18	5
	27		62	18	4
	26		61	18	3
	25		60	15	2
	24		59	15	1
	23		58		
	22		57		
	21		56		
	20		55		
	19		54		
	18		53		
	17		52		
	16		51		
255	15		50		
105	14		49		
82	13		48		
63	12		47		
32	11		46		
19	10		45		
	9		44		
	8		43		
	7		42		
	6		41		
	5		40		
	4		39		
	3		38		
	2		37		
	1		36		

Last Foot Driven

Criteria ⇒ 20

Pay 16'

Blows/Ft
80
79
78
77
76
75
74
73
72
71

Driving Record

HP 1253 X 60

Hammer 1200 FEC

Mfg. En 22,500

AUG 9 199[illegible]

Pile No: E 20 Date: 8-18-93 Proj. No: 93-25

Blows/Ft		Blows/Ft.		Blows/In	
	35		70		12
	34		69		11
	33		68		10
	32		67		9
	31		66	20	8
	30		65	20	7
	29		64	20	6
	28		63	20	5
	27		62	20	4
	26		61	20	3
	25		60	48	2
	24		59	15	1
	23		58		
	22		57		
	21		56		
	20		55		
	19		54		
	18		53		
	17		52		
5/1/4"	16		51		
189	15		50		
120	14		49		
71	13		48		
36	12		47		
24	11		46		
	10		45		
	9		44		
	8		43		
	7		42		
	6		41		
	5		40		
	4		39		
	3		38		
	2		37		
	1		36		

Last Foot Driven

Criteria ⇒ 20

Pay 17'

Blows/Ft	
	80
	79
	78
	77
	76
	75
	74
	73
	72
	71

Driving Record

Hp 1253 X 60

Hammer 1200 FEC

Mfg. En 22,500

AUG 19 1993

Pile No: 621 Date: ~~8-18-93~~ Proj. No: 73-25

2372-10

Blows/Ft	Blows/Ft.	Blows/In
35	70	12
34	69	11
33	68	10
32	67	9
31	66	8
30	65	7
29	64	6
28	63	5
27	62	4
26	61	3
25	60	2
24	59	1
23	58	
22	57	
21	56	
20	55	
19	54	
18	53	
17	52	
16	51	
15	50	
14	49	
13	48	
12	47	
11	46	
10	45	
9	44	
8	43	
7	42	
6	41	
5	40	
4	39	
3	38	
2	37	
1	36	

Blows/In
25
20
20
20
20
20
18

Last Foot Driven

Criteria ⇒ 80

Pay 16'

Blows/Ft
80
79
78
77
76
75
74
73
72
71

51 1/4"
195
158
80
46
28

Driving Record

Ht 1253 × 60

Hammer 1200 FEC

Mfg. En 22,500

ATTACHMENT D

GEOTECHNICAL DATA

GROUNDWATER TREATMENT SYSTEM
GEOTECHNICAL REPORT SUMMARY

Summit National Superfund Site
Deerfield, Ohio

DATE	TESTED BY	REPORT #	MATERIAL TESTED	TEST	# OF TESTS
8/5/93	R & R	1	loam source	gradation max. dry density permeability	1 1 1
8/9/93	Huntingdon	--	subgrade	proofrolling	--
9/14/93	R & R	2	treatment plant structural fill	compaction	6
9/16/96	Huntingdon	--	structural fill	recommendation	--
--	Summit	9/11/92	structural fill	gradation max. dry density	1 1
--	Summit	10/23/92	structural fill	gradation	1
9/23/93	R & R	3	driveway base	compaction	3
9/29/93	R & R	--	structural fill	gradation	1
10/12/93	R & R	5	foundation base	compaction	8
10/13/93	R & R	6	floor base	compaction	5
4/20/94	R & R	1	concrete pad base	compaction	2

Notes: R & R = R & R International, Inc. of Akron, Ohio
Summit = Summit Testing & Inspection Company

R&R INTERNATIONAL, INC

INTERNAL
FIELD REPORT

PROJECT: Summit National Superfund Site

CLIENT: Conestoga Rovers & Associates

LOCATION: Deerfield Township

PROJECT NO.: 001296 REPORT NO.: 1

DATE: 8/5/93 TIME: 10:30 a.m. WEATHER: Partly Sunny TEMP.: 82 degs.

PURPOSE: Obtain soil samples of off site borrow–pit material from two (2) seperate locations for laboratory testing.

PARTIES PRESENT: Timothy Walsh (Environmental Construction), Jeroen Winterink (CRA), Loader operator and Dan Kaser (R &R).

OBSERVATIONS: Samples were identified before leaving the borrow–pit areas. Sample S–1: Sanders borrow–pit due north of the lagoon. Sample S–2: Sanders borrow–pit northeast of lagoon. Sample S–3: Old Forge Road – Southern end of borrow site. Sample S–4: Old Forge Road – Westside of drive – Front of borrow site. (State tested material)

TASKS PERFORMED: Sampled and obtained material from two (2) seperate locations. Two samples were taken from each location. Samples were transported to R&R International (Akron HQ) laboratory for testing purposes.

SUMMARY OF FINDINGS / COMMENTS: Test to be performed are Moisture Density Relationship, Triaxial Permeability and Particle Size Analyses. Test results will accompany this report.

REPORT BY: Daniel Kaser

PAGE 1 OF 1

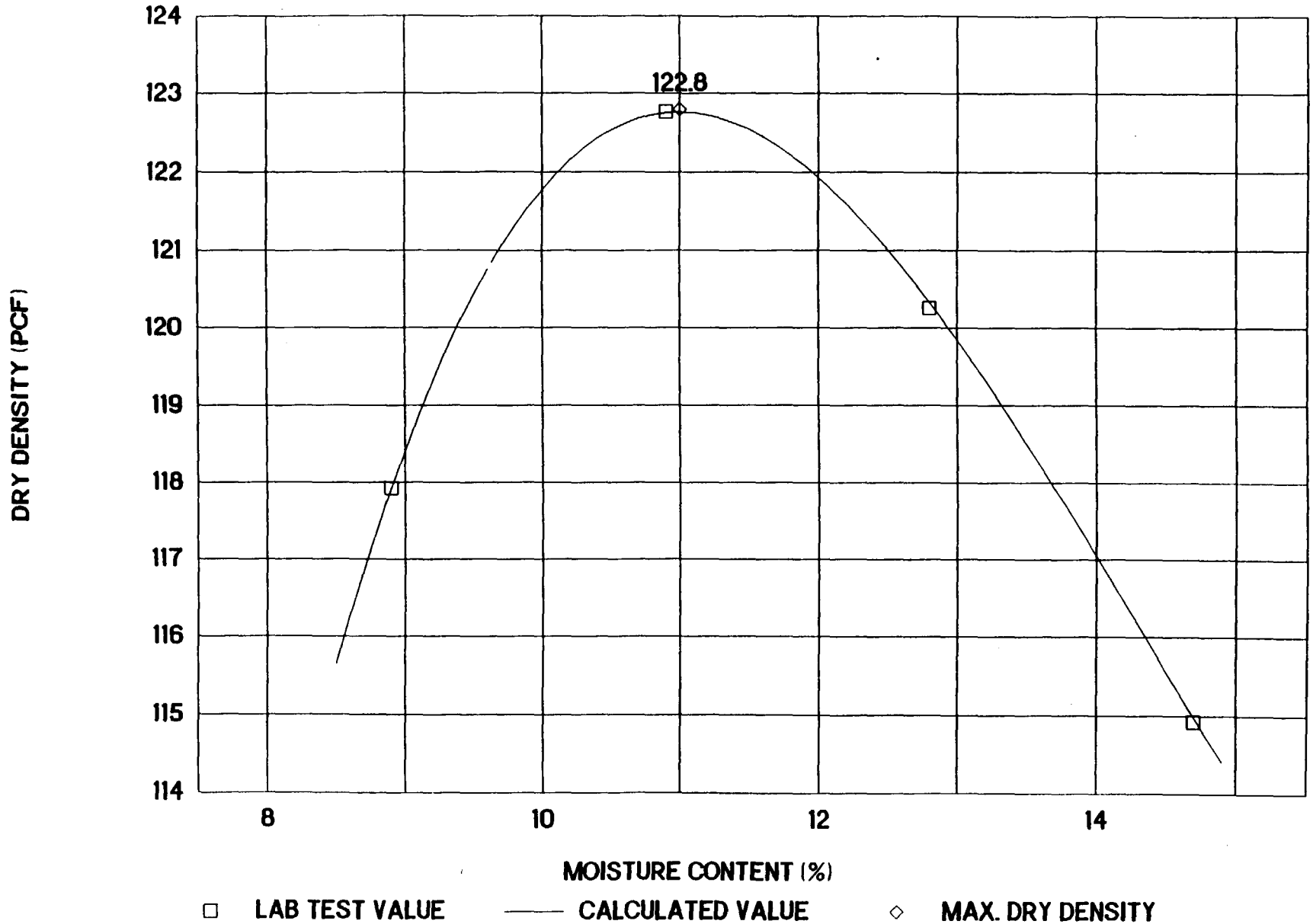
TIME RETURNED TO SHOP: 4:30 p.m.

MILES TRAVELED: 78

1296FR1.wks

MOISTURE-DENSITY

001296/PC1/ASTM D 698/122.8 PCF @ 11.0%



R&R INTERNATIONAL,INC.

PROJECT: Summit National Superfund Site

PROJECT NO.: 216003

MOISTURE (ASTM D-2216-80), GRADATION (ASTM D-422-63) AND ATTERBERG LIMITS (ASTM D-4318-64)

BORING NUMBER	SAMPLE NUMBER	MOISTURE CONTENT(%)	PARTICLE SIZE ANALYSIS (% Passing US. Standard sieve) #4	#10	#40	#100	#200	SILT	CLAY	ATTERBURG LIMITS L.L	P.L.	P.I.	USCS CLASSIFICATION
PC-1	1	11.2	89.9	81.6	67.9	55.4	50.3	24.7	25.6				CL-ML

* Silt and Clay Combined

R&R INTERNATIONAL, INC.

PROJECT: Summit National Superfund Site

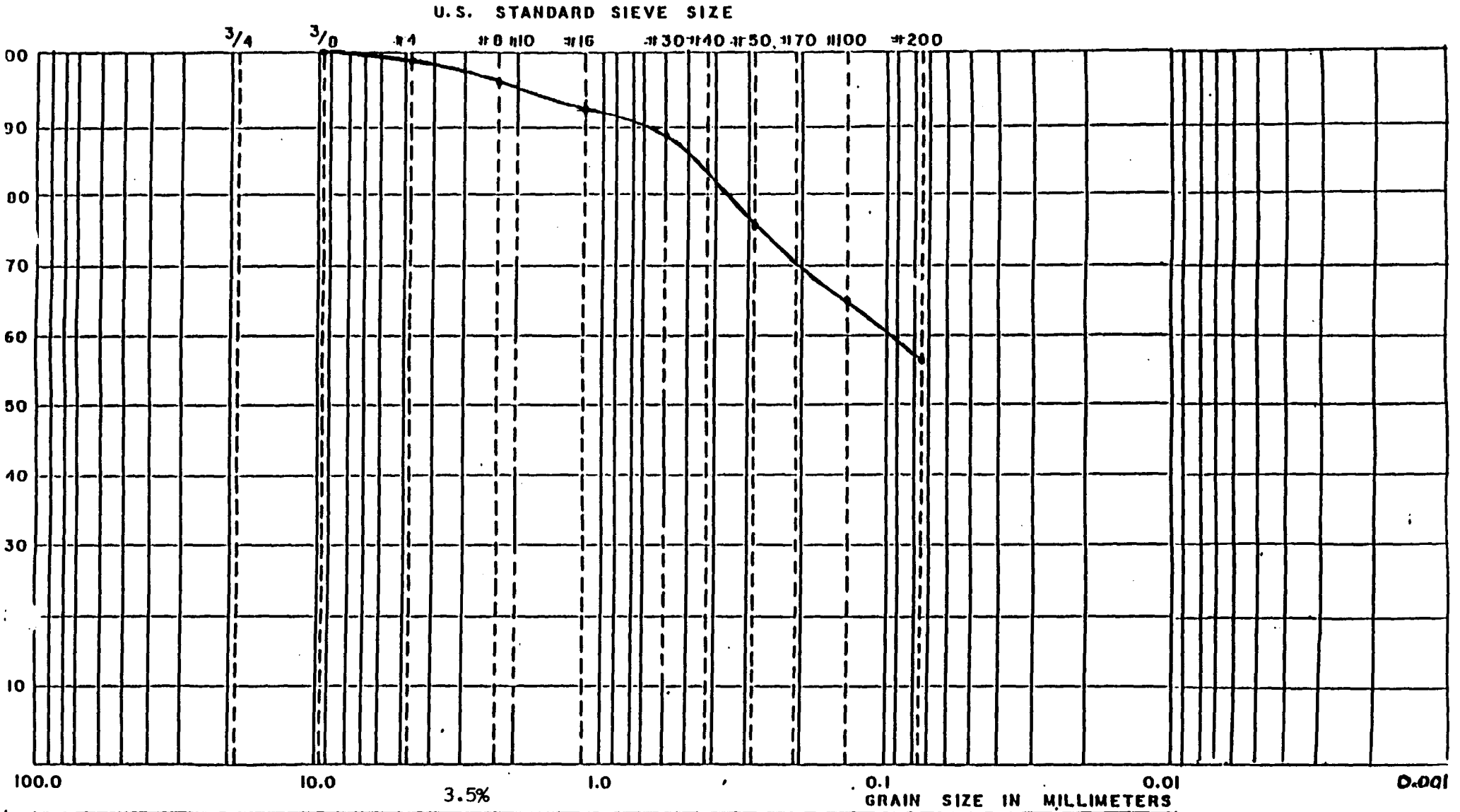
PROJECT NUMBER: 001296

MEASUREMENT OF HYDRAULIC CONDUCTIVITY OF SATURATED POROUS MATERIALS USING A FLEXIBLE WALL PERMEAMETER (ASTM D 5084 - 90)

SAMPLE NUMBER	DEPTH (feet)	MOISTURE PERCENT	UNIT WET WEIGHT (pcf)	UNIT DRY WEIGHT (pcf)	CONSOLIDATION PRESSURE (tsf)	AVERAGE GRADIENT (i)	PERMEABILITY (cm/sec)
S-1		11.0	121.8	109.7	0.12	5	1.8E-06

R&R

1234 S. CLEVELAND-MASSILLON ROAD
P.O. BOX 4383,
AKRON, OHIO 44321
(216) 666-2200



CSE. GRAVEL %	FINE GRAVEL %	CSE. SAND	MED. SAND 7.6%	FINE SAND 32.0%	CLAY & SILTS 56.9 %
		3.5%			
U.S.C.S.					

$$C_u = \frac{D_{60}}{D_{10}} \qquad C_z = \frac{(D_{30})^2}{D_{10} \times D_{60}}$$

PROJECT: Summit National Super Fund NO: 001296

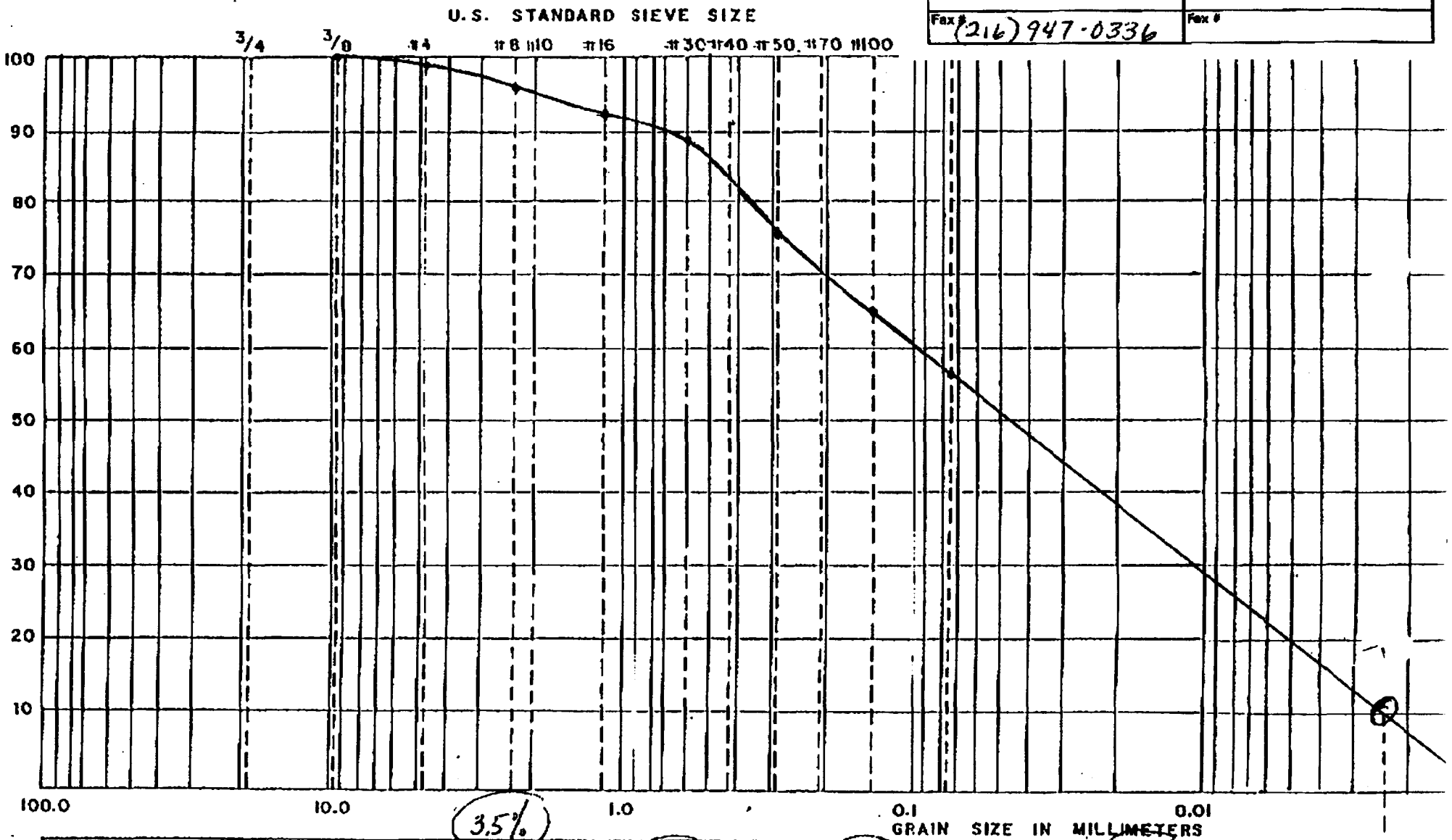
LOCATION: Deerfield Twp. SAMPLE DEPTH: _____

R&R

1234

Post-It™ brand fax transmittal memo 7671 | # of pages ▸ 1

To Jeroen Winterink	From Steve M.
Co. CRA	Co. R&R Int.
Dept.	Phone #
Fax # (216) 947-0336	Fax #



CSE. GRAVEL %	FINE GRAVEL %	CSE. SAND	MED. SAND	FINE SAND	CLAY & SILTS
		3.5%	7.6 %	32.0 %	56.9 %

U. S. C. S.

$$C_u = \frac{D_{60}}{D_{10}} \qquad C_z = \frac{(D_{30})^2}{D_{10} \times D_{60}}$$

PROJECT: Summit National Superfund (001296)

LOCATION: Deerfield Twp. SAMPLE DEPTH: _____

D_{10} _____ D_{30} _____ D_{60} _____ C_u _____ C_z _____

Huntingdon
Consulting Engineers Environmental Scientists

Empire Soils Investigations, Inc.
105 Corona Avenue
Groton New York 13073
(315) 475-0717
(607) 898-5881
Fax (607) 898-4760

August 12, 1993

RECEIVED AUG 2 0 1993

Summit National Facility Trust Fund
C/O Conestoga-Rovers & Associates
651 Colby Drive
Waterloo, Ontario
Canada N2V 1C2

Attention: Mr. Jeroen Winterink

Reference No. 2372 (ESI Project No. BTA-92-205)

Gentlemen:

This letter presents the observations and recommendations made during the writer's visit to the Summit National site on August 9, 1993. The purpose of the site visit was to assess the conditions of the floor slab subgrade at the location of the proposed water treatment plant.

Prior to my arrival on site, the area of the treatment plant had been stripped of vegetation. It is understood that approximately 3.5 feet of structural fill will be required in the building area to achieve bottom of slab elevation. A sheepsfoot roller was used for proofrolling over the exposed subgrade. During the proofrolling, it was observed that the majority of the site was stable. However, weaving of the subgrade was observed in the southern half of the future office area and in the southeast quadrant of the proposed treatment facility.

The area was covered with a 4 to 8 inch layer of coarse crushed limestone. This partially "bridged" the unstable area in the southeast quadrant, but the southern half of the office area continued to weave and rut under construction vehicles. We recommended that an additional 12 inch layer of crushed stone be placed in this area. If instability persists, we recommended that the area be undercut to a depth of 18 inches below original subgrade elevation and the grade be re-established with cobble size stone.

Based on the existing fill conditions encountered in our test borings, we anticipate that settlement of the slab-on-grade will still occur as a result of the additional surcharge load applied by the proposed fill and the floor loads. Therefore, flexible connections for piping should be used where possible and provisions to shim tanks and other interior structures should be made.

A minor depression in the site grades was created in the area of the proposed building because of the stripping and excavation to subgrade elevation. This situation was discussed and it was decided to construct stone drains from the southeast and southwest corners of the building site to the pond and drainage swale, respectively.

We appreciate the opportunity of continuing our services for you on this project. If you have any questions or require additional information, please contact us.

Sincerely,
EMPIRE SOILS INVESTIGATIONS, INC.

Gilbert N. Camp, Jr., P.E.
Manager - Central District

cc: File

R&R INTERNATIONAL INC

INTERNAL
FIELD REPORT

PROJECT: Summit National Superfund Site **CLIENT:** Conestoga Rovers & Associates

LOCATION: Deerfield Township **PROJECT NO.:** 001296 **REPORT NO.:** 2

DATE: 9/14/93 **TIME:** 10:00 a.m. **WEATHER:** Clear **TEMP.:** 76 degs.

PURPOSE: Soil Compaction

PARTIES PRESENT: Mr. Jeroen Winterink (CRA) and Gene Dimtroff (R&R).

OBSERVATIONS: Test area appeared to be recently prepared and showed evidence of compaction using sheepsfoot and smooth roller equipment.

TASKS PERFORMED: Obtained soil compaction at designated locations.

SUMMARY OF FINDINGS / COMMENTS: All tests met specifications.

REPORT BY: Gene Dimtroff **PAGE** 1 **OF** 1

TIME RETURNED TO SHOP: 11:30 a.m. **MILES TRAVELED:** 86

1296FR2/Disk B1/clt/9-14-93

R&R INTERNATIONAL INC.

FIELD COMPACTION TESTS

Rec'd CRA

SEP 2 1 1993

Client: Conestoga – Rovers & Associates

Date Tested: 9–14–93

Project: Summit National Superfund Site

Project No.: 001296

Location: Deerfield TWP., Ohio

Report No.: 2

Eng./Contr.: ECI

Material Description:

Lab Procedure: ASTM D–698

Field Test Procedure ASTM D–2922

Max. Dry Density: 122.8 PCF

PCD Opt W% 11.0

Spec. % Comp: 95%

Test No.	Location	Elev +/–	Wet Dens.	% W	Dry Dens.	Max Dens.	% Comp.
1	10' N of ditch 25' E		127.6	10.7	116.8	122.8	96.5
2	25' N of ditch 25' E		137.3	10.8	126.5	122.8	104.5
3	25' N of ditch 50' E		139.7	11.8	127.9	122.8	105.7
4	10' N of ditch 50' E		135.2	10.3	124.8	122.8	103.2
5	10' N of ditch 90' E		131.8	10.0	121.8	122.8	100.7
6	25' N of ditch 90' E		126.5	9.4	117.1	122.8	96.8

REMARKS/DISTRIBUTION:

All test met project specifications of 95% compactions.

001309/Disk B1/clt/8–27–93

Technician: Gene Dimtroff

2372-10

Huntingdon

Consulting Engineers Environmental Scientists

Empire Soils Investigations, Inc.
105 Corona Avenue
Groton, New York 13073
(315) 475-0717
(607) 898-5881
Fax: (607) 898-4760

September 16, 1993

Summit National Facility Trust Fund
C/O Conestoga-Rovers & Associates
651 Colby Drive
Waterloo, Ontario
Canada N2V 1C2

Rec'd CRA
SEP 20 1993

Attention: Mr. Jeroen Winterink

Reference No. 2372 (ESI Project No. BTA-92-205)

Gentlemen:

Pursuant to our review of the correspondence from Canestoga-Rovers & Associates, Ltd. (CRA) dated September 16, 1993, we offer the following comments. As indicated by the gradation and Standard Proctor results of the 310A material from Old Forge reported by Summit Testing and Inspection, the material appears to be suitable for use as structural fill with respect to its intended use. However, we recommend that the consistency of the gradation and maximum density/optimum moisture content be determined by additional testing of the material just prior to the time of placement.

As discussed, we also recommend that the performance of the ODOT #4 be evaluated by observations of a loaded dump truck or similar equipment prior to placement of the 310A material.

We appreciate the opportunity of continuing our services for you on this project. If you have any questions or require additional information, please contact us.

Sincerely,
EMPIRE SOILS INVESTIGATIONS, INC.

Gilbert N. Camp, Jr., P.E.
Manager - Central District

cc: File

Summit Testing & Inspection Company
P.O. Box 2231, Akron, Ohio 44309
Deliveries: 910 White Pond Dr., Akron, Ohio 44320
(216) 869-6806

September 11, 1992
RE: Karg Sand and Gravel
ODOT 310

Bertolini Construction
2070 Wright Road
Akron, Ohio 44320

Attention: Ralph DelGreco

This letter presents the results of mechanical grain size analyses performed on samples of the referenced aggregate. The samples were taken by ST & I's James Beadnell out of two separate compacted 6" plus or minus lifts. Compaction was achieved by repeatedly rolling over each strip of material by a front end loader with a loaded bucket.

The reason for this testing was to verify that the 310 would retain its conformance to the gradation requirements of ODOT after compaction. The results obtained by ODOT test methods S1004 and S1005, are:

	Cumulative % Passing		
Sieve Size	Old Forge	C.R.18	ODOT 310 A
2 1/2"			100
2"	100		
1 1/2"	98	100	
1"	92	95	70 - 100
3/4"	88	90	
1/2"	77	80	
3/8"	72	71	
#4	58	52	25 - 100
#8	44	37	
#16	35	28	
#30	27	21	
#40	21	19	5 - 50
#50	14	15	
#200	6.3	9.9	0 - 10

Bertolini Construction
RE: Karg Sand and Gravel
ODOT 310
September 11, 1992
Page 2

Both samples indicated compliance to ODOT with respect to the gradation, although the C. R. 18 test was just in spec on the #200.

Should there be any questions regarding this matter, please do not hesitate calling our office.

Respectfully submitted,

SUMMIT TESTING & INSPECTION COMPANY

John Malivuk, P. E.

JM:p

pc: file
Karg Sand and Gravel

Summit Testing & Inspection Company
P.O. Box 2231, Akron, Ohio 44309
Deliveries: 910 White Pond Dr., Akron, Ohio 44320
(216) 869-8806

October 23, 1992

Karg Sand & Gravel
2088 Congress Lake Road
Mogadore, Ohio 44260

Attention: Tom Karg

Per your request we have performed a standard moisture-density relationship test (ASTM D698, Method D) on a sample of 310A from Old Forge.

The maximum dry density was determined to be 134.8 pcf; optimum moisture is 8.5%. The complete results are shown on the attached page.

Should there be any questions, please call our office.

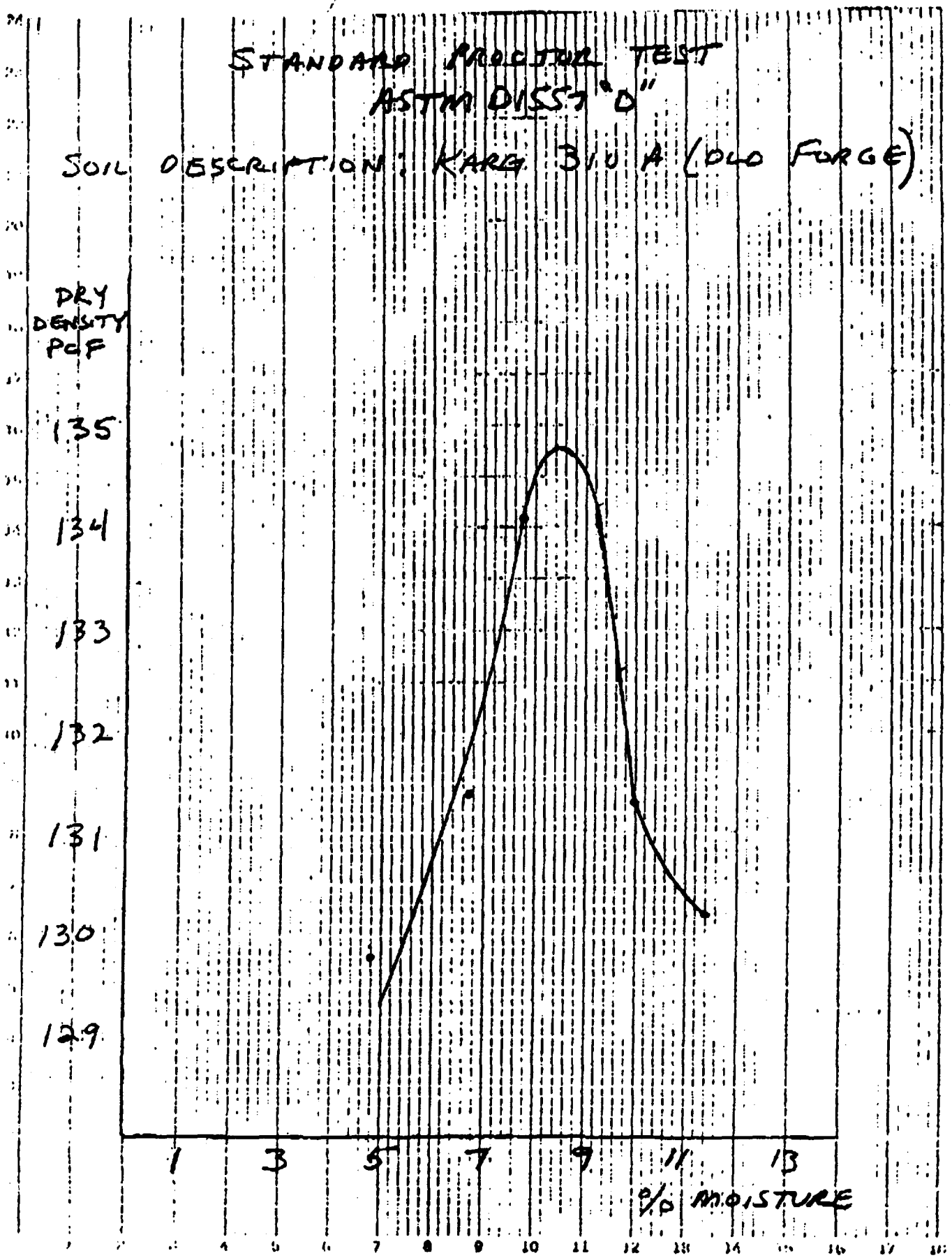
Respectfully submitted,

SUMMIT TESTING & INSPECTION COMPANY

John Malivuk, P. E.

JM:p

pc: file


STANDARD PROCTOR TEST
ASTM D1557 "D"
SOIL DESCRIPTION: KARG 31.0 A (OLD FORGE)
DRY DENSITY PCF
135
134
133
132
131
130
129
1
3
5
7
9
11
13
% MOISTURE

RECEIVED SEP 29 1993

2372-10

R&R

1234 S. CLEVELAND-MASSILLON ROAD
P.O. BOX 4383
AKRON, OHIO 44321
Phone: (216) 666-2200
FAX - (216) 666-7874

IMPORTANT FAX INFORMATION

Please deliver to: Mr. Jeroen Winterink

Company: Conestoga - Rovers & Associates
Summit National Superfund Site

FAX No. (216) 947-0336 No. of pages, including cover 4

Message:

Enclosed please find the Gradation and Standard Proctor results from Sample No. 4 (Marked Old Forge Road) State Tested Material. Obtained 8/5/93.

If you have any question in regards to the test results, please contact our office.

Original hard copies forwarded to Waterloo, Ontario.

Thank you!

CONFIDENTIALITY NOTICE

This facsimile transmission is intended only for the use of the individual or entity to which it is addressed, and may contain confidential information belonging to the sender. If you are not the intended recipient, you are hereby notified that any disclosure, copying, distribution, or the taking of any action in reliance on the contents of this information is strictly prohibited. If you have received this transmission in error, please immediately notify us by telephone to arrange for the return of these documents.

Time: 3:00 a.m. p.m.

Sent By: Norman R. Kinsman Date: September 29, 19

If all the pages are not received, please contact:

FORM NO. FD09-070/ar/rev.08/02/93

R&R INTERNATIONAL, INC.

PROJECT: Summit National Superfund Site

R&R PROJECT No.: 001296

MOISTURE (ASTM D-2216-80), GRADATION (ASTM D-422-63) AND ATTERBERG LIMITS (ASTM D-4318-64)

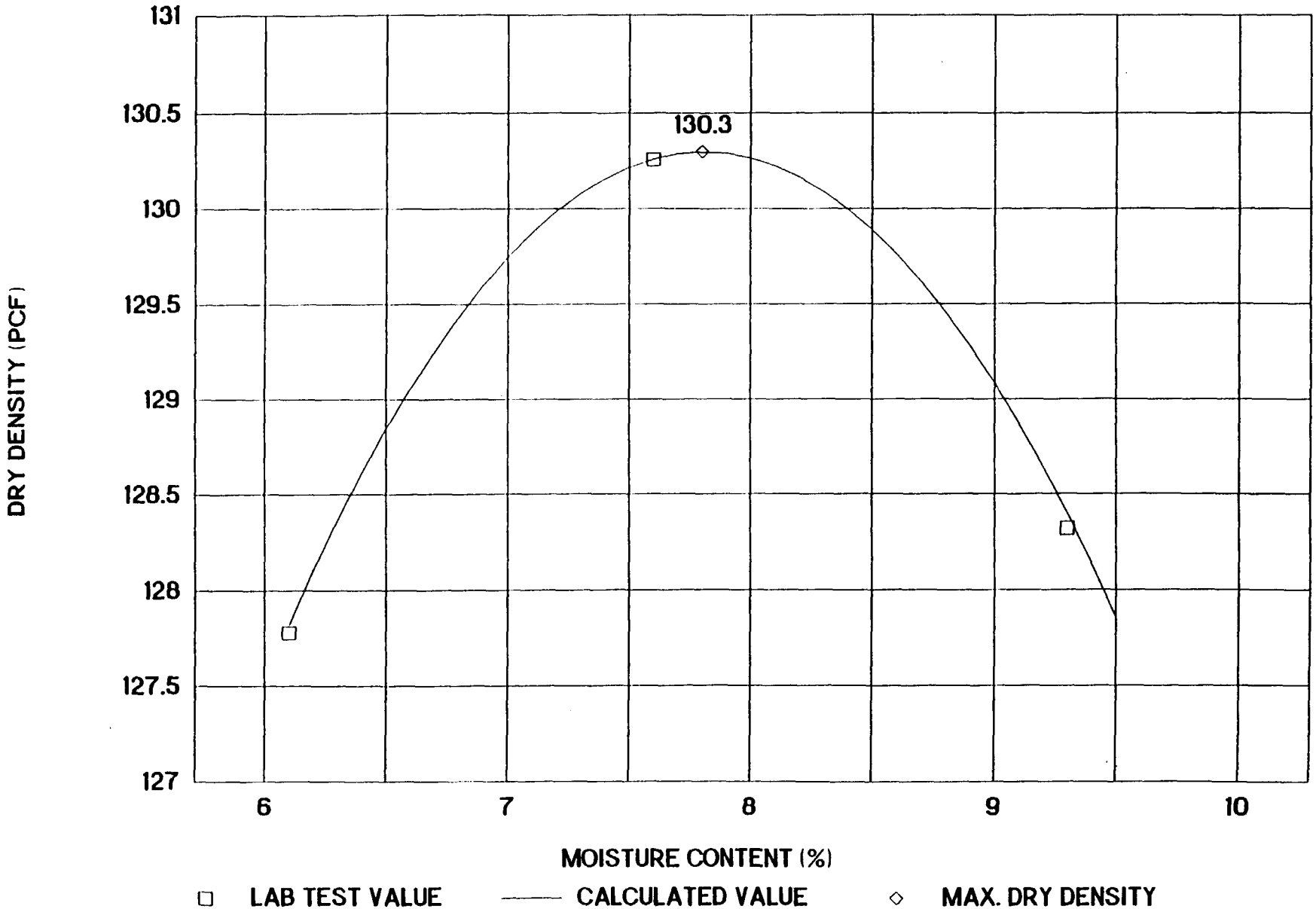
SAMPLE NUMBER	DEPTH (ft.)	MOISTURE CONTENT(%)	PARTICLE SIZE ANALYSIS (% PASSING U.S. STANDARD SIEVE) 2.5"	1.0"	#4	#40	#200	SILT	CLAY	ATTERBERG LIMITS L.L.	P.I.	CLASSIFICATION
4			100	96	70	20	3	*	3			310 A

* Silt and Clay Combined

R&R INTERNATIONAL, INC.

MOISTURE-DENSITY

001296/ASTM D 698/130.3 PCF @ 7.8%



INTERNAL
FIELD REPORT

PROJECT: Summit National Superfund Site **CLIENT:** Conestoga Rovers & Associates

LOCATION: Deerfield Township **PROJECT NO.:** 001296 **REPORT NO.:** 3

DATE: 9/23/93 **TIME:** 8:30 a.m. **WEATHER:** Rain **TEMP.:** 65 degs.

PURPOSE: To obtain soil compaction and concrete testing.

PARTIES PRESENT: Mr. Jeroen Winterink (CRA) and Gene Dimtroff (R&R).

OBSERVATIONS: Test area for compaction had been filled with stone. Client requested three (3) slump tests on concrete pour (90 cu. yds). Also, five (5) test cylinders were made.

TASKS PERFORMED: Tested compaction in designated area. Tested concrete slump and made cylinders.

SUMMARY OF FINDINGS / COMMENTS: All tests met specifications.

REPORT BY: Gene Dimtroff **PAGE** 1 **OF** 1

TIME RETURNED TO SHOP: 12:30 p.m. **MILES TRAVELED:** 68

1296FR3/Disk B1/clt/9-23-93

FIELD COMPACTION TESTS

Client: Conestoga–Rovers & Associates
Date Tested: 9–23–93
Project: Summit National Landfield
Project No.: 001296
Location: Deerfiled, Ohio
Report No.: 3
Eng./Contr.:

Material Description:
Lab Procedure: ASTM D–698
Field Test Procedure ASTM D–2922
Max. Dry Density: 122.8
PCD Opt W% 11.0
Spec. % Comp: 95%

Test No.	Location	Elev +/–	Wet Dens.	% W	Dry Dens.	Max Dens.	% Comp.
1	Drive 30' from fence	1094.0	131.9	8.8	122.8	98.0	100.0
2	Drive 50' from NW corner of building	1094.0	135.4	8.4	124.9	98.0	101.7
3	3' N, 18' W of corner, Depth 6'	1094.0	131.8	8.6	123.1	98.0	~~102~~ 100.2

REMARKS/DISTRIBUTION:

All tests meet required specifications of 95% compaction.

1296FC2/Disk B1/clt/9–23–93

Technician: Gene Dimtroff

R&R INTERNATIONAL INC

INTERNAL
FIELD REPORT

PROJECT: Summit National Landfill **CLIENT:** Conestoga–Rovers & Associates

LOCATION: Deerfield, Ohio **PROJECT NO.:** 001296 **REPORT NO.:** 5

DATE: 10/12/93 **TIME:** 11:00 a.m. **WEATHER:** Clear **TEMP.:** 52 degrees

PURPOSE: Soil compaction

PARTIES PRESENT: Mr. J. Winterink (CR&A) and Gene Dimtroff (R&R).

OBSERVATIONS: Treatment plant sub–floor being prepared. About 12" of 4" limestone in place and compacted at arrival. Donor fill (310) being placed and compacted.

TASKS PERFORMED: Checked compaction of limestone and fill material.

SUMMARY OF FINDINGS /COMMENTS: All tests met specifications.
Client requested compaction #4 limestone. Gave verbal results to engineer. Compaction results were approximate.

TIME RETURNED TO SHOP: 2:00 p.m. **MILES TRAVELED:** 67

REPORT BY: Gene Dimtroff **APPROVED BY:**
TECHNICIAN PROJECT MANAGER

1296fr5/clt/10/14/93

R&R INTERNATIONAL INC.

FIELD COMPACTION TESTS

Client: Conestoga Rovers & Associates
Date Tested: 10/12/93
Project: Summit National Superfund Site
Project No.: 001296
Location: Deerfield, Ohio
Report No.: 75
Eng./Contr.:

Material Description:
Lab Procedure: ASTM D 698
Field Test Procedure: ASTM D 2922
Max. Dry Density: 122.8
PCD Opt W%: 11.0
Spec. % Comp: 95%

Test No.	Location	Elev +/−	Wet Dens.	% W	Dry Dens.	Max Dens.	% Comp.
1	Foundation – 10' NW Corner	Grade	132.8	10.1	122.8	122.8	100.0
2	Foundation – 10' Center	Grade	136.6	11.8	124.8	122.8	101.6
3	Foundation – 10' SW Corner	Grade	136.2	10.9	125.3	122.8	102.0
4	Office Area NW Corner	Grade	133.2	10.2	122.9	122.8	100.0
5	Office Area SW Corner	Grade	134.6	10.6	124.0	122.8	101.0
6	Office Area SE Corner	Grade	135.1	10.2	124.9	122.8	101.7
7	Office Area NE Corner	Grade	134.4	9.9	124.5	122.8	101.3
8	Office Area Corner	Grade	133.7	10.2	123.5	122.8	100

REMARKS/DISTRIBUTION:

All tests met required specifications of 95% compaction.

REPORT BY: Gene Dimtroff
TECHNICIAN

APPROVED BY:
PROJECT MANAGER

1296FCT3/Disk B1/clt/10-15-93

R&R INTERNATIONAL INC

RECEIVED OCT 1 3 '93

INTERNAL
FIELD REPORT

PROJECT: Summit National Superfund Site **CLIENT:** Conestoga–Rovers & Associates

LOCATION: Deerfield, Ohio **PROJECT NO.:** 001296 **REPORT NO.:** 6

DATE: 10/13/93 **TIME:** 1:00 p.m. **WEATHER:** Clear **TEMP.:** 52 degrees

PURPOSE: Soil compaction

PARTIES PRESENT: Mr. J. Winterink (CR&A) and Gene Dimtroff (R&R).

OBSERVATIONS: At arrival treatment plant had donor fill (310) compacted.

TASKS PERFORMED: Checked compaction in treatment plant.

SUMMARY OF FINDINGS /COMMENTS: All tests met specifications.

TIME RETURNED TO SHOP: 3:30 p.m. **MILES TRAVELED:** 87

REPORT BY: Gene Dimtroff **APPROVED BY:** Thomas R. Finnan

TECHNICIAN PROJECT MANAGER

1296fr6/clt/10/15/93

R&R INTERNATIONAL INC.

FIELD COMPACTION TESTS

Client: Conestoga Rovers & Associates
Date Tested: 10/13/93
Project: Summit National Superfund Site
Project No.: 001296
Location: Deerfield, Ohio
Report No.: #6
Eng./Contr.: ECI

Material Description:
Lab Procedure: ASTM D 698
Field Test Procedure: ASTM D 2922
Max. Dry Density: 122.8 PCF
PCD Opt W%: 11.0
Spec. % Comp: 95%

Test No.	Location	Elev +/−	Wet Dens.	% W	Dry Dens.	Max Dens.	% Comp.
1	Treatment Room NE Corner	Grade	132.0	5.2	126.7	122.8	103.2
2	Treatment Room SW Corner	Grade	135.0	5.7	129.3	122.8	105.2
3	Maintenance SW Corner	Grade	128.3	5.7	122.7	122.8	99.99
4	Office SW Corner	Grade	129.1	4.6	124.5	122.8	101.4
5	Office NE Corner	Grade	129.9	4.9	125.0	122.8	101.8

REMARKS/DISTRIBUTION:

All tests met required specifications of 95% compaction.

REPORT BY: Gene Dimtroff
TECHNICIAN

APPROVED BY: [signature]
PROJECT MANAGER

1296FCT4/Disk B1/clt/10-15-93

R&R INTERNATIONAL, INC

FIELD REPORT

PROJECT: Summit National Superfund Site **CLIENT:** Summit National Facility Trust

LOCATION ; Deerfield Twp. **PROJECT NO.:** 001296 **REPORT NO.:** 1

DATE: 4-20-94 **TIME:** 8:00 **WEATHER:** Sunny **TEMP.:** 50+ Degs F.

PURPOSE: Test fill for compaction.

PARTIES PRESENT: Mr. Jeroen Winterink of Conestoga Rovers and Associates, Mr. Rick Gal, And Mr. Rick Dice of R&R International, Inc.

OBSERVATIONS: Performed two (2) tests in front of the office on Northside of building. This area was the only area which had no gravel spread on top of the fill material. Mr. Winterink wanted tests performed on the other areas which was spread with gravel. Mr. Winterink was informed that this could not be done unless the gravel was scraped away. Visually watched equipment move over area and observed no pumping or rolling.

TASKS PERFORMED: Tested fill material for compaction percentage, moisture content, and wet and dry densities.

SUMMARY OF FINDINGS/COMMENTS: Test met or exceeded requirements.

TIME RETURNED TO SHOP: 4:30 P.M. **MILES TRAVELED:** 106

REPORT BY: Rick Dice **APPROVED BY:** [signature]

TECHNICIAN PROJECT MANAGER

Disk 7/Field Reports/1296FR1/clt/4-28-94

R&R INTERNATIONAL INC.

FIELD COMPACTION TESTS

Client: Summit National Facility Trust

Date Tested: 4-20-94

Project: Summit National Superfund Site

Project No.: 001296

Location: 8186 US Route 224 P.O. Box 217

Report No.: 1

Eng./Contr.: Conestoga Rovers & Associates

Material Description: Loam Material

Lab Procedure: ASTM D 1557

Field Test Procedure: ASTM D 2922

Max. Dry Density: 129.9%

PCD Opt W%: 9.9 +/- 5%

Spec. % Comp: 98

Test No.	Location	Elev +/-	Wet Dens.	% W	Dry Dens.	Max Dens.	% Comp.
1	5' N in front of Office/N. side	subgrade	135.0	5.1	123.4	129.9	105.3
2	15' N in front of Office/N. side	subgrade	141.6	10.2	131.4	129.9	106.4

REMARKS/DISTRIBUTION:

Tests met or exceeded requirements.

REPORT BY: Rick Dice

TECHNICIAN

APPROVED BY:

PROJECT MANAGER

Disk 7/Field Reports/1296FC01/clt/4-20-94

ATTACHMENT E

CONCRETE TESTING REPORTS

GROUNDWATER TREATMENT SYSTEM
CONCRETE TESTING REPORT SUMMARY

Summit National Superfund Site
Deerfield, Ohio

DATE	TESTED BY	REPORT #	TEST LOCATION	TEST	# OF TESTS
9/23/93	R & R	3	treatment plant floor	slump compressive strength	3 5
10/1/93	R & R	4	treatment plant walls	slump compressive strength	1 5
10/21/93	R & R	7	treatment plant area	slump compressive strength	 5
11/4/93	R & R	8	treament plant floors	slump compressive strength	 5
5/3/94	R & R	1	parking slab and containment slab	slump compressive strength	 5

Notes: R & R = R & R International, Inc. of Akron, Ohio

RECEIVED OCT 12 1993

INTERNAL
FIELD REPORT

PROJECT: Summit National Superfund Site CLIENT: Conestoga Rovers & Associates

LOCATION: Deerfield Township PROJECT NO.: 001296 REPORT NO.: 3

DATE: 9/23/93 TIME: 8:30 a.m. WEATHER: Rain TEMP.: 65 degs.

PURPOSE: To obtain soil compaction and concrete testing.

PARTIES PRESENT: Mr. Jeroen Winterink (CRA) and Gene Dimtroff (R&R).

OBSERVATIONS: Test area for compaction had been filled with stone. Client requested three (3) slump tests on concrete pour (90 cu. yds). Also, five (5) test cylinders were made.

TASKS PERFORMED: Tested compaction in designated area. Tested concrete slump and made cylinders.

SUMMARY OF FINDINGS / COMMENTS: All tests met specifications.

REPORT BY: Gene Dimtroff PAGE 1 OF 1

TIME RETURNED TO SHOP: 12:30 p.m. MILES TRAVELED: 68

1296FR3/Disk B1/clt/9-23-93

R&R INTERNATIONAL, INC.

1234 S. Cleveland–Massillon Rd.
P.O. Box 4383
Akron, Ohio 44321
(216) 666–2200

Compression Strength Results

Clients: Conestoga–Rovers & Associates
Address: 651 Colby Drive – Waterloo, Ontario, Canada N2V1C2
Project Title: Summit National Superfund Site
Location: Deerfield Township, Ohio
G. C.: Summit Concrete
Concrete Supplier: Smith–Cowen, Ravenna, Ohio

Concrete Mix Information				Test Results	
Cement	611 lbs	per cu. yd. Type		Slump	4.0 in.
Coarse Agg.	1698 lbs	per cu. yd. Type		Air	N/A
Fine Agg.	1307 lbs	per cu. yd. Type		Unit Wt.	N/A
Water	20 gals	per cu. yd. Add		Air Temp	67 degs
Admixture	none	per cu. yd. Type		Conc Temp	73 degs

Specimen Location: Treatment Plant

Strength required at 28 days: 4000 psi Total Yards Tested: 90 cy.
Information Obtained from: Smith–Cowen, Ravenna, Ohio
No. of Spec.: 5 Cured in field: 1 day
Field report attached: yes Date Molded: 9/23/93

Spec No.	Spec No.	Avg Die	Date Tested	Age (Days)	Ult. Load (lbs)	Strength (psi)	Type Break
1A	1296	6.002	9/30/93	7	120,500	4242	D
1B	1296	6.000	9/30/93	7	115,500	4085	B
1C	1296	6.003	10/21/93	28	166,500	5883	C
1D	1296	6.004	10/21/93	28	167,500	5898	C
1E	1296	6.003	10/21/93	28	160,500	5671	C

Remarks

REPORT BY: Gene Dimrtroff APPROVED BY: [signature]

TECHNICIAN PROJECT MANAGER

CR1.wks/clt/10–25–93

R&R INTERNATIONAL INC

RECEIVED

INTERNAL
FIELD REPORT

PROJECT: Summit National Superfund Site **CLIENT:** Conestoga Rovers & Associates

LOCATION: Deerfield Township **PROJECT NO.:** 001296 **REPORT NO.:** 4

DATE: 10/01/93 **TIME:** 12:00 noon **WEATHER:** Cloudy **TEMP.:** 46 degs.

PURPOSE: To obtain soil compaction and concrete testing.

PARTIES PRESENT: Mr. Jeroen Winterink (CRA) and Gene Dimtroff (R&R).

OBSERVATIONS: Tested concrete for slump and made cylinders. Total yards 63 cu. yrds. Concrete test cylinders were taken from truck No. 1795, Ticket No. 135974. Location of concrete placement was the treatment plant walls.

TASKS PERFORMED: Tested slump and made five (5) cylinders.

SUMMARY OF FINDINGS / COMMENTS: All tests met specifications. Request made to test compaction on #4 stone. Tested with gauge and gave verbal results to site Engineer. Compaction results were approximate at best. Very difficult to determine density with larger aggregate.

REPORT BY: Gene Dimtroff **PAGE** 1 **OF** 1

TIME RETURNED TO SHOP: 2:30 p.m. **MILES TRAVELED:** 86

1296FR4/Disk B1/clt/10/06/93

R&R INTERNATIONAL, INC

1234 S. Cleveland–Massillon Rd.
P.O. Box 4383
Akron, Ohio 44321
(216) 666–2200

Compression Strength Results

Clients: Conestoga–Rovers & Associates Limited
Address: 651 Colby Drive – Waterloo, Ontario, Canada N2V1C2
Project Title: Summit National Superfund Site
Location: Deerfield Township, Ohio
G. C.: Summit Concrete
Concrete Supplier: Smith – Cowan

Concrete Mix Information				Test Results	
Cement	611 lbs	per cu. yd. Type	I	Slump	4.0"
Coarse Agg.	1698 lbs	per cu. yd. Type		Air	NA
Fine Agg.	1307 lbs.	per cu. yd. Type		Unit Wt.	NA
Water	20 gals	per cu. yd. Add		Air Temp	69 degrees
Admixture	none	per cu. yd. Type		Conc Temp	70 degrees

Specimen Location: Treatment plant

Strength required at 28 days: 4000 psi Total Yards Tested: 63 cu. yds
Information Obtained from: concrete supplier
No. of Spec.: 5 Cured in field: 2 days
Field report attached: yes Date Molded: 10/1/93

Spec No.	Spec No.	Avg. Die.	Date Tested	Age (Days)	Ult. Load (lbs)	Strength (psi)	Type Break
2–A	1296	6.001	10/8/93	7	122,500	4332	C
2–B	1296	6.004	10/8/93	7	126,000	4450	C
2–C	1296	6.003	10/29/93	28	178,000	6290	D
2–D	1296	6.002	10/29/93	28	167,000	5903	A
2–E	1296	6.000	10/29/93	28	180,250	6376	B

Remarks

REPORT BY: Gene Dimtroff APPROVED BY: Norman E. Binimas

1296CSS/LJH/10-11-93 TECHNICIAN PROJECT MANAGER

R&R INTERNATIONAL, INC.

INTERNAL
FIELD REPORT

PROJECT: Summit National Superfund Site **CLIENT:** Conestoga – Rovers & Associates

LOCATION: Deerfield, Ohio **PROJECT NO.:** 001296 **REPORT NO.:** 7

DATE: 10/21/93 **TIME:** 10:30 p.m. **WEATHER:** Cloudy **TEMP.:** 52 degrees

PURPOSE: Concrete Testing

PARTIES PRESENT: Mr. Jeoren Winterink (CR & Assoc.), Gene Dimtroff (R&R).

OBSERVATIONS: At arrival, forms were set and ready for "pour." Two pads were formed in the production room of the treatment plant. Repair was being secured.

TASKS PERFORMED: Tested each truck for slump. Prepared concrete cylinders.

SUMMARY OF FINDINGS /COMMENTS: All tests met specifications.

TIME RETURNED TO SHOP: 3:30 p.m. **MILES TRAVELED:** 71

REPORT BY: Gene Dimtroff
TECHNICIAN

APPROVED BY:
PROJECT MANAGER

1296fr7/clt/10/22/93

R&R INTERNATIONAL, INC.

1234 S. Cleveland–Massillon Rd.
P.O. Box 4383
Akron, Ohio 44321
(216) 666–2200

Compression Strength Results

Clients: Conestoga–Rovers & Associates Limited
Address: 651 Colby Drive – Waterloo, Ontario, Canada N2V1C2
Project Title: Summit National Superfund Site
Location: Deerfield Township, Ohio
G. C.: Summit Concrete
Concrete Supplier: Smith – Cowan

Concrete Mix Information				Test Results	
Cement	611 lbs	per cu. yd. Type	I	Slump	4.0"
Coarse Agg.	1698 lbs	per cu. yd. Type		Air	NA
Fine Agg.	1307 lbs.	per cu. yd. Type		Unit Wt.	NA
Water	20 gals	per cu. yd. Add		Air Temp	52 degs
Admixture	none	per cu. yd. Type		Conc Temp	68 degs

Specimen Location: Treatment plant production area.

Strength required at 28 days: 4000 psi Total Yards Tested: 40 cu. yds
Information Obtained from: Smith – Cowan
No. of Spec.: 5 Cured in field: 1 day
Field report attached: yes Date Molded: 10–21–93

Spec No.	Spec No.	Avg. Die.	Date Tested	Age (Days)	Ult. Load (lbs)	Strength (psi)	Type Break
3A	1296	6.001	10–28–93	7	126,000	4455	A
3B	1296	6.001	10–28–93	7	127,500	4508	B
3C	1296	6.002	11–18–93	28	167,500	5921	B
3D	1296	6.004	11–18–93	28	158,500	5599	B
3E	1296	6.004	11–18–93	28	159,000	5616	D

Remarks

REPORT BY: Gene Dimtroff APPROVED BY: Norman R. Lineman

1296CSC/dt/11–19–93 TECHNICIAN PROJECT MANAGER

R&R INTERNATIONAL, INC

INTERNAL
FIELD REPORT

PROJECT: Summit National Superfund Site **CLIENT:** Conestoga–Rovers & Associates

LOCATION: Deerfield, Ohio **PROJECT NO.:** 001296 **REPORT NO.:** 8

DATE: 11/04/93 **TIME:** 9:30 p.m. **WEATHER:** Cloudy **TEMP.:** 42 degrees

PURPOSE: Concrete inspection

PARTIES PRESENT: Mr. Jeoren Winterink (CR & Assoc.), Gene Dimtroff (R&R).

OBSERVATIONS: At arrival two (2) truckloads (9 cu. yds. each) were placed. Trucks 3 thru 6 appeared normal. Placement area had 1/4" mesh placed and supported some areas.

TASKS PERFORMED: Check concrete temperature, slump, and fabricated cylinders.

SUMMARY OF FINDINGS /COMMENTS: All tests and observations met specifications.

TIME RETURNED TO SHOP: 1:00 p.m. **MILES TRAVELED:** 77

REPORT BY: Gene Dimtroff
TECHNICIAN

APPROVED BY: [signature]
PROJECT MANAGER

1296FR&LJH/11-09-93

RECEIVED DEC 1 0 1993 3 2 - 10

R&R INTERNATIONAL, INC

1234 S. Cleveland–Massillon Rd.
P.O. Box 4383
Akron, Ohio 44321
(216) 666–2200

Compression Strength Results

Clients: Conestoga–Rovers & Associates Limited
Address: 651 Colby Drive – Waterloo, Ontario, Canada N2V1C2
Project Title: Summit National Superfund Site
Location: Deerfield Township, Ohio
G. C.: Summit Concrete
Concrete Supplier: Smith – Cowan

Concrete Mix Information				Test Results	
Cement	611 lbs	per cu. yd. Type	I	Slump	4.0"
Coarse Agg.	1698 lbs	per cu. yd. Type		Air	NA
Fine Agg.	1307 lbs.	per cu. yd. Type		Unit Wt.	NA
Water	20 gals	per cu. yd. Add		Air Temp	
Admixture	none	per cu. yd. Type		Conc Temp	

Specimen Location: Treatment plant production floors

Strength required at 28 days: 4000 psi Total Yards Tested: 45 cu. yds
Information Obtained from: Smith – Cowan
No. of Spec.: 5 Cured in field:
Field report attached: yes Date Molded: 11–4–93

Spec No.	Spec No.	Avg. Die.	Date Tested	Age (Days)	Ult. Load (lbs)	Strength (psi)	Type Break
4A	1296	6.008	11–11–93	7	188,000	6629	B
4B	1296	6.010	11–11–93	7	183,000	6450	B
4C	1296	6.009	12–2–93	28	192,500	6788	C
4D	1296	6.010	12–2–93	28	187.,000	6591	B
4E	1296	6.006	12–2–93	28	192.,500	6795	C

Remarks

REPORT BY: Gene Dimtroff APPROVED BY: [signature]

1296CSD2/clt/12–3–93 TECHNICIAN PROJECT MANAGER

R&R INTERNATIONAL INC.

FIELD REPORT

PROJECT: Summit National Superfund Site **CLIENT:** Conestoga Rovers & Associates

LOCATION: Deerfield, Ohio **PROJECT NO.:** 001296 **REPORT NO.:** 1

DATE: 5-3-94 **TIME:** 1:00 P.M. **WEATHER:** Overcast **TEMP.:** 60 Degs F.

PURPOSE: Concrete Inspection.

PARTIES PRESENT: Mr. J. Winterink of Conestoga Rovers & Associates, Inc. and Mr. Gene Dimtroff of R&R International, Inc.

OBSERVATIONS: A parking slab and containment slab was poured and finished at the production building.

TASKS PERFORMED: Made five (5) cylinders. Tested each truck for slump and temperature and air content.

SUMMARY OF FINDINGS /COMMENTS: All tests met specifications.

TIME RETURNED TO SHOP: 4:30 P.M. **MILES TRAVELED:** 68

REPORT BY: Gene Dimtroff
TECHNICIAN

APPROVED BY: [signature]
PROJECT MANAGER

Disk 9/Field Reports/1296FR1/clt/6-8-94

RECEIVED JUN 14 1994

2372

R&R INTERNATIONAL INC.

1234 S. Cleveland-Massillon Rd.
P.O. Box 4383
Akron, Ohio 44321
(216) 666-2200

Compression Strength Results

Clients: Conestoga Rovers & Associates, Inc. Project No.: 001296
Address: 651 Colby Drive - Waterloo, Ontario Canada N2V1C2
Project Titl: Summit National Superfund Site
Location: Deerfield Twp of Portage County, Ohio
G. C.: Akron Concrete
Concrete Supplier: Horning Concrete Supply

Concrete Mix Information				Test Results	
Cement		per cu. yd. Type	Class "C"		
		per cu. yd. Type	I	Slump	1.5 - 2 in.
Coarse Agg.		per cu. yd. Type	No. 57	Air	4.7%
Fine Agg.		per cu. yd. Type		Unit Wt.	
Water		per cu. yd. Add		Air Temp	60 Degs F.
Admixture		per cu. yd. Type	AEA-92	Conc Temp	68 Degs F.

Specimen Location: Production Building Parking Slab and Containment Slab

Strength required at 28 days: 4000 psi Total Yards Tested: 24.5 cy
Information Obtained from: Horning Concrete Supply
No. of Spec.: 5 Cured in field: 1 Day
Field report attached: Yes Date Molded: 5-03-94

Spec No.	Spec No.	Avg. Dia.	Date Tested	Age (Days)	Ult. Load (lbs)	Strength (psi)	Type Break
1 A	1296	6.001	5-10-94	7	120,000	4244	B
1 B	1296	6.000	5-10-94	7	120,000	4277	D
2 A	1296	6.000	5-31-94	28	178,000	6296	D
2 B	1296	5.999	5-31-94	28	173,000	6121	A
3 A	1296	6.001	5-31-94	28	183,000	6471	B

RECEIVED JUN 14 1994

Remarks: Two (2) cylinders - Truck No. 195. Two (2) cylinders Truck No. 194 and one (1) cylinder Truck No. 199. Ticket Nos. 1303001, 130002, and 130003 respectfully.

REPORT BY: Gene Dimtroff APPROVED BY: Thomas R. Simima
TECHNICIAN PROJECT MANAGER

Disk 8 Field Reports/1296CS01/clt/6-6-94

2372-10

ATTACHMENT F

COMMISSIONING PLAN

COMMISSIONING PLAN GROUNDWATER EXTRACTION AND TREATMENT SYSTEMS

Summit National Superfund Site
Deerfield Township
Portage County, Ohio

SEPTEMBER 1993

REF. NO. 2372 (57)

This report is printed on recycled paper.

CONESTOGA-ROVERS & ASSOCIATES

TABLE OF CONTENTS

Page

1.0 INTRODUCTION 1

2.0 DESCRIPTION 2
2.1 GROUNDWATER EXTRACTION SYSTEM 2
2.1.1 General 2
2.1.2 Pipe and Media Drain 2
2.1.3 Intermediate Unit Extraction Wells 2
2.1.4 Groundwater Collection and Transfer System 3
2.1.5 Estimated Groundwater Influent Characteristics 4
2.1.6 Surface Water Treatment 5
2.1.7 Effluent Quality Criteria 6
2.2 GROUNDWATER TREATMENT SYSTEM 7
2.2.1 Treatment Technology 7
2.2.2 Process Control and Instrumentation 8
2.2.3 Process Design Basis 11
2.2.3.1 Overall 11
2.2.3.2 Performance Specification by Unit Operations 11
2.2.3.3 Flow Control Scheme 13
2.2.3.4 Performance/Compliance Control 13
2.2.4 Equipment 14

3.0 CONSTRUCTION SCHEDULES 20
3.1 GROUNDWATER TREATMENT SYSTEM 20
3.2 GROUNDWATER EXTRACTION SYSTEM 21
3.3 SCHEDULE OF ACTIVITIES 22

4.0 COMMISSIONING 24
4.1 PHASE I - TREATMENT SYSTEM INITIAL COMMISSIONING 24
4.1.1 Hydrostatic Testing 24
4.1.2 Flow Through 27
4.2 PHASE II - INTERIM TREATMENT SYSTEM OPERATION 27
4.2.1 Pond Water Extraction System 27
4.2.3 Construction Dewatering 28
4.3 PHASE III - GROUNDWATER EXTRACTION SYSTEM COMMISSIONING 28
4.4 PHASE IV - FINAL COMMISSIONING OF GROUNDWATER EXTRACTION AND TREATMENT SYSTEMS 29

5.0 COMMISSIONING CRITERIA 30
5.1 GROUNDWATER TREATMENT SYSTEM 30
5.2 GROUNDWATER EXTRACTION SYSTEM 30

6.0 OPERATION AND MAINTENANCE PLAN 31

LIST OF FIGURES

		Following Page
FIGURE 2.1	GROUNDWATER EXTRACTION SYSTEM SITE WORK	2
FIGURE 2.2	GROUNDWATER EXTRACTION SYSTEM TYPICAL DETAILS	2
FIGURE 2.3	GROUNDWATER EXTRACTION SYSTEM PIPE MEDIA DRAIN PROFILE	2
FIGURE 2.4	GROUNDWATER TREATMENT SYSTEM PROCESS EQUIPMENT LAYOUT	3
FIGURE 2.5	GROUNDWATER TREATMENT SYSTEM PROCESS AND INSTRUMENTATION SCHEMATIC	8
FIGURE 3.1	REMEDIAL CONSTRUCTION SCHEDULE OF ACTIVITIES	22
FIGURE 7.1	OPERATION AND MAINTENANCE STAFFING SUMMARY	33

LIST OF TABLES

TABLE 2.1	ESTIMATED INFLUENT CONCENTRATIONS	5
TABLE 2.2	EFFLUENT QUALITY	5

1.0 INTRODUCTION

The construction of the groundwater treatment system at the Summit National Superfund Site (Site) commenced in July 1993 and is scheduled for completion in April 1994. The construction of the groundwater extraction system at the Site is scheduled to commence concurrent with the completion of the groundwater treatment system such that groundwater resulting from the dewatering of excavations during construction of the groundwater extraction system can be treated prior to discharge. Therefore, the initial commissioning of the groundwater treatment system is scheduled to commence in May 1994 concurrent with initiating construction of the groundwater extraction system and the final commissioning is scheduled for October 1994 at the completion of constructing the groundwater extraction system. This requires the start-up and commissioning of the groundwater treatment system and groundwater extraction system to be undertaken in four phases as follows:

- Phase I - Groundwater Treatment System initial Commissioning;
- Phase II - Interim Groundwater Treatment System Operation;
- Phase III - Groundwater Extraction System Commissioning; and
- Phase IV - Final Commissioning of Groundwater Extraction and Treatment Systems.

The following report presents an overview of the groundwater extraction and treatment systems (Section 2.0), the schedule of construction activities (Section 3.0), a discussion on commissioning of the systems (Section 4.0), commissioning criteria (Section 5.0), long-term operation and maintenance requirements for the Site (Section 6.0), and an interim and long-term staffing assessment for the Site (Section 7.0).

2.0 DESCRIPTION

2.1 GROUNDWATER EXTRACTION SYSTEM

2.1.1 General

The groundwater extraction system for the Site is designed to provide hydraulic containment and collection of Site-related contaminated groundwater, and consists of the following components:

i) a pipe and media groundwater collection drain in the Water Table Unit (WTU);

ii) groundwater extraction wells in the Intermediate Unit (IU); and

iii) a collection and transfer system to collect and transfer the groundwater contained by the pipe and media drain and the extraction well system to the on-Site groundwater treatment facility.

Figure 2.1 presents a layout of the groundwater extraction system, and Figure 2.2 presents typical details of the groundwater extraction system.

2.1.2 Pipe and Media Drain

The location of the pipe and media drain presented on Figure 2.1 provides for hydraulic containment of Site-related contaminated groundwater in the WTU. Typical sections through the pipe and media drain are presented on Figure 2.3.

2.1.3 Intermediate Unit Extraction Wells

The locations of the six extraction wells in the IU presented on Figure 2.1 provide for hydraulic containment and collection of

Site-related contaminated groundwater in the IU. Typical installation details and specifications for the construction of extraction wells are provided on Figure 2.2.

2.1.4 Groundwater Collection and Transfer System

Typical extraction well and chamber details are provided on Figure 2.2. Each extraction well will be equipped with a 1/3-Horsepower (HP) electrical submersible pump to pump groundwater through a high-density polyethylene (HDPE) forcemain into the nearest manhole on the pipe and media drain. All groundwater collected in the pipe and media drain then will drain to and be collected in the pipe and media drain wet well as shown on Figures 2.1 and 2.3.

Details of the wet well on the pipe and media drain are provided on Figure 2.2. The wet well will be equipped with two 2-HP electrical submersible pumps, configured to operate on an alternating cycle basis during steady-state flow conditions and in combination during high flowrate conditions. Water from the wet well will be pumped through a below-grade 3-inch diameter butt-fusion welded HDPE forcemain to the groundwater treatment facility as shown on Figures 2.1 and 2.4. All forcemains will be installed with a minimum of three feet cover, to ensure that the forcemains remain below frost penetration level.

The extraction wells will be equipped with high-level start and low-level stop switches to shut down the extraction well pumps on low water level and automatically restart the extraction well pumps when the wells have recovered. These switches will be positioned in the field to maximize drawdown in the IU. As shown on Figure 2.2, the manholes on the pipe and media drain will be equipped with high-level alarm switches to shut down the corresponding extraction well and upgradient wells along the pipe and media drain to prevent further flooding of the manholes should blockage occur in the pipe and media drain downstream of the manhole. Similarly, the wet well will be equipped with high-level start switches and low-level stop switches to start and stop the wet well pumps alternately and

together in accordance with the level of groundwater in the wet well. The wet well also will be equipped with a high-high level to shut off the extraction wells before the groundwater level which maintains downgradient hydraulic capture in the WTU is exceeded. A telemetering system will be installed from each extraction well, each manhole on the pipe and media drain, and from the wet well, to the groundwater treatment facility control center to provide the operating status of each extraction well pumping system (i.e. on or off), the operating status of the wet well pumping system (i.e. on or off), high water level alarm indications in the wet well, high water level alarm indicators in the pipe and media drain manholes, and instantaneous and totalized flow readings at each pump location. The control of the pumping systems is discussed in Section 2.2.4.

2.1.5 Estimated Groundwater Influent Characteristics

The predicted design flow rates for the pipe and media drain system and the groundwater extraction well system are as follows:

Time After Installation of Drain (days)	*Lateral Flows to Drain (gpm)*	*Infiltration (gpm)*	*Intermediate Unit Wells (gpm)*	*Conversion of Monitoring Wells (gpm)*	*Total (gpm)*
30	76	10	6	0	92
90	50	10	6	0	66
180	35	10	6	0	51
365	25	10	6	0	41
steady-state	17 to 26	10	6	0	33 to 42

The total flow rate from the groundwater extraction system is estimated to be approximately 92 gallons per minute (gpm) after 30 days of operation, 66 gpm after 90 days of operation, and will reduce with time to approximately 33 to 42 gpm at steady-state groundwater flow conditions. These estimated flow rates are based on existing groundwater levels at the Site and concurrent startup of the groundwater extraction and treatment systems.

Additionally, influent to the groundwater treatment plant creating non-steady state flow conditions within several months of startup may consist of water from the following sources:

i) construction dewatering operations;

ii) surface waters from dewatering of the two on-Site ponds; and

iii) liquid wastes from the on-Site incineration process, vehicle decontamination pad, personnel decontamination facility, contents of buried underground tanks, well development water and water from the drum staging area.

The basis of design for the groundwater treatment system for the Site is an influent flow rate of 100 gpm, which provides an initial safety factor for the design and also provides treatment contingency as the influent flow decreases with time.

The estimated influent concentrations of Site-related contaminated groundwater and the estimated influent concentrations of inorganic compounds to the groundwater treatment system are summarized in Tables 2.1 and 2.2, respectively. The design influent profile for the 100 gpm flow and the 42 gpm flow are the concentrations indicated for t=90 days and t=2.6 years, respectively, as shown in Table 2.1.

2.1.6 Surface Water Treatment

The water in the on-Site ponds will be pumped at a controlled rate of 20 to 50 gpm and treated through the groundwater treatment system during implementation of the soil removal and treatment phase of the remedial construction activities. The pre-design surface water characterization indicates that the concentrations of volatile organic compounds (VOCs), with the exception of acetone (12 µg/L) and 1,2-dichloroethane (3J µg/L), have decreased to non-detectable concentrations in the east pond. Similarly, in the west pond, all VOCs with the exception of

TABLE 2.1

ESTIMATED INFLUENT CONCENTRATIONS
GROUNDWATER TREATMENT PLANT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

	Weighted Average Concentrations					
VOLATILE ORGANIC COMPOUNDS	*t=90 days (ug/L)*	*t=2.6 Years (ug/L)*	*t=5.2 Years (ug/L)*	*t=7.8 Years (ug/L)*	*t=10.4 Years (ug/L)*	*t=13 Years (ug/L)*
Acetone	11.8	46,347.1	4,756.3	716.9	128.7	29.0
Benzene	7.1	5.1	5.1	5.1	5.1	5.1
1,1-Dichloroethane	56.6	294.6	358.5	263.2	171.2	111.6
1,2-Dichloroethane	180.7	1,049.1	717.1	341.2	196.9	152.6
1,1-Dichloroethylene	2.5	1.8	1.8	1.8	1.8	1.8
1,2-Dichloroethylene	26.0	663.2	1,200.6	1,223.0	1,052.5	833.7
Ethylbenzene	1.7	4.9	10.8	16.3	21.6	26.4
Methylene Chloride	0.0	132.4	144.7	87.7	44.8	21.0
Methyl Ethyl Ketone	0.1	22,103.3	6,514.0	1,721.6	494.3	139.3
Methyl Isobutyl Ketone	0.4	756.3	685.6	344.6	146.0	56.8
Toluene	2.8	46.8	120.9	179.3	225.3	260.1
1,1,1-Trichloroethane	98.7	205.8	398.7	515.4	578.2	601.8
Trichloroethylene	1.5	1.4	1.4	1.4	1.4	1.4
Xylenes (Total)	9.3	61.9	147.3	211.2	257.2	288.6
BASE/NEUTRAL COMPOUNDS						
Benzoic Acid		180.7	295.1	308.5	279.4	237.8
Bis (2-Ethylhexyl) Phthalate		0.7	0.7	0.8	0.9	0.9
Isophorone		34.7	38.0	26.9	18.1	13.1
2 Methyl Naphthalene		0.7	0.7	0.7	0.8	0.8
Naphthalene		0.5	0.7	0.9	1.0	1.2
ACID COMPOUNDS						
4 Chloro 3 Methyl Phenol (1)		1.9	0.1	1.9	0.1	1.9
2,4 Dimethyl Phenol		1.0	0.9	0.5	0.3	0.2
2- (O-Cresol) Methyl Phenol		2.6	1.9	1.0	0.6	0.5
4- (P-Cresol) Methyl Phenol		20.4	16.9	9.9	6.5	5.2
Phenol		158.5	106.2	44.8	20.7	13.2

Note:

(1) - Not modelled because no Koc value was available for this compound.
An average value of 16 ug/L was assumed for all time frames.
IU concentrations were kept constant as a function of time for MW16, MW21, MW22, MW23, and MW25.
The Acetone and Methyl Ethyl Ketone concentrations in MW10 were modelled.

TABLE 2.2

EFFLUENT QUALITY
APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

			EPA Water Quality Standards						Ohio Water Quality Standards		
			Drinking Water Standards		For The Protection of Aquatic Life	For The Protection of Human Life				Aquatic Life Habitat(6)	
Chemical	Maximum Estimated Influent Concentration (µg/L)	Calculated Effluent Concentration (µg/L)	Maximum Contaminant Level MCL (µg/L)	Proposed Maximum Contaminant Level pMCL (µg/L)	Freshwater Protection Acute/Chronic (µg/L)	AWQC Water and Fish Ingestion (µg/L)	AWQC Fish Only Ingestion (µg/L)	Effluent Target Level HI of 1 Based on Individual Compounds (µg/L)	Public Water Supply (µg/L)	30-Day Average (µg/L)	Human Health 30-Day Average (µg/L)
Organic Compounds											
Acetone	46,347	927						3,500		78,000	
Benzene	7										
1,1-Dichlorethane	359	7						3,500			
1-2-Dichlorethane	1,049	21	5(1,5)		118,000/20,000(1)	0.94(1,2)/0.38(5)	243(1,2)/98.6(5)		3.80	3,500	990
1,1-Dichloroethylene	2	<1	7(1,5)		11,600(1,2)	0.033(1,2)/0.057(5)	1.85(1,2)/3.2(5)	315	0.57	78	32
1,2-Dichloroethylene	1,223	24	5(3)							310	
Ethylbenzene	26	1	700(3)		32,000(1,2)	1,400(1,2)/3,120(5)	3,280(1,2)/28,720(5)	3,500	3,100	62	29,000
Methylene Chloride	145	3			11,000(1)	0.19(1)/4.7(5)	15.7(1)/1,578(5)	2,100		430	
Methyl Ethyl Ketone	22,103	442						1,750		7,100	
Methyl Isobutyl Ketone	756	15						1,750			
Toluene	260	5	1000(3)		17,500(1)	14,300(1,2)/6,765(5)	424,000(1,2)/201,300(5)	7,000	10,000	1,700	300,000
1,1,1-Trichloroethane	602	12	200(1,5)			18,400(1,2,5)	1,030,000(1,2,5)	70,000	200	88	1,030,000
Trichloroethylene	1.5		5(6)								
Xylene (Total)	289	6	10,000(3)								
Base/Neutral Compounds											
Benzoic Acid	309	6						140,000			
Bis(2-Ethylhexyl)Phthalate	1	<1			400/360(4)	1.76(5)	5.9(5)	700	18	8.4	59
Isophorone	38	1			117,000(1,2)	5,200(1,2)/8.4(5)	520,000(1,2)/598(5)	7,000			
2-Methyl Naphthalane	1	<1									
Naphthalene	1	<1			2,300/620(2)			140		44	
Acid Compounds											
4 Chloro 3 Methyl Phenol	2	<1									
2,4-Dimethyl Phenol	1	<1			2,120(2)	400(5)		700			
2-(O-Cresol) Methyl Phenol	3	<1						1,750		22	
4-(P-Cresol) Methyl Phenol	20	<1						1,750		6.2	
Phenol	158	3			10,200/2,560(1)	300(1,5)	46,163 ppm(5)	21,000	1.0	200	
Filtered Inorganic Compounds											
Antimony	5	5	6(6)		9,000/1,600(1) and 88/30(4)	14(1,5)	4,400(5)	14	14	190	4,300
Arsenic	7	7	50(3)	50(1)	360/190(1)	0.0022(1)/0.018(5)	0.018(1)/0.14(5)	35	50	190	
Iron	149,691	300 (soluble)	300(1)		11,000(2,5)	300(2,5)			300	1,000	

TABLE 2.2

EFFLUENT QUALITY
APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

			EPA Water Quality Standards						Ohio Water Quality Standards (6)		
			Drinking Water Standards		For The Protection of Aquatic Life	For The Protection of Human Life				Water Hardness Dependent Parameters	
										Water Hardness (mg/L CaCo3)	
Chemical	Maximum Estimated Influent Concentration (µg/L)	Calculated Effluent Concentration (µg/L)	Maximum Contaminant Level MCL (µg/L)	Proposed Maximum Contaminant Level pMCL (µg/L)	Freshwater Protection Acute/Chronic (µg/L)	AWQC Water and Fish Ingestion (µg/L)	AWQC Fish Only Ingestion (µg/L)	Effluent Target Level HI of 1 Based on Individual Compounds (µg/L)	Public Water Supply (µg/L)	100 30-Day Average (µg/L)	500 30-Day Average (µg/L)
Filtered Inorganic Compounds											
Aluminum	536	536			750/87(5)						
Barium	219	219	2000(6)			1,000(5)		2,450	1,000		
Calcium	403,571	201,785									
Chromium VI	5	5	100(3)*		16/11(1,2,5,)	50(1,2,5)		175	50	210	770
Cobalt	14	14									
Copper	2	2		1,300(5)	9/6.5(5)	1,000(5)		1,295	1,000	12	52
Lead	1	1	50(3)		82/3.2(1)	50(1,2,5)		49	50	6.9	54
Magnesium	144,301	72,151									
Manganese	6,818	6,818				30(5)	100(2)	3,500	50		
Nickel (Soluble Salts)	14	14	100(6)		789/87.7(5)	610(5)	4,600(5)	700	610	170	700
Potassium	12,829	6,415						7,000			
Zinc	188	188	5,000(1)		65/58.9(5)	5,000(5)			5,000	110	410

Notes:

ARARs do not exist for all chemicals presented, EPA classifies only primary MCLs, Promulgated state MCLs, and National Ambient Air Quality Standards (NAAQs) as ARARs for CERCLA Sites. Proposed MCLs, OSHA PELs, and health-based state criteria such as AALs and ALs, are classified as "to be considered" (TBC) Standards.

ARAR: Applicable or Relevant and Appropriate Requirements
AWQC: Ambient Water Quality Criteria
MCL: Maximum Contaminant Level
pMCL: Proposed Maximum Contaminant Level
WQC: Water Quality Criteria
* Effective Date July 30,1992

Sources:

1. ARIS: EPA Integrated Risk Information System Database; October 1991
2. USEPA Quality Criteria For Water 1986 EPA 440/5-86-0001 May 1986, 51 Federal Register 43665; Update September 1987
3. USEPA National Primary and Secondary Drinking Water Regulations 40 CFR 141-3 (56 FR No. 20) January 1991
4. EPA Ambient Water Quality Criteria 55 FR 19986; May 1990
5. EPA Regional IV "Toxic Substance Spreadsheet", EPA Water Quality Standards Unit
6. Ohio Water Quality Standards (OAC 3745-1)

acetone (10.5 μg/L), 2-butanone (2.0 μg/L), 2-hexanone (1.5 μg/L) and 4-methyl-2-pentanone (1.0 μg/L) have decreased to non-detectable concentrations. Similarly, base/neutral compounds were not detected during the pre-design surface water characterization.

Conversely, there remains an increasing level of inorganic compounds (filtered and unfiltered) and general chemistry compounds in the east and west ponds. In particular, the east pond contained 400,000 μg/L of calcium, 36,000 μg/L of iron, 160,000 μg/L of magnesium and 57,000 μg/L of sodium, and the west pond had high levels of aluminum, calcium and manganese, during the pre-design surface water characterization. Both pond samples displayed elevated levels of metals, dissolved solids and suspended solids. Due to the elevated metals concentrations, likely attributable to suspended solids, it is anticipated that a reduction of the elevated metals concentration in the east and west pond waters will be accomplished in the on-Site groundwater treatment system. Therefore, the surface waters will be treated to remove the inorganic compounds and suspended solids prior to discharge from the Site, and would be adequately treated by the on-Site groundwater treatment system.

2.1.7 Effluent Quality Criteria

Discharge of treated groundwater and surface water will be to the surface water drainage ditch at the northeast boundary of the Site. A series of existing surface water drainage ditches then conveys the water approximately 1 1/2 miles, and ultimately discharges to the extreme northwest limit of Berlin Lake.

Surface water discharge criteria for any particular site are determined only on an individual application basis, and therefore, the criteria are subject to review. A summary of various Applicable or Relevant and Appropriate Requirements (ARARs) for the quality of water as it applies to drinking water standards, the protection of aquatic life and the protection of human life are presented in Table 2.2 for the primary contaminants detected in groundwater at the Site.

The aerobic biological/granular activated carbon treatment process for treatment of groundwater at the Site will provide, at a minimum, expected treatment removal efficiencies of 98 percent or better for the VOCs and total iron, 50 percent or better for the metal salts (including calcium, magnesium and potassium), and no substantial removal of the other metal compounds due to their low dissolved concentrations. Based on these expected removal efficiencies, the calculated concentrations of compounds in the treated effluent, for the maximum estimated influent concentrations of the respective compounds, are as shown in Table 2.2.

The quantity of sludge/solids generated by the groundwater treatment process is expected to be 400 to 600 pounds/day. Dewatered sludges/solids may or may not be a hazardous waste, and a final determination will be made on the basis of chemical analyses of the sludges/solids generated. Initial characterization of sludges/solids will occur when a sufficient quantity of sludges/solids has accumulated. Thereafter, samples of sludges/solids generated will be collected and analyzed for TCLP every six months for the first three years of operation of the groundwater treatment plant, and annually thereafter until consistent analytical results are obtained over a three year period, at which time sampling and analysis of the sludges/solids will be discontinued. Disposal of dewatered materials will be consistent with their chemical characterization.

2.2 GROUNDWATER TREATMENT SYSTEM

2.2.1 Treatment Technology

The treatment components of the treatment process are as follows:

i) enclosed equalization/aeration tank with pH adjustment and vented through vapor phase carbon;
ii) inclined plate settler, followed by surge tank and pH readjustment;
iii) bioreactor vented through vapor phase carbon;

iv) sludge dewatering and disposal;
v) enclosed media filtration; and
vi) aqueous granular activated carbon final polishing.

The process equipment and building layout is presented on Figure 2.4, and Figure 2.5 presents the process and instrumentation schematic.

2.2.2 Process Control and Instrumentation

Instrumentation has been designed to monitor each groundwater extraction and treatment component, including the influent and effluent to the treatment system. In addition, pressure gauges will be provided to monitor pipeline pressures and level switches will be provided to shut down the system during unusual (high or low) level conditions in the process tanks, as shown on Figure 2.5.

In addition to the above, the groundwater treatment system design includes fail safe features including high water level sensors and motor overload sensors which will serve to shut down the groundwater extraction and treatment system at fault condition. In this case, a local alarm system (lights/sound alarm) will be energized to alert on-Site operation and maintenance (O & M) personnel to unusual system conditions. In addition, during unmanned shifts, an automatic telephone dialer system will be provided for a remote indication of conditions which require attention.

The performance specifications and the selected equipment specifications for the groundwater treatment system components are presented in Sections 2.2.3 and 2.2.4, respectively.

The groundwater extraction and collection system control is designed as follows:

i) groundwater will be pumped from the six groundwater extraction wells via individual underground forcemains to the nearest manholes along the alignment of the pipe and media drain system;

ii) the pumping rate from each extraction well will be controlled by a setable flow control valve;

iii) each extraction well pump will be protected by a water level control system to automatically shut down the pumps on low water levels and to allow restarting of the pumps on well recovery;

iv) the flow from the extraction wells will be measured by flow meters located in each extraction well chamber, with local flow rate indication and flow totalizers located at the treatment system control center;

v) the water levels in the pipe and media drain access manholes will be monitored by level sensors to provide an alarm at high water levels in the manholes, to shut down the extraction well feeding the manhole, and also to shut down upgradient extraction well pumps, if required;

vi) the collected groundwater in the pipe and media drain will be pumped from the wet well by a duplex pumping system designed to operate alternatively or together based on the water level in the wet well;

vii) a medium level float switch in the wet well will start one wet well pump and a low level float switch will stop this pump. The wet well pumps will alternate on subsequent starts;

viii) a medium-high level float switch in the wet well will start the second pump to pump concurrently with the first pump;

ix) a high level float switch in the wet well will signal an alarm condition on abnormally high water levels;

x) a high-high level float switch in the wet well will stop the groundwater extraction wells;

xi) the pumping rate from the wet well will be controlled at the treatment plant by a setable flow control valve which will direct water through the entire treatment system at flow rates of up to approximately 50 gpm (i.e. equalization tank, settler, biotower, sand filter and carbon adsorber); and

xii) for flow rates in excess of 50 gpm, the excess flow will be directed through a partial system bypass (i.e. to bypass the equalization tanks, parallel plate settler and biotower) directly to the sand filter; and

xiii) the biotower only will be operated when the biotower influent concentration of chemical oxygen demand (COD) exceeds 50 milligrams per liter (mg/L) and total VOC concentration exceeds 5 mg/L.

The control system will utilize a Texas Instruments Series 405 programmable logic controller (PLC) for operator interaction of the treatment system. Every analog signal from the treatment system is available from the PLC. The PLC will be located in the control room. The operator will be able to view the entire process schematically on the PLC and determine the operating conditions of the plant.

All pumps will be indicated in green when running and in red when off. All levels will be shown both graphically and digitally. Flow rates and pH will be indicated digitally. Alarm conditions will be shown as blinking red. Alarms will be logged and time stamped. Operator functions will also be logged. Run time of motors and flow values will be totalized.

Manual shut down of the system can be done from the control room. Each piece of equipment can be individually shut down from the control room as well.

2.2.3 Process Design Basis

2.2.3.1 Overall

Based on the estimated groundwater influent characteristics to the treatment system and the effluent quality criteria as discussed in Section 2.1.5 and Section 2.1.7, respectively, the overall groundwater treatment design capacity is as follows:

- 100 gpm hydraulic capability, 42 gpm normal operation
- during flow in excess of 50 gpm, the excess flow will be bypassed directly to the sand filter and carbon
- 98% VOC and total iron removal
- 50% metals removal (Ca, Mg, K)

2.2.3.2 Performance Specification by Unit Operations

Based on the steady-state flow of 42 gpm through the treatment system, the design basis for the unit process operations is as follows:

Aeration/Equalization Tank

- 90% chlorinated organics removal through aeration tank
- 2:1 (cfm:gpm) air to water ratio at 42 gpm
- 60 minute retention time at 42 gpm
- pH adjustment to 8 - 10 using 18% caustic solution
- 15 days batch inventory of 18% NaOH solution (2,500 gallon operating volume)
- dike for spill containment
- 95% removal of chlorinated organics through single vapor phase carbon adsorber with a 45 second minimum carbon contact time

Inclined Plate Settler

- 60% Fe, 40% Ca and 20% Mg, removal through settler
- pump out sludge on an as required basis
- oil removal if required

Acid Addition

- pH readjustment to 6.5 - 7.5 using 10N HCl (32% HCl)
- 44 days batch inventory of 10N HCl solution (2,500 gallon operating volume)
- dike for spill containment

Biotower

- 6 hour retention time in tower
- 80% organics removal across biotower
- 5% metals removal across tower
- 0.1 gpm nutrient addition into influent stream
- bump tower on routine basis to remove excess biomass (30-60 minutes)

Continuous Sand Filter

- 70% Fe and 25% other metals removal
- 98% biomass removal
- continuous purge at 5 gpm
- sludge stream free of organics

Liquid Carbon Adsorbers

- 95% organics removal across each container
- 50% Fe and 5% other metals removal
- 100 minute minimum carbon contact time at 42 gpm through each container
- carbon change approximately once every four months at 42 gpm, depending on influent concentrations and operation of biotower.

Sludge Filter/Handling

- 30% solids in sludge
- 75% Fe and other metals removal
- 100% biomass removal

- pump out sludge tank once per day
- dewatered sludge storage outside in roll-off box

Miscellaneous

- no in-line spares
- drainage trenches in building and quick connect at vessels for easy drainage into trench sump and automatic pump to equalization tank (or sand filter) from floor sump
- galvanized steel piping for piping to the biotower and PVC piping thereafter
- process lines 2- and 3-inch diameter except for metered streams (acid, NaOH and nutrients) and air lines
- totally enclosed fan cooled (TEFC) motors

2.2.3.3 Flow Control Scheme

The design basis for flow control is as follows:

- flows from wells tied in with control system of operating plant
- flow from inclined plate settler and biotower by gravity
- flow from caustic, acid, nutrient and inoculum tanks by metering pumps
- flow from all other unit operations utilize a pumped effluent on recycle based on level
- high level at tanks provide alarm at control panel
- high-high level shuts off feed pump

2.2.3.4 Performance/Compliance Control

The design basis for performance/compliance control is as follows:

- centrally located control panel for operator monitoring of system
- liquid sampling for performance evaluation after each surge tank and between carbon containers

- vapor sampling for performance evaluation after carbon adsorber on aeration tank and biotower
- liquid sampling before and after biotower for performance evaluation (temp, pH, dissolved oxygen, nutrients, COD and microbial count)

2.2.4 Equipment

The equipment specifications for the treatment equipment are summarized as follows:

i) Caustic Addition

- Tank
  - 162 gallon per day (gpd) of 18% sodium hydroxide (NaOH) solution
  - 3000 gallon steel flat bottom tank
  - seven feet six inches (7'6") outside diameter (OD) 10' straight sidewall height (SSH)
  - painted exterior, epoxy coated interior

- Metering pump
  - meter in 18% NaOH at 162 gpd or 6.75 gallons per hour (gph)
  - Liquid Metronics model D741 drive (115 VAC) c/w 35P wet end and 30691 analog to digital converter

ii) Equalization/Aeration Tank

- Tank
  - 3800 gallon capacity
  - 3000 gallon operating volume (60 minute retention time at 42 gpm)
  - FRP, dished top
  - 8'OD, 10'SSH

- Blower
  - 100 cubic feet per minute (cfm) at 96" total static pressure
  - regenerative type blower
  - Rotron model DR6D89 c/w 5 horsepower (Hp), TEFC, 230/460 VAC, 3 phase motor

- Pump
  - 50 gpm at 50 foot head
  - TEFC centrifugal pump
  - Goulds pump model 3642, size 1-1/4 x 1-1/2-5 c/w 3500 revolutions per minute (rpm), 1.5 Hp, TEFC, 230/460 VAC, 3 phase motor

- Vapor phase carbon
  - 100 cfm
  - 1 - 2000 pound adsorber
  - 4' OD, 7' SSH

- Aeration Internals
  - slotted stainless steel (SS) pipe

iii) Inclined Plate Settler

- Settler
  - lamella gravity plate settler package
  - 125 square foot (sq ft) area, FRP plates
  - steel construction
  - flash mixer and floc addition capabilities
  - 13'8" overall height, 10' x 4' floor space
  - Parkson model 125/55
  - can be modified for oil removal, if required

- Sludge Pump
  - air operated diaphragm pump (polypropylene)
  - Wilden model M-1
  - flow of 10 gpm at 50 foot head

iv) Acid Addition

- Acid Tank
  - 57 gpd 10N acid
  - 3000 gallon FRP flat bottom (2500 gallon operating volume)
  - 7'6" OD, 10' SSH
  - vinyl ester resin

- Metering pump
  - 2.375 gph addition
  - Liquid Metronics model D741 drive (0-20 gph), 36S wet end (TFE), 30691 analog to digital converter

- Surge Tank #1
  - FRP flat bottom dished top
  - 2150 gallon capacity - 6' OD, 10'SSH
  - 1500 gallon operating volume (30 minute retention time based on 42 gpm)

v) Bioreactor

- Tower
  - 12 feet internal diameter (ID), 24 feet high (H)
  - 20,300 gallon capacity, 18,190 gallon operating volume
  - epoxy coated steel
  - flat bottom, dished head
  - upflow, fixed film, fully submerged
  - 113 cubic foot Munters PVC media, 1580 cubic feet random mass transfer polypropylene media
  - ladder access to top with platform
  - weight shipped - 18,400 pounds (lbs), full-196,400 lbs

- Pump
  - 50 gpm at 50 foot head
  - 3 Hp, 230-460 V, 3 phase, 3,600 rpm motor
  - Durco Mark III 1K1.5 x 1-6 2RV

- Nutrient Addition Tank, Mixer and Pumps
  - FRP, 2'6" OD, 3' H
  - 110 gallon capacity, 90 gallon operating volume
  - LMI metering pump, D741 drive, 36S wet end, 115V
  - weight shipped - 100 lbs, full - 1070 lbs
  - Chemineer LTD-2 mixer (1/4 hp, 115/230 V, 1 phase, 1800 rpm)

- Inoculum Addition Tank, and Pump
  - FRP, 2'6" OD, 3'6" H
  - 250 gallon capacity, 215 gallon operating volume
  - LMI metering pump, D741 drive 36S wet end, 115V
  - weight shipped - 190 lbs, full - 2290 lbs

- Blowers (2)
  - Roots Dresser 53RAI-U
  - Universal rotary positive blower
  - 15 Hp 460 V
  - 115 scfm during normal operation, 282 scfm during bump cycle

- SS slotted pipe for internal air distribution

- Sludge Pump
  - air operated diaphragm pump
  - Wilden model M-2 (aluminum)
  - 30 gpm at 50 foot head

vi) Continuous Sand Filter

- Sand Filter
  - continuous backwash (5 - 10%), upflow, single media
  - 12 sq ft of filtration area
  - 40" filtration depth
  - max headloss 30"
  - air scour internally (SS construction)
  - FRP tank and internals
  - 4'ID, 12' H
  - weight shipped - 850 lbs, full-15500 lbs
  - Parkson DynaSand Filter model DSF-12

vii) Surge Tank #2

- Surge Tank #2
  - 1,100 gallon HDPE, flat bottom
  - 64" OD, 93" H
  - Nalgene model 51109-1100

- Pump (2)
  - 50 gpm at 50 foot head each
  - TEFC centrifugal pump, 3500 rpm
  - Goulds model 3642 size 1-1/4 x 1-1/2 - 5, 1-1/2 Hp 230/460V, 3 phase

viii) Liquid Phase Carbon

- Carbon
  - two 20,000 pound adsorbers, ASME code steel vessels
  - skid mounted, includes piping and valves
  - 10' OD, 10' H each vessel
  - 28' L x 13' W x 21' H skid
  - operating weigh 180,000 lbs
  - Encotech

ix) Sludge Handling

- Tank
  - 4,200 gallon XLPE, cone bottom, dished top
  - 96" OD, 137" SSH, 177" OAH with stand
  - Nalgene model 53309-4200 tank, 53009-4200 stand

- Pump
  - Moyno SP PUMP, MODEL 367 - progressive cavity
  - built into solids dewatering system
  - capacity at max pressure head of 50 psi is 25 gpm, increasing to 53 gpm with negligible pressure head

- Solids Dewatering
  - Sonmat model 6BCA dewatering system
  - 6 bag dewatering system
  - 9' x 12' overall floor space requirement, 6' H
  - includes pump (see above) and polymer addition system
  - 6 bags per day, 10-20 days per month bag changeout

x) Ventilation System

- Roof heat pump system Carrier Model 50QJ004-6 (700 cfm).

- Treatment room exhaust - two 3/4 Hp Greenheck exhaust fans and dampers based on thermostat (4773 cfm each)

- Maintenance room - one 1/4 Hp Greenheck exhaust fan and damper based on thermostat (840 cfm)

- Blower room - one 1/4 Hp Greenheck exhaust fan and damper based on thermostat (2700 cfm)

- Electrical room - one 1/80 Hp Greenheck exhaust fan and damper based on thermostat (214 cfm)

- Lab room - one 1/25 Hp Greenheck exhaust fan and damper based on thermostat with manual override (336 cfm)

- Washroom - one 1/4 Hp Greenheck exhaust fan and damper based on thermostat (310 cfm)

- Conference room - one 1/4 Hp Greenheck exhaust fan and damper based on timer (1170 cfm)

xi) Laboratory Equipment

- Testing Equipment
  - Coulter counter for microbial counter
  - Hach meter for COD
  - pH meter for pH
  - DO meter for dissolved oxygen (DO)
  - Hach meter for nitrogen
  - Hach meter for phosphorous

- General Equipment
  - bench with drawers
  - shelves
  - portable exhaust hood
  - miscellaneous glassware - bottles, jars, graduated cylinders, beakers
  - pipets
  - stool
  - small refrigerator
  - electric autoclave (pressure cooker)
  - flame sterilizing gun
  - miscellaneous chemicals - deionized H_2O, agar, mineral salts media

xii) Miscellaneous Equipment

- Air Compressor
  - 60 cfm at 100 psi
  - 120 gallon tank
  - 15 Hp, 230 V, 3-phase, TEFC
  - automatic drain with pressure switch
  - Quincy model QEH-15, 2-stage air compressor

3.0 CONSTRUCTION SCHEDULES

3.1 GROUNDWATER TREATMENT SYSTEM

Installation of the groundwater treatment system includes the following activities:

i) mobilization of labor, plant, materials and equipment to the Site;

ii) development and implementation of a Site-specific Health and Safety Plan by the selected remedial contractor for construction of the groundwater treatment system;

iii) installation of temporary support facilities (Site offices, support trailers, toilet facilities, etc.);

iv) excavation and regrading of the work area in Grids 1-6, 1-7, 1-8, 2-7 and 2-8 to pregrade elevations, where required, and placing of a 6-inch layer of clean imported soil over the work area;

v) installation of a new access gate in the existing perimeter security fence for permanent access to the groundwater treatment building;

vi) excavation and installation of foundations for the groundwater treatment building;

vii) construction of the groundwater treatment building, offices and maintenance rooms;

viii) installation and commissioning of utilities to the groundwater treatment building;

ix) installation of the groundwater treatment equipment and controls;

x) construction of the groundwater treatment facility discharge pipe and rip-rap apron;

xi) importation of clean common fill and placing common fill to pre-grade elevations in Grids 1-7, 1-8, 2-7 and 2-8;

xii) importation and placing of clean material for the permeable 2-foot thick final Site cover and vegetation in Grids 1-7, 1-8, 2-7 and 2-8;

xiii) commissioning the groundwater treatment system; and

xiv) demobilization of labor, plant, materials and equipment from the Site.

3.2 GROUNDWATER EXTRACTION SYSTEM

Installation of the groundwater extraction system includes the following activities:

i) mobilization of labor, plant, materials, equipment and temporary support facilities to the Site;

ii) development and implementation of a Site-specific Health and Safety Plan by the selected remedial contractor for construction of the groundwater extraction system;

iii) relocation of the south drainage ditch;

iv) relocation of the south perimeter security fence;

v) regrading along the alignment of the proposed pipe and media drain to create a level work area;

vi) installation of the wet well manhole in Grid 6-5, including temporary pumping facilities to the on-Site groundwater treatment facility, and startup of groundwater extraction;

vii) excavation, placing and backfilling of the pipe and media drain commencing at the wet well, including access manholes along the alignment of the pipe and media drain;

viii) installation of forcemains and control and power conduits;

ix) regrading of the work area to the Site cover final pregrade elevations;

x) importation and placing of clean material for the permeable 2-foot thick final Site cover, including the gravel maintenance road and topsoil, and vegetating the groundwater extraction system work area;

xi) construction of the rip-rap lined east ditch;

xii) replacement of the security fence removed to facilitate construction;

xiii) installation of the extraction wells, wet well and access manhole mechanical and electrical components;

xiv) commissioning the entire groundwater extraction system; and

xv) demobilization of labor, plant, materials and equipment from the Site.

3.3 SCHEDULE OF ACTIVITIES

The schedule of activities for construction of the groundwater treatment system and groundwater extraction systems at the Site is presented on Figure 3.1.

Commissioning of the groundwater treatment related systems (including Site services) will occur upon completion of the installations. Commissioning of the groundwater treatment equipment is scheduled to occur during March/April 1994. Initial startup of the groundwater treatment system will occur concurrent with one of the following activities:

i) dewatering of the Site ponds;

ii) treating accumulated remedial construction wastewater including decontamination water and well development water; or

iii) construction of the groundwater extraction system.

Initial startup of extraction of contaminated groundwater from the Water Table Unit (WTU) will commence upon installation of the wet well, and will continue during installation of the pipe media drain and access manholes. Complete commissioning of the pipe and media drain for extraction of contaminated groundwater from the WTU and the groundwater extraction wells for extraction of contaminated groundwater from the Intermediate Unit (IU) will occur approximately five months following the initial startup. All groundwater extracted during installation of the wet well, the pipe and media drain and the access manholes will be transferred to and treated at the on-Site groundwater treatment facility prior to discharge.

4.0 COMMISSIONING

4.1 PHASE I - TREATMENT SYSTEM INITIAL COMMISSIONING

The treatment system commissioning activities will be the responsibility of the groundwater treatment system contractor with supervision provided by Conestoga-Rovers & Associates (CRA). The commissioning activities will consist of hydrostatic testing of all treatment system tanks, piping and pumps and operational testing of all pumps, mixers and blowers. It is anticipated that the Phase I commissioning activities will require approximately two weeks to complete.

4.1.1 Hydrostatic Testing

The hydrostatic and equipment testing will be undertaken using potable water supplied from the on-Site potable water supply well and, if necessary, potable water supplied by tanker. The maximum flow rate from the potable water supply well is anticipated to be limited to approximately 5 gpm. An effort will be made to conserve potable water by conducting the hydrostatic testing in stages and circulating water through the treatment system when possible.

If leaks are found in any tanks, piping or pumps during hydrostatic testing, the equipment will be emptied, repaired, refilled and reinspected. The testing will be conducted until zero leakage is determined. The hydrostatic and equipment testing will be conducted as follows:

i) the caustic tank (T1) and the acid tank (T3) will be filled to their operating volumes of 2,500 and 500 gallons (gal), respectively, and held for one hour;

ii) the caustic metering pump (P1) and the acid metering pump (P4) will be tested;

iii) temporary transfer pump and piping will be used to transfer all water in the caustic tank (T1) (2,500 gal) and water in the acid tank (T3) (500 gal) into the equalization tank (T2) to its operating volume of 3,000 gal and held for one hour;

iv) the equalization tank blower (B1) will be tested;

v) transfer pump (P2) will be tested and used to transfer water from the equalization tank (T3) into the inclined plate settler (X1) to its operating volume of 3,000 gal and held for one hour. Remaining water in the acid tank (T3), 2,000 gal, will be pumped into the equalization tank;

vi) the compressed air supply system will be tested and the inclined plate settler sludge pump (P11) will be tested;

vii) water will be pumped from the equalization tank (T2), using transfer pump (P2), through the inclined plate settler (X1) into surge tank (T4) to its operating volume of 1,500 gal and held for one hour;

viii) biotower feed pump (P3) will be tested and used to transfer all water in the surge tank (T4), 1,500 gal, into the biotower (X2);

ix) an additional 16,500 gal water will be pumped into the biotower to its operating volume of 18,000 gal and held for one hour. Due to the anticipated 5 gpm flow limit from the potable water supply well, it is anticipated the additional 16,500 gal of water will be supplied by tanker to reduce the time required (2.3 days) to fill the biotower by using the potable water supply well;

x) the biotower blowers (B2 and B3), recirculation pump (P8) and sludge pump (P12) will be tested;

xi) the potassium phosphate tank (T5), ammonium chloride tank (T6) and inoculum tank (T7) will be filled to their operating volumes of 100 gal, 100 gal and 250 gal, respectively, and held for one hour;

xii) the potassium phosphate and ammonium chloride mixers (M1 and M2) and the potassium phosphate, ammonium chloride and inoculum metering pumps (P5, P6 and P7) will be tested;

xiii) water in tanks T5, T6 and T7 will be pumped into surge tank (T4) using a temporary transfer pump and piping. Additional water will be added to T4 and pumped through the biotower (X2) using P3 into the sand filter (X3) until it is full, and the sand filter will be held full for one hour;

xiv) water will be added to surge tank (T8) to its operating volume of 1,100 gal and held for one hour;

xv) transfer pumps P9 and P10 will be tested and used to pump water from surge tank (T8) into carbon adsorbers (X4 and X5) until they are full, and the carbon adsorbers will be held full for one hour;

xvi) water will be pumped into surge tank (T10) to its operating volume and held for one hour;

xvii) the surge tank bypass pump (P15) will be tested and the gravity discharge system will be tested;

xviii) biotower sludge pump (P12) will be used to transfer water into the sludge holding tank (T9) to its operating volume of 3,900 gal, and will be held full for one hour;

xix) sludge pump (P13) will be tested and used to pump water from the sludge holding tank (T9) into the bag dewatering unit (X6);

xx) water will be allowed to drain into the sump tank (T11) to its capacity and will be held full for one hour; and

xxi) sump pump (P14) will be tested and used to pump water from T11 to the equalization tank (T2).

4.1.2 Flow Through

Following successful completion of the hydrostatic and equipment testing, a flow through using potable water will be conducted. In order to test the treatment system during continuous operation while using potable water, bypass pump (P15) will be temporarily piped to pump water from surge tank (T10) to the equalization tank (T2) so that water may be circulated through the groundwater treatment system.

4.2 PHASE II - INTERIM TREATMENT SYSTEM OPERATION

Following the successful initial commissioning of the groundwater treatment system using potable water, the treatment system will be used on an interim basis to treat water from the on-Site ponds and water from the construction dewatering activities.

The interim operation, maintenance and monitoring of the treatment system will be the responsibility of SNFT with assistance provided by CRA.

The treatment system will be operated on an interim basis for approximately six months until the groundwater extraction system construction, start-up and commissioning activities have been completed.

4.2.1 Pond Water Extraction System

A temporary electric submersible pump and piping will be used to pump groundwater from the on-Site ponds into the treatment system equalization tank (T1) at a flow rate of up to 50 gpm, by the soil treatment contractor. Pumping of water from the on-Site ponds will only take place under supervision of the treatment system by CRA.

4.2.3 Construction Dewatering

During installation of the extraction system wet well, access manholes and pipe and media drain, Site dewatering will be necessary by the groundwater extraction system contractor. The extracted groundwater initially will be pumped to a bulk solid separator system (holding tank), and then to the groundwater treatment system equalization/aeration tank at a controlled rate by the groundwater extraction system contractor. Upon completion of the wet well installation, the wet well will be commissioned to pump water generated during installation of the remaining pipe and media drain directly to the groundwater treatment system for treatment prior to discharge. Operation of the wet well will be the responsibility of the groundwater extraction system contractor until the groundwater extraction system is commissioned. Pumping of construction dewatering will only take place under supervision of the treatment system by CRA.

4.3 PHASE III - GROUNDWATER EXTRACTION SYSTEM COMMISSIONING

The groundwater extraction system commissioning activities will be the responsibility of the groundwater extraction system contractor, with supervision provided by CRA. The commissioning activities will consist of hydrostatic testing of all piping and operational testing of all pumps, valves and controls. The hydrostatic testing of the piping will occur concurrent with the installation of the piping by the contractor. Commissioning of the groundwater extraction equipment will consist of the following activities:

i) verification of pump settings;
ii) verification of pump level control settings;
iii) testing of pump operation including flow and pressure tests; and
iv) testings of the logic control interface between the groundwater extraction system and the groundwater treatment system.

It is anticipated that the Phase III commissioning activities will require approximately one to two weeks to complete.

4.4 PHASE IV - FINAL COMMISSIONING OF GROUNDWATER EXTRACTION AND TREATMENT SYSTEMS

Upon completion of the testing of the groundwater extraction system and verification that the system will perform in accordance with the Project Specifications, final commissioning of the groundwater extraction and treatment systems will commence under the supervision of CRA. During this final commissioning period (approximately one month) performance monitoring testing will be conducted to determine that the system meets all criteria as discussed in Section 5.0.

5.0 COMMISSIONING CRITERIA

5.1 GROUNDWATER TREATMENT SYSTEM

The commissioning criteria for the groundwater treatment system will be as follows:

i) all equipment has been installed in accordance with the Project Specifications and the specifications discussed in Section 2.0;
ii) all equipment has been inspected and approved by the agencies having jurisdiction;
iii) all piping, valves and tanks have been tested and proven watertight;
iv) all instruments and controls have been calibrated, tested and instrument sign off sheets completed; and
v) all equipment performs in accordance with the design flow rates of 50 and 100 gpm.

5.2 GROUNDWATER EXTRACTION SYSTEM

The commissioning criteria for the groundwater extraction system are as follows:

i) all equipment has been installed in accordance with the Project Specifications;
ii) all piping and valves have been tested and proven watertight;
iii) all instruments and controls have been calibrated, tested and sign off sheets completed;
iv) all pumps have been pump tested; and
v) the logic control has been interfaced with the groundwater treatment system.

6.0 OPERATION AND MAINTENANCE PLAN

A draft long-term Operation, Maintenance and Monitoring Plan (O & M Plan) for the Site has been developed and is presented as Appendix L of the "Remedial Construction Work Plan, Volume V". Relevant sections of the O & M Plan will be finalized as each phase of the remedial construction at the Site is completed, and will be completed by CRA within 90 days of completion of complete system commissioning as detailed in the Remedial Construction Work Plan for the Site.

The draft O & M Plan, which is included as Appendix L of the Remedial Construction Work Plan, consists of the following sections:

i) Introduction;
ii) Description;
iii) Reference Drawings;
iv) Organizational Structure;
v) Operation;
vi) Equipment;
vii) Maintenance;
viii) Monitoring;
ix) Termination of Extraction and Treatment Systems;
x) Site Health and Safety Plan;
xi) Reference Reports and Manuals; and
xii) Quality Assurance Project Plan.

B

APPENDIX B

CONSTRUCTION REPORT
GROUNDWATER EXTRACTION SYSTEM

FINAL CONSTRUCTION REPORT
GROUNDWATER EXTRACTION SYSTEM

Summit National Superfund Site
Deerfield Township of Portage County, Ohio

OCTOBER 1995
REF. NO. 2372 (61)
This report is printed on recycled paper.

CONESTOGA-ROVERS & ASSOCIATES

TABLE OF CONTENTS

Page

1.0 INTRODUCTION 1

2.0 SCOPE OF WORK 3

3.0 REMEDIAL ACTION MANAGEMENT 5
- 3.1 CONSTRUCTION MANAGEMENT 5
- 3.1.1 Testing and Inspecting 5
- 3.2 CONTRACTOR 5
- 3.3 AGENCY OVERSIGHT 6
- 3.4 SITE SECURITY 6

4.0 MOBILIZATION AND DEMOBILIZATION 7

5.0 SITE PREPARATION 8
- 5.1 SOIL EROSION AND SEDIMENT CONTROL 8
- 5.2 CLEARING AND GRUBBING 8
- 5.3 WATSON HOUSE DEMOLITION 8

6.0 DEWATERING OPERATIONS 10

7.0 EXCAVATION 11
- 7.1 CONTAMINATED SOIL/SEDIMENT REMOVAL 11
- 7.2 SOUTH DITCH RELOCATION 12
- 7.3 EAST DITCH 13

8.0 EXTRACTION SYSTEM INSTALLATION 14
- 8.1 WET WELL AND ACCESS MANHOLES 14
- 8.2 PIPE AND MEDIA DRAIN 15
- 8.3 EXTRACTION WELLS 17
- 8.4 FORCEMAIN AND CONTROL CONDUITS 17
- 8.5 ELECTRICAL AND MECHANICAL 18
- 8.6 FINAL SOIL COVER 19
- 8.7 PERMANENT ACCESS ROAD 20

9.0 SECURITY FENCE 21

10.0 COMMISSIONING AND STARTUP 22

11.0 OPERATION, MAINTENANCE, AND MONITORING PLAN 23

12.0 HEALTH AND SAFETY 24

LIST OF ATTACHMENTS

ATTACHMENT A	GEOTECHNICAL TESTING REPORTS
ATTACHMENT B	MATERIAL CERTIFICATION PIPE AND MEDIA DRAIN
ATTACHMENT C	HDPE COMPRESSED AIR SUPPLY LINE APPROVALS
ATTACHMENT D	MATERIAL CERTIFICATION ACCESS ROAD GRAVEL

1.0 INTRODUCTION

The Final Construction Report contained herein is included as Appendix B to the Remedial Action Report (RA Report) for the Summit National Superfund Site (Site) in Deerfield, Ohio, and summarizes the field activities pertaining to Phase 2 of the RA, namely, the construction of the Groundwater Extraction System (GWES) at the Site. Construction of the GWES and related activities commenced on March 24, 1994. Extraction and on-Site treatment of Site-related contaminated groundwater from the Water Table Unit (WTU) commenced on June 9, 1994 (as part of the excavation dewatering during installation of the wet well), and extraction of groundwater from the Intermediate Unit (IU) extraction wells commenced on December 1, 1994, approximately three weeks ahead of the United States Environmental Protection Agency (USEPA) and Ohio Environmental Protection Agency (OEPA) approved Remedial Construction (RC) schedule.

This report is organized as follows:

i) Section 1.0 - presents the purpose, background information, and layout of the final construction report;

ii) Section 2.0 - outlines the scope of work performed for installation of the GWES;

iii) Section 3.0 - presents details of the Site management during installation of the GWES;

iv) Section 4.0 - presents details of the mobilization and demobilization activities;

v) Section 5.0 - presents details of the Site preparation activities;

vi) Section 6.0 - presents details of the dewatering operations at the Site during installation of the GWES;

vii) Section 7.0 - presents details of the excavation of contaminated soil/sediment removal, and construction of the east and south drainage ditches;

viii) Section 8.0 - presents details of the GWES installation;

ix) Section 9.0 - presents details of the construction of the security fence;

x) Section 10.0 - presents details of the GWES commissioning and startup activities;

xi) Section 11.0 - presents the implementation of the Operation, Maintenance, and Monitoring Plan (OMMP); and

xii) Section 12.0 - presents the health and safety activities for the construction of the GWES.

A set of As-Recorded Drawings which show the as-constructed details for the GWES are included as an attachment with this report, and consist of the following drawings:

Dwg. No.	*Rev. No.*	*Date*	*Title*
D-1	0	October 1995	Pre-Construction Conditions (Not Used)
D-2	0	October 1995	Site Preparation and Demolition
D-3	0	October 1995	Site Work
D-4	0	October 1995	Grading Plan
D-5	0	October 1995	Pipe and Media Drain Profile
D-6	0	October 1995	Wet Well Details
D-7	0	October 1995	Typical Details I
D-8	0	October 1995	Typical Sections and Electrical Conduit Details
D-9	0	October 1995	Access Manhole and Extraction Well Details

2.0 SCOPE OF WORK

The second phase of the RA to be implemented at the Site, as required by the Consent Decree, was the construction and commissioning of a GWES at the Site, and associated activities. Installation of the GWES phase of the RA consisted of the following activities:

i) mobilization of labor, plant, materials, equipment, and temporary support facilities to the Site;

ii) development and implementation of a Site-specific Health and Safety Plan by the selected remedial contractor for construction of the GWES;

iii) relocation of the south drainage ditch;

iv) relocation of the south perimeter security fence;

v) partial dewatering of the east pond to facilitate the following activities:
   a) removal of a 2-foot depth of pond sediments in Grids 2-8, 3-8, and 4-8, and stockpiling the sediments at the contaminated soil staging area in Grids 2-4, 2-5, and 2-6, and
   b) relocation of the east pond retaining berm to west of the GWES work area;

vi) excavation of the top two feet of contaminated soils from Grids 1-9 and 5-9, and from the portions of Grids 4-8, 6-4, 6-6, and 6-7 within the GWES work area, and hauling and temporary stockpiling of these contaminated soils at the contaminated soil staging area in Grids 2-4, 2-5, and 2-6;

vii) importation and placing of two feet of clean common fill in Grids 1-9 and 5-9, and vegetating these grids;

viii) demolition to grade of the Watson House in Grid 1-9 and placing the demolition debris on Site to be used as backfill under the final Site cover;

ix) regrading the alignment of the proposed pipe and media drain to create a level work area;

x) excavation for and installation of the wet well manhole in Grid 6-5, and installation of temporary pumping facilities to the on-Site groundwater treatment facility to facilitate construction of the pipe and media drain;

xi) excavation for placing and backfilling of the pipe and media drain, commencing at the wet well;

xii) excavation for and installation of access manholes along the alignment of the pipe and media drain;

xiii) installation of water and compressed air forcemains, and control and power conduits;

xiv) regrading of the work area to pregrade elevations of the final soil cover;

xv) importation and placing an 18-inch thick clean final soil cover within the GWES work area, and topsoiling and vegetating the work area;

xvi) construction of an on-Site gravel maintenance road;

xvii) construction of the riprap lined east drainage ditch;

xviii) construction of extraction well chambers to enclose the extraction wells and extraction well mechanical and electrical components;

xix) installation of mechanical and electrical components for the extraction wells, wet well, and access manholes;

xx) commissioning the completed GWES and groundwater treatment system (GWTS); and

xxi) demobilization of labor, plant, materials, and equipment from the Site.

3.0 REMEDIAL ACTION MANAGEMENT

3.1 CONSTRUCTION MANAGEMENT

CRA was retained by SNFT to provide oversight and management of the construction of the GWES. CRA's responsibilities included Site supervision, Site inspections, and liaison with the remedial contractor, SNFT, USEPA, OEPA, and adjacent property owners. As a minimum, one CRA representative was on Site for the duration of the construction activities.

3.1.1 Testing and Inspecting

R&R International (R&R) of Akron, Ohio was retained by SNFT to provide geotechnical and concrete testing services. Copies of the respective geotechnical and concrete testing reports are presented in Attachment A.

3.2 CONTRACTOR

Sevenson Environmental Services (SES) of Niagara Falls, New York, was retained by SNFT as the remedial contractor for construction of the GWES. SES also was retained by SNFT as the remedial contractor for the soil removal and treatment (SRT) phase (Phase 3) of the RA, and performed several activities at the Site for that contract concurrent with the construction of the GWES. SES, as general contractor, performed the civil works and retained Burden Electric of Alliance, Ohio as the electrical subcontractor for installation of the electrical components, and Frontz Drilling, Inc. (Frontz) of Wooster, Ohio as the mechanical subcontractor for the installation of the extraction well pumps and associated controls. A listing of SES's major suppliers is as follows:

Item	*Supplier*
Precast manholes and safety landings	Mack Industries, Valley City, Ohio
Bedding stone and pea gravel	East Ohio Stone Company, Alliance, Ohio
Extraction well pumps	Clean Environment Equipment, Oakland, Ohio
Electric pumps, flow meters, and control valves	Duff Industrial Supply, Norriston, PA
High density polyethylene (HDPE) forcemain and air supply pipe	J.P. MCelvanni, Exton, PA
HDPE perforated drain pipe	Advance Drainage Systems, Cincinnati, Ohio
Loam soil	Charleston Sand and Gravel, Charleston, Ohio

3.3 AGENCY OVERSIGHT

Black and Veatch Waste Science & Technology Corporation (B&V) provided oversight activities for USEPA during the construction activities. In addition to weekly attendance at the Site by B&V, USEPA and OEPA were kept informed of Site activities through correspondence, weekly and monthly progress meeting minutes, and quarterly progress reports.

3.4 SITE SECURITY

Mid-American Security Services Inc. provided security for the Site premises during all RC activities at the Site. All workers and visitors were required to sign in and out at the Site entrance every day. Daily Site sign-in sheets have been retained by SNFT.

4.0 MOBILIZATION AND DEMOBILIZATION

SES mobilized personnel, tools, equipment, and materials to the Site on March 24, 1994 after being given the Notice to Proceed on March 3, 1994. Support facilities were installed in the Site support area previously prepared by the GWTS contractor as shown on Drawing D-1 and were used by SES for both the GWES and for the SRT contracts. Site support facilities included: Site offices, decontamination facilities, worker lunch trailer, and a tool storage trailer.

Demobilization of the 100-ton crane, piling equipment, and shoring system commenced on September 13, 1994. The remaining equipment and facilities remained on Site for use during the SRT contract.

5.0 SITE PREPARATION

5.1 SOIL EROSION AND SEDIMENT CONTROL

Prior to clearing and grubbing operations, soil erosion and sediment controls were established. A silt fence was installed along the eastern portion of Grids 2-9 to 5-9 on April 8, 1994, as shown on Drawing D-3. SES utilized a small trenching machine to excavate a shallow trench to anchor the base of the silt fence fabric. Straw bales also were placed in a shallow trench and staked to the ground in the locations shown on Drawing D-3. These soil erosion and sediment controls were maintained during the performance of the GWES contract and were left in place on completion of the GWES contract.

5.2 CLEARING AND GRUBBING

Clearing and grubbing operations within the Watson property and along the alignment of the pipe and media drain commenced on April 11, 1994 and were completed on April 14, 1994. Materials generated from these operations were transferred to the on-Site stockpile area in Grid 4-2. Clearing and grubbing to facilitate construction of the new east ditch was performed on July 19, 1994. Material generated from clearing and grubbing of the east ditch area also was transferred to the on-Site stockpile area in Grid 4-2. The cleared and grubbed material will remain on Site and will be used as backfill material under the final Site cover by the SRT contractor.

5.3 WATSON HOUSE DEMOLITION

The top two feet of soil designated for removal around the Watson house in Grid 1-9 was excavated and transferred to the on-Site contaminated soil stockpile area in Grid 2-5 during the period of April 18 to 21, 1994. The resulting excavation then was backfilled with two feet of clean imported soil. Prior to demolition of the Watson house, accumulated

water within the basement of the house was pumped to the on-Site west pond as approved by OEPA.

SES commenced demolition of the Watson house on April 25, 1994. A Cat 225 backhoe was used to demolish the Watson house and to load the demolition debris into a moxy haul unit. The demolition debris was loaded in Grid 5-9 and transferred to the on-Site stockpile area through the Site support area and the vehicle decontamination facility. After the haul unit dumped its load at the stockpile area in Grid 4-2, the wheels of the haul unit were cleaned at the vehicle decontamination facility, and the haul unit then returned through the support zone back to Grid 5-9. As agreed with USEPA and OEPA, the demolition debris would remain on Site for placement under the final Site cover. Following the excavation of the west pond sediments for the SRT contract, SES mixed the stockpiled Watson house debris with other debris and soil that was previously stockpiled, and placed these materials into the base of the west pond in Grid 4-2 as shown on Drawing D-3. During demolition of the Watson house, SES utilized water sprays from a water tanker to minimize generation of dust.

A portion of the Watson house (between the garage and the house) was constructed on a concrete slab on grade. As agreed with USEPA and OEPA, this concrete slab was broken up, transferred on Site and placed with the demolition debris in Grid 4-2, and the top six inches of soil beneath the concrete slab also was excavated and transferred to the same on-Site stockpile area.

The concrete basement walls and slab were fractured in place, and the basement and demolition area were backfilled to adjacent grades with imported soil. All demolition-related activities were completed on April 26, 1994. SES subsequently utilized Grid 1-9 as a staging area for a 100,000-gallon water storage tank for storage of treated water from the GWTS to be used during the SRT contract. This area was restored following completion of the SRT activities.

6.0 DEWATERING OPERATIONS

Following the issuance of a Substantive Permit to Discharge by OEPA on May 18, 1994 for the on-Site GWTS, the east pond water was pumped to the GWTS for treatment prior to discharge. To control the amount of water entering the GWTS, the east pond pump was controlled from the GWTS motor-control center. By suspending a submersible pump from a floating raft in the east pond, SES was able to dewater the east pond in order to relocate the east pond retaining berm. Water from the east pond was pumped through a Rosedale strainer/filter unit for pretreatment prior to entering the GWTS. Following relocation of the east pond eastern berm approximately 80 feet west as shown on Drawing D-3, a sump was then constructed east of the relocated berm in the eastern portion of the former east pond, and a pump was installed to continuously transfer infiltrating water across the relocated east pond retaining berm to the western half of the former east pond.

Water collected in the wet well and pipe and media drain excavations also was pumped to the GWTS via a temporary pump and above ground forcemain for treatment prior to discharge. During the construction of the wet well, SES utilized a submersible pump powered by a generator to transfer water from the excavation to a temporary on-Site storage tank located in Grid 6-5. Water in the storage tank was transferred via a diaphragm pump controlled from the GWTS air supply system, to the GWTS for treatment prior to discharge. The storage tank's overflow was directed back into the wet well.

Heavy rains on July 28, 1994 and August 18, 1994 resulted in temporary work stoppages as the pipe and media drain excavations were inundated with stormwater. Following the heavy rains in August, SES installed a five horsepower (5 hp) electric submersible pump in the wet well. This pump also was powered from the GWTS control system with a single water level float switch within the wet well to control the pump on/off operation. The water level in the wet well then was maintained below the wet well perforated pipe invert level for the remainder of the construction period.

7.0 EXCAVATION

7.1 CONTAMINATED SOIL/SEDIMENT REMOVAL

The top two feet of potentially contaminated soil designated for removal and treatment from Grids 1-8 and 1-9 (Watson property) was excavated and transferred to the on-Site contaminated stockpile area in Grids 2-4 and 2-5 from April 18 to 21, 1994, as noted in Section 5.3. A Cat 225 backhoe was used to excavate and load the soils directly into a moxy haul unit. The haul unit remained outside of the excavation area during loading and then proceeded through the Site support area, directly to the contaminated soil staging area in Grids 2-4 and 2-5 for unloading. The wheels of the haul unit then were cleaned at the vehicle decontamination facility prior to returning for another load of soil. The backhoe worked off of large wooden mats to keep the crawler tracks clean. The excavated areas of Grids 1-8 and Grid 1-9 were backfilled on April 22, 1994 with two feet of soil fill imported from Charleston Sand and Gravel.

After completion of the initial east pond dewatering, as detailed in Section 6, a temporary east pond retaining berm was constructed west of the existing east pond berm as shown on Drawing D-3. To construct the relocated east pond retaining berm, SES placed and compacted contaminated soils designated for on-Site treatment from Grids 4-8 and 6-4 across the center of the east pond as shown on Drawing D-3. These contaminated soils, along with the underlying two feet of east pond sediments, later were excavated by SES for on-Site treatment as part of the SRT contract. The top two feet of sediment within the work area of the east pond then were excavated and transferred to the contaminated soil staging area in Grid 2-5.

The top two feet of soils within the work area of Grids 4-8, 5-9, 6-4, 6-6, and 6-7 were excavated by the Cat 225 backhoe from April 27 to May 3, 1994, loaded into the moxy haul units, and transferred directly to the contaminated soil staging area in Grids 2-4 and 2-5.

To ensure that stormwater runoff within the Site remained on Site, a soil berm was constructed on May 31, 1994 in Grids 4-8, 5-8, 6-7, and 6-6 as shown on Drawing D-2.

7.2 SOUTH DITCH RELOCATION

To facilitate excavation of the pipe and media drain, the south side of the existing south ditch was excavated to provide a level working platform, approximately 30 feet wide and at an elevation of approximately two feet above the pre-construction south ditch invert. Soil removed to facilitate construction of this working platform was temporarily stockpiled on the southern side of the south ditch. Prior to commencing excavation for the wet well, SES constructed a soil retaining wall in the western portion of the south ditch upstream of the wet well and pipe and media drain work area. SES installed two submersible pumps, each powered from a portable generator, to pump water flowing into the south ditch around the work area. A 3-inch submersible trash pump was used to pump normal ditch flow, and a 6-inch submersible trash pump was used to pump heavier flows around the pipe and media drain excavation. Both pumps were controlled via float switches.

Following the installation of the pipe and media drain between the wet well and MH-6, SES began regrading this portion of the work area directly above the pipe and media drain. Once the work area between the wet well and MH-6 was backfilled to subgraded elevations, the new south ditch was excavated. The new south ditch was constructed approximately 35 feet south of the old south ditch alignment as shown on Drawing D-3. Side slopes of the new south ditch were excavated at a slope of approximately 2 to 1 on the south side and varied between 1.5 and 2 to 1 on the north side. Soil excavated to construct the new south ditch was utilized as backfill on Site above the completed pipe and media drain. Excess soil from the south ditch excavation that could not be used to backfill the work area of the GWES was transferred on Site for later use as backfill under the final Site cover.

7.3 EAST DITCH

The east ditch was excavated on September 21 and 22, 1994. Soil from the east ditch excavation was loaded directly by the Cat 225 backhoe into a moxy haul unit which then transferred the soil to the base of the on-Site east pond. The excavated east ditch then was lined with a geotextile fabric, six inches of gravel and eight inches of riprap. A 36-inch diameter HDPE culvert was placed on the invert of the east ditch in Grid 5-8, as shown on Drawing D-3, and backfilled to adjacent ground elevations to provide future access from the Site to monitoring wells located on the Watson property.

8.0 EXTRACTION SYSTEM INSTALLATION

8.1 WET WELL AND ACCESS MANHOLES

Excavation for installation of the wet well commenced on June 7, 1994. A level work area initially was excavated for placement of a surface trench box at the wet well location. Shoring of the wet well excavation was accomplished with the surface trench box and steel sheet piles driven into the bedrock. After excavation of the overburden soils from within the trench box and sheetpiles by a CAT 225 backhoe, the bedrock encountered in the wet well excavation initially was broken using a ram attachment on a mini-excavator that had been lowered into the excavation. Due to limited working space within the sheet piles and the limited reach of the mini-excavator at the base of the excavation, the mini-excavator could only be utilized to excavate a 6-foot diameter hole in the upper portion of the bedrock. Workers manually broke the remaining three feet of rock using pneumatic jack-hammers, and enlarged the excavation to nine feet in diameter. The broken rock was manually loaded into a mud bucket that was lifted out of the excavation by the 100-ton crane.

Based on the deeper bedrock elevation encountered at the wet well, four additional soil borings were installed along the alignment of the pipe and media drain from MH-4 to MH-5 to better define the bedrock profile between these manholes prior to installing the pipe and media drain. Based on the bedrock elevations determined from these additional soil borings, the inverts of the pipe and media drain, MH-4, MH-5, and the wet well were revised to maintain the perforated pipe as close to the bedrock surface as possible. The revised pipe and media drain profile is shown on Drawing D-5.

Following inspection and approval of the wet well excavation by CRA, 6-foot diameter precast manhole sections were placed, and the annulus between the bedrock and the manhole sections was grouted. Final details and elevations of the wet well installation are provided on Drawing D-6.

Installation of the access manholes in advance of the pipe and media drain installation were completed in accordance with the following schedule:

Access Manhole	*Construction Period*
Wet well	June 7 to July 6
MH-5	July 22 to July 23
MH-6	July 6 to July 8
MH-7	July 12
MH-8	July 15 and 16
MH-4	August 19 and 20
MH-3	August 27
MH-2	September 1 and 2
MH-1	September 9

8.2 PIPE AND MEDIA DRAIN

Following installation and partial backfilling of the wet well, excavation and installation of the pipe and media drain commenced at the wet well and was installed in the following sequence:

Section	*Period of Installation*
Wet Well to MH-5	July 7 to July 22
MH-5 to MH-6	July 25 to August 3
MH-6 to MH-7	July 8 to July 12
MH-7 to MH-8	July 12 to July 15
Wet Well to MH-4	August 4 to August 19
MH-4 to MH-3	August 20 to August 27
MH-3 to MH-2	August 27 to September 1
MH-2 to MH-1	September 2 to September 9

The pipe and media drain from MH-4 to MH-6 was installed within a shoring system similar to that used for installation of the wet well. The sheet piles were driven to either bedrock or to a depth suitable to anchor the base of the sheet piles to allow the safe installation of the pipe and media drain. The sheet piles were driven inside a surface trench box that

provided lateral support to the sheet piles at the surface. The filter fabric, bedding gravel (ODOT #4), perforated HDPE pipe, and pea gravel (ODOT #8) all were placed within the shored trench. Material certification for the pipe and media drain perforated HDPE pipe, pipe bedding, pipe backfill and geotextile fabric are included in Attachment B. Each shored excavation was approximately 19 feet long, allowing approximately 18 feet of pipe and media drain to be installed at a time. Two trench boxes were used in a leap-frog fashion, to allow continuous installation of the pipe and media drain. The front trench box, after its piles were driven in, was excavated and the rear trench box backfilled. After backfilling the pipe and media drain, the piles of the rear trench box would be pulled up and locked in place, the trench box and piles picked up by the 100-ton crane and placed in front of the first trench box, and thus becoming the lead trench box. To facilitate extraction of the piles, the piles were vibrated by the pile driver during extraction of the piles, resulting in significant consolidation of the trench gravel backfill material. The pipe and media drain then was installed in the rear trench box, backfilled, and the process repeated until the pipe and media drain was completed between the manholes. At the manhole locations, the larger width trench box (used for the wet well installation) was used as the lead box.

Due to the relative shallowness of the bedrock on the east side of the Site (eight to 12 feet below ground surface), SES used an open excavation with a standard trench box to install the pipe and media drain from MH-6 to MH-8. The pipe and media drain between MH-6 and MH-8 was installed by a second crew at the same time that the pipe and media drain was installed between the wet well and MH-5.

Once the pipe and media drain was completed up to MH-6, the trench boxes with the sheet piles were moved back to the wet well, and the installation of the western portion of the pipe and media drain was accomplished in a similar fashion.

On completion of the pipe and media drain and manhole installations, the perforated pipe was flushed with clean water to remove sediment accumulated during the construction activities. Accumulated

sediments in the access manholes and wet well sumps then were removed with a vac truck and placed on Site in the former east pond.

8.3 EXTRACTION WELLS

The extraction wells were installed by Frontz during the period of July 27 to September 22, 1994 after the GWES work area was regraded to subgrade elevations by SES. Frontz also was SNFT's selected contractor for the installation and abandonment of monitoring wells and piezometers at the Site (Phase 5 activities). Frontz also installed the extraction well pumps and associated mechanical components and piping as a subcontractor to SES. The extraction wells, flow meters, and piping were installed during the period of September 26 to October 7, 1994. Details of the extraction wells are provided on Drawing D-9 and in the Final Construction Report for the Phase 5 well installation and abandonment activities.

8.4 FORCEMAIN AND CONTROL CONDUITS

The forcemain and the compressed air supply and electrical control conduits were placed on a prepared sand bedding layer and covered with sand bedding material prior to completion of backfill. HDPE forcemain and air supply lines were butt-fusion welded, whereas the PVC control conduits were solvent welded. A variance to the Ohio Basic Building Code to utilize a HDPE air line from the GWTS to the extraction wells was granted by the Ohio Board of Building Appeals on August 26, 1994, a copy of which is included in Attachment B. The HDPE air line was pressure tested and inspected and approved by the State of Ohio Department of Industrial Relations on September 29, 1994. A copy of the approval also is included in Attachment C. The HDPE forcemain was filled with water, pressurized to 100 pounds per square inch for 1 1/2 hours and inspected for leaks. As no leaks were located on the exposed pressurized HDPE forcemain and no pressure drop was observed during the 1 1/2-hour test period, the forcemain was backfilled.

8.5 ELECTRICAL AND MECHANICAL

In a letter dated January 18, 1994, CRA on behalf of SNFT, requested approval from USEPA and OEPA to utilize pneumatic extraction well pumps in lieu of the electric submersible extraction well pumps specified in the Final Design Report. A pneumatic pumping system is considered to be more reliable and easier to maintain than an electric submersible pumping system where flowrates are expected to be less than one gallon per minute from each extraction well. In addition, the pneumatic pumping system automatically pumps groundwater from the extraction well whenever the water level in the extraction well is above the top of the well pump, thus maintaining the extraction well in a continuously dewatered state. USEPA comments dated February 2, 1994 on the proposed revised extraction well pumping system were responded to in a letter dated March 14, 1994. Details of the revised extraction well pumping system are included on Drawing D-9. As detailed in Section 6.2.2 of the Remedial Action Report and Section 8 of the well installation and abandonment final report included in Appendix E of the Remedial Action Report, the extraction wells were shut down on May 9, 1995 and were either abandoned or converted to monitoring wells.

Two 5-hp pumps in the wet well, eight flow meters (one for each wet well pump and one for each of the six extraction well pumps), two control valves (one for each wet well pump), and 12 float switches were installed to form the electrical/control subsystem of the GWES. Three of the float switches were installed in the wet well as shown on Drawing D-6 to control the operation of the wet well pumps, one to start one pump, the second to start both pumps, and the third to shut off the pumps based on the water level in the wet well. Each access manhole on the pipe and media drain and the wet well also have a float switch installed to trigger a high water level condition alarm at the GWTS. Float switches were tethered to a stainless-steel eyebolt anchored into the concrete manhole wall.

The flow meters each have a display to indicate total flow and instantaneous flows. Telemetry wiring was installed to transmit the instantaneous flow rate from the flow meters to the process controller unit

(PLC) at the GWTS. Each wet well pump has a control valve coupled in a closed loop with the respective flow meter. The control valves are powered from an additional power circuit installed at the wet well to provide line power at the wet well for future maintenance activities.

The telemetry wiring was precut, and factory bundled and labeled in the required lengths, such that the handling and pulling effort of the wires at the Site was minimal. Following the pull through of the power and control wires, each wire was individually tested to ensure wire continuity and conductivity.

The power wiring was pulled in one continuous length, with external pull boxes mounted on MH-8 and MH-6. A junction box was utilized at each manhole for pull through of the control wire. A terminal strip was mounted inside the junction boxes to facilitate connection of the float switches and for the pump wire leads. The wet well pumps were suspended within a steel casing that was secured to the wet well landings. Pitless adapters were utilized to make the steel casing through-wall connection to the forcemain from the wet well pumps.

8.6 FINAL SOIL COVER

As approved by USEPA and OEPA, excess soil from the south ditch excavation was utilized for the loam component of the final Site cover between the access roadway for the GWES and the Site security fence. Imported loam soil was placed to a depth of 12 inches under the access roadway and 18 inches on the Site side of the access roadway. The side slopes of the off-Site south ditch then were covered with a nominal 2-inch thick layer of imported topsoil, whereas the GWES work area within the boundaries of the Site was covered with a nominal 6-inch thick layer of imported topsoil. The work areas then were hydro seeded and covered with a straw mulch. Grid 1-9 also was restored to original condition upon removal of the 100,000-gallon treated water storage tank.

8.7 PERMANENT ACCESS ROAD

Construction of the on-Site permanent access road along the alignment of the pipe and media drain consisted of compacting the 12-inch imported loam soil layer, placement of a geotextile fabric, and placement and compaction of a 12-inch layer of imported crushed limestone (ODOT #57). Material certification for the access road gravel is included in Attachment D.

9.0 SECURITY FENCE

Temporary safety fencing was installed around open excavations on and off Site, and at locations where the existing security fence had to be dismantled. The existing fence was left in place until the removal of the top two feet of contaminated soil from areas designated was completed. The existing south security fence then was relocated northwards to the edge of the work area. Upon completion of the installation of the pipe and media drain, and backfilling of soils to subgrade elevations, the relocated fence was left in place to provide delineation of the exclusion zone for the remainder of the RC activities.

The existing fence on the east side of the Site was relocated 40 feet east to allow sufficient room for the installation of the new east ditch. After completion of the installation of the new east fence, the old fence on the east side was removed and placed as fill on Site.

On October 3, 1994, SES commenced installation of the new southern and eastern portions of the perimeter security fence for the Site. New posts were set into concrete placed in augured holes along the property boundary on the east side of the Site, and along the north crest of the new south ditch on the south side of the Site. After the landscaped areas were hydro seeded, new top rails, fence fabric, and barbed wire were installed. A double leaf access gate was installed on the east side of the Site in Grid 5-8 to provide access to off-Site monitoring wells.

10.0 COMMISSIONING AND STARTUP

Commissioning of the GWES was conducted in accordance with the commissioning plan prepared by CRA and submitted to SNFT, a copy of which is included as Attachment F in Appendix A of the Remedial Action Report. Extraction and on-Site treatment of groundwater from the Water Table Unit commenced on June 9, 1994 during excavation for installation of the wet well. Groundwater extraction from the Water Table Unit was essentially continuous during the installation of the pipe and media drain. Extraction and on-Site treatment of groundwater collected by the completed pipe and media drain commenced on September 9, 1994, and extraction and on-Site treatment of groundwater from the extraction wells commenced on December 1, 1994.

As noted in Section 6.2.2 and Appendix E of the Remedial Action Report, the groundwater extraction wells were shut down on May 9, 1995 and abandoned or converted to monitoring wells.

11.0 OPERATION, MAINTENANCE, AND MONITORING PLAN

The Draft OMMP presented as Appendix L of the RC Work Plan was revised to include the as-constructed details of the GWES. The Final OMMP was submitted to USEPA and OEPA under separate cover.

12.0 HEALTH AND SAFETY

Construction of the GWES and related activities were conducted in accordance with SES's Site-specific Health and Safety Plan (HASP). The HASP provided specific information regarding air monitoring, use of personnel protective clothing and equipment, work area designations, hospital routes, and emergency numbers. A copy of the HASP was kept on Site and was made available to all Site personnel and visitors. Prior to commencing on-Site activities, a project briefing meeting was conducted at the Site on April 12, 1994 with representatives from the local emergency management association, fire and rescue personnel, the Portage County Sheriffs Office, Robinson Memorial Hospital, and the Ohio State Highway Patrol.

SES maintained a Health and Safety Officer (HSO) at the Site during any potentially hazardous work activities. The HSO performed the air monitoring on and around the Site and ensured that all on-Site personnel were properly informed and trained as required by the HASP.

Based on the air monitoring data, the action levels for the volatile organic compounds (VOCs) and dust were not exceeded during any of the GWES work activities.

The HSO issued confined space work permits to ensure appropriate procedures were followed by workers in the excavations for the pipe and media drain, wet well and access manhole installations. Confined space permits also were issued for workers entering the manholes to install float switches, flow meters and piping, and to clean the manhole sumps. Copies of all health and safety monitoring reports have been retained by SNFT.

ATTACHMENT A

GEOTECHNICAL TESTING REPORTS

GROUNDWATER EXTRACTION SYSTEM
GEOTECHNICAL REPORT SUMMARY

Summit National Superfund Site
Deerfield, Ohio

DATE	TESTED BY	REPORT #	MATERIAL TESTED	TEST	# OF TESTS
4/18/94	M/T S	944002	loam soil source	gradation max. dry density	1 1
5/10/94	R & R	letter	loam soil source	max. dry density gradation permeability	1 1 1
7/19/94	R & R	2	gravel bedding (#4 limestone) gravel backfill (#8 limestone)	gradation gradation	1 1
7/20/94	R & R	3	trench granular backfill	compaction	4
7/21/94	R & R	4	trench granular backfill	compaction	10
7/27/94	R & R	5	backfill	compaction	2
8/18/94	R & R	6	backfill	compaction	7
8/24/94	R & R	7	backfill	compaction	6
9/14/94	R & R	7A	loam soil final cover	compaction	6
9/19/94	R & R	--	loam soil final cover	compaction	7
9/20/94	Wyandot	--	access road gravel	gradation	1

Notes: M/T S = Messmore / Timmerman Services, Inc. of Akron, Ohio
R & R = R & R International, Inc. of Akron, Ohio
Wyandot = Wyandot Dolomite, Inc.

From Severson.

MESSMORE/TIMMERMAN SERVICES, INC.

CONSULTING GEOTECHNICAL ENGINEERS
Subsurface Investigations-Construction Quality Control-Materials Testing Laboratory

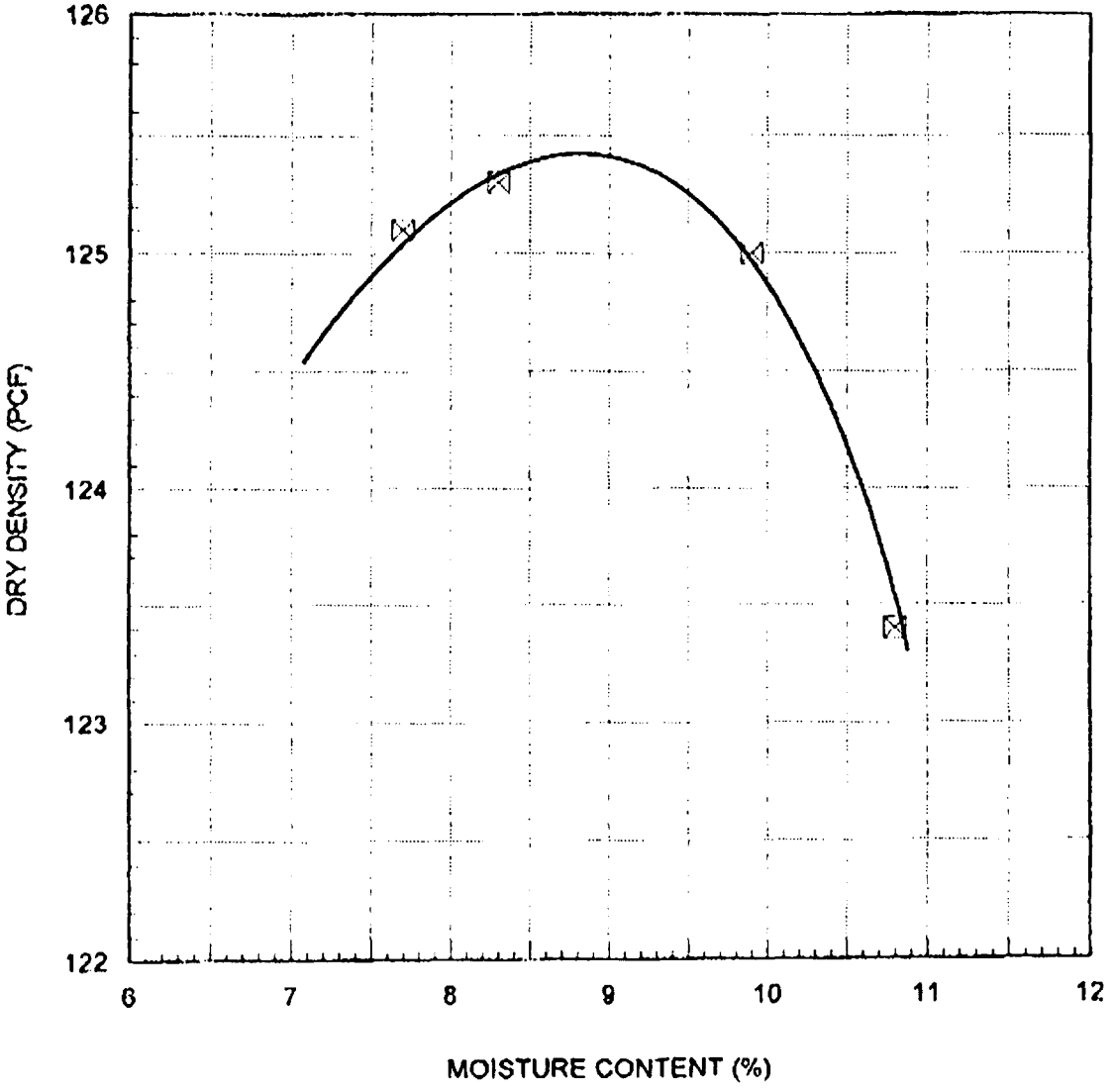
• 365 E. MARKET STREET
• AKRON, OHIO 44308
• PHONE 216-434-3494
• FAX 216-434-3496

PROJECT: Summit National Superfund Site **PROJECT NO.:** 944002

TEST: Standard Proctor; ASTM D-698 **DATE:** 4-18-94

SOIL DESCRIPTION: Brown Silty Sand Trace Gravel

MAXIMUM DRY DENSITY: 125.4 pcf **OPTIMUM MOISTURE CONTENT:** 8.8%



MESSMORE/TIMMERMAN SERVICES, INC.

CONSULTING GEOTECHNICAL ENGINEERS

Subsurface Investigations-Construction Quality Control-Materials Testing Laboratory

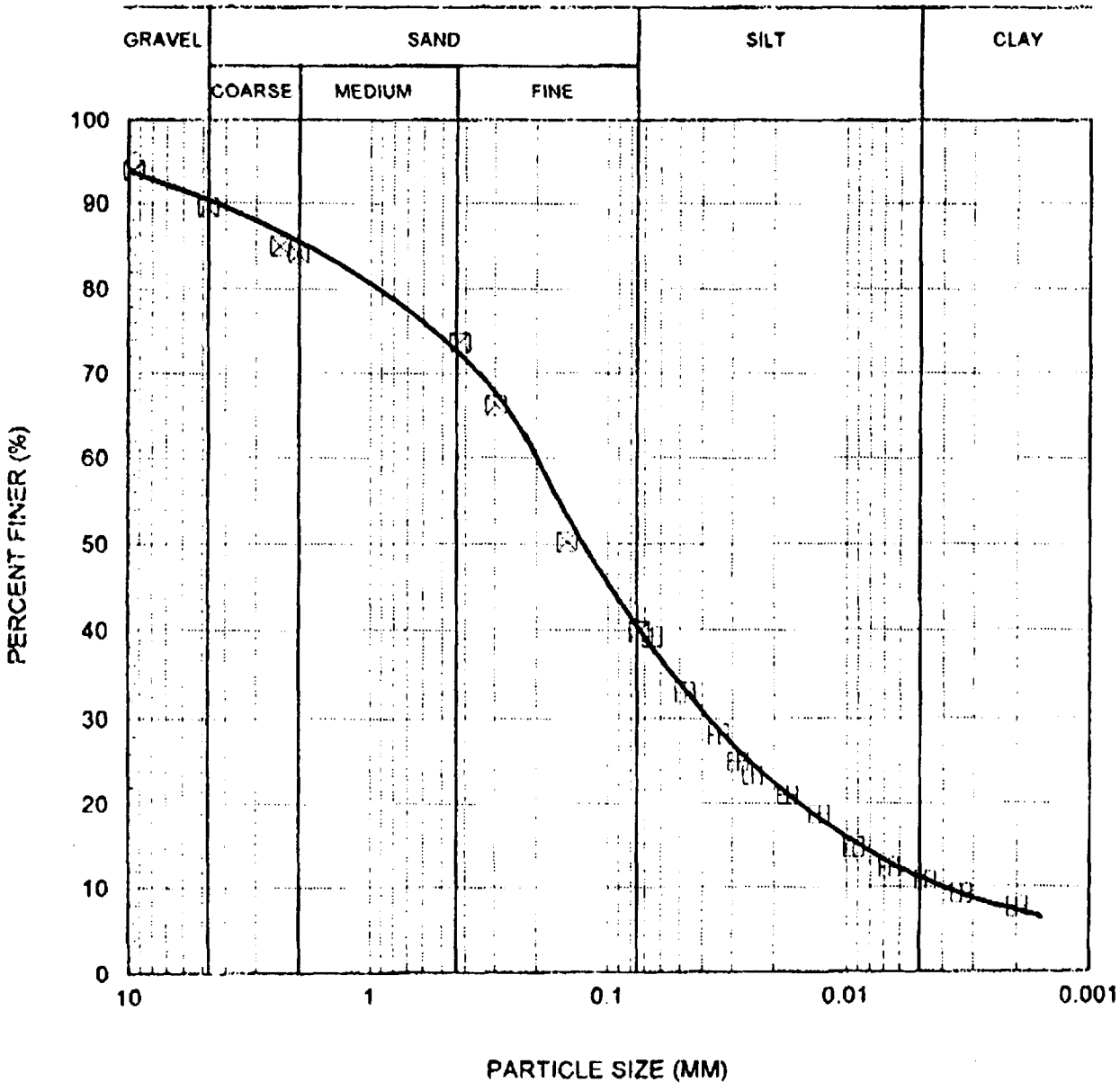
• 265 E. MARKET STREET
• AKRON, OHIO 44304
• PHONE 216-434-3494
• FAX 216-434-3496

PROJECT: Summit National Superfund Site **PROJECT NO.:** 944002

TEST: Grain Size Distribution; ASTM D-422 **DATE:** 4-20-94

SOIL DESCRIPTION: Brown, Silty Sand, Trace Gravel **SAMPLE NO.:** 94028

PRODUCED BY: Charlestown Sand and Gravel



R&R
INTERNATIONAL,INC.

1234 S. CLEVE-MASS ROAD
P.O. BOX 4383
AKRON, OHIO 44321
TEL. (216) 666-2200
FAX (216) 666-7874

RECEIVED MAY 6 1994

May 10, 1994

Mr. Jeroen Winterink
Conestoga-Rovers Associates, Ltd.
Summit national Superfund Site
8186 U.S. Route 224
Deerfield Twp. of Portage County, Ohio 44411

Reference: Laboratory Test Results
Summit National Superfund Site
Deerfield Twp., Ohio
R&R Project No. 001296

Dear Mr. Winterink:

Please find enclosed the Moisture Density Relationship Test ASTM D 1557, Gradation ASTM D 422 and Atterburg Limits ASTM D 4318, Grain Size D-10 Determination ASTM D 422 and Measurement of Hydraulic Conductivity of Saturated Porous Materials ASTM D 5084 of borrow pit material obtained by R&R International, Inc. on April 14, 1994.

If you have any questions or if we may be of further assistance, please contact our office at (216) 666-2200.

Respectfully,

R & R INTERNATIONAL, INC.

Norman R. Liniman
Construction Services Supervisor

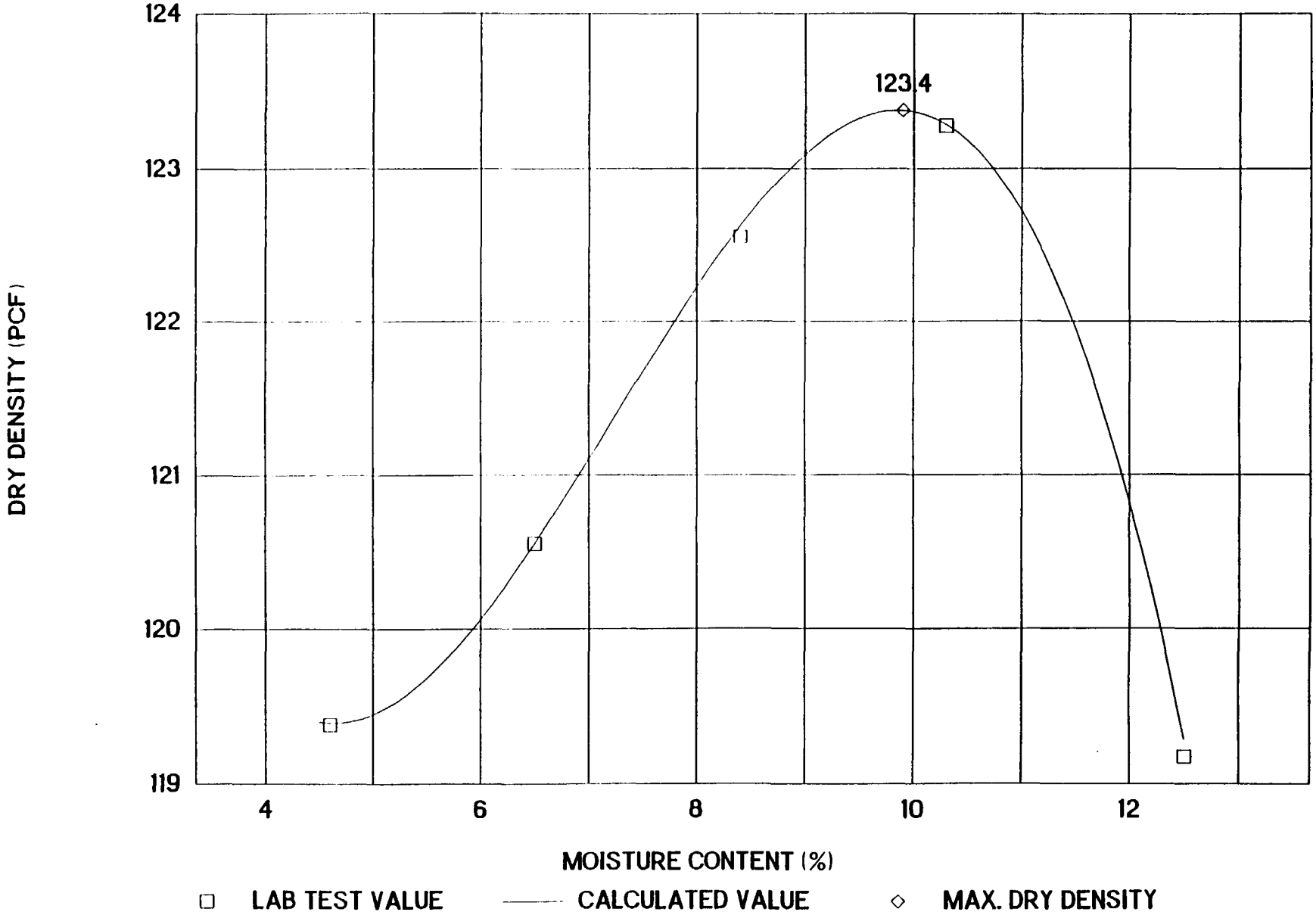
NRL:clt
Attachments
cc: Mr. Steve Whillier
Conestoga Rovers Associates, Ltd.

Letters/ Disk C/JW.ltr/NRL/clt/4-10-94

R&R INTERNATIONAL, INC.

MOISTURE-DENSITY

001296/PC2/ASTM D 698/123.4 PCF @ 9.9%



R&R INTERNATIONAL, INC.

PROJECT: Summit National Superfund Site

R&R PROJECT No.: 001296

MOISTURE (ASTM D-2216-80), GRADATION (ASTM D-422-63) AND ATTERBERG LIMITS (ASTM D-4318-64)

SAMPLE NUMBER	MOISTURE CONTENT(%)	PARTICLE SIZE ANALYSIS (% PASSING U.S. STANDARD SIEVE) 3/4"	3/8"	#4	#10	#40	#100	#200	SILT (%)	CLAY (%)	ATTERBERG LIMITS L.L.	P.I.	CLASSIFICATION
PC-2		98.5	94.2	87.6	79.8	64.5	37.2	25.8	23.8	2.0	NP	NP	SM

* Silt and Clay Combined

R&R INTERNATIONAL, INC.

PROJECT: Summit National Superfund Site

R&R PROJECT No: 001296

GRAIN SIZE D10 DETERMINATION (ASTM D 422-63)

SAMPLE NUMBER	D10 (mm)	TEXTURAL CLASSIFICATION
PC-2	0.0099	Sandy Loam

R&R INTERNATIONAL, INC.

PROJECT: Summit National Superfund Site

PROJECT NO.: 001296

MEASUREMENT OF HYDRAULIC CONDUCTIVITY OF SATURATED POROUS MATERIALS USING A FLEXIBLE WALL PERMEAMETER (ASTM D 5084 - 90)

SAMPLE NUMBER	DEPTH (feet)	MOISTURE PERCENT	UNIT WET WEIGHT (pcf)	UNIT DRY WEIGHT (pcf)	CONSOLIDATION PRESSURE (psi)	AVERAGE GRADIENT (i)	PERMEABILITY (cm/sec)
PC-2		9.9	122.1	111.1	2.0	10	5.42E-04 @ 90% Comp.
PC-2		10.2	133.4	121.0	2.0	10	6.24E-05 @ 98% Comp.

R&R INTERNATIONAL INC

FIELD REPORT

PROJECT: Summit National Super Fund Site **CLIENT:** Conestoga Rovers & Associates, Ltd.

LOCATION: Deerfield Twp., Ohio **PROJECT NO.:** 001296 **REPORT NO.:** 2

DATE: 7/19/94 **TIME:** 9:00 A.M. **WEATHER:** Clear **TEMP.:** 84 Degs F.

PURPOSE: Test soil compaction and obtained gravel samples.

PARTIES PRESENT: Mr. Jeroen Winterink (Conestoga Rovers) and Mr. Gene Dimtroff (R&R).

OBSERVATIONS: Upon arrival, soil at mark on grade stakes, but elevation not observed. Soil appeared well compacted.

TASKS PERFORMED: Tested one area for compaction. Obtained sample of #4 and #8 gravel for analysis. Also obtained, donor pile sample for proctor value.

SUMMARY OF FINDINGS /COMMENTS: Tested one location using S.A. 200 Nuclear Gauge. Experienced trouble with the gauge and could not make field correction.

TIME RETURNED TO SHOP: 12:30 P.M. **MILES TRAVELED:** 74

REPORT BY: Gene Dimtroff
TECHNICIAN

APPROVED BY:
PROJECT MANAGER

Disk 9/Field Reports/1296FR2/clt/8-12-94

R&R
INTERNATIONAL, INC.

Conestoga-Rovers Associates, Ltd.
Summit National Superfund Site
Deerfield Twp., Ohio
R&R Project No. 001296

Relative Density Test ASTM D 4253			
Sample Number	**Sample Identification**	**Maximum Density, PCF**	**Minimum Density, PCF**
1	No. 4 Limestone	97.7	85.5
2	No. 8 Limestone	115.5	92.6

R&R INTERNATIONAL, INC.

PROJECT: Summit National Superfund Site

R&R PROJECT No.: 001296

GRADATION (ASTM D-422-63)

PARTICLE SIZE ANALYSIS
(% PASSING U.S. STANDARD SIEVE)

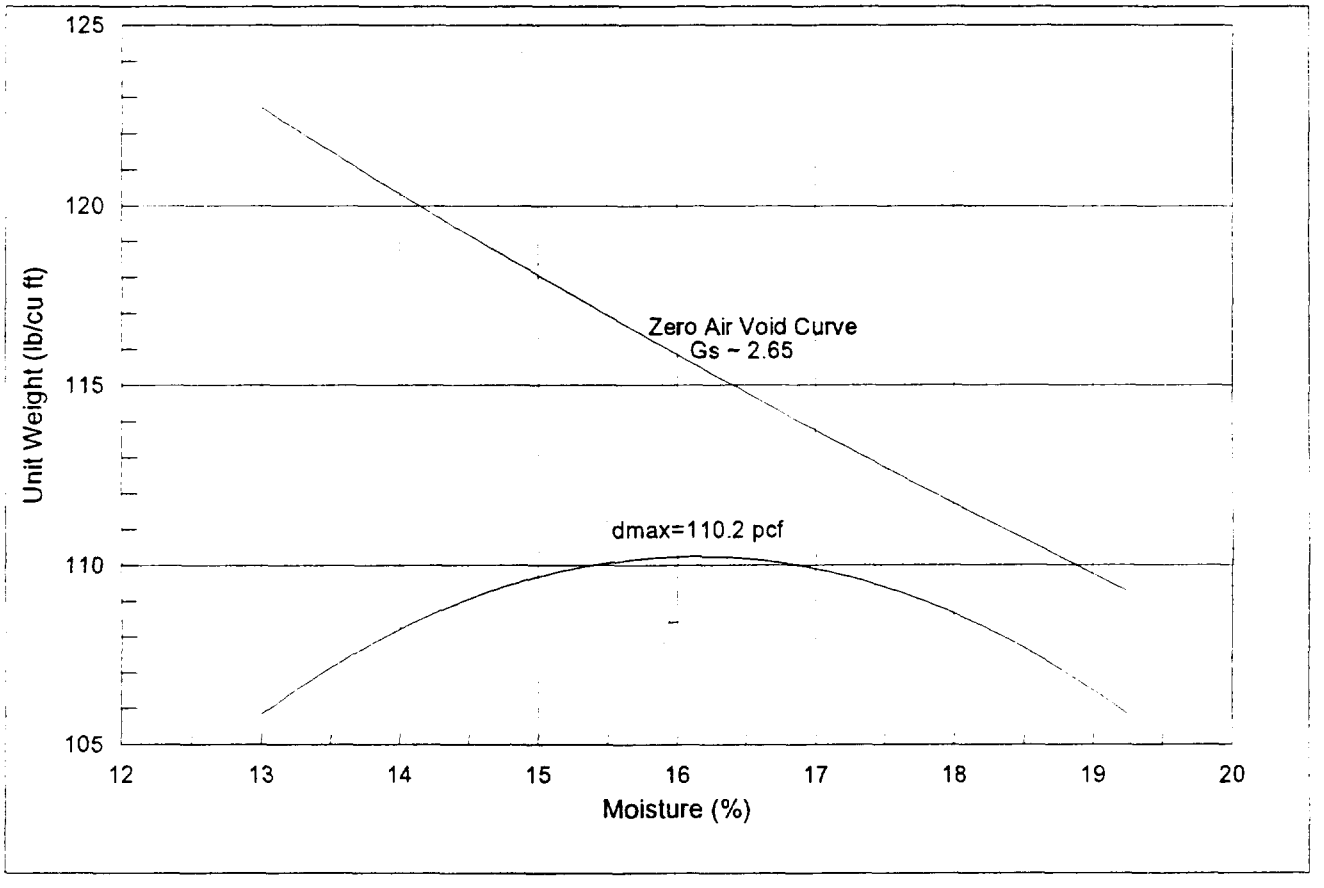
SAMPLE	2"	1-1/2"	1"	3/4"	1/2"	3/8"	#4	#8	#16
#4 Limestone Gravel	100.0	90.7	44.0	11.1	-	3.4	-	-	-
#8 Limestone Gravel	-	-	-	-	100.0	97.0	46.4	15.3	4.8

R&R

LABORATORY COMPACTION CHARACTERISTICS OF SOIL USING STANDARD EFFORT (12,400 FT-LBF/CU FT)

ASTM D 698 - 91

CLIENT:	Conestoga-Rovers & Associates Limited
PROJECT:	Summit National Superfund Site
LOCATION:	Deerfield Township, Portage County, Ohio
SAMPLE NO.	PC-4
SAMPLE ORIGIN:	Existing on site stockpile material
DATE TESTED:	7/21/94
MATERIAL DESCRIPTION	Brown CLAY, some shale fragments, trace sand.
MAXIMUM DRY DENSITY	110.2 lb/cu ft
OPTIMUM MOISTURE CONTENT:	16.2 %



R&R INTERNATIONAL INC

FIELD REPORT

PROJECT: Summit National Superfund Site **CLIENT:** Conestoga Rovers & Associates

LOCATION: Deerfield, Ohio **PROJECT NO.:** 001296 **REPORT NO.:** 3

DATE: 7-20-94 **TIME:** 10:00 A.M. **WEATHER:** Clear **TEMP.:** 84 Degs F.

PURPOSE: Soil Compaction

PARTIES PRESENT: Mr. J. Winterink of Conestoga Rovers & Associates, Inc. and Mr. Gene Dimtroff of R&R International, Inc.

OBSERVATIONS: Fill placed at #8 manhole, but not compacted. Area from 50' North of manhole #7 to manhole #6 was prepared for testing. Trench line filled with #8 Gravel from manhole #8 to manhole #6.

TASKS PERFORMED: Tested soil compaction from 50' North of manhole #7 to 60' North of manhole #6. Also, tested trench line in the same area. Client requested level "C" protection.

SUMMARY OF FINDINGS /COMMENTS: See attached sheet. All compaction tests on the crushed limestone material for the trench line were at grade.

TIME RETURNED TO SHOP: 3:00 P.M. **MILES TRAVELED:** 77

REPORT BY: Gene Dimtroff
TECHNICIAN

APPROVED BY: [signature]
PROJECT MANAGER

Disk 9/Field Reports/1296FR3/clt/7-28-94

R&R INTERNATIONAL INC

FIELD INFORMATION SUMMARY

Client: Conestoga Rovers & Associates, Limited

Date Tested: 7-20-94

Project: Summit National Superfund Site

Project No.: 001296

Location: Deerfield, Ohio

Report No.: 3

Contractor:

Technician: Gene Dimtroff

Material Description: #8 Crushed Limestone

Lab Procedure: N/A

Field Test Procedure: ASTM D 2922

Max. Dry Density (pcf):

Optimum % W: N/A

Spec. % Comp.: 90%

P=Pass; F=Fail

Test No.	Location	Elev +/-	% W	Dry Dens.	Max Dens.	% Comp.	P/F	Remarks
1	30' N of manhole #7, 18' W	Grade	3.8	108.4	95.0	90.1	N/A	
2	30' N of manhole #7, 18' W	Grade	2.8	103.9	90.0	86.3	N/A	
3	60' N of manhole #6, 16' W	Grade	4.1	109.6	95.0	91.1	N/A	
4	60' N of manhole #6, 16' W	Grade	3.1	108.3	90.0	90.0	N/A	

REMARKS/DIST.:

Client requested checking the density of the material as placed in the trench line.

Disk #9/Field Reports/1296FC03/clt/7-28-94

R&R INTERNATIONAL, INC

FIELD REPORT

PROJECT: Summit National Superfund Site **CLIENT:** Conestoga Rovers & Associates

LOCATION: Deerfield, Ohio **PROJECT NO.:** 001296 **REPORT NO.:** 4

DATE: 7-21-94 **TIME:** 9:00 A.M. **WEATHER:** Clear **TEMP.:** 84 Degs F.

PURPOSE: Soil Compaction

PARTIES PRESENT: Mr. J. Winterink of Conestoga Rovers & Associates, Inc. and Mr. Gene Dimtroff of R&R International, Inc.

OBSERVATIONS: Trench line from manhole #8 to manhole #6 filled and compacted to grade line with #8 Gravel. Roadbase 15' of trench line being under cut.

TASKS PERFORMED: Observed compaction of trench line along manhole line. Checked compaction of lift at wet well.

SUMMARY OF FINDINGS /COMMENTS: All tests met specifications. All compaction tests performed on the crushed limestone material for the trench line were at grade.

TIME RETURNED TO SHOP: 2:00 P.M. **MILES TRAVELED:** 77

REPORT BY: Gene Dimtroff
TECHNICIAN

APPROVED BY:
PROJECT MANAGER

Disk 9:Field Reports/1296FR4/clt/7-28-94

R&R INTERNATIONAL INC

FIELD INFORMATION SUMMARY

Client: Conestoga Rovers & Associates, Limited
Date Tested: 7-21-94
Project: Summit National Superfund Site
Project No.: 001296
Location: Deerfield, Ohio
Report No.: 4
Contractor:
Technician: Gene Dimtroff

Material Description: #8 Crushed Limestone

Lab Procedure:
Field Test Procedure: Field Proof Rolling

Max. Dry Density (pcf):
Optimum % W:
Spec. % Comp.: 90%

P=Pass; F=Fail

Test No.	Location	Elev +/-	% W	Dry Dens.	Max Dens.	% Comp.	P/F	Remarks
5	64' S of manhole #8	Grade	2.1	104.4	90.0	95.4	P	
6	68' S of manhole #8	Grade	2.1	105.6	90.0	96.2	P	
7	72' S of manhole #8	Grade	2.3	102.1	90.0	93.3	P	
8	80' S of manhole #8	Grade	2.0	103.1	90.0	94.2	P	
9	96' S of manhole #8	Grade	2.1	100.2	90.0	91.6	P	
10	108' S of manhole #8	Grade	2.4	100.1	90.0	91.5	P	
11	120' S of manhole #8	Grade	2.0	100.5	90.0	91.8	P	
12	136' S of manhole #8	Grade	2.4	101.2	90.0	92.5	P	
	33' E of wet well	Grade	17.9	114.8	120.3	95.4	P	
14	66' E of wet well	Grade	21.1	108.5	120.3	90.1	P	

REMARKS/DIST.:

Test Nos. 1 through 8 were proof rolled (trench line).

Test Nos. 9 through 10 (Proctor) 120.3 pcf.

R&R INTERNATIONAL INC.

FIELD REPORT

PROJECT: Summit National Super Fund Site **CLIENT:** Conestoga Rovers & Associates, Ltd.

LOCATION: Deerfield Twp., Ohio **PROJECT NO.:** 001296 **REPORT NO.:** 5

DATE: 7/27/94 **TIME:** 12:00 P.M. **WEATHER:** Pt. Cloudy **TEMP.:** 76 Degs F.

PURPOSE: Test soil compaction and obtained gravel samples.

PARTIES PRESENT: Mr. Jeroen Winterink (Conestoga Rovers) and Mr. Gene Dimtroff (R&R).

OBSERVATIONS: Checked compaction at wet well, two locations.

TASKS PERFORMED: Checked soil compaction at designated locations.
All tests met required specifications.

SUMMARY OF FINDINGS /COMMENTS: NOTE: Client requested compaction on #8 gravel; could not test designated area.

TIME RETURNED TO SHOP: 3:30 P.M. **MILES TRAVELED:** 78

REPORT BY: Gene Dimtroff
TECHNICIAN

APPROVED BY:
PROJECT MANAGER

Disk 9/Field Reports/1296FR5/clt/8-12-94

R&R INTERNATIONAL INC

FIELD INFORMATION SUMMARY

Client: Diversified Engineering, Inc.
Date Tested: 7/27/94
Project: Shapiro Lake
Project No.: 001425
Location: North Canton, Ohio
Report No.: 5
Contractor: Diversified Engineering, Inc.
Technician: R.D.

Material Description: Brown Clay, Some Sand and Trace of Gravel.

Lab Procedure: ASTM D 698
Field Test Procedure: ASTM D 2922

Max. Dry Density (pcf): 110.2
Optimum % W: 16.2%
Spec. % Comp.: 95%

P=Pass; F=Fail

Test No.	Location	Elev +/-	% W	Dry Dens.	Max Dens.	% Comp.	P/F	Remarks
15	80' E of Wet Well	Subgrade	13.2	110.9	109.7	101.1	P	
16	130' E of Wet Well	Subgrade	13.3	111.6	109.9	101.5	P	

REMARKS/DIST.:

B:\1296FC05.WK4/8-15-94

R&R INTERNATIONAL INC

FIELD REPORT

PROJECT: Summit National Super Fund Site **CLIENT:** Conestoga Rovers & Associates, Ltd.

LOCATION: Deerfield Twp., Ohio **PROJECT NO.:** 001296 **REPORT NO.:** 6

DATE: 8/18/94 **TIME:** 10:00 A.M. **WEATHER:** Cloudy **TEMP.:** 74 Degs F.

PURPOSE: Soil compaction testing.

PARTIES PRESENT: Mr. Jeroen Winterink (Conestoga Rovers) and Mr. Gene Dimtroff (R&R).

OBSERVATIONS: Tested area being prepared at arrival. Fill being placed from existing stockpile. Visually fill material appeared similar to sample taken on July 21, 1994.

TASKS PERFORMED: Tested soil compaction at designated areas along the trench line and road subbase. Used CPN, Model MC-3, Serial No. 320100649 for testing.

SUMMARY OF FINDINGS /COMMENTS: All tests met required specifications.

TIME RETURNED TO SHOP: 1:00 P.M. **MILES TRAVELED:** 74

REPORT BY: Gene Dimtroff
TECHNICIAN

APPROVED BY: [signature]
PROJECT MANAGER

Disk 9/Field Reports/1296FR6/clt/9-3-94

R&R INTERNATIONAL INC

FIELD INFORMATION SUMMARY

Client: Diversified Engineering, Inc. Date Tested: 08/18/94

Project: Shapiro Lake Project No.: 001407

Location: North Canton, Ohio Report No.: 6

Contractor: Diversified Engineering, Inc. Technician: G.D.

Material Description: Brown Clay, Some Shale Fragments and Trace of Sand.

Lab Procedure: ASTM D 698 Field Test Procedure: ASTM D 2922

Max. Dry Density (pcf): 110.2 Optimum % W: 16.2% Spec. % Comp.: 95%

P=Pass; F=Fail

Test No.	Location	Elev +/-	% W	Dry Dens.	Max Dens.	% Comp.	P/F	Remarks
17	Trenchline, 150' West of MH #5	Subbase	17.5	108.1	110.2	98.1	P	
18	Trenchline, 40' West of MH #5	Subbase	17.6	107.9	110.2	97.9	P	
19	Trenchline, 50' East of MH #5	Subbase	17.7	107.1	110.2	97.2	P	
20	Road Subbase, 40' West of MH #5	Subbase	13.0	114.7	110.2	104.1	P	
21	Road Subbase at MH #5	Subbase	13.9	113.0	110.2	102.5	P	
22	Road Subbase, 50' East of MH #5	Subbase	13.6	109.1	110.2	99.0	P	
23	Road Subbase, 100' East of MH #5	Subbase	12.3	111.1	110.2	100.8	P	

REMARKS/DIST.:

A:\1296FC06.WK4/9-2-94

R&R INTERNATIONAL INC.

FIELD REPORT

PROJECT: Summit National Super Fund Site **CLIENT:** Conestoga Rovers & Associates, Ltd.

LOCATION: Deerfield Twp., Ohio **PROJECT NO.:** 001296 **REPORT NO.:** 7

DATE: 8/24/94 **TIME:** 4:30 P.M. **WEATHER:** Cloudy **TEMP.:** 78 Degs F.

PURPOSE: Soil compaction testing.

PARTIES PRESENT: Mr. Jeroen Winterink (Conestoga Rovers) and Mr. Gene Dimtroff (R&R).

OBSERVATIONS: Upon arriving at the job site, test locations were being prepared for testing. The roadbase was tested along the manhole line from #6 thru #8. Tested trench line west of "Wet Well."

TASKS PERFORMED: Tested soil compaction at designated locations.

SUMMARY OF FINDINGS /COMMENTS: All tests met required specifications.

TIME RETURNED TO SHOP: 6:30 P.M. **MILES TRAVELED:** 75

REPORT BY: Gene Dimtroff
TECHNICIAN

APPROVED BY: Norman R. Grimm
PROJECT MANAGER

Disk 9/Field Reports/1296FR7/clt/9-3-94

R&R INTERNATIONAL INC.

FIELD INFORMATION SUMMARY

Client: Diversified Engineering, Inc.
Date Tested: 08/~~18~~ 24/94
Project: Shapiro Lake
Project No.: 001407
Location: North Canton, Ohio
Report No.: 7
Contractor: Severson Engineering, Inc.
Technician: G.D.

Material Description:

Lab Procedure: ASTM D 698
Field Test Procedure: ASTM D 2922

Max. Dry Density (pcf): 123.4
Optimum % W: 9.9%
Spec. % Comp.: 95%

P=Pass; F=Fail

Test No.	Location	Elev +/-	% W	Dry Dens.	Max Dens.	% Comp.	P/F	Remarks
24	MH #8, 40' S, 3' W	Subbase	12.4	122.6	123.4	99.4	P	
25	MH #7, 40' N, 3' W	Subbase	10.9	120.0	123.4	97.2	P	
26	MH #6, 36' N, 4' W	Subbase	11.5	121.6	123.4	98.5	P	

REMARKS/DIST.: Test locations along road subbase.

A:\1296FC07.WK4/9-2-94

R&R INTERNATIONAL INC.

FIELD INFORMATION SUMMARY

Client: Diversified Engineering, Inc.
Date Tested: 08/~~18~~ 24/94
Project: Shapiro Lake
Project No.: 001407
Location: North Canton, Ohio
Report No.: 7
Contractor: Severson Engineering, Inc.
Technician: G.D.

Material Description: Brown Clay, Some Shale Fragments, Trace Sand

Lab Procedure: ASTM D 698
Field Test Procedure: ASTM D 2922

Max. Dry Density (pcf): 110.2
Optimum % W: 16.2%
Spec. % Comp.: 90%

P=Pass; F=Fail

Test No.	Location	Elev +/-	% W	Dry Dens.	Max Dens.	% Comp.	P/F	Remarks
27	40' W of Wetwell	Subbase	12.3	110.7	110.2	100.5	P	
28	20' W of MH #7	Subbase	15.2	105.1	110.2	95.4	P	
29	30' W, 40' North of MH #7	Subbase	12.3	110.7	110.2	100.5	P	

REMARKS/DIST.:

A:\1296FC7A.WK4/9-2-94

REPORT OF FIELD COMPACTION TESTS

Project: Summit National Superfund Site — Report No.: 7 A

Site Location: Deerfield Twp., Portage County, Ohio — Page: 1 of 1

Contractor: Severson Excavating Company — Date Tested: 09/14/94

INFORMATION FURNISHED FROM LABORATORY

Material ID: --- Material Description: —

Maximum Lab. Dry Density = 110.3 pcf — Optimum Water Content = 16 % of dry weight

Req'd Min. % Compaction = 95 % — Acceptable Range of Water Contents:

Req'd Min. In-Place Dry Density --- pcf — From "Optimum" - --- % = --- % (Minimum)

Lab. Test Method: ASTM 698 — To "Optimum" + --- % = --- % (Maximum)

FIELD TEST DATA (Test Method ASTM D 2922)

Test No.	BS / DT	Test Depth	Test Elevation	In-Place Wet Density	Water Content (%)	In-Place Dry Density	Max. Dry Density	% Comp.	P / F	Comments (Fill Material, Backfill, Base Course, Subbase etc.)
23 G	DT	---	Grade	121.9	12.7	108.2	90.0	90	F	
23 H	DT	---	Grade	127.5	14.8	111.2	95.0	95	P	
23 I	DT	---	Grade	127.8	13.8	112.3	95.0	95	P	
23 J	DT	---	Grade	122.0	18.8	101.9	90.0	90	F	
23 K	DT	---	Grade	131.0	14.7	114.2	95.0	95	P	
23 L	DT	---	Grade	125.2	14.5	109.4	95.0	95	P	

BS = Backscatter, DT = Direct Transmission. P = Pass, F = Fail.

TEST LOCATIONS

23 G	40' South - Manhole #1
23 H	26' South, 16' East - Manhole #1
23 I	20' South, 10' East - Manhole #2
23 J	24' South, 6' West - Manhole #3
23 K	35' South, 8' East - Manhole #3
23 L	20' South, 35' East - Manhole #3

Remarks:

216003.01
R&R Project No.
Field Report #9/0[illegible]FC7a/ck

Gene Dimtroff
R&R Technician

Approved By/Date 9-15-95 (10/30/95) SSP

R&R INTERNATIONAL, INC.

1234 S. Cleve.-Mass. Road
P.O. Box 438
Akron, OH 44321
Tel. (216) 666-2200
Fax (216) 666-7874

IMPORTANT FAX INFORMATION

Please Deliver to: Mr. Whillier

Company: Conestoga Rovers

FAX No. 519-7251736 No. of pages, including cover 2

Message:

Field Info. Summary dated Sept, 94.

If we can be of further assistance, please call us.

Thank You!

Sent By: Santo Time: 2:40pm Date: 10/27/95

If all the pages are not received, please contact Cyndi

PROPRIETARY INFORMATION NOTICE

This facsimile transmission is intended only for the use of the individual or entity to which it is addressed, and may contain proprietary information belonging to the sender. If you are not the intended recipient, you are hereby notified that any disclosure, copying, distribution, or the taking of any action in reliance on the contents of this information is strictly prohibited. If you have received this transmission in error, please immediately notify us by telephone documents.

Response and Reliability - Engineering Our Environment

COLUMBUS, OH (614) 237-5700 | COLUMBIA, MD (410) 992-5200 | LITTLETON, CO (303) 771-4000 | PITTSBURGH, PA (412) 787-2700

R&R

FIELD INFORMATION SUMMARY

Client: Conestoga Rovers And Associates
Project: Summit National Superfund Site
Location: Deerfield Township, OH
Contractor: Seven Son

Date Tested: 9/19/94
Project No.: 001296
Report No.: ——
Technician: Andrew Morrison

Material Description: Sand loam Charlston Pit
Lab Procedure:
Field Test Procedure:
Max. Dry Density (pcf): 123.4
Optimum % W: 9.9
Spec. % Comp.: 95
Opt.:
P=Pass; F=Fail

Test No.	Location	Elev.	AW	Dry Dens.	Max Dry	% Comp.	P/F	Remarks
1	50' SE of Manhole #3		14.78	108.3	123.4	87.79	F	Too Moist
2	48' SE of Manhole #3		12.09	120.1	123.4	97.35	P	(Retest)
3	Manhole #3		13.31	112.2	123.4	90.91	F	Too Moist
4	Manhole #2		10.61	120.8	123.4	97.91	P	/
5	Manhole #1		9.65	121.6	123.4	98.51	P	
6	Manhole #3		13.24	115.7	123.4	93.73	F	Too Moist (Retest)
7	8' SE of Manhole #3		12.99	117.1	123.4	95.0	P	(Retest)

REMARKS/DIST.:

A:\FILDSUM.WK4/9-13-94

Road Base Material.
W. of Wetwell

Wyandot Dolomite, Inc.

Post Office Box 126
Carey, OH 43316-0126

Carey Phone: 419/396-
Fax: 419/396-6094

DATA SHEET

SIZE: #304

AGGREGATE: Dolomite

SAMPLE: 1993 Average

SOURCE: Carey Quarry, Carey, OH.
SYSTEM: Silurian
SERIES: Niagaran
GROUP: Lockport
FORMATION: Guelph Dolomite

GRADATION:

Sieve Sizes	% Passing	Specification
2"	100	100
1"	94	70 - 100
3/4"	78	50 - 90
No. 4	41	30 - 60
No. 40	15	7 - 30
No. 200	5.4	0 - 13

CRUSH COUNT: 100 %

DELETERIOUS: 0 %

ELONGATED PIECES: 0 %

UNIT WEIGHT:
L - 99.8 Lb./Cu.Ft.
R - 118.3 "

CHEMICAL ANALYSIS

FeO	0.05 %
SiO_2	0.37 %
Al_2O_3	0.10 %
CaO	30.60 %
MgO	21.18 %
MnO	0.01 %
TiO_2	0.05 %
P_2O_5	0.01 %
S	0.02 %
L.O.I.	47.94 %

SILICA ANALYSIS / X-RAY DIFFRACTION:

Phase	Concentration	Detection Lmt.
Quartz	0.25 +/- 0.03 %	0.01 %
Cristobalite	0.79 +/- 0.12 %	0.08 %
Tridymite	0.00	0.03 %
Tripoli	0.00	

CALCIUM CARBONATE ($CaCO_3$): 54.40 %

MAGNESIUM CARBONATE ($MgCO_3$): 43.46 %

ATTACHMENT B

MATERIAL CERTIFICATION

PIPE AND MEDIA DRAIN

Sevenson Environmental Services, Inc.

Pipe Bedding

March 30, 1994

Mr. J. Michels
Conestoga-Rovers & Associates Limited
651 Colby Drive
Waterloo, Ontario
Canada N2V 1C2

Dear Mr. Michels:

Re: #4 Gravel Supplier

Sevenson Environmental Services proposes to use East Ohio Stone Co. in Alliance, Ohio as # 4 Gravel supplier. Please see attached gradation report from independent laboratory.

If you have any questions on report please contact me at 610-388-0721

Respectfully Submitted,

Theodore C. Kuchler III
QC Engineer

4 Lake View Drive Chadds Ford, Pennsylvania 19317 (215) 388-0721

EAST OHIO STONE CO.
P.O. BOX 3805
ALLIANCE, OH 44601
216/823-4646

January 2, 1991

Product #	2"	1½"	1"	3/4"	3/8"	#4	#8	#16	#50	#100	#200	Sound-ness	Absorp-tion	Abrasion
#4 Spec	100	90-100	20-55	0-15	0-5									
Gradation	100	91	44	12	3							Loss 1%	0.80	A-26
#57 Spec		100	95-100		[½] 25-60	0-10	0-5							
Gradation		100	100	84	40	6	3					Loss 1%	0.83%	B-26
#703.02						100	90-100	50-75	14-30	4-12	0.5			
Gradation						100	94	72	28	12	4		1.67%	
#703.05					100	90-100	65-100	40-85	7-40	0-20	0-10			
Gradation					100	98	76	48	12	6	2.9	Loss 4%	1.23%	
FM 3.34														
#8 Spec				[½] 100	85-100	10-30	0-10	0-5						
Gradation				100	90	20	5	2				Loss 1%	1.09%	C-28
#9 Spec					100	85-100	10-40	0-10	0-5					
Gradation					100	89	18	6	2			Loss 1%	1.83%	
FM 4.80														
Concrete Sand														
Gradation						100	92	71	34	18	5.3			
FM 2.32														
#304.02	100		70-100	50-90		30-60			[40] 7-30		0-13			
Gradation	100		92	73		45			17		6.9	Loss 1%		A-28

Wyandot Dolomite, Inc.

Post Office Box 126
Carey, OH 43316-0126

Carey Phone: 419/396-7641
Fax: 419/396-8094

DATA SHEET

SIZE: #4 Ballast

AGGREGATE: Dolomite

SAMPLE: 1993 Average

SOURCE: Carey Quarry, Carey, OH.
SYSTEM: Silurian
SERIES: Niagaran
GROUP: Lockport
FORMATION: Guelph Dolomite

GRADATION:

Sieve Sizes	% Passing	Specification
2"	100	100
1 1/2"	90	90 - 100
1"	37	20 - 55
3/4"	7	0 - 15
3/8"	4	0 - 5

CRUSH COUNT: 100 %

DELETERIOUS: 0 %

ELONGATED PIECES: 0 %

UNIT WEIGHT: L - 83.1 Lb./Cu.Ft.
R - 92.4 "

SPECIFIC GRAVITY: 2.710

ABSORPTION: 1.3 %

% PASSING #200: 0.9 %

LA ABRASION: 25.6 % (ASTM Method 3)

SODIUM SULFATE SOUNDNESS: 1.7 % Loss

CHEMICAL ANALYSIS

FeO	0.05 %
SiO_2	0.37 %
Al_2O_3	0.10 %
CaO	30.60 %
MgO	21.18 %
MnO	0.01 %
TiO_2	0.05 %
P_2O_5	0.01 %
S	0.02 %
L.O.I.	47.94 %

SILICA ANALYSIS / X-RAY DIFFRACTION:

Phase	Concentration	Detection Lmt.
Quartz	0.25 +/- 0.03 %	0.01 %
Cristobalite	0.79 +/- 0.12 %	0.08 %
Tridymite	0.00	0.03 %
Tripoli	0.00	

CALCIUM CARBONATE ($CaCO_3$): 54.40 %

MAGNESIUM CARBONATE ($MgCO_3$): 43.46 %

March 28, 1994

Mr. J. Michels
Conestoga-Rovers & Associates Limited
651 Colby Drive
Waterloo, Ontario
Canada N2V 1C2

Pipe Backfill

Dear Mr. Michels:

Re: #8 Gravel Supplier

Sevenson Environmental Services proposes to use National Aggregates, Inc. in Malvern, Ohio as # 8 Gravel supplier. See attached gradation report from independent laboratory.

If you have any questions on report please contact me at 610-388-0721

Respectfully Submitted,

Theodore C. Kuchler III
QC Engineer

-67 (MODIFIED) TODD 610-500-0121

OHIO DEPARTMENT OF TRANSPORTATION
TESTING LABORATORY
1600 WEST BROAD STREET
COLUMBUS, OHIO 43223

COLUMBUS, OHIO JUN 28 1993

LAB NO. G 015522

REPORT ON AGGREGATE

COUNTY, ROUTE, SECTION
COL SR 164
4.48-14.08
PID: 12090

PRODUCER'S COPY

Main Section Big Pile

PROJECT NO. 197 -93
FED. AID NO. NONE
SAMPLE OF #8 GRAVEL 703.05
SAMPLE NO. 3
PRODUCED BY NATIONAL AGGREGATES INC.
MALVERN, OHIO
SAMPLED BY JOHN M. SOMMER
MC3
CARROLLTON, OHIO
CONSIGNED TO THE SHELLY CO.

SAMPLED FROM STK PILE #2 SEC.A *
REPRESENTS 2000 C.Y.
PROPOSED USE 448
REFERENCE NO. 2,3,4,5
FURNISHED BY
DATE SAMPLED 06/07/93
DATE RECEIVED JUN 14 1993

SIEVE ANALYSIS

TOTAL PASSING		SPECS.	
NO. 1/2"	100 %	100 - 100	%
NO. 3/8"	94 %	085 - 100	%
NO. 4	17 %	010 - 030	%
NO. 8	1 %	000 - 010	%
NO. 16	1 %	000 - 005	%
NO. 30	1 %	-	%
NO. 40	1 %	-	%
NO. 50	1 %	-	%
			%
			%

DELETERIOUS SUBSTANCES

SHALE AND SHALY MATERIAL	%
DELETERIOUS CHERT	0.2%
LIMONITIC CONCRETIONS	%
SOFT PIECES	%
CLAY LUMPS	%
COAL	0.8%
TOTAL DELETERIOUS	%

PHYSICAL TESTS

COMPACTED WEIGHT		LBS. PER CU.FT.
FRACTURED PIECES	53 %	
ABRASION SIZE & LOSS	C-26 %	
SPECIFIC GRAVITY	2.52 AVG 2.52	
ABSORPTION	2.80%AVG 2.65 %	
SOUNDNESS TEST DATE	LOSS 5 %	

STATE OF OHIO DENNIS L SUNKE REG. # E 037923 REGISTERED PROFESSIONAL ENGINEER

APPROVED

REMARKS: FLAT DETERMINATION 0.0%
* @ PLANT

TELETYPE DATE JUN 25 1993
TESTED DATE 06/09/93
REQUISITION
P.O. NO.
INV. NO.
WAIVER NO.

RESPECTFULLY SUBMITTED,
Dennis L Sunke
ENGINEER OF TESTS

LAB NO. G 015522

Summit National Superfund Site

HDPE Pipe Specification Materials

ADS N-

Corrugated exterior for superior strength

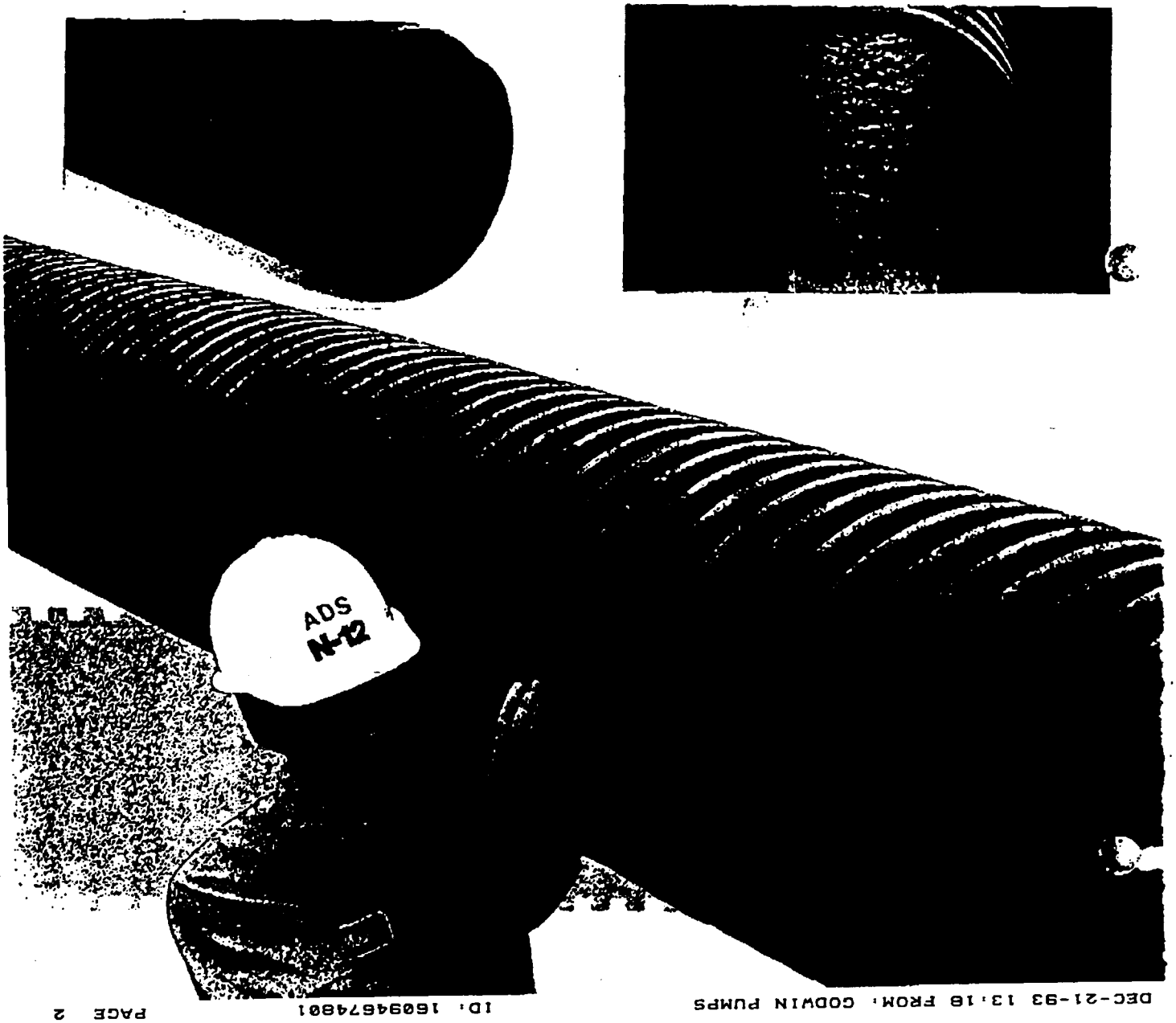
N-12 pipe is formed with a corrugated exterior for added strength. In each of its diameters, from 4" to 36", N-12 is a drainage pipe specifically designed to give excellent long-term performance.

N-12 is suitable for use under both H20 and E80 live loads with fill heights in excess of 50 feet. In field research, tests show the pipe performing well at fill heights of more than 100 feet.

Smooth interior for superior flow

N-12 is the large-diameter, corrugated polyethylene pipe that meets the most demanding hydraulic requirements.

N-12 is available in diameters of 4" to 36" and is manufactured with a smooth interior to provide maximum flow capacity. So it's ideal for storm sewers and other applications where optimum hydraulics are essential.

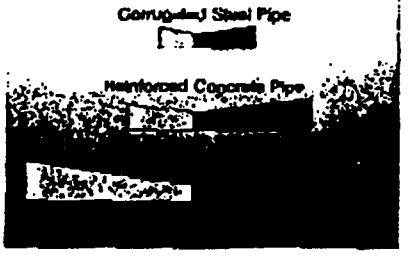


12™ pipe

The unmatched properties of polyethylene pipe

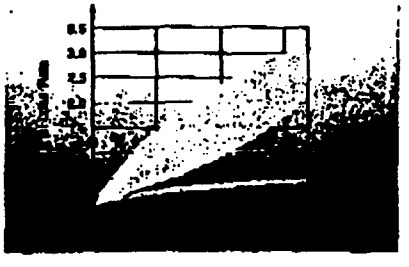
ADS N-12 possesses durability that is unique to ADS large-diameter polyethylene pipe. Manufactured with High Density Polyethylene (HDPE) resins, N-12 is highly resistant to chemical attack and corrosion. An inert material, polyethylene is immune to galvanic and electrochemical effects, and is unaffected by soils or effluents with a ph range from 1.5 to 14.

Recommended Use pH Range



Durability studies have shown N-12 to be significantly more resistant to abrasion than traditional materials. In fact, ADS pipe has often successfully replaced conventional materials which had failed due to extreme abrasion. This has made ADS pipe popular as a liner to restore deteriorated metal culverts.

Average Abrasion Values

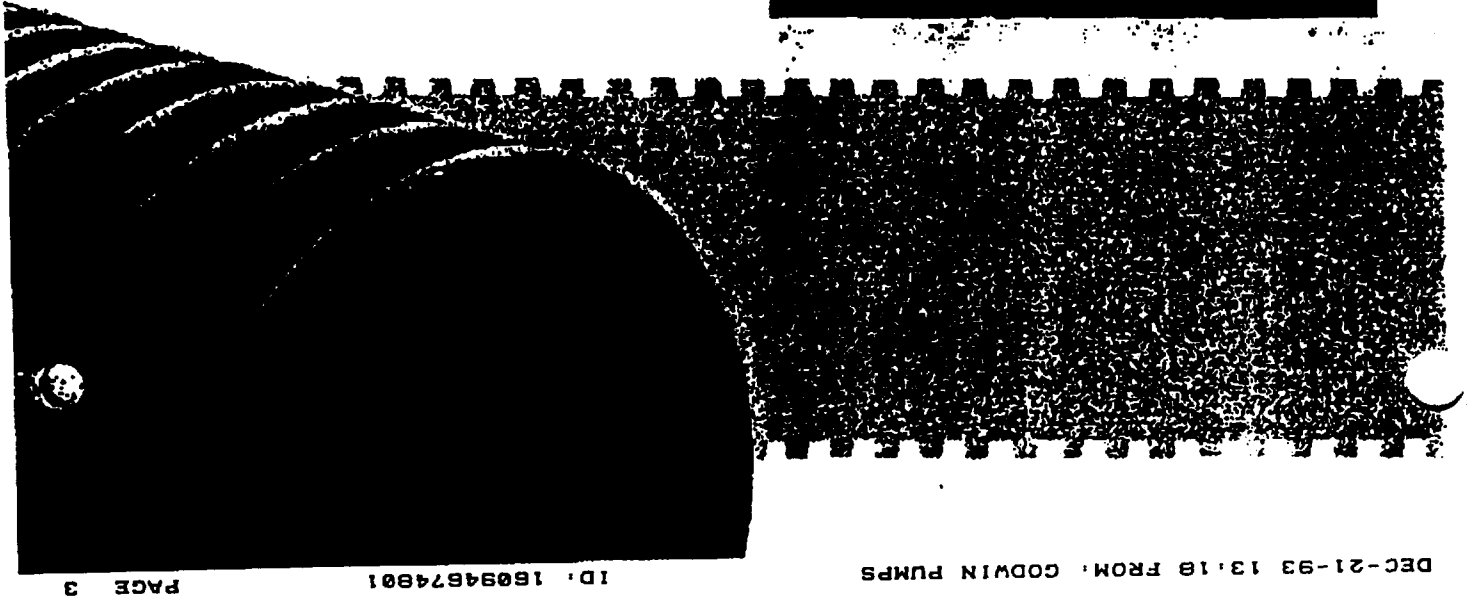


The highest standards of quality and performance

Advanced Drainage Systems is the nation's oldest and most experienced maker of polyethylene drainage products. Over the years, ADS has pioneered many of the advances that have become industry standards. At its more than 22 plants across the country, ADS maintains a comprehensive quality control program that extends through every stage of production to ensure that its polyethylene products meet applicable ASTM and AASHTO standards.

Today, Advanced Drainage Systems is America's leading manufacturer of quality corrugated polyethylene pipe and related products. Ever-increasing numbers of engineers and contractors are choosing ADS pipe for use in industrial, mining and public works projects — the toughest of applications.

N-12 delivers all the quality and performance the industry has come to expect from ADS, and puts it to work in storm sewer and other applications where hydraulics are important and durability is critical.



N-12 is chosen for the toughest applications

A site that provides 104' of cover

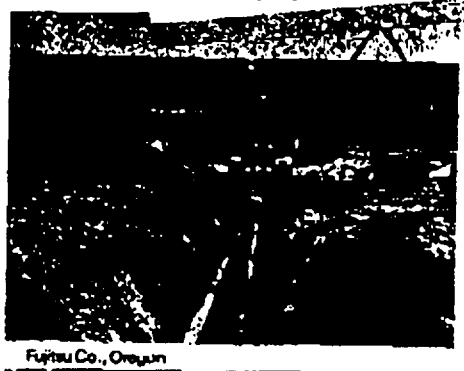
Calibrating the test devices

Ready for backfill and cover

Deep burial project

In conjunction with the University of Massachusetts, the Pennsylvania Department of Transportation, the Federal Highway Administration and Mashuda Construction, Advanced Drainage Systems buried 24-inch polyethylene pipe under 104 feet of total cover on a highway site near Pittsburgh, Pennsylvania in 1987. Electronic and hydraulic systems are monitoring pipe performance, including pipe wall strain and compression, pipe deflection and shape, plus soil pressure and strain, all over a 5-year period.

Results to date indicate that, under the tremendous soil pressure, the pipe is deflecting at the same percentage of strain as the surrounding soil. This means the pipe is transferring the load to the surrounding soil. The Federal Highway Administration has become involved in the sponsorship of the test and will be publishing comprehensive test results.



Fujitsu Co., Oregon

Marriott Hotel, San Diego

Lexington, KY DOT

The versa of N-1

Since its int has met an ety of speci wide range Some of tho the extraord and hydraul at the Fujits turing Plant Marriott Hot and the Lex tucky DOT p

The adap of N-1

HDPE N-12 b in its ease of design flexib site adaptabi dard 20' leng post cut o ditions. Plus, accommoda ect designs t its diameters 10, 12, 15, 18,

The new storm drain will be at the base of a landscaped median

N-12 will withstand the corrosive environment

N-12 won't misalign in sandy soil

lity

ıction, N-12
ressive vari-
tions on a
rojects.
employing
ry durability
of N-12 are
). Manufac-
Oregon, the
ı San Diego
on, Ken-
ıct.

:bility

matched
allation,
and on-
The stan-
can be
all d
ty on-
2 now
nore proj-
over with
, 6, 8,
30 and

N-12 can be cut on-site.

Lengths couple quickly, securely.

4"-36" diameters are available.

Ocean City, Maryland Highway Project

A project by the Maryland Department of Transportation involved construction on a 17,500-foot-long median strip to divide the six lanes of State Route 528. A significant problem to overcome was the east/west flow of storm-water over the road's surface, causing occasional traffic hazards. Designing a quality storm sewer system was vital to ensure that water would drain quickly from the highway to Assawoman Bay.

A high-density polyethylene pipe was chosen as the only material that would withstand the elements in this oceanside site. Past experience demonstrated that concrete pipe laid in the area's sandy soil misaligned, which eventually caused collapsed overburden and erosion of beaches. Engineers also decided against specifying steel pipe because the center line of the pipe is set at the low mean tide of the surrounding bay, so saltwater would stand in the storm sewer for at least half of every day. This would cause steel pipe to corrode.

Hydraulics were also an important consideration. ADS N-12 was specified for the sewer pipe, because of its smooth hydraulic interior and polyethylene properties. More than 16,500 feet of N-12 was ordered for the project in diameters of 12, 15, 18 and 24 inches and lengths of 20 feet. The pipe was manufactured in ADS's plant in Montezuma, Georgia.

Specifications ar

Applicable Specifications and Installation Guidelines

1. ASTM F 405, Standard Specification for Corrugated Polyethylene Pipe and Fittings.
2. ASTM F 667, Standard Specification for Large Diameter Corrugated Polyethylene Pipe and Fittings.
3. AASHTO M 252, Standard Specification for Polyethylene Corrugated Drainage Pipe.
4. AASHTO M 294, Standard Specification for Corrugated Polyethylene Pipe, 12" to 36" diameter.
5. ADS Installation Guidelines for Culvert and Other Heavy-Duty Drainage Applications.

ADS corrugated polyethylene pipe is a semi-rigid conduit. When properly installed, ADS pipe has excellent compressive load bearing strength. It is suitable for use under H20 and E80 live loads, or with fill heights in excess of 50 feet. (For fill heights greater than 50 feet, ADS regional engineers are available for technical assistance.) To ensure maximum performance, ADS pipe should be installed in accordance with the following recommendations:

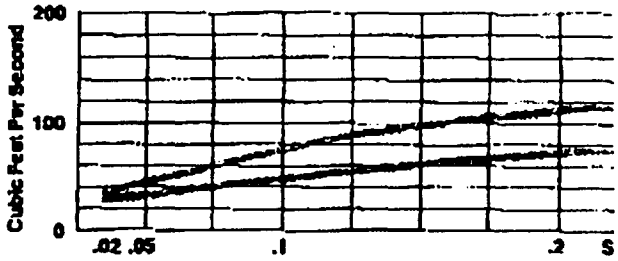
Installation Recommendations

1. Crushed stone, gravel or compacted soil backfill material should be used as the bedding and envelope material.
2. The corrugated pipe should be laid on grade, on a layer of bedding material. If native soil is used as the bedding and backfill material, it should be well compacted in six inch layers under the haunches, around the sides and above the pipe to the recommended minimum height of cover.
3. Either flexible (asphalt) or rigid (concrete) pavements may be laid as part of the minimum cover requirements.
4. Site conditions and availability of bedding materials often dictate the type of installation method used.
5. The load bearing capability of flexible conduits is dependent on the type of backfill material used and the degree of compaction achieved. Crushed stone and gravel backfill materials typically reach a compaction level of 90-95% AASHTO standard density without compaction. When native soils are used as backfill material, a compaction level of 95% is required. This is the same minimum compaction that is recommended by all drainage pipe manufacturers and can be achieved by either hand or mechanical tamping.

Two types of installations are recommended for H-20 live loads — the heaviest legal highway loads. These are the trench and open ditch installations. The minimum height of cover recommendations are the same for both conditions.

ADS Pipe Hydraulics

24" Diameter



ADS Recommended Manning's "n" For Desig

Pipe Diameter	ADS Corrugated Polyethylene	ADS-N-12 Polyethylene
4-6-8-10-12"	.018	.010
15"	.018	.010
18"	.020	.010
24"	.020	.010
30"	.020	.010
36"	.020	.010

*ASCE Manual and Report on Engineering Practice #37

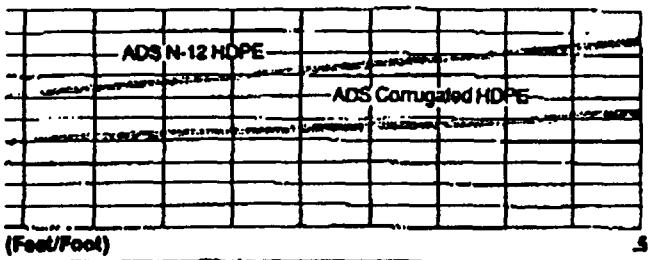
ADS N-12 Pipe Stiffness

Pipe Diameter	Minimum Pipe Stiffness Pounds/inch/inch
4-6-8 inches	50
10 inches	48
12 inches	45
15 inches	42
18 inches	40
24 inches	34
30 inches	28
36 inches	22

Weight Comparison Pounds/Linear Foot

Inside Diameter (inches)	ADS Corrugated HDPE Pipe	Clay or Concrete	Corrugated Metal
10"	2.0	50	9.0
12"	2.5	70	10.8
15"	3.1	103	12.9
18"	6.6	131	15.8
24"	13.0	217	19.4
30"	18.0	304	30.0
36"	22.0	524	36.0

d Technical Data



Concrete Pipe*	Corrugated Steel Pipe*
.011-.015	.022-.026
.011-.015	.022-.026
.011-.015	.022-.026
.011-015	.022-.026
.011-.015	.022-.026
.011-.015	.022-.026

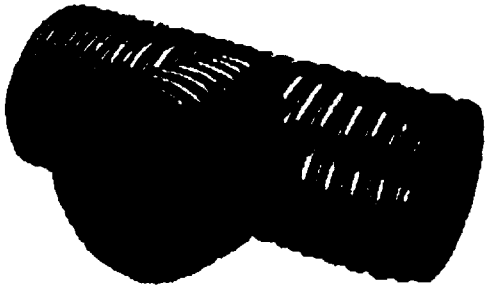
Height of Cover Table for ADS Culvert Pipe

- Depth of Cover for Corrugated Polyethylene Pipe
- H20 or E80 Live Load
- Pipe Manufactured to AASHTO M-294

Diameter (Inches)	Minimum Cover H20 (Inches)	Minimum Cover E80 (Inches)	Maximum Cover (feet)
4-6-8-10-12"	12	24	58
15"	12	24	58
18"	12	24	62
24"	12	24	61
30"	12	24	61
36"	12	24	61

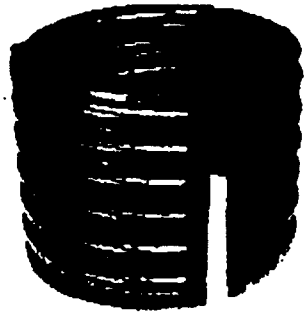
Notes:
1. Cover limitations calculated using load factor design per AASHTO procedures.
2. Soil density of 100#/cu. ft. is assumed.
3. Backfill around the pipe must be compacted to a density of 90% per AASHTO T-99.
4. Use reasonable care in handling and installation.
5. Cover limitations are measured from the top of the pipe.

N-12 Fabricated Tee Fitting

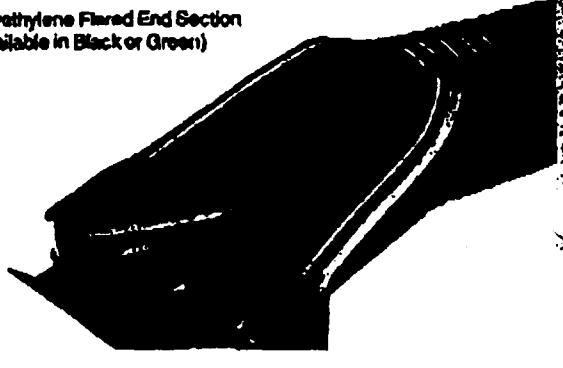


N-12 Fabricated Elbow Fitting

N-12 Coupler



Polyethylene Flared End Section
(Available in Black or Green)



ADVANCED DRAINAGE SYSTEMS, INC.

SHORT FORM SPECIFICATION
SMOOTH INTERIOR CORRUGATED POLYETHYLENE PIPE

This specification applies to high density polyethylene corrugated pipe with an integrally formed smooth interior.

This specification is applicable to nominal sizes 4 - 36 inch diameter. Requirements for test methods, dimensions, and markings are those found in AASHTO Designations M-252 and M-294.

Pipe and fittings shall be made of polyethylene compounds which meet or exceed the requirements of Type III, Category 4 or 5, Grade P33 or P34, Class C per ASTM D-1248 with the applicable requirements defined in ASTM D-1248. Clean reworked material may be used.

Minimum parallel plate pipe stiffness values shall be as follows:

Diameter	Pipe Stiffness*
4"	50 psi
6"	50 psi
8"	50 psi
10"	50 psi
12"	45 psi
15"	42 psi
18"	40 psi
24"	34 psi
30"	28 psi
36"	22 psi

*Per ASTM Test Method D-2412

The pipe and fittings shall be free of foreign inclusions and visible defects. For pipe sizes 12" diameter and greater, designed drainage perforations shall be permitted in corrugation valleys only. All holes of any kind in the corrugation crests or sidewalls shall be considered unacceptable. The ends of the pipe shall be cut squarely and cleanly so as not to adversely effect joining.

The nominal size for the pipe and fittings is based on the nominal inside diameter of the pipe. Corrugated fittings may be either molded or fabricated by the manufacturer. Fittings supplied by manufacturers other than the supplier of the pipe shall not be permitted without the approval of the Project Engineer.

Joints shall be made with split couplings, corrugated to engage the pipe corrugations, and shall engage a minimum of 4 corrugations, 2 on each side of the pipe joint. Where required by the Engineer, a neoprene gasket shall be utilized with the coupling to provide a soil tight joint.

Installation shall be in accordance with ASTM Recommended Practice D-2321 or as specified by the Project Engineer or local approving agency.

A manufacturers' certification that the product was manufactured, tested, and supplied in accordance with this specification shall be furnished to the Project Engineer upon request.

Issued: 2/90

DS product announcement

PART NO:

DESCRIPTION:

N-12 PREMIUM COUPLING

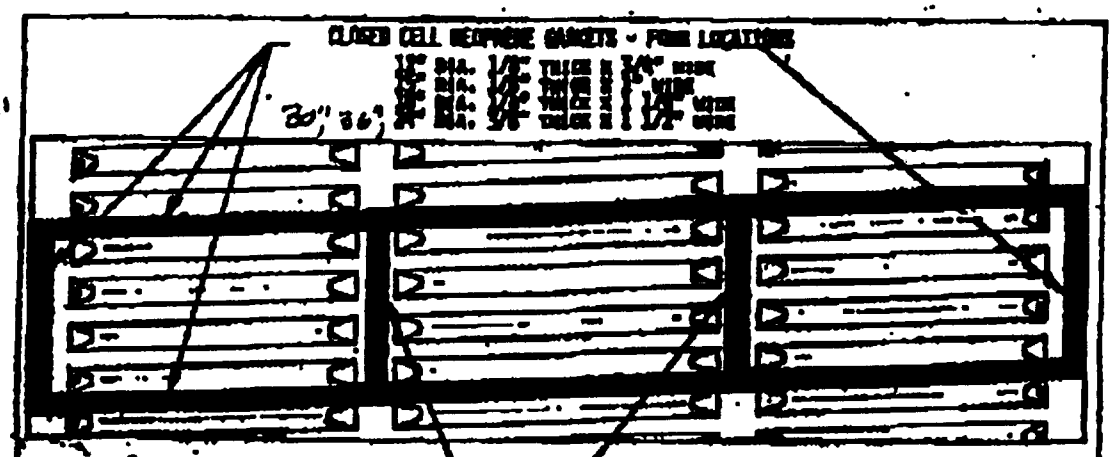
DATE: September 4, 1987

N-12 PREMIUM COUPLINGS ARE NOW AVAILABLE

This gasketed coupling provides the leak-resistant/soil tight joint which is required on some storm sewer projects.

The closed cell neoprene gaskets are installed in the N-12 split coupling so that the coupling can be installed on the pipe in the normal manner.

N-12 Premium Couplings will be shipped to the job site installed on the pipe with one cable tie. The tie is to be cut and the coupling installed on the N-12 pipe with the additional cable ties which are supplied.



INSTALLATION

THE N-12 PREMIUM COUPLING IS DESIGNED TO BE INSTALLED DIRECTLY ON N-12 PIPE. NO OTHER GASKETS ARE REQUIRED TO COMPLETE THE JOINT. CABLE TIES ARE SUPPLIED TO CLOSE AND SECURE THE COUPLING AROUND THE JOINT.

CLOSED CELL NEOPRENE GASKETS
TWO LOCATIONS
3/8" THICK x 1 1/2" WIDE (ALL COUPLINGS)

INSIDE VIEW OF OPENED UP N-12 SPLIT COUPLING

N-12 PREMIUM COUPLING

SIZE	PART #
12"	[illegible]
15"	[illegible]
18"	[illegible]
24"	[illegible]
30"	
36"	

ADVANCED DRAINAGE SYSTEMS, INC., [illegible] RIVERSIDE DR., P.O. BOX [illegible], COLUMBUS, OHIO [illegible], (614) [illegible]

ADVANCED DRAINAGE SYSTEMS, INC.

N-12™ PIPE

"FACT SHEET"

NOMINAL DIAMETER (I.D.)

Attribute	4"	6"	8"	10"	12"	15"	18"	24"*	30"*	36"*
Weight: Pounds/Foot	.4	.9	1.5	2.0	3.2	4.6	6.4	11.5	15.5	18.1
Pounds/20 Ft. Length					65.0	92.0	127.0	230.0	310.0	360.0
Inside Diameter: (Nominal)	4.10"	6.05"	7.94"	9.90"	12.15"	15.02"	18.15"	24.40"	30.15"	36.25"
Outside Diameter: (Nominal)	4.72"	6.95"	9.16"	11.31"	14.45"	17.65"	21.10"	28.30"	36.10"	42.25"
Wall Thickness: (Nominal)	.020"	.020"	.030"	.042"	.050"	.070"	.080"	.115"	.135"	.175"
Pipe Stiffness: 5% Deflection	50 PSI	50 PSI	50 PSI	50 PSI	Min. 45 PSI	Min. 42 PSI	Min. 40 PSI	Min. 34 PSI	Min. 28 PSI	Min. 22 PSI
Water Inlet Area: (Perforated Pipe)	Min. 1.0 Sq. In./Ft.	Min. 1.0 Sq. In./Ft.	Min. 1.0 Sq. In./Ft.	Min. 1.0 Sq. In./Ft.	Min. 1.0 Sq. In./Ft.	Min. 1.0 Sq. In./Ft.	Min. 1.0 Sq. In./Ft.	Min. 1.0 Sq. In./Ft.	Min. 1.0 Sq. In./Ft.	Min. 1.0 Sq. In./Ft.
Marking:	ADS* 4" I.D. ASTM F405 AASHTO M-252	ADS* 6" I.D. ASTM F405 AASHTO M-252	ADS* 8" I.D. ASTM F667 AASHTO M-252	ADS* 10" I.D. ASTM F667 AASHTO M-252	ADS* 12" I.D. N-12™ AASHTO M294 Plant, Month Day, Year and shift of Mfg.	ADS* 15" I.D. N-12™ AASHTO M294 Plant, Month Day, Year and shift of Mfg.	ADS* 18" I.D. N-12™ AASHTO M294 Plant, Month Day, Year and shift of Mfg.	ADS* 24" I.D. N-12™ AASHTO M294 Plant, Month Day, Year and shift of Mfg.	ADS* 30" I.D. N-12™ AASHTO M294 Plant, Month Day, Year and shift of Mfg.	ADS* 36" I.D. N-12™ AASHTO M294 Plant, Month Day, Year and shift of Mfg.

*Spirular Corrugations

ADVANCED DRAINAGE SYSTEMS, INC.

Issued: August 20, 1989
Supercedes: February 9, 1989

Summit National Superfund Site

Filter Fabric Specifications and Installation Procedures

Atlantic Construction Fabrics, Inc.†

3720 Willard Road
P.O. Box 220427
Chantilly, VA 22022
Phone (703) 631-9222
Fax (703) 631-2438

To whom it may concern:

The Geotextile listed under Drainage Fabric, #D-104, from our catalog is Amoco CEF 4553.

The Silt Fence #SF-102, is manufactured from Amoco CEF 2130.

Sincerely,

Gene Diloreto

Amoco Fabrics and Fibers Company

Quality Control Department
P. O. Box 836
Hazlehurst, Georgia 31539-0451

October 20, 1993

Atlantic Construction Fabrics Inc.
1801 A. Willis Road
Richmond, VA 23237

For pipe & media drain

Re: Purchase Order # 3694, Bid # 3195

We wish to certify that the Amoco CEF Style 4553 shipped to you under Shipping # OV160, dated October 19, 1993 meets the following minimum roll averages:

Property	Test Method	Minimum Roll Average Value	Typical Value
Grab Tensile, lbs.	ASTM-D-4632	200	240
Grab Elongation, %	ASTM-D-4632	50	71
Mullen Burst, psi	ASTM-D-3786	450	525
Puncture, lbs.	ASTM-D-4833 (Modi)	130	158
Trapezoid Tear, lbs.	ASTM-D-4533	80	105
U.V. Resistance, %* (Strength Retained)	ASTM-D-4355	70	85
A.O.S. % Retained	ASTM-D-4751	100	120
Permittivity, (1/sec)	ASTM-D-4491	.7	1.7
gal/min/sq. ft.		80	136

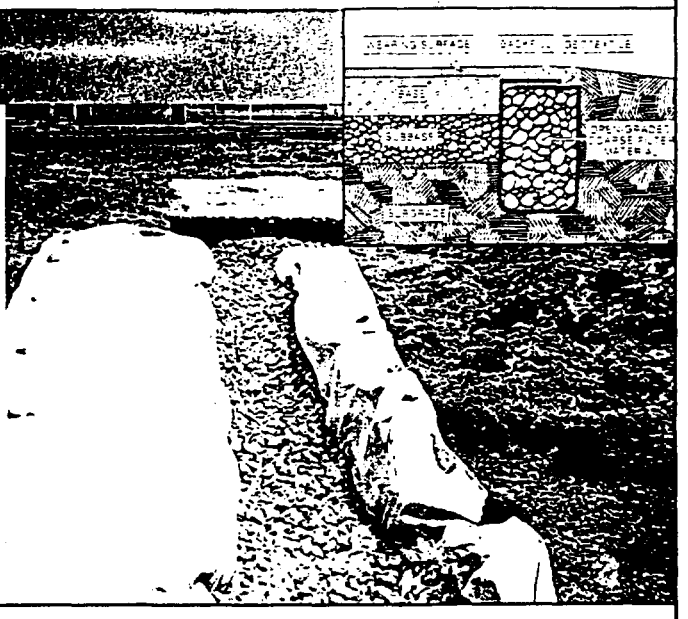
*Percent of minimum grab tensile after conditioning.

Amoco Fabrics and Fibers Company manufactures all the nonwoven geotextile fabric certified above. The values above are a result of testing conducted in on-site laboratories at the time of production. The typical values provided are for comparison purposes, and are representative of current production of this product. All test methods used are ASTM or industry standards. Test data is retained in the Quality Control files at Amoco's production facility.

Bennie J. Boutwell
Process & Area Control Superintendent
Amoco Fabrics & Fibers Company

mom

Drainage Fabric



Product Functions: Acts as a permeable separator to keep soil out of the drainage system, but allows water to pass freely.

Product Types: Nonwoven and woven fabrics. The most important physical characteristics are apparent opening size (AOS) and flow rate.

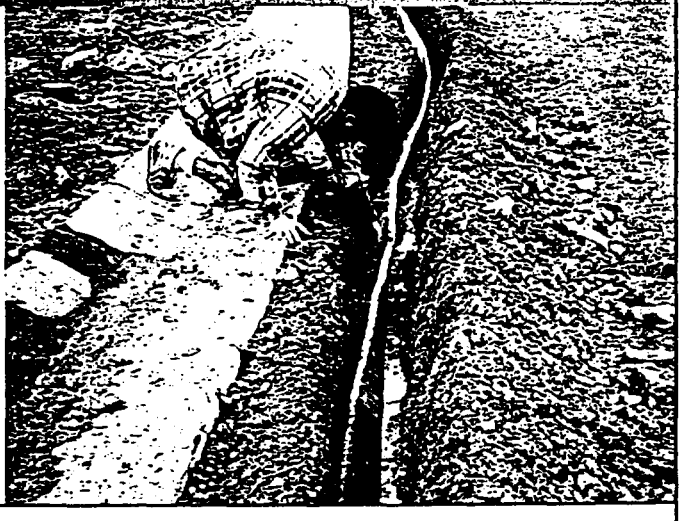
ACF stocks the largest selection of products and widths available anywhere.

Catalog No.	Description	Sizes	Weight (oz.)	Flow Rate Gal./Min./ft²	AOS U.S. Sieve
D-101	Nonwoven Polypropylene	2'-15' × 600'	3½	200	70
D-102	Nonwoven Polypropylene	2'-15' × 420'	4	175	70
D-103	Nonwoven Polypropylene	15' × 300'	6	130	100
D-104	Nonwoven Polypropylene	15' × 240'	8	80	100
D-105	Woven Polypropylene	15' × 300'	6	40	40

Heavier weight fabrics are available. Call for information and pricing.

AMOCO

Geocomposite Strip Drains



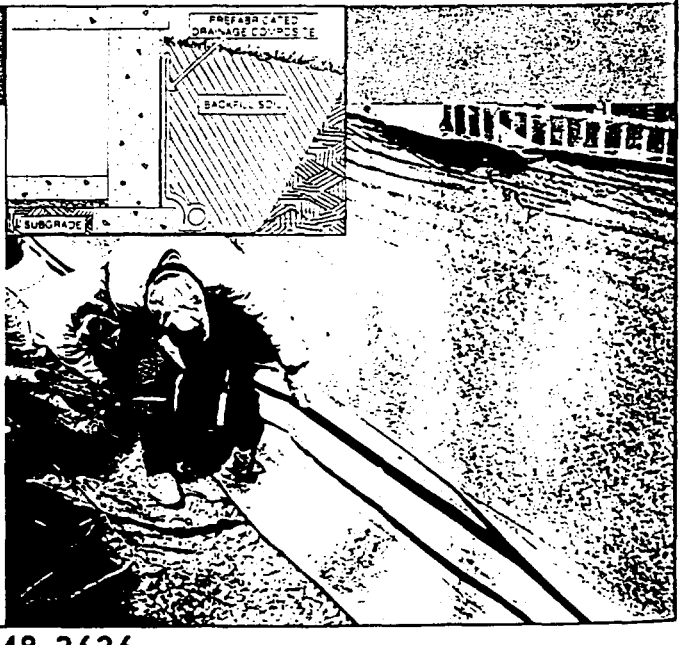
Product Functions: High flow capacity drainage system that offers better drawdown of water than pipe for landscape drainage such as building grounds, retaining walls, athletic fields, golf courses, highways, bridge abutments, etc.

Product Types: Multichanneled structure of formed polyethylene core enclosed in tough nonwoven, needle-punched polypropylene fabric covering.

Catalog No.	Description	Size
SD-101	Drain-it®	6" × 100'
SD-102	Drain-it	12" × 100'
SD-103	Drain-it	18" × 100'
SD-104	Drain-it	24" × 100'

Longer roll lengths available.

Geocomposite Drain Boards



Product Functions: Normally used to relieve hydrostatic build-up around large areas of walls or foundations. Typical applications are foundation walls and slabs, retaining walls, bridge abutments, roof gardens and patios.

Product Types: Drain boards for wall/foundation applications. Polystyrene core with filter fabric on one side to allow water entry and prevent intrusion of fill material. Also available with filter fabric on one side and high strength fiber on flat side that fits to wall to avoid intrusion of softer waterproofing materials into the cones of core. Also see Geonets.

Catalog No.	Description	Size
DB-201	Drain-it® with 4 oz. nonwoven polypropylene	4' × 104'
DB-202	Drain-it with monofilament woven polypropylene	4' × 104'

Note: 4' × 8' sheets also available.

AMOCO FABRICS AND FIBERS COMPANY
NASHVILLE MILLS
P.O. BOX 477
NASHVILLE, GEORGIA 31639

January 14, 1994

Atlantic Construction
1801 A Willis Road
Richmond, VA 23237

Dear Sir:

Silt Fence

We wish to certify that the Amoco CEF Style 2130 shipped to you under B/L #14507, & P.O.#4156, dated 1-12-94, meets the following minimum roll averages:

Property	Test Method	Minimum Roll Average Value	Typical Value
Grab Tensile, lbs.	ASTM-D-4632	120X120	125X125
Grab Elongation, %	ASTM-D-4632	15X20	23X23
Mullen Burst, psi	ASTM-D-3786	340	330
Puncture, lbs.	ASTM-D-4833	60	60
Trapezoidal Tear, lbs	ASTM-D-4533	60X70	60X70
U.V. Resistance, % (Strength Retained)	ASTM-D-4355	80	80
AOS, US Sieve #	ASTM-D-4751	30/40	30/40
Permittivity, (1/sec) gal/min/sq. ft.	ASTM-D-4491	10	

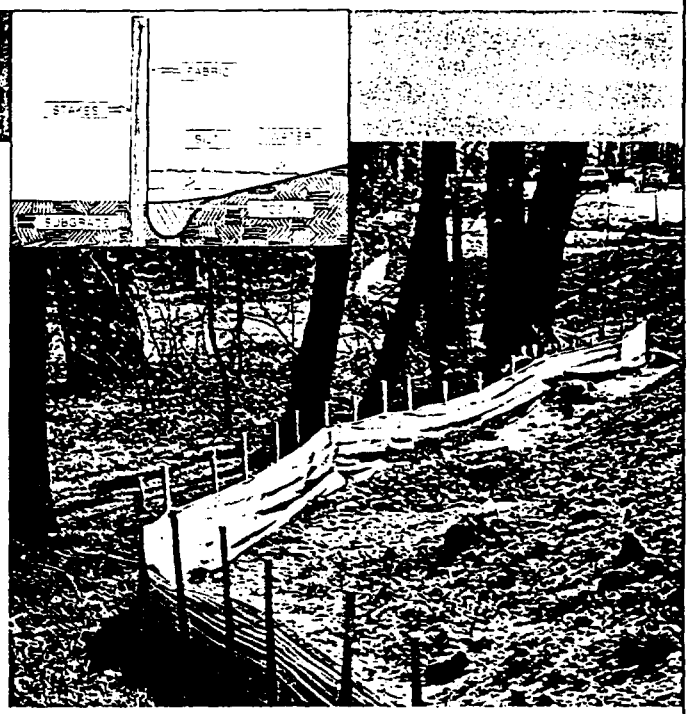
Amoco Fabrics and Fibers Company manufactures this product in the USA. The values above are a result of testing conducted in on-site laboratories at the time of production. The typical values provided are for comparison purposes, and are representative of current production of this product. All test methods used are ASTM or industry standards. Test data is retained in the Quality Control laboratory files at Amoco's production facility in Nashville, GA.

Tim Smith
Tim Smith
Quality Control Manager

js

ACF

Sediment Control—Silt Fence and Turbidity Barriers



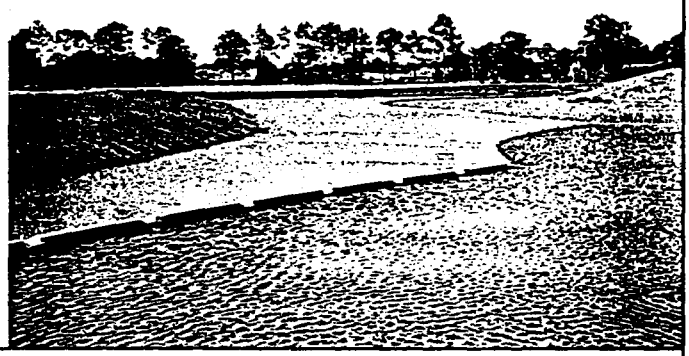
Product Functions: Silt fence controls sediment run off from construction sites where soil is being disturbed. Silt Fence stops the water containing sediment long enough for the sediment to drop out while the water passes through the fabric. Turbidity barriers (Floating Silt Fence) are used in water to control sediment contamination of rivers, lakes, ponds or oceans.

Product Types: Light to medium strength woven fabrics. Installation detail (toe in, post spacing, etc.) is critical to product success. Ultraviolet stability is an important property in high exposure installations.

Any fabric, post or style of fence to meet your specifications. You tell us what you need.

Catalog No.	Description	AOS U.S. Sieve	Tensile Strength (lbs./in.)
SF-101	24" × 100' with 13 stakes	20/30	120
SF-102	36" × 100' with 13 stakes	20/30	120
SF-103	42" × 100' with 13 stakes	20/30	120
SF-104	24" × 300' without stakes	20/30	120
SF-105	36" × 300' without stakes	20/30	120
SF-106	42" × 300' without stakes	20/30	120
SF-107	42" × 150' Silt Stop®	30/50	175
SF-108	36" × 100' with draw tape and 10 stakes (To meet Maryland DOT Specs)	30/40	100

AMOCO



Turbidity Barrier information and prices on request.

PE Pipe

Product Function: To reduce the water table and/or to efficiently move storm water. May be used as "entrance" pipe and as a "slope" drain during road construction.

Product Types: PE Pipe is available in corrugated or smooth interior wall in sizes 2" through 48" in diameter, perforated or solid.

Our standard products are listed below:

Corrugated:

Catalog No.	Description	Size
P-101	Corrugated-Solid or Perforated	4" × 100'
P-102	Corrugated-Solid or Perforated	4" × 250'
P-103	Corrugated-Solid or Perforated	6" × 100'
P-104	Corrugated-Solid or Perforated	6" × 20'
P-105	Corrugated-Solid or Perforated	8" × 20'

Smooth Wall:

Catalog No.	Description	Size
P-201	Smooth Wall—Solid or Perforated	8" × 20'
P-202	Smooth Wall—Solid or Perforated	12" × 20'
P-203	Smooth Wall—Solid or Perforated	15" × 20'
P-204	Smooth Wall—Solid or Perforated	18" × 20'

Additional Sizes on Request—up to 48" diameter.

All types of fittings and couplings are available—call for specific pricing.

ATTACHMENT C

HDPE COMPRESSED AIR SUPPLY LINE APPROVALS

Rec'd CRA

AUG 30 1994

BEFORE THE BOARD OF BUILDING APPEALS
STATE OF OHIO

Summit National Superfund 8186 U.S. Rt. 224 Deerfield, Oh 44411	)	Case No. 94-236
Appellant	)	
-vs-	)	DECISION
Larry R. Mace, Chief Division of Pressure Piping 2323 W. Fifth Ave., Box 825 Columbus, Oh 43216	)	
Appellee	)	

This matter came up for hearing Friday, August 12, 1994 on an appeal from Adjudication Order 95-01 issued by the Division of Pressure Piping Inspection. Said adjudication order involved the premises known as Summit National Superfund Site.

Based on evidence adduced by, and representations of the Appellant and the Appellee, the Appellant appealed the adjudication order.

The Board having determined that inasmuch as it would not be contrary to the public interest and unnecessary hardship would result if a literal enforcement of the Ohio Basic Building Code and/or the Ohio Fire Code was required, a variance against the adjudication order is given.

Any party adversely affected by this order may appeal to the Court of Common Pleas of the county in which he is a resident or in which the premises affected by this order is located. Any party desiring to appeal shall file a notice of appeal with the Board of Building Appeals and a copy with the Court, within fifteen (15) days after the mailing of this order, which notice of appeal shall set forth the order appealed from and the grounds of appeal.

STATE OF OHIO
DEPARTMENT OF INDUSTRIAL RELATIONS
Division of Pressure Piping Inspection

CERTIFICATE OF PIPING INSPECTION

CERTIFICATE NO. 139120

Type of System Comp. Air

Operating Pressure 75#

Issued To Summit National Facility

Test Pressure 150#

Location 8185 U.S. Route 224
Deerfield, OH

Inspector D. E. Carlyn

Inspected 9-29-94

GOVERNOR Larry R. Mace Chief of Division

TO BE KEPT AT PROJECT LOCATION

STATE OF OHIO
DEPARTMENT OF INDUSTRIAL RELATIONS
PRESSURE PIPING DIVISION
2323 W. FIFTH AVE. P.O. BOX 825
COLUMBUS, OHIO 43216

Rec'd CRA
JUL 26 1994

PERMIT/RECEIPT

APPLICATION NUMBER: 139120 COUNTY: PORT DATE: 07/20/94

DISTRICT INSPECTOR: DONALD CARLYN TELEPHONE NUMBER: (216)628-9454

Fee Paid By:	Project Location:
CONESTOGA ROVERS & ASSO LTD 651 COLBY DR WATERLOO ONTARIO CANA N2V1C2 Telephone Number:	SUMMIT NATIONAL SUPERFUND 8186 US ROUTE 224 DEERFIELD OH 44411 Telephone Number: (216)947-0335
Contractor: SEVENSON ENVIRONMENTAL SERV 4 LAKEVIEW DR CHADDS FORD PA 19317 Telephone Number: ( ) -	Owner: SUMMIT NATIONAL FACILITY 8186 US ROUTE 224 DEERFIELD OH 44411 Telephone Number: (216)947-0335

Type of System: PWR Substance in System: COMPRESSED AIR Start Date: 940815

Actual Cost: 11.000.00 Fee: 373.25 Check Number: 10903

THIS RECEIPT/PERMIT MUST BE AVAILABLE AT THE JOB SITE FOR THE INSPECTOR

ALL PRESSURE PIPING SYSTEMS INSTALLED IN OHIO MUST CONFORM TO SECTION 4101:8 OF THE OAC

Please request an inspection of the District Inspector listed above, four (4) work-days in advance.
Please include the JOB LOCATION and the APPLICATION NUMBER.

You may contact the Inspector at the above telephone number from 7:30 AM to 8:30 AM.

ATTACHMENT D

MATERIAL CERTIFICATION

ACCESS ROAD GRAVEL

Sevenson
Environmental
Services, Inc.

March 30, 1994

Mr. J. Michels
Conestoga-Rovers & Associates Limited
651 Colby Drive
Waterloo, Ontario
Canada N2V 1C2

Dear Mr. Michels:

Re: #57 Gravel Supplier

Sevenson Environmental Services proposes to use East Ohio Stone Co. in Alliance, Ohio as # 57 Gravel supplier. This stone will replace the number 68 stone as per verbal conversation with Jeroen Winterink. Please see attached gradation report from independent laboratory.

If you have any questions on report please contact me at 610-388-0721

Respectfully Submitted,

Theodore C. Kuchler III
QC Engineer

4 Lake View Drive Chadds Ford, Pennsylvania 19317 (215) 388-0721

EAST OHIO STONE CO.
P.O. BOX 3805
ALLIANCE, OH 44601
216 / 823 - 4646

January 2, 1991

Product #	2"	1½"	1"	3/4"	3/8"	#4	#8	#16	#50	#100	#200	Soundness	Absorption	Abrasion
#4 Spec	100	90-100	20-55	0-15	0-5									
Gradation	100	91	44	12	3							Loss 1%	0.80	A-26
#57 Spec		100	95-100		[½] 25-60	0-10	0-5							
Gradation		100	100	84	40	6	3					Loss 1%	0.83%	B-26
#703.02						100	90-100	50-75	14-30	4-12	0.5			
Gradation						100	94	72	28	12	4		1.67%	
#703.05					100	90-100	65-100	40-85	7-40	0-20	0-10			
Gradation					100	98	76	48	12	6	2.9	Loss 4%	1.23%	
FM 3.34														
#8 Spec				[½] 100	85-100	10-30	0-10	0-5						
Gradation				100	90	20	5	2				Loss 1%	1.09%	C-28
#9 Spec					100	85-100	10-40	0-10	0-5					
Gradation					100	89	18	6	2			Loss 1%	1.83%	
FM 4.80														
Concrete Sand														
Gradation						100	92	71	34	18	5.3			
FM 2.32														
#304.02	100		70-100	50-90		30-60			[40] 7-30		0-13			
Gradation	100		92	73		45			17		6.9	Loss 1%		A-28

Wyandot Dolomite, Inc.

Post Office Box 128
Carey, OH 43316-0128

Carey Phone: 419/396-7841
Fax: 419/396-6094

DATA SHEET

SIZE: #57

AGGREGATE: Dolomite

SAMPLE: 1993 Average

SOURCE: Carey Quarry, Carey, OH.
SYSTEM: Silurian
SERIES: Niagaran
GROUP: Lockport
FORMATION: Guelph Dolomite

GRADATION:

Sieve Sizes	% Passing	Specification
1 1/2"	100	100
1"	99	95 - 100
3/4"	87	
1/2"	43	25 - 60
No. 4	4	0 - 10
No. 8	3	0 - 5

CRUSH COUNT: 100 % **DELETERIOUS:** 0 % **ELONGATED PIECES:** 0 %

UNIT WEIGHT: L - 81.9 Lb./Cu.Ft.
R - 91.3 "

SPECIFIC GRAVITY: 2.690

ABSORPTION: 1.1 %

% PASSING #200: 0.7 %

LA ABRASION: 31.2 % (ASTM Method B)

SODIUM SULFATE SOUNDNESS: 1.7 % Loss

D - CRACKING: 1.8 - Sound
2.5 - Maximum

CHEMICAL ANALYSIS

FeO	0.05 %
SiO_2	0.37 %
Al_2O_3	0.10 %
CaO	30.80 %
MgO	21.18 %
MnO	0.01 %
TiO_2	0.05 %
P_2O_5	0.01 %
S	0.02 %
L.O.I.	47.94 %

SILICA ANALYSIS / X-RAY DIFFRACTION:

Phase	Concentration	Detection Lmt.
Quartz	0.25 +/- 0.03 %	0.01 %
Cristobalite	0.79 +/- 0.12 %	0.08 %
Tridymite	0.00	0.03 %
Tripoli	0.00	

CALCIUM CARBONATE ($CaCO_3$): 54.40 %

MAGNESIUM CARBONATE ($MgCO_3$): 43.46 %

C

APPENDIX C

CONSTRUCTION REPORT
SOIL REMOVAL AND TREATMENT

FINAL CONSTRUCTION REPORT
SOIL REMOVAL AND TREATMENT

Summit National Superfund Site
Deerfield Township of Portage County, Ohio

OCTOBER 1995
REF. NO. 2372 (64)
This report is printed on recycled paper.

CONESTOGA-ROVERS & ASSOCIATES

TABLE OF CONTENTS

Page

1.0 INTRODUCTION 1

2.0 SCOPE OF WORK 3

3.0 REMEDIAL ACTION MANAGEMENT 6
- 3.1 CONSTRUCTION MANAGEMENT 6
- 3.1.1 Testing and Inspecting 6
- 3.2 CONTRACTOR 6
- 3.3 AGENCY OVERSIGHT 7
- 3.4 SITE SECURITY 7

4.0 PRE-CONSTRUCTION SUBMITTALS 8

5.0 SCHEDULE 9

6.0 SITE PREPARATION 10
- 6.1 SOIL EROSION AND SEDIMENT CONTROL 10
- 6.2 CLEARING AND GRUBBING 10
- 6.3 DEMOLITION 10

7.0 EXCAVATION AND BACKFILLING 13
- 7.1 CONTAMINATED SOIL/SEDIMENT REMOVAL 13
- 7.2 UNDERGROUND STORAGE TANKS (USTs) 16
- 7.2.1 Excavation and Removal of Steel USTs 17
- 7.2.2 Excavation and Removal of Concrete USTs 17
- 7.3 BURIED CONTAINERS 18
- 7.3.1 Excavation of Buried Containers 18
- 7.3.2 Removal of Buried Containers 19
- 7.4 BACKFILLING OF EXCAVATION AREAS 20

8.0 INCINERATION 22
- 8.1 GENERAL 22
- 8.2 DOCUMENTS SUPPORTING OPERATION OF THE INCINERATOR 23
- 8.3 AIR MODELING 24
- 8.4 PERFORMANCE DEMONSTRATION 25
- 8.5 INCINERATOR OPERATION 28

9.0 SAMPLING AND WASTE CHARACTERIZATION 31
- 9.1 BURIED CONTAINER SAMPLING 31
- 9.1.1 General 31
- 9.1.2 Sample Collection and Handling 32
- 9.2 UST SAMPLING 33

TABLE OF CONTENTS

Page

9.2.1 General 33
9.2.2 Sample Collection and Handling 33
9.3 ANALYTICAL RESULTS 34
9.3.1 Buried Containers 34
9.3.1.1 Waste Fingerprint/Compatibility Analytical Results 34
9.3.1.2 PCB Analytical Results 35
9.3.1.3 Waste Characterization Results 36
9.3.1.4 Wastestream Development 36
9.3.2 USTs 37
9.3.2.1 Characterization of UST Contents 37
9.4 DISPOSAL DECISIONS 38

10.0 TRANSPORTATION AND DISPOSAL 39
10.1 BURIED CONTAINERS 39
10.2 UST CONTENTS 39
10.3 REMOVAL AND DISPOSAL OF LAB-PACKED CHEMICALS 40

11.0 PERIMETER AIR MONITORING PROGRAM 41
11.1 GENERAL 41
11.2 REAL-TIME AIR MONITORING PROGRAM 41
11.3 COMPOUND-SPECIFIC AIR MONITORING PROGRAM 41
11.3.1 Background (Baseline) Air Sampling 42
11.3.2 Start and Balance (Active Excavation) Air Sampling 43

12.0 PROJECT CLOSEOUT 44

13.0 HEALTH AND SAFETY 45

LIST OF TABLES

		Following Text
TABLE 4.1	LIST OF CONTRACTOR SUBMITTALS	
TABLE 7.1	DESCRIPTION OF ON-SITE UNDERGROUND STORAGE TANKS	
TABLE 7.2	DRUM EXCAVATION SUMMARY	
TABLE 8.1	INCINERATOR PERFORMANCE CRITERIA	
TABLE 8.2	REVISION OF CANCER SLOPE FACTORS	
TABLE 8.3	PLANNED PERFORMANCE DEMONSTRATION TEST OPERATING CONDITIONS	
TABLE 8.4	PROPOSED INCINERATOR OPERATING PROTOCOL	
TABLE 8.5	SUMMARY OF QUANTITIES OF TREATED SOIL	
TABLE 8.6	SUMMARY OF TREATED SOIL	
TABLE 8.7	RESULTS OF ANALYSES OF TREATED SOILS FOR SELECTED ORGANICS	
TABLE 8.8	RESULTS OF TCLP ANALYSES OF TREATED SOILS FOR METALS	
TABLE 11.1	SUMMARY OF PERIMETER AIR MONITORING REPORTS	
TABLE 11.2	TARGET COMPOUNDS: PERIMETER AIR MONITORING PROGRAM	

LIST OF ATTACHMENTS

ATTACHMENT A	CONTAINER LOG SUMMARY
ATTACHMENT B	GEOTECHNICAL TESTING REPORTS
ATTACHMENT C	CONTAINER WASTE ANALYTICAL RESULTS SUMMARY
ATTACHMENT D	COMPLETED WASTE MANIFESTS

1.0 INTRODUCTION

The Final Construction Report contained herein is included as Appendix C to the Remedial Action Report (RA Report) for the Summit National Superfund Site (Site) in Deerfield, Ohio, and summarizes the field activities pertaining to Phase 3 of the RA, namely the Soil Removal and Treatment (SRT) at the Site. Construction activities commenced on April 29, 1994. On-Site thermal treatment of soils commenced on September 28, 1994 and was completed on April 3, 1995, approximately 15 months ahead of the United States Environmental Protection Agency (USEPA) and Ohio Environmental Protection Agency (OEPA) approved Remedial Construction (RC) schedule.

This report is organized as follows:

i) Section 1.0 - presents the purpose, background information, and layout of the final construction report;

ii) Section 2.0 - outlines the scope of work performed for soil removal and treatment;

iii) Section 3.0 - presents details of the Site management during the SRT activities;

iv) Section 4.0 - presents a summary of pre-construction submittals approved by USEPA and OEPA;

v) Section 5.0 - presents the schedule of RA activities;

vi) Section 6.0 - presents details of the Site preparation activities;

vii) Section 7.0 - presents details of the excavation of contaminated soils/sediments, buried containers and underground storage tanks, and backfilling of these excavation areas;

viii) Section 8.0 - presents details of the incinerator commissioning and startup activities and on-Site incineration of contaminated materials;

ix) Section 9.0 - presents the details of buried container and UST sampling, characterization, and disposal;

x) Section 10.0 - presents the details of final transportation and disposal of contaminated materials requiring off-Site disposal;

xi) Section 11.0 - presents the health and safety activities for the SRT activities;

xii) Section 12.0 - presents details of the air monitoring programs conducted at the Site during performance of SRT activities; and

xiii) Section 13.0 - presents details of project closeout and demobilization.

A set of As-Recorded Drawings which show the as-constructed details for the SRT activities are included as an attachment with this report, and consist of the following drawings:

Dwg. No.	*Rev. No.*	*Date*	*Title*
E-2	0	October 1995	Site Preparation and Demolition
E-3	0	October 1995	Excavation
E-4	0	October 1995	Typical Details
E-5	0	October 1995	Grading Details
E-6	0	October 1995	Cross-Section Locations
E-7	0	October 1995	Cross-Sections 0 and 100
E-8	0	October 1995	Cross-Sections 200 and 300
E-9	0	October 1995	Cross-Sections 400 and 500
E-10	0	October 1995	Cross-Sections 600 and 700

2.0 SCOPE OF WORK

The third phase of the RA to be implemented at the Site, as required by the Consent Decree, was the soil removal and treatment at the Site. Phase 3 of the RA consisted of the following activities:

i) preparation and submission of submittals by the contractor selected to perform the SRT activities describing design details in addition to those provided in the Final Design Report and RC Work Plan, for review and approval by USEPA and OEPA;

ii) development, implementation, and maintenance of a Site-specific Health and Safety Plan;

iii) operation and maintenance of an equipment decontamination facility, contaminated soil staging area, personnel decontamination facility, drum staging area, Site offices, emergency first-aid facility, mobile wastewater treatment facility, and sanitary facilities;

iv) air modeling to determine the impact of incinerator emissions on ambient air;

v) design, supply, on-Site installation, and shakedown of a mobile incinerator;

vi) completion of a performance demonstration of the mobile incinerator;

vii) demolition and on-Site disposal of existing utility poles, buried pipe, abandoned incinerator, sheds, OEPA trailer, abandoned weigh scale and buildings, abandoned truck, and other miscellaneous structures and objects;

viii) emptying and on- or off-Site treatment, as determined by on-Site groundwater treatment system capability, of contents of underground storage tanks;

ix) removal, dismantling, and on-Site disposal of underground storage tanks;

x) in place abandonment of two underground concrete tanks;

xi) excavation and on-Site incineration of visibly contaminated soil from a stockpile in Grid No. 5-5 generated by USEPA/OEPA during a previous emergency cleanup, and on-Site backfilling of soil from the same stockpile that was not visibly contaminated;

xii) excavation, overpacking, sampling, fingerprinting, characterization, waste handling, preparation, and off-Site treatment/disposal of buried drums/containers and their contents;

xiii) excavation and on-Site incineration of visibly contaminated soil immediately associated with excavated drums and containers and around or below excavated underground storage tanks;

xiv) excavation and on-Site incineration of the upper two feet of soil in designated grids (Grid Nos. 1-2, 2-2, 2-4, 2-5, 2-6, 3-1, 3-5, 4-3, 4-4, 4-5, 4-6, 4-7, 5-4, 5-6, 5-7, 6-4, 6-6, 6-7);

xv) excavation, handling, consolidation, and on-Site incineration of soils and sediments (which include the top two feet of soils from Grid Nos. 1-9 and 5-9, parts of Grid Nos. 6-4, 6-6, 6-7, and 4-8, and sediments from the east part of the east pond) stockpiled in the contaminated soil staging area by the groundwater extraction system contractor;

xvi) emptying drill cuttings contained in drums generated by USEPA/OEPA during previous investigations of the Site and staged by the groundwater treatment plant contractor on the contaminated soil staging area, crushing emptied drums, removing soil samples and jars from on-Site storage shed (Grid No. 1-1) and OEPA trailer (Grid No. 1-2), and backfilling all on the Site;

xvii) removal of water from the east and west ponds and on-Site treatment of removed water at the on-Site groundwater treatment plant;

xviii) excavation and on-Site incineration of the upper two feet of sediments from the east and west ponds;

xix) on-Site backfilling and compaction of incinerated soils and sediments;

xx) construction of protective concrete casings around existing on-Site wells and piezometers;

xxi) regrading Site to base of final Site cover;

xxii) project closeout including:

a) decommissioning of incinerator and associated facilities;
b) final decontamination of all Site equipment and facilities; and
c) demobilization from the Site.

3.0 REMEDIAL ACTION MANAGEMENT

3.1 CONSTRUCTION MANAGEMENT

CRA was retained by SNFT to provide oversight and management of the SRT activities. CRA's responsibilities included Site supervision, Site inspections, and liaison with the remedial contractors, SNFT, USEPA, OEPA, and adjacent property owners. As a minimum, one CRA representative was on Site for the duration of the construction activities.

3.1.1 Testing and Inspecting

R&R International (R&R) of Akron, Ohio was retained by SNFT to provide geotechnical testing services (grain size, moisture content, and compaction testing).

Analytical laboratory services were provided by Halliburton-NUS Laboratory (NUS) of Pittsburgh, Pennsylvania (heating value and chloride content of untreated soils and testing for cleanup criteria of untreated soil), Quanterra of Canton, Ohio (heating value, polychlorinated biphenyl and solids content of feed soil samples), Bowser-Morner of Dayton, Ohio (heating value and chloride contents of untreated soils), and Shrader Analytical and Consulting Laboratories, Inc. of Detroit, Michigan (air samples).

3.2 CONTRACTOR

Sevenson Environmental Services (SES) of Niagara Falls, New York was retained by SNFT on December 3, 1993 as the remedial contractor for the SRT activities. SES, as general contractor, performed the earthworks, drum excavation and disposal, and demolition. SES retained Advanced Soil Technologies, Inc. (AST) as the incinerator subcontractor and Waste Stream Technology (WST) of Buffalo, New York to perform the bulk

chemical testing. AST replaced CleanSoils, Inc. as the incinerator contractor when CleanSoils, Inc. withdrew from the project in February 1994.

3.3 AGENCY OVERSIGHT

Black and Veatch Waste Science & Technology Corporation (B&V) provided oversight activities for USEPA during the construction activities. In addition to weekly attendance at the Site by B&V, USEPA, and OEPA were kept informed of Site activities through correspondence, weekly and monthly progress meeting minutes, and quarterly progress reports.

3.4 SITE SECURITY

Mid-American Security Services Inc. provided security for the Site premises during the SRT phase of the RA. All workers and authorized visitors were required to sign in and out at the Site entrance every day. Daily Site sign-in sheets have been retained by SNFT. In addition to performing gate duty, security personnel conducted hourly checks of the Site perimeter during evening hours.

4.0 PRE-CONSTRUCTION SUBMITTALS

SES completed a number of documents describing construction and design features of their work program for the review and approval of USEPA and OEPA. These submittals described construction and design details specific to SES's work program and equipment (i.e., incinerator) which could not be included in the USEPA and OEPA approved Final Design Report and RC Work Plan. A list of the submittals prepared by SES and reviewed and approved by USEPA and OEPA is presented in Table 4.1.

5.0 SCHEDULE

As SES had commenced mobilization to the Site on March 23, 1994 for the installation of the GWES, SES was able to commence Site work for the SRT phase of the RA concurrent with Site work for the GWES phase. On-Site incineration of contaminated soils and sediments was completed on April 3, 1995 with the incinerator being fully demobilized from the Site on April 13, 1995, 659 days after USEPA and OEPA approval of the final design and 15 months ahead of the USEPA and OEPA approved construction schedule. Key milestone dates are presented below.

Activity	*Key Milestones Actual Schedule*
Contract Award	November 23, 1993
Commencement of Site Work	April 29, 1994
Completion of Performance Demonstration	September 19, 1994
Commencement of Treated Soil Backfilling	September 19, 1994
Commencement of Full-scale Incineration	September 28, 1994
Commencement of Excavation of Buried Containers	September 28, 1994
Completion of Excavation of Buried Containers	January 20, 1995
Completion of Incineration	April 3, 1995
Transportation and Off-Site Disposal of Buried Containers	May 4 to 18, 1995
Completion of Site Regrading	May 21, 1995
SRT Contractor Demobilization from Site	June 2, 1995
Demobilization	June 6, 1995

6.0 SITE PREPARATION

6.1 SOIL EROSION AND SEDIMENT CONTROL

Prior to clearing and grubbing operations, soil erosion and sediment controls were established. A silt fence was installed along the work area boundary to prevent sediments from being washed from the work area. Straw bales were placed as shown on Drawing E-2 in the natural drainage paths on Site, to help reduce the amount of erosion occurring. These soil erosion and sediment controls were maintained and modified as the work progressed during the performance of the SRT contract. The silt fence surrounding the Site was left in place on completion of the SRT contract, and was removed following completion of the final Site cover. During remedial construction activities, a series of perimeter dikes and swales were installed to direct surface runoff to the east pond. This water was initially treated by SES's mobile groundwater treatment system (bag filter) and was periodically pumped to the groundwater extraction system for conveyance to the on-Site groundwater treatment plant for treatment and discharge.

6.2 CLEARING AND GRUBBING

Clearing and grubbing of rubbish and the small trees was carried out as the work progressed. Materials generated from the clearing and grubbing were placed in fill areas beneath the final Site cover.

6.3 DEMOLITION

All pre-RA Site structures were demolished. Structures that were identified to be demolished included: the abandoned incinerator and associated buildings (Grid Nos. 5-6, 5-7, and 6-7), three storage sheds and their contents (Grid Nos. 1-1, 5-6, and 6-6), weigh scale and scale house (Grid No. 1-1), an abandoned dump truck (Grid No. 1-1), an OEPA storage trailer (Grid No. 1-2), and miscellaneous scrap metal. With the exception of the refractory liner and contents of the old abandoned incinerator, all resulting

demolition debris was placed as fill on Site beneath the final Site cover. The contents of the abandoned incinerator and the refractory liner were incinerated in the on-Site mobile incinerator and subsequently backfilled on Site under the final Site cover.

Drums containing soil cuttings and used personal protective equipment (PPE) generated during previous USEPA/OEPA investigations of the Site were emptied, with the soil cuttings being added to the stockpiled soils that were to be incinerated, and the used PPE and other miscellaneous debris were placed in a debris pile in Grid No. 3-2 that was subsequently placed as backfill into the west pond following excavation of contaminated sediments from the west pond. The emptied drums were crushed with a PC220 excavator and also placed in the debris pile in Grid No. 3-2 that was subsequently placed as backfill in the west pond. Empty drums stored in the wooden shed near the old incinerator also were crushed and placed as backfill in the west pond.

The old wooden storage shed and other miscellaneous sheds and buildings associated with the abandoned incinerator were demolished with a PC220 excavator, and the resulting debris was transferred to the stockpile in Grid No. 3-2. The PC220 was used to hammer the top of the kiln of the abandoned incinerator, causing the refractory liner to separate from the kiln. Subsequently, a gas cutting torch was used to cut the kiln in half longitudinally on May 5, 1994. After removing the top half of the kiln, the PC220 excavator excavated and loaded the majority of the refractory liner and other kiln contents into off-road dump trucks and transferred the debris to the contaminated soil staging area for on-Site incineration. Water was applied to the refractory liner for dust control as it was being excavated and loaded. Kiln liner that could not be loaded with the PC220 excavator was hand loaded into the bucket of the WA320 wheel loader which then loaded the off-road dump truck.

Contents of the wooden storage shed located on the scale platform in Grid No. 1-1 were transferred into the OEPA trailer on May 5, 1994. The OEPA trailer was then transferred to Grid No. 2-5 where it was temporarily staged. The wooden storage shed and the old scale house were

demolished on June 21, 1994, and the resulting debris was transferred to the excavated west pond where it was placed as backfill. The old scale platform was removed and transferred to the excavated west pond as backfill. The scale foundation was demolished and left in place as fill. The aqueous samples stored in the old wooden shed and in the OEPA trailer were transferred to the on-Site groundwater treatment plant for treatment prior to discharge. The soil and sludge samples stored in the OEPA trailer were transferred and mixed into approximately 10 cubic yards of soil to be incinerated on Site. The resulting mixture was sampled and analyzed for feed soil acceptance, was found to be suitable for on-Site incineration, and was incinerated on Site. The emptied OEPA trailer and the abandoned dump truck were reduced and placed as fill within the excavated east pond and within the drum excavation area in Grid No. 5-5, respectively.

Once the top two feet of soil was excavated in Grid Nos. 5-6 and 6-6, the area between the existing pole-mounted transformers and the existing access roadway (clean support area) was graded to its final subgrade elevation, and a temporary access way was constructed by placement of a 6-inch thick layer of clean imported soil. Ohio Edison, as owner of the transformers, then removed the three transformers off Site from the utility pole utilizing a standard boom truck on March 3, 1995. The abandoned utility poles and associated overhead wire were knocked down and placed as backfill in the excavated east pond.

The majority of the old coal tipple structure in Grid No. 2-3 was previously demolished by the groundwater treatment system contractor as detailed in Attachment A of the Remedial Action Report. The remaining above- and below-grade reinforced concrete portion of the structure was demolished in stages by SES. The debris was placed as backfill in the excavated east pond. The substructure of the coal tipple was demolished and removed such that it was not within the upper six inches of the final subgrade elevation.

7.0 EXCAVATION AND BACKFILLING

Excavation and handling of Site soils was performed to meet the following objectives:

i) excavation of soils identified for on-Site incineration;
ii) excavation of soils associated with drum removal;
iii) excavation of soils associated with UST removal;
iv) excavation of pond sediments identified for on-Site incineration; and
v) excavation of soils to meet design grades.

Similarly, backfilling of treated and regraded Site materials was performed to meet the following objectives:

i) backfill completed drum excavations;
ii) backfill completed pond sediment excavations;
iii) backfill soil and sediment following incineration; and
iv) dispose of demolition debris.

Excavation generally proceeded in a manner such that there was a sufficient area for backfilling of incinerated soil, thus minimizing stockpiling of incinerated soil. Each of these excavation and backfill activities is further described in the following sections.

7.1 CONTAMINATED SOIL/SEDIMENT REMOVAL

In accordance with the Final Design Report and as shown on Drawing E-3, the upper two feet of soil in designated grids and the upper two feet of sediment in the east and west ponds were excavated and incinerated in the on-Site mobile incinerator.

All Site soils were handled as being either contaminated or potentially contaminated with workers wearing either modified Level C PPE (air-purifying respirator available) or Level C PPE, depending on air monitoring results. To maintain depth control of the excavations, SES

utilized a tripod-mounted laser level along with string lines and a yard stick. The grids were surveyed both prior to and after excavation. CRA confirmed the required two feet of excavation by spot checks of the excavated surface.

Prior to commencement of the SRT contract, SES (under the GWES contract) had stockpiled approximately 2,500 cubic yards of contaminated soil and sediment from the GWES work area designated for on-Site incineration (from Grid Nos. 1-9, 5-9, 4-8, 6-4, 6-6, and 6-7 and from the east side of the east pond) in Grid No. 2-4 of the contaminated soil staging area. This stockpile was immediately available for feeding to the mobile incinerator when the SRT phase of the contract was underway.

The top two feet of soils in Grid Nos. 1-2, 2-2, and 3-1 were excavated and loaded with the PC220 excavator into off-road trucks, and transferred to the contaminated soil staging area in Grid Nos. 2-4 and 2-5 on May 14, 1995. On June 1, 1994, SES completed the excavation of the balance of soils in Grids Nos. 4-8 and 6-4 and transferred these soils to the east pond, where they were placed as a temporary dyke to create a small basin in the west half of the east pond for surface water control. The east half of the east pond sediments then were excavated and stockpiled in the contaminated soil staging area as part of the GWES phase of work.

The top two feet of soil in Grid No. 3-5 (excluding the pond area), 4-5, and 4-6 (grids previously identified as containing polychlorinated biphenyls (PCBs) at a concentration greater than 50 milligrams per kilogram (mg/kg) were excavated with the PC220 excavator and were stockpiled in their respective grids with a D58 Dozer between June 22 and 25, 1994. A 50 point soil composite sample was collected from each of the three stockpiles for PCB analysis. PCB analytical results revealed that the concentrations of PCBs in these soils was below 50 mg/kg, and consequently, a separate performance demonstration test of the incinerator for PCBs was not required (see Section 8.0 for further discussion). These data were presented to USEPA and OEPA in a letter dated July 6, 1994.

In late June 1994, the west pond was dewatered and the top two feet of sediments were removed. The removed water was treated in

the groundwater treatment plant. Working from both the north and south banks of the west pond, the PC220 excavator had sufficient reach to excavate and load the pond sediments. By installing a pump in a sump at the east end of the west pond and continuously pumping the free water from the excavation to the east pond, SES was able to excavate and load the pond sediments as a reasonably stable sludge. The pond sediments were excavated and directly loaded into off-road dump trucks, which then transferred the sediments to a stockpile area in Grid No. 5-6. Sediments were permitted to dewater by gravity in this area prior to being incinerated.

Following sufficient dewatering of the west half of the east pond, the temporary dyke that was installed on June 1, 1994 in the east pond as part of the GWES contract was excavated in September 1994 along with the pond sediments that were beneath the dyke. Excavating westward from the location of the dyke, free water from the sediments was able to drain towards the sump that was previously installed in the east end of the east pond. Using the PC400 with the extended boom, SES was able to completely excavate the remainder of the east pond from the south bank. The pond sediments were loaded directly into off-road dump trucks which transferred the sediments to the contaminated soil staging area in Grid No. 2-6, where they were stockpiled and allowed to further dewater. These sediments were subsequently mixed with dryer soils that were designated for incineration.

At the time of the performance demonstration test on September 8 and 9, 1994, all of the above identified soils were stockpiled pending incineration. As such, no excavation of soils occurred for several months until stockpiled soils had been incinerated. Excavation resumed in December 1994 with the excavation of soils from Grid Nos. 4-3 and 4-5.

The top two feet of the non-drum excavation portions of Grid Nos. 5-6, 6-6, and 6-7 were sequentially excavated in January 1995, with the PC220 excavator loading soils directly into an off-road dump truck which transferred the soil to the contaminated soil staging area in Grid Nos. 2-4 and 2-5. The top two feet of the contaminated soil staging area in Grid Nos. 2-4, 2-5, and 2-6 were excavated in March 1995, from east to west,

completing the required excavation of soils and sediments designated for incineration.

7.2 UNDERGROUND STORAGE TANKS (USTs)

As identified during the pre-design investigation, four USTs identified as UST 1, 2, 3, and 4 on Drawing E-2 of the RC Work Plan were identified to have their contents removed, and treated on Site or disposed of off Site. The USTs were to be emptied, removed, reduced, backfilled on Site, and the resulting excavation backfilled. Any visibly stained soils associated with a UST were to be excavated and incinerated on Site. A database search for USTs registered with the Ohio State Fire Marshall determined that there were no registered USTs at the Site, and hence a UST closure plan did not need to be filed with the Ohio State Fire Marshall.

In addition to the four USTs identified in the RC Work Plan, six USTs were encountered during remedial construction activities (note that several USTs identified prior to construction were renumbered, and as such the numbering shown in Drawing E-2 of the Final Construction Report should be referenced for all further discussions). The new USTs identified during construction are as follows:

i) two additional USTs (UST 04 and 05) were found in Grid No. 1-1 while sampling or removing USTs 01, 02, and 03;

ii) one additional concrete UST (UST 08C) was found in Grid No. 1-2 while excavating the upper two feet of contaminated soil (piezometer PX-1 had previously been installed through the tank); and

iii) one steel UST and two concrete USTs (UST 06, 09C, and 10C, respectively) were found in Grid No. 5-7 north of the abandoned incinerator while excavating the upper two feet of contaminated sediments. UST 09C and 10C appeared to have been previously abandoned.

A summary of all USTs found including a description of their contents and the closure method is presented in Table 7.1. The following two sections describe the closure method used for the steel USTs and the concrete USTs, respectively. The analytical results of the UST contents is presented in Section 10.2.

7.2.1 Excavation and Removal of Steel USTs

After excavating the soils overlying the steel USTs, holes for pump access were cut into the USTs using a metal saw. The contents were removed by pumping into a tanker truck following which the soils adjacent to the UST were excavated to the base elevation of the UST. Appropriately sized slings and/or chains were secured to the UST, which could then be lifted out of the excavation by the PC220 excavator and placed into the off-road dump truck. If no visibly stained soils were observed in the base of the excavation, the excavation was backfilled with excavated soil by the PC220 excavator. A flat plate tamper was used to compact the fill. Only the soils at the base of the excavation for UST 04 were visibly stained. These soils (approximately 70 cubic yards) were excavated and transferred to the contaminated soil staging area for incineration.

Once removed from the excavation, the steel USTs were purged with nitrogen and then were cut in half. The interiors were scraped and washed at the on-Site vehicle decontamination pad. The scrapings were added to the soil to be incinerated. The remnants of the steel USTs were further reduced by crushing and then placed as backfill within the east pond.

7.2.2 Excavation and Removal of Concrete USTs

Overlying soils were excavated to expose the tops of the concrete USTs. The contents of concrete USTs 07C and 08C were pumped out into SES' water treatment system. From there it was pumped into the East Pond, following which it was sent to the on-Site groundwater treatment plant for final treatment prior to discharge. The PC220 excavator was utilized to

remove the concrete tops of the USTs. The USTs were then collapsed by pushing on the sidewalls of the UST using the bucket of the PC220. The remaining cavity was backfilled with native soil which was compacted using a flat plate tamper.

The remains of the two concrete USTs (UST 09C and 10C) that were found near the abandoned incinerator were excavated at one end to verify that the tanks were not intact. The PC220 excavator then collapsed the remaining sidewalls and backfilled the cavity with native soils.

7.3 BURIED CONTAINERS

7.3.1 Excavation of Buried Containers

Excavation of buried containers commenced on September 28, 1994 and was completed by November 15, 1994 in the six areas of buried drums identified on Drawing E-3 of the RC Work Plan.

Excavation activities commenced at the area of buried drums located within Grid No. 5-3 and proceeded in the sequence shown in Table 7.2. Excavations were completed with the PC220 excavator, in a controlled and gradual manner. Within the area of buried containers, soil was excavated in maximum 1-foot depth increments with the excavation surface kept horizontal across the width of the excavation. As required, the excavations continued to a minimum depth of eight feet below original ground surface or in isolated areas to an elevation three feet below the deepest container encountered where this resulted in a depth greater than eight feet. Consequently, the excavation limit of excavation ranged from eight to 13 feet deep. In cases where the presence of metallic debris indicated buried containers potentially beyond the excavation face at the perimeter of excavation, the limit of the excavation was extended outwards until no such evidence was present. As such, the areal limits and depths of the buried drum removal areas were revised from those shown in the RC Work Plan. The revised limits of the excavations and their depths are shown on Drawing E-3.

Excavated native soils were stockpiled adjacent to the excavation. Visibly contaminated soils associated with buried containers were removed and either placed on polyethylene sheeting adjacent to the excavation pending relocation to the contaminated soil staging area or were loaded directly into an off-road dump truck for transport to the contaminated soil staging area. Soils which were not visibly contaminated were used to backfill the buried container excavations.

Following the completion of the buried container excavation activities stipulated in the RC Work Plan, additional containers were found near the surface in an area northwest of and contiguous to the area of buried containers located in Grid No. 5-7. Excavation and recovery of buried containers in this area, commenced on January 18, 1995 and was completed on January 19, 1995.

7.3.2 Removal of Buried Containers

The majority of containers found in the excavation areas were present at depths between two and six feet below ground surface. Upon removal from the excavation, all containers were numbered and logged and the ambient air was screened for volatile organics with an HNu. Drum hooks and/or slings attached to the excavation equipment were utilized to remove the containers from the excavation. All containers were observed to be either crushed or in poor condition and, consequently, had to be overpacked at the excavation. Both 85-gallon and 110-gallon overpacks were used. Overpack drums were transferred directly to staging areas, following packing, with aisleways left open for sampling access. Sampling and analyses of drum contents is presented in Section 9.

A total of 782 containers were excavated and removed from the container excavation areas. Four of the containers were 1-quart cans; 46 of the containers were 1-gallon cans; seven of the containers were 2-gallon cans; 286 of the containers were 5-gallon drums; 21 of the containers

were 30-gallon drums; and the remainder were 55-gallon drums. A complete summary of all containers excavated is presented in Table 1 of Attachment A.

All personnel in the area of active excavation were equipped with Level C PPE. Personnel handling drums within the excavation were equipped with a supplied-air respiratory system (Level B PPE).

7.4 BACKFILLING OF EXCAVATION AREAS

All soils placed at the Site were incinerated or on-Site regraded soils, with the exception of approximately 10,000 cubic yards of soil that were brought into the SRT contract work area from the GWTP and GWES work areas. No soils were imported onto the Site, except for those utilized in the final 24-inch Site cover.

Generally, the south and west portions of the Site required fill while the north and the east portions required excavation to meet the design subgrade elevation. The pre- and post-construction grades are shown on Drawing E-4. Backfilled soils were compacted to a minimum of 90 percent of the maximum dry density (ASTM D698). Geotechnical testing reports are included in Attachment B.

Backfilling was performed in accordance with normal backfilling procedures and as follows:

i) backfill locations for incinerated soils are presented in Table 8.6;

ii) coal segregated from soil designated for incineration was backfilled in the east pond following submission of test results to USEPA and OEPA. The coal data were presented in letters to USEPA and OEPA dated September 21, 1994 and April 17, 1995. Tests performed were Toxicity Characteristic Leaching Procedures, ignitability, corrosivity, reactivity, and PCB concentration. Ambient air concentrations for Volatile Organic Compounds (VOCs) immediately around the coal stockpile

were also monitored. Provided that these results indicated that the coal did not have hazardous characteristics as defined under 40 Consolidated Federal Register (CFR) Part 261 Subtitle C of the Resource Conservation Recovery Act (RCRA) or 40 CFR Part 761 of the Toxic Substances Control Act (TSCA), USEPA and OEPA approved in a September 5, 1994 Site meeting that these materials could be backfilled on Site under the final Site cover;

iii) the first lift of fill in each pond was placed in one 3-foot thickness due to the softness of the underlying soils. Subsequent lifts were placed and compacted as required in the RC Work Plan; and

iv) the maximum dry density of incinerated soil was found to be less than that of untreated soil [93 pounds per cubic foot (pcf) compared to 118 pcf]. This swell contributed to an increase in the final subgrade elevation over those shown on Drawing E-2 of the RC Work Plan.

8.0 INCINERATION

8.1 GENERAL

Incineration of soils and sediments was completed by AST. Approximately 21,100 tons of soil and sediments were incinerated, representing the following Site materials:

i) soil within the upper two feet of the grids designated on Drawing E-3 (approximately 17,400 tons);

ii) sediment within the upper two feet of the east and west ponds (approximately 2,500 tons);

iii) visibly contaminated soils within the USEPA stockpile (approximately 100 tons);

iv) visibly contaminated soils immediately associated with leaking drums within the drum excavations (approximately 1,000 tons);

v) visibly contaminated soils immediately associated with leaking USTs within the UST excavations (approximately 100 tons);

vi) drill cuttings stored in drums from the previous USEPA investigations of the Site (approximately three tons);

vii) samples in the OEPA storage trailer (approximately 0.25 ton); and

viii) refractory liner and contents of abandoned incinerator (approximately one ton).

Soils in the upper two feet of designated grids and the sediment in the upper two feet of the ponds were selected by USEPA and OEPA for incineration based on analytical testing of the soil as presented in the Remedial Investigation Report for the Site, indicating concentrations

representative of a 3×10^{-5} or greater additional cancer risk under a residential exposure scenario.

Incineration was performed at the Site commencing on August 1, 1994 and was completed on April 3, 1995. On August 1 to 3, 1994 a preliminary performance demonstration test was performed to assist AST in establishing operating protocol for the performance demonstration test. On September 8 and 9, 1994 the performance demonstration test was performed. Full scale operation of the incinerator commenced on September 28, 1994, following USEPA and OEPA review and acceptance of preliminary data and incinerator operating protocol resulting from the performance demonstration test.

The following sections describe key steps in the establishment of operating protocol for the incinerator and performance of the incineration.

8.2 DOCUMENTS SUPPORTING OPERATION OF THE INCINERATOR

In support of establishing operating protocol for the incinerator, SES and AST retained the services of Focus Environmental, Inc. (Focus) from Chatanooga, Tennessee to prepare documents describing the incinerator and its' operation and proposed operating protocol, for USEPA and OEPA approval. These documents were as follows:

i) Performance Demonstration Plan (PDP) which describes the proposed protocol and operation for the performance demonstration test. The PDP includes a Quality Assurance Project Plan (QAPP) describing stack gas sampling and testing methods;

ii) Operation and Maintenance Manual which describes manufacturer recommended operation and maintenance protocol for the incinerator;

iii) Vendor Manual which is a compilation of manufacturer's operating manuals and fact sheets for components of the incinerator;

iv) Incinerator Facilities and Process Information Plan which presents process schematics and control sheets;

v) Analytical Quality Assurance Project Plan which presents analytical methods and quality assurance protocol for the feed and incinerated materials;

vi) Air Modeling Plan which describes the methodology to model ambient air concentrations of contaminants resulting from stack emissions from the incinerator;

vii) Air Modeling Report which describes the results of the air modeling;

viii) Preliminary Performance Demonstration Report which presents the operating protocol utilized and the analytical results from the performance demonstration completed on September 8 and 9, 1995;

ix) Final Performance Demonstration Report, similar to Item viii) above, but including all analytical and field reporting sheets for backup; and

x) Incinerator Closure Plan which describes decontamination procedures for the incinerator upon project completion.

Some key features of the Air Modeling Report and Performance Demonstration Plan and Report are described in Sections 8.3 and 8.4.

8.3 AIR MODELING

Air modeling was performed by Galson Corporation for SES to determine the concentration of contaminants in the ambient air that may result from the potential release of these contaminants from the incinerator stack. All contaminants which had previously been found at the Site were included in the model. The models used were the

USEPA-approved Industrial Source Complex Model - Short Term (ISCST2) and a screening model (SCREEN2). The models were initially run prior to the operation of the incinerator and therefore included assumed operating protocol such as soil feed rate, temperature, metal partitioning to the stack, organic destruction in the incinerator, and air flow rates. Following the performance demonstration test, actual analytical data from the test as well as the approved operating protocol were used to rerun the model to confirm acceptable ambient air concentrations resulting from the incinerator operation.

Ambient air concentrations calculated were compared to USEPA and OEPA regulatory levels. As well, a hazard index and additional cancer risk were calculated to confirm that the incinerator emissions were not resulting in unacceptable health risks.

Comparison of calculated concentrations with regulated levels indicated that the operation of the incinerator would not result in any exceedances. In general, background concentrations exceeded or in a few cases equaled, the impact caused by the incinerator. The calculated total hazard index for non-carcinogenic compounds resulting from the operation of the incinerator was 0.21 which is less than the maximum acceptable value of 1.0. The additional cancer risk was similarly calculated as 1.20×10^{-6}, which is less than the maximum acceptable value of 1×10^{-5}.

In summary, the air model indicated that the operation of the incinerator resulted in no unacceptable concentration of contaminants in the ambient air.

8.4 PERFORMANCE DEMONSTRATION

A performance demonstration test was completed to determine the operating protocol for the incinerator which would result in acceptable incinerator performance. The performance demonstration process was comprised of seven stages as follows:

i) proposed operating protocol presented in the Performance Demonstration Plan;

ii) performance of a preliminary performance demonstration test on August 3 and 5, 1994 to determine if the operating protocol proposed in the Performance Demonstration Plan were capable of achieving the performance criteria;

iii) presentation of test results from the preliminary performance demonstration test in a letter to USEPA and OEPA dated August 24, 1994;

iv) shakedown of the incinerator in the week prior to the performance demonstration test;

v) completion of the performance demonstration test on September 8 and 9, 1994;

vi) presentation of the performance demonstration test results in a letter to USEPA and OEPA dated September 23, 1995; and

vii) USEPA and OEPA review of the September 23, 1994 letter and verbal approval to commence incinerator operation on September 28, 1994.

The itemized stages of the performance demonstration test are described in detail in the referenced letters and reports previously provided to USEPA and OEPA, and are briefly summarized in the following paragraphs.

The Performance Demonstration Plan was prepared by Focus, for SES and AST, to provide USEPA and OEPA information on the incinerator's operating protocol necessary to achieve the specified performance criteria. During the preparation of the Final Design Report, two separate sets of performance criteria were established. One set was established to address soil containing less than 50 mg/kg PCB and another to address soil containing 50 mg/kg or more PCB (Grid Nos. 3-5, 4-5, and 4-6). Subsequent

testing (letter from CRA to USEPA and OEPA dated July 6, 1994) indicated that soil in Grid Nos. 3-5, 4-5 and 4-6 had less than 50 mg/kg PCB. Therefore the need to enforce performance criteria for soil with 50 mg/kg or more PCB was no longer necessary. Therefore, one set of performance criteria were required to be demonstrated during the performance demonstration test. These are itemized on Table 8.1. The performance criteria for soil treatment were revised following commencement of incinerator operation to reflect a change in the Cancer Slope Factors for the polynuclear aromatic hydrocarbons. These changes are presented in a letter from CRA to USEPA and OEPA dated December 2, 1994 and are summarized in Table 8.2. In addition to revising Cancer Slope Factors, USEPA and OEPA also required that compounds not detected be assigned a value of the Method Detection Limit and not a value of zero, as previously approved. Based on the performance criteria, Focus established incinerator operating protocol for the performance demonstration test, which are summarized on Table 8.3. These were approved by USEPA and OEPA for utilization in the performance demonstration test.

The performance demonstration test was performed in two stages. On August 3 and 5, 1994, a preliminary performance demonstration test was performed to assist AST and Focus in confirming that the operating protocol proposed for the performance demonstration test would be acceptable. This preliminary test, as well as the performance demonstration test, were performed using soil from Grid No. 4-5. This grid was selected since, compared to other soil grids, it had a relatively high in-situ organic and chloride concentration. This information was presented in a letter from CRA to USEPA and OEPA dated July 15, 1994.

The results of the preliminary test were presented in a report prepared by Focus and presented to USEPA and OEPA under a CRA cover letter dated August 24, 1994. The report indicated that acceptable destruction and removal efficiencies (DREs) were achieved for toluene and naphthalene (the surrogate principal organic hazardous constituents (POHCs) monitored in the stack). Sampling in the stack for metals, particulate, hydrogen chloride (HCl) and chlorine gas (Cl_2) were not completed due to sampling port difficulties. Based on the results of the DRE testing, USEPA and OEPA permitted AST to perform a shakedown of the incinerator prior to

the performance demonstration test, however limited this shakedown to a one week period before the test due to the absence of the metals, particulate, HCl and Cl_2 test data.

The performance demonstration test was performed on September 8 and 9, 1994. The results of the test are described in detail in the Performance Demonstration Test Report submitted to USEPA and OEPA. A total of three identical test runs were performed, all of which indicated that the incinerator achieved the required performance criteria. Two additional test runs were abandoned when particulate emissions were observed at the stack, indicating baghouse failure. Baghouse difficulties persisted during the first two months of full scale incinerator operation and are described in more detail in Section 8.5.

The preliminary results of the performance demonstration test were presented to USEPA and OEPA on September 23, 1994. This report also presented proposed operating protocol to be used during full scale incinerator operation for approved by USEPA and OEPA. These operating protocol were selected by Focus based on worst case operating protocol (e.g., temperature, air flows) encountered during the performance demonstration test which still resulted in achievement of the performance criteria. These proposed operating protocol are presented in Table 8.3.

USEPA and OEPA reviewed the preliminary results of the test, and in a conference call between USEPA, OEPA, CRA, Focus, SES and AST on September 28, 1995, approved operation of the incinerator using the proposed operating protocol.

8.5 INCINERATOR OPERATION

Incinerator operation commenced on September 28, 1994 and was completed on April 3, 1995 when all soils designated for treatment had been treated. Table 8.4 presents the operating protocol used, Table 8.5 presents soil quantities treated on a weekly basis, Table 8.6 presents a batch by batch summary of soil treatment, and Table 8.7 presents a summary of the

analyses of treated soils for the organic compounds identified on Table 8.2 necessary to confirm achievement of acceptable soil treatment. Table 8.8 presents Toxicity Characteristic Leaching Procedure test data for metals in 40 CFR 261.24 Table 1. The remainder of this section briefly discusses these tables and significant background issues.

The incinerator was operated in accordance with the operating protocol presented in Table 8.4. A real-time monitoring system was installed on the incinerator to measure the parameters identified on Table 8.4, with the exception that chloride feed was measured by testing of the stockpiled soil prior to feeding. With regard to the remaining parameters, all protocol were followed with the exception that in mid-December 1994, a leak was found in the line sampling carbon monoxide from the stack. This caused the measured value of carbon monoxide to approach ambient air levels. In late December 1994, following shutdown of the incinerator for the holiday break, the line was replaced and a full audit of the real-time monitoring system was performed by two independent testing companies to confirm that it was operating acceptably. Monthly audits and periodic (weekly to bi-weekly) checks of the system were then conducted beginning January 1995 to confirm that it continued to function properly. All group A1 and A2 parameters identified on Table 8.4 were recorded every minute and the data printed out on 8 1/2 by 11-inch reporting sheets. These data as well as daily operating summaries were provided to USEPA and OEPA on a periodic basis through December 1994, and weekly thereafter.

Baghouse failures occurred frequently from incinerator startup to approximately early November 1994 and intermittently thereafter. The cause of the failures were not definitively determined, although they are believed to be related to excessive heat radiating off the hot treated soils, passing immediately under the bags within the baghouse. To address this concern, AST installed a water spray system to cool the soil before it passed under the bags. A Mod-U-Tank was set up in Grid No. 1-9 to store water to be used to cool the soil. The cooling water was obtained from the treated water discharge from the on-Site groundwater treatment plant. Following additional structural changes to the baghouse and adjustments to the spray

system, the frequency of bag failures decreased significantly after mid-November 1994.

A summary of soil treated in the incinerator is presented in Table 8.5. This table includes soil which were treated and subsequently retreated because they did not achieve the soil treatment criteria for organic compounds. Soils were tested for organic concentrations and TCLP metals in 500 ton batches. Five batches were retreated. Three of these batches (batches 3, 4, and 5 in Tables 8.7) were retreated based on failure of the treatment criteria for organics utilizing the original Cancer Slope Factor (see Table 8.2). Following revision of the Cancer Slope Factor, only two batches failed (batches 24 and 43). No soil batches failed the soil criteria based on TCLP metals (Table 8.8). Therefore, the contingent RCRA closure cell identified in the SOW was not required.

Table 8.6 identifies where soils meeting the treatment criteria were backfilled on the Site.

9.0 SAMPLING AND WASTE CHARACTERIZATION

9.1 BURIED CONTAINER SAMPLING

9.1.1 General

All containers excavated from the seven buried drum excavation areas were packed in overpack drums and staged on the on-Site staging pads prior to sampling. Container sampling was conducted on three occasions as sufficient numbers of containers were staged to warrant mobilization of sampling equipment and personnel.

The initial sampling phase was completed on November 7, 1994. All remaining drums excavated from the six areas previously identified in the RC Work Plan were sampled between November 28, 1994 and December 3, 1994 following completion of excavation activities. A third and final sampling phase for drums excavated from the previously unidentified drum area in Grid 5-7 commenced on January 19, 1995 and was completed on January 20, 1995.

A total of 782 containers were excavated from the buried drum areas and packed into a total of 468 overpack drums. Four containers were 1-quart cans; 46 were 1-gallon cans; 7 were 2-gallon cans; 286 were 5-gallon drums; 21 were 30-gallon drums; and the remaining were 55-gallon drums. During secondary inspection of the contents of overpack drums on the staging pads prior to sampling, 98 containers were determined to be empty as defined by RCRA (less than two inches of residue and less than one percent by weight).

A complete container log summary is presented in Table 1 of Attachment A.

9.1.2 Sample Collection and Handling

Most containers excavated from buried container areas were crushed or ripped and generally in poor condition. The majority of the 55-gallon drums were open-top types with no lids. Representative samples were obtained from these drums with no requirement to physically cut open the drums. For drums and small containers where access to solid or liquid contents was not easily obtained, a brass chisel was used to cut away a section(s) of the drum/container to expose its contents.

Sampling and oversight personnel were equipped with Level C PPE during all sampling activities. All drums had been previously screened with an HNu at the excavation. Cold weather and windy conditions minimized the potential for elevated VOC concentrations in the breathing zone during sample collection. The Site Health and Safety Officer (HSO) monitored air quality and the general progress of sampling to ensure activities were performed in accordance with the Site-Specific Health and Safety Plan.

Solid samples were collected using a new disposable stainless-steel trowel for each sample, while liquid samples were collected using a new disposable glass sample thief for each sample. Container contents were placed directly into prelabelled 1-liter glass sample jars with teflon-lined lids. Sampling personnel wore a new pair of latex gloves for each sample collected. Disposable sampling equipment and apparel were discarded in the overpack drum from which samples were collected.

As a minimum, one discrete sample was collected for each container of 30-gallon or more capacity. During inspection of the containers on the staging pads prior to sampling, containers of 5-gallon capacity or less were removed from overpack drums, classified and segregated into groups of similar contents. Composite samples of these groups were collected and designated C-01 through C-28. These groups were each placed in individual overpack drums.

A total of 482 samples were collected during the sampling events. Three hundred and seventy (370) of the samples collected were solids and one hundred and twelve (112) of the samples collected were liquids.

Sample jars were packed in coolers with packing material and ice to maintain a transport temperature below 4°C. Samples were shipped daily by courier during each sampling event to WST in Buffalo, New York using standard chain-of-custody protocols. All coolers had security seals placed on the lids to ensure that coolers had not been tampered with during transport.

A list of all samples submitted for waste characterization analyses is presented in Table 2 of Attachment C.

9.2 UST SAMPLING

9.2.1 General

Six USTs were sampled by SES. A complete UST summary is presented in Table 7.1.

9.2.2 Sample Collection and Handling

Prior to sampling UST contents,.organic vapors were measured at the tank openings and at the associated breathing height adjacent to the tanks. Based on the low concentration of organic vapors at breathing height, Level C PPE was deemed appropriate for use by all sampling personnel during UST sample collection.

Where possible, a discrete sample was collected for each liquid and/or sludge phase present within each tank. Prior to sample collection, a timber dip-stick was lowered into the tanks to determine the presence of multiple phases. To prevent cross-contamination between the tanks, a new piece of timber was used for each tank sampled. In all cases,

samples were collected using a new disposable glass sample thief. Sampling personnel wore a new pair of latex gloves for each sample collected. Samples of the UST contents were placed directly into prelabeled 1-liter glass sample jars with teflon-lined lids.

Sample jars were packed in coolers with packing material and ice to maintain a transportation temperature below 4°C. Samples were shipped by overnight courier to WST for analysis using standard chain-of-custody procedures. All coolers had security seals placed on the lids to ensure that coolers had not been opened prior to arrival at the laboratory.

9.3 ANALYTICAL RESULTS

9.3.1 Buried Containers

9.3.1.1 Waste Fingerprint/Compatibility Analytical Results

Each waste sample submitted to the laboratory was initially screened using the following waste fingerprint/compatibility tests:

i) air reactivity screen;
ii) pH;
iii) hexane solubility screen;
iv) water solubility/reactivity screen;
v) flammability screen;
vi) oxidizer/peroxide screen;
vii) cyanide/sulfide screen; and
viii) halogen screen.

The laboratory also recorded the color, density, and physical description of each sample. A complete description of the container contents and waste fingerprint/compatibility results are presented in Table 2 of Attachment C.

9.3.1.2 PCB Analytical Results

Following completion of waste fingerprint/compatibility analyses, samples were grouped into preliminary ten-sample composites or fewer and the resulting composite sample was analyzed for total PCB. These composite samples, referred to as PCB composite samples, were developed by combining ten or fewer compatible samples, as determined from waste compatibility results. All PCB compositing was performed by WST.

To identify and segregate individual containers whose PCB concentration potentially exceeded the 50 mg/kg TSCA regulatory limit, the resulting PCB concentration of the preliminary composite was multiplied by the total number of waste samples constituting the composite sample. If this number exceeded 50 mg/kg, then there was a potential that the contents of one container or more could exceed 50 mg/kg. For example, based on a ten-sample composite, 5 mg/kg or greater would indicate that one or more samples for that composite potentially exceed the 50 mg/kg TSCA Regulatory Limit. Conversely, a PCB concentration less than 5 mg/kg would indicate that no individual container for that composite exceeds the 50 mg/kg TSCA Regulatory Limit and, consequently, no further PCB testing would be required. For composite samples which potentially contain individual samples exceeding the 50 mg/kg TSCA regulatory limit, two new composite samples of the PCB composite sample were prepared using half the number of individual samples in each new composite sample as the original. These samples were analyzed, and evaluated using the same screening protocol. New PCB composite samples which revealed elevated levels of PCB were further reduced to individual sample analysis to isolate the associated containers with PCB content above the TSCA Regulatory Limit.

PCB analytical results are presented in Table 2 of Attachment C.

9.3.1.3 Waste Characterization Results

Following completion of PCB screening on PCB composite samples, individual container samples found to exceed the TSCA regulatory limit were segregated and combined into reasonably-sized compatible final composite groupings. Similarly, final composite groupings for samples passing PCB criteria were developed by combining compatible samples into reasonably-sized groups. The development of final composite groups was performed by SES and reviewed by CRA. Preparation and analyses of final composite samples were performed by WST and included the following characterization tests:

i) heating valve (BTU);
ii) total chloride;
iii) total bromide;
iv) total releasable cyanide;
v) total releasable sulfide;
vi) percent ash;
vii) percent moisture;
viii) specific gravity;
ix) Target Analyte List (TAL) metals
x) Target Compound List (TCL) Volatile Organic Compounds;
xi) TCL base/neutral and acid extractable organic compounds; and
xii) TCL pesticides/PCBs.

The results of the above analyses are presented in Tables 3 and 4 of Attachment C. The analytical reports have been previously provided to USEPA and OEPA.

9.3.1.4 Wastestream Development

Following review of the waste fingerprint/compatibility, PCB, and characterization analytical results, 11 wastestreams for the containerized waste were developed as follows:

Wastestream 1:	RCRA Metals, Solid
Wastestream 2:	RCRA Organic, Solid
Wastestream 3:	RCRA Organic, Liquid
Wastestream 4:	Non-Hazardous, Solid
Wastestream 5:	RCRA Organic/Metal, Solid
Wastestream 6:	RCRA Organic/Metal, Liquid
Wastestream 7:	Cyanide Bearing, Solid
Wastestream 8:	Flammable, Solid
Wastestream 9:	Flammable, Liquid
Wastestream 10:	TSCA, Flammable, Solid
Wastestream 11:	TSCA, Flammable, Liquid

A composite sample for each wastestream was prepared by WST and shipped to the proposed disposal facility for acceptance testing of the waste.

9.3.2 USTs

9.3.2.1 Characterization of UST Contents

All samples of UST contents collected were submitted by SES to WST for the following analyses:

i) ignitability;
ii) reactivity;
iii) pH;
iv) TAL metals;
v) TCL VOCs;
vi) TCL base/neutral and acid extractables organic compounds; and
vii) TCL pesticides/PCBs.

9.4 DISPOSAL DECISIONS

Written notification of the proposed disposal facilities were provided to USEPA and OEPA for review and approval. The disposal facilities utilized for disposal of buried container waste were as follows:

i) Chemical Waste Management (CWM)
Model City, New York
NYD049836679;

ii) E.Q. Company (EQ Co.)
Belleville, Michigan
MID040906633;

iii) LWD
Calvert City, Kentucky
KYD088438817; and

iv) Research Oil Company (ROC)
Cleveland, Ohio
OHD004178612.

Chemical characterization of UST contents indicated that USTs 01, 02 and 06 contained hazardous liquids, while USTs 03, 04 and 05 contained non-hazardous liquids. The non-hazardous contents of USTs 03 and 04 were deemed amenable to treatment by the on-Site groundwater treatment plant. Consequently, the contents of USTs 03 and 04 were transferred to the on-Site groundwater treatment plant for treatment. The contents of USTs 01, 02, 05, and 06 required treatment at an off-Site facility. ROC was utilized exclusively for disposal of contents of USTs 01, 02, 05 and 06. The contents of USTs 07c, 08c, 09c, and 10c were water. These contents were initially treated by SES's on-Site mobile water treatment system prior to being transferred to the on-Site groundwater treatment plant for treatment and discharge.

10.0 TRANSPORTATION AND DISPOSAL

10.1 BURIED CONTAINERS

Following USEPA and OEPA approval of the proposed disposal facilities and completion of wastestream development, direct loadout of staged containers onto transport vehicles commenced on May 5, 1995. Appropriate provisions of the Health and Safety Plan were maintained during the transportation and disposal phase of the program.

The sealed overpack drums were individually power washed at the vehicle decontamination pad and staged in the parking lot pending loadout. A rubber-tired loader, equipped with a drum grapple, loaded each overpack drum into the rear of a covered carrier transport trailer. Once inside the trailer, overpack drums were secured and a final inspection was performed.

Overpack drums comprising Wastestreams 1, 2, 4, and 5 were transported to EQ Co. on May 12 and 17, 1995 for stabilization and landfilling. Overpack drums comprising Wastestreams 3, 5, 6, and 7 were transported to ROC on May 18, 1995 for treatment. Overpack drums comprising Wastestreams 8 and 9 were transported to LWD on May 4 and 5, 1995 for incineration. Overpack drums comprising Wastestreams 10 and 11 were transported to CWM on May 11, 1995 for stabilization and landfilling.

Copies of the completed waste manifests are provided in Attachment D.

10.2 UST CONTENTS

Following chemical characterization of UST contents and determination of the appropriate methods of disposal for the contents of UST's 01, 02, 05 and 06, removal of tanked contents commenced. The disposal option selected for the UST contents are presented on Table 7.1. Appropriate provisions of the Site-specific Health and Safety Plan were

maintained during the removal, transportation and disposal phase of the program.

Removal of the liquid contents from USTs 01 and 02 (totaling 4,000 gallons) were completed on October 10, 1994. Tanked contents were pumped directly into a transport tanker and transported to ROC. On October 31, 1994 the liquid contents of UST 05 (totaling 1,350 gallons) was pumped directly into a transport tanker and transported to ROC. On March 1, 1995, the liquid contents of UST 06 (1,500 gallons) were pumped into a transport tanker and transported to ROC.

Copies of waste manifests for UST contents requiring off-Site disposal are provided in Attachment D.

10.3 REMOVAL AND DISPOSAL OF LAB-PACKED CHEMICALS

SES subcontracted Environmental Enterprises of Cincinnati, Ohio to remove and dispose of new and waste chemicals contained in small volume containers that were previously packaged into three 55-gallon lab packs by OEPA and left on Site following previous emergency response activities at the Site.

Prior to commencing lab pack removal activities, the contents of each lab pack were removed, inventoried, re-packed, and classified into one of the following waste classification groups based on information obtained from container labels and physical appearance of the materials:

i) waste organic solvents;
ii) basic inorganic waste; and
iii) acidic inorganic waste.

The lab pack materials were removed from the Site on October 3, 1995. Lab pack waste manifests and a completed inventory of lab packed waste materials removed from the Site are presented in Attachment D.

11.0 PERIMETER AIR MONITORING PROGRAM

11.1 GENERAL

Perimeter air quality was monitored at the Site by conducting two independent air monitoring programs. SES's HSO completed real-time air monitoring at the exclusion zone perimeter for total volatile organic compounds (TVOC) and dust. CRA conducted a compound-specific air monitoring program at the Site perimeter. Details and results of each program are provided in the following sections.

11.2 REAL-TIME AIR MONITORING PROGRAM

Real-time air monitoring was conducted by SES on a regular basis during periods of active excavation and backfilling around the exclusion zone perimeter at the Site. Based on real-time air monitoring data, action levels for TVOC and dust were not exceeded during any of the soil removal and treatment work activities. The results of the real-time monitoring were provided to USEPA and OEPA with the preliminary results of the Time Weighted Average (TWA) sampling and analysis performed by CRA.

11.3 COMPOUND-SPECIFIC AIR MONITORING PROGRAM

In addition to the real-time air monitoring program, a TWA compound-specific air monitoring program was conducted using Method TO-1 and NIOSH Method 5503 for selected VOCs and PCBs (Aroclor 1248), respectively. Sampling and analytical procedures were presented to USEPA and OEPA in the Perimeter Air Monitoring Program Quality Assurance Project Plan. Sampling stations were established along the perimeter of the Site (see Figure 11.1). Chain-of-custody forms and analytical results have been provided to USEPA and OEPA under separate cover as they were received.

Compound-specific air samples were collected daily during active periods of excavation and backfilling, at three locations: one upwind Site perimeter station, and two downwind Site perimeter stations. Target VOCs were monitored during all phases of the soil removal and treatment Contract, while PCB monitoring was conducted exclusively during excavation and handling of soils from Grid Nos. 3-5, 4-5, and 4-6. A summary of perimeter air monitoring sampling events is provided in Table 11.1. SKC Model 224 PC XR8 sampling pumps were calibrated before and after each sampling event using a flow rate specified for the individual sampling methodology employed. Flow rates were specified in the approved Perimeter Air Monitoring Program Quality Assurance Project Plan. TO-1 methodology involved collection of samples on two Tenax filled sorbent cartridges connected in series (primary and backup). NIOSH 5503 methodology involved collection of samples on a glass fiber particulate prefilter installed ahead of a Florisil cartridge. After sample collection, samples were sent under chain-of-custody to Shrader Laboratories, Inc. of Detroit, Michigan for analyses. Analytes analyzed for by TO-1 methodology were: chloroform, 1,2-dichloroethane, methylene chloride, tetrachloroethene, toluene, 1,1,1-trichloroethane, and xylenes; NIOSH 5503 methodology was used to analyze for the presence of PCB Aroclor 12480.

The following subsections summarize the individual phases of the compound-specific air sampling program.

11.3.1 Background (Baseline) Air Sampling

Background sampling to establish baseline air quality was conducted for 7 days prior to the initiation of active excavation work (March 24 to 30, 1994). Samples were obtained for eight hours on each day. During this time no intrusive work activities took place.

The results of the background monitoring were presented to USEPA and OEPA in a report dated June 2, 1994. Results of background air sampling revealed that the nine target analytes (see Table 11.2 for a listing) were not detected. In all cases, the concentrations were significantly below

OEPA Maximum Ambient Air Ground Level Concentration (MAGLC) concentrations (Table 11.2). Downwind concentrations were determined to be relatively similar to upwind concentrations indicating that the identified compounds were not Site related. As such, the data provided a suitable basis for comparison of ambient air concentrations determined throughout the performance of the soil removal and treatment activities.

11.3.2 Start and Balance (Active Excavation) Air Sampling

Excavation activities commenced on May 12, 1994. Sampling was conducted from this date to March 30, 1995, when excavation activities were completed. On each day that active excavation took place, sampling was conducted for a maximum of eight hours during those hours that work was performed. Sampling was suspended only on days of inclement weather conditions.

The results of all analyses were provided to USEPA and OEPA as they were received. The analytical data from the compound-specific perimeter air sampling program indicated that there was no exceedance of OEPA MAGLC concentrations for target compounds throughout the performance of the excavation and incineration activities and that ambient air concentrations were well below OEPA MAGLC concentrations.

12.0 PROJECT CLOSEOUT

Following the successful treatment of the soil and the subsequent closure and demobilization of the incinerator, SES cleaned and disassembled the waste preparation facility. The incinerator and waste preparation facility were decontaminated, as described in the Incinerator Closure Plan, reviewed and approved by USEPA and OEPA. After the overpack drums were transported off Site, the PC220 excavator and off-road haul truck were cleaned and demobilized. The PC400 excavator was demobilized in March 1995.

To facilitate the required grading along the north side of the Site, SES relocated their trailers to Grid No. 1-9, after the 100,000-gallon Mod-U-Tank was drained and disassembled. Other trailers, including the personal decontamination facility, lunch trailer and security trailer were all demobilized from the Site by June 6, 1995.

The vehicle decontamination facility was backfilled and the subgrade regrading was completed on May 21, 1995. The dozer and roller were then cleaned on a temporary decontamination facility in Grid No. 2-5. SES was completely demobilized on June 2, 1995, with only their granular activated carbon canisters from the temporary water treatment facility and the three remaining OEPA lab pack drums remaining on Site. These GAC units were subsequently removed from the Site on July 14, 1995. The lab packs were removed from the Site on October 3, 1995.

13.0 HEALTH AND SAFETY

Soil removal and treatment and related activities were conducted in accordance with SES' Site-Specific Health and Safety Plan (HASP). The Heath and Safety Plan provided specific information regarding air monitoring, use of personnel protective clothing and equipment, work area designations, hospital routes, and emergency numbers. A copy of the HASP was kept on Site and was made available to all Site personnel and visitors. Prior to commencing on-Site activities, a project briefing meeting was conducted at the Site on April 12, 1994 with representatives from the Portage County Emergency Management Association, fire and rescue personnel, the Portage County Sheriffs Office, Robinson Memorial Hospital, and the Ohio State Highway Patrol. A follow-up meeting was held on August 18, 1994 at the Site, once the incinerator was fully operational.

SES maintained a Health and Safety Officer at the Site during any potentially hazardous work activities. The Health and Safety Officer performed the air monitoring on and around the Site and ensured that all on-Site personnel were properly informed and trained as required by the HASP. The results of air sampling and analysis were presented in Section 11.

No health and safety problem impacting workers or the public occurred during the incineration project.

TABLE 4.1

LIST OF CONTRACTOR SUBMITTALS
FINAL CONSTRUCTION REPORT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Site-Specific Health and Safety Plan

On-Site Spill and Hazardous Substances Release and Control Plan

Air Modeling Plan

Air Modeling Report

Waste Preparation Facility Components and Plan

Drum/Container Facility Components and Plan

Underground Storage Tank Removal Plan

Performance Demonstration Plan

Incinerator Facilities and Process Information Plan

Incinerator Operations and Maintenance Plan

Vendor Manual

Incinerator Closure Plan

Ash Sampling and Analysis Plan

Consolidated Waste Sampling and Analysis Plan

Performance Demonstration Report

Excavation Plan

TABLE 7.1

DESCRIPTION OF ON-SITE UNDERGROUND STORAGE TANKS
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

UST #	*Grid Location*	*Tank Dimensions*	*Volume of Tank (Gallons)*	*Volume of Contents (Gallons)*	*Description of Contents*	*Date Pumped*	*Date Removed/Crushed*	*Content Disposition*
UST-01	1-1	12' x 64"	2,000	2,000	Clear Liquid Small amount of suspended solids	10-10-94	10-10-94	Research Oil (Hazardous)
UST-02	1-1	12' x 64"Ø	2,000	2,000	Clear Liquid Small amount of suspended solids	10-10-94	10-31-94	Research Oil (Hazardous)
UST-03	1-1	24' x 64"Ø	4,000	4,000	Clear Liquid Petroleum Odor	10-10-94	10-10-94	GWTS
UST-04	1-1	12' x 64"Ø	2,000	2,000	Clear Liquid Petroleum Odor	10-10-94	10-10-94	GWTS
UST-05	1-1	12' x 64"Ø	1,125	1,125	Clear Liquid	10-31-94	10-31-94	Research Oil (Non-hazardous)
UST-06	5-7	12' x 64"Ø	2,000	1,350	Clear Liquid	03-01-95	03-01-95	Research Oil (Non-hazardous)
UST-07c	1-2	8' x 4' x 4'	960	960	Clear Liquid water	05-13-94	05-13-94	Contractor On-Site Treatment System and GWTS
UST-08c	1-2	8' x 4' x 4'	960	960	Clear Liquid water	05-16-94	05-16-94	Contractor On-Site Treatment System and GWTS
UST-09c	5-7	8' x 4' x 4'	960	0	NA	NA	01-31-95	NA
UST-10c	5-7	8' x 4' x 4'	960	0	NA	NA	01-31-95	NA

Notes:

1. NA - Not Applicable.
2. UST 07C was named UST 04 in the Work Plan.
3. Subscript 'c' refers to tanks of concrete construction. All other tanks were steel.
4. GWTS = On-Site Groundwater Treatment System.

TABLE 7.2

DRUM EXCAVATION SUMMARY
FINAL CONSTRUCTION REPORT
SMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Drum Excavation Area (Grid Nos.)	*Excavation Date*	*Number of Overpack Drums*	*Excavation Volume (cubic yards)*
5-3	9-28-94	No Drums	133
6-5	9-29-94	10	148
5-7/6-7	2-29-94 to 10-5-94	124	311
3-5	10-6-94	No Drums	238
5-4/4-5	10-17-94 to 10-28-94	147	1,961
5-7/4-7	11-8-94 to 11-15-94	180	1,799
5-7*	1-18-95	7	23
Totals		**468**	**4,613**

Note:

* Found while excavating soil designated for incineration.

TABLE 8.1

INCINERATOR PERFORMANCE CRITERIA
FINAL CONSTRUCTION REPORT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD OHIO

1. The additional cancer risk resulting from exposure to the fly ash[8] and treated soil shall not exceed 3×10^{-5}. Additional cancer risk shall be calculated as follows:

$$\text{Additional Cancer Risk} = \sum_{n=1}^{n=x} (\text{Daily Intake})_n \times CSF_n$$

$$= \sum_{n=1}^{n=x} \frac{(4.6\ \text{mg/kg - visit})\ (160\ \text{visits/year})\ (\text{kg}/10^6\ \text{mg})\ [N] \times CSF_n}{365\ \text{days/year}}$$

$$= 2.02 \times 10^{-6}/\text{day} \sum_{n=1}^{n=x} [N]\ CSF_n$$

Where:
- n — reference to all carcinogenic TCL VOCs, BNAs and pesticides and PCBs,
- CSF_n — is the current (August 30, 1993) cancer slope factor for chemical n published in the USEPA Integrated Risk Information System and Health Assessment Summary Tables. The CSF for carcinogenic PAHs* shall employ the CSF for benzo(a)pyrene.
- [N] — is the concentration of chemical 'n' in mg/kg.

Carcinogenic PAHs: fluoranthene, benzo(b)fluoranthene, benzo(k)fluorothene, benzo(a)pyrene, indeno(1,2,3-c,d)pyrene and dibenzo(a,h)anthracene.

Non-detected chemicals will be assigned a concentration of 0.0 ppm for insertion in the above equation. [1] [2] [6] [7]

2. stack air emissions when feeding RCRA Principal Organic Hazardous Constituents (POHCs) shall have concentrations of less than 0.1 g/kg of the RCRA POHC introduced into the thermal desorber to obtain a Destruction and Removal Efficiency of at least 99.99%, in accordance with 40 CFR 264.343(a)(1). [1]

3. stack particulate emissions shall be less than 180 mg/dscm (0.08 gr/dscf) when corrected to 7% oxygen, in accordance with 40 CFR 264.343(2)(c).[1]

4. stack emissions of more than 1.8 kg/hr (4 lbs/hr) of hydrogen chloride (HCl) shall be controlled such that the HCl emission rate is no greater than the larger of either 1.8 kg/hr or 1% of the HCl in the stack gas prior to entering any pollution control equipment (99% removal efficiency), in accordance with 40 CFR 264.343(b). [1] [3]

TABLE 8.1

INCINERATOR PERFORMANCE CRITERIA
FINAL CONSTRUCTION REPORT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD OHIO

5. the emission of metals shall not exceed levels as calculated based on the air model specified in Section 02002 based on a total additional lifetime cancer risk not exceeding 1×10^{-5} for carcinogenic compounds and a Hazard Index not exceeding 1.0.(1) (4)

6. average stack emissions of carbon monoxide must not exceed 100 ppm by volume calculated as the rolling average of the last 60 readings over an hour corrected to 7 percent oxygen in accordance with the guidelines in the USEPA Hazardous Waste Incineration Guidance Series. (5)

7. sound levels at 200 feet from the thermal desorber shall not exceed 60 dB, or 10dB more than background levels at any property line.

8. the thermal desorber and APCE shall be operated to prevent exceedances of National Ambient Air Quality Standards, New Source Performance Standards, National Emission Standards for Hazardous Air Pollutants, Prevention of Significant Deterioration and OEPA (Threshold Limit Values (ACGIH) divided by 70) requirements. (1)

Notes:

(1) Confirmed during performance demonstration test.

(2) Ongoing testing of treated soils during normal incinerator operation.

(3) HCl controlled by limiting organic chloride feed to incinerator.

(4) Based on air modeling. Metals data from performance demonstration used to confirm modeling assumptions.

(5) Confirmed by real time monitoring of stack emissions during normal incinerator operation.

(6) Clean-up criteria for soil revised during project. See Table 8.2.

(7) Soils also required to have Toxicity Characteristic Leaching Procedure concentrations less than those stipulated in 40 CFR 261.24.

(8) Fly ash mixed with treated soil prior to leaving incinerator. No separate testing of fly ash was performed.

TABLE 8.2

REVISION OF CANCER SLOPE FACTORS
FINAL CONSTRUCTION REPORT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Compound	*Final Design Report CSF*		*Revised CSF* (1) (2)	
fluoranthene	7.31	1/(mg/kg-day)	0	
benzo(b)fluoranthene	7.31	1/(mg/kg-day)	0.731	1/(mg/kg-day)
benzo(k)fluoranthene	7.31	1/(mg/kg-day)	0.0731	1/(mg/kg-day)
benzo(a)pyrene	7.31	1/(mg/kg-day)	7.31	1/(mg/kg-day)
indeno(1,2,3-c,d)pyrene	7.31	1/(mg/kg-day)	0.731	1/(mg/kg-day)
dibenzo(a,h)anthracene	7.31	1/(mg/kg-day)	7.31	1/(mg/kg-day)
benzo(a)anthracene	0	1/(mg/kg-day)	0.73	1/(mg/kg-day)
chrysene	0	1/(mg/kg-day)	0.0073	1/(mg/kg-day)
Aroclor 1248	7.7		no change	
hexachlorobenzene	1.6		no change	
bis(2-ethylhexyl)phthalate	0.014		no change	

Notes:

(1) CSF - Cancer Slope Factor
(2) Use revised CSF and Value of Method Detection Limit when compound not detected

TABLE 8.3

PLANNED PERFORMANCE DEMONSTRATION TEST OPERATING CONDITIONS
FINAL CONSTRUCTION REPORT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Control Parameter (1)	*Test Conditions (1)*
Soil feed rate (ton/hr)	18 - 22
Toluene feed rate (lb/hr) (2)	28 - 32
Naphthalene feed rate (lb/hr) (2)	50 - 70
Chloride feed rate (lb/hr) (3)	<3.8
Propane feed rate (scfh) (4)	As required
Rotary dryer treated soil exit temperature (°F)	800 - 1,000
Rotary dryer draft (inches w.c.)	>0.01
Baghouse differential pressure (inches w.c.)	>2
Thermal oxidizer gas outlet temperature (°F)	1,700 - 1,900
CEMs carbon monoxide (ppm_v @ 7% oxygen)	<100
Baghouse exit flow rate (acfm)	10,000 - 14,000

Notes:

(1) All values are estimated ranges. Final values were determined from the performance test results.
(2) Surrogate POHCs mixed with feed soils in hopper.
(3) Ambient concentration in soil.
(4) Burner fuel.

TABLE 8.4

INCINERATOR OPERATING PROTOCOL
FINAL CONSTRUCTION REPORT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Control Parameter (1)	*AWFCO Condition (2)*	*Comment*
GROUP A1 PARAMETERS		
Maximum rotary dryer soil feed rate (tons/hr)	25	1-minute rolling average AWFCO
Minimum rotary dryer exit soil temperature (°F)	720	1-minute rolling average AWFCO
Minimum thermal oxidizer exit gas temperature (°F)	1,700	1-minute rolling average AWFCO
Maximum baghouse exit gas flow rate (ft3/min, actual)	15,000	1-minute rolling average AWFCO
GROUP A2 PARAMETERS		
Minimum rotary dryer draft (inches w.c.)	0.01	15-second delay before AWFCO
Minimum baghouse differential pressure (inches w.c.)	2	Instantaneous AWFCO
Maximum stack gas carbon monoxide (ppmv)	100	60-minute rolling average AWFCO
I.D. Fan failure	-	Instantaneous AWFCO
Burner system failure	-	Instantaneous AWFCO
Power failure	-	Instantaneous AWFCO
GROUP B PARAMETERS		
Maximum chloride feed rate (lb/hr) (3)	3.8 (3)	Not an AWFCO parameter

Notes:

(1) Group A parameters were continuously monitored and are interlocked with the automatic waste feed cut off system.
Group A1 parameters were established from the performance test results.
Group A2 parameters were based on safety and/or good operating practice considerations.
(2) AWFCO - Automatic Waste Feed Cut Off.
(3) Based on soil feed testing showing organic chloride levels less than 98 mg/kg.

TABLE 8.5

SUMMARY OF QUANTITIES OF TREATED SOIL
FINAL CONSTRUCTION REPORT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Week Number (1)	*Week Ending*	*Weekly Total (2)*	*Running Total (2)*
	31-Jul		0
-4	7-Aug	455	455
-3	14-Aug	45	500
-2	4-Sep	515	1118
-1	11-Sep	417	1532
1	2-Oct	273	1808
2	9-Oct	72	1877
3	16-Oct	930	2807
4	23-Oct	84	2091
5	30-Oct	301	3281
6	6-Nov	808	3040
7	13-Nov	1461	5410
8	20-Nov	1556	6266
9	27-Nov	554	7520
10	4-Dec	2006	9526
11	11-Dec	681	10206
12	18-Dec	591	10797
13	25-Dec	478	11278
14	1-Jan	0	11278
15	8-Jan	0	11278
16	15-Jan	391	11666
17	22-Jan	958	12622
18	29-Jan	1090	13697
19	5-Feb	712	14409
20	12-Feb	977	15386
21	19-Feb	1354	16740
22	26-Feb	1252	17002
23	5-Mar	1493	19485
24	12-Mar	847	20332
25	19-Mar	1170	21503
26	26-Mar	1200	22703
27	1-Apr	500	23203

Notes:

(1) Refers to weeks prior to or following USEPA and OEPA approval to commence full scale operation.
(2) Includes soil not passing treatment criteria which were subsequently retreated.

TABLE 8.6

SUMMARY OF TREATED SOIL
FINAL CONSTRUCTION REPORT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Batch No.	*Bin No.*	*Tonnage From*	*Tonnage To*	*Tonnage Net*	*Total Approved*	*Status*	*Date Moved*	*Backfill Location*
1	3	0	500	500*	500	pass	27-Sep	Grid No. 2-2
2	4	500	1,000	500*	1,000	pass	27-Sep	Grid No. 2-2
3	5	1,000	1,500	500*	1,500	pass	6-Oct	Grid No. 3-5
4	6	1,500	2,000	500*	-	fail	4-Nov	Soil staging area - retreated
5	5	2,000	2,500	500*	-	fail	4-Nov	Soil staging area - retreated
6	3	2,500	2,890	390*	1,890	pass	3-Nov	Grid Nos. 3-5/4-5
7	4	2,890	3,390	500*	-	fail	8-Nov	Soil staging area - retreated
8	2	3,390	3,890	500*	-	fail	8-Nov	Soil staging area - retreated
9	1	3,890	4,390	500*	2,390	pass	15-Nov	Grid Nos. 4-3/5-3/5-4
10	6	4,390	4,890	500*	2,890	pass	15-Nov	Grid Nos. 4-3/5-3/5-4
11	3	4,890	5,390	500*	3,290	pass	19-Nov	Grid No. 4-4
12	5	5,390	5,890	500*	3,615	pass	22-Nov	Grid Nos. 4-3/4-4
13	2	5,615	6,107	492	4,107	pass	26-Nov	Grid No. 6-5
14	6	6,107	6,607	500	4,607	pass	29-Nov	Grid No. 4-3
15	4	6,607	7,107	500	5,107	pass	30-Nov	Grid No. 4-3/5-3
16	3	7,107	7,607	500	5,607	pass	14-Dec	Grid No. 5-4
17	5	7,607	8,107	500	6,107	pass	10-Dec	Grid No. 4-4
18	2	8,107	8,607	500	6,607	pass	8-Dec	Grid No. 5-3
19	1	8,607	9,107	500	7,107	pass	8-Dec	Grid Nos. 4-3/4-4
20	6	9,107	9,607	500	7,607	pass	15-Dec	Grid No. 4-4
21	4	9,607	10,107	500	8,107	pass	6-Jan	Grid Nos. 4-3, 5-3
22	2	10,107	10,607	500	8,607	pass	9-Jan	Grid Nos. 4-4, 5-3
23	5	10,607	11,107	500	9,107	pass	24-Jan	Grid Nos. 4-3, 5-3
24	6	11,107	11,607	500	9,607	pass	23-Jan	Grid Nos. 4-3, 5-3
25	5	11,607	12,107	500	-	fail	-	retreated
26	4	12,107	12,607	500	10,107	pass	30-Jan	Grid Nos. 5-3, 5-4
27	3	12,607	13,107	500	10,607	pass	4-Feb	Grid Nos. 3-4, 4-4
28	6	13,107	13,607	500	11,107	pass	7-Feb	Grid No. 5-4

TABLE 8.6

SUMMARY OF TREATED SOIL
FINAL CONSTRUCTION REPORT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Batch No.	*Bin No.*	*Tonnage From*	*Tonnage To*	*Tonnage Net*	*Total Approved*	*Status*	*Date Moved*	*Backfill Location*
29	2	13,607	14,107	500	11,607	pass	10-Feb	Grid No. 6-6
30	1	14,107	14,607	500	12,107	pass	16-Feb	Grid Nos. 4-3, 4-4
31	4	14,607	14,833	226	12,333	pass	17-Feb	Grid Nos. 5-3,5-4
32	5	14,833	15,333	500	12,833	pass	17-Feb	Grid Nos. 5-3, 5-4
33	3	15,333	15,833	500	13,333	pass	22-Feb	Grid Nos. 4-3, 5-3
34	4	15,833	16,333	500	13,833	pass	23-Feb	Grid Nos. 6-2, 6-3
35	2	16,333	16,833	500	14,333	pass	1-Mar	Grid No. 3-3
36	5	16,833	17,333	500	14,833	pass	3-Mar	Grid No. 2-4
37	3	17,333	17,833	500	15,333	pass	4-Mar	Grid No. 2-4
38	4	17,833	18,333	500	15,833	pass	10-Mar	Grid No. 2-5
39	1	18,333	18,833	500	16,333	pass	11-Mar	Grid No. 2-5
40	2	18,833	19,333	500	16,833	pass	13-Mar	Grid No. 2-5
41	3	19,333	19,833	500	17,333	pass	18-Mar	Grid No. 2-6
42	5	19,833	20,333	500	17,833	pass	21-Mar	Grid No. 2-4
43	4	20,333	20,833	500	17,833	fail	24-Mar	soil staging area - retreated
44	2	20,833	21,333	500	18,333	pass	27-Mar	Grid No. 3-3
45	1	21,333	21,833	500	18,833	pass	1-Apr	Grid No. 3-3
46	5	21,833	22,333	500	19,333	pass	3-Apr	Grid No. 3-3
47	3	22,333	22,833	500	19,833	pass	5-Apr	Grid No. 3-4
48	6	22,833	23,333	500	20,333	pass	7-Apr	Grid No. 3-3
49	2	23,333	23,833	500	20,833	pass	9-Apr	Grid No. 3-4
50	4	23,833	24,066	233	21,066	pass	11-Apr	Grid No. 3-4

Notes:

* The tonnages for Batch Nos. 1 through 12 were based on total incinerator throughput, with no deductions made for soils that were retreated based on initial low dryer temperature (2,961 tons). As such, each of these batches is actually less than the stated amount.

TABLE 8.7

RESULTS OF ANALYSES OF TREATED SOIL FOR SELECTED ORGANICS
FINAL CONSTRUCTION REPORT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Compound	*CSF (1) Multiplier*	*Concentration (mg/kg)*								
Batch No.		*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*
Tonnage		*0 - 500*	*500 - 1000*	*1000 - 1500*	*1500 - 2000*	*2000 - 2500*	*2500 - 2890*	*2890 - 3390*	*3390 - 3890*	*3890 - 4390*
WST Lab. No. (2)		*8093*	*8094*	*8095*	*8718*	*8817*	*8913*	*9174*	*9283*	*9554*
Aroclor 1248	7.7	0.22	0.17	0.16	0.55	0.55	U(0.008)	0.45	0.29	0.089
hexachlorobenzene	1.6	0.107	U(0.07)	U(0.07)	0.194	0.269	U(0.07)	0.114	0.71	U(0.07)
fluoranthene	0	0.172	0.214	U(0.07)	1.07	0.723	0.095	0.607	1.82	0.432
benzo(a)anthracene	0.73	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
chrysene	0.0073	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
bis(2-ethylhexyl)phthalate	0.014	0.646	0.182	U(0.07)	0.119	1.140	U(0.07)	0.686	0.34	0.29
benzo(b)fluoranthene	0.731	0.138	0.182	U(0.07)	0.871	0.471	0.107	0.606	0.951	0.267
benzo(k)fluoranthene	0.0731	0.118	0.108	U(0.07)	0.565	0.312	0.082	0.592	1.06	0.268
benzo(a)pyrene	7.31	0.106	0.101	U(0.07)	0.876	0.387	0.097	0.580	1.09	0.303
indeno(1,2,3-c,d) pyrene	0.731	U(0.07)	0.089	U(0.07)	0.761	0.379	0.105	0.285	1.32	0.297
dibenzo(a,h)anthracene	7.31	U(0.07)	U(0.07)	U(0.07)	U(0.07)	0.146	U(0.07)	U(0.07)	U(0.07)	U(0.07)
CSF x Concentration (3)		3.32	2.88	2.48	12.70	9.22	1.56	9.10	13.59	3.96
Pass/Fail (4)		Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass

Notes:

(1) CSF - Cancer Slope Factor 1/(mg/kg-day)

(2) Waste Stream Technology (WST) Laboratory number. All numbers as shown are preceeded by "WS".

(3) Not detected concentrations are assumed to have the value of the method detection limit (MDL) which is 0.07 mg/kg for all compounds except Aroclor 12480 which has a MDL of 0.008 mg/kg.

(4) To pass, the sum of the CSFs multiplied by the concentrations should be less than 14.85 in order for the additional cancer risk to be less than 3 x 10E-5.

U(0.07) Not detected at a detection limit shown in parenthesis.

J Estimated value below the PQL of 0.330 mg/kg but above the MDL of 0.070 mmg/kg.

D Compound identified in an analysis at a secondary dilution factor.

N.A. Sample not analyzed for indicated compound.

TABLE 8.7

RESULTS OF ANALYSES OF TREATED SOIL FOR SELECTED ORGANICS
FINAL CONSTRUCTION REPORT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Compound	*CSF (1) Multiplier*	*Concentration (mg/kg)*								
Batch No.		*10*	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*
Tonnage		*4390 - 4890*	*4890 - 5390*	*5390 - 5890*	*55615 - 6107*	*6107 - 6607*	*6607 - 7107*	*7107 - 7707*	*7707 - 8207*	*8107 - 8607*
WST Lab. No. (2)		*9779*	*9878*	*9877*	*9924*	*9952*	*10023*	*10142*	*10334*	*10415*
Aroclor 1248	7.7	0.15	0.06	0.04	0.10	0.068	0.201	0.186	0.162	0.220
hexachlorobenzene	1.6	U(0.07)	U(0.07)	U(0.07)	U(0.07)	0.071	0.125	0.161	U(0.07)	0.145
fluoranthene	0	0.291	0.145	0.214	0.385	0.203	0.188	0.531	0.268	0.486
benzo(a)anthracene	0.73	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
chrysene	0.0073	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
bis(2-ethylhexyl)phthalate	0.014	0.205	0.077	0.109	0.326	0.161	0.381	0.344	0.131	0.262
benzo(b)fluoranthene	0.731	0.215	0.082	0.110	0.183	0.139	0.133	0.497	0.333	0.465
benzo(k)fluoranthene	0.0731	0.181	U(0.07)	0.101	0.122	0.114	0.126	0.293	0.316	0.517
benzo(a)pyrene	7.31	0.212	U(0.07)	0.113	0.14	0.124	0.125	0.401	0.398	0.564
indeno(1,2,3-c,d) pyrene	0.731	0.229	U(0.07)	0.105	0.132	0.123	0.106	0.422	0.516	0.606
dibenzo(a,h)anthracene	7.31	U(0.07)	U(0.07)	U(0.07)	U(0.07)	0.107	0.07	0.113	0.095	U(0.07)
CSF x Concentration (3)		3.67	1.71	1.92	2.66	2.53	3.36	6.15	5.61	7.38
Pass/Fail (4)		Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass

Notes:

(1) CSF - Cancer Slope Factor 1/(mg/kg-day)

(2) Waste Stream Technology (WST) Laboratory number. All numbers as shown are preceeded by "WS".

(3) Not detected concentrations are assumed to have the value of the method detection limit (MDL) which is 0.07 mg/kg for all compounds except Aroclor 12480 which has a MDL of 0.008 mg/kg.

(4) To pass, the sum of the CSFs multiplied by the concentrations should be less than 14.85 in order for the additional cancer risk to be less than 3 x 10E-5.

U(0.07) Not detected at a detection limit shown in parenthesis.

J Estimated value below the PQL of 0.330 mg/kg but above the MDL of 0.070 mmg/kg.

D Compound identified in an analysis at a secondary dilution factor.

N.A. Sample not analyzed for indica[illegible] mpound.

TABLE 8.7

RESULTS OF ANALYSES OF TREATED SOIL FOR SELECTED ORGANICS
FINAL CONSTRUCTION REPORT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Compound	*CSF (1) Multiplier*	*Concentration (mg/kg)*							
Batch No.		*19*	*20*	*21*	*22*	*23*	*24*	*25*	*26*
Tonnage		*8607 - 9107*	*9107 - 9607*	*9607 - 10107*	*10107 - 10607*	*10607 - 11107*	*11107 - 11607*	*11607 - 12107*	*12107 - 12607*
WST Lab. No. (2)		*10470*	*10630*	*10738*	*10950*	*11126*	*12086*	*12968*	*13138*
Aroclor 1248	7.7	0.095	0.17	0.432	0.0996	0.094	0.065	0.466	0.101
hexachlorobenzene	1.6	0.126	0.225J	0.1490	0.209J	0.403	0.473	1.470	0.199 J
fluoranthene	0	0.281	0.707	0.683	0.507	0.291	0.472	1.790	0.339
benzo(a)anthracene	0.73	N.A.	0.322	0.264	0.246	0.158	0.218 J	0.722	0.189 J
chrysene	0.0073	N.A.	0.306	0.263	0.243	0.159	0.229 J	0.665	0.210 J
bis(2-ethylhexyl)phthalate	0.014	0.162	0.548	1.610	0.339	0.275	0.448	3.100	0.514
benzo(b)fluoranthene	0.731	0.229	0.401	0.391	0.288	0.152	0.257 J	0.800	0.355
benzo(k)fluoranthene	0.0731	0.197	0.424	0.369	0.270	0.176J	0.268 J	0.951	0.336
benzo(a)pyrene	7.31	0.241	0.477	0.336	0.308	0.167J	0.270 J	1.010	0.351
indeno(1,2,3-c,d) pyrene	0.731	0.258	0.561	0.229J	0.379	0.156J	0.300 J	1.150	0.511
dibenzo(a,h)anthracene	7.31	U(0.07)	U(0.07)	U(0.07)	U(0.07)	U(0.07)	U(0.07)	0.176 J	U(0.07)
CSF x Concentration (3)		3.58	6.65	7.23	4.56	3.45	4.34	16.68	4.98
Pass/Fail (4)		Pass	Pass	Pass	Pass	Pass	Pass	Fail	Pass

Notes:

(1) CSF - Cancer Slope Factor 1/(mg/kg-day)

(2) Waste Stream Technology (WST) Laboratory number. All numbers as shown are preceeded by "WS".

(3) Not detected concentrations are assumed to have the value of the method detection limit (MDL) which is 0.07 mg/kg for all compounds except Aroclor 12480 which has a MDL of 0.008 mg/kg.

(4) To pass, the sum of the CSFs multiplied by the concentrations should be less than 14.85 in order for the additional cancer risk to be less than 3 x 10E-5.

U(0.07) Not detected at a detection limit shown in parenthesis.

J Estimated value below the PQL of 0.330 mg/kg but above the MDL of 0.070 mmg/kg.

D Compound identified in an analysis at a secondary dilution factor.

N.A. Sample not analyzed for indicated compound.

TABLE 8.7

RESULTS OF ANALYSES OF TREATED SOIL FOR SELECTED ORGANICS
FINAL CONSTRUCTION REPORT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Compound	*CSF (1) Multiplier*	*Concentration (mg/kg)*							
Batch No.		*27*	*28*	*29*	*30*	*30*	*31*	*32*	*33*
Tonnage		*12607 - 13107*	*13107 - 13607*	*13607 - 14107*	*14107 - 14607*	*DUP.*	*14607 - 14833*	*14833 - 15333*	*15334 - 15834*
WST Lab. No. (2)		*13591*	*13895*	*14434*	*14717*	*14718*	*14864*	*15195*	*15492*
Aroclor 1248	7.7	0.381	0.278	0.185	0.297	0.345	0.092	0.190	0.290
hexachlorobenzene	1.6	0.567	0.337	0.082 J	0.143 J	0.229 J	U(0.07)	0.106 J	0.189 J
fluoranthene	0	0.184 J	0.389	0.387	0.301 J	0.382	0.124 J	0.367	1.270
benzo(a)anthracene	0.73	0.085 J	0.183 J	0.193 J	0.180 J	0.202 J	U(0.07)	0.200 J	0.479
chrysene	0.0073	0.103 J	0.181 J	0.208 J	0.171 J	0.200 J	0.073 J	0.204 J	0.520
bis(2-ethylhexyl)phthalate	0.014	2.000	0.483	0.280 J	0.831	0.881	U(0.07)	0.217 J	0.692
benzo(b)fluoranthene	0.731	0.086 J	0.190 J	0.264 J	0.199 J	0.213 J	0.073 J	0.307 J	0.369
benzo(k)fluoranthene	0.0731	0.083 J	0.147 J	0.330	0.207 J	0.231 J	U(0.07)	0.249 J	0.463
benzo(a)pyrene	7.31	0.103 J	0.197 J	0.317 J	0.253 J	0.275 J	0.077 J	0.301 J	0.466
indeno(1,2,3-c,d) pyrene	0.731	0.125 J	0.165 J	0.431	0.195 J	0.211 J	U(0.07)	0.407	0.429
dibenzo(a,h)anthracene	7.31	U(0.07)	U(0.07)	U(0.07)	U(0.07)	U(0.07)	U(0.07)	0.086 J	U(0.07)
CSF x Concentration (3)		5.36	5.04	5.06	5.32	6.03	2.06	5.15	7.43
Pass/Fail (4)		Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass

Notes:

(1) CSF - Cancer Slope Factor 1/(mg/kg-day)

(2) Waste Stream Technology (WST) Laboratory number. All numbers as shown are preceeded by "WS".

(3) Not detected concentrations are assumed to have the value of the method detection limit (MDL) which is 0.07 mg/kg for all compounds except Aroclor 12480 which has a MDL of 0.008 mg/kg.

(4) To pass, the sum of the CSFs multiplied by the concentrations should be less than 14.85 in order for the additional cancer risk to be less than 3 x 10E-5.

U(0.07) Not detected at a detection limit shown in parenthesis.

J Estimated value below the PQL of 0.330 mg/kg but above the MDL of 0.070 mmg/kg.

D Compound identified in an analysis at a secondary dilution factor.

N.A. Sample not analyzed for ir d compound.

TABLE 8.7

RESULTS OF ANALYSES OF TREATED SOIL FOR SELECTED ORGANICS
FINAL CONSTRUCTION REPORT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Compound	*CSF (1) Multiplier*	*Concentration (mg/kg)*							
Batch No.		*34*	*35*	*36*	*37*	*38*	*39*	*40*	*40*
Tonnage		*15834 - 16334*	*16334 - 16834*	*16834 - 17334*	*17333 - 17833*	*17833 - 18333*	*18333 - 18833*	*18833 - 19333*	*DUP.*
WST Lab. No. (2)		*15610*	*15744*	*15884*	*15942*	*16059*	*16200*	*16292*	*16293*
Aroclor 1248	7.7	0.178	0.149	0.242	0.271	0.170	0.284	0.334	0.373
hexachlorobenzene	1.6	0.194 J	0.104 J	0.244 J	0.271 J	0.200 J	0.286 J	0.272 J	0.279 J
fluoranthene	0	0.784	0.387	0.583	0.957	1.050	1.160	0.670	0.715
benzo(a)anthracene	0.73	0.427	0.164 J	0.262 J	0.381	0.433	0.478	0.258 J	0.273 J
chrysene	0.0073	0.390	0.164 J	0.243 J	0.364	0.406	0.435	0.255 J	0.280 J
bis(2-ethylhexyl)phthalate	0.014	0.494	0.206 J	0.568	0.772	0.624	1.090	0.837	0.799
benzo(b)fluoranthene	0.731	0.662	0.230 J	0.396	0.780	0.887	0.652	0.375	0.437
benzo(k)fluoranthene	0.0731	0.761	0.274 J	0.429	0.758	0.911	0.656	0.419	0.480
benzo(a)pyrene	7.31	0.801	0.235 J	0.426	0.689	0.815	0.671	0.408	0.457
indeno(1,2,3-c,d) pyrene	0.731	0.721	0.237 J	0.605	0.304 J	0.354	0.757	0.340	0.314
dibenzo(a,h)anthracene	7.31	0.146 J	U(0.070)	U(0.070)	U(0.070)	U(0.070)	U(0.070)	U(0.070)	U(0.070)
CSF x Concentration (3)		9.99	4.03	6.84	9.21	9.40	9.51	7.26	7.97
Pass/Fail (4)		Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass

Notes:

(1) CSF - Cancer Slope Factor 1/(mg/kg-day)

(2) Waste Stream Technology (WST) Laboratory number. All numbers as shown are preceeded by "WS".

(3) Not detected concentrations are assumed to have the value of the method detection limit (MDL) which is 0.07 mg/kg for all compounds except Aroclor 12480 which has a MDL of 0.008 mg/kg.

(4) To pass, the sum of the CSFs multiplied by the concentrations should be less than 14.85 in order for the additional cancer risk to be less than 3 x 10E-5.

U(0.07) Not detected at a detection limit shown in parenthesis.

J Estimated value below the PQL of 0.330 mg/kg but above the MDL of 0.070 mmg/kg.

D Compound identified in an analysis at a secondary dilution factor.

N.A. Sample not analyzed for indicated compound.

TABLE 8.7

RESULTS OF ANALYSES OF TREATED SOIL FOR SELECTED ORGANICS
FINAL CONSTRUCTION REPORT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Compound	*CSF (1) Multiplier*	*Concentration (mg/kg)*						
Batch No.		*41*	*42*	*43*	*44*	*45*	*46*	*47*
Tonnage		*19333 - 19833*	*19833 - 20333*	*20333 - 20833*	*20833 - 21333*	*21333 - 21833*	*21833 - 22333*	*22333 - 22833*
WST Lab. No. (2)		*16520*	*16624*	*16713*	*16749*	*16815*	*16908*	*16945*
Aroclor 1248	7.7	0.915	0.057	0.323	0.374	0.137	0.147	0.269
hexachlorobenzene	1.6	0.104 J	0.100 J	0.429	0.288 J	0.113 J	0.131 J	U(0.070)
fluoranthene	0	0.410	0.529	2.250	1.160	0.898	0.892	0.779
benzo(a)anthracene	0.73	0.174 J	0.251 J	0.782	0.513	0.332	0.368	0.199 J
chrysene	0.0073	0.162 J	0.251 J	0.764	0.450	0.309 J	0.365	0.195 J
bis(2-ethylhexyl)phthalate	0.014	0.356	0.300 J	1.580	0.870	0.261 J	1.280	0.125 J
benzo(b)fluoranthene	0.731	0.249 J	0.331	1.580	0.627	0.443	0.539	0.276 J
benzo(k)fluoranthene	0.0731	0.283 J	0.362	1.850	0.670	0.449	0.588	0.276 J
benzo(a)pyrene	7.31	0.262 J	0.340	1.340	0.710	0.473	0.478	0.269 J
indeno(1,2,3-c,d) pyrene	0.731	0.230 J	0.335	0.385	0.723	0.566	0.151 J	0.317 J
dibenzo(a,h)anthracene	7.31	U(0.070)	U(0.070)	U(0.070)	0.161 J	U(0.070)	U(0.070)	U(0.070)
CSF x Concentration (3)		10.14	4.30	15.65	11.13	6.22	6.18	5.26
Pass/Fail (4)		Pass	Pass	Fail	Pass	Pass	Pass	Pass

Notes:

(1) CSF - Cancer Slope Factor 1/(mg/kg-day)

(2) Waste Stream Technology (WST) Laboratory number. All numbers as shown are preceeded by "WS".

(3) Not detected concentrations are assumed to have the value of the method detection limit (MDL) which is 0.07 mg/kg for all compounds except Aroclor 12480 which has a MDL of 0.008 mg/kg.

(4) To pass, the sum of the CSFs multiplied by the concentrations should be less than 14.85 in order for the additional cancer risk to be less than 3 x 10E-5.

U(0.07) Not detected at a detection limit shown in parenthesis.

J Estimated value below the PQL of 0.330 mg/kg but above the MDL of 0.070 mmg/kg.

D Compound identified in an analysis at a secondary dilution factor.

N.A. Sample not analyzed for indicated compound.

TABLE 8.7

RESULTS OF ANALYSES OF TREATED SOIL FOR SELECTED ORGANICS
FINAL CONSTRUCTION REPORT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Compound	*CSF (1) Multiplier*	*Concentration (mg/kg)*			
Batch No.		*48*	*49*	*50*	*50*
Tonnage		*22833 - 23333*	*23333 - 23833*	*23833 - 24066*	*DUP.*
WST Lab. No. (2)		*17060*	*17103*	*17158*	*17159*
Aroclor 1248	7.7	0.151	0.237	0.079	0.094
hexachlorobenzene	1.6	0.091 J	U(0.070)	U(0.070)	U(0.070)
fluoranthene	0	1.280	0.380	0.439	0.454
benzo(a)anthracene	0.73	0.308 J	0.116 J	0.132 J	0.138 J
chrysene	0.0073	0.306 J	0.118 J	0.135 J	0.138 J
bis(2-ethylhexyl)phthalate	0.014	0.357	U(0.070)	0.132 J	0.103 J
benzo(b)fluoranthene	0.731	0.432	0.171 J	0.177 J	0.193 J
benzo(k)fluoranthene	0.0731	0.400	0.175 J	0.200 J	0.166 J
benzo(a)pyrene	7.31	0.364	0.153 J	0.179 J	0.180 J
indeno(1,2,3-c,d) pyrene	0.731	0.234 J	0.123 J	0.191 J	0.185 J
dibenzo(a,h)anthracene	7.31	U(0.070)	U(0.070)	U(0.070)	U(0.070)
CSF x Concentration (3)		5.23	3.88	2.92	3.05
Pass/Fail (4)		Pass	Pass	Pass	Pass

Notes:

(1) CSF - Cancer Slope Factor 1/(mg/kg-day)

(2) Waste Stream Technology (WST) Laboratory number. All numbers as shown are preceeded by "WS".

(3) Not detected concentrations are assumed to have the value of the method detection limit (MDL) which is 0.07 mg/kg for all compounds except Aroclor 12480 which has a MDL of 0.008 mg/kg.

(4) To pass, the sum of the CSFs multiplied by the concentrations should be less than 14.85 in order for the additional cancer risk to be less than 3 x 10E-5.

U(0.07) Not detected at a detection limit shown in parenthesis.

J Estimated value below the PQL of 0.330 mg/kg but above the MDL of 0.070 mmg/kg.

D Compound identified in an analysis at a secondary dilution factor.

N.A. Sample not analyzed for indicated compound.

TABLE 8.8

RESULTS OF TCLP (1) ANALYSES OF TREATED SOIL FOR METALS
FINAL CONSTRUCTION REPORT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Metal	*Max. (3) Allowed*	*Concentration (mg/L)*								
Batch No.		*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*
Tonnage		*0 - 500*	*500 - 1000*	*1000 - 1500*	*1500 - 2000*	*2000 - 2500*	*2500 - 2890*	*2890 - 3390*	*3390 - 3890*	*3890 - 4390*
WST Lab. No. (2)		*8093*	*8094*	*8095*	*8718*	*8817*	*8913*	*9174*	*9283*	*9554*
lead	5	<0.132	<0.132	<0.132	<0.132	<0.132	<0.132	<0.132	<0.132	<0.132
cadmium	1	<0.016	<0.016	<0.016	0.17	<0.016	<0.016	<0.016	<0.016	<0.016
barium	100	0.22B	0.16B	0.18B	0.11	0.12B	0.22B	0.24	0.25	0.36B
chromium	5	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
silver	5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
arsenic	5	0.008	<0.005	0.005	0.008	0.006	<0.005	<0.005	<0.005	<0.005
selenium	1	<0.002	<0.002	<0.002	<0.002	0.002	<0.002	<0.002	<0.002	<0.002
mercury	0.2	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012
Pass/Fail (4)		Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass

Notes:

(1) Toxicity Characteristic Leaching Procedure Chapter 40 Section 261 of the Consolidated Federal Register (40CFR 261).

(2) Waste Stream Technology (WST) Laboratory number. All numbers as shown are preceeded by "WS".

(3) Maximum allowed in accordance with 40 CFR 261.

(4) To pass, the concentrations of all inorganics must be less than TCLP regulatory levels.

<0.132 Not detected at a detection limit shown after "<".

TABLE 8.8

RESULTS OF TCLP (1) ANALYSES OF TREATED SOIL FOR METALS
FINAL CONSTRUCTION REPORT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Metal	*Max. (3) Allowed*	*Concentration (mg/L)*							
Batch No.		*10*	*11*	*12*	*13*	*14*	*15*	*16*	*17*
Tonnage		*4390 - 4890*	*4890 - 5390*	*5390 - 5890*	*5615 - 6107*	*6107 - 6607*	*6607 - 7107*	*7107 - 7707*	*7707 - 8207*
WST Lab. No. (2)		*9779*	*9878*	*9877*	*9924*	*9952*	*10023*	*10142*	*10334*
lead	5	<0.132	<0.132	<0.132	<0.132	<0.132	<0.132	<0.132	<0.132
cadmium	1	<0.016	<0.016	<0.016	<0.016	0.017	0.02	<0.016	0.024
barium	100	0.24B	0.26B	0.24B	1.04B	0.284B	0.183B	0.15B	0.277
chromium	5	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
silver	5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
arsenic	5	0.005	0.007	0.005	0.007	0.005	0.005	<0.005	0.011
selenium	1	<0.002	<0.002	<0.002	<0.002	0.002	<0.002	<0.002	<0.002
mercury	0.2	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012
Pass/Fail (4)		Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass

Notes:

(1) Toxicity Characteristic Leaching Procedure Chapter 40 Section 261 of the Consolidated Federal Register (40CFR 261).

(2) Waste Stream Technology (WST) Laboratory number. All numbers as shown are preceeded by "WS".

(3) Maximum allowed in accordance with 40 CFR 261.

(4) To pass, the concentrations of all inorganics must be less than TCLP regulatory levels.

<0.132 Not detected at a detection limit shown after "<".

TABLE 8.8

RESULTS OF TCLP (1) ANALYSES OF TREATED SOIL FOR METALS
FINAL CONSTRUCTION REPORT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Metal	*Max. (3) Allowed*	*Concentration (mg/L)*							
Batch No.		*18*	*19*	*20*	*21*	*22*	*23*	*24*	*25*
Tonnage		*8107 - 8607*	*8607 - 9107*	*9107 - 9607*	*9607 - 10107*	*10107 - 10607*	*10607 - 11107*	*11107 - 11607*	*11607 - 12107*
WST Lab. No. (2)		*10415*	*10470*	*10630*	*10738*	*10950*	*11126*	*12086*	*12968*
lead	5	<0.132	<0.132	<0.132	<0.132	<0.132	<0.132	<0.132	1.20
cadmium	1	<0.016	0.018	<0.016	<0.016	<0.016	<0.016	0.027	<0.016
barium	100	0.144B	0.134B	0.188B	0.266	0.212	0.212	0.221	0.203
chromium	5	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
silver	5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
arsenic	5	0.005	<0.005	0.007	<0.05	<0.05	<0.05	0.009	<0.005
selenium	1	<0.002	<0.002	0.002	<0.002	<0.002	<0.002	<0.002	<0.002
mercury	0.2	<0.0012	<0.0012	<0.012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012
Pass/Fail (4)		Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass

Notes:

(1) Toxicity Characteristic Leaching Procedure Chapter 40 Section 261 of the Consolidated Federal Register (40CFR 261).

(2) Waste Stream Technology (WST) Laboratory number. All numbers as shown are preceeded by "WS".

(3) Maximum allowed in accordance with 40 CFR 261.

(4) To pass, the concentrations of all inorganics must be less than TCLP regulatory levels.

<0.132 Not detected at a detection limit shown after "<".

TABLE 8.8

RESULTS OF TCLP (1) ANALYSES OF TREATED SOIL FOR METALS
FINAL CONSTRUCTION REPORT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Metal	*Max. (3) Allowed*	*Concentration (mg/L)*							
Batch No.		*26*	*27*	*28*	*29*	*30*	*30*	*31*	*32*
Tonnage		*12107 - 12607*	*12607 - 13107*	*13107 - 13607*	*13607 - 14107*	*14107 - 14607*	*DUP.*	*14607 - 14833*	*14833 - 15333*
WST Lab. No. (2)		*13138*	*13591*	*13895*	*14434*	*14717*	*14718*	*14864*	*15195*
lead	5	0.281	<0.132	<0.132	<0.132	<0.132	<0.132	<0.132	<0.132
cadmium	1	<0.016	<0.016	<0.016	0.022	0.020	0.024	0.016	<0.016
barium	100	0.219	0.177	0.222	0.240	0.204 B	0.180 B	0.276 B	0.303 B
chromium	5	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
silver	5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
arsenic	5	0.006	<0.005	0.007	0.006	0.006	0.005	0.006	<0.005
selenium	1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
mercury	0.2	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012
Pass/Fail (4)		Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass

Notes:

(1) Toxicity Characteristic Leaching Procedure Chapter 40 Section 261 of the Consolidated Federal Register (40CFR 261).

(2) Waste Stream Technology (WST) Laboratory number. All numbers as shown are preceeded by "WS".

(3) Maximum allowed in accordance with 40 CFR 261.

(4) To pass, the concentrations of all inorganics must be less than TCLP regulatory levels.

<0.132 Not detected at a detection limit shown after "<".

TABLE 8.8

RESULTS OF TCLP (1) ANALYSES OF TREATED SOIL FOR METALS
FINAL CONSTRUCTION REPORT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Metal	*Max. (3) Allowed*	*Concentration (mg/L)*							
Batch No.		*33*	*34*	*35*	*36*	*37*	*38*	*39*	*40*
Tonnage		*15334 - 15834*	*15834 - 16334*	*16334 - 16834*	*16834 - 17334*	*17333 - 17833*	*17833 - 18333*	*18333 - 18833*	*18833 - 19333*
WST Lab. No. (2)		*15492*	*15610*	*15744*	*15884*	*15942*	*16059*	*16200*	*16292*
lead	5	<0.132	<0.132	<0.132	<0.132	<0.132	<0.132	<0.132	<0.132
cadmium	1	<0.016	0.020	0.023	0.023	0.021	0.016	0.017	0.018
barium	100	0.248 B	0.222 B	0.173	0.227	0.269	0.173	0.191	0.158
chromium	5	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
silver	5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
arsenic	5	0.010	0.007	0.008	<0.005	0.006	0.006	0.005	0.007
selenium	1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.002
mercury	0.2	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012
Pass/Fail (4)		Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass

Notes:

(1) Toxicity Characteristic Leaching Procedure Chapter 40 Section 261 of the Consolidated Federal Register (40CFR 261).

(2) Waste Stream Technology (WST) Laboratory number. All numbers as shown are preceeded by "WS".

(3) Maximum allowed in accordance with 40 CFR 261.

(4) To pass, the concentrations of all inorganics must be less than TCLP regulatory levels.

<0.132 Not detected at a detection limit shown after "<".

TABLE 8.8

RESULTS OF TCLP (1) ANALYSES OF TREATED SOIL FOR METALS
FINAL CONSTRUCTION REPORT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Metal	*Max. (3) Allowed*	*Concentration (mg/L)*							
Batch No.		*40*	*41*	*42*	*43*	*44*	*45*	*46*	*47*
Tonnage		*DUP.*	*19333 - 19833*	*19833 - 20333*	*20333 - 20833*	*20833 - 21333*	*21333 - 21833*	*21833 - 22333*	*22333 - 22833*
WST Lab. No. (2)		*16293*	*16520*	*16624*	*16713*	*16749*	*16815*	*16908*	*16945*
lead	5	<0.132	<0.132	<0.132	<0.132	<0.132	<0.132	<0.132	<0.132
cadmium	1	0.018	<0.016	0.019	0.018	<0.016	<0.016	<0.016	<0.016
barium	100	0.261	0.277	0.284	0.237	0.268	0.252	0.222	0.186
chromium	5	<0.07	<0.07	<0.070	<0.070	<0.070	<0.070	<0.070	<0.070
silver	5	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
arsenic	5	0.006	0.007	0.008	0.007	0.007	0.007	0.009	0.007
selenium	1	<0.002	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
mercury	0.2	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012
Pass/Fail (4)		Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass

Notes:

(1) Toxicity Characteristic Leaching Procedure Chapter 40 Section 261 of the Consolidated Federal Register (40CFR 261).

(2) Waste Stream Technology (WST) Laboratory number. All numbers as shown are preceeded by "WS".

(3) Maximum allowed in accordance with 40 CFR 261.

(4) To pass, the concentrations of all inorganics must be less than TCLP regulatory levels.

<0.132 Not detected at a detection limit shown after "<".

TABLE 8.8

RESULTS OF TCLP (1) ANALYSES OF TREATED SOIL FOR METALS
FINAL CONSTRUCTION REPORT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Metal	*Max. (3) Allowed*	*Concentration (mg/L)*			
Batch No.		*48*	*49*	*50*	*50*
Tonnage		*22833 - 23333*	*23333 - 23833*	*23833 - 24066*	*DUP.*
WST Lab. No. (2)		*17060*	*17103*	*17158*	*17159*
lead	5	<0.132	<0.132	<0.132	<0.132
cadmium	1	<0.016	0.017	<0.016	0.031
barium	100	0.260	0.216	0.242	0.260
chromium	5	<0.070	<0.070	<0.070	<0.070
silver	5	<0.050	<0.050	<0.050	<0.050
arsenic	5	0.006	0.006	<0.005	0.005
selenium	1	<0.002	<0.002	<0.002	<0.002
mercury	0.2	<0.0012	<0.0012	<0.0012	<0.0012
Pass/Fail (4)		Pass	Pass	Pass	Pass

Notes:

(1) Toxicity Characteristic Leaching Procedure Chapter 40 Section 261 of the Consolidated Federal Register (40CFR 261).

(2) Waste Stream Technology (WST) Laboratory number. All numbers as shown are preceeded by "WS".

(3) Maximum allowed in accordance with 40 CFR 261.

(4) To pass, the concentrations of all inorganics must be less than TCLP regulatory levels.

<0.132 Not detected at a detection limit shown after "<".

TABLE 11.1

SUMMARY OF PERIMETER AIR MONITORING REPORTS (2)
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Sampling Period	*Sampling Date(s)*	*Sampling Phase(1)*
March 24-30, 1994	March 24-30, 1994	Pre-Excavation, Background
May 12,13,16-19,23, 1994	May 12-23, 1994	VOC Start of Excavation
May 31, June 1, 2, 1994	May 31-June 2, 1994	VOC Start of Excavation
June 7, 1994	June 7, 1994	VOC Balance of Excavation
June 16, 17, 18, 1994	June 18, 1994	VOC Balance of Excavation
June 22-25, 1994	June 22-25, 1994	PCB Start of Excavation VOC Balance of Excavation
August 2, 3, 6, 7, 9, 1994	August 2, 3, 6, 7, 9, 1994	Performance Demonstration Test VOC Balance of Excavation
August 30, September 1, 1994	August 30, September 1, 1994	Incineration of Site Soils VOC Balance of Excavation
September 8, 9, 1994	September 8, 9, 1994	Performance Demonstration Tests #1, #2 & #3 VOC Balance of Excavation PCB Balance of Excavation (Grids 3-5, 4-5 & 4-6)
September 16, 17, 1994	September 16, 1994	VOC Balance of Excavation
September 21, 1994	September 21, 1994	VOC Balance of Excavation
September 28-30, 1994	September 30, 1994	VOC Balance of Excavation
October 3-6, 1994	October 3, 1994	VOC Balance of Excavation
October 11-15, 1994	October 11, 1994	VOC Balance of Excavation
October 17, 18, 20, 21, 1994	October 21, 1994	VOC Balance of Excavation
October 24-28, 1994	October 26, 1994	VOC Balance of Excavation
November 2, 3, 1994	November 3, 1994	VOC Balance of Excavation
November 7-12, 1994	November 12, 1994	VOC Balance of Excavation
November 14-19, 1994	November 14, 1994	VOC Balance of Excavation
November 22, 1994	November 22, 1994	VOC Balance of Excavation
November 29, 30, December 1, 2, 1994	December 1, 1994	VOC Balance of Excavation
December 12-16, 1994	December 13, 1994	VOC Balance of Excavation
December 19-21, 1994	December 20, 1994	VOC Balance of Excavation
January 5, 6, 1995	January 5, 1995	VOC Balance of Excavation
January 11, 13, 1995	January 13, 1995	VOC Balance of Excavation
January 17, 18, 19, 1995	January 18, 1995	VOC Balance of Excavation
January 25-28, 1995	January 27, 1995	VOC Balance of Excavation
January 30, 31, 1995	January 30, 1995	VOC Balance of Excavation
February 13, 14, 16, 17, 19, 1995	February 13, 1995	VOC Balance of Excavation
February 22-25, 1995	February 25, 1995	VOC Balance of Excavation
March 1, 1995	March 1, 1995	VOC Balance of Excavation
March 7, 9, 10, 11, 1995	March 9, 1995	VOC Balance of Excavation
March 13-16, 1995	March 14, 1995	VOC Balance of Excavation
March 20, 22-26, 1995	March 26, 1995	VOC Balance of Excavation
March 27, 28, 29, 30, 1995	March 27, 1995	VOC Balance of Excavation

Notes:

(1) "Sampling Phase" corresponds to "Event" listed in Table 2.2 of the USEPA-approved Quality Assurance Project Plan (QAPP).
(2) All reports previously provided to USEPA and OEPA.

TABLE 11.2

TARGET COMPOUNDS
PERIMETER AIR MONITORING PROGRAM
FINAL CONSTRUCTION REPORT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Compound	*OEPA MAGLC (1)* ($\mu g/m^3$)
Chloroform	700
1,2-Dichloroethane	570
Methylene Chloride	2,486
Tetrachloroethene	2,428
Toluene	2,685
1,1,1-Trichloroethane	24,286
Trichloroethene	3,842
Xylenes	6,200
Archlor 1248	NL

Note:

(1) MAGLC - Maximum Ambient Ground Level Concentration

NL - 7 $\mu g/m^3$ Arochlor 1254 and
7 $\mu g/m^3$ Arochlor 1242.

ATTACHMENT A

CONTAINER LOG SUMMARY

TABLE 1

CONTAINER DATA SUMMARY
FINAL CONSTRUCTION REPORT
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Drum/ Container Number	Overpack#	REMOVAL Excavation Date	REMOVAL Grid Location	CONTAINER Size	CONTAINER Type	CONTAINER Condition	CONTENTS % Full	CONTENTS Matrix	CONTENTS Color	CONTENTS Description	Sampled	Sample Collection	Composite Group	Waste Classification	Ship Manifest	Outlet	Loadout Date
SN 0001	0001	-	-	55	steel	poor	<50	solid	brown	-	Y	11/3/94	1	RCRA Metals	95008	EQ Co.	5/12/95
SN 00A1	00A1	-		55	steel	poor	<50	solid	brown	-	Y	2/2/95	23A	Flammable	95004/95005	LWD	5/4/95
SN 0002	0002	-	-	55	steel	poor	<50	solid	black	-	Y	11/2/94	19A	Flammable (HOC)	95005/95007	LWD	5/5/95
SN 00A2	00A2	-	-	55	steel	poor	<50	solid	black	-	Y	2/2/95	23A	Flammable	95004/95005	LWD	5/4/95
SN 0003	0003	-	-	55	steel	poor	<50	solid	brown		Y	11/4/94	20A*	Flammable	95005	LWD	5/4/95
SN 0004	0004	-	-	55	steel	poor	<50	solid	brown		Y	11/3/94	1	RCRA Metals	95008	EQ Co.	5/12/95
SN 0005	0005	-		55	steel	poor	<50	solid	white/brown	product/soil mix	Y	11/3/94	11	RCRA Organic/Metal	95009/95010	EQ Co.	5/17/95
SN 0006	0006			55	steel	poor	<50	solid	brown	-	Y	11/3/94	3A	Flammable (HOC)	95004/95005	LWD	5/4/95
SN 0007	0007		-	55	steel	poor	<50	solid	white/brown	product/soil mix	Y	11/3/94	12A	RCRA Organic/Metal	95009/95010	EQ Co.	5/17/95
SN 0008	0008	-		55	steel	poor	<50	solid	black	-	Y	11/4/94	24	RCRA Metals	95009/95010	EQ Co.	5/17/95
SN 0009	0009			55	steel	poor	<50	solid	brown	-	Y	11/3/94	1	RCRA Metals	95008	EQ Co.	5/12/95
SN 0010	0010	9/28/94	6 5	55	steel	poor	<50	solid	brown	-	Y	11/3/94	1A	RCRA Organic/Metal	95009/95010	EQ Co.	5/17/95
SN 0011	0011	9/28/94	6 5	55	steel	poor	<50	solid	brown	sludge	Y	11/3/94	38	Cyanide Sludge	95013	ROC	5/18/95
SN 0012	0012	9/28/94	6 5	55	steel	poor	<50	solid	brown	-	Y	11/3/94	9	RCRA Metals	95008	EQ Co.	5/12/95
SN 0013	0013	9/28/94	6 5	55	steel	poor	<50	solid	black/brown	stained soil	Y	11/4/94	9	RCRA Metals	95008	EQ Co.	5/12/95
SN 0014	0014	9/28/94	6 5	55	steel	poor	<50	solid	brown	-	Y	11/3/94	9	RCRA Metals	95008	EQ Co.	5/12/95
SN 0015	0015	9/28/94	6 5	55	steel	poor	<50	solid	brown	-	Y	11/4/94	41	RCRA Organic/Metals	95009/95010	EQ Co.	5/17/95
SN 0016	0016	9/28/94	6 5	55	steel	poor	<50	solid	brown	-	Y	11/4/94	23	RCRA Organic/Metals	95009/95010	EQ Co.	5/17/95
SN 0017	0017	9/28/94	6 5	55	steel	poor	<50	solid	brown	-	Y	11/3/94	17	Flammable	95004/95005	LWD	5/4/95
SN 0018	0018	9/28/94	6 5	55	steel	poor	<50	solid	brown	-	Y	11/4/94	23	RCRA Organic/Metals	95009/95010	EQ Co.	5/17/95
SN 0019	0019	9/28/94	6 5	55	steel	poor	<50	solid	black	-	Y	11/4/94	24	RCRA Metals	95009/95010	EQ Co.	5/17/95
SN-0020	0020	9/29/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/4/94	24	RCRA Metals	95009/95010	EQ Co.	5/17/95
SN-0021	0021	9/29/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/3/94	11	RCRA Organic/Metal	95009/95010	EQ Co.	5/17/95
SN-0022	0022	9/29/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/3/94	20A*	Flammable	95005	LWD	5/4/95
SN 0023	-	9/29/94	5-7/6-7	55	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0024	0024	9/29/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/3/94	2A	Flammable (HOC)	95004/95005	LWD	5/4/95
SN 0025	0025	9/29/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/3/94	1	RCRA Metals	95008	EQ Co.	5/12/95
SN 0026	0026	9/29/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/3/94	37	Flammable	95004/95005	LWD	5/4/95
SN-0027	0027	9/29/94	5-7/6-7	5	steel	poor	<50	solid	brown	-	Y	11/3/94	1A	RCRA Organic/Metals	95009/95010	EQ Co.	5/17/95
SN-0028	0028	9/29/94	5-7/6-7	55	steel	poor	<50	liquid	grey	-	Y	11/2/94	51	RCRA Organic/Metal	95006/95007	LWD	5/5/95
SN-0029A	0029	9/29/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/3/94	1	RCRA Metals	95008	EQ Co.	5/12/95
SN-0029B	0029	9/29/94	5-7/6-7	5	steel	poor	<50	solid	brown	-	Y	11/3/94	1	RCRA Metals	95008	EQ Co.	5/12/95
SN 0030	0030	9/30/94	5-7/6-7	55	steel	poor	<50	liquid	brown	oil	Y	11/7/94	18A	Flammable (HOC)	95005/95007	LWD	5/5/95
SN-0031	0031	9/30/94	5-7/6-7	55	steel	poor	<50	liquid	brown	-	Y	11/7/94	47	RCRA Organic/Metal	95013	ROC	5/18/95
SN-0032	0032	9/30/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	9	RCRA Metals	95008	EQ Co.	5/12/95
SN-0033	0033	9/30/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	9	RCRA Metals	95008	EQ Co.	5/12/95
SN-0034	0034	9/30/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	9	RCRA Metals	95008	EQ Co.	5/12/95
SN-0035	0035	9/30/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	11	RCRA Organic/Metal	95009/95010	EQ Co.	5/17/95
SN-0036	0036	9/30/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	1	RCRA Metals	95008	EQ Co.	5/12/95
SN-0037	0037	9/30/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	11	RCRA Organic/Metal	95009/95010	EQ Co.	5/17/95
SN 0038	0038	9/30/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	1A	RCRA Organic/Metals	95009/95010	EQ Co.	5/17/95
SN-0039	0039	9/30/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/3/94	1	RCRA Metals	95008	EQ Co.	5/12/95
SN-0040	0040	9/30/94	5-7/6-7	55	steel	poor	<50	solid	brown/grey	-	Y	11/3/94	1	RCRA Metals	95008	EQ Co.	5/12/95
SN 0041	0041	9/30/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/3/94	13A	Flammable (HOC)	95006/95007	LWD	5/5/95
SN-0042	0042	9/30/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/5/94	6A	PCB, Flammable (HOC)	95012	CWM	5/11/95
SN-0043	0043	9/30/94	5-7/6-7	55	plastic	poor	<50	solid	brown	-	Y	11/3/94	11	RCRA Organic/Metal	95009/95010	EQ Co.	5/17/95
SN-0044	0044	9/30/94	5-7/6-7	55	plastic	poor	<50	solid	brown	-	Y	11/5/94	8A	PCB, Flammable (HOC)	95012	CWM	5/11/95
SN 0045	0045	9/30/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/3/94	1A	RCRA Organic/Metals	95009/95010	EQ Co.	5/17/95

TABLE 1

CONTAINER DATA SUMMARY
FINAL CONSTRUCTION REPORT
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Drum/		REMOVAL		CONTAINER			CONTENTS										
Container Number	Overpack#	Excavation Date	Grid Location	Size	Type	Condition	% Full	Matrix	Color	Description	Sampled	Sample Collection	Composite Group	Waste Classification	Ship Manifest	Outlet	Loadout Date
SN-0046	0046	9/30/94	5-7/6-7	55	plastic	poor	<50	solid	brown	-	Y	11/3/94	13A	Flammable	95006/95007	LWD	5/5/95
SN-0047	0047	9/30/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/3/94	10A	Flammable	95006/95007	LWD	5/5/95
SN-0048	0048	9/30/94	5-7/6-7	55	plastic	poor	<50	solid	brown	-	Y	11/3/94	4A	Flammable	95004/95005	LWD	5/4/95
SN-0049	0049	9/30/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/3/94	2	RCRA Organic	95008	EQ Co.	5/12/95
SN-0050	0050	9/30/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/3/94	2	RCRA Metals	95008	EQ Co.	5/12/95
SN-0051	0051	9/30/94	5-7/6-7	55	steel	poor	<50	liquid	black/grey	-	Y	11/1/94	7A	PCB, Flammable	95012	CWM	5/11/95
SN-0052	0052	9/30/94	5-7/6-7	55	steel	poor	<50	liquid	grey	-	Y	11/1/94	19A	Flammable (HOC)	95005/95007	LWD	5/5/95
SN-0053	0053	9/30/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/3/94	9	RCRA Metals	95008	EQ Co.	5/12/95
SN-0054	0054	9/30/94	5-7/6-7	55	steel	poor	<50	liquid	brown/black	-	Y	11/1/94	7A	PCB, Flammable	95012	CWM	5/11/95
SN-0055	-	9/30/94	5-7/6-7	55	plastic	poor	empty			-	N	-	-	-	-	-	-
SN-0056	0056	9/30/94	5-7/6-7	55	plastic	poor	<50	solid	brown	-	Y	11/3/94	1A	RCRA Organic/Metals	95009/95010	EQ Co.	5/17/95
SN-0057	0057	10/3/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	9	RCRA Metals	95008	EQ Co.	5/12/95
SN-0058	0058	10/3/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	9	RCRA Metals	95008	EQ Co.	5/12/95
SN-0059	0059	10/3/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	10	RCRA Metals	95009/95010	EQ Co.	5/17/95
SN-0060	0060	10/3/94	5-7/6-7	55	steel	poor	<50	liquid	brown	-	Y	11/7/94	18A	Flammable (HOC)	95005/95007	LWD	5/5/95
SN-0061	0061	10/3/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/5/94	2	RCRA Organic	95008	EQ Co.	5/12/95
SN-0062	0062	10/3/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	2A	Flammable (HOC)	95004/95005	LWD	5/4/95
SN-0063	0063	10/3/94	5-7/6-7	55	plastic	poor	<50	liquid	black	-	Y	11/5/94	18A	Flammable (HOC)	95005/95007	LWD	5/5/95
SN-0064	0064	10/3/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	1A	RCRA Organic/Metals	95009/95010	EQ Co.	5/17/95
SN-0065	0065	10/3/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	2A	Flammable (HOC)	95004/95005	LWD	5/4/95
SN-0066	0066	10/3/94	5-7/6-7	30	plastic	poor	<50	solid	brown	-	Y	11/7/94	3A	Flammable (HOC)	95004/95005	LWD	5/4/95
SN-0067	0067	10/3/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	1A	RCRA Organic/Metals	95009/95010	EQ Co.	5/17/95
SN-0068	0068	10/3/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	6A	PCB, Flammable (HOC)	95012	CWM	5/11/95
SN-0069	0069	10/3/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	2	RCRA Organic	95008	EQ Co.	5/12/95
SN-0070	0070	10/3/94	5-7/6-7	55	steel	poor	<50	solid	brown	sludge	Y	11/7/94	14A	Flammable	95006/95007	LWD	5/5/95
SN-0071	0071	10/3/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	6A	PCB, Flammable (HOC)	95012	CWM	5/11/95
SN-0072	0072	10/3/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	6A	PCB, Flammable (HOC)	95012	CWM	5/11/95
SN-0073	0073	10/3/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	4A	Flammable	95004/95005	LWD	5/4/95
SN-0074	0074	10/3/94	5-7/6-7	55	steel	poor	<50	solid	black/grey	-	Y	11/7/94	16A	PCB, Flammable (HOC)	95011	CWM	5/11/95
SN-0075	0075	10/3/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	16A	PCB, Flammable (HOC)	95011	CWM	5/11/95
SN-0076	0076	10/3/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	2A	Flammable (HOC)	95004/95005	LWD	5/4/95
SN-0077	0077	10/3/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	2A	Flammable (HOC)	95004/95005	LWD	5/4/95
SN-0078	0078	10/3/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	8A	PCB, Flammable (HOC)	95012	CWM	5/11/95
SN-0079	0079	10/3/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	8A	PCB, Flammable (HOC)	95012	CWM	5/11/95
SN-0080	0080	10/3/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	1A	RCRA Organic/Metals	95009/95010	EQ Co.	5/17/95
SN-0081	0081	10/3/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	1A	RCRA Organic/Metals	95009/95010	EQ Co.	5/17/95
SN-0082	0082	10/3/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	2	RCRA Organic	95008	EQ Co.	5/12/95
SN-0083	0083	10/3/94	5-7/6-7	55	steel	poor	<50	liquid	brown/black	oil	Y	11/7/94	7A	PCB, Flammable	95012	CWM	5/11/95
SN-0084	0084	10/3/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	1A	RCRA Organic/Metals	95009/95010	EQ Co.	5/17/95
SN-0085	0085	10/3/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	20A	Flammable (HOC)	95006	LWD	5/5/95
SN-0086A	0086	10/4/94	5-7/6-7	55	steel	poor	10	liquid	black	oil	Y	11/7/94	33A	Flammable	95006/95007	LWD	5/5/95
SN-0086B	0086	10/4/94	5-7/6-7	5	steel	poor	10	liquid	black	oil	Y	11/7/94	33A	Flammable	95006/95007	LWD	5/5/95
SN-0087	0087	10/4/94	5-7/6-7	55	steel	poor	<50	liquid	black	oil	Y	11/7/94	7A	PCB, Flammable	95012	CWM	5/11/95
SN-0088	0088	10/4/94	5-7/6-7	55	plastic	poor	<50	solid	brown	-	Y	11/7/94	2A	Flammable (HOC)	95004/95005	LWD	5/4/95
SN-0089	0089	10/4/94	5-7/6-7	55	steel	poor	<50	solid	black	-	Y	11/5/94	9A	CB, Flammable (HOC)	95011	CWM	5/11/95
SN-0090	0090	10/4/94	5-7/6-7	55	steel	poor	<50	liquid	black/grey	oil	Y	11/5/94	5A	Flammable, PCB	95012	M	5/11/95
SN-0091	0091	10/4/94	5-7/6-7	55	steel	poor	<50	solid	black	-	Y	11/5/94	13A	Flammable	95006/95007	VD	5/5/95
SN-0092A	-	10/4/94	5-7/6-7	5	plastic	poor	empty	-	-		N	-	-	-	-	-	-

TABLE 1

CONTAINER DATA SUMMARY
FINAL CONSTRUCTION REPORT
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Drum/ Container Number	Overpack#	REMOVAL Excavation Date	REMOVAL Grid Location	CONTAINER Size	CONTAINER Type	CONTAINER Condition	CONTENTS % Full	CONTENTS Matrix	CONTENTS Color	CONTENTS Description	Sampled	Sample Collection	Composite Group	Waste Classification	Ship Manifest	Outlet	Loadout Date
SN-0092B	0463	10/4/94	5-7/6-7	5	steel	poor	90	solid	white	-	Y	11/5/94	32B	Flammable	95004/95005	LWD	5/4/95
SN-0092C	0455	10/4/94	5-7/6-7	5	steel	poor	25	liquid	brown	brown	Y	11/5/94	19A	Flammable (HOC)	95005/95007	LWD	5/5/95
SN-0092D	0455	10/4/94	5-7/6-7	5	steel	poor	50	liquid	brown	brown	Y	11/5/94	19A	Flammable (HOC)	95005/95007	LWD	5/5/95
SN-0092E	0142	10/4/94	5-7/6-7	5	plastic	poor	10	solid	brown	stained soil	Y	11/5/94	37	CB, Flammable (HOC)	95004/95005	CWM	5/11/95
SN-0092F	0455	10/4/94	5-7/6-7	5	steel	poor	10	liquid	black	-	Y	11/5/94	19A	Flammable (HOC)	95005/95007	LWD	5/5/95
SN-0092G	-	10/4/94	5-7/6-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0092H	0408	10/4/94	5-7/6-7	5	steel	poor	10	solid	black	solid residue/rubber	Y	11/5/94	9A	CB Flammable (HOC)	95011	CWM	5/11/95
SN-0092I	-	10/4/94	5-7/6-7	55	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0093	0093	10/4/94	5-7/6-7	55	steel	poor	<50	solid	grey	-	Y	11/5/94	20A	Flammable (HOC)	95006	LWD	5/5/95
SN-0094	0094	10/4/94	5-7/6-7	55	steel	poor	<50	solid	black	-	Y	11/5/94	24	RCRA Metals	95009/95010	EQ Co.	5/17/95
SN-0095	0095	10/4/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/5/94	8A	PCB, Flammable (HOC)	95012	CWM	5/11/95
SN-0096A	0096	10/4/94	5-7/6-7	2	plastic	poor	<50	solid	black/brown	-	Y	11/5/94	9A	CB, Flammable (HOC)	95011	CWM	5/11/95
SN-0096B	-	10/4/94	5-7/6-7	55	plastic	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0096C	-	10/4/94	5-7/6-7	55	plastic	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0097	0097	10/4/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	2	RCRA Organic	95008	EQ Co.	5/12/95
SN-0098	0098	10/4/94	5-7/6-7	55	steel	poor	<50	solid	grey	-	Y	11/7/94	38	Cyanide Sludge	95013	ROC	5/18/95
SN-0099	0099	10/4/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	3A	Flammable (HOC)	95004/95005	LWD	5/4/95
SN-0100	0100	10/4/94	5-7/6-7	55	steel	poor	<50	solid	black	-	Y	11/5/94	6A	PCB, Flammable (HOC)	95012	CWM	5/11/95
SN-0101	0101	10/4/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	2A	Flammable (HOC)	95004/95005	LWD	5/4/95
SN-0102	0102	10/4/94	5-7/6-7	55	steel	poor	<50	solid	black	-	Y	11/5/94	16A	PCB, Flammable (HOC)	95011	CWM	5/11/95
SN-0103	0103	10/4/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	9A	CB, Flammable (HOC)	95011	CWM	5/11/95
SN-0104	0104	10/4/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	2A	Flammable (HOC)	95004/95005	LWD	5/4/95
SN-0105	0105	10/4/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	20A	Flammable (HOC)	95006	LWD	5/5/95
SN-0106	0106	10/4/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	2A	Flammable (HOC)	95004/95005	LWD	5/4/95
SN-0107	0107	10/4/94	5-7/6-7	55	steel	poor	<50	liquid	brown	-	Y	11/7/94	47	RCRA Organic/Metal	95013	ROC	5/18/95
SN-0108	0108	10/4/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	16A	PCB, Flammable (HOC)	95011	CWM	5/11/95
SN-0109	0109	10/4/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	2A	Flammable (HOC)	95004/95005	LWD	5/4/95
SN-0110	0110	10/4/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	14A	Flammable	95006/95007	LWD	5/5/95
SN-0111	0111	10/4/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	2A	Flammable (HOC)	95004/95005	LWD	5/4/95
SN-0112	0112	10/5/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	16A	PCB, Flammable (HOC)	95011	CWM	5/11/95
SN-0113	0113	10/5/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	6A	PCB, Flammable (HOC)	95012	CWM	5/11/95
SN-0114A	0114	10/5/94	5-7/6-7	30	steel	poor	50	solid	brown/black	stained soil	Y	11/7/94	5A	Flammable, PCB	95012	CWM	5/11/95
SN-0114B	0114	10/5/94	5-7/6-7	5	steel	poor	40	solid	brown/black	stained soil	Y	11/7/94	5A	Flammable, PCB	95012	CWM	5/11/95
SN-0115A	-	10/5/94	5-7/6-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0115B	0463	10/5/94	5-7/6-7	5	steel	poor	100	solid	colorless	clear, hard/brittle	Y	11/7/94	32B	Flammable	95004/95005	LWD	5/4/95
SN-0115C	-	10/5/94	5-7/6-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0115D	-	10/5/94	5-7/6-7	5	plastic	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0115E	0115	10/5/94	5-7/6-7	5	steel	poor	20	liquid	brown	-	Y	11/7/94	9A	CB, Flammable (HOC)	95011	CWM	5/11/95
SN-0115F	0115	10/5/94	5-7/6-7	5	steel	poor	20	liquid	brown	-	Y	11/7/94	9A	CB, Flammable (HOC)	95011	CWM	5/11/95
SN-0115G	0115	10/5/94	5-7/6-7	5	steel	poor	20	liquid	brown	-	Y	11/7/94	9A	CB, Flammable (HOC)	95011	CWM	5/11/95
SN-0116A	0408	10/5/94	5-7/6-7	5	plastic	poor	20	solid	black	solid residue/rubber	Y	11/7/94	9A	CB Flammable (HOC)	95011	CWM	5/11/95
SN-0116B	0459	10/5/94	5-7/6-7	5	steel	poor	50	solid	black	oil/stained soil	Y	11/7/94	9A	PCB Flammable (HOC)	95011	CWM	5/11/95
SN-0116C	-	10/5/94	5-7/6-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0116D	0130	10/5/94	5-7/6-7	5	steel	poor	100	solid	white	pliable	Y	11/7/94	32B	Flammable (HOC)	95004/95005	LWD	5/4/95
SN-0116E	-	10/5/94	5-7/6-7	55	plastic	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0117A	-	10/5/94	5-7/6-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0117B	0468	10/5/94	5-7/6-7	5	steel	poor	100	solid	white	opaque	Y	11/7/94	32B	Flammable (HOC)	95004/95005	LWD	5/4/95
SN-0117C	-	10/5/94	5-7/6-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-

TABLE 1

CONTAINER DATA SUMMARY
FINAL CONSTRUCTION REPORT
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Drum/		REMOVAL		CONTAINER			CONTENTS										
Container Number	Overpack#	Excavation Date	Grid Location	Size	Type	Condition	% Full	Matrix	Color	Description	Sampled	Sample Collection	Composite Group	Waste Classification	Ship Manifest	Outlet	Loadout Date
SN-0117D	0455	10/5/94	5-7/6-7	5	steel	poor	40	liquid	brown	brown	Y	11/7/94	19A	Flammable (HOC)	95005/95007	LWD	5/5/95
SN-0117E	0379	10/5/94	5-7/6-7	5	steel	poor	50	liquid	black	viscous	Y	11/7/94	19A	Flammable (HOC)	95005/95007	LWD	5/5/95
SN-0117F	-	10/5/94	5-7/6-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0118	0118	10/5/94	5-7/6-7	5	steel	poor	<50	solid	black	-	Y	11/7/94	16A	PCB, Flammable (HOC)	95011	CWM	5/11/95
SN-0119	0119	10/5/94	5-7/6-7	5	steel	poor	<50	solid	grey	-	Y	11/5/94	20A	Flammable (HOC)	95006	LWD	5/5/95
SN-0120	0120	10/5/94	5-7/6-7	5	steel	poor	<50	solid	brown	-	Y	11/5/94	4A	Flammable	95004/95005	LWD	5/4/95
SN-0121	0121	10/5/94	5-7/6-7	5	steel	poor	<50	liquid	black/grey	-	Y	11/7/94	5A	Flammable, PCB	95012	CWM	5/11/95
SN-0122	0122	10/5/94	5-7/6-7	5	steel	poor	<50	liquid	black/grey	-	Y	11/7/94	18A	Flammable (HOC)	95005/95007	LWD	5/5/95
SN-0123A	-	10/5/94	5-7/6-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0123B	-	10/5/94	5-7/6-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0123C	0115	10/5/94	5-7/6-7	5	steel	poor	40	liquid	brown	clear, viscous	Y	11/7/94	9A	CB, Flammable (HOC)	95011	CWM	5/11/95
SN-0123D	0123	10/5/94	5-7/6-7	5	steel	poor	50	liquid	black	viscous	Y	11/7/94	9A	CB, Flammable (HOC)	95011	CWM	5/11/95
SN-0123E	-	10/5/94	5-7/6-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0123F	0123	10/5/94	5-7/6-7	5	steel	poor	30	solid	black	sludge	Y	11/7/94	9A	CB, Flammable (HOC)	95011	CWM	5/11/95
SN-0124	0124	10/5/94	5-7/6-7	55	steel	poor	<50	solid	grey	-	Y	11/7/94	38	Cyanide Sludge	95013	ROC	5/18/95
SN-0125	0125	10/5/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	6A	PCB, Flammable (HOC)	95012	CWM	5/11/95
SN-0126	0126	10/5/94	5-7/6-7	55	steel	poor	<50	liquid	black/grey	-	Y	11/7/94	5A	Flammable, PCB	95012	CWM	5/11/95
SN-0127	0127	10/5/94	5-7/6-7	55	steel	poor	<50	liquid	black	-	Y	11/7/94	47	RCRA Organic/Metal	95013	ROC	5/18/95
SN-0128	0128	10/5/94	5-7/6-7	55	steel	poor	<50	liquid	black/grey	-	Y	11/7/94	5A	Flammable, PCB	95012	CWM	5/11/95
SN-0129	0129	10/5/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	4A	Flammable	95004/95005	LWD	5/4/95
SN-0130A	0123	10/5/94	5-7/6-7	5	steel	poor	<5	solid	black	sludge	Y	11/7/94	9A	CB, Flammable (HOC)	95011	CWM	5/11/95
SN-0130B	-	10/5/94	5-7/6-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0130C	0472	10/5/94	5-7/6-7	5	steel	poor	40	solid	brown	stained soil	Y	11/7/94	37	Flammable	95004/95005	LWD	5/4/95
SN-0130D	0459	10/5/94	5-7/6-7	5	steel	poor	80	liquid	black	oil	Y	11/7/94	9A	PCB Flammable (HOC)	95011	CWM	5/11/95
SN-0130E	0450	10/5/94	5-7/6-7	5	steel	poor	75	liquid	brown	clear,oil	Y	11/7/94	10A	Flammable	95006/95007	LWD	5/5/95
SN-0131	0131	10/5/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	1A	RCRA Organic/Metals	95009/95010	EQ Co.	5/17/95
SN-0132A	0123	10/5/94	5-7/6-7	5	steel	poor	5	liquid	black	viscous	Y	11/7/94	9A	CB, Flammable (HOC)	95011	CWM	5/11/95
SN-0132B	0455	10/5/94	5-7/6-7	5	steel	poor	10	liquid	brown	brown	Y	11/7/94	19A	Flammable (HOC)	95005/95007	LWD	5/5/95
SN-0132C	0474	10/5/94	5-7/6-7	5	steel	poor	80	liquid	colorless	clear, viscous	Y	11/7/94	13A	Flammable	95006/95007	LWD	5/5/95
SN-0133A	0130	10/5/94	5-7/6-7	5	steel	poor	95	solid	yellow	pale, hard	Y	11/7/94	34A	Flammable	95004/95005	LWD	5/4/95
SN-0133B	-	10/5/94	5-7/6-7	5	plastic	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0133C	0408	10/5/94	5-7/6-7	5	steel	poor	10	solid	black	residue/rubber	Y	11/7/94	9A	CB Flammable (HOC)	95011	CWM	5/11/95
SN-0133D	-	10/5/94	5-7/6-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0133E	-	10/5/94	5-7/6-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0133F	-	10/5/94	5-7/6-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0133G	0115	10/5/94	5-7/6-7	5	steel	poor	70	liquid	brown	viscous	Y	11/7/94	9A	CB, Flammable (HOC)	95011	CWM	5/11/95
SN-0134	0134	10/5/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	2A	CB, Flammable (HOC)	95004/95005	CWM	5/11/95
SN-0135	0135	10/5/94	5-7/6-7	55	steel	poor	<50	solid	white	-	Y	2/2/95	15A	Flammable	95008	LWD	5/4/95
SN-0136	0136	10/5/94	5-7/6-7	55	steel	poor	<50	liquid	brown	-	Y	11/7/94	5A	Flammable, PCB	95012	CWM	5/11/95
SN-0137	0137	10/5/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	6A	PCB, Flammable (HOC)	95012	CWM	5/11/95
SN-0138	0138	10/5/94	5-7/6-7	55	plastic	poor	<50	solid	brown	-	Y	11/7/94	2A	CB, Flammable (HOC)	95004/95005	CWM	5/11/95
SN-0139	0139	10/5/94	5-7/6-7	55	steel	poor	<50	liquid	brown	-	Y	11/7/94	16A	PCB, Flammable (HOC)	95011	CWM	5/11/95
SN-0140	0140	10/5/94	5-7/6-7	55	steel	poor	<50	solid	brown	-	Y	11/7/94	20A	Flammable (HOC)	95006	LWD	5/5/95
SN-0141A	-	10/5/94	5-7/6-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0141B	0455	10/5/94	5-7/6-7	5	steel	poor	100	liquid	brown	brown	Y	11/7/94	19A	Flammable (HOC)	95005/95007	LWD	5/5/95
SN-0142A	-	10/5/94	5-7/6-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0142B	0459	10/5/94	5-7/6-7	5	steel	poor	80	solid	black	sludge	Y	11/7/94	9A	PCB Flammable (HOC)	95011	CWM	5/11/95
SN-0142C	0463	10/5/94	5-7/6-7	5	steel	poor	80	solid	white	-	Y	11/7/94	32B	Flammable	95004/95005	LWD	5/4/95

TABLE 1

CONTAINER DATA SUMMARY
FINAL CONSTRUCTION REPORT
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Drum/		REMOVAL		CONTAINER			CONTENTS										
Container Number	Overpack#	Excavation Date	Grid Location	Size	Type	Condition	% Full	Matrix	Color	Description	Sampled	Sample Collection	Composite Group	Waste Classification	Ship Manifest	Outlet	Loadout Date
SN 0142D	0472	10/5/94	5-7/6-7	5	steel	poor	50	solid	brown	stained soil	Y	11/7/94	37	Flammable	95004/95005	LWD	5/4/95
SN-0142E	0437	10/5/94	5-7/6-7	5	steel	poor	100	solid	white	powder	Y	11/7/94	14A	Flammable	95006/95007	LWD	5/5/95
SN-0142F	0142	10/5/94	5-7/6-7	5	steel	poor	50	solid	brown	stained soil	Y	11/7/94	37	CB, Flammable (HOC)	95004/95005	CWM	5/11/95
SN 0143	0143	10/17/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/7/94	11	RCRA Organic/Metal	95009/95010	EQ Co.	5/17/95
SN 0144	0144	10/17/94	5-4	5	steel	poor	<50	solid	brown	-	Y	11/7/94	2A	CB, Flammable (HOC)	95004/95005	CWM	5/11/95
SN-0145	0145	10/17/94	5-4	55	steel	poor	<50	liquid	grey	-	Y	11/5/94	44	RCRA Organic/Metal	95013	ROC	5/18/95
SN 0146	0146	10/17/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/3/94	1A	RCRA Organic/Metals	95009/95010	EQ Co.	5/17/95
SN 0147	0147	10/17/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/1/94	41	RCRA Organic/Metal	95009/95010	EQ Co.	5/17/95
SN-0148	0148	10/17/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/3/94	10	RCRA Metals	95009/95010	EQ Co.	5/17/95
SN-0149	0149	10/17/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/5/94	11	RCRA Organic/Metal	95009/95010	EQ Co.	5/17/95
SN-0150	0150	10/17/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/3/94	10	RCRA Metals	95009/95010	EQ Co.	5/17/95
SN-0151	0151	10/17/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/3/94	2	RCRA Organic	95008	EQ Co.	5/12/95
SN-0152	0152	10/17/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/3/94	11	RCRA Organic/Metal	95009/95010	EQ Co.	5/17/95
SN-0153	0153	10/17/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/3/94	10	RCRA Metals	95009/95010	EQ Co.	5/17/95
SN-0154	0154	10/17/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/3/94	10	RCRA Metals	95009/95010	EQ Co.	5/17/95
SN-0155	0155	10/17/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/3/94	18	RCRA Organic/Metals	95009/95010	EQ Co.	5/17/95
SN-0156	0156	10/17/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/3/94	10	RCRA Metals	95009/95010	EQ Co.	5/17/95
SN-0157	0157	10/17/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/3/94	19	RCRA Organic	95008/95009	EQ Co.	5/12/95
SN-0158	0158	10/17/94	5-4	55	steel	poor	<50	solid	black/grey	-	Y	11/1/94	20A	Flammable (HOC)	95006	LWD	5/5/95
SN 0159	0159	10/18/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/3/94	10	RCRA Metals	95009/95010	EQ Co.	5/17/95
SN-0160	0160	10/18/94	5-4	55	steel	poor	<50	solid	black	-	Y	11/1/94	20A	Flammable (HOC)	95006	LWD	5/5/95
SN-0161	0161	10/18/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/4/94	2	RCRA Metals	95008	EQ Co.	5/17/95
SN 0162	0162	10/18/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/3/94	10	RCRA Metals	95009/95010	EQ Co.	5/17/95
SN-00163A	0163	10/18/94	5-4	55	steel	poor	5	solid	brown	-	Y	11/3/94	18	RCRA Organic/Metals	95009/95010	EQ Co.	5/17/95
SN-0163B	0163	10/18/94	5-4	55	steel	poor	5	solid	brown	-	Y	11/3/94	18	RCRA Organic/Metals	95009/95010	EQ Co.	5/17/95
SN-0164A	0164	10/18/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/3/94	11	RCRA Organic/Metal	95009/95010	EQ Co.	5/17/95
SN-0164B	0164	10/18/94	5-4	55	steel	poor	5	solid	brown	-	Y	11/3/94	11	RCRA Organic/Metal	95009/95010	EQ Co.	5/17/95
SN-0165	0165	10/18/94	5-4	55	steel	poor	5	solid	brown	-	Y	11/3/94	10	RCRA Metals	95009/95010	EQ Co.	5/17/95
SN-0166	0166	10/18/94	5-4	55	steel	poor	<50	liquid	colorless	-	Y	11/2/94	44	RCRA Organic/Metal	95013	ROC	5/18/95
SN-0167	0167	10/18/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/3/94	11	RCRA Organic/Metal	95009/95010	EQ Co.	5/17/95
SN-0168	0168	10/18/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/3/94	10	RCRA Metals	95009/95010	EQ Co.	5/17/95
SN-0169	0169	10/18/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/3/94	3A	CB, Flammable (HOC)	95004/95005	CWM	5/11/95
SN-0170	0170	10/18/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/3/94	18	RCRA Organic/Metals	95009/95010	EQ Co.	5/17/95
SN-0171	0171	10/18/94	5-4	55	steel	poor	<50	solid	grey	-	Y	11/1/94	35	RCRA Organic	95013	ROC	5/18/95
SN-0172	0172	10/18/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/3/94	18	RCRA Organic/Metals	95009/95010	EQ Co.	5/17/95
SN-0173	0173	10/18/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/3/94	3A	Flammable (HOC)	95004/95005	LWD	5/4/95
SN-0174	0174	10/18/94	5-4	30	plastic	poor	<50	liquid	grey	-	Y	11/2/94	35	RCRA Organic	95013	ROC	5/18/95
SN 0175	0175	10/20/94	5-4	55	steel	poor	<50	liquid	black	-	Y	11/1/94	16A	PCB, Flammable (HOC)	95011	CWM	5/11/95
SN-0176	0176	10/20/94	5-4	55	steel	poor	<50	liquid	black	-	Y	11/1/94	16A	PCB, Flammable (HOC)	95011	CWM	5/11/95
SN-0177	0177	10/20/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/3/94	18	RCRA Organic/Metals	95009/95010	EQ Co.	5/17/95
SN-0178	0178	10/20/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/3/94	3A	Flammable (HOC)	95004/95005	LWD	5/4/95
SN 0179	0179	10/20/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/3/94	3A	Flammable (HOC)	95004/95005	LWD	5/4/95
SN-0180	0180	10/20/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/3/94	2	RCRA Organic	95008	EQ Co.	5/12/95
SN-0181	0181	10/20/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/3/94	3A	Flammable (HOC)	95004/95005	LWD	5/4/95
SN-0182	0182	10/20/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/3/94	1A	RCRA Organic/Metals	95009/95010	EQ Co.	5/17/95
SN-0183	0183	10/20/94	5-4	55	steel	poor	<5	solid	brown	-	Y	11/3/94	8A	PCB, Flammable (HOC)	95012	CWM	5/11/95
SN-0184	0184	10/20/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/3/94	18	RCRA Organic/Metals	95009/95010	EQ Co.	5/17/95
SN-0185	0185	10/20/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/3/94	3A	Flammable (HOC)	95004/95005	LWD	5/4/95

TABLE 1

CONTAINER DATA SUMMARY
FINAL CONSTRUCTION REPORT
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Drum/ Container Number	Overpack#	REMOVAL Excavation Date	REMOVAL Grid Location	CONTAINER Size	CONTAINER Type	CONTAINER Condition	CONTENTS % Full	CONTENTS Matrix	CONTENTS Color	CONTENTS Description	Sampled	Sample Collection	Composite Group	Waste Classification	Ship Manifest	Outlet	Loadout Date
SN 0186	0186	10/20/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/3/94	1A	RCRA Organic/Metals	95009/95010	EQ Co.	5/17/95
SN 0187	0187	10/20/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/3/94	3A	Flammable (HOC)	95004/95005	LWD	5/4/95
SN 0188	0188	10/20/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/3/94	8A	PCB, Flammable (HOC)	95012	CWM	5/11/95
SN 0189A	0189	10/20/94	5-4	55	steel	poor	<10	solid	brown	-	Y	11/1/94	35	RCRA Organic	95013	ROC	5/18/95
SN 0189B	-	10/20/94	5-4	55	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN 0190	0190	10/20/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/3/94	3A	Flammable (HOC)	95004/95005	LWD	5/4/95
SN 0191	0191	10/20/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/3/94	3A	Flammable (HOC)	95004/95005	LWD	5/4/95
SN 0192	0192	10/20/94	5-4	55	steel	poor	<5	solid	brown	-	Y	11/5/94	41	RCRA Organic/Metal	95009/95010	EQ Co.	5/17/95
SN 0193	0193	10/20/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/3/94	3A	Flammable (HOC)	95004/95005	LWD	5/4/95
SN 0194	0194	10/20/94	5-4	55	steel	poor	<50	solid	black	-	Y	11/3/94	9A	CB, Flammable (HOC)	95011	CWM	5/11/95
SN 0195	0195	10/20/94	5-4	55	steel	poor	<50	liquid	black	-	Y	11/2/94	16A	PCB, Flammable (HOC)	95011	CWM	5/11/95
SN 0196	0196	10/21/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/3/94	6A	PCB, Flammable (HOC)	95012	CWM	5/11/95
SN 0197A	-	10/21/94	5-4	55	plastic	poor	empty	-	-	-	N	-	-	-	-	-	-
SN 0197B	-	10/21/94	5-4	55	plastic	poor	empty	-	-	-	N	-	-	-	-	-	-
SN 0197C	-	10/21/94	5-4	55	plastic	poor	empty	-	-	-	N	-	-	-	-	-	-
SN 0198	-	10/21/94	5-4	55	plas/stel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0199	-	10/21/94	5-4	55	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0200	-	10/21/94	5-4	55	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN 0201	0201	10/21/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/3/94	2	RCRA Organic	95008	EQ Co.	5/12/95
SN 0202	0202	10/21/94	5-4	55	steel	poor	<50	solid	black	-	Y	11/3/94	24	RCRA Metals	95009/95010	EQ Co.	5/12/95
SN 0203A	-	10/21/94	5-4	55	plastic	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0203B	0203	10/21/94	5-4	55	plastic	poor	<5	solid	black	-	Y	11/4/94	13A	Flammable	95006/95007	LWD	5/5/95
SN-0204	0204	10/24/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/4/94	3A	Flammable (HOC)	95004/95005	LWD	5/4/95
SN-0205	0205	10/24/94	5-4	55	steel	poor	<50	solid	grey	-	Y	11/4/94	3A	Flammable (HOC)	95004/95005	LWD	5/4/95
SN-0206	0206	10/24/94	5-4	55	steel	poor	<50	solid	grey	-	Y	11/2/94	35	RCRA Organic	95013	ROC	5/18/95
SN-0207	0207	10/24/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/4/94	6A	PCB, Flammable (HOC)	95012	CWM	5/11/95
SN-0208	0208	10/24/94	5-4	55	steel	poor	<50	solid	white	-	Y	11/2/94	35	RCRA Organic	95013	ROC	5/18/95
SN-0209	0209	10/24/94	5-4	55	steel	poor	<50	solid	white	-	Y	11/4/94	32A	Flammable	95004/95005	LWD	5/4/95
SN-0210	0210	10/24/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/4/94	4A	Flammable	95004/95005	LWD	5/4/95
SN-0211	0211	10/24/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/4/94	12A	RCRA Organic/Metal	95009/95010	EQ Co.	5/17/95
SN-0212	0212	10/24/94	5-4	55	steel	poor	<50	liquid	black	-	Y	11/2/94	16A	PCB, Flammable (HOC)	95011	CWM	5/11/95
SN-0213	0213	10/24/94	5-4	55	steel	poor	<50	solid	yellow	-	Y	2/2/95	21A	Flammable (HOC)	95005	LWD	5/4/95
SN 0214	0214	10/24/94	5-4	55	s. steel	good	<50	solid	white	-	Y	11/4/94	15A	Non-Hazzardous	95008	EQ Co.	5/12/95
SN-0215	0215	10/24/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/4/94	4A	Flammable	95004/95005	LWD	5/4/95
SN-0216	0216	10/25/94	5-4	55	steel	poor	<50	solid	white	-	Y	11/4/94	12A	RCRA Organic/Metal	95009/95010	EQ Co.	5/17/95
SN-0217	0217	10/25/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/4/94	3A	Flammable (HOC)	95004/95005	LWD	5/4/95
SN-0218	0218	10/25/94	5-4	55	steel	poor	<50	liquid	grey	-	Y	11/2/94	18A	Flammable (HOC)	95005/95007	LWD	5/5/95
SN-0219	0219	10/25/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/4/94	2	RCRA Organic	95008	EQ Co.	5/12/95
SN-0220	0220	10/25/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/4/94	14A	Flammable	95006/95007	LWD	5/5/95
SN-0221	0221	10/25/94	5-4	55	steel	poor	<50	liquid	white	-	Y	11/2/94	18A	Flammable (HOC)	95005/95007	LWD	5/5/95
SN-0222	0222	10/25/94	5-4	55	steel	poor	<50	liquid	grey	-	Y	11/2/94	18A	Flammable (HOC)	95005/95007	LWD	5/5/95
SN 0223	0223	10/25/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/4/94	18	RCRA Organic/Metals	95009/95010	EQ Co.	5/17/95
SN 0224	0224	10/25/94	5-4	55	steel	poor	<50	liquid	white	-	Y	11/2/94	18A	Flammable (HOC)	95005/95007	LWD	5/5/95
SN-0225	0225	10/25/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/4/94	14A	Flammable	95006/95007	LWD	5/5/95
SN-0226	0226	10/25/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/4/94	18	RCRA Organic/Metals	95009/95010	[illegible] Co.	5/17/95
SN-0227	0227	10/25/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/4/94	18	RCRA Organic/Metals	95009/95010	[illegible]o.	5/17/95
SN-0228	0228	10/25/94	5-4	55	steel	poor	<50	solid	black	-	Y	11/3/94	20B	Flammable	95004/95005	[illegible]VD	5/4/95
SN-0229	0229	10/25/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/4/94	1A	RCRA Organic/Metals	95009/95010	EQ Co.	5/17/95

TABLE 1

CONTAINER DATA SUMMARY
FINAL CONSTRUCTION REPORT
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Drum/		REMOVAL		CONTAINER			CONTENTS										
Container Number	Overpack#	Excavation Date	Grid Location	Size	Type	Condition	% Full	Matrix	Color	Description	Sampled	Sample Collection	Composite Group	Waste Classification	Ship Manifest	Outlet	Loadout Date
SN-0230	0230	10/25/94	5-4	55	steel	poor	<5	solid	brown	-	Y	11/4/94	2A	Flammable (HOC)	95004/95005	LWD	5/4/95
SN-0231	0231	10/25/94	5-4	55	steel	poor	<5	solid	brown	-	Y	11/4/94	1A	RCRA Organic/Metals	95009/95010	EQ Co.	5/17/95
SN-0232	0232	10/25/94	5-4	55	steel	poor	<50	solid	grey	-	Y	11/2/94	51	RCRA Organic/Metal	95006/95007	LWD	5/5/95
SN-0233	0233	10/25/94	5-4	55	steel	poor	<50	solid	grey	-	Y	11/7/94	35	RCRA Organic	95013	ROC	5/18/95
SN-0234	0234	10/25/94	5-4	55	steel	poor	<50	solid	white	-	Y	11/2/94	35	RCRA Organic	95013	ROC	5/18/95
SN-0235	0235	10/25/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/4/94	1	RCRA Metals	95008	EQ Co.	5/12/95
SN-0236	0236	10/25/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/4/94	2A	Flammable (HOC)	95004/95005	LWD	5/4/95
SN-0237	0237	10/25/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/4/94	4A	Flammable	95004/95005	LWD	5/4/95
SN-0238	0238	10/25/94	5-4	55	steel	poor	<50	solid	white	-	Y	11/4/94	15A	Non-Hazzardous	95008	EQ Co.	5/12/95
SN-0239	0239	10/25/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/4/94	3A	Flammable (HOC)	95004/95005	LWD	5/4/95
SN-0240	0240	10/25/94	5-4	55	steel	poor	<50	solid	green/brown	-	Y	11/3/94	41	RCRA Organic/Metal	95009/95010	EQ Co.	5/17/95
SN-0241	0241	10/25/94	5-4	55	steel	poor	<50	solid	black	-	Y	11/4/94	24	RCRA Metals	95009/95010	EQ Co.	5/17/95
SN-0242	0242	10/25/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/5/94	2	RCRA Metals	95008	EQ Co.	5/12/95
SN-0243	0243	10/25/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/5/94	24	RCRA Metals	95009/95010	EQ Co.	5/17/95
SN-0244	0244	10/25/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/5/94	13A	Flammable	95006/95007	LWD	5/5/95
SN-0245	0245	10/25/94	5-4	55	steel	poor	<50	solid	white	-	Y	11/4/94	12A	Flammable (HOC)	95009/95010	LWD	5/4/95
SN-0246	0246	10/25/94	5-4	55	steel	poor	<50	solid	brown	-	Y	2/2/95	12A	Flammable	95009/95010	LWD	5/4/95
SN-0247	0247	10/25/94	5-4	55	steel	poor	<50	solid	black/white	-	Y	2/2/95	23A	Flammable	95004/95005	LWD	5/4/95
SN-0248	0248	10/25/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/4/94	20A	Flammable (HOC)	95006	LWD	5/5/95
SN-0249	0249	10/25/94	5-4	55	steel	poor	<50	liquid	grey	-	Y	11/4/94	44	RCRA Organic/Metal	95013	ROC	5/18/95
SN-0250	0250	10/25/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/3/94	1	RCRA Metals	95008	EQ Co.	5/12/95
SN-0251	0251	10/25/94	5-4	55	steel	poor	<50	solid	brown/white	-	Y	11/5/94	14A	Flammable	95006/95007	LWD	5/5/95
SN-0252	0252	10/25/94	5-4	55	steel	poor	<50	solid	black	-	Y	11/3/94	9A	CB, Flammable (HOC)	95011	CWM	5/11/95
SN-0253	0253	10/25/94	5-4	55	steel	poor	<50	liquid	grey	-	Y	11/1/94	18A	Flammable (HOC)	95005/95007	LWD	5/5/95
SN-0254	0254	10/26/94	5-4	55	steel	poor	<50	solid	brown	-	Y	11/3/94	18	RCRA Organic/Metals	95009/95010	EQ Co.	5/17/95
SN-0255	0255	10/26/94	5-4	55	steel	poor	<50	solid	grey	-	Y	11/7/94	2A	Flammable (HOC)	95004/95005	LWD	5/4/95
SN-0256A	0256	10/26/94	5-4	55	steel	poor	<10	solid	black/brown	stained soil	Y	11/3/94	24	RCRA Metals	95009/95010	EQ Co.	5/17/95
SN-0256B	0256	10/26/94	5-4	5	steel	poor	40	solid	green	pliable	Y	11/3/94	24	RCRA Metals	95009/95010	EQ Co.	5/17/95
SN-0256C	-	10/26/94	5-4	5	plastic	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0257	0257	10/26/94	5-5	55	steel	poor	<50	solid	brown	-	Y	11/3/94	19	RCRA Organic	95008/95009	EQ Co.	5/17/95
SN-0258	0258	10/26/94	5-5	55	steel	poor	<50	solid	brown	-	Y	11/3/94	19	RCRA Organic	95008/95009	EQ Co.	5/17/95
SN-0259	0259	10/26/94	5-5	55	steel	poor	<50	solid	brown	-	Y	11/5/94	41	RCRA Organic/Metal	95009/95010	EQ Co.	5/17/95
SN-0260	0260	10/26/94	5-5	55	steel	poor	<50	solid	brown/white	-	Y	11/3/94	13A	Flammable	95006/95007	LWD	5/5/95
SN-0261	0261	10/26/94	5-5	55	steel	poor	<5	solid	brown	-	Y	11/4/94	6A	PCB, Flammable (HOC)	95012	CWM	5/11/95
SN-0262	0262	10/26/94	5-5	55	steel	poor	<50	solid	brown	-	Y	11/4/94	8A	PCB, Flammable (HOC)	95012	CWM	5/11/95
SN-0263	0263	10/26/94	5-5	55	steel	poor	<5	solid	brown	-	Y	11/4/94	6A	PCB, Flammable (HOC)	95012	CWM	5/11/95
SN-0264	0264	10/27/94	5-5	55	steel	poor	<50	solid	brown	-	Y	11/4/94	2A	Flammable (HOC)	95004/95005	LWD	5/4/95
SN-0265	0265	10/27/94	5-5	55	steel	poor	<50	solid	brown	-	Y	11/4/94	6A	PCB, Flammable (HOC)	95012	CWM	5/11/95
SN-0266	0266	10/27/94	5-5	55	steel	poor	<50	solid	brown	-	Y	11/4/94	13A	Flammable	95006/95007	LWD	5/5/95
SN-0267	0267	10/27/94	5-5	55	steel	poor	<50	solid	brown	-	Y	11/4/94	9A	CB, Flammable (HOC)	95011	CWM	5/11/95
SN-0268	0268	10/27/94	5-5	55	steel	poor	<50	solid	brown	-	Y	11/4/94	3A	Flammable (HOC)	95004/95005	LWD	5/4/95
SN-0269	0269	10/27/94	5-5	55	steel	poor	<50	solid	brown	-	Y	11/4/94	1A	RCRA Organic/Metals	95009/95010	EQ Co.	5/17/95
SN-0270	0270	10/27/94	5-5	55	steel	poor	<50	solid	brown	-	Y	11/4/94	2A	Flammable (HOC)	95004/95005	LWD	5/4/95
SN-0271	0271	10/27/94	5-5	55	steel	poor	<50	solid	brown	-	Y	11/4/94	6A	PCB, Flammable (HOC)	95012	CWM	5/11/95
SN-0272	0272	10/27/94	5-5	55	steel	poor	<5	solid	brown/white	-	Y	11/4/94	6A	PCB, Flammable (HOC)	95012	CWM	5/11/95
SN-0273	0273	10/27/94	5-5	55	steel	poor	<50	solid	brown	-	Y	11/4/94	6A	PCB, Flammable (HOC)	95012	CWM	5/11/95
SN-0274	0274	10/27/94	5-5	55	steel	poor	<50	solid	brown	-	Y	11/4/94	19	RCRA Organic	95008/95009	EQ Co.	5/12/95
SN-0275	0275	10/27/94	5-5	55	steel	poor	<5	solid	brown	-	Y	11/4/94	8A	PCB, Flammable (HOC)	95012	CWM	5/11/95

TABLE 1

CONTAINER DATA SUMMARY
FINAL CONSTRUCTION REPORT
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Drum/		REMOVAL		CONTAINER			CONTENTS										
Container Number	Overpack#	Excavation Date	Grid Location	Size	Type	Condition	% Full	Matrix	Color	Description	Sampled	Sample Collection	Composite Group	Waste Classification	Ship Manifest	Outlet	Loadout Date
SN-0276	0276	10/27/94	5-5	55	steel	poor	<50	solid	brown	-	Y	11/4/94	2A	Flammable (HOC)	95004/95005	LWD	5/4/95
SN-0277	0277	10/27/94	5-5	55	steel	poor	<50	solid	brown	-	Y	11/4/94	6A	PCB, Flammable (HOC)	95012	CWM	5/11/95
SN-0278	0278	10/27/94	5-5	55	steel	poor	<50	solid	brown	-	Y	11/4/94	32A	Flammable	95004/95005	LWD	5/4/95
SN-0279	0279	10/27/94	5-5	55	steel	poor	<50	solid	brown	-	Y	11/4/94	6A	PCB, Flammable (HOC)	95012	CWM	5/11/95
SN-0280	0280	10/27/94	5-5	55	steel	poor	<50	solid	brown		Y	11/4/94	20B	Flammable	95004/95005	LWD	5/4/95
SN-0281	0281	10/27/94	5-5	55	steel	poor	<50	solid	brown		Y	11/4/94	2A	Flammable (HOC)	95004/95005	LWD	5/4/95
SN-0282	0282	10/27/94	5-5	55	steel	poor	<50	solid	brown	-	Y	11/4/94	6A	PCB, Flammable (HOC)	95012	CWM	5/11/95
SN-0283	0283	10/27/94	5-5	55	steel	poor	<50	solid	brown	-	Y	11/4/94	8A	PCB, Flammable (HOC)	95012	CWM	5/11/95
SN-0284	0284	10/27/94	5-5	55	steel	poor	<50	solid	brown	-	Y	11/4/94	2A	Flammable (HOC)	95004/95005	LWD	5/4/95
SN-0285	0285	10/27/94	5-5	55	steel	poor	<50	solid	brown		Y	11/4/94	14A	Flammable	95006/95007	LWD	5/5/95
SN-0286	0286	10/27/94	5-5	55	steel	poor	<50	solid	brown	-	Y	11/4/94	6A	PCB, Flammable (HOC)	95012	CWM	5/11/95
SN-0287	0287	10/27/94	5-5	55	steel	poor	<50	solid	brown		Y	11/4/94	14A	Flammable	95006/95007	LWD	5/5/95
SN-0288	0288	10/27/94	5-5	55	steel	poor	<50	solid	brown		Y	11/4/94	6A	PCB, Flammable (HOC)	95012	CWM	5/11/95
SN-0289	0289	11/7/94	5-7	55	steel	poor	60	solid	brown	-	Y	11/28/94	11A	RCRA Organic/Metal	95013	ROC	5/18/95
SN-0290		11/7/94	5-7	30	steel	poor	empty		-		N	-	-	-	-	-	-
SN-0291	0291	11/7/94	5-7	30	steel	poor	40	solid	brown	sludge, soil	Y	11/28/94	13A	Flammable	95006/95007	LWD	5/5/95
SN-0292	0292	11/8/94	4-7	55	steel	poor	80	solid	multi	sludge	Y	11/30/94	11A	RCRA Organic/Metal	95013	ROC	5/18/95
SN-0293	0293	11/8/94	4-7	30	steel	poor	50	solid	brown	-	Y	11/30/94	13A	Flammable	95006/95007	LWD	5/5/95
SN-0294	0294	11/8/94	4-7	55	steel	poor	40	liquid	brown	oil/water	Y	11/28/94	35	RCRA Organic	95013	ROC	5/18/95
SN-0295	0295	11/8/94	4-7	55	steel	poor	70	solid	colorless	-	Y	12/1/94	12A	RCRA Organic/Metal	95009/95010	EQ Co.	5/17/95
SN-0296	0296	11/8/91	4-7	55	steel	poor	70	liquid	brown	biphasic, oil/water	Y	11/29/94	19A	Flammable (HOC)	95005/95007	LWD	5/5/95
SN-0297	0297	11/8/94	4-7	55	steel	poor	50	solid	brown	sludge	Y	11/29/94	17A	Flammable	95006	LWD	5/5/95
SN-0298	0298	11/8/94	4-7	55	steel	poor	50	solid	brown	-	Y	11/28/94	34A	Flammable	95004/95005	LWD	5/4/95
SN-0299	0299	11/8/94	4-7	55	steel	poor	80	solid	white	-	Y	11/30/94	25	RCRA Organic	95008/95009	EQ Co.	5/12/95
SN-0300	0300	11/8/94	4-7	55	steel	poor	<50	solid	white	-	Y	12/3/94	25	RCRA Organic	95008/95009	EQ Co.	5/12/95
SN-0301	0301	11/8/94	4-7	55	steel	poor	50	liquid	white	-	Y	12/3/94	35	RCRA Organic	95013	ROC	5/18/95
SN-0302	0302	11/8/94	4-7	55	steel	poor	40	solid	brown	sludge	Y	2/2/95	10A	Flammable	95006/95007	LWD	5/5/95
SN-0303	0303	11/8/94	4-7	55	steel	poor	100	solid	white	-	Y	11/29/94	12A	RCRA Organic/Metal	95009/95010	EQ Co.	5/17/95
SN-0304	0304	11/8/94	4-7	55	steel	poor	60	liquid	white	-	Y	11/30/94	19A	Flammable (HOC)	95005/95007	LWD	5/5/95
SN-0305	0305	11/8/94	4-7	55	steel	poor	80	solid	tan	rubber-like	Y	11/28/94	34A	Flammable	95004/95005	LWD	5/4/95
SN-0306	0306	11/8/94	4-7	30	steel	poor	75	solid	brown	sludge	Y	11/29/94	11A	RCRA Organic/Metal	95013	EQ Co.	5/17/95
SN-0307A	0307	11/8/94	4-7	55	steel	poor	30	solid	brown	stained soil	Y	11/29/94	13A	Flammable (HOC)	95006/95007	LWD	5/5/95
SN-0307B	0307	11/8/94	4-7	5	steel	poor	70	liquid	black	oil	Y	11/29/94	19A	Flammable (HOC)	95005/95007	LWD	5/5/95
SN-0308	0308	11/8/94	4-7	55	steel	poor	70	solid	cream	rubber-like	Y	11/30/94	32A	Flammable	95004/95005	LWD	5/4/95
SN-0309	0309	11/8/94	4-7	55	steel	poor	90	solid	white	rubber-like	Y	11/28/94	25	RCRA Organic	95008/95009	EQ Co.	5/12/95
SN-0310	0310	11/8/94	4-7	55	steel	poor	90	solid	white	sludge	Y	11/29/94	33A	Flammable	95006/95007	LWD	5/5/95
SN-0311	0311	11/8/94	4-7	55	steel	poor	80	solid	white	-	Y	11/30/94	12A	RCRA Organic/Metal	95009/95010	EQ Co.	5/17/95
SN-0312	0312	11/8/94	4-7	55	steel	poor	80	liquid	white	-	Y	11/29/94	44	RCRA Organic/Metal	95013	EQ Co.	5/17/95
SN-0313	0313	11/8/94	4-7	55	steel	poor	100	solid	multi	-	Y	11/29/94	13A	Flammable	95006/95007	LWD	5/5/95
SN-0314	0314	11/8/94	4-7	55	steel	poor	20	liquid	brown	-	Y	11/30/94	44	RCRA Organic/Metal	95013	EQ Co.	5/17/95
SN-0315	0315	11/8/94	4-7	55	steel	poor	20	liquid	brown	-	Y	11/30/94	19A	Flammable (HOC)	95005/95007	LWD	5/5/95
SN-0316	0316	11/8/94	4-7	55	steel	poor	60	solid	brown	sludge	Y	11/29/94	33A	Flammable	95006/95007	LWD	5/5/95
SN-0317	0317	11/8/94	4-7	55	steel	poor	90	solid	brown	granular	Y	11/29/94	13A	Flammable	95006/95007	LWD	5/5/95
SN-0318	0318	11/8/94	4-7	55	steel	poor	50	solid	brown	sludge	Y	11/29/94	11A	RCRA Organic/Metal	95013	EQ Co.	5/17/95
SN-0319	0319	11/8/94	4-7	55	steel	poor	100	solid	brown	-	Y	11/29/94	13A	Flammable	95006/95007	LWD	5/5/95
SN-0320	0320	11/8/94	4-7	55	steel	poor	30	solid	white/brown	stained soil	Y	2/2/95	23A	Flammable	95004/95005	D	5/4/95
SN-0321	0321	11/8/94	4-7	55	steel	poor	25	solid	brown	-	Y	11/30/94	19	RCRA Organic	95008/95009	Co.	5/12/95
SN-0322A	0322	11/8/94	4-7	55	plastic	poor	20	liquid	brown	-	Y	11/29/94	17A	Flammable (HOC)	95006	LWD	5/5/95

TABLE 1

CONTAINER DATA SUMMARY
FINAL CONSTRUCTION REPORT
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Drum/ Container Number	Overpack#	REMOVAL Excavation Date	REMOVAL Grid Location	CONTAINER Size	CONTAINER Type	CONTAINER Condition	CONTENTS % Full	CONTENTS Matrix	CONTENTS Color	CONTENTS Description	Sampled	Sample Collection	Composite Group	Waste Classification	Ship Manifest	Outlet	Loadout Date
SN-0322B	0322	11/8/94	4-7	55	steel	poor	20	liquid	colorless	-	Y	11/29/94	19A	Flammable (HOC)	95005/95007	LWD	5/5/95
SN-0323	0323	11/8/94	4-7	55	steel	poor	60	solid	white	crystalline	Y	11/30/94	12A	RCRA Organic/Metal	95009/95010	EQ Co.	5/17/95
SN-0324	0324	11/8/94	4-7	55	steel	poor	80	solid	white	-	Y	11/30/94	12A	RCRA Organic/Metal	95009/95010	EQ Co.	5/17/95
SN-0325	0325	11/8/94	4-7	55	steel	poor	100	solid	brown	-	Y	11/30/94	17	Flammable	95004/95005	LWD	5/4/95
SN-0326	0326	11/8/94	4-7	55	steel	poor	90	solid	multi	mixed product	Y	11/30/94	23	RCRA Organic/Metals	95009/95010	EQ Co.	5/17/95
SN-0327	0327	11/8/94	4-7	55	steel	poor	40	solid	black	sludge	Y	11/30/94	53	RCRA Metals	95008	EQ Co.	5/12/95
SN-0328	0328	11/9/94	4-7	55	steel	poor	90	solid	brown	-	Y	11/30/94	37	Flammable (HOC)	95004/95005	LWD	5/4/95
SN-0329	0329	11/9/94	4-7	55	steel	poor	80	solid	brown	-	Y	11/30/94	22	RCRA Metals	95008	EQ Co.	5/12/95
SN-0330	0330	11/9/94	4-7	55	steel	poor	25	solid	brown	stained soil	Y	11/29/94	23	RCRA Organic/Metals	95009/95010	EQ Co.	5/17/95
SN-0331	0331	11/9/94	4-7	55	steel	poor	80	solid	cream	sludge	Y	11/29/94	11A	RCRA Organic/Metal	95013	EQ Co.	5/17/95
SN-0332	0332	11/9/94	4-7	55	steel	poor	60	solid	brown	sludge	Y	11/29/94	33A	Flammable	95006/95007	LWD	5/5/95
SN-0333	0333	11/9/94	4-7	55	steel	poor	100	liquid	brown	-	Y	11/29/94	19A	Flammable (HOC)	95005/95007	LWD	5/5/95
SN-0334	0334	11/9/94	4-7	55	steel	poor	50	liquid	green	-	Y	11/29/94	44	RCRA Organic/Metal	95013	EQ Co.	5/17/95
SN-0335A	0335	11/9/94	4-7	5	steel	poor	20	solid	black	residue	Y	11/29/94	15A	Flammable	95008	LWD	5/4/95
SN-0335B	0335	11/9/94	4-7	5	steel	poor	20	solid	black	residue	Y	11/29/94	32A	Flammable	95004/95005	LWD	5/4/95
SN-0336	0336	11/9/94	4-7	55	steel	poor	90	solid	white	-	Y	11/29/94	25	RCRA Organic	95008/95009	EQ Co.	5/12/95
SN-0337	0337	11/9/94	4-7	55	steel	poor	80	liquid	green	translucent	Y	11/30/94	51	RCRA Organic/Metal	95006/95007	LWD	5/5/95
SN-0338	0338	11/9/94	4-7	55	steel	poor	80	liquid	green	-	Y	11/30/94	19A	Flammable (HOC)	95005/95007	LWD	5/5/95
SN-0339	0339	11/9/94	4-7	55	steel	poor	20	solid	brown	sludge	Y	11/30/94	13A	Flammable	95006/95007	LWD	5/5/95
SN-0340	0340	11/9/94	4-7	55	steel	poor	65	liquid	green	-	Y	12/1/94	44	RCRA Organic/Metal	95013	EQ Co.	5/17/95
SN-0341	0341	11/10/94	4-7	55	steel	poor	90	solid	brown	-	Y	12/1/94	23	RCRA Organic/Metals	95009/95010	EQ Co.	5/17/95
SN-0342	0342	11/10/94	4-7	55	steel	poor	35	solid	brown	sludge	Y	12/2/94	38	Cyanide Sludge	95013	ROC	5/18/95
SN-0343	0343	11/10/94	4-7	55	steel	poor	90	solid	multi	-	Y	12/1/94	22	RCRA Metals	95008	EQ Co.	5/12/95
SN-0344	0344	11/10/94	4-7	55	steel	poor	70	solid	multi	-	Y	12/1/94	37	Flammable	95004/95005	LWD	5/4/95
SN-0345	0345	11/10/94	4-7	30	steel	poor	20	solid	black	residue	Y	12/1/94	38	Cyanide Sludge	95013	ROC	5/18/95
SN-0346	0346	11/10/94	4-7	55	steel	poor	90	solid	brown	-	Y	12/1/94	17	Flammable	95004/95005	LWD	5/4/95
SN-0347	0347	11/10/94	4-7	55	steel	poor	75	solid	multi	-	Y	12/1/94	22	RCRA Metals	95008	EQ Co.	5/12/95
SN-0348	0348	11/10/94	4-7	55	steel	poor	90	solid	multi	-	Y	12/1/94	37	Flammable	95004/95005	LWD	5/4/95
SN-0349	-	11/10/94	4-7	55	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0350	0350	11/10/94	4-7	55	steel	poor	50	solid	-	-	Y	12/1/94	23	RCRA Organic/Metals	95009/95010	EQ Co.	5/17/95
SN-0351	0351	11/10/94	4-7	55	steel	poor	80	solid	white/orange	-	Y	11/30/94	22	RCRA Metals	95008	EQ Co.	5/12/95
SN-0352	0352	11/10/94	4-7	55	steel	poor	90	solid	tan	-	Y	12/1/94	22	RCRA Metals	95008	EQ Co.	5/12/95
SN-0353	0353	11/10/94	4-7	55	steel	poor	30	solid	tan	-	Y	12/1/94	22	RCRA Metals	95008	EQ Co.	5/12/95
SN-0354	0354	11/10/94	4-7	55	steel	poor	50	solid	tan	-	Y	11/30/94	23	RCRA Organic/Metals	95009/95010	EQ Co.	5/17/95
SN-0355	0355	11/10/94	4-7	55	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0356	0356	11/10/94	4-7	55	steel	poor	90	solid	brown	-	Y	11/30/94	17	Flammable	95004/95005	LWD	5/4/95
SN-0357	0357	11/10/94	4-7	30	steel	poor	30	solid	brown	-	Y	11/30/94	23	RCRA Organic/Metals	95009/95010	EQ Co.	5/17/95
SN-0358	0358	11/10/94	4-7	55	steel	poor	60	solid	multi	-	Y	12/2/94	23	RCRA Organic/Metals	95009/95010	EQ Co.	5/17/95
SN-0359	-	11/10/94	4-7	55	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0360	0360	11/10/94	4-7	55	steel	poor	75	solid	multi	-	Y	12/1/94	37	Flammable	95004/95005	LWD	5/4/95
SN-0361	0361	11/10/94	4-7	55	steel	poor	90	solid	multi	-	Y	12/1/94	17	Flammable	95004/95005	LWD	5/4/95
SN-0362	0362	11/10/94	4-7	55	steel	poor	90	solid	multi	-	Y	12/1/94	37	Flammable	95004/95005	LWD	5/4/95
SN-0363	0363	11/10/94	4-7	55	steel	poor	90	solid	brown	-	Y	12/2/94	17	Flammable	95004/95005	LWD	5/4/95
SN-0364	0364	11/10/94	4-7	30	steel	poor	30	solid	brown	stained soil	Y	12/1/94	22	RCRA Metals	95008	EQ Co.	5/12/95
SN-0365	0365	11/10/94	4-7	30	steel	poor	30	solid	yellow/brown	granular product, soil	Y	12/1/94	12A	RCRA Organic/Metal	95009/95010	EQ Co.	5/17/95
SN-0366	0366	11/10/94	4-7	55	steel	poor	90	solid	brown	-	Y	12/1/94	17	Flammable	95004/95005	LWD	5/4/95
SN-0367	0367	11/10/94	4-7	30	steel	poor	30	solid	brown	stained soil	Y	12/1/94	20A	Flammable (HOC)	95006	LWD	5/5/95
SN-0368	0368	11/10/94	4-7	55	steel	poor	75	solid	multi	-	Y	12/1/94	22	RCRA Metals	95008	EQ Co.	5/12/95

TABLE 1

CONTAINER DATA SUMMARY
FINAL CONSTRUCTION REPORT
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Drum/		REMOVAL		CONTAINER			CONTENTS										
Container Number	Overpack#	Excavation Date	Grid Location	Size	Type	Condition	% Full	Matrix	Color	Description	Sampled	Sample Collection	Composite Group	Waste Classification	Ship Manifest	Outlet	Loadout Date
SN-0369	0369	11/10/94	4-7	30	steel	poor	30	solid	brown	granular	Y	12/1/94	37	Flammable	95004/95005	LWD	5/4/95
SN-0370	0370	11/10/94	4-7	55	steel	poor	80	solid	brown	-	Y	12/1/94	37	Flammable	95004/95005	LWD	5/4/95
SN-0371	0371	11/10/94	4-7	55	steel	poor	80	solid	brown	-	Y	12/1/94	17	Flammable	95004/95005	LWD	5/4/95
SN-0372	0372	11/10/94	4-7	55	steel	poor	65	liquid	brown	-	Y	12/1/94	20A	Flammable (HOC)	95006	LWD	5/5/95
SN-0373	0373	11/10/94	4-7	55	steel	poor	25	solid	brown	-	Y	12/1/94	38	Cyanide Sludge	95013	ROC	5/18/95
SN-0374	0374	11/10/94	4-7	55	steel	poor	90	solid	multi	-	Y	12/1/94	22	RCRA Metals	95008	EQ Co.	5/12/95
SN-0375	0375	11/10/94	4-7	55	steel	poor	40	solid	brown	stained soil	Y	12/1/94	23	RCRA Organic/Metals	95009/95010	EQ Co.	5/17/95
SN-0376	0376	11/10/94	4-7	55	steel	poor	75	solid	multi	-	Y	12/1/94	22	RCRA Metals	95008	EQ Co.	5/12/95
SN-0377	0377	11/10/94	4-7	55	steel	poor	40	solid	brown	sludge	Y	12/2/94	38	Cyanide Sludge	95013	ROC	5/18/95
SN-0378	0378	11/10/94	4-7	55	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0379A	0413	11/10/94	4-7	5	steel	poor	<50	solid	black	sludge	Y	12/1/94	9A	CB Flammable (HOC)	95011	CWM	5/11/95
SN-0379B	-	11/10/94	4-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0379C	-	11/10/94	4-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0379D	-	11/10/94	4-7	5	plastic	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0379E	-	11/10/94	4-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0379F	-	11/10/94	4-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0379G	-	11/10/94	4-7	30	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0380	0380	11/10/94	4-7	55	steel	poor	75	solid	multi	-	Y	12/1/94	17	Flammable	95004/95005	LWD	5/4/95
SN-0381	0381	11/10/94	4-7	55	steel	poor	30	solid	brown	sludge	Y	12/2/94	53	RCRA Metals	95008	EQ Co.	5/12/95
SN-0382A	-	11/10/94	4-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0382B	-	11/10/94	4-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0382C	0142	11/10/94	4-7	5	steel	poor	<50	solid	brown	-	Y	12/2/94	37	CB, Flammable (HOC)	95004/95005	CWM	5/11/95
SN-0382D	0382	11/10/94	4-7	55	steel	poor	<10	solid	brown	-	Y	12/2/94	13A	Flammable	95006/95007	LWD	5/5/95
SN-0383	0383	11/10/94	4-7	55	steel	poor	100	solid	brown	-	Y	12/2/94	17	Flammable	95004/95005	LWD	5/4/95
SN-0384	-	11/10/94	4-7	55	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0385A	-	11/10/94	4-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0385B	-	11/10/94	4-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0385C	-	11/10/94	4-7	5	plastic	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0385D	0473	11/10/94	4-7	5	steel	poor	<50	solid	brown	sludge	Y	12/2/94	11A	RCRA Organic	95013	EQ Co.	5/17/95
SN-0385E	-	11/10/94	4-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0385F	0432	11/10/94	4-7	5	plastic	poor	<50	solid	black	sludge	Y	12/2/94	10A	Flammable	95006/95007	LWD	5/5/95
SN-0385G	-	11/10/94	4-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0386	0386	11/10/94	4-7	30	steel	poor	80	liquid	white	-	Y	12/2/94	35	RCRA Organic	95013	ROC	5/18/95
SN-0387	-	11/10/94	4-7	55	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0388	0388	11/10/94	4-7	55	steel	poor	60	solid	green	-	Y	12/2/94	20B	Flammable	95004/95005	LWD	5/4/95
SN-0389	0389	11/10/94	4-7	55	steel	poor	50	liquid	brown	-	Y	12/2/94	17A	Flammable	95006	LWD	5/5/95
SN-0390	0390	11/10/94	4-7	55	steel	poor	90	liquid	brown	-	Y	12/8/94	18A	Flammable (HOC)	95005/95007	LWD	5/5/95
SN-0391	0391	11/11/94	4-7	55	steel	poor	70	solid	brown	-	Y	12/2/94	13A	Flammable	95006/95007	LWD	5/5/95
SN-0392	0392	11/11/94	4-7	55	steel	poor	10	solid	brown	-	Y	12/2/94	41	RCRA Organic/Metal	95009/95010	EQ Co.	5/17/95
SN-0393	0393	11/11/94	4-7	55	steel	poor	25	solid	black	-	Y	12/2/94	32B	Flammable	95004/95005	LWD	5/4/95
SN-0394	-	11/11/94	4-7	55	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0395	0395	11/11/94	4-7	55	steel	poor	25	solid	brown	-	Y	12/2/94	32B	Flammable	95004/95005	LWD	5/4/95
SN-0396	-	11/11/94	4-7	55	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0397	0397	11/11/94	4-7	55	steel	poor	10	liquid	brown	-	Y	12/2/94	20A	Flammable (HOC)	95006	LWD	5/5/95
SN-0398	0398	11/11/94	4-7	55	steel	poor	50	liquid	white	-	Y	12/1/94	17A	Flammable	95006	LWD	5/5/95
SN-0399	0399	11/11/94	4-7	55	steel	poor	50	liquid	green	-	Y	12/1/94	17A	Flammable	95006	LWD	5/5/95
SN-0400	0400	11/11/94	4-7	55	steel	poor	20	liquid	brown	-	Y	12/1/94	18A	Flammable (HOC)	95005/95007	LWD	5/5/95
SN-0401	-	11/11/94	4-7	55	steel	poor	empty	-	-	-	N	-	-	-	-	-	-

TABLE 1

CONTAINER DATA SUMMARY
FINAL CONSTRUCTION REPORT
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Drum/ Container Number	Overpack#	REMOVAL Excavation Date	REMOVAL Grid Location	CONTAINER Size	CONTAINER Type	CONTAINER Condition	CONTENTS % Full	CONTENTS Matrix	CONTENTS Color	CONTENTS Description	Sampled	Sample Collection	Composite Group	Waste Classification	Ship Manifest	Outlet	Loadout Date
SN-0402	-	11/11/94	4-7	55	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN 0403	0403	11/11/94	4-7	55	steel	poor	100	liquid	amber	clear	Y	12/2/94	44	RCRA Organic/Metal	95013	ROC	5/18/95
SN 0404	0404	11/11/94	4-7	55	steel	poor	50	liquid	green	-	Y	11/30/94	19A	Flammable (HOC)	95005/95007	LWD	5/5/95
SN 0405A	-	11/11/94	4-7	55	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0405B	-	11/11/94	4-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN 0406	0406	11/11/94	4-7	55	steel	poor	25	solid	brown	-	Y	11/30/94	20B	Flammable	95004/95005	LWD	5/4/95
SN 0407	0407	11/11/94	4-7	55	steel	poor	90	solid	white	-	Y	12/1/94	13A	Flammable	95006/95007	LWD	5/5/95
SN-0408A	-	11/12/94	4-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN 0408B	-	11/12/94	4-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0408C	0458	11/12/94	4-7	5	steel	poor	<50	solid	brown	-	Y	12/1/94	34A	Flammable	95004/95005	LWD	5/4/95
SN-0408D	0437	11/12/94	4-7	16 oz	glass	poor	<50	solid	white	crystalline	Y	12/1/94	14A	Flammable	95006/95007	LWD	5/5/95
SN-0408E	0413	11/12/94	4-7	5	steel	poor	<50	solid	black	sludge/oil	Y	12/1/94	9A	CB Flammable (HOC)	95011	CWM	5/11/95
SN-0408F	0413	11/12/94	4-7	5	steel	poor	<50	solid	black	sludge/oil	Y	12/1/94	9A	CB Flammable (HOC)	95011	CWM	5/11/95
SN-0408G	0413	11/12/94	4-7	5	steel	poor	<50	solid	black	sludge/oil	Y	12/1/94	9A	CB, Flammable (HOC)	95011	CWM	5/11/95
SN-0408H	0456	11/12/94	4-7	5	steel	poor	<50	solid	brown	-	Y	12/1/94	12A	RCRA Organic/Metal	95009/95010	EQ Co.	5/17/95
SN-0408I	-	11/12/94	4-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0409A	0437	11/12/94	4-7	5	steel	poor	100	solid	white	opaque, crystalline	Y	12/1/94	14A	Flammable	95006/95007	LWD	5/5/95
SN-0409B	0408	11/12/94	4-7	5	steel	poor	5	solid	black/grey	pliable	Y	12/1/94	9A	CB, Flammable (HOC)	95011	CWM	5/11/95
SN-0409C	0466	11/12/94	4-7	2-L	glass	poor	20	liquid	brown	clear	Y	12/1/94	9A	CB, Flammable (HOC)	95011	CWM	5/11/95
SN-0409D	0474	11/12/94	4-7	1-L	alumin.	poor	100	liquid	colorless	clear, viscous	Y	12/1/94	13A	Flammable	95006/95007	LWD	5/5/95
SN-0409E	-	11/12/94	4-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0409F	0409	11/12/94	4-7	30	steel	poor	100	solid	white	pliable	Y	12/1/94	32B	Flammable	95004/95005	LWD	5/4/95
SN-0410	0410	11/12/94	4-7	55	steel	poor	20	solid	white/black	granular product, residue	Y	12/3/94	13A	Flammable	95006/95007	LWD	5/5/95
SN-0411	0411	11/12/94	4-7	55	steel	poor	95	solid	brown	rubber-like	Y	12/3/94	34A	Flammable	95004/95005	LWD	5/4/95
SN-0412	0412	11/12/94	4-7	55	steel	poor	90	liquid	brown/white	biphasic	Y	12/3/94	10A	Flammable (HOC)	95006/95007	LWD	5/5/95
SN-0413A	-	11/12/94	4-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN 0413B	-	11/12/94	4-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0413C	0413	11/12/94	4-7	5	steel	poor	<50	solid	black	sludge	Y	12/3/94	9A	CB Flammable (HOC)	95011	CWM	5/11/95
SN-0413D	0468	11/12/94	4-7	5	steel	poor	<50	solid	white	-	Y	12/3/94	32B	Flammable	95004/95005	LWD	5/4/95
SN-0413E	0463	11/12/94	4-7	5	steel	poor	<50	solid	white	-	Y	12/3/94	32B	Flammable	95004/95005	LWD	5/4/95
SN-0413F	0142	11/12/94	4-7	5	steel	poor	<50	solid	brown	-	Y	12/3/94	37	CB, Flammable (HOC)	95004/95005	CWM	5/11/95
SN-0414	0414	11/12/94	4-7	55	steel	poor	50	solid	cream	-	Y	12/3/94	32B	Flammable	95004/95005	LWD	5/4/95
SN-0415	-	11/12/94	4-7	55	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0416A	0416	11/12/94	4-7	5	steel	poor	10	liquid	brown	-	Y	11/30/94	19A	Flammable	95005/95007	LWD	5/5/95
SN-0416B	0416	11/12/94	4-7	5	steel	poor	20	solid	white	sludge	Y	11/30/94	10A	Flammable	95006/95007	LWD	5/5/95
SN-0416C	0416	11/12/94	4-7	5	steel	poor	20	solid	white	sludge	Y	11/30/94	10A	Flammable	95006/95007	LWD	5/5/95
SN 0416D	-	11/12/94	4-7	5	steel	poor	90	liquid	white	-	Y	11/30/94	25	RCRA Organic	95008/95009	EQ Co.	5/17/95
SN-0417	0417	11/14/94	4-7	55	steel	poor	20	solid	brown	stained soil	Y	12/3/94	20B	Flammable	95004/95005	LWD	5/4/95
SN 0418	0418	11/14/94	4-7	55	steel	poor	25	solid	white/brown	misc solids, soil	Y	12/3/94	34A	Flammable	95004/95005	LWD	5/4/95
SN 0419	0419	11/14/94	4-7	55	steel	poor	15	solid	brown	stained soil	Y	12/3/94	19	RCRA Organic	95008/95009	EQ Co.	5/17/95
SN-0420	0420	11/14/94	4-7	55	steel	poor	30	solid	brown	stained soil	Y	12/3/94	20A*	Flammable	95005	LWD	5/4/95
SN 0421	0421	11/14/94	4-7	55	steel	poor	85	solid	multi	-	Y	12/3/94	10A	Flammable	95006/95007	LWD	5/5/95
SN-0422	0422	11/14/94	4-7	55	steel	poor	80	solid	brown/black	-	Y	12/3/94	13A	Flammable	95006/95007	LWD	5/5/95
SN-0423A	0432	11/14/94	4-7	5	steel	poor	75	solid	black	sludge/rubber	Y	12/3/94	10A	Flammable	95006/95007	LWD	5/5/95
SN-0423B	0432	11/14/94	4-7	5	steel	poor	25	solid	black	sludge/rubber	Y	12/3/94	10A	Flammable	95006/95007	LWD	5/5/95
SN 0423C	0456	11/14/94	4-7	5	steel	poor	75	solid	brown	-	Y	12/3/94	12A	RCRA Organic/Metal	95009/95010	EQ Co.	5/17/95
SN-0423D	0432	11/14/94	4-7	5	steel	poor	50	solid	black	sludge/rubber	Y	12/3/94	10A	Flammable	95006/95007	LWD	5/5/95
SN-0423E	0432	11/14/94	4-7	5	steel	poor	50	solid	black	sludge/rubber	Y	12/3/94	10A	Flammable	95006/95007	LWD	5/5/95

TABLE 1

CONTAINER DATA SUMMARY
FINAL CONSTRUCTION REPORT
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Drum/ Container Number	Overpack#	REMOVAL Excavation Date	REMOVAL Grid Location	CONTAINER Size	CONTAINER Type	CONTAINER Condition	CONTENTS % Full	CONTENTS Matrix	CONTENTS Color	CONTENTS Description	Sampled	Sample Collection	Composite Group	Waste Classification	Ship Manifest	Outlet	Loadout Date
SN-0423F	0423	11/14/94	4-7	30	steel	poor	70	solid	white	opaque, hard/brittle	Y	12/3/94	32B	Flammable	95004/95005	LWD	5/4/95
SN-0424	0424	11/14/94	4-7	30	steel	poor	30	liquid	brown	oil/water	Y	12/3/94	35	RCRA Organic	95013	ROC	5/18/95
SN-0425A	0458	11/14/94	4-7	5	plastic	poor	40	solid	brown	-	Y	12/3/94	34A	Flammable	95004/95005	LWD	5/4/95
SN-0425B	-	11/14/94	4-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0425C	-	11/14/94	4-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0425D	0472	11/14/94	4-7	1	steel	poor	75	solid	brown	stained soil	Y	12/3/94	37	Flammable	95004/95005	LWD	5/4/95
SN-0426	-	11/14/94	4-7	55	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0427A	0427	11/14/94	4-7	5	steel	poor	50	liquid	red	oil	Y	12/3/94	10A	Flammable	95006/95007	LWD	5/5/95
SN-0427B	0474	11/14/94	4-7	5	steel	poor	80	liquid	green	pale, opaque	Y	12/3/94	17A	Flammable	95006	LWD	5/5/95
SN-0427C	0468	11/14/94	4-7	5	steel	poor	100	solid	white	-	Y	12/3/94	32B	Flammable	95004/95005	LWD	5/4/95
SN-0427D	0130	11/14/94	4-7	5	steel	poor	100	solid	red	opaque	Y	12/3/94	11A	Flammable	95013	LWD	5/4/95
SN-0427E	0474	11/14/94	4-7	5	steel	poor	100	liquid	colorless	clear	Y	12/3/94	13A	Flammable	95006/95007	LWD	5/5/95
SN-0427F	0432	11/14/94	4-7	5	steel	poor	50	solid	black	residue/rubber	Y	12/3/94	10A	Flammable	95006/95007	LWD	5/5/95
SN-0428A	0450	11/14/94	4-7	5	steel	poor	<50	liquid	brown	oil	Y	12/3/94	10A	Flammable	95006/95007	LWD	5/5/95
SN-0428B	0450	11/14/94	4-7	5	steel	poor	<50	liquid	brown	oil	Y	12/3/94	10A	Flammable	95006/95007	LWD	5/5/95
SN-0428C	-	11/14/94	4-7	2	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0428D	-	11/14/94	4-7	2	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0428E	0473	11/14/94	4-7	5	steel	poor	<50	solid	blue/grey	sludge	Y	12/3/94	14A	Flammable	95006/95007	LWD	5/5/95
SN-0428F	0468	11/14/94	4-7	2	plastic	poor	<50	solid	white	-	Y	12/3/94	32B	Flammable	95004/95005	LWD	5/4/95
SN-0428G	0413	11/14/94	4-7	2	steel	poor	<50	solid	black	sludge	Y	12/3/94	9A	CB Flammable (HOC)	95011	CWM	5/11/95
SN-0428H	0413	11/14/94	4-7	5	steel	poor	<50	solid	black	sludge	Y	12/3/94	9A	CB Flammable (HOC)	95011	CWM	5/11/95
SN-0429	0429	11/14/94	4-7			poor	20	solid	brown/grey	-	Y	12/3/94	21B	Flammable	95004/95005	LWD	5/4/95
SN-0430A	0142	11/14/94	4-7	5	steel	poor	60	solid	brown	stained soil	Y	12/3/94	37	CB, Flammable (HOC)	95004/95005	CWM	5/11/95
SN-0430B	0142	11/14/94	4-7	5	steel	poor	50	solid	brown	stained soil	Y	12/3/94	37	CB, Flammable (HOC)	95004/95005	CWM	5/11/95
SN-0430C	0458	11/14/94	4-7	5	steel	poor	40	solid	brown	clear, hard,brittle	Y	12/3/94	34A	Flammable	95004/95005	LWD	5/4/95
SN-0430D	0130	11/14/94	4-7	5	steel	poor	100	solid	yellow	-	Y	12/3/94	34A	Flammable	95004/95005	LWD	5/4/95
SN-0430E	0450	11/14/94	4-7	5	steel	poor	100	liquid	brown	clear	Y	12/3/94	10A	Flammable	95006/95007	LWD	5/5/95
SN-0430F	0450	11/14/94	4-7	5	steel	poor	100	liquid	brown	clear	Y	12/3/94	10A	Flammable	95006/95007	LWD	5/5/95
SN-0431	0431	11/14/94	4-7	55	steel	poor	100	liquid	brown	clear, viscous	Y	12/2/94	19A	Flammable (HOC)	95005/95007	LWD	5/5/95
SN-0432A	0432	11/14/94	4-7	5	steel	poor	80	solid	black	sludge	Y	12/2/94	10A	Flammable	95006/95007	LWD	5/5/95
SN-0432B	0413	11/14/94	4-7	5	steel	poor	90	solid	black	sludge	Y	12/2/94	9A	CB Flammable (HOC)	95011	CWM	5/11/95
SN-0432C	0466	11/14/94	4-7	5	steel	poor	100	solid	black	sludge	Y	12/2/94	9A	CB, Flammable (HOC)	95011	CWM	5/11/95
SN-0432D	0142	11/14/94	4-7	5	steel	poor	50	solid	brown	stained soil	Y	12/2/94	37	CB, Flammable (HOC)	95004/95005	CWM	5/11/95
SN-0432E	0466	11/14/94	4-7	5	steel	poor	80	solid	black	sludge	Y	12/2/94	9A	CB, Flammable (HOC)	95011	CWM	5/11/95
SN-0432F	0474	11/14/94	4-7	5	steel	poor	100	solid	clear	oil	Y	12/2/94	13A	Flammable	95006/95007	LWD	5/5/95
SN-0432G		11/14/94	4-7	1	steel	poor	empty	-	-	-	N	-		-	-	-	-
SN-0433	0433	11/14/94	4-7	55	steel	poor	50	liquid	brown/black	-	Y	12/8/94	19A	Flammable (HOC)	95005/95007	LWD	5/5/95
SN-0434	0434	11/14/94	4-7	55	steel	poor	100	solid	brown	-	Y	12/8/94	21B	Flammable	95004/95005	LWD	5/4/95
SN-0435	0435	11/14/94	4-7	55	steel	poor	60	solid	brown/grey	-	Y	12/2/94	20A*	Flammable	95005	LWD	5/4/95
SN-0436	0436	11/14/94	4-7	55	steel	poor	100	solid	brown	-	Y	12/2/94	20A*	Flammable	95005	LWD	5/4/95
SN-0437A	0437	11/14/94	4-7	5	steel	poor	100	solid	white	powder	Y	12/2/94	14A	Flammable	95006/95007	LWD	5/5/95
SN-0437B	0465	11/14/94	4-7	5	steel	poor	50	solid	black	-	Y	12/2/94	32B	Flammable	95004/95005	LWD	5/4/95
SN-0437C	0475	11/14/94	4-7	5	steel	poor	100	solid	white	translucent, rubber-like	Y	12/2/94	10A	Flammable	95006/95007	LWD	5/5/95
SN-0437D	0437	11/14/94	4-7	5	steel	poor	100	solid	white	powder	Y	12/2/94	14A	Flammable	95006/95007	LWD	5/5/95
SN-0437E	0408	11/14/94	4-7	5	steel	poor	10	solid	black	rubber-like	Y	12/2/94	9A	CB, Flammable (HOC)	95011	CWM	5/11/95
SN-0437F	0463	11/14/94	4-7	1	plastic	poor	100	solid	white	fat-like	Y	12/2/94	32B	Flammable	95004/95005	LWD	5/4/95
SN-0437G	-	11/14/94	4-7	2	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0437H	0474	11/14/94	4-7	5	steel	poor	100	liquid	green	pale, viscous	Y	12/2/94	17A	Flammable	95006	LWD	5/5/95

TABLE 1

CONTAINER DATA SUMMARY
FINAL CONSTRUCTION REPORT
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Drum/ Container Number	Overpack#	REMOVAL Excavation Date	REMOVAL Grid Location	CONTAINER Size	CONTAINER Type	CONTAINER Condition	CONTENTS % Full	CONTENTS Matrix	CONTENTS Color	CONTENTS Description	Sampled	Sample Collection	Composite Group	Waste Classification	Ship Manifest	Outlet	Loadout Date
SN-0438A	0437	11/14/94	4-7	5	steel	poor	100	solid	white	powder	Y	12/2/94	14A	Flammable	95006/95007	LWD	5/5/95
SN-0438B	0408	11/14/94	4-7	5	steel	poor	80	solid	black	residue/rubber	Y	12/2/94	9A	CB, Flammable (HOC)	95011	CWM	5/11/95
SN-0438C	0115	11/14/94	4-7	5	steel	poor	100	liquid	brown	viscous oil	Y	12/2/94	9A	CB, Flammable (HOC)	95011	CWM	5/11/95
SN-0438D		11/14/94	4-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0438E	0455	11/14/94	4-7	5	steel	poor	100	liquid	tan brown	-	Y	12/2/94	19A	Flammable (HOC)	95005/95007	LWD	5/5/95
SN-0438F	-	11/14/94	4-7	2	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0438G	0474	11/14/94	4-7	1	plastic	poor	100	solid	orange		Y	12/2/94	14A	Flammable	95006/95007	LWD	5/5/95
SN-0438H	0474	11/14/94	4-7	1	plastic	poor	100	solid	orange		Y	12/2/94	14A	Flammable	95006/95007	LWD	5/5/95
SN-0438I	0463	11/14/94	4-7	1	plastic	poor	100	solid	white	fat like	Y	12/2/94	32B	Flammable	95004/95005	LWD	5/4/95
SN-0438J	0463	11/14/94	4-7	1	plastic	poor	100	solid	white	fat-like	Y	12/2/94	32B	Flammable	95004/95005	LWD	5/4/95
SN-0439	-	11/14/94	4-7	55	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0440	0439	11/14/94	4-7	55	steel	poor	85	solid	brown	rubber like	Y	12/2/94	25	RCRA Organic	95008/95009	EQ Co.	5/17/95
SN-0441	0441	11/14/94	4-7	55	steel	poor	80	solid	black	sludge	Y	12/2/94	13A	Flammable	95006/95007	LWD	5/5/95
SN-0442	0442	11/14/94	4-7	55	steel	poor	50	solid	white	sludge	Y	12/2/94	10A	Flammable	95006/95007	LWD	5/5/95
SN-0443	0443	11/14/94	4-7	55	steel	poor	90	solid	multi	-	Y	12/2/94	13A	Flammable	95006/95007	LWD	5/5/95
SN-0444	0444	11/14/94	4-7	55	steel	poor	90	solid	brown	stained soil	Y	12/8/94	21B	Flammable	95004/95005	LWD	5/4/95
SN-0445	0445	11/14/94	4-7	55	steel	poor	90	solid	white	-	Y	12/2/94	25	RCRA Organic	95008/95009	EQ Co.	5/17/95
SN-0446A	0463	11/14/94	4-7	5	steel	poor	100	solid	white	opaque, fat-like	Y	12/2/94	32B	Flammable	95004/95005	LWD	5/4/95
SN-0446B	-	11/14/94	4-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0446C	-	11/14/94	4-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0446D	0432	11/14/94	4-7	5	steel	poor	10	solid	black	sludge/rubber	Y	12/2/94	10A	Flammable	95006/95007	LWD	5/5/95
SN-0446E	0123	11/14/94	4-7	5	steel	poor	20	solid	black	sludge	Y	12/2/94	9A	CB, Flammable (HOC)	95011	CWM	5/11/95
SN-0447	0447	11/14/94	4-7			poor	100	solid	white	-	Y	12/2/94	13A	Flammable	95006/95007	LWD	5/5/95
SN-0448	0448	11/14/94	4-7			poor	90	liquid	white	-	Y	12/2/94	19A	Flammable (HOC)	95005/95007	LWD	5/5/95
SN-0449	0449	11/14/94	4-7			poor	90	solid	brown/grey	-	Y	12/2/94	13A	Flammable	95006/95007	LWD	5/5/95
SN-0450A	0466	11/14/94	4-7	5	steel	poor	40	solid	black	sludge/oil	Y	12/2/94	9A	CB, Flammable (HOC)	95011	CWM	5/11/95
SN-0450B	0456	11/14/94	4-7	5	steel	poor	100	solid	brown	-	Y	12/2/94	12A	RCRA Organic/Metal	95009/95010	EQ Co.	5/17/95
SN-0450C	-	11/14/94	4-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0450D	0466	11/14/94	4-7	1 quart	steel	poor	95	solid	black	sludge/oil	Y	12/2/94	9A	CB, Flammable (HOC)	95011	CWM	5/11/95
SN-0450E	0130	11/14/94	4-7	5	steel	poor	100	solid	yellow	-	Y	12/2/94	34A	Flammable	95004/95005	LWD	5/4/95
SN-0451	0451	11/15/94	4-7	55	steel	poor	60	solid	tan	sludge	Y	12/2/94	11A	RCRA Organic/Metal	95013	ROC	5/18/95
SN-0452	0452	11/15/94	4-7	55	steel	poor	100	solid	white	sludge	Y	12/2/94	51	Flammable	95006/95007	LWD	5/5/95
SN-0453	0453	11/15/94	4-7	55	steel	poor	60	solid	grey/brown	-	Y	12/2/94	21B	Flammable	95004/95005	LWD	5/4/95
SN-0454	0454	11/15/94	4-7	55	steel	poor	90	solid	red/brown	-	Y	12/2/94	10A	Flammable	95006/95007	LWD	5/5/95
SN-0455A	-	11/15/94	4-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0455B	0476	11/15/94	4-7	30	steel	poor	50	solid	white	-	Y	12/2/94	32B	Flammable	95004/95005	LWD	5/4/95
SN-0456A	0115	11/15/94	4-7	5	steel	poor	80	liquid	brown	-	Y	12/2/94	9A	CB, Flammable (HOC)	95011	CWM	5/11/95
SN-0456B	0456	11/15/94	4-7	5	steel	poor	70	solid	tan brown	-	Y	12/2/94	12A	RCRA Organic/Metal	95009/95010	EQ Co.	5/17/95
SN-0456C	0413	11/15/94	4-7	5	steel	poor	5	solid	black	-	Y	12/2/94	9A	CB Flammable (HOC)	95011	CWM	5/11/95
SN-0456D	0465	11/15/94	4-7	5	steel	poor	80	solid	tan brown	-	Y	12/2/94	32B	Flammable	95004/95005	LWD	5/4/95
SN-0456E	-	11/15/94	4-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0456F	0456	11/15/94	4-7	5	steel	poor	50	solid	tan brown	-	Y	12/2/94	12A	RCRA Organic/Metal	95009/95010	EQ Co.	5/17/95
SN-0457	0457	11/15/94	4-7	55	steel	poor	30	solid	white	rubber-like	Y	12/2/94	25	RCRA Organic	95008/95009	EQ Co.	5/17/95
SN-0458A	0438	11/15/94	4-7	5	steel	poor	40	liquid	tan brown	-	Y	12/2/94	10A	Flammable	95006/95007	LWD	5/5/95
SN-0458B	0475	11/15/94	4-7	5	steel	poor	100	solid	white	translucent, rubber-like	Y	12/2/94	10A	Flammable	95006/95007	LWD	5/5/95
SN-0458C	0475	11/15/94	4-7	5	steel	poor	100	solid	white	translucent, rubber-like	Y	12/2/94	10A	Flammable	95006/95007	LWD	5/5/95
SN-0458D	0458	11/15/94	4-7	5	steel	poor	100	solid	brown	brown	Y	12/2/94	34A	Flammable	95004/95005	LWD	5/4/95
SN-0458E	-	11/15/94	4-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-

TABLE 1

CONTAINER DATA SUMMARY
FINAL CONSTRUCTION REPORT
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Drum/		REMOVAL		CONTAINER			CONTENTS										
Container Number	Overpack#	Excavation Date	Grid Location	Size	Type	Condition	% Full	Matrix	Color	Description	Sampled	Sample Collection	Composite Group	Waste Classification	Ship Manifest	Outlet	Loadout Date
SN-0458F	0123	11/15/94	4-7	5	steel	poor	20	solid	black	sludge	Y	12/2/94	9A	CB, Flammable (HOC)	95011	CWM	5/11/95
SN-0459A	0141	11/15/94	4-7	5	steel	poor	90	solid	black	sludge	Y	12/2/94	9A	CB, Flammable (HOC)	95011	CWM	5/11/95
SN-0459B	0459	11/15/94	4-7	5	steel	poor	25	liquid	black/brown	viscous, oil	Y	12/2/94	9A	PCB Flammable (HOC)	95011	CWM	5/11/95
SN-0459C	-	11/15/94	4-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0459D	-	11/15/94	4-7	5	steel	poor	empty		-	-	N	-	-	-	-	-	-
SN-0459E	0123	11/15/94	4-7	5	steel	poor	10	solid	black	sludge	Y	12/2/94	9A	CB, Flammable (HOC)	95011	CWM	5/11/95
SN-0459F	0459	11/15/94	4-7	5	steel	poor	5	solid	black	sludge	Y	12/2/94	9A	PCB Flammable (HOC)	95011	CWM	5/11/95
SN-0459G	0123	11/15/94	4-7	5	steel	poor	5	solid	black	sludge	Y	12/2/94	9A	CB, Flammable (HOC)	95011	CWM	5/11/95
SN-0460	0123	11/15/94	4-7			poor	40	solid	blue	fiberous	Y	12/2/94	25	RCRA Organic	95008/95009	EQ Co.	5/17/95
SN-0461A	0461	11/15/94	4-7	30	steel	poor	80	solid	white	opaque	Y	12/2/94	32B	Flammable	95004/95005	LWD	5/4/95
SN-0461B	-	11/15/94	4-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0462	0462	11/15/94	4-7	30	steel	poor	25	solid	tan	sludge	Y	12/2/94	11A	Flammable (HOC)	95013	LWD	5/5/95
SN-0463A	0458	11/15/94	4-7	5	steel	poor	90	solid	brown	-	Y	12/2/94	34A	Flammable	95004/95005	LWD	5/4/95
SN-0463B	0438	11/15/94	4-7	5	steel	poor	80	liquid	brown	-	Y	12/2/94	10A	Flammable	95006/95007	LWD	5/5/95
SN-0463C	-	11/15/94	4-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0463D	0468	11/15/94	4-7	5	steel	poor	5	solid	white	opaque	Y	12/2/94	32B	Flammable	95004/95005	LWD	5/4/95
SN-0463E	0458	11/15/94	4-7	5	steel	poor	5	solid	brown	-	Y	12/2/94	32B	Flammable	95004/95005	LWD	5/4/95
SN-0463F	0455	11/15/94	4-7	5	steel	poor	5	liquid	brown	viscous	Y	12/2/94	19A	Flammable (HOC)	95005/95007	LWD	5/5/95
SN-0463G	0474	11/15/94	4-7	5	steel	poor	100	liquid	colorless	clear, viscous	Y	12/2/94	13A	Flammable	95006/95007	LWD	5/5/95
SN-0464A	0473	11/15/94	4-7	5	steel	poor	100	liquid	colorless	clear, viscous	Y	12/2/94	13A	RCRA Organic	95006/95007	EQ Co.	5/17/95
SN-0464B	0465	11/15/94	4-7	5	steel	poor	50	solid	brown	-	Y	12/2/94	32B	Flammable	95004/95005	LWD	5/4/95
SN-0464C	0473	11/15/94	4-7	5	steel	poor	100	solid	green/brown	rubber-like	Y	12/2/94	14A	RCRA Organic	95006/95007	EQ Co.	5/17/95
SN-0464D	0473	11/15/94	4-7	5	steel	poor	80	solid	white/blue	-	Y	12/2/94	14A	RCRA Organic	95006/95007	EQ Co.	5/17/95
SN-0464E	0474	11/15/94	4-7	1	steel	poor	100	solid	colorless	clear	Y	12/2/94	13A	Flammable	95006/95007	LWD	5/5/95
SN-0464F	-	11/15/94	4-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0464G	0459	11/15/94	4-7	5	steel	poor	20	liquid	black	viscous	Y	12/2/94	9A	PCB Flammable (HOC)	95011	CWM	5/11/95
SN-0464H	0464	11/15/94	4-7	5	steel	poor	10	solid	tan brown	-	Y	12/2/94	2A	Flammable	95004/95005	LWD	5/5/95
SN-0465A	0141	11/15/94	4-7	1	steel	poor	80	liquid	brown	viscous	Y	12/2/94	9A	CB, Flammable (HOC)	95011	CWM	5/11/95
SN-0465B	0474	11/15/94	4-7	1	steel	poor	90	liquid	colorless	clear	Y	12/2/94	13A	Flammable	95006/95007	LWD	5/5/95
SN-0465C	0379	11/15/94	4-7	5	steel	poor	40	liquid	black	viscous	Y	12/2/94	19A	Flammable (HOC)	95005/95007	LWD	5/5/95
SN-0465D	0473	11/15/94	4-7	5	steel	poor	90	solid	black/grey	powder/solids	Y	12/2/94	11A	RCRA Organic	95013	EQ Co.	5/17/95
SN-0465E	-	11/15/94	4-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0465F	-	11/15/94	4-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0465G	0408	11/15/94	4-7	5	steel	poor	75	solid	black/grey	powder/solids	Y	12/2/94	9A	CB, Flammable (HOC)	95011	CWM	5/11/95
SN-0465H	0465	11/15/94	4-7	5	steel	poor	30	solid	brown	-	Y	12/2/94	32B	Flammable	95004/95005	LWD	5/4/95
SN-0465I	0463	11/15/94	4-7	5	steel	poor	90	solid	black	sludge	Y	12/2/94	32B	Flammable	95004/95005	LWD	5/4/95
SN-0465J	0465	11/15/94	4-7	5	steel	poor	50	solid	tan brown	-	Y	12/2/94	32B	Flammable	95004/95005	LWD	5/4/95
SN-0466A	-	11/15/94	4-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0466B	0141	11/15/94	4-7	5	steel	poor	90	liquid	brown	clear, viscous	Y	12/2/94	9A	CB, Flammable (HOC)	95011	CWM	5/11/95
SN-0466C	-	11/15/94	4-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0466D	0475	11/15/94	4-7	5	steel	poor	100	solid	white	translucent, rubber-like	Y	12/2/94	10A	Flammable	95006/95007	LWD	5/5/95
SN-0466E	0141	11/15/94	4-7	5	steel	poor	80	liquid	brown	clear, viscous	Y	12/2/94	9A	CB, Flammable (HOC)	95011	CWM	5/11/95
SN-0466F	0466	11/15/94	4-7	5	steel	poor	25	liquid	brown	clear, viscous	Y	12/2/94	9A	CB, Flammable (HOC)	95011	CWM	5/11/95
SN-0467A	0475	11/15/94	4-7	5	steel	poor	100	solid	white	translucent, rubber-like	Y	12/2/94	10A	Flammable	95006/95007	LWD	5/5/95
SN-0467B	0455	11/15/94	4-7	5	steel	poor	50	liquid	brown	-	Y	12/2/94	19A	Flammable (HOC)	95005/95007	LWD	5/5/95
SN-0467C	-	11/15/94	4-7	5	steel	poor	empty	-	-	-	N	-	-	-	-		-
SN-0467D	-	11/15/94	4-7	5	steel	poor	empty	-	-	-	N	-	-	-	-		-
SN-0467E	0455	11/15/94	4-7	5	steel	poor	20	liquid	brown	clear	Y	12/2/94	19A	Flammable (HOC)	95005/95007	LWD	5/5/95

TABLE 1

CONTAINER DATA SUMMARY
FINAL CONSTRUCTION REPORT
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Drum/ Container Number	Overpack#	REMOVAL Excavation Date	REMOVAL Grid Location	CONTAINER Size	CONTAINER Type	CONTAINER Condition	CONTENTS % Full	CONTENTS Matrix	CONTENTS Color	CONTENTS Description	Sampled	Sample Collection	Composite Group	Waste Classification	Ship Manifest	Outlet	Loadout Date
SN-0467F	-	11/15/94	4-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0467G	0408	11/15/94	4-7	5	steel	poor	20	solid	black	powder/rubber	Y	12/2/94	9A	CB, Flammable (HOC)	95011	CWM	5/11/95
SN-0468A	0472	11/15/94	4-7	5	steel	poor	5	soil	brown	stained soil	Y	12/2/94	37	Flammable	95004/95005	LWD	5/4/95
SN-0468B	0458	11/15/94	4-7	5	steel	poor	100	solid	brown	-	Y	12/2/94	34A	Flammable	95004/95005	LWD	5/4/95
SN-0468C	0427	11/15/94	4-7	5	steel	poor	50	liquid	red	-	Y	12/2/94	10A	Flammable	95006/95007	LWD	5/5/95
SN-0468D	0130	11/15/94	4-7	5	steel	poor	100	solid	pale yellow	-	Y	12/2/94	34A	Flammable	95004/95005	LWD	5/4/95
SN-0468E	0468	11/15/94	4-7	5	steel	poor	40	solid	white	brittle	Y	12/2/94	32B	Flammable	95004/95005	LWD	5/4/95
SN-0468F	0473	11/15/94	4-7	5	steel	poor	80	liquid	blue/purple	blue/purple	Y	12/2/94	11A	RCRA Organic	95013	EQ Co.	5/17/95
SN-0469	0469	11/15/94	4-7	55	steel	poor	30	solid	black/brown	granular	Y	12/2/94	21B	Flammable	95004/95005	LWD	5/4/95
SN-0470A	0456	11/15/94	4-7	5	steel	poor	50	solid	brown	granular	Y	12/2/94	12A	RCRA Organic/Metal	95009/95010	EQ Co.	5/17/95
SN-0470B	0474	11/15/94	4-7	5	steel	poor	100	liquid	colorless	clear, viscous	Y	12/2/94	13A	Flammable	95006/95007	LWD	5/5/95
SN-0470C	0379	11/15/94	4-7	5	steel	poor	50	liquid	black	viscous	Y	12/2/94	19A	Flammable	95005/95007	LWD	5/5/95
SN-0470D	0379	11/15/94	4-7	5	steel	poor	5	liquid	black	viscous	Y	12/2/94	19A	Flammable	95005/95007	LWD	5/5/95
SN-0470E	0468	11/15/94	4-7	5	steel	poor	100	solid	white	opaque, sludge	Y	12/2/94	32B	Flammable	95004/95005	LWD	5/4/95
SN-0470F	0455	11/15/94	4-7	5	steel	poor	90	liquid	brown	-	Y	12/2/94	19A	Flammable (HOC)	95005/95007	LWD	5/5/95
SN-0470G	0473	11/15/94	4-7	1	steel	poor	80	solid	brown	grease	Y	12/2/94	11A	RCRA Organic	95013	EQ Co.	5/17/95
SN-0471A	-	11/15/94	4-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0471B	-	11/15/94	4-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0471C	-	11/15/94	4-7	5	steel	poor	empty	-	-	-	N	-	-	-	-	-	-
SN-0471D	0468	11/15/94	4-7	5	steel	poor	40	solid	white	-	Y	12/2/94	32B	Flammable	95004/95005	LWD	5/4/95
SN-0471E	0432	11/15/94	4-7	5	steel	poor	75	solid	black	rubber/residue	Y	12/2/94	10A	Flammable	95006/95007	LWD	5/5/95
SN-0471F	0466	11/15/94	4-7	5	steel	poor	40	solid	black	sludge	Y	12/2/94	9A	CB, Flammable (HOC)	95011	CWM	5/11/95
SN-0472	0458	11/15/94	4-7	5	steel	poor	70	solid	brown	-	Y	12/2/94	34A	PCB Flammable (HOC)	95004/95005	CWM	5/11/95
SN-0473	0477	1/18/95	5-7	5	steel	poor	<50	solid	brown	-	Y	12/2/94	25A	PCB, Flammable	95012	CWM	5/11/95
SN-0474	0477	1/18/95	5-7	5	steel	poor	<50	solid	brown/black	stained soil, oil, grease	Y	1/19/95	25A	PCB, Flammable	95012	CWM	5/11/95
SN-0475	0477	1/18/95	5-7	5	steel	poor	<50	solid	brown/black	stained soil, oil, grease	Y	1/19/95	25A	PCB, Flammable	95012	CWM	5/11/95
SN-0476	0477	1/18/95	5-7	5	steel	poor	<50	solid	brown/black	stained soil, oil, grease	Y	1/19/95	25A	PCB, Flammable	95012	CWM	5/11/95
SN-0477	0477	1/18/95	5-7	5	steel	poor	<50	solid	brown/black	stained soil, oil, grease	Y	1/19/95	25A	PCB, Flammable	95012	CWM	5/11/95
SN-0478	0477	1/18/95	5-7	5	steel	poor	<50	solid	brown/black	stained soil, oil, grease	Y	1/19/95	25A	PCB, Flammable	95012	CWM	5/11/95
SN-0479	0477	1/18/95	5-7	5	steel	poor	<50	solid	brown/black	stained soil, oil, grease	Y	1/19/95	25A	PCB, Flammable	95012	CWM	5/11/95
SN-0480	0477	1/18/95	5-7	5	plastic	poor	<50	solid	brown/black	stained soil, oil, grease	Y	1/19/95	25A	PCB, Flammable	95012	CWM	5/11/95
SN-0481	0477	1/18/95	5-7	1	steel	poor	<50	solid	brown/black	stained soil, oil, grease	Y	1/19/95	25A	PCB, Flammable	95012	CWM	5/11/95
SN-0482	0477	1/18/95	5-7	1	steel	poor	<50	solid	brown/black	stained soil, oil, grease	Y	1/19/95	25A	PCB, Flammable	95012	CWM	5/11/95
SN-0483	0477	1/18/95	5-7	1	steel	poor	<50	solid	brown/black	stained soil, oil, grease	Y	1/19/95	25A	PCB, Flammable	95012	CWM	5/11/95
SN-0484	0478	1/18/95	5-7	5	steel	poor	<50	solid	brown/black	stained soil, oil, grease	Y	1/19/95	24A	PCB, Flammable	95012	CWM	5/11/95
SN-0485	0478	1/18/95	5-7	5	steel	poor	<50	solid	brown/black	stained soil, oil, grease	Y	1/19/95	24A	PCB, Flammable	95012	CWM	5/11/95
SN-0486	0478	1/18/95	5-7	5	steel	poor	<50	solid	brown/black	stained soil, oil, grease	Y	1/19/95	24A	PCB, Flammable	95012	CWM	5/11/95
SN-0487	0478	1/18/95	5-7	5	steel	poor	<50	solid	brown/black	stained soil, oil, grease	Y	1/19/95	24A	PCB, Flammable	95012	CWM	5/11/95
SN-0488	0478	1/18/95	5-7	5	steel	poor	<50	solid	brown/black	stained soil, oil, grease	Y	1/19/95	24A	PCB, Flammable	95012	CWM	5/11/95
SN-0489	0478	1/18/95	5-7	5	steel	poor	<50	solid	brown/black	stained soil, oil, grease	Y	1/19/95	24A	PCB, Flammable	95012	CWM	5/11/95
SN-0490	0478	1/18/95	5-7	5	steel	poor	<50	solid	brown/black	stained soil, oil, grease	Y	1/19/95	24A	PCB, Flammable	95012	CWM	5/11/95
SN-0491	0478	1/18/95	5-7	5	steel	poor	<50	solid	brown/black	stained soil, oil, grease	Y	1/19/95	24A	PCB, Flammable	95012	CWM	5/11/95
SN-0492	0478	1/18/95	5-7	5	steel	poor	<50	solid	brown/black	stained soil, oil, grease	Y	1/19/95	24A	PCB, Flammable	95012	CWM	5/11/95
SN-0493	0478	1/18/95	5-7	5	steel	poor	<50	solid	brown/black	stained soil, oil, grease	Y	1/19/95	24A	PCB, Flammable	95012	CWM	5/11/95
SN-0494	0478	1/18/95	5-7	5	steel	poor	<50	solid	brown/black	stained soil, oil, grease	Y	1/19/95	24A	PCB, Flammable	95012	CWM	5/11/95
SN-0495	0478	1/18/95	5-7	5	steel	poor	<50	solid	brown/black	stained soil, oil, grease	Y	1/19/95	24A	PCB, Flammable	95012	CWM	5/11/95
SN-0496	0478	1/18/95	5-7	5	steel	poor	<50	solid	brown/black	stained soil, oil, grease	Y	1/19/95	24A	PCB, Flammable	95012	CWM	5/11/95
SN-0497	0479	1/18/95	5-7	5	steel	poor	<50	solid	brown/black	sludge, soil, oil, adhesives	Y	1/19/95	22A	Flammable	95006/95007	LWD	5/5/95

TABLE 1

CONTAINER DATA SUMMARY
FINAL CONSTRUCTION REPORT
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Drum/		REMOVAL		CONTAINER			CONTENTS										
Container Number	Overpack#	Excavation Date	Grid Location	Size	Type	Condition	% Full	Matrix	Color	Description	Sampled	Sample Collection	Composite Group	Waste Classification	Ship Manifest	Outlet	Loadout Date
SN-0498	0479	1/18/95	5-7	5	steel	poor	<50	solid	brown/black	sludge, soil, oil, adhesives	Y	1/19/95	22A	Flammable	95006/95007	LWD	5/5/95
SN-0499	0479	1/18/95	5-7	5	steel	poor	<50	solid	brown/black	sludge, soil, oil, adhesives	Y	1/19/95	22A	Flammable	95006/95007	LWD	5/5/95
SN-0500	0479	1/18/95	5-7	5	steel	poor	<50	solid	brown/black	sludge, soil, oil, adhesives	Y	1/19/95	22A	Flammable	95006/95007	LWD	5/5/95
SN-0501	0479	1/18/95	5-7	5	steel	poor	<50	solid	brown/black	sludge, soil, oil, adhesives	Y	1/19/95	22A	Flammable	95006/95007	LWD	5/5/95
SN-0502	0479	1/18/95	5-7	5	steel	poor	<50	solid	brown/black	sludge, soil, oil, adhesives	Y	1/19/95	22A	Flammable	95006/95007	LWD	5/5/95
SN-0503	0479	1/18/95	5-7	5	steel	poor	<50	solid	brown/black	sludge, soil, oil, adhesives	Y	1/19/95	22A	Flammable	95006/95007	LWD	5/5/95
SN-0504	0479	1/18/95	5-7	5	steel	poor	<50	solid	brown/black	sludge, soil, oil, adhesives	Y	1/19/95	22A	Flammable	95006/95007	LWD	5/5/95
SN-0505	0479	1/18/95	5-7	5	steel	poor	<50	solid	brown/black	sludge, soil, oil, adhesives	Y	1/19/95	22A	Flammable	95006/95007	LWD	5/5/95
SN-0506	0479	1/18/95	5-7	5	steel	poor	<50	solid	brown/black	sludge, soil, oil, adhesives	Y	1/19/95	22A	Flammable	95006/95007	LWD	5/5/95
SN-0507	0479	1/18/95	5-7	5	steel	poor	<50	solid	brown/black	sludge, soil, oil, adhesives	Y	1/19/95	22A	Flammable	95006/95007	LWD	5/5/95
SN-0508	0479	1/18/95	5-7	5	plastic	poor	<50	solid	brown/black	sludge, soil, oil, adhesives	Y	1/19/95	22A	Flammable	95006/95007	LWD	5/5/95
SN-0509	0479	1/18/95	5-7	1	steel	poor	<50	solid	brown/black	sludge, soil, oil, adhesives	Y	1/19/95	22A	Flammable	95006/95007	LWD	5/5/95
SN-0510	0479	1/18/95	5-7	1	steel	poor	<50	solid	brown/black	sludge, soil, oil, adhesives	Y	1/19/95	22A	Flammable	95006/95007	LWD	5/5/95
SN-0511	0479	1/18/95	5-7	1	steel	poor	<50	solid	brown/black	sludge, soil, oil, adhesives	Y	1/19/95	22A	Flammable	95006/95007	LWD	5/5/95
SN-0512	0479	1/18/95	5-7	1	steel	poor	<50	solid	brown/black	sludge, soil, oil, adhesives	Y	1/19/95	22A	Flammable	95006/95007	LWD	5/5/95
SN-0513	0479	1/18/95	5-7	1	steel	poor	<50	solid	brown/black	sludge, soil, oil, adhesives	Y	1/19/95	22A	Flammable	95006/95007	LWD	5/5/95
SN-0514	0479	1/18/95	5-7	1	steel	poor	<50	solid	brown/black	sludge, soil, oil, adhesives	Y	1/19/95	22A	Flammable	95006/95007	LWD	5/5/95
SN-0515	0479	1/18/95	5-7	1	steel	poor	<50	solid	brown/black	sludge, soil, oil, adhesives	Y	1/19/95	22A	Flammable	95006/95007	LWD	5/5/95
SN-0516	0479	1/18/95	5-7	1	steel	poor	<50	solid	brown/black	sludge, soil, oil, adhesives	Y	1/19/95	22A	Flammable	95006/95007	LWD	5/5/95
SN-0517	0479	1/18/95	5-7	1	steel	poor	<50	solid	brown/black	sludge, soil, oil, adhesives	Y	1/19/95	22A	Flammable	95006/95007	LWD	5/5/95
SN-0518	0479	1/18/95	5-7	1	steel	poor	<50	solid	brown/black	sludge, soil, oil, adhesives	Y	1/19/95	22A	Flammable	95006/95007	LWD	5/5/95
SN-0519	0480	1/18/95	5-7	1	steel	poor	<50	solid	brown/black	stained soil, oil	Y	1/20/95	24A	PCB, Flammable	95012	CWM	5/11/95
SN-0520	0480	1/18/95	5-7	1	steel	poor	<50	solid	brown/black	stained soil, oil	Y	1/20/95	24A	PCB, Flammable	95012	CWM	5/11/95
SN-0521	0480	1/18/95	5-7	1	steel	poor	<50	solid	brown/black	stained soil, oil	Y	1/20/95	24A	PCB, Flammable	95012	CWM	5/11/95
SN-0522	0480	1/18/95	5-7	1	steel	poor	<50	solid	brown/black	stained soil, oil	Y	1/20/95	24A	PCB, Flammable	95012	CWM	5/11/95
SN-0523	0480	1/18/95	5-7	1	steel	poor	<50	solid	brown/black	stained soil, oil	Y	1/20/95	24A	PCB, Flammable	95012	CWM	5/11/95
SN-0524	0480	1/18/95	5-7	5	plastic	poor	<50	solid	brown/black	stained soil, oil	Y	1/20/95	24A	PCB, Flammable	95012	CWM	5/11/95
SN-0525	0480	1/18/95	5-7	5	plastic	poor	<50	solid	brown/black	stained soil, oil	Y	1/20/95	24A	PCB, Flammable	95012	CWM	5/11/95
SN-0526	0480	1/18/95	5-7	5	steel	poor	<50	solid	brown/black	stained soil, oil	Y	1/20/95	24A	PCB, Flammable	95012	CWM	5/11/95
SN-0527	0480	1/18/95	5-7	5	steel	poor	<50	solid	brown/black	stained soil, oil	Y	1/20/95	24A	PCB, Flammable	95012	CWM	5/11/95
SN-0528	0480	1/18/95	5-7	5	steel	poor	<50	solid	brown/black	stained soil, oil	Y	1/20/95	24A	PCB, Flammable	95012	CWM	5/11/95
SN-0529	0480	1/18/95	5-7	5	steel	poor	<50	solid	brown/black	stained soil, oil	Y	1/20/95	24A	PCB, Flammable	95012	CWM	5/11/95
SN-0530	0480	1/18/95	5-7	5	steel	poor	<50	solid	brown/black	stained soil, oil	Y	1/20/95	24A	PCB, Flammable	95012	CWM	5/11/95
SN-0531	0480	1/18/95	5-7	5	steel	poor	<50	solid	brown/black	stained soil, oil	Y	1/20/95	24A	PCB, Flammable	95012	CWM	5/11/95
SN-0532	0480	1/18/95	5-7	5	steel	poor	<50	solid	brown/black	stained soil, oil	Y	1/20/95	24A	PCB, Flammable	95012	CWM	5/11/95
SN-0533	0480	1/18/95	5-7	5	steel	poor	<50	solid	brown/black	stained soil, oil	Y	1/20/95	24A	PCB, Flammable	95012	CWM	5/11/95
SN-0534	0481	1/18/95	5-7	5	steel	poor	<50	liquid	white	viscous	Y	1/19/95	24A	Flammable	95012	LWD	5/5/95
SN-0535	0481	1/18/95	5-7	5	steel	poor	<50	liquid	white	viscous	Y	1/19/95	22A	Flammable	95006/95007	LWD	5/5/95
SN-0536	0481	1/18/95	5-7	5	steel	poor	<50	liquid	white	viscous	Y	1/19/95	22A	Flammable	95006/95007	LWD	5/5/95
SN-0537	0481	1/18/95	5-7	1	glass	poor	<50	liquid	white	viscous	Y	1/19/95	22A	Flammable	95006/95007	LWD	5/5/95
SN-0538	0482	1/19/95	5-7	5	steel	poor	<50	solid	black	stained soil, oil	Y	1/19/95	24A	PCB, Flammable	95012	CWM	5/11/95
SN-0539	0482	1/19/95	5-7	5	steel	poor	<50	solid	black	stained soil, oil	Y	1/19/95	24A	PCB, Flammable	95012	CWM	5/11/95
SN-0540	0482	1/19/95	5-7	5	steel	poor	<50	solid	black	stained soil, oil	Y	1/19/95	24A	PCB, Flammable	95012	CWM	5/11/95
SN-0541	0482	1/19/95	5-7	5	steel	poor	<50	solid	black	stained soil, oil	Y	1/19/95	24A	PCB, Flammable	95012	CWM	5/11/95
SN-0542	0482	1/19/95	5-7	5	steel	poor	<50	solid	black	stained soil, oil	Y	1/19/95	24A	PCB, Flammable	95012	CWM	5/11/95
SN-0543	0482	1/19/95	5-7	5	steel	poor	<50	solid	black	stained soil, oil	Y	1/19/95	24A	PCB, Flammable	95012	CWM	5/11/95
SN-0544	0482	1/19/95	5-7	1	steel	poor	<50	solid	black	stained soil, oil	Y	1/19/95	24A	PCB, Flammable	95012	CWM	5/11/95
SN-0545	0482	1/19/95	5-7	1	steel	poor	<50	solid	black	stained soil, oil	Y	1/19/95	24A	PCB, Flammable	95012	CWM	5/11/95

TABLE 1

CONTAINER DATA SUMMARY
FINAL CONSTRUCTION REPORT
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Drum/		REMOVAL		CONTAINER			CONTENTS										
Container Number	Overpack#	Excavation Date	Grid Location	Size	Type	Condition	% Full	Matrix	Color	Description	Sampled	Sample Collection	Composite Group	Waste Classification	Ship Manifest	Outlet	Loadout Date
SN-0546	0483	1/19/95	5-7	1	steel	poor	<50	solid	white/brown	product soil/mix	Y	1/19/95	22A	Flammable	95006/95007	LWD	5/5/95
SN-0547	0483	1/19/95	5-7	1	glass	poor	<50	solid	white/brown	product soil/mix	Y	1/19/95	22A	Flammable	95006/95007	LWD	5/5/95
SN-0548	0483	1/19/95	5-7	1	glass	poor	<50	solid	white/brown	product soil/mix	Y	1/19/95	22A	Flammable	95006/95007	LWD	5/5/95
SN-0549	0483	1/19/95	5-7	1	glass	poor	<50	solid	white/brown	product soil/mix	Y	1/19/95	22A	Flammable	95006/95007	LWD	5/5/95
SN-0550	0483	1/19/95	5-7	1	glass	poor	<50	solid	white/brown	product soil/mix	Y	1/19/95	22A	Flammable	95006/95007	LWD	5/5/95
SN-0551	0483	1/19/95	5-7	1	glass	poor	<50	solid	white/brown	product soil/mix	Y	1/19/95	22A	Flammable	95006/95007	LWD	5/5/95
SN-0552	0483	1/19/95	5-7	1	glass	poor	<50	solid	white/brown	product soil/mix	Y	1/19/95	22A	Flammable	95006/95007	LWD	5/5/95
SN-0553	0483	1/19/95	5-7	1	plastic	poor	<50	solid	white/brown	product soil/mix	Y	1/19/95	22A	Flammable	95006/95007	LWD	5/5/95
SN-0554	0483	1/19/95	5-7	1	plastic	poor	<50	solid	white/brown	product soil/mix	Y	1/19/95	22A	Flammable	95006/95007	LWD	5/5/95
SN-0555	0483	1/19/95	5-7	1	plastic	poor	<50	solid	white/brown	product soil/mix	Y	1/19/95	22A	Flammable	95006/95007	LWD	5/5/95
SN-0556	0483	1/19/95	5-7	1	plastic	poor	<50	solid	white/brown	product soil/mix	Y	1/19/95	22A	Flammable	95006/95007	LWD	5/5/95
SN-0557	0483	1/19/95	5-7	1	plastic	poor	<50	solid	white/brown	product soil/mix	Y	1/19/95	22A	Flammable	95006/95007	LWD	5/5/95
SN-0558	0483	1/19/95	5-7	1	plastic	poor	<50	solid	white/brown	product soil/mix	Y	1/19/95	22A	Flammable	95006/95007	LWD	5/5/95
SN-0559	0483	1/19/95	5-7	1	plastic	poor	<50	solid	white/brown	product soil/mix	Y	1/19/95	22A	Flammable	95006/95007	LWD	5/5/95

Legend

SIZE - in gallons unless otherwise specified.
SAMPLED - Y - Yes, N - No
OUTLET - EQ Co. - E. Q. Company (formerly Michigan Disposal), Belleville, MI.
LWD - LWD Inc., Calvert City, KY.
ROC - Research Oil Company, Cleveland, OH.
CWM - Chemical Waste Management, Model City, NY.

ATTACHMENT B

GEOTECHNICAL TESTING REPORTS

SOIL REMOVAL AND TREATMENT
GEOTECHNICAL REPORT SUMMARY

Summit National Superfund Site
Deerfield, Ohio

DATE	TESTED BY	REPORT #	MATERIAL TESTED	TEST	# OF TESTS
11/22/94	R & R	9	backfill	compaction	12
11/28/94	R & R	--	treated soil	max. dry density	1
11/30/94	R & R	10	backfill	compaction	17
12/2/94	R & R	--	treated soil	max. dry density	1
12/14/94	R & R	11	backfill	compaction	11
5/12/95	R & R	12	backfill	compaction	24
5/15/95	R & R	--	backfill	max. dry density	1
5/24/95	R & R	13	backfill	compaction	24

Notes: R & R = R & R International, Inc. of Akron, Ohio

R&R INTERNATIONAL

DAILY FIELD REPORT

PROJECT IDENTIFICATION Summit National Superfund Site	**PROJECT NO.** 001296 **REPORT NO.** 9	**PAGE NO.** Page 1 of 5 **DATE** 11/22/94 **DAY OF THE WEEK** Tuesday
LOCATION OF ADDRESS Deerfield Twp., Portage County, Ohio		**WEATHER** Cloudy **TEMP (F)** 38
OWNER N/A		**PROJECT MANAGER** Santino S. Piccoli
GENERAL CONTRACTOR / REPRESENTATIVE Conestoga Rovers and Associates Limited		**SUPERVISOR** Mark Swogger
OTHERS PRESENT Two (2) Operators		**FIELD REPRESENTATIVE** Gene Dimtroff
SPECIALTY CONTRACTOR Severson	[ ] GRADING [X] EXCAVATION [X] OTHER	**PLANS AND SPECIFICATIONS** BY CRA DATE May 1993
SPECIALTY CONTRACTOR'S SUPERINTENDENT OR FOREMAN N/A		
PROJECT BRIEFING [X] PREVIOUSLY REPORTED [X] BY Norm Liniman [ ] NO [ ] UNKNOWN [ ] ON		**SOURCE OF FILL** Local on site
CONTRACTOR'S EQUIPMENT OBSERVED IN USE N/A		**FIRM EQUIPMENT USED** TYPE/MODEL MFR. MC-3 CPN SERIAL NO. 649

VISITORS

NAME	REPRESENTING	ARR.	DPT.
N/A			

FOLLOW-UP FROM PRIOR REPORT
YES [X] NO [ ]

DID YOU OBSERVE EVERYTHING YOU EXPECTED TO?
YES [X] NO [ ]

DID YOU OBSERVE ANYTHING UNEXPECTED?
YES [X] NO [ ] Slight plume from incinerator

DID YOU SEE, HEAR, SMELL, TASTE, OR TOUCH ANYTHING UNUSUAL OR UNEXPLAINED?

Yes. Slight hydrocarbon odor and foul taste.

WHAT IN PARTICULAR SHOULD BE OBSERVED, CHECKED, OR TESTED DURING THE NEXT VISIT?
See compaction result sheet.

R&R INTERNATIONAL

File No. 001296	Page No. Page 2 of 5
Report No. 9	Date 11/22/94

Project I.D.
Summit National Superfund Site, Deerfield Twp., Portage County, Ohio

Field Representative
Gene Dimtroff

CONTRACTOR ACTIVITIES

INDICATE ACTIVITES YOU DID AND DID NOT MONITOR

Pile placed in various grid locations.

Checked compaction in grid areas.

Field Representative's Activities

ARR. 8:10 A.M. DPT. 9:50 P.M.

Compaction cancelled. Client requested Proctor on treated soil sample.

NOTICE

The professional engineer is represented on site solely to observe operations of the contractor identified, form opinions about the adequacy of those operations, and report those opinions to the client. The presence and activities of the engineer's field representative do not relieve the contractor's obligation to meet contractural requirements. The contractor retains sole responsibility for site safety and the methods and sequences of construction.

☐ THIS DFR IS PRELIMINARY

A preliminary report is provided soley as evidence that field observation was performed. Observations and/or conclusions and/or recommendations conveyed in the final report may vary from and shall take precedence over those indicated in a preliminary report.

☒ THIS DFR IS FINAL

This final report has been reviewed by the Project Manager. Any conclusions drawn from this report should be discussed with and evaluated by the Project Manager involved

FIELD REPRESENTATIVE	DATE
Gene Dimtroff	11/22/94
REVIEWED BY	DATE
	11-23-94

Field Report Disk #9/1296Act9.wk4/clt

R&R INTERNATIONAL INC

REPORT OF FIELD COMPACTION TESTS

Project:	Summit National Superfund Site	Report No.:	9
Site Location:	Deerfield Twp., Portage County, Ohio	Page:	3 of 5
Contractor:	Severson Excavating Company	Date Tested:	11/22/94

INFORMATION FURNISHED FROM LABORATORY

Material ID: PC-4 Material Description: Brown, CLAY WITH SHALE FRAGMENTS

Maximum Lab. Dry Density = 110.2 pcf Optimum Water Content = 17.2 % of dry weight

Req'd Min. % Compaction = 90 % Acceptable Range of Water Contents:

Req'd Min. In-Place Dry Density = 99.2 pcf From "Optimum" - N/A % = N/A % (Minimum)

Lab. Test Method: ASTM D 689 To "Optimum" + N/A % = N/A % (Maximum)

FIELD TEST DATA (Test Method ASTM D 2922)

Test No.	BS / DT	Test Depth	Test Elevation	In-Place Wet Density	Water Content (%)	In-Place Dry Density	Max. Dry Density	% Comp.	P / F	Comments (Fill Material, Backfill, Base Course, Subbase etc.)
24	DT	6"	Grade	110.1	16.6	102.7	110.2	93%	F	Fill Material
25	DT	6"	Grade	107.7	25.4	81.9	110.2	74%	F	Fill Material
26	DT	6"	Grade	115.9	20.1	95.4	110.2	87%	F	Fill Material
27	DT	6"	Grade	118.8	21.1	97.7	110.2	89%	F	Fill Material
28	DT	6"	Grade	116.4	19.6	96.8	110.2	88%	F	Fill Material
29	DT	6"	Grade	11.0	23.1	87.9	110.2	80%	F	Fill Material
30	DT	6"	Grade	109.2	17.1	92.1	110.2	84%	F	Fill Material

BS = Backscatter, DT = Direct Transmission. P = Pass, F = Fail.

TEST LOCATIONS

24	Grid 3-5, Center
25	Grid 3-5, North East Corner
33	Grid 4-7
34	Grid 4-7

Remarks: Tests fail to meet moisture content criteria of ASTM D 3017

001296	Gene Dimtroff	Peter S Pails / 11-23-94
R&R Project No.	R&R Technician	Approved By/Date

Field Report #9/1296FC9A/clt

R&R INTERNATIONAL

REPORT OF FIELD COMPACTION TESTS

Project:	Summit National Superfund Site	Report No.:	9
Site Location:	Deerfield Twp., Portage County, Ohio	Page:	4 of 5
Contractor:	Severson Excavating Company	Date Tested:	11/22/94

INFORMATION FURNISHED FROM LABORATORY

Material ID: PC-5 Material Description: INCINERATED MATERIAL

Maximum Lab. Dry Density = 92.8 pcf Optimum Water Content = 17.2 % of dry weight

Req'd Min. % Compaction = 90 % Acceptable Range of Water Contents:

Req'd Min. In-Place Dry Density = 83.5 pcf From "Optimum" - N/A % = N/A % (Minimum)

Lab. Test Method: ASTM D 689 To "Optimum" + N/A % = N/A % (Maximum)

FIELD TEST DATA (Test Method ASTM D 2922)

Test No.	BS / DT	Test Depth	Test Elevation	In-Place Wet Density	Water Content (%)	In-Place Dry Density	Max. Dry Density	% Comp.	P / F	Comments (Fill Material, Backfill, Base Course, Subbase etc.)
31	DT	6"	Grade	116.9	21.0	95.3	92.8	103%	P	Fill Material
32	DT	6"	Grade	114.8	21.2	93.4	92.8	101%	P	Fill Material
33	DT	6"	Grade	116.1	20.7	95.1	92.8	102%	P	Fill Material
34	DT	6"	Grade	112.3	27.7	84.2	92.8	91%	P	Fill Material

BS = Backscatter, DT = Direct Transmission. P = Pass, F = Fail.

TEST LOCATIONS

31	Grid 3-5, Center
32	Grid 3-5, North East Corner
33	Grid 4-7
34	Grid 4-7

Remarks: Tests fail to meet moisture content criteria of ASTM D 3017

001296	Gene Dimtroff	Dustin S Pirali / 11-23-94
R&R Project No.	R&R Technician	Approved By/Date

Field Report #9/1296FC9B/clt

R&R INTERNATIONAL INC

REPORT OF FIELD COMPACTION TESTS

Project:	Summit National Superfund Site	Report No.:	9
Site Location:	Deerfield Twp., Portage County, Ohio	Page:	5 of 5
Contractor:	Severson Excavating Company	Date Tested:	11/22/94

INFORMATION FURNISHED FROM LABORATORY

Material ID: PC-4 Material Description: Brown, CLAY, some Shale Fragments

Maximum Lab. Dry Density = 110.2 pcf Optimum Water Content = 16.2 % of dry weight

Req'd Min. % Compaction = 90 % Acceptable Range of Water Contents:

Req'd Min. In-Place Dry Density = 99.2 pcf From "Optimum" - N/A % = N/A % (Minimum)

Lab. Test Method: ASTM D 689 To "Optimum" + N/A % = N/A % (Maximum)

FIELD TEST DATA (Test Method ASTM D 2922)

Test No.	BS / DT	Test Depth	Test Elevation	In-Place Wet Density	Water Content (%)	In-Place Dry Density	Max. Dry Density	% Comp.	P / F	Comments (Fill Material, Backfill, Base Course, Subbase etc.)
35	DT	6"	Grade	123.4	18.0	104.6	110.2	95%	P	

BS = Backscatter, DT = Direct Transmission. P = Pass, F = Fail.

TEST LOCATIONS

35	Grid, 5-7

Remarks:

001296	Gene Dimtroff	Santo S Pirali /11-23-94
R&R Project No.	R&R Technician	Approved By/Date

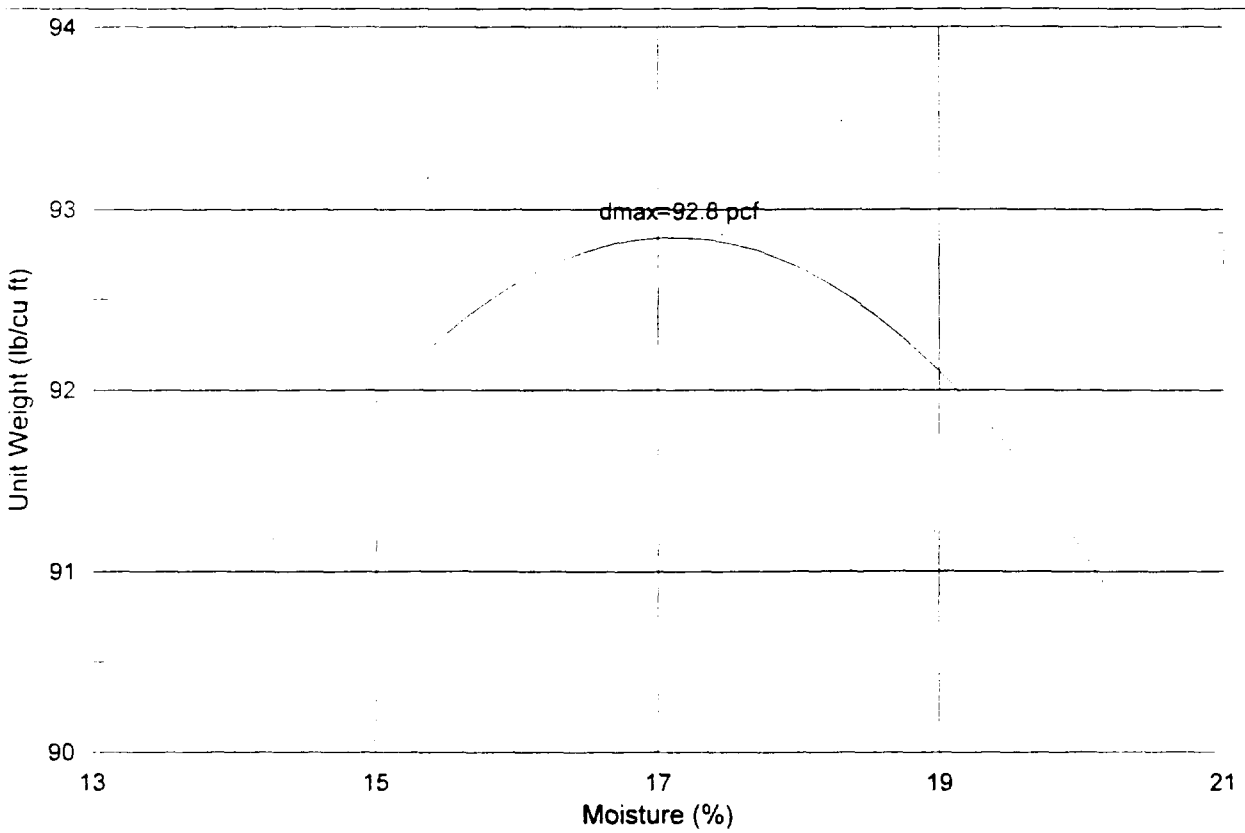
Field Report #9/1296FC9C/clt

R&R

LABORATORY COMPACTION CHARACTERISTICS OF SOIL USING STANDARD EFFORT (12,400 FT-LBF/CU FT)

ASTM D 698 - 91

CLIENT:	Conestoga - Rover
PROJECT:	Summit National Superfund Site
LOCATION:	Portage County, Ohio
SAMPLE NO.	PC-5
SAMPLE ORIGIN:	
DATE TESTED:	11/28/94
MATERIAL DESCRIPTION:	Incinerated Material
MAXIMUM DRY DENSITY:	92.8 lb/cu ft
OPTIMUM MOISTURE CONTENT:	17.2 %



R&R INTERNATIONAL INC

DAILY FIELD REPORT

PROJECT IDENTIFICATION Summit National Superfund Site	**PROJECT NO.** 001296 **REPORT NO.** 10	**PAGE NO.** Page 1 of 6 **DATE** 11/30/94 **DAY OF THE WEEK** Wednesday
LOCATION OF ADDRESS Deerfield Twp., Portage County, Ohio		**WEATHER** Cloudy **TEMP (F)** 34
OWNER N/A		**PROJECT MANAGER** Santino S. Piccoli
GENERAL CONTRACTOR / REPRESENTATIVE Conestoga Rovers and Associates Limited		**SUPERVISOR** Mark Swogger
OTHERS PRESENT Two (2) Operators		**FIELD REPRESENTATIVE** Gene Dimtroff
SPECIALTY CONTRACTOR Severson	[ ] GRADING [X] EXCAVATION [X] OTHER	**PLANS AND SPECIFICATIONS** BY CRA DATE May 1993
SPECIALTY CONTRACTOR'S SUPERINTENDENT OR FOREMAN N/A		
PROJECT BRIEFING [X] PREVIOUSLY REPORTED [ ] BY [ ] NO [ ] UNKNOWN [ ] ON		**SOURCE OF FILL** Local on site - Treated soil
CONTRACTOR'S EQUIPMENT OBSERVED IN USE N/A		**FIRM EQUIPMENT USED** TYPE/MODEL MFR. MC-3 CPN SERIAL NO. 649

VISITORS

NAME	REPRESENTING	ARR.	DPT.
N/A			

FOLLOW-UP FROM PRIOR REPORT
YES [X] NO [ ]

DID YOU OBSERVE EVERYTHING YOU EXPECTED TO?
YES [X] NO [ ]

DID YOU OBSERVE ANYTHING UNEXPECTED?
YES [ ] NO [X]

DID YOU SEE, HEAR, SMELL, TASTE, OR TOUCH ANYTHING UNUSUAL OR UNEXPLAINED?

Strong phenolic odor.

WHAT IN PARTICULAR SHOULD BE OBSERVED, CHECKED, OR TESTED DURING THE NEXT VISIT?
Check compaction area 5-5 North East Corner

Field Report Disk #9/1296FR10.cht

R&R INTERNATIONAL INC.

File No. 001296	Page No. Page 2 of 6
Report No. 10	Date 11/30/94

Project I.D.
Summit National Superfund Site, Deerfield Twp., Portage County, Ohio

Field Representative
Gene Dimtroff

CONTRACTOR ACTIVITIES

INDICATE ACTIVITES YOU DID AND DID NOT MONITOR

Field Representative's Activities

ARR. 8:45 A.M. DPT. 11:30 A.M.

Obtained proctor sample and delivered it to R&R's Laboratory for testing.

Checked compaction in various locations per Client's request.

NOTICE

The professional engineer is represented on site solely to observe operations of the contractor identified, form opinions about the adequacy of those operations, and report those opinions to the client. The presence and activities of the engineer's field representative do not relieve the contractor's obligation to meet contractural requirements. The contractor retains sole responsibility for site safety and the methods and sequences of construction.

☐ THIS DFR IS PRELIMINARY

A preliminary report is provided soley as evidence that field observation was performed. Observations and/or conclusions and/or recommendations conveyed in the final report may vary from and shall take precedence over those indicated in a preliminary report.

☒ THIS DFR IS FINAL

This final report has been reviewed by the Project Manager. Any conclusions drawn from this report should be discussed with and evaluated by the Project Manager involved

FIELD REPRESENTATIVE	DATE
Gene Dimtroff	11/30/94

REVIEWED BY	DATE
Santos S Pirali	12-1-94

Field Report Disk #9/1296Ac10.wk4/clt

R&R INTERNATIONAL

REPORT OF FIELD COMPACTION TESTS

Project: Summit National Superfund Site — Report No.: 10

Site Location: Deerfield Twp., Portage County, Ohio — Page: 3 of 6

Contractor: Severson Excavating Company — Date Tested: 11/30/94

INFORMATION FURNISHED FROM LABORATORY

Material ID: PC-5 — Material Description: INCINERATED MATERIAL

Maximum Lab. Dry Density = 92.8 pcf — Optimum Water Content = 17.2 % of dry weight

Req'd Min. % Compaction = 90 % — Acceptable Range of Water Contents:

Req'd Min. In-Place Dry Density = 83.5 pcf — From "Optimum" - N/A % = N/A % (Minimum)

Lab. Test Method: ASTM D 689 — To "Optimum" + N/A % = N/A % (Maximum)

FIELD TEST DATA (Test Method ASTM D 2922)

Test No.	BS / DT	Test Depth	Test Elevation	In-Place Wet Density	Water Content (%)	In-Place Dry Density	Max. Dry Density	% Comp.	P / F	Comments (Fill Material, Backfill, Base Course, Subbase etc.)
36	DT	6"	Grade	100.1	19.7	83.6	92.8	90%	P	
37	DT	6"	Grade	100.5	22.3	82.2	92.8	89%	F	
38	DT	6"	Grade	114.6	20.0	95.5	92.8	103%	P	
39	DT	6"	Grade	113.0	21.3	93.2	92.8	100%	P	
40	DT	6"	Grade	113.9	20.8	94.3	92.8	102%	P	
41	DT	6"	Grade	114.5	19.1	96.1	92.8	104%	P	
42	DT	6"	Grade	108.9	20.2	90.6	92.8	98%	P	
43	DT	6"	Grade	112.3	20.2	92.9	92.8	100%	P	

BS = Backscatter, DT = Direct Transmission. P = Pass, F = Fail.

TEST LOCATIONS

36	Grid, 1-1, South West Corner
37	Grid, 2-1, South West Corner
38	Grid, 2-1, Right
39	Grid, 5-3, North West Corner
40	Grid, 5-3, South West Corner
41	Grid, 5-3, Center
42	Grid, 5-4, South West Corner
43	Grid, 5-3 South East Corner

Remarks:

001296
R&R Project No.

Gene Dimtroff
R&R Technician

Santo S Pirli 12-01-94
Approved By/Date

Field Report #9/1296C10A/clt

R&R INTERNATIONAL INC.

REPORT OF FIELD COMPACTION TESTS

Project:	Summit National Superfund Site	Report No.:	10
Site Location:	Deerfield Twp., Portage County, Ohio	Page:	4 of 6
Contractor:	Severson Excavating Company	Date Tested:	11/30/94

INFORMATION FURNISHED FROM LABORATORY

Material ID: PC-5 Material Description: INCINERATED MATERIAL

Maximum Lab. Dry Density = 92.8 pcf Optimum Water Content = 17.2 % of dry weight

Req'd Min. % Compaction = 90 % Acceptable Range of Water Contents:

Req'd Min. In-Place Dry Density = 83.5 pcf From "Optimum" - N/A % = N/A % (Minimum)

Lab. Test Method: ASTM D 689 To "Optimum" + N/A % = N/A % (Maximum)

FIELD TEST DATA (Test Method ASTM D 2922)

Test No.	BS / DT	Test Depth	Test Elevation	In-Place Wet Density	Water Content (%)	In-Place Dry Density	Max. Dry Density	% Comp.	P / F	Comments (Fill Material, Backfill, Base Course, Subbase etc.)
44	DT	6"	Grade	110.9	22.0	90.9	92.8	98%	P	
45	DT	6"	Grade	122.7	16.2	105.6	92.8	114%	P	
46	DT	6"	Grade	112.0	20.2	93.2	92.8	100%	P	
47	DT	6"	Grade	113.3	20.2	94.3	92.8	102%	P	

BS = Backscatter, DT = Direct Transmission. P = Pass, F = Fail.

TEST LOCATIONS

44	Grid, 4-3, South East Corner
45	Grid, 4-3, Middle
46	Grid, 4-4, North West Corner
47	Grid, 4-4, South West Corner

Remarks:

001296
R&R Project No.

Gene Dimtroff
R&R Technician

12-01-94
Approved By/Date

Field Report #9/1296C10B/clt

R&R INTERNATIONAL, INC.

REPORT OF FIELD COMPACTION TESTS

Project: Summit National Superfund Site — Report No.: 10

Site Location: Deerfield Twp., Portage County, Ohio — Page: 5 of 6

Contractor: Severson Excavating Company — Date Tested: 11/30/94

INFORMATION FURNISHED FROM LABORATORY

Material ID: PC-4 — Material Description: Brown, CLAY WITH SHALE FRAGMENTS

Maximum Lab. Dry Density = 110.2 pcf — Optimum Water Content = 16.2 % of dry weight

Req'd Min. % Compaction = 90 % — Acceptable Range of Water Contents:

Req'd Min. In-Place Dry Density = 99.2 pcf — From "Optimum" - N/A % = N/A % (Minimum)

Lab. Test Method: ASTM D 689 — To "Optimum" + N/A % = N/A % (Maximum)

FIELD TEST DATA (Test Method ASTM D 2922)

Test No.	BS / DT	Test Depth	Test Elevation	In-Place Wet Density	Water Content (%)	In-Place Dry Density	Max. Dry Density	% Comp.	P / F	Comments (Fill Material, Backfill, Base Course, Subbase etc.)
48	DT	6"	Grade	123.1	21.6	101.2	110.2	92%	P	
49	DT	6"	Grade	117.6	17.8	99.8	110.2	91%	P	
50	DT	6"	Grade	116.9	18.0	99.1	110.2	90%	P	
51	DT	6"	Grade	102.8	19.6	86.0	110.2	78%	P	
52	DT	6"	Grade	129.2	17.1	110.3	110.2	100%	P	

BS = Backscatter, DT = Direct Transmission. P = Pass, F = Fail.

TEST LOCATIONS

48	Grid, 6-5, North West Corner
49	Grid, 6-4, North East Corner
50	Grid, 5-5, North East Corner
51	Grid, 5-5, North West Corner
52	Grid, 5-7, North East Corner

Remarks:

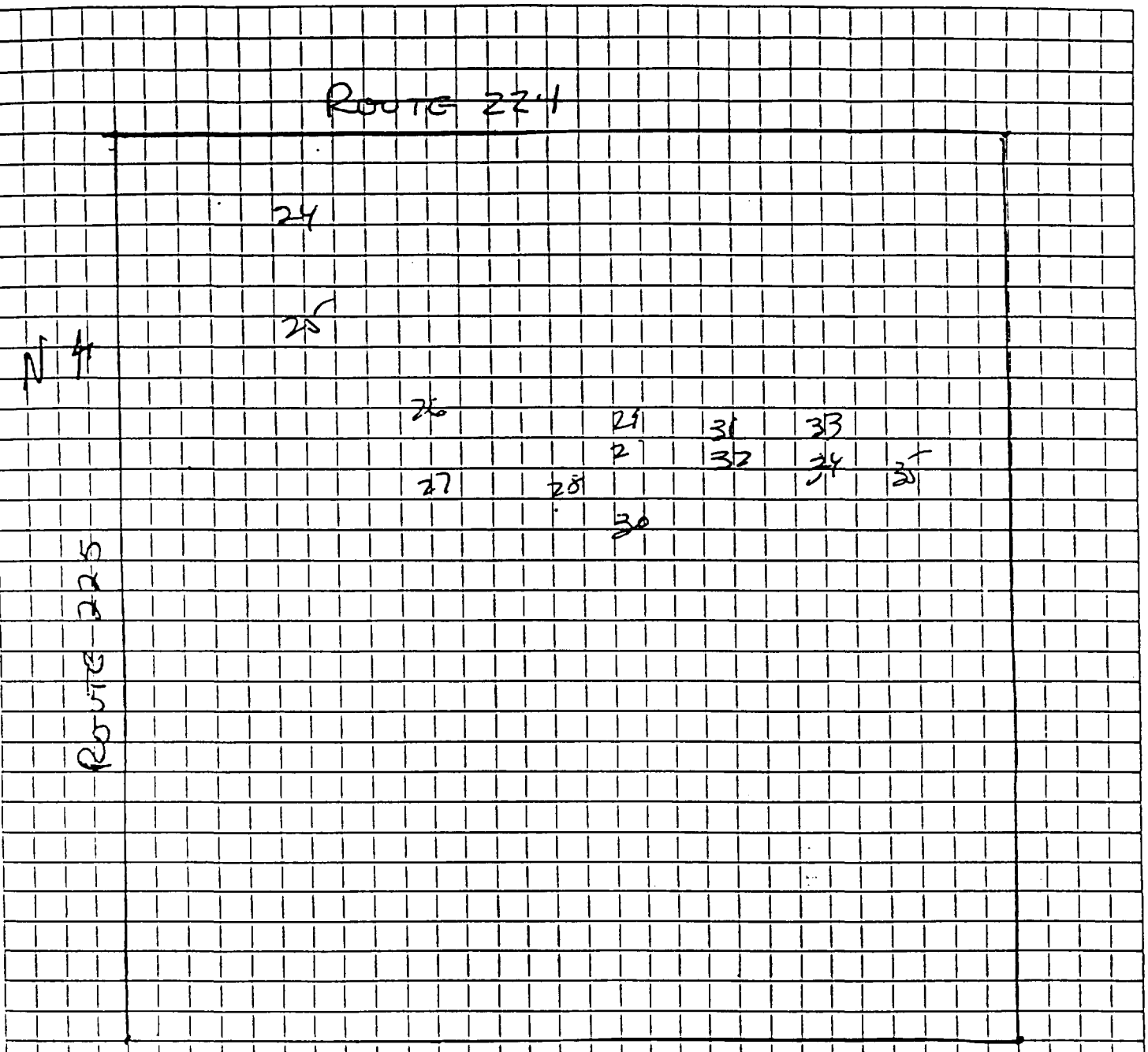
001296
R&R Project No.

Gene Dimtroff
R&R Technician

Santos S. Piccolo 12-01-94
Approved By/Date

Field Report #9/1296C10C/clt

R&R INTERNATIONAL, INC.



APPROXIMATE TEST LOCATIONS FOR COMPACTION BY TEST NUMBER

Area Excavated Today

Fill Placed and Completed Today

Location of Field Unit Weight Test

DFR SITE SKETCH

PROJECT I.D. 001296

FILE NO.

REPORT NO. 9

PROJECT I.D. 001296

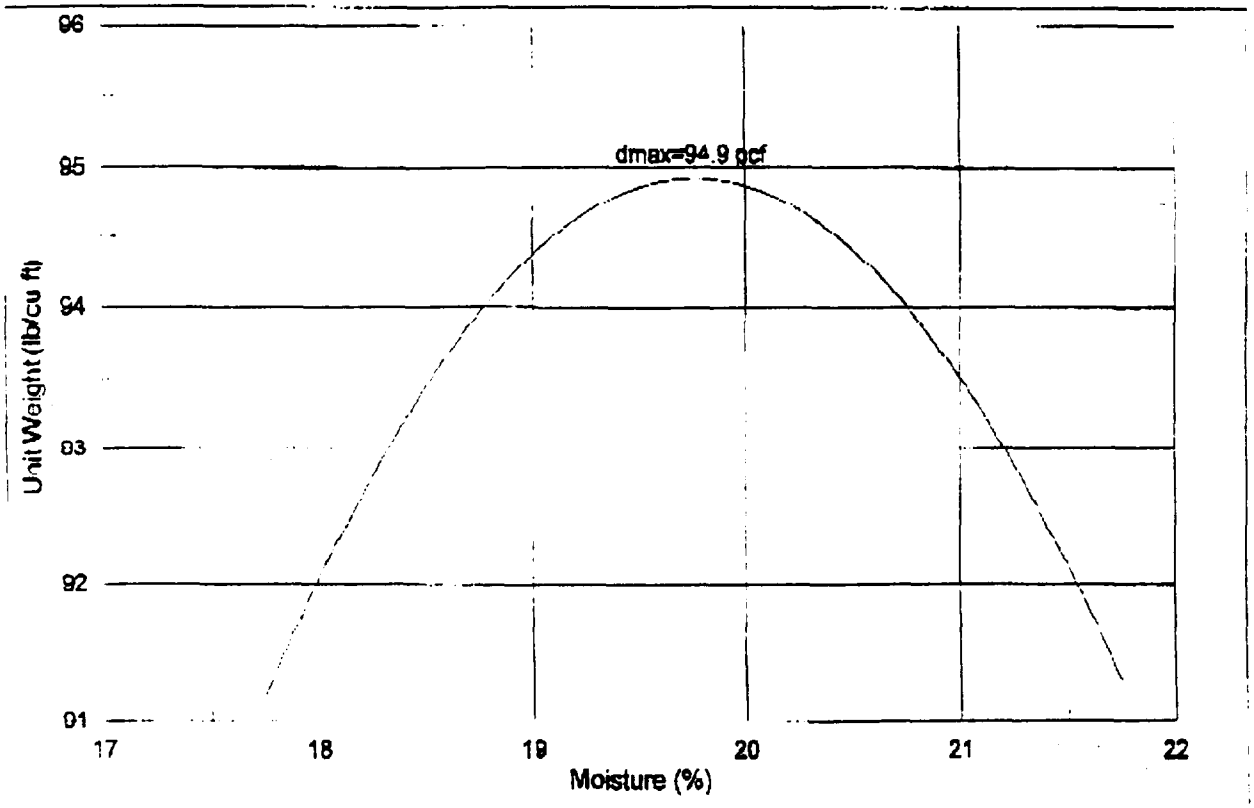
APPROXIMATE SCALE 1" N.T.S.

A:DFRSKETCH 10-15-94

LABORATORY COMPACTION CHARACTERISTICS OF SOIL USING STANDARD EFFORT (12,400 FT-LBF/CU FT)

ASTM D 698 - 91

CLIENT:	Conestoga - Rover
PROJECT:	Summit National Superfund Site
LOCATION:	Portage County, Ohio
SAMPLE NO.	PC6
SAMPLE ORIGIN:	
DATE TESTED:	12/02/94
MATERIAL DESCRIPTION:	Incinerated Material
MAXIMUM DRY DENSITY:	94.9 lb/cu ft
OPTIMUM MOISTURE CONTENT:	19.8 %



R&R INTERNATIONAL INC

DAILY FIELD REPORT

PROJECT IDENTIFICATION Summit National Superfund Site	**PROJECT NO.** 001296 **REPORT NO.** 11	**PAGE NO.** Page 1 of 5 **DATE** 12/14/94 **DAY OF THE WEEK** Wednesday
LOCATION OF ADDRESS Deerfield Twp., Portage County, Ohio		**WEATHER** Sunny **TEMP (F)** 35
OWNER N/A		**PROJECT MANAGER** Santino S. Piccoli
GENERAL CONTRACTOR / REPRESENTATIVE Conestoga Rovers and Associates Limited		**SUPERVISOR** Mark Swogger
OTHERS PRESENT Two (2) Operators		**FIELD REPRESENTATIVE** Andy Morrison
SPECIALTY CONTRACTOR Severson [ ] GRADING [X] EXCAVATION [ ] OTHER		**PLANS AND SPECIFICATIONS** BY CRA DATE May 1993
SPECIALTY CONTRACTOR'S SUPERINTENDENT OR FOREMAN N/A		
PROJECT BRIEFING [ ] PREVIOUSLY REPORTED [ ] BY [X] NO [ ] UNKNOWN [ ] ON		**SOURCE OF FILL** Local on site - Treated soil
CONTRACTOR'S EQUIPMENT OBSERVED IN USE N/A		**FIRM EQUIPMENT USED** TYPE/MODEL MFR. MC-3 CPN SERIAL NO. 649

VISITORS

NAME	REPRESENTING	ARR.	DPT.
N/A			

FOLLOW-UP FROM PRIOR REPORT
YES [ ] NO [X]

DID YOU OBSERVE EVERYTHING YOU EXPECTED TO?
YES [X] NO [ ]

DID YOU OBSERVE ANYTHING UNEXPECTED?
YES [ ] NO [X]

DID YOU SEE, HEAR, SMELL, TASTE, OR TOUCH ANYTHING UNUSUAL OR UNEXPLAINED?

NO

WHAT IN PARTICULAR SHOULD BE OBSERVED, CHECKED, OR TESTED DURING THE NEXT VISIT?
Retest all areas that did not meet specifications

File No.	Page No.
001296	Page 2 of 5
Report No. 11	**Date** 12/14/94

Project I.D.
Summit National Superfund Site, Deerfield Twp., Portage County, Ohio

Field Representative
Andy Morrison

CONTRACTOR ACTIVITIES

INDICATE ACTIVITES YOU DID AND DID NOT MONITOR

Performed a total of 11 compaction tests using a nuclear compaction gauge. All test findings were reported to Mr. Jeroen Winterink of Conestoga Rovers and Associates.

Field Representative's Activities

ARR. 9:59 A.M. DPT. 1:20 P.M.

NOTICE

The professional engineer is represented on site solely to observe operations of the contractor identified, form opinions about the adequacy of those operations, and report those opinions to the client. The presence and activities of the engineer's field representative do not relieve the contractor's obligation to meet contractural requirements. The contractor retains sole responsibility for site safety and the methods and sequences of construction.

[ ] THIS DFR IS PRELIMINARY

A preliminary report is provided soley as evidence that field observation was performed. Observations and/or conclusions and/or recommendations conveyed in the final report may vary from and shall take precedence over those indicated in a preliminary report.

[X] THIS DFR IS FINAL

This final report has been reviewed by the Project Manager. Any conclusions drawn from this report should be discussed with and evaluated by the Project Manager involved

FIELD REPRESENTATIVE	DATE
Andy Morrison	12/14/[illegible]
REVIEWED BY	DATE
[signature]	12-14-94

Field Report Disk #9/1296Ac11.wk4/clt

R&R INTERNATIONAL INC

REPORT OF FIELD COMPACTION TESTS

Project:	Summit National Superfund Site	Report No.:	11
Site Location:	Deerfield Twp., Portage County, Ohio	Page:	3 of 5
Contractor:	Severson Excavating Company	Date Tested:	12/14/94

INFORMATION FURNISHED FROM LABORATORY

Material ID: PC-5 Material Description: INCINERATED MATERIAL

Maximum Lab. Dry Density = 92.8 pcf Optimum Water Content = 17.2 % of dry weight

Req'd Min. % Compaction = 90 % Acceptable Range of Water Contents:

Req'd Min. In-Place Dry Density = 83.5 pcf From "Optimum" - N/A % = N/A % (Minimum)

Lab. Test Method: ASTM D 689 To "Optimum" + N/A % = N/A % (Maximum)

FIELD TEST DATA (Test Method ASTM D 2922)

Test No.	BS / DT	Test Depth	Test Elevation	In-Place Wet Density	Water Content (%)	In-Place Dry Density	Max. Dry Density	% Comp.	P / F	Comments (Fill Material, Backfill, Base Course, Subbase etc.)
53	DT	6"	Grade	110.6	27.1	87.0	92.8	94%	P	
54	DT	6"	Grade	105.2	27.0	82.8	92.8	89%	F	
55	DT	6"	Grade	109.4	26.6	86.4	92.8	93%	P	
56	DT	6"	Grade	113.8	24.7	91.2	92.8	98%	P	
57	DT	6"	Grade	110.5	28.0	86.4	92.8	93%	P	
58	DT	6"	Grade	110.4	26.8	87.9	92.8	95%	P	
59	DT	6"	Grade	110.1	29.7	84.9	92.8	91%	P	
60	DT	6"	Grade	111.1	30.7	85.0	92.8	92%	P	

BS = Backscatter, DT = Direct Transmission. P = Pass, F = Fail.

TEST LOCATIONS

53	Grid 4-3
54	Grid 4-3
55	Grid 4-3
56	Grid 4-3
57	Grid 5-3
58	Grid 5-3
59	Grid 5-3
60	Grid 5-4

Remarks:

001296	Andy Morrison	Sarter S Pirch 12-14-94
R&R Project No.	R&R Technician	Approved By/Date

Field Report #9/1296C11A/clt

R&R INTERNATIONAL

REPORT OF FIELD COMPACTION TESTS

Project:	Summit National Superfund Site	Report No.:	11
Site Location:	Deerfield Twp., Portage County, Ohio	Page:	4 of 5
Contractor:	Severson Excavating Company	Date Tested:	12/14/94

INFORMATION FURNISHED FROM LABORATORY

Material ID: PC-5 Material Description: INCINERATED MATERIAL

Maximum Lab. Dry Density = 92.8 pcf Optimum Water Content = 17.2 % of dry weight

Req'd Min. % Compaction = 90 % Acceptable Range of Water Contents:

Req'd Min. In-Place Dry Density = 83.5 pcf From "Optimum" - N/A % = N/A % (Minimum)

Lab. Test Method: ASTM D 689 To "Optimum" + N/A % = N/A % (Maximum)

FIELD TEST DATA (Test Method ASTM D 2922)

Test No.	BS / DT	Test Depth	Test Elevation	In-Place Wet Density	Water Content (%)	In-Place Dry Density	Max. Dry Density	% Comp.	P / F	Comments (Fill Material, Backfill, Base Course, Subbase etc.)
61	DT	6"	Grade	107.0	33.6	80.1	92.8	86%	P	
62	DT	6"	Grade	102.9	31.8	78.1	92.8	84%	P	
63	DT	6"	Grade	99.9	28.3	77.8	92.8	84%	P	

BS = Backscatter, DT = Direct Transmission. P = Pass, F = Fail.

TEST LOCATIONS

61	Grid 5-4
62	Grid 5-4
63	Grid 5-4

Remarks:

001296
R&R Project No.

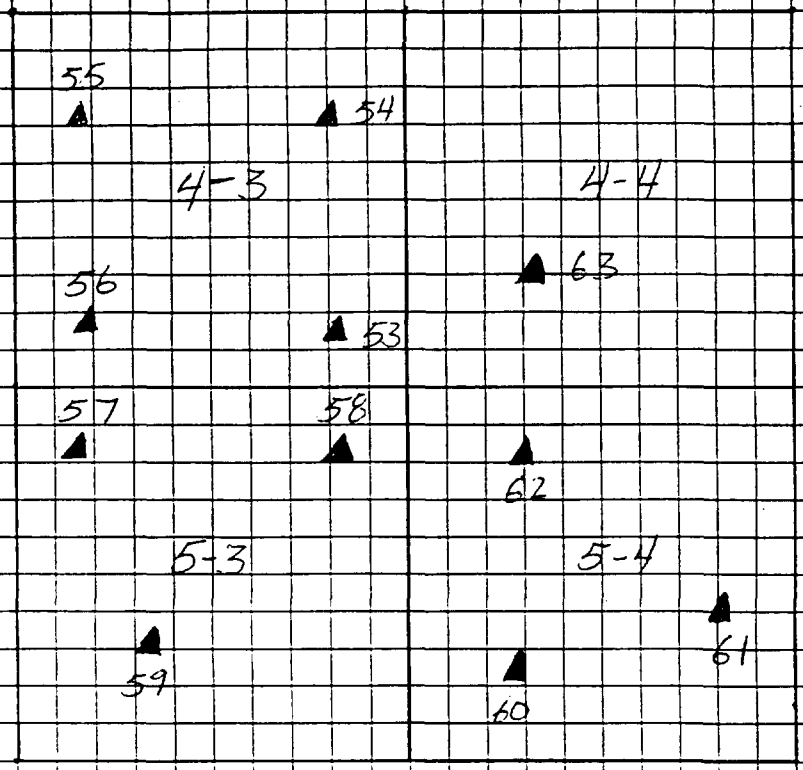
Andy Morrison
R&R Technician

Scott S Pearl 12-14-94
Approved By/Date

Field Report #9/1296C11B/clt

R&R INTERNATIONAL

PAGE 5 ~~3~~ 4 OF 5



AREA EXCAVATED TODAY

FILL PLACED AND COMPLETED TODAY

LOCATION OF FIELD UNIT WEIGHT TEST

A:DRSKETCH/eh/10-19-94

DFR SITE SKETCH

PROJECT NO. 001296

PROJECT I.D. Summit Nat'l Superfund Site

REPORT NO. 4

FIELD REP. Andy Morrison

DATE 12/14/94

APPROXIMATE SCALE 1" = 50'

DAILY FIELD REPORT

PROJECT IDENTIFICATION Deerfield National Superfund Site	**PROJECT NO.** 216003.01 **REPORT NO.** 12	**PAGE NO.** Page 1 of 6 **DATE** 5/12/95 **DAY OF THE WEEK** Fri.
LOCATION OF ADDRESS Deerfield, Ohio		**WEATHER** Pt. Cloudy **TEMP (F)** 60
OWNER U.S. Government		**PROJECT MANAGER** Santino Piccoli
GENERAL CONTRACTOR / REPRESENTATIVE Conestoga Rovers / Steve Hale		**SUPERVISOR** Mark Swogger
OTHERS PRESENT None		**FIELD REPRESENTATIVE** Gene Dimtroff
SPECIALTY CONTRACTOR Severson Construction	[ ] GRADING [ ] EXCAVATION [X] OTHER	**PLANS AND SPECIFICATIONS** BY CRA DATE May 1993
SPECIALTY CONTRACTOR'S SUPERINTENDENT OR FOREMAN None		
PROJECT BRIEFING [X] PREVIOUSLY REPORTED [ ] BY [ ] NO [ ] UNKNOWN [ ] ON		**SOURCE OF FILL** Site Stockpile
CONTRACTOR'S EQUIPMENT OBSERVED IN USE (1) D9 Cat Dozer (1) 988 Cat Loader		**FIRM EQUIPMENT USED** TYPE/MODEL N/A MFR. SERIAL NO.

VISITORS

NAME	REPRESENTING	ARR.	DPT.
N/A			

FOLLOW-UP FROM PRIOR REPORT
YES [X] NO [ ]

DID YOU OBSERVE EVERYTHING YOU EXPECTED TO?
YES [ ] NO [X]

DID YOU OBSERVE ANYTHING UNEXPECTED?
YES [ ] NO [X]

DID YOU SEE, HEAR, SMELL, TASTE, OR TOUCH ANYTHING UNUSUAL OR UNEXPLAINED?

No

WHAT IN PARTICULAR SHOULD BE OBSERVED, CHECKED, OR TESTED DURING THE NEXT VISIT?
As directed

Project No. 216003.01	Page No. Page 2 of 6
Report No. 12	Date 5/12/95 Friday

Project I.D.
Summit National Superfund Site

Field Representative
Gene Dimtroff

CONTRACTOR ACTIVITIES

INDICATE ACTIVITIES YOU DID AND DID NOT MONITOR

Client requested soil compaction by Grid, with site map provided. Also, requested standard proctor sample obtained.

Field Representative's Activities

ARR. 1:15 P.M. DPT. 3:45 P.M.

Checked compaction, obtained soil sample for Proctor, Particle Size Analysis and Permability.

CPN MC-3 NUCLEAR DENSITY STANDARD COUNT

--- A.M.			--- P.M.		
CPM	Wet	H2O	CPM	Wet	H2O
PRV	---	---	PRV	---	---
STD	---	---	STD	---	---
XI	---	---	XI	---	---
N	---	---	N	---	---
DAT	---	---	DAT	---	---

NOTICE

The professional engineer is represented on site solely to observe operations of the contractor identified, form opinions about the adequacy of those operations, and report those opinions to the client. The presence and activities of the engineer's field representative do not relieve the contractor's obligation to meet contractural requirements. The contractor retains sole responsibility for site safety and the methods and sequences of construction.

☐ THIS DFR IS PRELIMINARY

A preliminary report is provided soley as evidence that field observation was performed. Observations and/or conclusions and/or recommendations conveyed in the final report may vary from and shall take precedence over those indicated in a preliminary report.

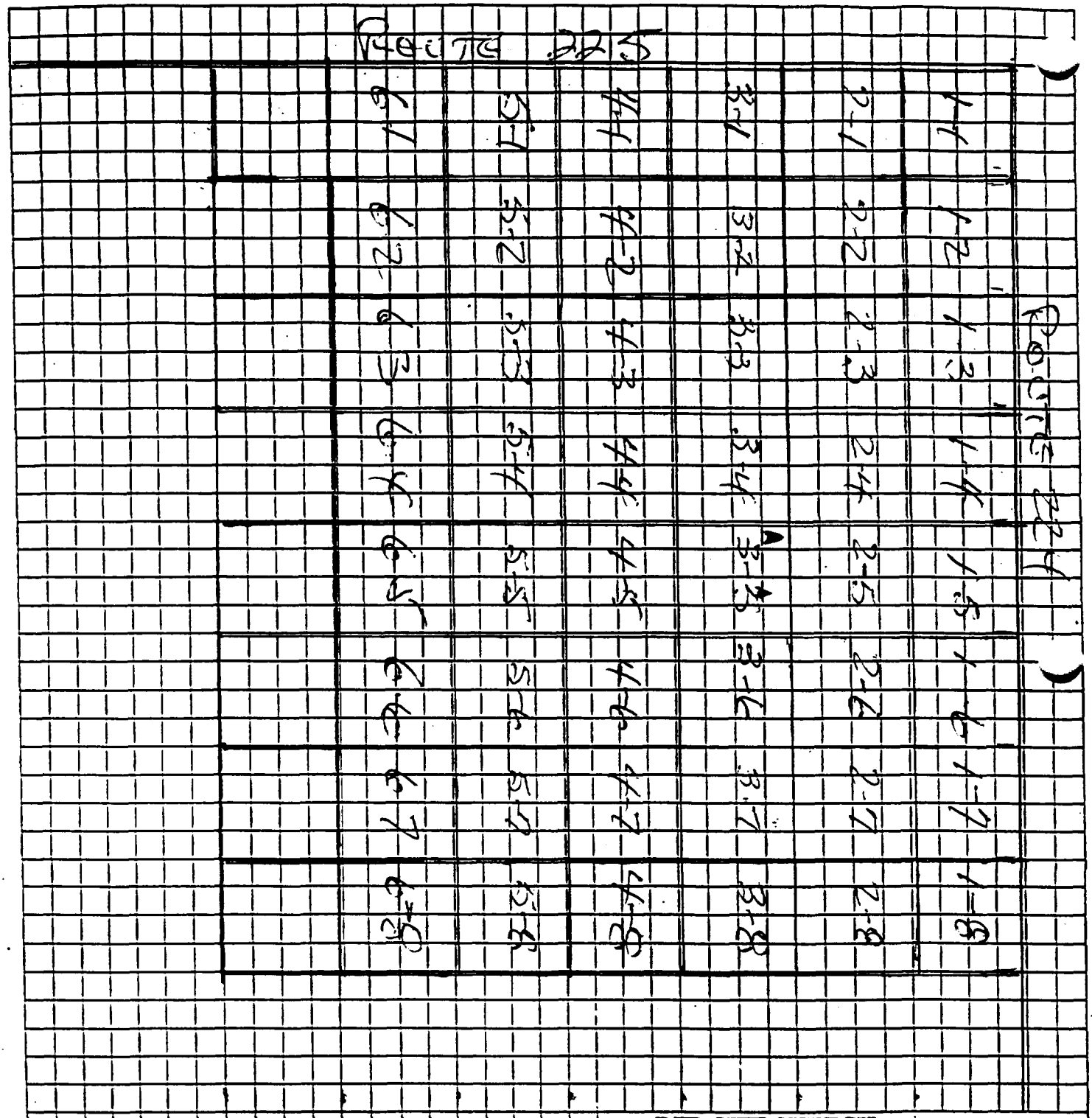
☑ THIS DFR IS FINAL

This final report has been reviewed by the Project Manager. Any conclusions drawn from this report should be discussed with and evaluated by the Project Manager involved

A:Field Report\Disk #9/003Act12.wk4/clt

FIELD REPRESENTATIVE	DATE
Gene Dimtroff	5/12/95

REVIEWED BY	DATE
[signature]	5-13-95



AREA EXCAVATED TODAY

FILL PLACED AND COMPLETED TODAY

LOCATION OF FIELD UNIT WEIGHT TEST

DFR SITE SKETCH

PROJECT NO. 216003

PROJECT I.D. Summit Nat'l Superfund

REPORT NO.

FIELD REP. Dimtroff

DATE 3-12-90

APPROXIMATE SCALE 1" = 100'

A:DRSKETCH.wk/10-19-94

REPORT OF FIELD COMPACTION TESTS

Project:	Summit National Superfund Site	Report No.:	12
Site Location:	Deerfield Twp., Portage County, Ohio	Page:	4 of 6
Contractor:	Severson Excavating Company	Date Tested:	05/12/95

INFORMATION FURNISHED FROM LABORATORY

Material ID: PC-9 Material Description: Dark Brown/Gray SANDY ORGANIC CLAY, trace gravel

Maximum Lab. Dry Density = 102.5 pcf Optimum Water Content = 17.9 % of dry weight

Req'd Min. % Compaction = 90 % Acceptable Range of Water Contents:

Req'd Min. In-Place Dry Density 92.3 pcf From "Optimum" - 17.9 % = 10.9 % (Minimum)

Lab. Test Method: ASTM D 698-91 To "Optimum" + 17.9 % = 21.9 % (Maximum)

FIELD TEST DATA (Test Method ASTM D 2922)

Test No.	BS / DT	Test Depth	Test Elevation	In-Place Wet Density	Water Content (%)	In-Place Dry Density	Max. Dry Density	% Comp.	P / F	Comments (Fill Material, Backfill, Base Course, Subbase etc.)
64	DT	6"	Grade	127.4	14.0	109.3	102.5	107%	P	Fill Material
65	DT	6"	Grade	125.1	14.1	109.2	102.5	107%	P	Fill Material
66	DT	6"	Grade	122.4	15.0	106.3	102.5	104%	P	Fill Material
67	DT	6"	Grade	124.6	11.0	112.0	102.5	109%	P	Fill Material
68	DT	6"	Grade	130.4	13.3	115.0	102.5	112%	P	Fill Material
69	DT	6"	Grade	124.1	13.1	110.4	102.5	108%	P	Fill Material
70	DT	6"	Grade	118.3	15.5	101.7	102.5	99%	P	Fill Material
71	DT	6"	Grade	117.2	14.5	102.3	102.5	100%	P	Fill Material

BS = Backscatter, DT = Direct Transmission. P = Pass, F = Fail.

TEST LOCATIONS

64	Grid 3-5, N.W. Corner of Grid
65	Grid 3-5, Corner of Grid
66	Grid 3-6, Center Grid
67	Grid 3-6, Top Center of Grid
68	Grid 3-7, NW Corner of Grid
69	Grid 3-7, SE Corner of Grid
70	Grid 4-2, SE Corner of Grid
71	Grid 4-2, NE Corner of Grid

Remarks: Tests fail to meet moisture content criteria of ASTM D 3017

216003.01	Gene Dimtroff	
R&R Project No.	**R&R Technician**	**Approved By/Date**

Field Report #9/003FC12A/clt

REPORT OF FIELD COMPACTION TESTS

Project:	Summit National Superfund Site	Report No.:	12
Site Location:	Deerfield Twp., Portage County, Ohio	Page:	5 of 6
Contractor:	Severson Excavating Company	Date Tested:	05/12/95

INFORMATION FURNISHED FROM LABORATORY

Material ID: PC-9 Material Description: Dark Brown/Gray SANDY ORGANIC CLAY, trace gravel

Maximum Lab. Dry Density = 102.5 pcf Optimum Water Content = 17.9 % of dry weight

Req'd Min. % Compaction = 90 % Acceptable Range of Water Contents:

Req'd Min. In-Place Dry Density 92.3 pcf From "Optimum" - 17.9 % = 10.9 % (Minimum)

Lab. Test Method: ASTM D 698-91 To "Optimum" + 17.9 % = 21.9 % (Maximum)

FIELD TEST DATA (Test Method ASTM D 2922)

Test No.	BS / DT	Test Depth	Test Elevation	In-Place Wet Density	Water Content (%)	In-Place Dry Density	Max. Dry Density	% Comp.	P / F	Comments (Fill Material, Backfill, Base Course, Subbase etc.)
72	DT	6"	Grade	119.9	15.4	104.5	102.5	102%	P	Fill Material
73	DT	6"	Grade	114.6	17.1	97.8	102.5	95%	P	Fill Material
74	DT	6"	Grade	117.6	12.5	103.9	102.5	101%	P	Fill Material
75	DT	6"	Grade	114.9	12.9	100.5	102.5	98%	P	Fill Material
76	DT	6"	Grade	115.8	15.6	100.2	102.5	98%	P	Fill Material
77	DT	6"	Grade	121.9	13.8	102.1	102.5	100%	P	Fill Material
78	DT	6"	Grade	114.9	15.1	100.3	102.5	98%	P	Fill Material
79	DT	6"	Grade	116.1	15.5	100.4	102.5	98%	P	Fill Material

BS = Backscatter, DT = Direct Transmission. P = Pass, F = Fail.

TEST LOCATIONS

72	Grid 4-3, SE Corner of Grid
73	Grid 4-3, NW of Grid
74	Grid 4-4, NE Corner of Grid
75	Grid 4-4, SW Corner of Grid
76	Grid 4-6, NW Corner of Grid
77	Grid 4-6, SE Corner of Grid
78	Grid 4-7, NW Corner of Grid
79	Grid 4-7, SE Corner of Grid

Remarks: Tests fail to meet moisture content criteria of ASTM D 3017

216003.01	Gene Dimtroff	5-13-95
R&R Project No.	R&R Technician	Approved By/Date

Field Report #9/003FC12B/clt

REPORT OF FIELD COMPACTION TESTS

Project:	Summit National Superfund Site	Report No.:	12
Site Location:	Deerfield Twp., Portage County, Ohio	Page:	6 of 6
Contractor:	Severson Excavating Company	Date Tested:	05/12/95

INFORMATION FURNISHED FROM LABORATORY

Material ID: PC-9 Material Description: Dark Brown/Gray SANDY ORGANIC CLAY, trace gravel

Maximum Lab. Dry Density = 102.5 pcf Optimum Water Content = 17.9 % of dry weight

Req'd Min. % Compaction = 90 % Acceptable Range of Water Contents:

Req'd Min. In-Place Dry Density 92.3 pcf From "Optimum" - 17.9 % = 10.9 % (Minimum)

Lab. Test Method: ASTM D 698-91 To "Optimum" + 17.9 % = 21.9 % (Maximum)

FIELD TEST DATA (Test Method ASTM D 2922)

Test No.	BS / DT	Test Depth	Test Elevation	In-Place Wet Density	Water Content (%)	In-Place Dry Density	Max. Dry Density	% Comp.	P / F	Comments (Fill Material, Backfill, Base Course, Subbase etc.)
80	DT	6"	Grade	112.0	15.3	104.6	102.5	102%	P	Fill Material
81	DT	6"	Grade	117.6	15.0	102.1	102.5	100%	P	Fill Material
82	DT	6"	Grade	131.4	13.0	116.3	102.5	113%	P	Fill Material
83	DT	6"	Grade	116.3	13.0	101.4	102.5	99%	P	Fill Material
84	DT	6"	Grade	117.1	13.4	104.1	102.5	102%	P	Fill Material
85	DT	6"	Grade	119.1	15.3	103.9	102.5	101%	P	Fill Material
86	DT	6"	Grade	114.6	14.1	100.0	102.5	98%	P	Fill Material
87	DT	6"	Grade	119.1	15.0	104.0	102.5	101%	P	Fill Material

BS = Backscatter, DT = Direct Transmission. P = Pass, F = Fail.

TEST LOCATIONS

80	Grid 5-2, SE Corner of Grid
81	Grid 5-2, NW Corner of Grid
82	Grid 5-4, SE Corner of Grid
83	Grid 5-4, NW Corner of Grid
84	Grid 5-5, SE Corner of Grid
85	Grid 5-5, NW Corner of Grid
86	Grid 5-6, SE Corner of Grid
87	Grid 5-6, NW Corner of Grid

Remarks: Tests fail to meet moisture content criteria of ASTM D 3017

216003.01	Gene Dimtroff	5-13-95
R&R Project No.	R&R Technician	Approved By/Date

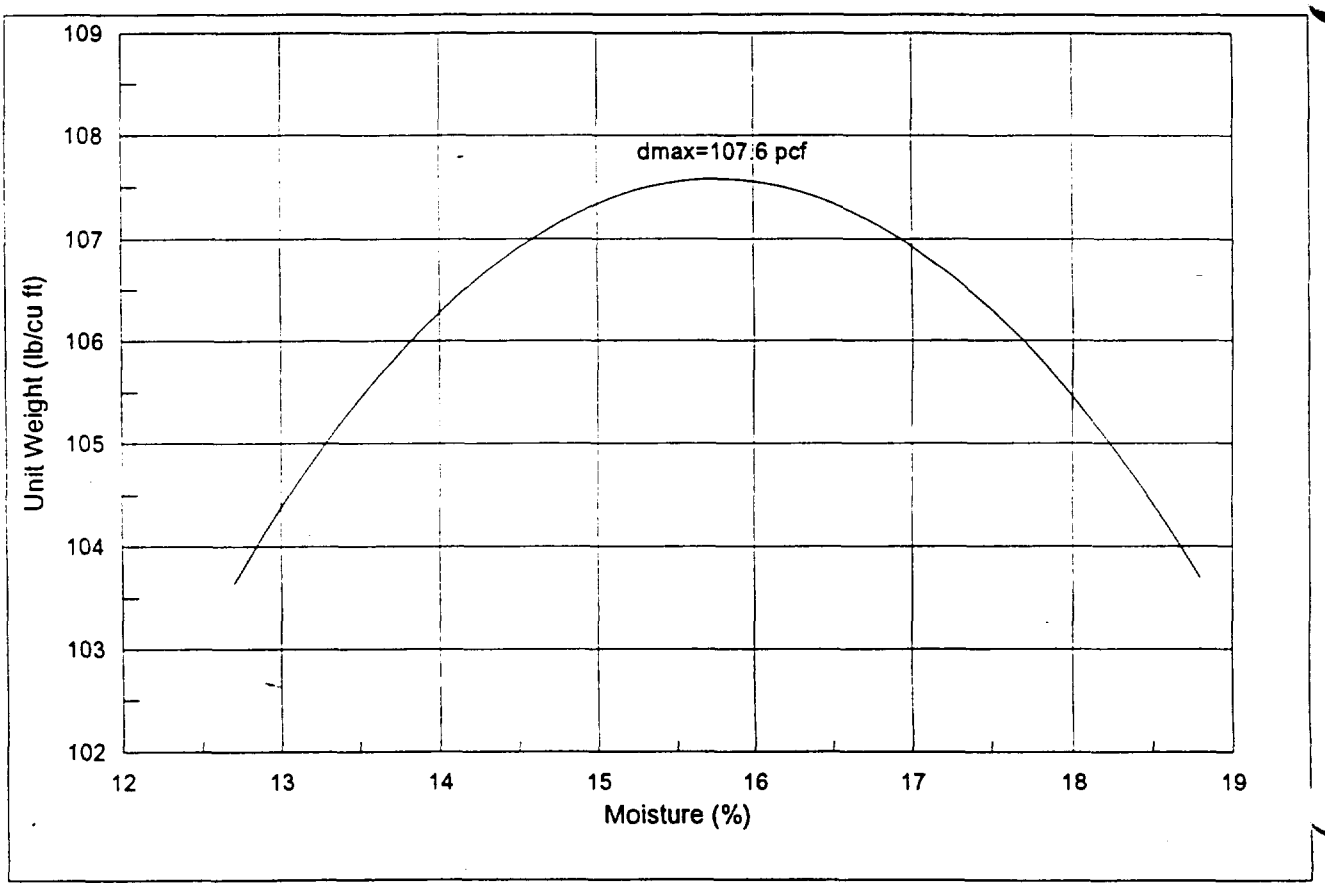
Field Report #9/003FC12C/clt

R&R INTERNATIONAL INC.

LABORATORY COMPACTION CHARACTERISTICS OF SOIL USING STANDARD EFFORT (12,400 FT-LBF/CU FT)

ASTM D 698 - 91

CLIENT:	Conestoga-Rover & Associates
PROJECT:	Summit National Superfund Site
LOCATION:	Deerfield, Ohio
SAMPLE NO.	PC-1
SAMPLE ORIGIN:	On-site material
DATE TESTED:	5-15-95
MATERIAL DESCRIPTION	DARK BROWN SANDY SILTY CLAY, LITTLE GRAVEL
MAXIMUM DRY DENSITY	107.6 lb/cu ft
OPTIMUM MOISTURE CONTENT:	15.8 %



DAILY FIELD REPORT

PROJECT IDENTIFICATION Deerfield National Superfund Site	**PROJECT NO.** 216003.01 **REPORT NO.** 13	**PAGE NO.** Page 1 of 6 **DATE** 5/24/95 **DAY OF THE WEEK** Weds.
LOCATION OF ADDRESS Deerfield, Ohio		**WEATHER** Cloudy **TEMP (F)** 62
OWNER U.S. Government		**PROJECT MANAGER** Santino Piccoli
GENERAL CONTRACTOR / REPRESENTATIVE Conestoga Rovers / Steve Hale		**SUPERVISOR** Mark Swogger
OTHERS PRESENT None		**FIELD REPRESENTATIVE** Gene Dimtroff
SPECIALTY CONTRACTOR Severson Construction	[ ] GRADING [ ] EXCAVATION [X] OTHER	**PLANS AND SPECIFICATIONS** BY CRA DATE May 1993
SPECIALTY CONTRACTOR'S SUPERINTENDENT OR FOREMAN None		
PROJECT BRIEFING [X] PREVIOUSLY REPORTED [ ] BY [ ] NO [ ] UNKNOWN [ ] ON		**SOURCE OF FILL** Site Stockpile
CONTRACTOR'S EQUIPMENT OBSERVED IN USE (1) Katmatus Dozer - 58E (1) Ingersoll Land Compactor SD100 D (1) 988 Cat Loader (1) Komatus Hoe 451 E		**FIRM EQUIPMENT USED** TYPE/MODEL N/A MFR. SERIAL NO.

VISITORS

NAME	REPRESENTING	ARR.	DPT.
N/A			

FOLLOW-UP FROM PRIOR REPORT
YES [X] NO [ ]

DID YOU OBSERVE EVERYTHING YOU EXPECTED TO?
YES [ ] NO [X]

DID YOU OBSERVE ANYTHING UNEXPECTED?
YES [ ] NO [X]

DID YOU SEE, HEAR, SMELL, TASTE, OR TOUCH ANYTHING UNUSUAL OR UNEXPLAINED?

No

WHAT IN PARTICULAR SHOULD BE OBSERVED, CHECKED, OR TESTED DURING THE NEXT VISIT?
As directed

Project No. 216003.01	Page No. Page 2 of 6
Report No. 13	Date 5/24/95 Wednesday

Project I.D.
Summit National Superfund Site

Field Representative
Gene Dimtroff

CONTRACTOR ACTIVITIES

INDICATE ACTIVITIES YOU DID AND DID NOT MONITOR

Tested compaction of soils in grids starting at Grid 1-1 and ending at Grid 4-6.

Field Representative's Activities

ARR. 9:00 A.M. DPT. 12:00 P.M.

Soils

CPN MC-3 NUCLEAR DENSITY STANDARD COUNT

--- A.M.			--- P.M.		
CPM	Wet	H2O	CPM	Wet	H2O
PRV	---	---	PRV	---	---
STD	---	---	STD	---	---
XI	---	---	XI	---	---
N	---	---	N	---	---
DAT	---	---	DAT	---	---

NOTICE

The professional engineer is represented on site solely to observe operations of the contractor identified, form opinions about the adequacy of those operations, and report those opinions to the client. The presence and activities of the engineer's field representative do not relieve the contractor's obligation to meet contractural requirements. The contractor retains sole responsibility for site safety and the methods and sequences of construction.

☐ THIS DFR IS PRELIMINARY

A preliminary report is provided soley as evidence that field observation was performed. Observations and/or conclusions and/or recommendations conveyed in the final report may vary from and shall take precedence over those indicated in a preliminary report.

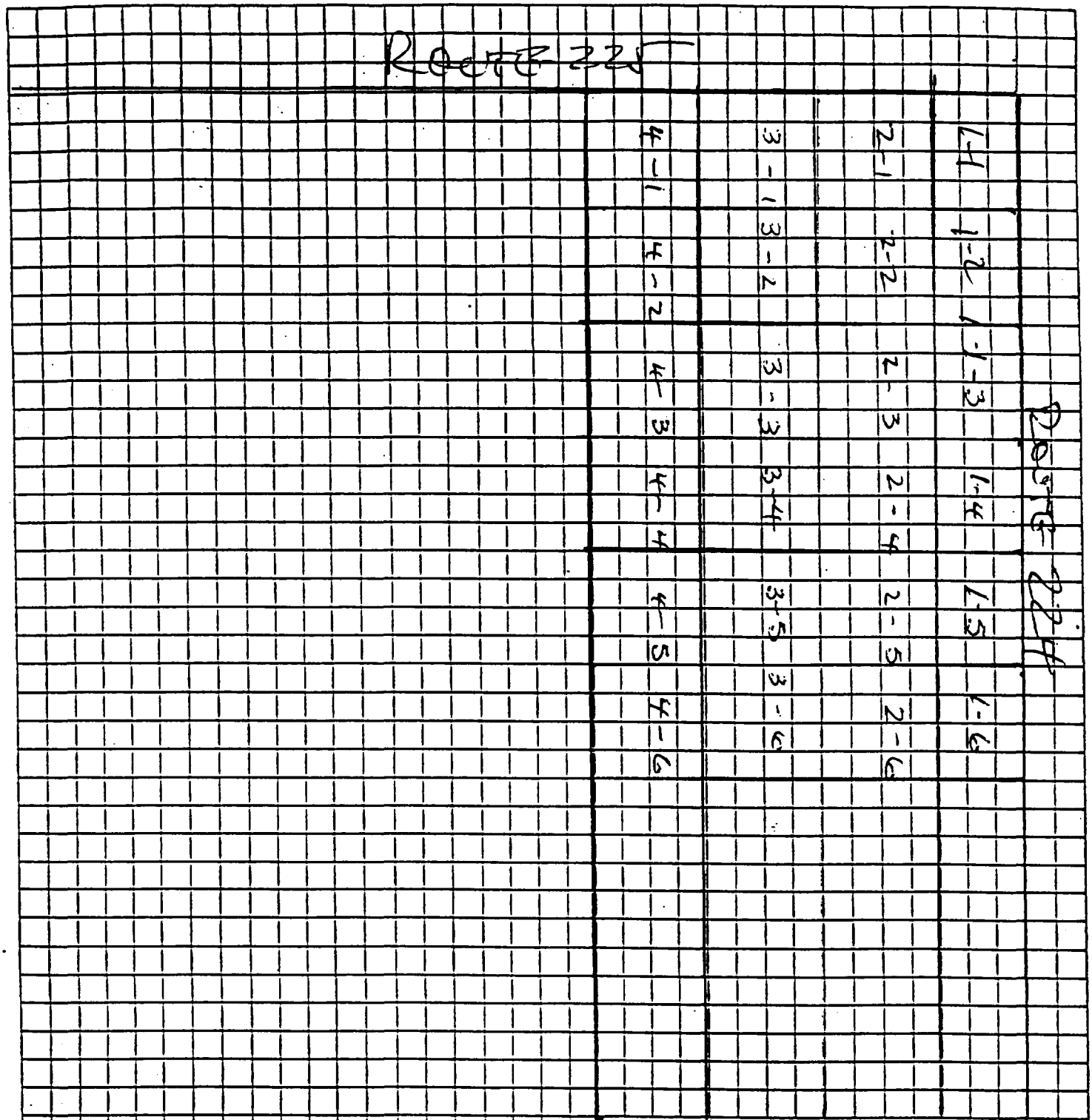
☐ THIS DFR IS FINAL

This final report has been reviewed by the Project Manager. Any conclusions drawn from this report should be discussed with and evaluated by the Project Manager involved

A:Field Report\Disk #9/003Act13.wk4/clt

FIELD REPRESENTATIVE	DATE
Gene Dimtroff	5/24/95
REVIEWED BY	DATE
	5-25-95

R&R



AREA EXCAVATED TODAY

FILL PLACED AND COMPLETED TODAY

LOCATION OF FIELD UNIT WEIGHT TEST

A:DRSKETCH/ab/10-19-94

DFR SITE SKETCH

PROJECT NO. 216003

PROJECT I.D. SUMMIT NAT'L SUPERFUND

REPORT NO.

FIELD REP. DIMTROFF

DATE 5-24-95

APPROXIMATE SCALE 1" = 100'

REPORT OF FIELD COMPACTION TESTS

Project:	Summit National Superfund Site	Report No.:	13
Site Location:	Deerfield Twp., Portage County, Ohio	Page:	4 of 6
Contractor:	Severson Excavating Company	Date Tested:	05/24/95

INFORMATION FURNISHED FROM LABORATORY

Material ID: PC-~~9~~ 1 Material Description: Dark Brown SANDY SILTY CLAY, trace gravel

Maximum Lab. Dry Density = 107.6 pcf Optimum Water Content = 15.8 % of dry weight

Req'd Min. % Compaction = 90 % Acceptable Range of Water Contents:

Req'd Min. In-Place Dry Density 96.8 pcf From "Optimum" - --- % = --- % (Minimum)

Lab. Test Method: ASTM D 698-91 To "Optimum" + --- % = --- % (Maximum)

FIELD TEST DATA (Test Method ASTM D 2922)

Test No.	BS / DT	Test Depth	Test Elevation	In-Place Wet Density	Water Content (%)	In-Place Dry Density	Max. Dry Density	% Comp.	P / F	Comments (Fill Material, Backfill, Base Course, Subbase etc.)
88	DT	6"	Grade	125.0	23.7	101.1	107.6	94%	P	Backfill
89	DT	6"	Grade	117.3	19.0	98.0	107.6	91%	P	Backfill
90	DT	6"	Grade	116.6	17.5	99.0	107.6	92%	P	Backfill
91	DT	6"	Grade	112.8	14.9	98.1	107.6	91%	P	Backfill
92	DT	6"	Grade	113.6	15.0	98.6	107.6	92%	P	Backfill
93	DT	6"	Grade	117.1	16.7	99.0	107.6	92%	P	Backfill
94	DT	6"	Grade	108.6	11.9	97.0	107.6	90%	P	Backfill
95	DT	6"	Grade	122.9	12.3	109.4	107.6	102%	P	Backfill

BS = Backscatter, DT = Direct Transmission. P = Pass, F = Fail.

TEST LOCATIONS

88	75' East, 50' South
89	90' East, 55' South
90	190' East, 60' South
91	280' East, 70' South
92	320' East, 90' South
93	375' East, 75' South
94	425' East, 70' South
95	475' East, 90' South

Remarks: Tests fail to meet moisture content criteria of ASTM D 3017

216003.01
R&R Project No.

Gene Dimtroff
R&R Technician

[signature] 5-25-95
Approved By/Date

Field Report #9/003FC13A/clt

REPORT OF FIELD COMPACTION TESTS

Project:	Summit National Superfund Site	Report No.:	13
Site Location:	Deerfield Twp., Portage County, Ohio	Page:	5 of 6
Contractor:	Severson Excavating Company	Date Tested:	05/24/95

INFORMATION FURNISHED FROM LABORATORY

Material ID: PC-1 Material Description: Dark Brown SANDY SILTY CLAY, trace gravel

Maximum Lab. Dry Density = 107.6 pcf Optimum Water Content = 15.8 % of dry weight

Req'd Min. % Compaction = 90 % Acceptable Range of Water Contents:

Req'd Min. In-Place Dry Density 96.8 pcf From "Optimum" - --- % = --- % (Minimum)

Lab. Test Method: ASTM D 698-91 To "Optimum" + --- % = --- % (Maximum)

FIELD TEST DATA (Test Method ASTM D 2922)

Test No.	BS / DT	Test Depth	Test Elevation	In-Place Wet Density	Water Content (%)	In-Place Dry Density	Max. Dry Density	% Comp.	P / F	Comments (Fill Material, Backfill, Base Course, Subbase etc.)
96	DT	6"	Grade	123.1	11.1	111.0	107.6	103%	P	Backfill
97	DT	6"	Grade	119.5	11.2	107.5	107.6	100%	P	Backfill
98	DT	6"	Grade	119.1	12.9	106.0	107.6	99%	P	Backfill
99	DT	6"	Grade	108.7	12.5	97.1	107.6	90%	P	Backfill
100	DT	6"	Grade	109.1	12.5	98.0	107.6	91%	P	Backfill
101	DT	6"	Grade	110.1	12.3	99.0	107.6	92%	P	Backfill
102	DT	6"	Grade	111.6	11.9	99.1	107.6	92%	P	Backfill
103	DT	6"	Grade	116.1	12.7	103.4	107.6	96%	P	Backfill

BS = Backscatter, DT = Direct Transmission. P = Pass, F = Fail.

TEST LOCATIONS

96	430' East, 150' South
97	490' East, 180' South
98	430' East, 205' South
99	375' East, 215' South
100	325' East, 250' South
101	275' East, 225' South
102	325' East, 230' South
103	525' East, 225' South

Remarks: Tests fail to meet moisture content criteria of ASTM D 3017

216003.01	Gene Dimtroff	Santa S Paul 5-25-95
R&R Project No.	**R&R Technician**	**Approved By/Date**

Field Report #9/003FC13B/clt

REPORT OF FIELD COMPACTION TESTS

Project:	Summit National Superfund Site	Report No.:	13
Site Location:	Deerfield Twp., Portage County, Ohio	Page:	6 of 6
Contractor:	Severson Excavating Company	Date Tested:	05/24/95

INFORMATION FURNISHED FROM LABORATORY

Material ID: PC-1 Material Description: Dark Brown SANDY SILTY CLAY, trace gravel

Maximum Lab. Dry Density = 107.6 pcf Optimum Water Content = 15.8 % of dry weight

Req'd Min. % Compaction = 90 % Acceptable Range of Water Contents:

Req'd Min. In-Place Dry Density 96.8 pcf From "Optimum" - --- % = --- % (Minimum)

Lab. Test Method: ASTM D 698-91 To "Optimum" + --- % = --- % (Maximum)

FIELD TEST DATA (Test Method ASTM D 2922)

Test No.	BS / DT	Test Depth	Test Elevation	In-Place Wet Density	Water Content (%)	In-Place Dry Density	Max. Dry Density	% Comp.	P / F	Comments (Fill Material, Backfill, Base Course, Subbase etc.)
104	DT	6"	Grade	116.1	12.7	103.4	107.6	96%	P	Backfill
105	DT	6"	Grade	116.7	11.6	104.1	107.6	97%	P	Backfill
106	DT	6"	Grade	115.8	12.0	103.6	107.6	96%	P	Backfill
107	DT	6"	Grade	116.0	10.6	106.5	107.6	99%	P	Backfill
108	DT	6"	Grade	118.1	14.3	102.8	107.6	96%	P	Backfill
109	DT	6"	Grade	119.7	14.0	103.1	107.6	96%	P	Backfill
110	DT	6"	Grade	114.0	11.2	102.8	107.6	96%	P	Backfill
111	DT	6"	Grade	115.0	11.0	103.1	107.6	96%	P	Backfill

BS = Backscatter, DT = Direct Transmission. P = Pass, F = Fail.

TEST LOCATIONS

104	270' East, 250' South
105	325' East, 225' South
106	270' East, 250' South
107	225' East, 225' South
108	190' East, 225' South
109	150' East, 300' South
110	180' East, 325' South
111	225' East, 375' South

Remarks: Tests fail to meet moisture content criteria of ASTM D 3017

216003.01
R&R Project No.

Gene Dimtroff
R&R Technician

Santa S Pierle 5-25-95
Approved By/Date

Field Report #9/003FC13C/clt

ATTACHMENT C

CONTAINER WASTE ANALYTICAL RESULTS SUMMARY

TABLE 2
WASTE FINGERPRINT/COMPATIBILITY AND PCB DATA
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

SAMPLE ID	LAB ID#	PCB COMPOSITE GROUP#	FINAL COMPOSITE GROUP#	STATE	COLOR	DENSITY	pH	FLASH	HALOGEN	AIR REACT	H2O REACT	HEXANE SOLUBLE	H2O SOLUBLE	CYANIDE REACT	SULFIDE REACT	OXIDIZER	PEROXIDE	PCB (mg/kg)	TSCA(1) P/F
1	9323	1	1	SOLID	BROWN	> 1.2	6.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
2	9220	46	19A	LIQUID	BLACK	0.93	6.0	>200	NEG	NEG	NEG	P/S	NEG	NEG	NEG	NEG	NEG	<50	P
3	9322	20	20A**	SOLID	BROWN	> 1.2	7.0	129	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
4	9321	1	1	SOLID	BROWN	> 1.2	6.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
5	9318	11	11	SOLID	BROWN	> 1.2	6.0	>200	POS	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
6	9319	5	3A	SOLID	BROWN	> 1.2	7.0	109	POS	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<10*	P
7	9317	28	12A	SOLID	BRN/WHT	> 1.2	6.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
8	9587	24	24	SOLID	BLACK	> 1.2	6.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
9	9320	1	1	SOLID	BROWN	> 1.2	6.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
10	9313	3	1A	SOLID	BROWN	> 1.2	5.0	>200	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<10*	P
11	9315	38	38	SOLID	BROWN	> 1.2	8.0	>200	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	<50	P
11A	9680	38	38	LIQUID	GRAY	1.02	6.0	>200	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	<50	P
12	9314	9	9	SOLID	BROWN	> 1.2	7.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
13	9483	9	9	SOLID	BROWN	> 1.2	9.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
14	9316	9	9	SOLID	BROWN	> 1.2	9.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
15	9579	41	41	SOLID	BROWN	> 1.2	9.0	>200	NEG	NEG	NEG	NEG	NEG	POS	POS	NEG	NEG	<50	P
16	9589	23	23	SOLID	BROWN	> 1.2	12.0	>200	NEG	NEG	NEG	NEG	NEG	POS	POS	NEG	NEG	<50	P
17	9362	17	17	SOLID	BROWN	> 1.2	12.0	104	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
18	9584	23	23	SOLID	BROWN	> 1.2	9.0	>200	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	<50	P
19	9588	24	24	SOLID	BLACK	> 1.2	6.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
20	9585	24	24	SOLID	BROWN	> 1.2	6.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
21	9371	11	11	SOLID	BROWN	> 1.2	5.0	>200	POS	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
22	9360	20	20A**	SOLID	BROWN	> 1.2	6.0	113	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
24	9363	4	2A	SOLID	BROWN	> 1.2	5.0	126	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<10*	P
25	9364	1	1	SOLID	BROWN	> 1.2	6.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
26	9361	37	37	SOLID	BROWN	> 1.2	6.0	111	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	<50	P
27	9367	3	1A	SOLID	BROWN	> 1.2	5.0	>200	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	7.8*	P
28	9678	51	51	LIQUID	GRAY	0.99	6.0	>200	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
29	9365	1	1	SOLID	BROWN	> 1.2	5.5	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
30	9608	43	18A	LIQUID	BROWN	0.99	7.0	126	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
31	9603	47	47	LIQUID	BROWN	1.06	7.0	>200	NEG	NEG	NEG	NEG	NEG	POS	POS	NEG	NEG	<50	P
32	9577	9	9	SOLID	BROWN	> 1.2	5.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
33	9572	9	9	SOLID	BROWN	> 1.2	5.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
34	9576	9	9	SOLID	BROWN	> 1.2	6.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
35	9573	11	11	SOLID	BROWN	> 1.2	5.0	>200	POS	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
36	9568	1	1	SOLID	BROWN	> 1.2	5.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
37	9570	11	11	SOLID	BROWN	> 1.2	5.0	>200	POS	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
38	9569	3	1A	SOLID	BROWN	> 1.2	6.0	>200	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	15*	P
39	9303	1	1	SOLID	BROWN	> 1.2	5.5	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
40	9370	1	1	SOLID	BROWN	> 1.2	5.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
41	9368	27	13A	SOLID	BROWN	> 1.2	4.0	>200	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
41A	9213	42	18A	LIQUID	GRAY	0.88	4.5	81	NEG	NEG	NEG	NEG	P/S	NEG	NEG	NEG	NEG	<50	P
42	9649	15	6A	SOLID	BROWN	> 1.2	7.0	99	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	77.5*	F
43	9366	11	11	SOLID	BROWN	> 1.2	4.5	>200	POS	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
44	9650	5	8A	SOLID	BROWN	> 1.2	7.0	106	POS	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	75.9*	F
45	9369	3	1A	SOLID	BROWN	> 1.2	6.0	>200	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	5.48J*	P
46	9308	27	13A	SOLID	BROWN	> 1.2	4.5	189	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
47	9307	30	10A	SLUDGE	BROWN	> 1.2	7.0	88	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
48	9306	6	4A	SOLID	BROWN	> 1.2	6.0	86	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	16.6*	P
49	9305	2	2	SOLID	BROWN	> 1.2	6.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
50	9301	9	9	SOLID	BROWN	> 1.2	6.5	>200	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
51	9197	8	7A	LIQUID	BLK/GRY	0.90	7.0	86	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	156*	F
52	9196	46	19A	LIQUID	GRY	1.04	7.0	109	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
53	9302	9	9	SOLID	BROWN	> 1.2	6.5	>200	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
54	9195	8	7A	LIQUID	BLK/BRN	0.83	7.0	95	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	320*	F
55	9581	24	24	SOLID	WHT/BRN	> 1.2	6.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
56	9304	3	1A	SOLID	BROWN	> 1.2	5.0	>200	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<10*	P
57	9621	9	9	SOLID	BROWN	> 1.2	6.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
58	9625	9	9	SOLID	BROWN	> 1.2	5.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
59	9617	10	10	SOLID	BROWN	> 1.2	5.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
60	9664	43	18A	LIQUID	BROWN	0.89	6.0	102	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
61	9658	2	2	SOLID	BROWN	> 1.2	8.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
62	9567	7	2A	SOLID	BROWN	> 1.2	5.0	90	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<10*	P
63	9654	43	18A	LIQUID	BLACK	0.90	7.0	136	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
64	9575	3	1A	SOLID	BROWN	> 1.2	6.0	>200	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P

TABLE 2
WASTE FINGERPRINT/COMPATIBILITY AND PCB DATA
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

SAMPLE ID	LAB ID#	PCB COMPOSITE GROUP#	FINAL COMPOSITE GROUP#	STATE	COLOR	DENSITY	pH	FLASH	HALOGEN	AIR REACT	H2O REACT	HEXANE SOLUBLE	H2O SOLUBLE	CYANIDE REACT	SULFIDE REACT	OXIDIZER	PEROXIDE	PCB (mg/kg)	TSCA(1) P/F
65	9504	7	2A	SOLID	BROWN	> 1.2	7.0	82	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	39.5*	P
66	9626	16	3A	SOLID	BROWN	> 1.2	7.0	70	POS	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	46*	P
67	9571	3	1A	SOLID	BROWN	> 1.2	5.0	>200	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
68	9593	6	6A	SOLID	BROWN	> 1.2	7.0	97	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	61*	F
69	9591	2	2	SOLID	BROWN	> 1.2	5.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
70	9624	40	14A	SOLID	BROWN	> 1.2	7.0	96	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	20.7*	P
71	9596	4	6A	SOLID	BROWN	> 1.2	6.0	104	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	97.4	F
72	9574	7	6A	SOLID	BROWN	> 1.2	6.0	70	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	75.2*	F
73	9592	6	4A	SOLID	BROWN	> 1.2	6.0	90	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<10*	P
74	9670	43	16A	LIQUID	GRY/BLK	0.88	6.0	73	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	401*	F
75	9673	50	16A	LIQUID	BROWN	0.91	5.0	77	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	244*	F
76	9622	4	2A	SOLID	BROWN	> 1.2	5.0	117	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	24.8*	P
77	9615	7	2A	SOLID	BROWN	> 1.2	7.0	76	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	21.3*	P
78	9616	5	8A	SOLID	BROWN	> 1.2	7.0	106	POS	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	64.6*	F
79	9618	16	8A	SOLID	BROWN	> 1.2	8.0	90	POS	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	60*	F
80	9619	3	1A	SOLID	BROWN	> 1.2	4.0	>200	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
81	9623	1	1A	SOLID	BROWN	> 1.2	6.0	>200	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
82	9620	2	2	SOLID	BROWN	> 1.2	6.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
83	9614	8	7A	LIQUID	GRY/BLK	0.87	6.0	68	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	444*	F
84	9518	14	2A	SOLID	BROWN	> 1.2	6.0	198	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	13*	P
85	9663	36	20A	LIQUID	BROWN	0.95	4.0	72	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	<50	P
86A	9662	33	33A	SOLID	BLACK	> 1.2	6.0	102	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
86B	9665	33	33A	LIQUID	BLK/GRY	0.90	6.0	126	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
87	9672	8	7A	LIQUID	BROWN	0.88	7.0	72	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	228*	F
88	9597	7	2A	SOLID	BROWN	> 1.2	6.0	82	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	45*	P
89	9656	48	9A	SOLID	BLACK	> 1.2	6.0	70	POS	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	67*	F
90	9552	8	8A	LIQUID	GRAY	0.92	7.0	73	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	1.82J*	P
91	9655	34	13A	SOLID	BLACK	> 1.2	11	91	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	48.6*	P
93	9651	36	20A	LIQUID	GRAY	0.96	7.0	120	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	<50	P
94	9676	24	24	SOLID	BLACK	> 1.2	6.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
95	9659	16	8A	SOLID	BROWN	> 1.2	7.0	71	POS	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	120*	F
96	9660	48	9A	SOLID	BLACK	> 1.2	6.0	72	POS	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	67*	F
97	9599	2	2	SOLID	BROWN	> 1.2	5.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
98	9669	38	18	LIQUID	GRAY	1.02	7.0	>200	NEG	NEG	NEG	NEG	POS	POS	NEG	NEG	NEG	<50	P
99	9594	5	3A	SOLID	BROWN	> 1.2	7.0	129	POS	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<10*	P
100	9657	15	6A	SOLID	BLACK	> 1.2	8.0	97	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	58.9*	F
101	9598	4	2A	SOLID	BROWN	> 1.2	6.0	133	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<10*	P
102	9653	39	16A	LIQUID	BLACK	0.96	7.0	77	NEG	NEG	NEG	POS	NEG	POS	NEG	NEG	NEG	337*	F
103	9595	48	9A	SOLID	BROWN	> 1.2	6.0	82	POS	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	79*	F
104	9600	4	2A	SOLID	BROWN	> 1.2	6.0	107	POS	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	<10*	P
105	9667	36	20A	LIQUID	BROWN	0.98	5.0	111	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	<50	P
106	9602	4	2A	SOLID	BROWN	> 1.2	7.0	129	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	26.1*	P
107	9671	47	47	LIQUID	BROWN	0.91	7.0	194	NEG	NEG	NEG	NEG	NEG	POS	POS	NEG	NEG	<50	P
108	9668	49	16A	LIQUID	BROWN	0.89	4.0	77	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	544*	F
109	9629	7	2A	SOLID	BROWN	> 1.2	7.0	97	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	34.3*	P
110	9630	48	14A	SOLID	BROWN	> 1.2	7.0	82	POS	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	29*	P
111	9633	7	2A	SOLID	BROWN	> 1.2	7.0	84	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	34.1*	P
112	9555	39	16A	LIQUID	BROWN	0.97	11	108	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	117*	F
113	9631	6	6A	SOLID	BROWN	> 1.2	6.0	75	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	92.9*	F
114	9558	8	5A	LIQUID	BLK/GRY	0.97	7.0	75	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	<50	P
115	9666	36	20A	LIQUID	GRAY	1.07	6.0	68	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	<50*	P
118	9563	49	16A	LIQUID	BLACK	0.94	6.0	73	NEG	NEG	NEG	POS	NEG	NEG	NEG	NEG	NEG	526*	F
119	9677	36	20A	LIQUID	GRAY	0.94	6.0	113	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	42*	P
120	9675	6	4A	SOLID	BROWN	> 1.2	6.0	99	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	1.82J*	P
121	9566	8	5A	LIQUID	BLK/GRY	0.98	6.0	95	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	<50	P
122	9561	43	18A	LIQUID	BLK/GRY	0.91	7.0	94	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	48*	P
124	9562	38	38	LIQUID	GRAY	1.03	7.0	174	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	<50	P
125	9632	7	6A	SOLID	BROWN	> 1.2	6.0	75	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	86*	F
126	9560	8	5A	LIQUID	BLK/GRY	0.93	8.0	72	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	<50	P
127	9564	47	47	LIQUID	BLACK	1.02	7.0	>200	NEG	NEG	NEG	NEG	POS	POS	NEG	NEG	NEG	<50	P
128	9559	8	5A	LIQUID	BLK/GRY	0.91	8.0	90	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	<50	P
129	9605	6	4A	SOLID	BROWN	> 1.2	6.0	93	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	32.7*	P
131	9636	3	1A	SOLID	BROWN	> 1.2	6.0	>200	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	[illegible]
134	9634	7	2A	SOLID	BROWN	> 1.2	7.0	75	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	28.1*	[illegible]
135	14549	61	23A	SOLID	WHITE	> 1.2	2.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	[illegible]

TABLE 2
WASTE FINGERPRINT/COMPATIBILITY AND PCB DATA
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

SAMPLE ID	LAB ID#	PCB COMPOSITE GROUP#	FINAL COMPOSITE GROUP#	STATE	COLOR	DENSITY	pH	FLASH	HALOGEN	AIR REACT	H2O REACT	HEXANE SOLUBLE	H2O SOLUBLE	CYANIDE REACT	SULFIDE REACT	OXIDIZER	PEROXIDE	PCB (mg/kg)	TSCA(1) P/F
136	9657	8	5A	LIQUID	BROWN	0.88	8.0	77	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	<50	P
137	9628	4	6A	SOLID	BROWN	> 1.2	6.0	113	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	59.1*	F
138	9614	4	2A	SOLID	BROWN	> 1.2	7.0	101	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	18.4*	P
139	9611	36	16A	LIQUID	BROWN	0.89	7.0	86	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	284*	F
140	9609	36	20A	LIQUID	BROWN	0.99	7.0	140	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	<50*	P
142	9612	19	19	SOLID	BROWN	> 1.2	7.0	151	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
143	9352	11	11	SOLID	BROWN	> 1.2	6.0	>200	POS	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
144	9607	7	2A	SOLID	BROWN	> 1.2	7.0	77	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	33.8*	P
145	9679	44	44	LIQUID	GRAY	1.01	6.0	>200	POS	NEG	NEG	NEG	POS	NEG	NEG	NEG	NEG	<50	P
146	9350	14	1A	SOLID	BROWN	> 1.2	5.0	>200	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<20*	P
147	9309	41	41	SOLID	BROWN	> 1.2	5.0	194	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
148	9334	10	10	SOLID	BROWN	> 1.2	4.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
149	9640	11	11	SOLID	BROWN	> 1.2	5.0	>200	POS	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
150	9340	10	10	SOLID	BROWN	> 1.2	5.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
151	9357	2	2	SOLID	BROWN	> 1.2	5.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
152	9646	11	11	SOLID	BROWN	> 1.2	6.0	>200	POS	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
153	9329	10	10	SOLID	BROWN	> 1.2	5.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
154	9324	10	10	SOLID	BROWN	> 1.2	6.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
155	9312	18	18	SOLID	BROWN	> 1.2	7.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
156	9332	10	10	SOLID	BROWN	> 1.2	5.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
157	9327	19	19	SOLID	BROWN	> 1.2	3.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
158	9201	50	20A	LIQUID	BLY/GRY	0.89	7.0	129	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<20*	P
159	9335	10	10	SOLID	BROWN	> 1.2	6.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
160	9194	50	20A	LIQUID	BLK/CLR	0.93	7.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
161	9590	24	24	SOLID	BROWN	> 1.2	5.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
162	9326	10	10	SOLID	BROWN	> 1.2	6.5	>200	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
163	9333	18	18	SOLID	BROWN	> 1.2	6.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
164	9325	11	11	SOLID	BROWN	> 1.2	6.0	>200	POS	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
165	9337	10	10	SOLID	BROWN	> 1.2	6.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
166	9223	44	44	LIQUID	CLEAR	1.00	4.0	>200	POS	NEG	NEG	NEG	P/S	NEG	NEG	NEG	NEG	<50	P
167	9338	11	11	SOLID	BROWN	> 1.2	6.0	>200	POS	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
168	9343	10	10	SOLID	BROWN	> 1.2	6.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
169	9330	12	3A	SOLID	BROWN	> 1.2	6.0	>200	POS	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	8.99J*	P
170	9359	18	18	SOLID	BROWN	> 1.2	6.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
171	9200	35	35	LIQUID	GRAY	1.01	7.0	>200	NEG	NEG	NEG	NEG	YES	NEG	NEG	NEG	NEG	<50	P
172	9310	18	18	SOLID	BROWN	> 1.2	5.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
173	9311	12	3A	SOLID	BROWN	> 1.2	5.0	>200	POS	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<10*	P
174	9221	35	35	LIQUID	GRAY	0.99	2.0	>200	NEG	NEG	NEG	NEG	P/S	NEG	NEG	NEG	NEG	<50	P
175	9203	49	16A	LIQUID	BLACK	0.90	6.5	111	NEG	NEG	NEG	P/S	NEG	NEG	NEG	NEG	NEG	578*	F
176	9202	39	16A	LIQUID	BLACK	0.92	7.0	73	NEG	NEG	NEG	NEG	P/S	NEG	POS	NEG	NEG	360*	F
177	9341	18	18	SOLID	BROWN	> 1.2	6.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
178	9328	12	3A	SOLID	BROWN	> 1.2	5.0	>200	POS	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	8.73*	P
179	9353	12	3A	SOLID	BROWN	> 1.2	6.0	>200	POS	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50*	P
180	9358	2	2	SOLID	BROWN	> 1.2	6.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
181	9349	12	3A	SOLID	BROWN	> 1.2	6.0	>200	POS	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<10*	P
182	9356	14	1A	SOLID	BROWN	> 1.2	4.0	>200	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50*	P
183	9331	12	8A	SOLID	BROWN	> 1.2	5.0	>200	POS	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<500*	F
184	9355	18	18	SOLID	BROWN	> 1.2	6.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
185	9346	12	3A	SOLID	BROWN	> 1.2	6.0	>200	POS	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<10*	P
186	9339	14	1A	SOLID	BROWN	> 1.2	6.0	>200	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	18*	P
187	9344	16	3A	SOLID	BROWN	> 1.2	5.0	85	POS	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<10*	P
188	9347	12	8A	SOLID	BROWN	> 1.2	6.0	>200	POS	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<100*	F
189	9204	35	35	LIQUID	GRAY	1.00	5.5	178	NEG	NEG	NEG	NEG	P/S	NEG	NEG	NEG	NEG	<50	P
190	9354	5	3A	SOLID	BROWN	> 1.2	5.0	136	POS	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<10*	P
191	9348	12	3A	SOLID	BROWN	> 1.2	5.0	>200	POS	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<10*	P
192	9645	41	41	SOLID	BROWN	> 1.2	5.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
193	9345	12	3A	SOLID	BROWN	> 1.2	6.0	>200	POS	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<10*	P
194	9642	40	9A	SOLID	BLACK	> 1.2	5.0	136	POS	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	63.8*	F
195	9222	49	16A	LIQUID	BLACK	0.91	7.0	149	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	740*	F
196	9336	14	6A	SOLID	BROWN	> 1.2	5.0	>200	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<100*	F
197	9381	19	19	SOLID	BLACK	> 1.2	7.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
198	9582	41	41	SOLID	BROWN	> 1.2	7.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
199	9583	41	41	SOLID	BROWN	> 1.2	6.0	>200	POS	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
200	9639	41	41	SOLID	BROWN	> 1.2	5.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
201	9383	2	2	SOLID	BROWN	> 1.2	6.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P

TABLE 2
WASTE FINGERPRINT/COMPATIBILITY AND PCB DATA
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

SAMPLE ID	LAB ID#	PCB COMPOSITE GROUP#	FINAL COMPOSITE GROUP#	STATE	COLOR	DENSITY	pH	FLASH	HALOGEN	AIR REACT	H2O REACT	HEXANE SOLUBLE	H2O SOLUBLE	CYANIDE REACT	SULFIDE REACT	OXIDIZER	PEROXIDE	PCB (mg/kg)	TSCA(1) P/F
202	9382	24	24	SOLID	BLACK	> 1.2	7.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
203	9580	27	13A	SOLID	BLACK	> 1.2	5.0	>200	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
204	9511	5	3A	SOLID	BROWN	> 1.2	7.0	111	POS	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	5.68*	P
205	9512	16	3A	SOLID	GRAY	> 1.2	5.0	73	POS	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	21*	P
206	9217	35	35	LIQUID	GRAY	0.98	5.0	>200	NEG	NEG	NEG	NEG	P/S	NEG	NEG	NEG	NEG	<50	P
207	9516	6	6A	SOLID	BROWN	> 1.2	5.0	75	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	375*	F
208	9215	35	35	LIQUID	WHITE	1.02	4.0	183	NEG	NEG	NEG	NEG	P/S	NEG	NEG	NEG	NEG	<50	P
209	9539	32	32A	SOLID	WHITE	> 1.2	5.0	117	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
210	9537	6	4A	SOLID	BROWN	> 1.2	5.0	88	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	46.4*	P
211	9541	54	12A	SOLID	BROWN	> 1.2	5.0	>200	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	NEG	<50	P
212	9212	49	16A	LIQUID	BLACK	0.88	6.0	68	NEG	NEG	NEG	P/S	NEG	NEG	NEG	NEG	NEG	1086*	F
213	14550	61	21A	SOLID	YELLOW	> 1.2	5.0	108	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<10*	P
214	9515	29	15A	SOLID	WHITE	> 1.2	3.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
215	9507	6	4A	SOLID	BROWN	> 1.2	4.0	99	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	5.92J*	P
216	9536	28	12A	SOLID	WHITE	> 1.2	5.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
217	9532	16	3A	SOLID	BROWN	> 1.2	5.0	74	POS	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	18*	P
218	9214	41	18A	LIQUID	GRAY	0.75	9.0	68	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50*	P
219	9535	2	2	SOLID	BROWN	> 1.2	6.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
220	9531	40	14A	SOLID	BROWN	> 1.2	6.0	75	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	3.2*	P
221	9212	42	18A	LIQUID	WHITE	0.96	7.0	79	NEG	NEG	NEG	NEG	P/S	NEG	NEG	NEG	NEG	<50	P
222	9213	42	18A	LIQUID	GRAY	0.88	4.5	81	NEG	NEG	NEG	NEG	P/S	NEG	NEG	NEG	NEG	<50	P
223	9538	18	18	SOLID	BROWN	> 1.2	5.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
224	9211	42	18A	LIQUID	WHITE	0.99	4.5	126	POS	NEG	NEG	NEG	P/S	NEG	NEG	NEG	NEG	<50	P
225	9542	40	14A	SOLID	BROWN	> 1.2	5.0	79	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50*	P
226	9484	18	18	SOLID	BROWN	> 1.2	5.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
227	9534	18	18	SOLID	BROWN	> 1.2	6.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
228	9377	20	20B	SOLID	BLACK	> 1.2	4.0	108	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
229	9520	14	1A	SOLID	BROWN	> 1.2	6.0	>200	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<10*	P
230	9508	4	2A	SOLID	BROWN	> 1.2	5.0	133	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<10*	P
231	9519	14	1A	SOLID	BROWN	> 1.2	5.0	>200	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<10*	P
232	9210	51	51	LIQUID	GRAY	1.04	11	>200	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
233	9209	35	35	LIQUID	GRAY	1.00	8.0	>200	NEG	NEG	NEG	NEG	P/S	NEG	NEG	NEG	NEG	<50	P
234	9207	35	35	LIQUID	WHITE	0.91	7.0	>200	NEG	NEG	NEG	NEG	P/S	NEG	NEG	NEG	NEG	<50	P
235	9524	1	1	SOLID	BROWN	> 1.2	4.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
236	9529	15	2A	SOLID	BROWN	> 1.2	6.0	82	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	9.55J*	P
237	9530	6	4A	SOLID	BROWN	> 1.2	6.0	82	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	10.2*	P
238	9528	29	15A	SOLID	WHITE	> 1.2	3.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
239	9535	5	3A	SOLID	BROWN	> 1.2	5.0	135	POS	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<10*	P
240	9373	41	41	SOLID	GRN/BRN	> 1.2	6.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
241	9525	24	24	SOLID	BLACK	> 1.2	6.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
242	9643	2	2	SOLID	BROWN	> 1.2	5.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
243	9647	24	24	SOLID	BROWN	> 1.2	4.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
244	9648	27	13A	SOLID	BROWN	> 1.2	5.0	153	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
245	9526	15	2A	SOLID	WHITE	> 1.2	3.0	86	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<10*	P
246	14715	61	23A	SOLID	BROWN	> 1.2	4.0	160	POS	NEG	NEG	POS	NEG	NEG	NEG	NEG	NEG	<50	P
246A	9522	54	12A	SOLID	BROWN	>1.2	4.0	158	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
247	14551	61	23A	SOLID	BLACK/WHITE	> 1.2	5.0	158	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
248	9527	28	12A	SOLID	BROWN	>1.2	5.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
248A	9521	50	20A	LIQUID	BROWN	> 1.2	5.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
249	9206	44	44	LIQUID	GRAY	1.10	7.0	>200	POS	NEG	NEG	NEG	P/S	NEG	NEG	NEG	NEG	<50	P
250	9379	1	1	SOLID	BROWN	> 1.2	6.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
251	9641	40	14A	SOLID	BRN/WHT	> 1.2	5.0	77	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50*	P
252	9375	40	9A	SOLID	BLACK	> 1.2	5.0	82	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	86.5*	F
253	9205	42	18A	LIQUID	GRAY	0.82	5.0	90	NEG	NEG	NEG	NEG	P/S	NEG	NEG	NEG	NEG	<50	P
254	9378	18	18	SOLID	BROWN	> 1.2	6.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
255	9638	15	2A	SOLID	GRAY	> 1.2	5.0	68	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<10*	P
256	9376	24	24	SOLID	GRN/BLK	> 1.2	5.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
257	9380	19	19	SOLID	BROWN	> 1.2	4.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
258	9374	19	19	SOLID	BROWN	> 1.2	6.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
259	9644	41	41	SOLID	BROWN	> 1.2	5.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
260	9372	27	13A	SOLID	BRN/WHT	> 1.2	5.0	>200	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
261	9503	14	6A	SOLID	BROWN	> 1.2	5.0	>200	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	201*	F
262	9501	5	8A	SOLID	BROWN	> 1.2	5.0	120	OS	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<100*	
263	9502	15	6A	SOLID	BROWN	> 1.2	6.0	77	OS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	96.8*	
264	9497	13	2A	SOLID	BROWN	> 1.2	3.0	82	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50*	

TABLE 2
WASTE FINGERPRINT/COMPATIBILITY AND PCB DATA
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

SAMPLE ID	LAB ID#	PCB COMPOSITE GROUP#	FINAL COMPOSITE GROUP#	STATE	COLOR	DENSITY	pH	FLASH	HALOGEN	AIR REACT	H2O REACT	HEXANE SOLUBLE	H2O SOLUBLE	CYANIDE REACT	SULFIDE REACT	OXIDIZER	PEROXIDE	PCB (mg/kg)	TSCA(1) P/F
265	9504	13	6A	SOLID	BROWN	> 1.2	3.0	88	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<100*	F
266	9498	21	11A	SOLID	BROWN	> 1.2	5.0	120	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50*	P
267	9496	21	9A	SOLID	BROWN	> 1.2	3.0	108	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<200*	F
268	9495	16	3A	SOLID	BROWN	> 1.2	6.0	100	POS	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	5.5*	P
269	9499	14	1A	SOLID	BROWN	> 1.2	5.0	>200	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50*	P
270	9513	15	2A	SOLID	BROWN	> 1.2	5.0	73	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	29*	P
271	9517	15	6A	SOLID	BROWN	> 1.2	5.0	73	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	52.4*	F
272	9500	15	6A	SOLID	BRN/WHT	> 1.2	5.0	97	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	402*	F
273	9505	13	6A	SOLID	BROWN	> 1.2	6.0	66	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	140*	F
274	9509	19	19	SOLID	BROWN	> 1.2	6.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
275	9487	16	8A	SOLID	BROWN	> 1.2	3.0	95	POS	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<200*	F
276	9494	13	2A	SOLID	BROWN	> 1.2	2.0	99	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
277	9493	13	6A	SOLID	BROWN	> 1.2	2.0	86	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	154*	F
278	9490	32	32A	SOLID	BROWN	> 1.2	4.0	70	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
279	9286	14	6A	SOLID	BROWN	> 1.2	5.0	>200	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	86*	F
280	9289	20	20B	SOLID	BROWN	> 1.2	4.0	77	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
281	9510	13	2A	SOLID	BROWN	> 1.2	3.0	68	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
282	9506	13	6A	SOLID	BROWN	> 1.2	4.0	66	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	96*	F
283	9518	16	8A	SOLID	BROWN	> 1.2	4.0	66	POS	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<100*	F
284	9492	13	2A	SOLID	BROWN	> 1.2	3.0	86	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	20*	P
285	9514	55	14A	SOLID	BROWN	> 1.2	6.0	72	POS	NEG	NEG	NEG	NEG	NEG	POS	POS	POS	<50*	P
286	9485	13	6A	SOLID	BROWN	> 1.2	2.0	82	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<100*	F
287	9488	40	14A	SOLID	BROWN	> 1.2	4.0	88	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	29.5*	P
288	9491	13	6A	SOLID	BROWN	> 1.2	2.0	66	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<100*	F
289	10205	26	11A	SOLID	TN/BRN	> 1.2	5.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
291	10198	21	13A	SOLID	BLACK	>1.2	4.0	70	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	16.8*	P
292	10435	26	11A	SOLID/LIQUID	GRY/BLK	>1.2	8.0	>200	NEG	NEG	NEG	NEG	NEG/POS	NEG	NEG	NEG	NEG	<50	P
293	10433	21	13A	SOLID	BLACK	>1.2	5.0	93	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	24.6*	P
294	10201	35	35	LIQUID	CLEAR	1.05	7.0	>200	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	NEG	<50	P
295	10489	28	12A	SOLID	WHITE	>1.2	7.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
296	10188	46	19A	LIQUID/LIQUD	GRN/CLR	0.95/1.0	6.0/9.	135	NEG	NEG	NEG	POS/NEG	NEG/POS	NEG	NEG	NEG	NEG	<50*	P
297	10199	52	17A	SOLID/LIQUID	BRN/RD	>1.0/1.0	5.0	93	POS/POS	NEG	NEG	NEG	NEG/POS	NEG	NEG	NEG	NEG	<50	P
298	10207	34	34A	SOLID	BLK/GRN	<1.0	5.0	109	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
299	10440	25	25	SOLID	WHITE	<1.0	5.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
300	10571	25	25	SOLID	ORANGE	<1.0	4.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
301	10439	35	35	LIQUID	WHITE	1.0	8.0	>200	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	NEG	<50	P
302 A	10203	30	10A	SOLID	GREEN	1.0	8.0		NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
302 B	14552	62	22A	LIQUID	GREEN	0.88	6.0	82	NEG	NEG	NEG	POS	NEG	NEG	NEG	NEG	NEG	<50	P
303	10177	54	12A	SOLID	WHITE	<1.0	5.0	>200	NEG	NEG	NEG	POS	NEG	NEG	NEG	NEG	NEG	<50	P
304	10438	45	19A	LIQUID	GRN/ORG	1.10	7.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
305	10204	34	34A	SOLID	WHITE	>1.0	6.0	79	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
306	10179	26	11A	SOLID/LIQUID	WHT/WHT	>1.0/1.0	7.0/8.	142	NEG	NEG	NEG	NEG	NEG/POS	NEG	NEG	NEG	NEG	<50	P
307 A	10182	34	13A	SOLID	BLACK	>1.0	5.0	68	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	17.4*	P
307 B	10184	46	19A	LIQUID	BLK/CLR	1.0/0.95	5.0	70	NEG	NEG	NEG	NEG/POS	POS/NEG	NEG	NEG	NEG	NEG	<50*	P
308	10200	32	32A	SOLID	WHITE	<1.0	5.0	116	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
309	10206	25	25	SOLID	TN/WHT	>1.2	4.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
310	10181	33	33A	LIQUID/SOLID	RED/AMBER	>1.0	5.0	>200	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
311	10434	28	12A	SOLID	WHITE	<1.0	5.0	11	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
312	10185	44	44	LIQUID/SOLID	CLR/BLK	1.0/>1.0	5.0	>200	POS/POS	NEG	NEG	NEG	POS/NEG	NEG	NEG	NEG	NEG	<50	P
313	10183	34	13A	SOLID	BRN/WHT	>1.0	8.0	70	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50*	P
314	10437	44	44	LIQUID	GRAY	1.0	3.0	>200	POS	NEG	NEG	NEG	POS	NEG	NEG	NEG	NEG	<50	P
315	10445	46	19A	LIQUID/LIQUID	BLK/GRY	<1.0/1.0	7.0/3.	73	NEG	NEG	NEG	POS/NEG	NEG/POS	NEG	NEG	NEG	NEG	13*	P
316	10195	33	33A	SOLID/LIQUID	WHT/AMBER	<1.0/1.0	5.0	100	POS/POS	NEG	NEG	NEG	NEG/POS	NEG	NEG	NEG	NEG	<50	P
317	10176	27	13A	SOLID	BRN/WHT	<1.0	6.0	172	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
318	10192	26	11A	SOLID/LIQUID	YLW/BRN	<1.0/1.1	6.0/8.	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
319	10191	34	13A	SOLID	BRN/WHT	>1.0	5.0	127	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50*	P
320	14716	61	23A	SOLID	WHI/BLE	>1.2	5.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
321	10441	19	19	SOLID	BLACK	>1.0	5.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
322 A	10186	57	17A	LIQUID/LIQUID	CLR/GRY	1.0/>1.0	5.0	>200	POS/POS	NEG	NEG	NEG	POS/NEG	NEG	NEG	NEG	NEG	<50	P
322 B	10187	45	19A	LIQUID	CLEAR	1.1	6.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
323	10432	28	12A	SOLID	GRAY	>1.0	9.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
324	10442	54	12A	SOLID	YELLOW	<1.0	3.0	>200	POS	NEG	NEG	POS	NEG	NEG	NEG	NEG	NEG	<50	P
325	10425	17	17	SOLID	BRN/ORG	>1.0	13.0	110	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
326	10444	23	23	SOLID	YELLOW	>1.0	13.5	>200	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	<50	P
327	10443	53	53	SLUDGE	GRAY	>1.0	10.0	>200	NEG	NEG	NEG	NEG	NEG	POS	POS	NEG	NEG	<50	P

TABLE 2
WASTE FINGERPRINT/COMPATIBILITY AND PCB DATA
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

SAMPLE ID	LAB ID#	PCB COMPOSITE GROUP#	FINAL COMPOSITE GROUP#	STATE	COLOR	DENSITY	pH	FLASH	HALOGEN	AIR REACT	H2O REACT	HEXANE SOLUBLE	H2O SOLUBLE	CYANIDE REACT	SULFIDE REACT	OXIDIZER	PEROXIDE	PCB (mg/kg)	TSCA(1) P/F
328	10422	37	37	SOLID	BRN/ORG	>1.0	13.0	111	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	<50	P
329	10421	22	22	SOLID	ORG/BRN	>1.0	11.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
330	10180	23	23	SOLID	BLACK	>1.0	12.0	>200	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	<50	P
331	10193	26	11A	SOLID/SLUDGE	WHT/BRN	>1.0/1.0	5.0	>200	NEG	NEG	NEG	NEG	NEG/POS	NEG	NEG	NEG	NEG	<50	P
332	10194	33	33A	SOLID/LIQUID	WHT/YLW	<1.0/1.0	4.0/5.	70	POS/POS	NEG	NEG	NEG	NEG	NEG/POS	NEG	NEG	NEG	<50	P
333	10189	46	19A	LIQUID/LIQUID	AMBER/GRN	0.95/1.1	3.0	97	NEG	NEG	NEG	POS/NEG	NEG/POS	NEG	NEG	NEG	NEG	<50*	P
334	10190	44	44	LIQUID	GREEN	1.10	3.0	183	POS	NEG	NEG	NEG	POS	NEG	NEG	NEG	NEG	<50	P
335 A	10196	29	15A	SOLID	BROWN	>1.0	4.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
335 B	10197	32	32A	SOLID	BLACK	>1.0	5.0	73	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
336	10178	25	25	SOLID	BRN/WHT	<1.0	5.0	174	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
337	10447	51	51	LIQUID	GREEN	<1.0	3.0	183	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
338	10448	46	19A	LIQUID/LIQUID	ORG/GRN	<1.0/1.0	7.0/3.	129	NEG	NEG	NEG	POS/NEG	NEG/POS	NEG	NEG	NEG	NEG	<50*	P
339	10419	33	33A	SLUDGE	BLK/GRN	>1.0	4.0	95	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	POS	<50*	P
340	10509	44	44	LIQUID	GREEN	1.0	3.0	>200	POS	NEG	NEG	NEG	POS	NEG	NEG	NEG	NEG	<50	P
341	10500	23	23	SOLID	ORG/BRN	>1.0	14.0	>200	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	<50	P
342	10536	38	38	SLUDGE	BROWN	>1.0	14.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
343	10484	22	22	SOLID	BROWN	>1.0	12.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
344	10513	37	37	SOLID	BRN/ORG	>1.0	13.0	115	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	<50	P
345	10499	38	38	SLUDGE	BLACK	>1.0	12.0	>200	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	<50	P
346	10505	17	17	SOLID	BRN/ORG	>1.0	13.0	118	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
347	10512	22	22	SOLID	BRN/ORG	>1.0	14.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
348	10502	37	37	SOLID	BRN/ORG	>1.0	14.0	126	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	<50	P
350	10488	23	23	SOLID	BRN/BLK	>1.0	12.0	>200	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	<50	P
351	10420	22	22	SOLID	ORANGE	>1.0	12.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
352	10503	22	22	SOLID	BRN/ORG	>1.0	13.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
353	10498	22	22	SOLID	BRN/ORG	>1.0	12.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
354	10426	23	23	SOILD	BROWN	>1.0	13.0	>200	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	<50	P
356	10427	17	17	SOLID	BRN/ORG	>1.0	13.0	111	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
357	10418	23	23	SOLID	BRN/GRN	>1.0	11.0	>200	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	<50	P
358	10535	23	23	SOLID	BRN/ORG	>1.0	13.0	>200	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	<50	P
360	10501	37	37	SOLID	ORG/BRN	>1.0	14.0	117	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	<50	P
361	10486	17	17	SOLID	BROWN	>1.0	14.0	91	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
362	10485	37	37	SOLID	BROWN	>1.0	13.0	81	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	<50	P
363	10520	17	17	SOLID	BRN/ORG	>1.0	14.0	113	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
364	10511	22	22	SOLID	BROWN	>1.0	13.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
365	10490	28	12A	SOLID	GRN/YLW	>1.0	10.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
366	10506	17	17	SOLID	BRN/ORG	>1.0	13.0	100	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50*	P
367	10495	39	20A	SOLID	BLACK	>1.0	12.0	81	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	<50	P
368	10487	22	22	SOLID	BROWN	>1.0	13.0	190	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
369	10494	37	37	SOLID	GRAY	>1.0	12.0	86	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	<50	P
370	10497	37	37	SOLID	ORANGE	>1.0	13.0	124	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	<50	P
371	10504	17	17	SOLID	ORG/BLK	>1.0	13.0	158	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
372	10515	39	20A	LIQUID/SOLID	BRN/ORG	1.10/>1.0	13	88	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	28*	P
373	10492	38	38	SLUDGE	BROWN	>1.0	11.0	>200	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	<50	P
374	10493	22	22	SOLID	BROWN	>1.0	14.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
375	10516	23	23	SOLID	BROWN	>1.0	7.0	147	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	<50	P
376	10491	22	22	SOLID	ORG/BRN	>1.0	14.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
377	10524	38	38	LIQUID/SLUDGE	BROWN	1.0/>1.0	11.0	158	NEG	NEG	NEG	NEG	POS/NEG	POS/POS	NEG	NEG	NEG	<50	P
380	10514	17	17	SOLID	BRN/ORG	>1.0	13.0	93	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
381	10525	53	53	LIQUID	GRAY	1.0	10.0	>200	NEG	NEG	NEG	NEG	POS	POS	POS	NEG	NEG	<50	P
382	10725	48	13A	SOLID	BLACK	>1.0	6.0	81	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	4J*	P
383	10521	17	17	SOLID	ORG/BRN	>1.0	13.0	97	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
386	10526	35	35	LIQUID	WHITE	1.0	7.0	>200	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	NEG	<50	P
388	10519	20	20B	SOLID	GREEN	>1.0	7.0	109	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
389	10528	52	17A	LIQUID	GREEN	<1.0	5.0	68	POS	NEG	NEG	POS	NEG	NEG	NEG	NEG	NEG	<50	P
390	10727	42	18A	LIQUID	BROWN	1.0	7.0	70	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	NEG	<50	P
391	10517	21	13A	SOLID	BLACK	>1.0	5.0	72	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	11.6*	P
392	10522	41	41	SOL/LIQ	BLCK/BLCK	>1.0/1.0	7.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	<50	P
393	10518	32	32B	SOLID	BLACK	>1.0	7.0	79	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
395	10542	32	32B	SOLID	BLACK	<1.0	5.0	111	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
397A	10527	38	20A	LIQUID	GREEN	1.0	4.0	>200	POS	NEG	NEG	NEG	POS	POS	NEG	NEG	NEG		
398	10510	57	17A	LIQ/LIQ	BRN/GRN	<1.0/1.0	7.0/10.	183	POS	NEG	NEG	POS/NEG	NEG/POS	NEG	NEG	NEG	NEG	<50	P
399	10507	57	17A	LIQUID	GREEN	1.0	3.0	>20[illegible]	[illegible]OS	NEG	NEG	POS	NEG	NEG	NEG	NEG	NEG	<50	
400	10508	42	18A	LIQUID	CLEAR	1.0	4.0	88[illegible]	[illegible]OS	NEG	NEG	NEG	POS	NEG	NEG	NEG	NEG	<50	
403	10548	44	44	LIQUID	BROWN	>1.0	3.0	>200[illegible]	POS	NEG	NEG	NEG	POS	NEG	NEG	NEG	NEG	<50	

TABLE 2
WASTE FINGERPRINT/COMPATIBILITY AND PCB DATA
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

SAMPLE ID	LAB ID#	PCB COMPOSITE GROUP#	FINAL COMPOSITE GROUP#	STATE	COLOR	DENSITY	pH	FLASH	HALOGEN	AIR REACT	H2O REACT	HEXANE SOLUBLE	H2O SOLUBLE	CYANIDE REACT	SULFIDE REACT	OXIDIZER	PEROXIDE	PCB (mg/kg)	TSCA(1) P/F
404	10429	46	19A	LIQ/LIQ	ORG/GRN	<1.0/1.0	4.0/3.	68	NEG	NEG	NEG	POS/NEG	NEG/POS	NEG	NEG	NEG	NEG	<50	P
406	10417	20	20B	SOLID	BROWN	>1.0	5.0	135	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
407	10496	27	13A	SOLID	WHITE	>1.0	7.0	>200	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
410	10573	33	13A	SLUDGE	BLK/WHT	>1.0	5.0	66	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	20.4*	P
411	10574	34	34A	SOLID	BLK/GRY	>1.0	5.0	73	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
412	10549	45	19A	LIQ/LIQ	BRN/GRN	<1.0/1.0	7.0/8.	172	NEG	NEG	NEG	POS/NEG	NEG/POS	NEG	NEG	NEG	NEG	<50	P
414	10428	32	32B	SOLID	WHT/BRN	>1.0	6.0	80	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
416A	10430	45	19A	LIQUID	ORANGE	>1.0	7.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
416B	10431	30	10A	SLUDGE	WHITE	<1.0	6.0	88	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
416C	10423	30	10A	SLUDGE	BRN/YLW	>1.0	5.0	79	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
416D	10424	25	25	SOLID	WHITE	>1.0	5.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
417	10570	20	20B	SOLID	BLACK	>1.0	5.0	82	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
418	10578	34	34A	SOLID	YELLOW	<1.0	5.0	99	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
419	10569	19	19	SOLID	BROWN	>1.0	5.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
420	10568	20	20A**	SOLID	BLACK	>1.0	5.0	124	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
421	10581	30	10A	SLUDGE	BLACK	>1.0	5.0	70	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
422	10531	27	13A	SOLID	WHT/BLK	<1.0	7.0	183	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
424	10529	35	35	LIQUID	BROWN	>1.0	10.0	>200	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	NEG	<50	P
429	10572	21	21B	SOLID	BLACK	>1.0	6.0	70	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
431	10729	45	19A	LIQUID	BROWN	<1.0	7.0	>200	NEG	NEG	NEG	POS	NEG	NEG	NEG	NEG	NEG	<50	P
433	10728	46	19A	LIQUID	BLACK	<1.0	7.0	70	NEG	NEG	NEG	POS	NEG	NEG	NEG	NEG	NEG	<50	P
434	10730	21	21B	SOLID	BLACK	>1.0	5.0	73	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
435	10538	20	20A**	SOLID	BLACK	>1.0	5.0	82	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
436	10540	20	20A**	SOLID	BLACK	>1.0	5.0	77	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
440	10557	25	25	SOLID	WHITE	>1.0	5.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
441	10543	14	13A	SOLID	BLACK	>1.0	5.0	68	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	28.5*	P
442	10539	30	10A	SOLID	WHITE	<1.0	9.0		NEG	NEG	NEG	POS	NEG	NEG	NEG	NEG	NEG	<50	P
443	10583	34	13A	SOLID	BLACK	<1.0	7.0	72	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50*	P
444	10731	21	21B	SOLID	BLACK	>1.0	5.0	93	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
445	10523	25	25	SOLID	WHITE	<1.0	7.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
447	10532	27	13A	SOLID	WHT/BLK	>1.0	7.0	198	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
448	10567	49	19A	LIQUID	WHITE	1.0	8.0	>200	NEG	NEG	NEG	POS	NEG	NEG	NEG	NEG	NEG	<50*	P
449	10577	33	13A	SLUDGE	GREY	>1.0	5.0	77	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	3.14J*	P
451	10533	26	11A	SOL/LIQ	GRY/GRY	>1.0	10.0	>200	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	NEG	<50	P
452	10534	51	51	SOL/LIQ	WHT/WHT	>1.0	10.0	>200	POS	NEG	NEG	NEG	POS	NEG	NEG	NEG	NEG	<50	P
453	10576	21	21B	SOLID	BLACK	>1.0	5.0	95	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
454	10530	30	10A	SLUDGE	BLACK	<1.0	5.0	68	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
457	10580	25	25	SOLID	PINK	<1.0	7.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
460	10575	25	25	SOLID	PINK	<1.0	5.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
462A	10726	26	11A	SOL/LIQ	WHT/YLW	>1.0/1.0	5.0/5.	169	NEG	NEG	NEG	NEG	NEG/POS	NEG	NEG	NEG	NEG	<50	P
462B	10582	42	18A	LIQUID	WHITE	1.0	8.0	100	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	NEG	<50	P
469	10579	21	21B	SOLID	BLACK	>1.0	4.0	106	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
483K	12969	58	21A	SOLID	WHITE	>1.0	10	118	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
480A	12970	58	23A	SOLID	WHITE	<1.0	7	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
483J	12971	58	21A	SOLID	RED/BROWN	<1.0	5	70	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
483I	12972	58	21A	SOLID	WHITE	<1.0	5	73.4	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
478	12973	59	24A	SOLID	BLACK	>1.0	5	68	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
482E	12974	60	22A	LIQUID	YELLOW	>1.0	6	>200	NEG	NEG	NEG	POS	NEG	NEG	NEG	NEG	NEG	<50	P
482	12975	59	24A	SOLID	BLACK	>1.0	5	75.2	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
477	12976	59	25A	SOLID	BLACK/BROWN	<1.0	3	78	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	77*	F
480	12977	59	24A	SOLID	BLACK	>1.0	5	68	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	41*	P
483	12978	60	22A	LIQUID	RED	<1.0	7	68	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
479	12979	59	22A	SOL/LIQ	BLACK	<1.0	10	75.2	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	30*	P
481	12980	60	22A	SOL/LIQ	WHITE	1	5	111	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
C01	10696	31	9A	SLUDGE	BRN/BLK/BLK	>1.0	5.0	86	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	90*	F
C02	10697	31	9A	SLUDGE	BRN/RED	<1.0	6.0	90	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	235*	F
C03	10698	46	19A	LIQUID	BLACK	<1.0	7.0	73	NEG	NEG	NEG	POS	NEG	NEG	NEG	NEG	NEG	<50	P
C04	10699	31	9A	LIQ/SLD/SLD	BLK/WHT/GRN	<1.0/>1.0	8.0	70	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	67.8*	F
C05	10700	31	10A	SOLID	GRN/BRN	>1.0	7.0	114	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	3.4J*	P
C06	10701	31	9A	SLD/SLD/SLD	GRY/BRN/BLK	>1.0	7.0	70	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	54.9*	F
C07	10702	31	9A	LIQ/SLUDGE	BRN/BRN	<1.0/>1.0	7.0/7.	82	NEG	NEG	NEG	POS/NEG	NEG	NEG	NEG	NEG	NEG	1880*	F
C08	10703	31	9A	SLUDGE/LIQ	PNK/GRY/BLK	>1.0/>1.0	7.0/7.	68	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	62*	F
C09	10704	31	10A	LIQ/LIQ/LIQ	RD/CLR/RD	<1.0/>1.0	8.0/7.	70	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50*	P
C10	10705	30	10A	SOLID	BLACK	>1.0	5.0	86	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
C11	10706	33	9A	SLUDGE	BLACK	>1.0	6.0	68	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	447*	F

TABLE 2
WASTE FINGERPRINT/COMPATIBILITY AND PCB DATA
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

SAMPLE ID	LAB ID#	PCB COMPOSITE GROUP#	FINAL COMPOSITE GROUP#	STATE	COLOR	DENSITY	pH	FLASH	HALOGEN	AIR REACT	H2O REACT	HEXANE SOLUBLE	H2O SOLUBLE	CYANIDE REACT	SULFIDE REACT	OXIDIZER	PEROXIDE	PCB (mg/kg)	TSCA(1) P/F
C12	10707	49	19A	LIQ/LIQ	BLK/BRN	<1.0/<1.0	7.0/7.	70	POS	NEG	NEG	POS/NEG	NEG	NEG/POS	NEG	NEG	NEG	14.2*	P
C13	10708	31	10A	LIQ/LIQ/SLDG	BLK/CLR/WHT	<1.0	6.0	70	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	11.1*	P
C14	10709	54	12A	SOLID	GRN/BRN	<1.0	5.0	>200	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
C15	10710	32	32B	SOLID	MULTI	>1.0	7.0	95	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
C16	10711	48	14A	SOLID	WHITE	>1.0	5.5	93	POS	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	<50*	P
C17	10712	34	34A	SOLID	MULTI	>1.0	5.5	86	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
C18	10713	37	37	SOLID	MULTI	>1.0	10.0	97	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	<50	P
C19	10714	32	32B	SOLID	WHITE	>1.0	6.0	97	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
C20	10715	34	34A	SOLID	WHT/YLW/BRN	>1.0	5.5	>200	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
C21	10716	33	13A	SLUDGE	WHT/GRY	>1.0	7.0	158	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50*	P
C22	10717	57	17A	LIQUID	YELLOW	>1.0	6.0	180	POS	NEG	NEG	POS	NEG	NEG	NEG	NEG	NEG	<50	P
C23	10718	31	10A	SLUDGE	ORG BLK	>1.0	5.0	114	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50*	P
C24	10719	26	11A	SLUDGE	RED	>1.0	4.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
C25	10720	56	14A	SOLID	PEACH	>1.0	4.0	91	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	POS	<50*	P
C26	10721	25	25	SOLID	GRN/BLK/WHT	>1.0	3.0	158	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
C27	10722	48	14A	SOLID	BRN/WHT/TAN	>1.0	5.0	95	POS	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	24*	P
C28	10723	26	11A	LIQ/SLD/SLD	GRN/BLK/BLE	>1.0	10.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
A 1	14547	61	21A	SOLID	BROWN	>1.2	6.0	>200	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P
A 2	14548	61	21A	SOLID	BLACK	>1.2	6.0	>200	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	<50	P

Notes:
- ** Final composite group corresponds to subgroup of PCB composite group, thus differs from similarly numbered group 20A
- * Indicates individual sample analysis
- J Numerical value is an estimated quantity
- (1) TSCA Regulatory limit of 50 mg/kg PCB
  - P Pass F Fail

TABLE 3

DRUM/CONTAINER CONTENTS RESULTS
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
Deerfield, Ohio

Final Composite Group No:	*1*	*2*	*9*	*10*	*11*	*17*	*18*	*19*	*22*	*23*	*24*
Volatile Organic Compounds (VOCs)											
(units - µg/kg)											
chloromethane											
vinyl chloride		32	6.2J	616	701						
chloroethane											
methylene chloride	449B	287B	964B	212	2,020B	475JB	1,170JB	2,580B	585JB	501JB	2,410JB
acetone			174J	287J							
carbon disulfide		10J		6.6J							
1,1-dichloroethene				5.6J	2,410						
1,1-dichloroethane	93	222	100	188	941		1,610	820J	308J	1,070	
1,2-dichloroethene	5.1	27	23J	127	201J		438J				
chloroform	50	30	33	25						326J	
carbon tetrachloride											
1,2-dichloroethane	1,540	4,260	1,450	526	5,500		4,300	17,300		146J	6,420
2-butanone					13,500						
1,1,1-trichloroethane	782	483	434	126		1,120	4,450	15,200	501J	3,580	3,380
1,1,2,2-tetrachloroethane											
trichloroethene	9,160	741	730	612	15,100	2,460	21,800	45,600	1,500	13,200	7,340
1,1,2-trichloroethane	25	38	38								
benzene	12	418	57	6.4J	300J		622J	1,860J	172J	1,210	
2-hexanone											
4-methyl-2-pentanone											
tetrachloroethene	182	165	198	14J	4,720	252J	968J	7,580	454J	446	7,520
toluene	169	347	777	446	40,200	22,000	16,600	34,600	3,820	26,100	41,700
chlorobenzene		65		31	808		602J	1,530J		759	
ethylbenzene		132	289	54	5,060	1,840	3,180	31,200	308J	756	38,500
styrene	1.4J		12J		199J			1,280J			1,490J
Total xylenes		2,150	3,030	338	91,000	11,160	76,900	148,800	1,795J	3,610	246,300

TABLE 3

DRUM/CONTAINER CONTENTS RESULTS
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
Deerfield, Ohio

Final Composite Group No:	*1*	*2*	*9*	*10*	*11*	*17*	*18*	*19*	*22*	*23*	*24*
Base/Neutrals and Acids (BNAs)											
(units - µg/kg)											
n-nitrosodimethylamine											
phenol			3,140J	3,360J			5,930J				51,900
3&4-methylphenol											9,640J
aniline											
1,3-dichlorobenzene											
1,4-dichlorobenzene											
pyridine											
benzyl alcohol											
1,2-dichlorobenzene				10,000	4,940						2,800J
2,4,5-trichlorophenol											
2,4,6-trichlorophenol											
2-methylphenol			2,910J								9,470J
bis(2-chloroisopropyl)ether											
4-methylphenol			14,800J		5,060						
hexachloroethane											
nitrobenzene											
2,4-dinitrotoluene											
isophorone											
2-nitrophenol											
2,4-dimethylphenol											9,420J
benzoic acid											
2,4-dichlorophenol											
1,2,4-trichlorobenzene											
naphthalene							5,430J				11,700J
4-chloroaniline											
4-chloro-3-methylphenol											
2-methylnaphthalene				4,630J			4,390J				9,360J
hexachlorocyclopentadiene											
dimethylphthalate											
acenaphthylene											
acenaphthene											

TABLE 3

DRUM/CONTAINER CONTENTS RESULTS
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
Deerfield, Ohio

Final Composite Group No:	*1*	*2*	*9*	*10*	*11*	*17*	*18*	*19*	*22*	*23*	*24*
Base/Neutrals and Acids(BNAs) Cont'd											
4-nitrophenol											
dibenzofuran											
diethylphthalate											
fluorene											
n-nitrosodiphenylamine											
hexachlorobenzene		6,660J		3,520J	4,530J		4,550J	4,860J			3,580J
pentachlorophenol											
phenanthrene				2,850J							2,720J
anthracene											
di-n-butylphthalate											5,210J
fluoranthene											
pyrene											
butylbenzylphthalate											35,000
benzo(a)anthracene											
bis(2-ethylhexyl)phthalate	26,300	33,200	30,200	38,600	73,400		31,000	14,200J			88,000
chrysene											
di-n-octyl phthalate	3,090J	4,900J	3,840J		7,690J			4,530J			24,000
benzo(b)fluoranthene											
benzo(k)fluoranthene											
benzo(a)pyrene											
indeno (1,2,3-cd)pyrene											
dibenz(a,h)anthracene											
benzo(g,h,i)perylene											
hexachlorobutadiene											
carbazole											

TABLE 3

DRUM/CONTAINER CONTENTS RESULTS
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
Deerfield, Ohio

Final Composite Group No:	*1*	*2*	*9*	*10*	*11*	*17*	*18*	*19*	*22*	*23*	*24*
Inorganics											
(units - mg/kg dry weight)											
Aluminum	5,450	4,640	5,650	2,910	7,770	3,930	7,810	5,560	4,450	7,630	3,030
Antimony	6.49			5.47	5.31	1.73				1.7	6.14
Arsenic	15.9	12.9	8.22	15.6	15.3	2.12	16.6	19.5	2.35	7.66	19
Barium	142	97.3	65.6	221	342	21,300	107	117	24,300	9,040	68.5
Beryllium											
Cadmium	21.7	16.7	68.6	61.7	47.3	13.7	10.2	12.6	26	8.97	68
Calcium	3,480	13,200	2,980	2,100	3,860	8,420	2,360	1,890	13,200	6,100	2,490
Chromium	60.6	19	22.1	76	134	3,230	20.6	79.9	3,180	890	120
Cobalt				18	18.8	32.9			55.6	14.5	
Copper	121	34.2	31.3	157	14,500	184	27.9	41.9	55.6	2,940	289
Iron	31,600	24,000	31,100	51,000	43,400	13,000	27,800	24,100	23,500	23,100	108,000
Lead	68.4	33.1		69	485	191			315	122	193
Magnesium	1,890	1,230	1,990	673	1,160	1,270	1,400	1,170	2,400	2,156	606
Manganese	248	105	281	183	173	126	265	161	351	435	991
Mercury	2.28	1.69	3.4	3.41	2.26	1.77	4.15	3.52	0.252	2.9	5
Nickel	20.7	15.4	33.6	39.8	104	33.6	18.5	43.5	56.7	682	109
Potassium	1,280	1,540	1,420	790	870	871	2,270	916	1,070	1,220	425
Selenium	1.43	1.51	0.455	1.51	1.08		1.86	2.41		0.39	1.34
Silver											
Sodium	716	573	1,110	1,100	1,090	148,000	731	810	134,500	80,600	4,110
Thallium	1.48	1.34		2.62	3.01		0.992	1.14			0.758
Vanadium	13.7	13.5	9.23	9.42	11.7		16.6	10.9	9.36	8.45	19.6
Zinc	217	89	328	228	604	3,440	56.4	137	3,680	2,400	198

TABLE 3

DRUM/CONTAINER CONTENTS RESULTS
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
Deerfield, Ohio

Final Composite Group No:	*1*	*2*	*9*	*10*	*11*	*17*	*18*	*19*	*22*	*23*	*24*
Pesticides and PCBs											
(units - µg/kg)											
Alpha-BHC											
Beta-BHC											
Delta-BHC											
Gamma-BHC (Lindane)											
2,4-D											
Heptachlor											
Aldrin											
Chlordane											
Methoxychlor											
Heptachlor Epoxide											
Endosulfan I											
Dieldrin							31.3				
4,4-DDE											
Endrin											
4,4-DDT											
Toxaphene											
Arochlor-1232											
Arochlor-1242											
Arochlor-1248	3,400	2,080	1,670	472J	4,970		2,060				
Arochlor-1254			1,980								
2,4,5-TP(Silvex)											
Mirex											

Notes:
J The associated value is an estimated quantity
B Denotes blank contamination

TABLE 3

DRUM/CONTAINER CONTENTS RESULTS
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
Deerfield, Ohio

Final Composite Group No:	*25*	*35*	*20A**	*20B*	*21B*	*32A*	*32B*	*33A*	*34A*	*1A*	*2A*
Volatile Organic Compounds (VOCs)											
(units - µg/kg)											
chloromethane											
vinyl chloride											
chloroethane											
methylene chloride		28,700B	55,200JB	148,000	309,000JB	418,000B	3,770,000B	382,000B	416,000JB	6,890B	410,000JB
acetone											
carbon disulfide											
1,1-dichloroethene											
1,1-dichloroethane											
1,2-dichloroethene											
chloroform	35,100J										
carbon tetrachloride											
1,2-dichloroethane		5,320J	106,000	286,000		482,000		83,100J		29,000	322,000J
2-butanone								4,900,000			
1,1,1-trichloroethane	72,600	22,400	408,000	269,000	4,130,000	221,000	59,400,000	258,000	1,020,000	9,100	
1,1,2,2-tetrachloroethane											
trichloroethene	67,800	520,000	327,000	394,000	2,730,000	179,000		284,000J	508,000	30,900	365,000J
1,1,2-trichloroethane											
benzene	49,500J		19,000J							1,290J	
2-hexanone											
4-methyl-2-pentanone											
tetrachloroethene		5,600J	32,100J							9,650	
toluene	428,000	73,000B	1,990,000B	3,360,000B	9,050,000	5,820,000	6,160,000	5,110,000	7,220,000	97,800	47,800,000
chlorobenzene											
ethylbenzene	202,000	27,400	146,000	498,000	459,000	629,000	988,000	205,000J	244,000J	46,300	430,000
styrene	2,800,000	210,000	194,000	214,000	1,840,000	397,000		5,990,000	2,510,000		
Total xylenes	82,000J	22,080J	757,000	1,908,000	1,453,000	2,141,000	4,630,000	567,000	674,000	235,800	1,858,000

TABLE 3

DRUM/CONTAINER CONTENTS RESULTS
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
Deerfield, Ohio

Final Composite Group No:	*25*	*35*	*20A**	*20B*	*21B*	*32A*	*32B*	*33A*	*34A*	*1A*	*2A*
Base/Neutrals and Acids (BNAs)											
(units - µg/kg)											
n-nitrosodimethylamine											
phenol			204,000	51,300	225,000	10,500J	50,800	121,000			92,000
3&4-methylphenol			97,600	13,500J	65,100	5,900J	30,400	9,200J	8,200J		6,760,000
aniline											
1,3-dichlorobenzene											
1,4-dichlorobenzene											
pyridine											
benzyl alcohol									59,800		
1,2-dichlorobenzene						3,600J					5,200J
2,4,5-trichlorophenol											
2,4,6-trichlorophenol											
2-methylphenol			87,900	24,300	79,100		76,100	2,900J	7,800J		136,000
bis(2-chloroisopropyl)ether											
4-methylphenol											
hexachloroethane											
nitrobenzene											
2,4-dinitrotoluene											
isophorone			38,200	30,400	108,000	11,200J		3,600J	5,400J		
2-nitrophenol											
2,4-dimethylphenol			34,400				36,500		5,100J		41,000
benzoic acid						12,400J			109,000		
2,4-dichlorophenol											
1,2,4-trichlorobenzene											
naphthalene			32,700	31,500	47,800	11,000J	348,000		17,500J		20,000
4-chloroaniline											
4-chloro-3-methylphenol			32,400		68,500	5,000J			25,200		19,000J
2-methylnaphthalene			39,400	23,100	67,300	10,400J	413,000		28,400		20,000
hexachlorocyclopentadiene						26,800				32,000	4,920,000
dimethylphthalate											
acenaphthylene											
acenaphthene											

TABLE 3

DRUM/CONTAINER CONTENTS RESULTS
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
Deerfield, Ohio

Final Composite Group No:	*25*	*35*	*20A**	*20B*	*21B*	*32A*	*32B*	*33A*	*34A*	*1A*	*2A*
Base/Neutrals and Acids(BNAs) Cont'd											
4-nitrophenol											
dibenzofuran											
diethylphthalate								2,900J			
fluorene									5,500J		
n-nitrosodiphenylamine									6,300J		
hexachlorobenzene						31,600				20,000	57,000
pentachlorophenol		24,500J									
phenanthrene			20,000		28,900	7,800J	13,300J		14,500J		4,700J
anthracene							11,000J				
di-n-butylphthalate									7,100J		9,500J
fluoranthene											
pyrene											
butylbenzylphthalate			104,000	403,000	85,800	22,100			26,100		15,000J
benzo(a)anthracene											
bis(2-ethylhexyl)phthalate	4,700J		2,320,000	4,730,000	3,490,000	744,000	368,000	51,000	1,600,000	3,030,000	8,650,000
chrysene											
di-n-octyl phthalate			158,000	24,600	122,000	17,600J	5,500J		25,100	12,000J	847,000
benzo(b)fluoranthene											
benzo(k)fluoranthene											
benzo(a)pyrene											
indeno (1,2,3-cd)pyrene											
dibenz(a,h)anthracene											
benzo(g,h,i)perylene											
hexachlorobutadiene											
carbazole											

TABLE 3

DRUM/CONTAINER CONTENTS RESULTS
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
Deerfield, Ohio

Final Composite Group No:	25	35	*20A**	*20B*	*21B*	*32A*	*32B*	*33A*	*34A*	*1A*	*2A*
Inorganics											
(units - mg/kg dry weight)											
Aluminum	90		5,820	7,550	1,330	5,740	3,400	4,820	2,840	4,270	3,890
Antimony			17.6	7.41	27.1		7.01	3.43	23	3.3	6.88
Arsenic			12.2	5.24	5.28	5.66	6.51	5.69	2.79	12.6	9.36
Barium			170	55.2	88.8	49.4	40.3	73.3	92.5	152	218
Beryllium											
Cadmium			32	7.04	25	6.86	5.63	33	37	31	135
Calcium	182	163	3,580	1,910	374	1,730	1,020	1,530	506	2,290	11,900
Chromium			64.1	18,300	23.5	16.5		106	25.2	148	63.7
Cobalt	12.1										
Copper	11.6		45.3	81.1	35.6	16.8	17.5	59.7	86	79	276
Iron	3,040	364	20,500	6,350	4,290	16,800	15,800	22,900	4,600	37,800	16,300
Lead			180	391	58.6	28.1		186	36.8	81.6	191
Magnesium		70.1	1,540	651	231	1,960	1,180	1,730	361	1,530	1,860
Manganese	15.5	5.93	150	521	37.7	191	208	220	67.7	324	274
Mercury	0.864		0.588	1.1	0.328	0.799	1		0.201	4.31	4.96
Nickel			16.7			13.5	12.7	35.3		131	54.2
Potassium			1,190	6,020	225	912	348	901	622	993	787
Selenium			1.53	1.23		0.633	1.06	0.829	0.507	1.18	1.87
Silver											
Sodium	2,250	874	638	374	237	515	508	1,280	384	993	1,080
Thallium											
Vanadium			9.66			9.22		9.59		13.4	7.69
Zinc	19.6		366	26,000	271	184	58.4	224	165	264	456

TABLE 3

DRUM/CONTAINER CONTENTS RESULTS
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
Deerfield, Ohio

Final Composite Group No:	*25*	*35*	*20A**	*20B*	*21B*	*32A*	*32B*	*33A*	*34A*	*1A*	*2A*
Pesticides and PCBs											
(units - µg/kg)											
Alpha-BHC											
Beta-BHC											
Delta-BHC								69			
Gamma-BHC (Lindane)											
2,4-D											
Heptachlor											
Aldrin											
Chlordane											
Methoxychlor											
Heptachlor Epoxide											
Endosulfan I											
Dieldrin			331		329	59	41J		64		
4,4-DDE											
Endrin											
4,4-DDT											
Toxaphene											
Arochlor-1232											
Arochlor-1242											
Arochlor-1248	1,370		8,840		6,750	8,000	9,800	4,000	6,500		37,300
Arochlor-1254											
2,4,5-TP(Silvex)											
Mirex											

Notes:
J The associated value is an estimated quar
B Denotes blank contamination

TABLE 3

DRUM/CONTAINER CONTENTS RESULTS
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
Deerfield, Ohio

Final Composite Group No:	*3A*	*4A*	*5A*	*6A*	*7A*	*8A*	*9A*	*10A*	*11A*	*12A*	*13A*
Volatile Organic Compounds (VOCs)											
(units - µg/kg)											
chloromethane											
vinyl chloride											
chloroethane											
methylene chloride	59,000JB	118,000JB	217,000B	127,000JB	269,000B	185,000JB	1,670,000B	1,290,000B	352,000B	50,900J	1,220,000B
acetone								1,960,000J			
carbon disulfide											
1,1-dichloroethene											
1,1-dichloroethane					29,000J						
1,2-dichloroethene											
chloroform			59,000J	86,900J	42,800J		268,000J	708,000	166,000		89,400J
carbon tetrachloride											
1,2-dichloroethane	62,200	249,000J	1,310,000	744,000	1,530,000	1,350,000	1,250,000	252,000J		6,950J	
2-butanone					1,550,000			2,720,000J	508,000J		
1,1,1-trichloroethane	43,200J	104,000J	732,000	308,000J	764,000	726,000	1,410,000	1,230,000	64,400	41,400	1,100,000
1,1,2,2-tetrachloroethane											
trichloroethene	2,830,000	149,000J	764,000	267,000J	532,000	901,000	877,000	627,000	52,900J	303,000	1,260,000
1,1,2-trichloroethane											
benzene			122,000J	402,000J	148,000	74,400J	1,980,000	1,210,000	429,000		113,000J
2-hexanone											
4-methyl-2-pentanone											
tetrachloroethene	37,800J		146,000J	172,000J	136,000	72,500J	224,000J			15,200	
toluene	1,650,000	5,460,000	2,770,000	8,160,000	2,790,000	7,910,000	6,970,000	7,340,000	645,000	230,000	6,630,000
chlorobenzene										4,580J	
ethylbenzene	110,000J	311,000J	984,000	1,120,000	982,000	1,670,000	1,230,000	341,000	36,500J	14,500	561,000
styrene			33,800J		44,500J		81,200J	119,000J	962,000	12,900	551,000
Total xylenes	480,000	1,222,000	3,863,000	4,133,000	3,784,000	6,260,000	5,130,000	1,357,000	64,800J	37,980J	1,824,000

TABLE 3

DRUM/CONTAINER CONTENTS RESULTS
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
Deerfield, Ohio

Final Composite Group No:	*3A*	*4A*	*5A*	*6A*	*7A*	*8A*	*9A*	*10A*	*11A*	*12A*	*13A*
Base/Neutrals and Acids (BNAs)											
(units - µg/kg)											
n-nitrosodimethylamine											
phenol		12,000J	197,000	7,500J	184,000	83,000	209,000	37,000	212,000	9,400J	
3&4-methylphenol	6,200J	13,000J	517,000	146,000	186,000	57,000	223,000	96,000	7,800J		29,000
aniline											
1,3-dichlorobenzene											
1,4-dichlorobenzene											4,600J
pyridine											
benzyl alcohol											
1,2-dichlorobenzene	12,000J		4,600J	20,000	8,100J	9,800J	5,800J				30,000
2,4,5-trichlorophenol											
2,4,6-trichlorophenol											
2-methylphenol		8,300J	198,000	31,000	281,000	28,000	68,000	158,000			27,000
bis(2-chloroisopropyl)ether											
4-methylphenol											
hexachloroethane											
nitrobenzene				60,000							
2,4-dinitrotoluene											
isophorone				11,000J		10,000J		5,300			6,400J
2-nitrophenol											
2,4-dimethylphenol		7,100J	526,000	14,000J	69,000	9,300J	19,000J	53,000			12,000
benzoic acid											69,000
2,4-dichlorophenol											
1,2,4-trichlorobenzene				38,000							
naphthalene	7,300J	18,000J	53,000	40,000	66,000	25,000	34,000	4,300J			14,000J
4-chloroaniline											
4-chloro-3-methylphenol			9,700J	19,000J	13,000J	12,000J	12,000J				
2-methylnaphthalene	5,700J	12,000J	57,000	29,000	67,000	21,000	35,000	7,700J			15,000J
hexachlorocyclopentadiene	217,000			8,540,000		6,190,000	1,220,000				10,000,000
dimethylphthalate											
acenaphthylene											
acenaphthene											

TABLE 3

DRUM/CONTAINER CONTENTS RESULTS
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
Deerfield, Ohio

Final Composite Group No:	*3A*	*4A*	*5A*	*6A*	*7A*	*8A*	*9A*	*10A*	*11A*	*12A*	*13A*
Base/Neutrals and Acids(BNAs) Cont'd											
4-nitrophenol											
dibenzofuran											
diethylphthalate											
fluorene											
n-nitrosodiphenylamine											
hexachlorobenzene	20,000			886,000		473,000	217,000				1,390,000
pentachlorophenol									24,400J		
phenanthrene			7,100J	8,300J	8,700J	4,500J	8,800J				7,500J
anthracene											
di-n-butylphthalate	4,000J	11,000J	96,000	10,000J	64,000		59,000				7,700J
fluoranthene											
pyrene											
butylbenzylphthalate	10,000J	7,400J	27,000	26,000	39,000	14,000J	39,000				55,000
benzo(a)anthracene											
bis(2-ethylhexyl)phthalate	226,000	324,000	2,620,000	1,030,000	3,860,000	686,000	3,000,000	301,000			1,004,000
chrysene											
di-n-octyl phthalate	10,000J	49,000	222,000	128,000	262,000	132,000	225,000	4,600J		13,000J	483,000
benzo(b)fluoranthene											
benzo(k)fluoranthene											
benzo(a)pyrene											
indeno (1,2,3-cd)pyrene											
dibenz(a,h)anthracene											
benzo(g,h,i)perylene											
hexachlorobutadiene						4,000J					12,000J
carbazole						10,000J					

TABLE 3

DRUM/CONTAINER CONTENTS RESULTS
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
Deerfield, Ohio

Final Composite Group No:	*3A*	*4A*	*5A*	*6A*	*7A*	*8A*	*9A*	*10A*	*11A*	*12A*	*13A*
Inorganics											
(units - mg/kg dry weight)											
Aluminum	2,860	2,000	264	5,270		3,160	1,830	58	178	443	8,700
Antimony	2.16	3.09		10.6		9.26	13.1	7.3	0.97	0.95	10.4
Arsenic	17.4	10.2	2.33	12.9	2.92	14.3	5.59			1.4	20
Barium	127	76.4	31.7	99.4		477	306	18.9	72.1	3,870	88.8
Beryllium											
Cadmium	12.4	22	97	18.6		79	426	12	46.4	4.11	20.2
Calcium	1,830	1,640	4,390	7,280	314	3,930	10,300	2,411	133	5,590	1,200
Chromium	107	19.8	26.3	30.2	14.3	144	63	17.3		37.3	883
Cobalt											66.4
Copper	122	86	21.5	71.8	2.14	71.9	50.6	2.32	5.68	3,340	430
Iron	23,700	10,800	1,210	22,000	304	21,700	13,500	724	1,760	10,800	51,400
Lead	66.5	102	22.6	90.2		185	147		31.8	1,800	61
Magnesium	684	744	1,000	1,800		906	1,650	259	46.8	2,030	557
Manganese	108	78.4	50.4	117	5.54	136	126	43.4	15	84.3	200
Mercury	7.12	2.45	0.37	5.08		5.35	0.92	0.557	1.17	0.611	0.212
Nickel	57.4	26.2	27.2	33.6		23.5	55.6			35.9	1,720
Potassium	691	699	93	1,150		691	431		253	440	537
Selenium	1.31	1.22		0.965		0.797	0.52			0.45	0.35
Silver											
Sodium	899	501	1,050	767	478	983	705	670	2,400	11,200	1,790
Thallium	1.67									0.6	0.76
Vanadium	8.52										11.8
Zinc	224	147	228	197	9.46	350	1,360	122	32.3	66.3	1,060

TABLE 3

DRUM/CONTAINER CONTENTS RESULTS
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
Deerfield, Ohio

Final Composite Group No:	*3A*	*4A*	*5A*	*6A*	*7A*	*8A*	*9A*	*10A*	*11A*	*12A*	*13A*
Pesticides and PCBs											
(units - µg/kg)											
Alpha-BHC											
Beta-BHC											
Delta-BHC											
Gamma-BHC (Lindane)											
2,4-D											
Heptachlor											
Aldrin											
Chlordane											
Methoxychlor											
Heptachlor Epoxide											
Endosulfan I											
Dieldrin											
4,4-DDE				9,910							
Endrin											
4,4-DDT											
Toxaphene											
Arochlor-1232											
Arochlor-1242											
Arochlor-1248	29,800	20,800	200,000		179,000		110,000	18,200			
Arochlor-1254											
2,4,5-TP(Silvex)											
Mirex											

Notes:
J The associated value is an estimated quar
B Denotes blank contamination

TABLE 3

DRUM/CONTAINER CONTENTS RESULTS
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
Deerfield, Ohio

Final Composite Group No:	*14A*	*15A*	*16A*	*17A*	*18A*	*19A*	*20A*	*21A*	*22A*	*23A*
Volatile Organic Compounds (VOCs)										
(units - µg/kg)										
chloromethane										
vinyl chloride										
chloroethane									50,000JB	54,600JB
methylene chloride	2,030,000B	2,830B	517,000B	402,000JB	484,000JB	501,000B	321,000B	740,000B	6,500,000B	153,000B
acetone							2,420,000J			
carbon disulfide										
1,1-dichloroethene									18,100J	22,800J
1,1-dichloroethane		225J					28,200J		21,500J	
1,2-dichloroethene										
chloroform			269,000JB	351,000JB	351,000JB	1,050,000B	49,200JB			
carbon tetrachloride										
1,2-dichloroethane	432,000J	149J	2,610,000		198,000J	112,000J	488,000			42,900J
2-butanone	5,120,000J	2,570J			12,600,000J				1,880,000	
1,1,1-trichloroethane	184,000J	429J	1,570,000			1,270,000	315,000	97,500J	848,000	90,800
1,1,2,2-tetrachloroethane										
trichloroethene	186,000J	642	1,440,000			904,000	412,000	90,000J	988,000	3,870,000
1,1,2-trichloroethane										
benzene	241,000J		245,000J	221,000J	2,600,000	1,640,000	287,000	211,000J	27,800J	
2-hexanone										
4-methyl-2-pentanone									146,000J	
tetrachloroethene	155,000J		332,000		132,000J	474,000	65,800J	506,000	19,400,000	4,100,000
toluene	14,000,000	11,700	8,820,000B	17,700,000B	10,200,000B	8,040,000B	1,640,000B	173,000,000B	12,300,000B	654,000B
chlorobenzene							50,500J		18,800J	
ethylbenzene	608,000J	175J	2,620,000			675,000	395,000	83,800J	1,430,000	72,100
styrene			147,000J			67,500J		80,600J	123,000	
Total xylenes	2,575,000J	864J	9,810,000	175,000J	292,000J	4,050,000	1,530,000	400,800J	10,290,000	551,000

TABLE 3

DRUM/CONTAINER CONTENTS RESULTS
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
Deerfield, Ohio

Final Composite Group No:	*14A*	*15A*	*16A*	*17A*	*18A*	*19A*	*20A*	*21A*	*22A*	*23A*
Base/Neutrals and Acids (BNAs)										
(units - µg/kg)										
n-nitrosodimethylamine										
phenol	1,970,000		169,000			3,100,000	51,000	44,000		
3&4-methylphenol	21,000		283,000		5,300J	25,000	78,000			
aniline										
1,3-dichlorobenzene										
1,4-dichlorobenzene									42,000	
pyridine										
benzyl alcohol										
1,2-dichlorobenzene	11,800J		39,000			37,000	34,000		51,000	
2,4,5-trichlorophenol										
2,4,6-trichlorophenol										
2-methylphenol	18,000J		98,000		4,800J	34,000	13,000J	5,100J		
bis(2-chloroisopropyl)ether										
4-methylphenol										
hexachloroethane										
nitrobenzene										
2,4-dinitrotoluene										
isophorone			81,000			80,000				
2-nitrophenol										
2,4-dimethylphenol										
benzoic acid	43,900,000									
2,4-dichlorophenol			44,000							
1,2,4-trichlorobenzene										
naphthalene	11,000J		159,000			50,000	34,000	4,900J	44,000	
4-chloroaniline								16,000J		
4-chloro-3-methylphenol						48,000				
2-methylnaphthalene	7,800J		116,000			110,000	87,000		60,000	
hexachlorocyclopentadiene	949,000									
dimethylphthalate										
acenaphthylene										
acenaphthene			22,000							

TABLE 3

DRUM/CONTAINER CONTENTS RESULTS
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
Deerfield, Ohio

Final Composite Group No:	*14A*	*15A*	*16A*	*17A*	*18A*	*19A*	*20A*	*21A*	*22A*	*23A*
Base/Neutrals and Acids(BNAs) Cont'c										
4-nitrophenol										
dibenzofuran										
diethylphthalate			6,100J							
fluorene			18,000J			10,000J	8,400J			
n-nitrosodiphenylamine						18,000J	13,000J			
hexachlorobenzene	260,000		64,000							
pentachlorophenol										
phenanthrene			30,000			29,000	22,000			
anthracene										
di-n-butylphthalate	11,800,000		62,000			10,000J	4,100J			
fluoranthene			17,000J							
pyrene			20,000			5,500J	4,100J			
butylbenzylphthalate	16,000J		139,000							
benzo(a)anthracene										
bis(2-ethylhexyl)phthalate	561,000			31,000	7,300J		169,000	40,000	98,900,000	25,000
chrysene										
di-n-octyl phthalate	11,000J		411,000			87,000	18,000J			
benzo(b)fluoranthene										
benzo(k)fluoranthene										
benzo(a)pyrene										
indeno (1,2,3-cd)pyrene										
dibenz(a,h)anthracene										
benzo(g,h,i)perylene										
hexachlorobutadiene										
carbazole										

TABLE 3

DRUM/CONTAINER CONTENTS RESULTS
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
Deerfield, Ohio

Final Composite Group No:	*14A*	*15A*	*16A*	*17A*	*18A*	*19A*	*20A*	*21A*	*22A*	*23A*
Inorganics										
(units - mg/kg dry weight)										
Aluminum	1,330	2,170					159			1,280
Antimony	6.98						1.40			1,310
Arsenic	16.2	2.6	1.1				1.3			11.9
Barium	2,390	15.8			20.6	55.5	690			71.3
Beryllium										
Cadmium	1,640		81.0		11.1	18.2	14.1			
Calcium	1,940	322	214	188	135	95.9	2,360	1,320	811	5,210
Chromium	18.8			77.7		40.6	110			
Cobalt								4,280		
Copper	44.8	9	4.2				1,450			20.2
Iron	16,700	6,240	98.1	35.5	224	226	896	131	44.2	24,200
Lead	46.4				24		28.4			30.0
Magnesium	575	595		69.3		24.3	405	103,000	75.4	1,700
Manganese	72.3	64.6	3.2	30.4	9.02	9.6	42.6	9.17		298
Mercury	0.326						0.094	0.128	0.036	0.078
Nickel	11.6						115			
Potassium	423	288								397
Selenium	0.51									0.503
Silver										
Sodium	636	160	827	351	318	230	1,970	964	51.2	9,900
Thallium										
Vanadium										
Zinc	603	796	13.0	4.6	20.9	11.9	136	15,200	9.81	94.6

TABLE 3

DRUM/CONTAINER CONTENTS RESULTS
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
Deerfield, Ohio

Final Composite Group No:	*14A*	*15A*	*16A*	*17A*	*18A*	*19A*	*20A*	*21A*	*22A*	*23A*
Pesticides and PCBs										
(units - µg/kg)										
Alpha-BHC										
Beta-BHC										
Delta-BHC										
Gamma-BHC (Lindane)										
2,4-D										
Heptachlor										
Aldrin										
Chlordane										
Methoxychlor										
Heptachlor Epoxide										
Endosulfan I										
Dieldrin										
4,4-DDE										
Endrin										
4,4-DDT										
Toxaphene										
Arochlor-1232										
Arochlor-1242										
Arochlor-1248			165,000				9,700	2,410J	8,230	
Arochlor-1254										
2,4,5-TP(Silvex)										
Mirex										

Notes:
J The associated value is an estimated quar
B Denotes blank contamination

TABLE 3

DRUM/CONTAINER CONTENTS RESULTS
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
Deerfield, Ohio

Final Composite Group No:	*24A*	*25A*	*37*	*38*	*41*	*44*	*47*	*51*	*53*
Volatile Organic Compounds (VOCs)									
(units - µg/kg)									
chloromethane									
vinyl chloride									
chloroethane	52,200JB	57,600JB							
methylene chloride	14,700,000B	1,180,000B	5,440JB	3,380B	478,000JB	5,340B	12,300B	52,200JB	372JB
acetone	947,000J			40,500		139,000	34,500J		21,100
carbon disulfide									
1,1-dichloroethene	15,800J	37,100J							
1,1-dichloroethane	87,200			616J		8,440	2,490J		5,700
1,2-dichloroethene									
chloroform	20,500J	28,400J	5,140J						
carbon tetrachloride									
1,2-dichloroethane	70,500	52,000J	13,800	7,920		1,030	56,200		165J
2-butanone	13,600,000	24,400,000		157,000		94,300	20,400J		23,100
1,1,1-trichloroethane	2,880,000	532,000	12,900			13,300	8,390		2,330
1,1,2,2-tetrachloroethane									
trichloroethene	6,510,000	1,510,000	12,300	3,140		32,100	14,200	2,960,000	2,160
1,1,2-trichloroethane						1,190			
benzene	47,400J	66,900	13,600	445J	550,000J	1,560	1,660J		190J
2-hexanone	212,000J								
4-methyl-2-pentanone	524,000J	392,000J		8,950		36,800	18,400J		1,780J
tetrachloroethene	11,900,000	188,000	6,140J	274J			1,680J		
toluene	31,500,000B	41,200,000B	145,000	13,100	50,000,000	119,000	55,800	45,000J	3,520
chlorobenzene									
ethylbenzene	3,090,000	628,000	33,700	591J		4,280	7,790		148J
styrene	13,500J	14,600J	3,790J			2,620		39,200J	
Total xylenes	14,890,000	3,104,000	146,300	3,550	418,000J	15,560	39,990		672J

TABLE 3

DRUM/CONTAINER CONTENTS RESULTS
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
Deerfield, Ohio

Final Composite Group No:	*24A*	*25A*	*37*	*38*	*41*	*44*	*47*	*51*	*53*
Base/Neutrals and Acids (BNAs)									
(units - µg/kg)									
n-nitrosodimethylamine									
phenol	326,000	248,000	32,000		17,000J		47,000	190,000	
3&4-methylphenol	141,000	18,000J	5,800J	59,000			11,000J	15,000J	
aniline									
1,3-dichlorobenzene									
1,4-dichlorobenzene					6,200J				
pyridine									
benzyl alcohol									
1,2-dichlorobenzene					29,000				
2,4,5-trichlorophenol									
2,4,6-trichlorophenol									
2-methylphenol	320,000	56,000							
bis(2-chloroisopropyl)ether									
4-methylphenol									
hexachloroethane									
nitrobenzene									
2,4-dinitrotoluene									
isophorone									
2-nitrophenol									
2,4-dimethylphenol	51,000								
benzoic acid									
2,4-dichlorophenol									
1,2,4-trichlorobenzene									
naphthalene	108,000	53,000			6,100J				
4-chloroaniline									
4-chloro-3-methylphenol	202,000	44,000							
2-methylnaphthalene	81,000	54,000			10,000J				
hexachlorocyclopentadiene					14,000J				
dimethylphthalate					5,500J				
acenaphthylene									
acenaphthene		5,900J							

TABLE 3

DRUM/CONTAINER CONTENTS RESULTS
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
Deerfield, Ohio

Final Composite Group No:	*24A*	*25A*	*37*	*38*	*41*	*44*	*47*	*51*	*53*
Base/Neutrals and Acids(BNAs) Cont'd									
4-nitrophenol									
dibenzofuran									
diethylphthalate									
fluorene	9,000J	6,200J							
n-nitrosodiphenylamine									
hexachlorobenzene					23,000				
pentachlorophenol								31,000J	
phenanthrene		15,000J			5,700J				
anthracene									
di-n-butylphthalate	191,000J	5,600J			7,400J				
fluoranthene									
pyrene									
butylbenzylphthalate	42,000	55,000			111,000				
benzo(a)anthracene									
bis(2-ethylhexyl)phthalate	29,700,000	2,130,000	39,000	11,000J			6,300J	5,100J	
chrysene									
di-n-octyl phthalate	28,000	14,000J			8,600J				
benzo(b)fluoranthene									
benzo(k)fluoranthene									
benzo(a)pyrene									
indeno (1,2,3-cd)pyrene									
dibenz(a,h)anthracene									
benzo(g,h,i)perylene									
hexachlorobutadiene									
carbazole									

TABLE 3

DRUM/CONTAINER CONTENTS RESULTS
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
Deerfield, Ohio

Final Composite Group No:	*24A*	*25A*	*37*	*38*	*41*	*44*	*47*	*51*	*53*
Inorganics									
(units - mg/kg dry weight)									
Aluminum	2,440	174	3,530	8,880	5,700			132	809
Antimony	58.8		3.46	1.82	0.95		48.3		
Arsenic	7.13	1.34	10.0	5.71	11.5				1.44
Barium	149		5,910	97.1	176				70.1
Beryllium									
Cadmium	38.3		31.5	13.9	8.72		53.6		8.26
Calcium	1,670	1,520	6,600	9,010	2,130	1,330	726	582	126,000
Chromium	70.6		1,030	165	10,600	790		267	524
Cobalt									
Copper	174	2.38	681	4,560	128		13.8	23.6	346
Iron	11,300	86.4	89,700	27,700	19,200	6,410	301	561	7,030
Lead	212		227		309		344		115
Magnesium	739	167	2,030	2,670	659	341	145	148	9,070
Manganese	76.7		873	492	69.1	1,110			131
Mercury	0.186	0.048	0.309	0.176	2.91		0.588	0.928	0.906
Nickel			374	1,030	39.6				11.9
Potassium	493		812	2,440	4,220				157
Selenium			0.334		0.452				
Silver									
Sodium	643	64.5	72,800	12,900	730	1,190	622	5,400	28,100
Thallium					2.68				
Vanadium			39.3	17.1					
Zinc	581	8.10	1,720	162	16,100		208	10.0	23,400

TABLE 3

DRUM/CONTAINER CONTENTS RESULTS
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
Deerfield, Ohio

Final Composite Group No:	*24A*	*25A*	*37*	*38*	*41*	*44*	*47*	*51*	*53*
Pesticides and PCBs									
(units - µg/kg)									
Alpha-BHC									
Beta-BHC									
Delta-BHC									
Gamma-BHC (Lindane)									
2,4-D									
Heptachlor									
Aldrin									
Chlordane									
Methoxychlor									
Heptachlor Epoxide									
Endosulfan I									
Dieldrin									
4,4-DDE									
Endrin									
4,4-DDT									
Toxaphene									
Arochlor-1232									
Arochlor-1242									
Arochlor-1248	23,300	46,600	1,100				4,800		
Arochlor-1254									
2,4,5-TP(Silvex)									
Mirex									

Notes:
J The associated value is an estimated quar
B Denotes blank contamination

TABLE 4

BURIED DRUM/CONTAINER CONTENTS RESULTS
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
Deerfield, Ohio

	Final Composite Group												
Parameter	***1***	***2***	***9***	***10***	***11***	***17***	***18***	***19***	***22***	***23***	***24***	***25***	***35***
BTU (BTU/lb)	814	5,670	494	3,010	2,326	95	3,095	3,389	<50	320	2,395	11,123	<50
Chloride (mg/kg)	23	37	7.9	119	93	150	433	310	9	26	490	105	520
Bromide (mg/kg)	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250
Sulfide (mg/kg)	14.4	49.1	70.1	352	29.3	<4.0	345	98.6	<4.0	<3.6	107	7.7	6.4
Cyanide (mg/kg)	26.7	28.7	18.9	<4.0	28.8	12.4	<2.0	14.6	16.1	189	112	<2	<4
% Ash	68.7	48.8	70.9	48.5	56.5	58.6	52.8	49.54	66.7	61.3	51.5	1.5	17.4
% Moisture	18.2	15.2	19.2	24.4	22.0	21.6	18.6	23.3	23.2	14.4	3.94	29.4	21.6
Specific Gravity (g/cc)	1.75	1.36	1.85	1.59	1.71	1.622	1.532	1.526	1.829	1.425	2.16	0.854	0.942

TABLE 4

BURIED DRUM/CONTAINER CONTENTS RESULTS
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
Deerfield, Ohio

	Final Composite Group												
Parameter	*20A**	*20B*	*21B*	*32A*	*32B*	*33A*	*34A*	*1A*	*2A*	*3A*	*4A*	*5A*	*6A*
BTU (BTU/lb)	4,870	4,960	9,140	3,675	6,947	5,852	10,596	2,720	3,560	3,150	3,420	3,830	5,880
Chloride (mg/kg)	679	609	3,350	410	13	49	385	245	1,180	1,230	615	806	3,050
Bromide (mg/kg)	<250	<250	<250	<1,000	<1,000	<1,000	<1,000	<250	2,360	<250	<250	<250	<250
Sulfide (mg/kg)	94.4	37.2	36.7	3.92	22	41	9.78	61.6	<3.6	19	13.1	17.3	47.5
Cyanide (mg/kg)	17.6	3.8	3.5	<4	6.81	<4	<4	26.2	129	15.4	10.4	82.3	21.4
% Ash	44	36.7	23.6	68.1	43.7	11.6	12.3	56	55.5	39	60.7	7.2	37.3
% Moisture	18	19.4	22.6	21.7	7.8	29.7	15.2	18.9	23.6	23.2	13	12.8	22.8
Specific Gravity (g/cc)	1.34	1.5	1.24	1.16	1.38	0.846	0.891	1.52	1.32	1.41	1.24	0.66	1.3

TABLE 4

BURIED DRUM/CONTAINER CONTENTS RESULTS
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
Deerfield, Ohio

	Final Composite Group												
Parameter	*7A*	*8A*	*9A*	*10A*	*11A*	*12A*	*13A*	*14A*	*15A*	*16A*	*17A*	*18A*	*19A*
BTU (BTU/lb)	4,770	3,590	14,300	11,600	9,200	4,910	4,260	6,420	7,580	13,200	5,360	9,780	5,680
Chloride (mg/kg)	1,390	4,120	1,030	303	66.3	12.2	1,950	664	<2	1,970	NA	1,280	1,690
Bromide (mg/kg)	3,480	<250	<250	<250	<250	<250	<250	<250	<250	2,760	<250	<250	<250
Sulfide (mg/kg)	<3.6	28.9	26.9	69.2	16.5	24.3	91.5	80.5	53.6	<3.6	4.79	68.6	68.6
Cyanide (mg/kg)	20.6	56.5	72.7	12.5	<4	31.3	28.1	18.2	<4	56.3	<4.0	<4.0	<4.0
% Ash	6.7	48.8	19.2	9.95	4.29	35.3	29.5	33.7	14.7	0.65	0.64	3.08	9.44
% Moisture	14	26.7	12.7	47	70.2	25.6	23.3	18.5	12.2	14.7	64.8	38.8	21.7
Specific Gravity (g/cc)	0.95	1.28	1.59	1.06	1.07	1.11	1.15	1.39	1.32	0.854	1.061	0.840	0.867

TABLE 4

BURIED DRUM/CONTAINER CONTENTS RESULTS
SOIL REMOVAL AND TREATMENT
SUMMIT NATIONAL SUPERFUND SITE
Deerfield, Ohio

	Final Composite Group												
Parameter	*20A*	*21A*	*22A*	*23A*	*24A*	*25A*	*37*	*38*	*41*	*44*	*47*	*51*	*53*
BTU (BTU/lb)	9,940	7,050	14,300	3,030	8,970	14,900	908	<50	12,100	<50	1,920	<50	<50
Chloride (mg/kg)	1,180	380	91	77	160	35	33.4	30.6	370	10.4	32.3	411	9.4
Bromide (mg/kg)	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250
Sulfide (mg/kg)	68.6	<3.6	5.77	15.1	165	46.1	<3.6	<3.6	56.6	22.0	27.1	17.9	28.0
Cyanide (mg/kg)	28.4	11.5	<4.0	<4.0	<4.0	<4.0	211	1,050	9.50	<4.0	17.9	<4.0	5.85
% Ash	3.15	24.2	0.3	16.0	25.8	1.8	48.8	25.2	16.5	5.45	4.50	16.6	19.7
% Moisture	25.5	29.0	9.1	18.2	23.3	17.3	20.0	23.0	42.7	73.9	4.5	60.2	48.5
Specific Gravity (g/cc)	0.872	0.43	0.39	1.02	0.27	0.87	1.091	1.24	1.136	0.875	0.912	0.739	0.880

ATTACHMENT D

COMPLETED WASTE MANIFESTS

Truck #9268

V20-16868
9268-646-149V

Emergency Contact Telephone Number

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: OHD98060999 | Manifest Document No.: 95 004 | 2. Page 1 of 23 | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Summit National Superfund Site
8186 State Route 224, Deerfield, OH 44411

4. Generator's Phone (216-) 947-0632

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: DART Trucking Co., INC.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID: MA 870
D. Transporter's Phone: (216) 533-9841

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
LWD, Inc.
Highway 1523, P.O. Box 3327, Calvert City, KY 42029
10. US EPA ID Number: KYD 08 84 38 817

G. State Facility's ID
H. Facility's Phone: 502-395-8313

	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.
a. 17	RQ, Waste Flammable Solid, N.O.S. 4.1., UN1325, PG II (D001)(D008)	x	001	DM	Approximate 004.50	P	D001
b. 3A	RQ, Waste Flammable Solid, N.O.S. 4.1., UN1325, PG II (D001)(D007)	x	015	DM	(App.) 067.50	P	D001
c. 37	RQ, Waste Flammable Solid, N.O.S. 4.1., UN1325, PG II (D001)(D005)	x	002	DM	(App.) 009.00	P	D001
d. 2A	RQ, Waste Flammable Solid, N.O.S. 4.1., UN1325, PG II (D001)(D006)	x	017	DM	(App) 076.50	P	D001

J. Additional Descriptions for Materials Listed Above ** CD Required **
Additional Waste No.
11a. D008, D007, D005
11b. D007, D009, D028, D032, D039, D040
11c. D005, D006, D007, D008, D018, D028, D040
11d. D006, D008, D009, D028, D032, ~~D028~~ D040

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
11a. LWD PC # NG78 Comp # 17 ERG # 38
11b. LWD PC # NG78 Comp # 3A ERG # 38
11c. LWD PC # NG78 Comp # 37 ERG # 38
11d. LWD PC # NG78 Comp # 2A ERG # 38
Phone/Contact: 216-937-0632 (Chris Miller)

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 governmental 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 minimized 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: Gary Gifford | Signature: Gary Gifford | Month 05 Day 04 Year 95

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Victor J. Kirin Jr # 646 | Signature: [signature] #646 | Month 05 Day 04 Year 95

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

19. Discrepancy Indication Space
11d. Change D028 to D040 per Ken Paisley

e/Contac

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: John P. Walker | Signature: John P. Walker | Month 05 Day 05 Year 95

TRANSPORTER #1

UNIFORM HAZARDOUS WASTE MANIFEST
(Continuation Sheet)

21. Generator's US EPA ID No.: OH D 98 06 099 94 — Manifest Document No.: 95 0.04

22. Page: 2 of 8

Information in the shaded areas is not required by Federal law.

23. Generator's Name
Summit National Superfund Site
8186 State Route 224
Deerfield, OH 44411

L. State Manifest Document Number

M. State Generator's ID

24. Transporter 1 Company Name: DART TRUCKING CO., INC

25. US EPA ID Number: OH D 009 865 825

N. State Transporter's ID: MA 870

O. Transporter's Phone: (216) 533-9841

26. Transporter ____ Company Name

27. US EPA ID Number

P. State Transporter's ID

Q. Transporter's Phone

	HM	28. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	29. Containers No	Type	30. Total Quantity	31. Unit Wt/Vol	R. Waste No.
a.	X	RQ, Waste Flammable Solid, N.O.S. 4.1, UN1325, PG II (D001)(D006)	5	DM	(Appmite) 2250	P	D001
b.	X	RQ, Waste Flammable Solid, N.O.S. 4.1, UN1325, PG II (D001)(D039)	3	DM	(App) 1350	P	D001
c.	X	RQ, Waste Flammable Solid, N.O.S. 4.1, UN1325, PG II (D001)(D007)	4	DM	(App) 1800	P	D001
d.	X	RQ, Waste Flammable Solid, N.O.S. 4.1, UN1325, PG II (D001)(D006)	2 ~~X~~	DM	900 ~~450~~	P	D001
e.					(App)		
f.							
g.							
h.							
i.							

S. Additional Descriptions for Materials Listed Above ** CD Required **

Additional Waste No.
11a. D006, D008, D028, D040 11c. D007, D008, D028, D040 (D003)
11b. D039 D040 11d. ~~D006, D040~~ D028, D032, D040

T. Handling Codes for Wastes Listed Above

32. Special Handling Instructions and Additional Information

11a. LWD PC # NG78 Comp # 4A ERG # 38 11c. LWD PC # NG78 Comp # 20B(S) ERG # 38
11b. LWD PC # NG78 Comp # 23A ERG # 38 11d. LWD PC # NG78 Comp # 32A ERG # 38

Phone/Contact: 216-937-0632 (Chris Miller)

33. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Victor J. Kiew Jr. #646 — Signature: [signature] #646 — Date: Month 05 Day 04 Year 95

34. Transporter ____ Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Date: Month Day Year

35. Discrepancy Indication Space

5) change 11d from D006, D040 to D028, D032, D040 per Kim Hensley

GENERATOR

TRANSPORTER

FACILITY

TRANSPORTER #1

UNIFORM HAZARDOUS WASTE MANIFEST
(Continuation Sheet)

21. Generator's US EPA ID No.: OHD 98 06 099 | Manifest Document No.: 4 9 5004

22. Page: 3 of 3 OH

Information in the shaded areas is not required by Federal law.

23. Generator's Name
Summit National Superfund Site
8186 State Route 224
Deerfield, OH 44411

L. State Manifest Document Number

M. State Generator's ID

24. Transporter 1 Company Name: DART TRUCKING CO, INC

25. US EPA ID Number: OHD 009 865 825

N. State Transporter's ID: MA 870

O. Transporter's Phone: (216) 533-9841

26. Transporter ____ Company Name

27. US EPA ID Number

P. State Transporter's ID

Q. Transporter's Phone

	28. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) HM		29. Containers No	Type	30. Total Quantity	31. Unit Wt/Vol	R. Waste No.
a.	X X	RQ, Waste Flammable Solid, N.O.S. 4.1., UN1325, PG II (D001) DOM	2	DM	(App) 900	P	D001
b.	X X	RQ, Waste Flammable Solid, N.O.S. 4.1., UN1325 PG II (D001) (D006)	1	DM	(App) 450	P	D001
c.	X X	RQ Waste Flammable Solid N.O.S. 4.1., UN1325 PG II (D001) (D006)	1	DM	(App) 450	P	D001
d.							
e.							
f.							
g.							
h.							
i.							

S. Additional Descriptions for Materials Listed Above

** CD Required **

Additional Waste No.

11a. —

11b. ~~D006, D040~~

11c. D006, D040

11d.

T. Handling Codes for Wastes Listed Above

32. Special Handling Instructions and Additional Information

11a. LWD PC #NG78 Comp # 32B ERG # 38

11b. LWD PC #NG78 Comp # 34A ERG # 38

11c. LWD PC #NG78 Comp # 21B(S) ERG # 38

11d. LWD PC # ____ Comp # ____ ERG # ____

Phone/Contact: 216-937-0632 (Chris Miller)

33. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Victor J. Kirw Jr #646

Signature: [signature] #646

Date: Month 05 Day 04 Year 9

34. Transporter ____ Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Date: Month Day Year

35. Discrepancy Indication Space

GENERATOR

TRANSPORTER

FACILITY

TRANSPORTER #1

20 FS

LWD INC
CALVERT CITY, KY

L W D , INC.

P.O. BOX 327 — CALVERT CITY, KENTUCKY 42029

Date 5-5-95

Customer: Summit DAKt

Address: Deerfield, OH

Type Waste: Liquid _____ Solid _____ Size Load: 53 Gal. _____ Cu. Ft. _____

Hauled By: L W D _____ Other — Truck No. _____

Total Weight 60360 Pumping _____ Time in: _____

Truck Weight 33820 Loading Drums _____ Time out: _____

Net Weight 26,540 Overpacks _____

WASTE RUN TICKET

46592

Customer's Signature _____

L W D Signature John P. Walker

PRESS HARD

☒ Dart Trucking Co. Inc.
Dump Divn. (216) 533-3358 1-800-533-0255
Roll-off Divn. (419) 729-0500 1-800-423-0220
Flatbed Divn. (216) 533-2679 1-800-541-9158

TYPE OF LOAD
☐ DUMP
☐ FLATBED
☐ ROLL-OFFS
☐ TANKS
☒ VANS
☐ PNEUMATIC

LOAD No. V120116868

BILLING ADDRESS
61 Railroad Street
P.O. Box 89
Canfield, OH 44406

DATE: 5-4-95

DRIVER'S NAME	DRIVER'S NO.	OWNER'S NAME	TRUCK NO.	TRAILER NO.
Victor J. Kirin Jr	646	SAME	9268	149V

SHIPPER'S SIGNATURE (IF APPLICABLE):

BILL OF LADING NO.:

SHIPPER (Company & Address)
Summit National Site
Deer Field OH

CONSIGNEE (Company & Address)
G.W.D.

☐ PREPAID ☐ COLLECT ☐ COMMODITY: ☐ HAZARDOUS ☐ NONHAZARDOUS

QUANTITY	DESCRIPTION	WEIGHT	RATE	AMOUNT
53	Over packs of Flamable	GROSS:		
	Waste	TARE:		
		NET: 45,000		

COMMENTS

ADVANCES
CHECK NO. 401788896 94965 AMT. 300.00
CHECK NO. _____ AMT. _____
CHECK NO. _____ AMT. _____
CHECK NO. _____ AMT. _____

RECEIVED ABOVE PROPERTY IN GOOD CONDITION

FULL NAME OF RECEIVING COMPANY	NAME OF RECEIVING CLERK	DATE

SPECIAL CHARGES

☐ LIVE LOAD
☐ SET
☐ PULL
☐ TARP CRANK
☐ TARP CHARGE
☐ LINER
HOURLY TIME
☐ STOPOFF
☐ BLOWER
☐ SPOTTING
☐ RECONSIGNMENT
☐ TRUCK ORDERED NOT USED
☐ REDELIVERY
☐ EQUIPMENT OPERATOR
☐ HOLIDAY
☐ OTHER

BEG. ODOMETER:
END ODOMETER:

DELAY VERIFICATION

	LOADING AM	LOADING PM	UNLOADING AM	UNLOADING PM
TIME ARRIVED				
TIME RELEASED				
TOTAL TIME				
FREE TIME				
MEAL TIME				
DETENTION TIME				

AUTHORIZATION OF DELAY
(LOADING) BY _____ FIRM _____
(UNLOADING) BY _____ FIRM _____

DELIVERED BY DRIVER (FULL NAME)

V20-16884
3080 1276 41

Emergency Contact Telephone Number

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: OHD 98 06 099 94
Manifest Document No.: 95005
2. Page 1 of 3
Information in the shaded areas is not required by Federal law.

RECEIVED MAY 10 1995

3. Generator's Name and Mailing Address
Summit National Superfund Site
8186 State Route 224, Deerfield, OH 44411
4. Generator's Phone (216) 947-0632

A. State Manifest Document Number
B. State Generator's ID
C. State Transporter's ID T380-HF
D. Transporter's Phone (216) 532-9841
E. State Transporter's ID
F. Transporter's Phone
G. State Facility's ID
H. Facility's Phone 502-395-8313

5. Transporter 1 Company Name: DART TRUCKING CO., INC.
6. US EPA ID Number: OHD 00 98 65 825
7. Transporter 2 Company Name
8. US EPA ID Number
9. Designated Facility Name and Site Address
LWD, Inc.
Highway 1523, P.O. Box 3327, Calvert City, KY 42029
10. US EPA ID Number: KYD 08 84 38 817

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	Waste No.
a.	X	RQ, Waste Flammable Solid, N.O.S., 4.1., UN1325, PG II, (D001) (D028)	003	DM	Approximate 01350	P	D001
b.	X	RQ, Waste Flammable Solid, N.O.S., 4.1., UN1325, PG II, (D001) (D018)	005	DM	Approximate 02250	P	D001
c.	X	RQ, Waste Flammable Solid, N.O.S., 4.1., UN1325, PG II, (D001) (D028)	008	DM	Approximate 03600	P	D001
d.	X	RQ, Waste Flammable Solid, N.O.S., 4.1., UN1325, PG II, (D001) (D040)	005	DM	Approximate 02250	P	D001

J. Additional Descriptions for Materials Listed Above ** CD Required **
Additional Waste No.
11a. D028,D040,D007,D009,D032, D039
11b. D006,D008,D018,D028,D039,D040
11c. D028,D040,D008,D006,D009,D032
11d. D040, D006

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
11a. LWD PC # NG78 Comp # 3A ERG # 38
11b. LWD PC # NG78 Comp # 20A(s) ERG # 38
11c. LWD PC # NG78 Comp # 2A ERG # 38
11d. LWD PC # NG78 Comp # 34A ERG # 38
Phone/Contact: 216-937-0632 (Chris Miller)

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 governmental 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 minimized 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: Gary Gifford
Signature: Gary Gifford
Month 05 Day 04 Year 95

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Victor J. Kiew Jr #646
Signature: [signature] #646
Month 05 Day 04 Year 95

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
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: John P. Walker
Signature: John P. Walker
Month 05 Day 08 Year 95

TRANSPORTER #1

UNIFORM HAZARDOUS WASTE MANIFEST
(Continuation Sheet)

21. Generator's US EPA ID No.: QHD98060999 | Manifest Document No.: 95005

22. Page 2 of 3

Information in the shaded areas is not required by Federal law.

23. Generator's Name
Summit National Superfund Site
8186 State Route 224
Deerfield, OH 44411

L. State Manifest Document Number

M. State Generator's ID

24. Transporter 1 Company Name: DART TRUCKING CO., INC.

25. US EPA ID Number: OHD009865825

N. State Transporter's ID: T380KF-OHIO

O. Transporter's Phone: (216) 533-9841

26. Transporter ____ Company Name

27. US EPA ID Number

P. State Transporter's ID

Q. Transporter's Phone

	28. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) HM		29. Containers No	Type	30. Total Quantity	31. Unit Wt/Vol	R. Waste No.
a.	X	RQ, Waste Flammable Solid, N.O.S., 4.1., UN1325, PG II, (D001) (D006)	2	DM	Approximate 900	P	D001
b.	X	RQ, Waste Flammable Solid, N.O.S., 4.1., UN1325, PG II, (D001) (D039)	3	DM	Approximate 1350	P	D001
c.	X	RQ, Waste Flammable Solid, N.O.S., 4.1., UN1325, PG II, (D001) (D007)	1	DM	Approximate 450	P	D001
d.	X	RQ, Waste Flammable Solid, N.O.S., 4.1., UN1325, PG II, (D001) (D006)	2	DM	Approximate 900	P	D001
e.	X	RQ. Waste Flammable Solid, N.O.S., 4.1., UN1325, PG II (D001)(D008)	1	DM	Approximate 450	P	D001
f.							
g.							
h.							
i.							

S. Additional Descriptions for Materials Listed Above

** CD Required **

Additional Waste No.
11a. D006,D008,D028,D040
11b. D039, D040
11c. D007,D008,D028,D040, (D003)
11d. D006, D040
11e. D006,D008,D009,D028 D032,D040

T. Handling Codes for Wastes Listed Above

32. Special Handling Instructions and Additional Information

11a. LWD PC #NG78 Comp # 4A ERG # 38
11b. LWD PC #NG78 Comp # 23A ERG # 38
11c. LWD PC #NG78 Comp # 20B(S) ERG # 38
11d. LWD PC #NG78 Comp # 32A ERG # 38
11e. LWD PC #NG78 Comp # 21A ERG # 38
Phone/Contact: 216-937-0632 (Chris Miller)

33. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Victor J. Kirin Jr #646
Signature: [signature] #646
Date: Month 05 Day 04 Year 95

34. Transporter ____ Acknowledgement of Receipt of Materials

Printed/Typed Name
Signature
Date: Month Day Year

35. Discrepancy Indication Space

GENERATOR

TRANSPORTER

FACILITY

TRANSPORTER #1

UNIFORM HAZARDOUS WASTE MANIFEST
(Continuation Sheet)

21. Generator's US EPA ID No. O H D 9 8 0 6 0 9 9 9 4 — Manifest Document No. 9 5 0 0 5

22. Page 3 of 3

Information in the shaded areas is not required by Federal law.

23. Generator's Name
Summit National Superfund Site
8186 State Route 224
Deerfield, OH 44411

L. State Manifest Document Number

M. State Generator's ID T320KF OHIO

24. Transporter 1 Company Name: DART trucking Co.,Inc.

25. US EPA ID Number: O H D 0 0 9 8 6 5 8 2 5

N. State Transporter's ID

O. Transporter's Phone (216) 533-9841

26. Transporter ____ Company Name

27. US EPA ID Number

P. State Transporter's ID

Q. Transporter's Phone

	28. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM	29. Containers No	Type	30. Total Quantity	31. Unit Wt/Vol	Waste No.
a.	RQ, Waste Flammable Solid, N.O.S., 4.1., UN1325, PG II, (D001)(D005)	X	10	DM	Approximate 4500	P	
b.	RQ, Waste Flammable Solid, N.O.S., 4.1., UN1325, PG II, (D001) (D005)	X	8	DM	Approximate 3600	P	
c.	RQ, Waste Flammable Solid, N.O.S., 4.1., UN1325, PG II, (D001)	X	4	DM	Approximate 1800	P	
d.	RQ, Waste Flammable Solid, N.O.S., UN1325, 4.1., PG II, (D001) (D006)	X	4	DM	Approximate 1800	P	D001
e.	RQ, Waste Flammable Liquid, N.O.S., 3, UN1993, PG III, (D001)(D018)	X	2	DM	Approximate 900	P	D001
f.	RQ, Waste Flammable LIquid, N.O.S., 3, UN1993, PG III, (D001)(D018)	X	1	DM	Approximate 450	P	D001
g.							
h.							
i.							

GENERATOR

S. Additional Descriptions for Materials Listed Above ** CD Required **

Additional Waste No.

11a. D005,D007,D008 — 11c. D001 — 11e. D40

11b. D005,D006,D007,D008,D018, D028, D040 — 11d. D006, D040 — 11f. D018,D022,D035,D039

D018,D022,D028,D039,

T. Handling Codes for Wastes Listed Above

32. Special Handling Instructions and Additional Information

11a. LWD PC #NG78 Comp # 17 ERG # 38 — 11c. LWD PC #NG78 Comp # ~~33~~ 32B ERG # 38

11b. LWD PC #NG78 Comp # 37 ERG # 38 — 11d. LWD PC #NG78 Comp # 21B(S) ERG # 38

11e. LWD PC #NG77 Comp # 19A ERG # 26 — 11f. LWD PC #77 Comp # 18A ERG # 26

Phone/Contact: 216-937-0632 (Chris Miller)

TRANSPORTER

33. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Victor J. Kiew Jr #646 — Signature: #646 — Date: Month 05 Day 04 Year 95

34. Transporter ____ Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Date: Month Day Year

FACILITY

35. Discrepancy Indication Space

TRANSPORTER #1

L W D , INC.

P.O. BOX 327 — CALVERT CITY, KENTUCKY 42029

Date 5-8-95

Customer: Summit DART

Address: Deerfield, OH

ype Waste: Liquid _____ Solid _____ Size Load: 59 Gal _____ Cu. Ft. _____

Hauled By: L W D _____ Other — Truck No. _____

Total Weight 65 760 Pumping _____ Time in: _____

Truck Weight 35 320 Loading Drums _____ Time out: _____

Net Weight 40 440 Overpacks _____

WASTE RUN TICKET

46438

Customer's Signature [signature]

L W D Signature [signature]

BILLING DEPT. 1
PRESS HARD

☐ Dart Trucking Co. Inc.
Dump Divn. (216) 533-3358 1-800-533-0255
Roll-off Divn. (419) 729-0500 1-800-423-0220
Flatbed Divn. (216) 533-2679 1-800-541-9158

TYPE OF LOAD
☐ DUMP
☐ FLATBED
☐ ROLL-OFFS
☐ TANKS
☒ VANS
☐ PNEUMATIC

LOAD No. V120116774

BILLING ADDRESS
61 Railroad Street
P.O. Box 89
Canfield, OH 44406

DATE 5-5-95

DRIVER'S NAME	DRIVER'S NO.	OWNER'S NAME	TRUCK NO.	TRAILER NO.
Daniel Copein	1270	Corona Transport	3080	41

SHIPPER'S SIGNATURE (IF APPLICABLE)

BILL OF LADING NO. 95005 Ky

SHIPPER (Company & Address)
Terminal Summit National Superfund
Railroad
Canfield - OH

CONSIGNEE (Company & Address)
LWD
Hwy 1523
Calvert City Ky

☐ PREPAID ☐ COLLECT ☐ COMMODITY: ☐ HAZARDOUS ☐ NONHAZARDOUS

QUANTITY	DESCRIPTION	WEIGHT	RATE	AMOUNT
	Load Haz	GROSS:		1460.00
		TARE:		
		NET:		

COMMENTS

ADVANCES
CHECK NO. _____ AMT. 400
CHECK NO. _____ AMT. _____
CHECK NO. _____ AMT. _____
CHECK NO. _____ AMT. _____

RECEIVED ABOVE PROPERTY IN GOOD CONDITION

FULL NAME OF RECEIVING COMPANY X LWD
NAME OF RECEIVING CLERK X [signature]
DATE 5-8-95

SPECIAL CHARGES

☐ LIVE LOAD
☐ SET
☐ PULL
☐ TARP CRANK
☐ TARP CHARGE
☐ LINER
☐ HOURLY TIME
☐ STOPOFF
☐ BLOWER
☐ SPOTTING
☐ RECONSIGNMENT
☐ TRUCK ORDERED NOT USED
☐ REDELIVERY
☐ EQUIPMENT OPERATOR
☐ HOLIDAY
☐ OTHER

BEG. ODOMETER
END ODOMETER

DELAY VERIFICATION

	LOADING AM	LOADING PM	UNLOADING AM	UNLOADING PM
TIME ARRIVED				
TIME RELEASED				
TOTAL TIME				
FREE TIME				
MEAL TIME				
DETENTION TIME				

AUTHORIZATION OF DELAY (LOADING) BY _____ FIRM _____
(UNLOADING) BY _____ FIRM _____

DELIVERED BY DRIVER (FULL NAME)

Load #3 Truck # 173 V20-16904 173 954 28V

[redacted] Emergency Contact Telephone Number [redacted]

UNIFORM HAZARDOUS WASTE MANIFEST 216-947-0632	1. Generator's US EPA ID No. OH 098 06 099 94	Manifest Document No. 95006	2. Page 1 of 2	Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Summit National Superfund Site
8186 State Route 224, Deerfield, OH 44411

4. Generator's Phone (216+ 947-0632

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: DART TRUCKING CO., INC. — US EPA ID Number: OHD009865825

C. State Transporter's ID: T926KEB

D. Transporter's Phone: (216) 533-[illegible]

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
LWD, Inc.
Highway 1523, P.O. Box 3327, Calvert City, KY 42029

10. US EPA ID Number: KYD 088438817

G. State Facility's ID

H. Facility's Phone: 502-395-8313

RECEIVED MAY 15 1995

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	Waste No.
a.	X	RQ, Waste Flammable Liquid, N.O.S., 3, UN1993, PG III, (D001)(D007)	003	DM	Approximate 01350	P	D001
b.	X	RQ, Waste Flammable Liquid, N.O.S., 3, UN1993, PG III, (D001)(D006)	017	DM	Approximate 07650	P	D001
c.	X	RQ, Waste Flammable Liquid, N.O.S., 3, UN1993, PG III, (D001)(D018)	005	DM	Approximate 02250	P	D001
d.	X	RQ, Waste Flammable Liquid, N.O.S., 3, UN1993, PG III, (D001)(D006)	007	DM	Approximate 03150	P	D001

J. Additional Descriptions for Materials Listed Above ** CB Required **
Additional Waste No.
11a. D007, D040 11c. D018, D022, D028, D040
11b. D006, D007, D018, D032, D033, D040 11d. D006, D018, D028, D032, D035, D039, D040

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
11a. LWD PC # NG79 Comp # 51 ERG # 26 11c. LWD PC # NG79 Comp # 10A ERG # 26
11b. LWD PC # NG79 Comp # 13A ERG # 26 11d. LWD PC # NG79 Comp # 14A ERG # 26
Phone/Contact: 216-937-0632 (Chris Miller)

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 governmental 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 minimized 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: Gary Gifford — Signature: Gary Gifford — Month 05 Day 05 Year 95

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: David Bernard — Signature: David Bernard — Month 05 Day 05 Year 95

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — 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: John P. Walker — Signature: John P. Walker — Month 05 Day 08 Year 95

[redacted] [redacted]

TRANSPORTER #1

TRUCK #1/3 Load #3

UNIFORM HAZARDOUS WASTE MANIFEST
(Continuation Sheet)

21. Generator's US EPA ID No.: OHD980609994
Manifest Document No.: 95006

22. Page: 2 of 2

Information in the shaded areas is not required by Federal law.

23. Generator's Name
Summit National Superfund Site
8186 State Route 224
Deerfield, OH 44411

L. State Manifest Document Number

M. State Generator's ID

24. Transporter 1 Company Name: DART TRUCKING CO., INC.

25. US EPA ID Number: OHD009865825

N. State Transporter's ID: T926KEOH

O. Transporter's Phone: (216) 533-[illegible]

26. Transporter ____ Company Name

27. US EPA ID Number

P. State Transporter's ID

Q. Transporter's Phone

	HM	28. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	29. Containers No	Type	30. Total Quantity	31. Unit Wt/Vol	R. Waste No.
a.	X	RQ, Waste Flammable Liquid, NO.S., 3, UN1993, PG III, (D001)(D007)	11	DM	Approximate 4,950	P	[illegible]
b.	X	RQ, Waste Flammable Liquid, N.O.S., 3, UN1993, PG III, (D001)(D007)	3	DM	Approximate 1350	P	[illegible]
c.	X	RQ, Waste Flammable Liquid, N.O.S., 3, UN1993, PG III, (D001)(D018)	4	DM	Approximate 1800	P	[illegible]
d.	X	RQ, Waste Flammable Liquid, N.O.S., 3, UN1993, PG III, (D001)(D039)	3	DM	Approximate 1,350	P	D001
e.							
f.							
g.							
h.							
i.							

S. Additional Descriptions for Materials Listed Above ** CD Required **
Additional Waste No.
11a. D007,D018,D028,D039,D040 11c. D018,D022,D028,D040
11b. D007,D008,D028,D035,D040 11d. D039,D040

T. Handling Codes for Wastes Listed Above

32. Special Handling Instructions and Additional Information
11a. LWD PC #NG79 Comp # 20A ERG # 26 11c. LWD PC #NG79 Comp # 17A ERG # 26
11b. LWD PC #NG79 Comp # 33A ERG # 26 11d. LWD PC #NG79 Comp # 22A ERG # 26
Phone/Contact: 216-937-0632 (Chris Miller)

33. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: David Bernard
Signature: David Bernard
Date: Month 05 Day 05 Year 95

34. Transporter ____ Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Date: Month Day Year

35. Discrepancy Indication Space

GENERATOR

TRANSPORTER

FACILITY

TRANSPORTER #1

CUSTOMER COPY

PRESS HARD

☑ Dart Trucking Co. Inc.

Dump Divn. (216) 533-3358 1-800-533-0255
Roll-off Divn. (419) 729-0500 1-800-423-0220
Flatbed Divn. (216) 533-2679 1-800-541-9158

TYPE OF LOAD
- ☐ DUMP
- ☐ FLATBED
- ☐ ROLL-OFFS
- ☐ TANKS
- ☑ VANS
- ☐ PNEUMATIC

LOAD No. V120116902

BILLING ADDRESS
61 Railroad Street
P.O. Box 89
Canfield, OH 44406

DATE: May 5, 1995

DRIVER'S NAME	DRIVER'S NO.	OWNER'S NAME	TRUCK NO.	TRAILER NO.
D. Bernard	954	Dart	173	28V

SHIPPER'S SIGNATURE (IF APPLICABLE)	BILL OF LADING NO.

SHIPPER (Company & Address)
Summit National Superfund Site
Deerfield, OH

CONSIGNEE (Company & Address)
LWD
Calvert City, KY

☐ PREPAID ☐ COLLECT ☐ COMMODITY: ☑ HAZARDOUS ☐ NONHAZARDOUS

QUANTITY	DESCRIPTION	WEIGHT	RATE	AMOUNT
53	DM	GROSS:		
		TARE:		
		NET:		

COMMENTS

ADVANCES
CHECK NO. _____ AMT. _____
CHECK NO. _____ AMT. _____
CHECK NO. _____ AMT. _____
CHECK NO. _____ AMT. _____

RECEIVED ABOVE PROPERTY IN GOOD CONDITION

FULL NAME OF RECEIVING COMPANY	NAME OF RECEIVING CLERK	DATE

SPECIAL CHARGES

- ☐ LIVE LOAD
- ☐ SET
- ☐ PULL
- ☐ TARP CRANK
- ☐ TARP CHARGE
- ☐ LINER
- ☐ HOURLY TIME
- ☐ STOPOFF
- ☐ BLOWER
- ☐ SPOTTING
- ☐ RECONSIGNMENT
- ☐ TRUCK ORDERED NOT USED
- ☐ REDELIVERY
- ☐ EQUIPMENT OPERATOR
- ☐ HOLIDAY
- ☐ OTHER _____

BEG. ODOMETER	END ODOMETER
285522	286289

DELAY VERIFICATION

	LOADING AM	LOADING PM	UNLOADING AM	UNLOADING PM
TIME ARRIVED				
TIME RELEASED				
TOTAL TIME				
FREE TIME				
MEAL TIME				
DETENTION TIME				

AUTHORIZATION OF DELAY
(LOADING) BY _____ FIRM _____
(UNLOADING) BY _____ FIRM _____

DELIVERED BY DRIVER (FULL NAME)

Load #4 Grps 5 76 V20-16905

Emergency Contact Telephone Number 16[redacted]

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: OHD98060999 4
Manifest Document No.: 95008
2. Page 1 of 2
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Summit National Superfund Site
8186 State Route 224, Deerfield, OH 44411
4. Generator's Phone (216) 947-0632

RECEIVED MAY 15 1995

A. State Manifest Document Number
B. State Generator's ID
C. State Transporter's ID T662KB OH
D. Transporter's Phone (216) 533-9841
E. State Transporter's ID
F. Transporter's Phone
G. State Facility's ID
H. Facility's Phone 502-396-8313

5. Transporter 1 Company Name: DART TRUCKING CO., INC.
US EPA ID Number: OHD009865825
7. Transporter 2 Company Name
8. US EPA ID Number

9. Designated Facility Name and Site Address
LWD, Inc.
Highway 1523, P.O. Box 3327, Calvert City, KY 42029
10. US EPA ID Number: KYD 08 84 38 817

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	Waste No.
a.	X	RQ, Waste Flammable Liquid, N.O.S., 3, UN1993, PG III, (D001)(D018)	014	DM	Approximate 06300	P	D001
b.	X	RQ, Waste Flammable LIquid, N.O.S., 3, UN1993, PG III, (D001)(D018)	014	DM	Approximate 06300	P	D001
c.	X	RQ, WAste Flammable LIquid, N.O.S., 3, UN1993, PG III, (D001)(D018)	006	DM	Approximate 02700	P	D001
d.	X	RQ, Waste Flammable Liquid, N.O.S., 3, UN1993, PG III, (D001)(D006)	005	DM	Approximate 02250	P	D001

J. Additional Descriptions for Materials Listed Above ** CD Required **
Additional Waste No.
11a. D018,D022,D028,D039,D040 11c. D018,D022,D028,D040
11b. D018,D022,D035,D039 11d. D006,D007,D018,D032,D033,D040

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
11a. LWD PC # NG77 Comp # 19A ERG # 26 11c. LWD PC # NG79 Comp # 10A ERG # 26
11b. LWD PC # NG77 Comp # 18A ERG # 26 11d. LWD PC # NG79 Comp # 13A ERG # 26
Phone/Contact: 216-937-0632 (Chris Miller)

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 governmental 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 minimized 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: Gary Gifford
Signature: Gary Gifford
Month 05 Day 05 Year 95

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Hommer Ayres
Signature: Hommer Ayres
Month 05 Day 05 Year 95

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
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: John P. Walker
Signature: John P. Walker
Month 05 Day 05 Year 95

GENERATOR

TRANSPORTER

FACILITY

TRANSPORTER #1

UNIFORM HAZARDOUS WASTE MANIFEST
(Continuation Sheet)

21. Generator's US EPA ID No.: OHD98060999 Manifest Document No.: 95007

22. Page: 2 of 2

Information in the shaded areas is not required by Federal law.

23. Generator's Name
Summit National Superfund Site
8186 State Route 224
Deerfield, OH 44411

L. State Manifest Document Number

M. State Generator's ID

24. Transporter 1 Company Name: DART TRUCKING CO, INC.

25. US EPA ID Number: OHD009865825

N. State Transporter's ID: T562KB OH

O. Transporter's Phone: (216) 533-9841

26. Transporter ____ Company Name

27. US EPA ID Number

P. State Transporter's ID

Q. Transporter's Phone

	28. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) HM		29. Containers No	Type	30. Total Quantity	31. Unit Wt/Vol	R. Waste No.
a.	X	RQ, Waste Flammable Liquid, N.O.S., 3, UN1993, PG III, (D001)(D006)	1	DM	Approximate 450	P	D001
b.	X	RQ, Waste Flammable Liquid, N.O.S., 3, UN1993, PG III, (D001)(D007)	1	DM	Approximate 450	P	D001
c.	X	RQ, Waste Flammable Liquid, N.O.S., 3, UN1993, PG III, (D001)(D006)	1	DM	Approximate 450	P	D001
d.	X	RQ, Waste Flammable Liquid, N.O.S., 3, UN1993, PG III, (D001)(D039)	1	DM	Approximate 450	P	D001
e.	X	RQ, Waste Flammable Liquid, N.O.S., 3, UN1993, PG III, (D001)(D0XX)	0	N/A	Approximate 000	P	D001
f.							
g.							
h.							
i.							

S. Additional Descriptions for Materials Listed Above

** CD Required **

Additional Waste No.

11a. D007,D008,D028,D035,D040 11c. D006,D018,D028,D032,D035,D040,D039

11b. D007, D040 11d. D039,D040

T. Handling Codes for Wastes Listed Above

32. Special Handling Instructions and Additional Information

11a. LWD PC # NG79 Comp # 33A ERG # 26 11c. LWD PC # NG79 Comp # 14A ERG # 26

11b. LWD PC # NG79 Comp # 51 ERG # 26 11d. LWD PC # NG79 Comp # 22A ERG # 26

Phone/Contact: 216-937-0632 (Chris Miller)

33. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Hommer Ayres Signature: Hommer Ayres Date: Month 05 Day 05 Year 95

34. Transporter ____ Acknowledgement of Receipt of Materials

Printed/Typed Name Signature Date: Month Day Year

35. Discrepancy Indication Space

GENERATOR

TRANSPORTER

FACILITY

TRANSPORTER #1

Hommer Cypress 985
V20-16905
$ 2.00

TICKET NO. 11 TRUCK ID PC

TIME 10:17 AM DATE 05/09/95

GROSS	10620	LB
TARE	0	LB
NET	10620	LB

TICKET NO. 12 TRUCK ID PC

TIME 10:18 AM DATE 05/09/95

GROSS	41760	LB
TARE	0	LB
NET	41760	LB

31140

TICKET NO. 13 TRUCK ID PC

TIME 10:18 AM DATE 05/09/95

GROSS	75420	LB
TARE	0	LB
NET	75420	LB

33660

L W D , INC.

P.O. BOX 327 — CALVERT CITY, KENTUCKY 42029

Date 5-8-95

Customer: Summit DAKT

Address: Barberton, OH

Type Waste: Liquid _____ Solid _____ Size Load: 43 Gal _____ Cu. Ft. _____

Hauled By: L W D _____ Other — Truck No. _____

Total Weight _____ Pumping _____ Time in: _____

Truck Weight _____ Loading Drums _____ Time out: _____

Net Weight _____ Overpacks _____

WASTE RUN TICKET

46442

Customer's Signature Hommer Ayre

L W D Signature [illegible]

PRESS HARD

☑ Dart Trucking Co. Inc.
Dump Divn. (216) 533-3358 1-800-533-0255
Roll-off Divn. (419) 729-0500 1-800-423-0220
Flatbed Divn. (216) 533-2679 1-800-541-9158

TYPE OF LOAD
☐ DUMP
☐ FLATBED
☐ ROLL-OFFS
☐ TANKS
☑ VANS
☐ PNEUMATIC

LOAD No. V120116 5

BILLING ADDRESS
61 Railroad Street
P.O. Box 89
Canfield, OH 44406

DATE 5-3-95

DRIVER'S NAME	DRIVER'S NO.	OWNER'S NAME	TRUCK NO.	TRAILER NO.
Hommer Ayres	985	Dart Trucking Co Inc	765	5V

SHIPPER'S SIGNATURE (IF APPLICABLE)

BILL OF LADING NO. 95007

SHIPPER (Company & Address)
Sumitt National Superfund Site
8182 State Route 224
Deerfield Oh 44411

CONSIGNEE (Company & Address)
L,W,D Inc.
Highway 1523 P.O. Box 3327
Calvert City KY 42029

☐ PREPAID ☐ COLLECT ☐ COMMODITY: ☐ HAZARDOUS ☐ NONHAZARDOUS

QUANTITY	DESCRIPTION	WEIGHT	RATE	AMOUNT
43	Drums Waste Flammable Liquid	GROSS:		
		TARE:		
		NET:		

COMMENTS

ADVANCES
CHECK NO. _____ AMT. _____
CHECK NO. _____ AMT. _____
CHECK NO. _____ AMT. _____
CHECK NO. _____ AMT. _____

RECEIVED ABOVE PROPERTY IN GOOD CONDITION

FULL NAME OF RECEIVING COMPANY	NAME OF RECEIVING CLERK	DATE
CCD	[illegible]	5-8-95

SPECIAL CHARGES

☐ LIVE LOAD
☐ SET
☐ PULL
☐ TARP CRANK
☐ TARP CHARGE
☐ LINER
☐ HOURLY TIME
☐ STOPOFF
☐ BLOWER
☐ SPOTTING
☐ RECONSIGNMENT
☐ TRUCK ORDERED NOT USED
☐ REDELIVERY
☐ EQUIPMENT OPERATOR
☐ HOLIDAY
☐ OTHER _____

BEG. ODOMETER
END ODOMETER

DELAY VERIFICATION

	LOADING AM	LOADING PM	UNLOADING AM	UNLOADING PM
TIME ARRIVED				
TIME RELEASED				
TOTAL TIME				
FREE TIME				
MEAL TIME				
DETENTION TIME				

AUTHORIZATION OF DELAY (LOADING) BY _____ FIRM _____
(UNLOADING) BY _____ FIRM _____

DELIVERED BY DRIVER (FULL NAME) Hommer Ayres

DATE	STATE	HIGHWAYS USED	MILEAGE	FUEL GALLONS PURCHASE

Load 5, Group #1

DNR

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

V20-17427

178-955-19436

DO NOT WRITE IN THIS SPACE

ATT. ☐ DIS. ☐ REJ. ☐ PR. ☐

1979 as amended and Act 136, PA 1969

Failure to file is punishable under section 299.548 MCL or Section 10 of Act 136, PA 1969

Please print or type

Form Approved. OMB No. 2050-0039 Expires 9-30-9

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: OHD980609994 — Manifest Document No.: 95008

2. Page 1 of 2

Information in the shaded areas is not required by Federal law

3. Generator's Name and Mailing Address
Summit National Superfund Site
8186 State Rt# 224, Deerfield, Ohio 44411

4. Generator's Phone (216) 947-0632

A. State Manifest Document Number: MI 2335492

B. State Generator's ID: Same

5. Transporter 1 Company Name: DART TRUCKING CO., INC.

6. US EPA ID Number: OHD009865825

C. State Transporter's ID: 7676KF OH

D. Transporter's Phone: (216)533-9841

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
~~[illegible]~~ Ennotech
49350 N. Service Drive
Belleville, MI 48111

10. US EPA ID Number: MID 000724831

G. State Facility's ID:

H. Facility's Phone: (313) 697-7830

	HM	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER).	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.	X	RQ, Hazardous Waste Solid, N.O.S., 9, NA3077 PG III, (D006)(~~[illegible]~~) D005, D006, D007, D008, D017, D030	010	DM	Approximate 04500	P	D006	H
b.	X	RQ, Hazardous Waste Solid, N.O.S., 9, NA3077 D005, D006, D007, D008, D017, D030 PG III, (D006)(~~[illegible]~~)	013	DM	Approximate 05850	P	D006	H
c.	X	RQ, Hazardous Waste Solid, N.O.S., 9, NA3077, D005, D006, D007, D008, D030, D017 PG III, (D007)(D008)	002	DM	Approximate 00900	P	D007	H
d.	X	RQ, Hazardous Waste Solid, N.O.S., 9, NA3077, D005, D006, D007, D008, D017, D030 PG III, (D005)(D006)	012	DM	Approximate 05400	P	D005	H

J. Additional Descriptions for Materials Listed Above

11a. Comp. #1

11b. Comp. #1, 15A

11c. D008, Comp. 53

11d. D006, D007, D008, Comp. #22, Comp. # D242

K. Handling Codes for Wastes Listed Above: a/ x / b/ x / c/ x / d/ x /

160914, 151917

15. Special Handling Instructions and Additional Information

EQ APPROVAL # 050495 MZ

Phone/Contact : 216-947-0632, Chris Miller Emergency Response Guide # 31

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: Gary Gifford — Signature: Gary Gifford — Date: Month 05 Day 12 Year 95

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Dale Schaef — Signature: Dale Schaef 955 — Date: Month 05 Day 12 Year 95

18. Transporter 2 Acknowledgement or 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: EDWARD MULLE — Signature: [signature] — Date: Month 05 Day 15 Year 95

GENERATOR

TRANSPORTER

FACILITY

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN CENTER AT 1-800-424-8802 24 HOURS PER DAY. CALL AT 1-800-292-4708 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE

EPA Form 8700-22 (Rev. 9/88)

RECEIVED MAY 23 1995

TRANSPORTER COPY

PR 5110 Rev. 9/

CUSTOMER COPY

ENVOTECH
SERVICES INC.
1349 HURON
Ypsilanti, Michigan 48197

Office: (313)485-6464
I-94 Landfill (313)697-7830

SURCHARGE APPLIED
JMC 5/15/95

WRITTEN BY: DATE:

ACCT. NAME: SEVENSON ENVIRONMENTAL SERVICE

ACCOUNT NUMBER: 1084 SHORT NAME: SEVENS

CODE: D003 - D - QUANTITY: 10

Approval # 50495-MI

EPA# [illegible]

REMARKS:
SUMMIT NATIONAL FRP SITE
Manifest # MI2335492
Hauler DART-LIAM-MP
Time In 12:07 PM Time Out 3:31 PM

I understand and acknowledge that entry is permitted only at my own risk. I, both personally and on behalf of my employer release Wayne Disposal, Inc. and/or Michigan Disposal, Inc. from any and all liability not caused by its gross negligence or willful misconduct.

Ticket # 160914

Dale Schaefer 955
DELIVERED BY

NO SALVAGING ON PREMISES

CUSTOMER COPY

E N V O T E C H
S E R V I C E S I N C .
1349 HURON
Ypsilanti, Michigan 48197

Office: (313)485-6464
I-94 Landfill (313)697-7830

SURCHARGE APPLIED
JMC 5/15/95

WRITTEN BY: DATE:

SEVENSON ENVIRONMENTAL SERVICE

ACCT. NAME: I084 SEVENS

ACCOUNT NUMBER: D005 - D - SHORT NAME: 13

Approval # 50495-MZ

CODE: QUANTITY:

EPA# OHD980609994

REMARKS: NATIONAL PRP SITE
Manifest # MI2335492
Hauler DART-11AM-MP
Time In 12:07 PM Time Out 3:31 PM

I understand and acknowledge that entry is permitted only at my own risk. I, both personally and on behalf of my employer release Wayne Disposal, Inc. and/or Michigan Disposal, Inc. from any and all liability not caused by its gross negligence or willful misconduct.

Ticket # 160915

Dale Schaef 955

DELIVERED BY

NO SALVAGING ON PREMISES

E N V O T E C H CUSTOMER COPY
S E R V I C E S I N C .
1349 HURON
Ypsilanti, Michigan 48197

Office: (313)485-6464
I-94 Landfill (313)697-7830

SURCHARGE APPLIED
JMC 5/15/95

WRITTEN BY: DATE:

SEVENSON ENVIRONMENTAL SERVICE
ACCT. NAME: 1084 SEVENS

ACCOUNT NUMBER: D005 - D.-. SHORT NAME: 2

Approval # 50495-MZ
CODE: QUANTITY:

EPA# OHD980609994

REMARKS: NATIONAL PRP SITE
Manifest # MI2335492
Hauler DART-LIAM-MP
Time In 12:08 PM Time Out 3:31 PM

I understand and acknowledge that entry is permitted only at my own risk. I, both personally and on behalf of my employer release Wayne Disposal, Inc. and/or Michigan Disposal, Inc. from any and all liability not caused by its gross negligence or willful misconduct.

Ticket # 16098

Dale Schaef 955
DELIVERED BY

NO SALVAGING ON PREMISES

ENVOTECH CUSTOMER COPY
SERVICES INC.
1349 HURON
Ypsilanti, Michigan 48197

Office: (313)485-6464
I-94 Landfill (313)697-7830

SURCHARGE APPLIED
JMC 5/15/95

WRITTEN BY: DATE:

SEVENSON ENVIRONMENTAL SERVICE

ACCT. NAME: 1084 SEVENS

ACCOUNT NUMBER: 1085 D -- SHORT NAME: 12

Approval # 50495-MZ

CODE: QUANTITY:

EPA# OHD980609994

REMARKS: NATIONAL PRP SITE
Manifest # MI2335492
Hauler DART-LIAM-MP
Time In 12:05 PM Time Out 3:31 PM

I understand and acknowledge that entry is permitted only at my own risk. I, both personally and on behalf of my employer release Wayne Disposal, Inc. and/or Michigan Disposal, Inc. from any and all liability not caused by its gross negligence or willful misconduct.

Ticket # 160917

Dale Schaefer
DELIVERED BY

NO SALVAGING ON PREMISES

DNR
MICHIGAN DEPARTMENT OF NATURAL RESOURCES

DO NOT WRITE IN THIS SPACE
ATT. ☐ DIS. ☐ REJ. ☐ PR. ☐

1979 as amended and Act 136, PA 1969

Failure to file is punishable under section 299.548 MCL or Section 10 of Act 136, PA 1969

Please print or type

Form Approved. OMB No. 2050-0039 Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: OHD980609994 — Manifest Document No.: 950082
2. Page 2 of 2

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Summit NATional Superfund Site
8186 State Rt. 224, Deerfield, Ohio 44411

A. State Manifest Document Number: MI 2335495

B. State Generator's ID: Same

4. Generator's Phone (216) 947-0632

5. Transporter 1 Company Name: DART TRUCKING CO., INC.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID: T676KF-OH
D. Transporter's Phone: (216)533-9841

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
~~EQ Company~~ ENVOTEC
49350 W. Service Drive
Belleville, MI, 48111

10. US EPA ID Number: MID ~~040906633~~ 000724531

G. State Facility's ID:
H. Facility's Phone: (313) 697-7830

	HM	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER).	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.	X	RQ, Hazardous Waste Solid, N.O.S., 9, NA3077 D018, D028, D030, D032, D040 PG III, (D028)(D032)	004	DM	Approximate 01800	P	D028	H
b.	X	RQ, Hazardous Waste Solid, N.O.S., 9, NA3077, D018 D028 D030 D032 D040 PG III, (D018)(D040)	004	DM	Approximate 01800	P	D018	H
c.	X	RQ, Hazardous Waste Solid, N.O.S., 9, NA3077, D018 D028 D030 D032 D040 PG III, (D032)	009	DM	Approximate 04050	P	D032	H
d.								

J. Additional Descriptions for Materials Listed Above
11a. D032, D040, Comp. #19 — 11c. Comp. ~~#22~~ 2 CIM
11b. D040, Comp. # 25 — 11d. 160918, 19, 20

K. Handling Codes for Wastes Listed Above
a/ X /
b/ X /
c/ X /
d/ X /

15. Special Handling Instructions and Additional Information
EQ APPROVAL # 050875 ME
Phone/Contact : (216)947-0632, Chris Miller — Emergency Response Guide # 31

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: Gary Gifford — Signature: Gary Gifford — Date: Month Day Year: 05 12 95

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Dale Schaef — Signature: Dale Schaef 955 — Date: Month Day Year: 05 12 95

18. Transporter 2 Acknowledgement or 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: EDWARD MULLER — Signature: [signature] — Date: Month Day Year: 05 15 95

GENERATOR — TRANSPORTER — FACILITY

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev. 9/88)

PR 5110 Rev. 9/9

TRANSPORTER COPY

CUSTOMER COPY

E N V O T E C H
S E R V I C E S I N C .
1349 HURON
Ypsilanti, Michigan 48197

Office: (313)485-6464
I-94 Landfill (313)697-7830

SURCHARGE APPLIED
JMC 5/15/95

WRITTEN BY: DATE:

SEVENSON ENVIRONMENTAL SERVICE

ACCT. NAME: 1084 SEVENS

ACCOUNT NUMBER: 0018 D - SHORT NAME: 4

Approval # 50695-ME

CODE: QUANTITY:

EPA# OHD980609994

REMARKS: NATIONAL FRP SITE
Manifest # MI2335495
Hauler DART-LIAM-MF
Time In 12:04 PM Time Out 3:32 PM

I understand and acknowledge that entry is permitted only at my own risk. I, both personally and on behalf of my employer release Wayne Disposal, Inc. and/or Michigan Disposal, Inc. from any and all liability not caused by its gross negligence or willful misconduct.

Ticket # 160918

Dale Schaef 955
DELIVERED BY

NO SALVAGING ON PREMISES

E N V O T E C H CUSTOMER COPY
S E R V I C E S I N C .
1349 HURON
Ypsilanti, Michigan 48197

Office: (313)485-6464
I-94 Landfill (313)697-7830

SURCHARGE APPLIED
JMC 5/15/95

WRITTEN BY: DATE:
SEVENSON ENVIRONMENTAL SERVICE

ACCT. NAME: 1084 SEVENS

ACCOUNT NUMBER: D - SHORT NAME: 9
Approval # 50895-ME

CODE: QUANTITY:
EPA# OHD980609994

REMARKS: NATIONAL PRP SITE
Manifest # MI2335495
Hauler DART-11AM-MP
Time In 12:05 PM Time Out 3:32 PM

I understand and acknowledge that entry is permitted only at my own risk. I, both personally and on behalf of my employer release Wayne Disposal, Inc. and/or Michigan Disposal, Inc. from any and all liability not caused by its gross negligence or willful misconduct.

Ticket # 160919

Dale Schaaf 955
DELIVERED BY

NO SALVAGING ON PREMISES

E N V O T E C H CUSTOMER COPY
S E R V I C E S I N C .
1349 HURON
Ypsilanti, Michigan 48197

Office: (313)485-6464
I-94 Landfill (313)697-7830

SURCHARGE APPLIED
JMC 5/15/95

WRITTEN BY: DATE:

SEVENSON ENVIRONMENTAL SERVICE

ACCT. NAME: 1084 SEVENS

ACCOUNT NUMBER: D - SHORT NAME: 4

Approval # 50895-ME

CODE: QUANTITY:

EPA# OHD980609994

REMARKS: NATIONAL PRP SITE
Manifest # MI2535495
Hauler DART-LAM-MP
Time In 12:05 PM Time Out 2:33 PM

I understand and acknowledge that entry is permitted only at my own risk. I, both personally and on behalf of my employer, release Envotech Disposal, Inc. and/or Michigan Disposal, Inc. from any and all liability for caused by its gross negligence or willful misconduct.

Ticket # 160920

CUSTOMER COPY

PRESS HARD

☐ Dart Trucking Co. Inc.
Dump Divn. (216) 533-3358 1-800-533-0255
Roll-off Divn. (419) 729-0500 1-800-423-0220
Flatbed Divn. (216) 533-2679 1-800-541-9158

TYPE OF LOAD
☐ DUMP
☐ FLATBED
☐ ROLL-OFFS
☐ TANKS
☑ VANS
☐ PNEUMATIC

LOAD No. V12011 7422

BILLING ADDRESS
61 Railroad Street
P.O. Box 89
Canfield, OH 44406

DATE 5-12-95

DRIVER'S NAME	DRIVER'S NO.	OWNER'S NAME	TRUCK NO.	TRAILER NO.
Dale Schaal	955	Dart	170	14936

SHIPPER'S SIGNATURE (IF APPLICABLE)

BILL OF LADING NO. 95008

SHIPPER (Company & Address)
Summit National Superfund Site
Deerfield, Ohio

CONSIGNEE (Company & Address)
EQ Company
Belleville, Mich

☐ PREPAID ☐ COLLECT ☐ COMMODITY: ☑ HAZARDOUS ☐ NONHAZARDOUS

QUANTITY	DESCRIPTION	WEIGHT	RATE	AMOUNT
		GROSS:		
		TARE:		
54 DM	RQ hazardous waste solid	NET:		

COMMENTS

ADVANCES
CHECK NO. _____ AMT. _____
CHECK NO. _____ AMT. _____
CHECK NO. _____ AMT. _____
CHECK NO. _____ AMT. _____

RECEIVED ABOVE PROPERTY IN GOOD CONDITION

FULL NAME OF RECEIVING COMPANY | NAME OF RECEIVING CLERK | DATE

SPECIAL CHARGES

☐ LIVE LOAD
☐ SET
☐ PULL
☐ TARP CRANK
☐ TARP CHARGE
☐ LINER
☐ HOURLY TIME
☐ STOPOFF
☐ BLOWER
☐ SPOTTING
☐ RECONSIGNMENT
☐ TRUCK ORDERED NOT USED
☐ REDELIVERY
☐ EQUIPMENT OPERATOR
☐ HOLIDAY
☐ OTHER

BEG. ODOMETER 32 11 52
END ODOMETER 32 75 39

DELAY VERIFICATION

	LOADING AM	LOADING PM	UNLOADING AM	UNLOADING PM
TIME ARRIVED			10:45	
TIME RELEASED				3:45
TOTAL TIME				
FREE TIME				
MEAL TIME				
DETENTION TIME				

AUTHORIZATION OF DELAY (LOADING) BY _____ FIRM _____
(UNLOADING) BY _____ FIRM _____

DELIVERED BY DRIVER (FULL NAME) Dale Schaal

Load # 6
Truck # 5V
Page 1 of 3

DNR

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

V20-17648
175 921 5V
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

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. / Manifest Document No.: OHD980609994 95 00 4
2. Page 1 of 3
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Summit National Superfund Site
8186 State Rt. 224, Deerfield, Ohio 44411

4. Generator's Phone (216) 947-0632

A. State Manifest Document Number: MI 4180403
B. State Generator's ID: Same

5. Transporter 1 Company Name: ~~PAME~~ Cay ~~EXP~~ TRUCKING CO., INC.
US EPA ID Number: OHD009865825
C. State Transporter's ID: T662KB OH
D. Transporter's Phone: (216)533-9841

RECEIVED MAY 22 1995

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
Michigan Disposal
49350 N. I-94, Service Drive
Belleville, MI 48111
10. US EPA ID Number: MID000072483 1
G. State Facility's ID
H. Facility's Phone: (313) 697-7830

	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.
a.	RQ, Hazardous Waste Solid, N.O.S., 9, NA3077, PG III, (D028)(D032)	X	003	DM	Approximate 01350	P	D028
b.	RQ, Hazardous Waste Solid, N.O.S., 9, NA3077, PG III, (D018)(D040)	X	005	DM	Approximate 02250	P	D018
c.	RQ, Hazardous Waste Solid, N.O.S., 9, NA3077, PG III, ~~(D005)~~ D005 (D008)	X	007	DM	Approximate 01500	P	D005
d.	RQ, Hazardous Waste Solid, N.O.S., 9, NA3077, PG III, (D006)(D007)	X	002	DM	Approximate 00900	P	D006

J. Additional Descriptions for Materials Listed Above
11a. (Comp. 19) D028, D032, D040 EQ # 050895ME
11b. (Comp. 25) D018, D040 EQ # 050895ME
11c. D005, D008, D039, D040, 001D (Comp. 12A) EQ # 050895MF
11d. (Comp. 11) D006, D007, D008, D032, D040 EQ # 050895MF

K. Handling Codes for Wastes Listed Above
a/x / b/x / c/x / d/x /

15. Special Handling Instructions and Additional Information
Phone/Contact (216) 947-0632, Chris Miller EQ # 050895 ME EQ # 050895 MF Emergency Response Guide # 31

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. X

Printed/Typed Name: Gary Gifford
Signature: Gary Gifford
Date: Month 05 Day 17 Year 95

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: JAMES E SCHILLER
Signature: James E Schiller
Date: Month 05 Day 17 Year 95

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: Edward Mollc
Signature:
Date: Month 05 Day 18 Year

GENERATOR
TRANSPORTER
FACILITY

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN M... N AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev. 9/88)

TRANSPORTER COPY

PR 5 Rev.

CUSTOMER COPY

ENVOTECH
SERVICES INC.
1349 HURON
Ypsilanti, Michigan 48197

Office: (313)485-6464
I-94 Landfill (313)697-7830

SURCHARGE APPLIED

WRITTEN BY: JMC DATE: 5/18/95

ACCT. NAME: SEVENSON ENVIRONMENTAL SERVICE

ACCOUNT NUMBER: 1084 SHORT NAME: SEVENS

CODE: D018 - D - QUANTITY: 3

Approval # 50895-ME

EPA# OHD980609994

REMARKS:
SUMMIT NATIONAL PRP SITE
Manifest # MI4180403
Hauler DART-11AM
Time In 10:49 AM Time Out 2:35 PM

I understand and acknowledge that entry is permitted only at my own risk. I, both personally and on behalf of my employer release Wayne Disposal, Inc. and/or Michigan Disposal, Inc. from any and all liability not caused by its gross negligence or willful misconduct.

Ticket # 161085 James E. Schuller
DELIVERED BY

NO SALVAGING ON PREMISES

CUSTOMER COPY

ENVO. ECH
SERVICES INC.
1349 HURON
Ypsilanti, Michigan 48197

Office: (313)485-6464
I-94 Landfill (313)697-7830

SURCHARGE APPLIED

WRITTEN BY: JMC DATE: 5/18/95

ACCT. NAME: SEVENSON ENVIRONMENTAL SERVICE

ACCOUNT NUMBER: 1084 SHORT NAME: SEVENS

CODE: D018 - D - QUANTITY: 5

Approval # 50895-ME
EPA# OHD980609994

REMARKS: NATIONAL FRP SITE
Manifest # MI4180403
Hauler DART-11AM
Time In 10:50 AM Time Out 2:35 PM

I understand and acknowledge that entry is permitted only at my own risk. I, both personally and on behalf of my employer release Wayne Disposal, Inc. and/or Michigan Disposal, Inc. from any and all liability not caused by its gross negligence or willful misconduct.

Ticket # 161086

DELIVERED BY

NO SALVAGING ON PREMISES

CUSTOMER COPY

ENVOTECH
SERVICES INC.
1349 HURON
Ypsilanti, Michigan 48197

Office: (313)485-6464
I-94 Landfill (313)697-7830

SURCHARGE APPLIED

WRITTEN BY: JMC DATE: 5/18/95

ACCT. NAME: SEVENSON ENVIRONMENTAL SERVICE

ACCOUNT NUMBER: 1084 SHORT NAME: SEVENS

CODE: D018 - D - QUANTITY: 7

Approval # 50895-MF

EPA# OHD980609994

REMARKS: NATIONAL PRP SITE
Manifest # MI4180403
Hauler DART-11AM
Time In 10:50 AM Time Out 2:38 PM

I understand and acknowledge that entry is permitted only at my own risk. I, both personally and on behalf of my employer release Wayne Disposal, Inc. and/or Michigan Disposal, Inc. from any and all liability not caused by its gross negligence or willful misconduct.

Ticket # 161087

DELIVERED BY

NO SALVAGING ON PREMISES

CUSTOMER COPY

ENVOTECH
SERVICES INC.
1349 HURON
Ypsilanti, Michigan 48197

Office: (313)485-6464
I-94 Landfill (313)697-7830

SURCHARGE APPLIED

WRITTEN BY: JMC DATE: 5/18/95

ACCT. NAME: SEVENSON ENVIRONMENTAL SERVICE

ACCOUNT NUMBER: 1084 SHORT NAME: SEVENS

CODE: D018 - D - QUANTITY: 2

Approval # 50895-MF

EPA# OHD980609994

REMARKS: NATIONAL PRP SITE
Manifest # MI4180403
Hauler DART-11AM
Time In 10:51 AM Time Out 2:38 PM

I understand and acknowledge that entry is permitted only at my own risk. I, both personally and on behalf of my employer release Wayne Disposal, Inc. and/or Michigan Disposal, Inc. from any and all liability not caused by its gross negligence or willful misconduct.

Ticket # 161088

DELIVERED BY

NO SALVAGING ON PREMISES

Load # 6
Truck 5V
Pg 2of3 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-

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. OHD980609994 — Manifest Document No. 95009
2. Page 1 of 3 — Information in the sh area is not required l dera law.

3. Generator's Name and Mailing Address
Summit National Superfund Site
8186 State Rt. 224, Deerfield, Ohio 44411

A. State Manifest Document Number: MI 4180404

4. Generator's Phone (216) 947-0632

B. State Generator's ID: Same

5. Transporter 1 Company Name: DART TRUCKING CO., INC.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID: T662KB OH
D. Transporter's Phone: (216)533-984

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
Michigan Disposal
49350 N. I-94, Service Drive
Belleville, MI 48111

10. US EPA ID Number: MID000724831

G. State Facility's ID:
H. Facility's Phone: (313) 697-7830

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.
a. X	RQ, Hazardous Waste Solid, N.O.S., 9, NA3077 PG III, (D005)(D007)	005	DM	Approximate 02250	P	D005
b. X	RQ, Hazardous Waste Solid, N.O.S., 9, NA3077, PG III, (D006)(D007)	007	DM	Approximate 03150	P	D006
c. X	RQ, Hazardous Waste Solid, N.O.S., 9, NA3077, PG III, (D009)(D032)	006	DM	Approximate 02700	P	D009
d. X	RQ, Hazardous Waste Solid, ~~N~~ OPTN O.S., 9, NA3077, PG III, (D007)(D008)	008	DM	Approximate 03600	P	D007

J. Additional Descriptions for Materials Listed Above
11a. (Comp. 23) D005,D007,D008,D040,003D EQ # 050895 MF
11b. (Comp. 1A) D006,D007,D009, D028,D032,D040 EQ# 050895MF
11c. (Comp. 18) D009,D032,D040 EQ # 050895 MF
11d. (Comp. 41) D009, D032,D040 EQ # 050895 MF

K. Handling Codes for Wastes Listed Above: a/X / b/X / c/X / d/X /

161,089,90,91,92

15. Special Handling Instructions and Additional Information EQ # 050895 MF
Phone/Contact (216) 947-0632, Chris Miller Emergency Response Guide # 31

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 determi to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes 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 wa generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Gary Gifford — Signature: Gary Gifford — Date: Month Day Y 05 17 9

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: JAMES E SCHILLER — Signature: James E Schiller — Date: Month Day Y 05 17 9

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: — Signature: — Date: Month Day Y

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: EDWARD Mulle — Signature: [signature] — Date: Month Day Y 05 18 9

GENERATOR — TRANSPORTER — FACILITY

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev. 9/88)

PR Rev

TRANSPORTER COPY

CUSTOMER COPY

E N V O T E C H
S E R V I C E S I N C .
1349 HURON
Ypsilanti, Michigan 48197

Office: (313)485-6464
I-94 Landfill (313)697-7830

SURCHARGE APPLIED

WRITTEN BY: JMC DATE: 5/18/95

ACCT. NAME: SEVENSON ENVIRONMENTAL SERVICE

ACCOUNT NUMBER: 1084 - SHORT NAME: SEVENS

CODE: D018 - D - QUANTITY: 5

Approval # 50895-MF

EPA# OHD980609994

REMARKS: SUMMIT NATIONAL PRP SITE
Manifest # MI4180404
Hauler DART-11AM
Time In 10:51 AM Time Out 2:38 PM

I understand and acknowledge that entry is permitted only at my own risk. I, both personally and on behalf of my employer release Wayne Disposal, Inc. and/or Michigan Disposal, Inc. from any and all liability not caused by its gross negligence or willful misconduct.

Ticket # 161089

DELIVERED BY

NO SALVAGING ON PREMISES

CUSTOMER COPY

ENVOTECH
SERVICES INC.
1349 HURON
Ypsilanti, Michigan 48197

Office: (313)485-6464
I-94 Landfill (313)697-7830

SURCHARGE APPLIED

WRITTEN BY: JMC DATE: 5/18/95

ACCT. NAME: SEVENSON ENVIRONMENTAL SERVICE

ACCOUNT NUMBER: 1084 SHORT NAME: SEVENS

CODE: D018 - D - QUANTITY: 7

Approval # 50895-MF

EPA# OHD980609994

REMARKS:
SUMMIT NATIONAL PRP SITE
Manifest # MI4180404
Hauler DART-11AM
Time In 10:52 AM Time Out 2:39 PM

I understand and acknowledge that entry is permitted only at my own risk. I, both personally and on behalf of my employer release Wayne Disposal, Inc. and/or Michigan Disposal, Inc. from any and all liability not caused by its gross negligence or willful misconduct.

Ticket # 161090

DELIVERED BY

NO SALVAGING ON PREMISES

CUSTOMER COPY

ENVOTECH
SERVICES INC.
1349 HURON
Ypsilanti, Michigan 48197

Office: (313)485-6464
I-94 Landfill (313)697-7830

SURCHARGE APPLIED

WRITTEN BY: JMC DATE: 5/18/95

ACCT. NAME: SEVENSON ENVIRONMENTAL SERVICE

ACCOUNT NUMBER: 1084 SHORT NAME: SEVENS

CODE: D018 - D - QUANTITY: 6

Approval # 50895-MF

EPA# OHD980609994

REMARKS: SUMMIT NATIONAL PRP SITE
Manifest # MI4180404
Hauler DART-11AM
Time In 10:53 AM Time Out 2:39 PM

I understand and acknowledge that entry is permitted only at my own risk. I, both personally and on behalf of my employer release Wayne Disposal, Inc. and/or Michigan Disposal, Inc. from any and all liability not caused by its gross negligence or willful misconduct.

Ticket # 161071 James E Schulke
DELIVERED BY

NO SALVAGING ON PREMISES

CUSTOMER COPY

E N V O T E C H
S E R V I C E S I N C .
1349 HURON
Ypsilanti, Michigan 48197

Office: (313)485-6464
I-94 Landfill (313)697-7830

SURCHARGE APPLIED

WRITTEN BY: JMC DATE: 5/18/95

ACCT. NAME: SEVENSON ENVIRONMENTAL SERVICE

ACCOUNT NUMBER: 1084 SHORT NAME: SEVENS

CODE: D018 - D - QUANTITY: 8

Approval # 50895-MF

EPA# OHD980609994

REMARKS:
SUMMIT NATIONAL PRP SITE
Manifest # MI4180404
Hauler DART-11AM
Time In 10:53 AM Time Out 2:39 PM

I understand and acknowledge that entry is permitted only at my own risk. I, both personally and on behalf of my employer release Wayne Disposal, Inc. and/or Michigan Disposal, Inc. from any and all liability not caused by its gross negligence or willful misconduct.

Ticket # 161092

DELIVERED BY

NO SALVAGING ON PREMISES

Load #6
Truck 5V
Pg. 3of3

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 9-3

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: OHD980609994 — Manifest Document No.: 95009
2. Page 1 of 3

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Summit National Superfund Site
8186 State ~~Rt~~ Rt 224, Deerfield, Ohio 44411

4. Generator's Phone (216) 947-0632

A. State Manifest Document Number: MI 4180405

B. State Generator's ID: Same

5. Transporter 1 Company Name: DART TRUCKING CO., INC.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID: T662KB OH

D. Transporter's Phone: (216)533-9841

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
Michigan Disposal
49350 N. I-94, Service Drive
Belleville, Michigan 48111

10. US EPA ID Number: MID000724825

G. State Facility's ID:

H. Facility's Phone: (313) 697-7830

	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.
a.	X	RQ, Hazardous Waste Solid, N.O.S., 9, NA3077, PG ~~IIII~~ III (D006)(D007)	005	DM	Approximate 02250	P	D006
b.	X	RQ, Hazardous Waste Solid, N.O.S., 9, NA3077, PG III, (D006)(D032)	003	DM	Approximate 01350	P	D006
c.							
d.							

J. Additional Descriptions for Materials Listed Above
11a. (Comp. 24) D006,D007,D008,D009,D032
EQ # 050895 MF
11b. (Comp. 10) D006, D032
EQ # 050895 MF

161093,94

K. Handling Codes for Wastes Listed Above
a/ x /
b/ x /
c/ /
d/ /

15. Special Handling Instructions and Additional Information
Phone/Contact (216) 947-0632 Chris Miller EQ # 050895 MF Emergency Response Guide # 31

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 determin to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes t 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 wa generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Gary Gifford — Signature: [signature] — Date: Month Day Y 05 17 9

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: JAMES F SCHILLER — Signature: James E Schiller — Date: Month Day Y 05 17 9

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: — Signature: — Date: Month Day Y

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: Anthony Mulla — Signature: [signature] — Date: Month Day Y 05 18 9

GENERATOR — TRANSPORTER — FACILITY

ALL ...S MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN M... N AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev. 9/88) PR 5 Rev.

TRANSPORTER COPY

CUSTOMER COPY

ENVOTECH
SERVICES INC.
1349 HURON
Ypsilanti, Michigan 48197

Office: (313)485-6464
I-94 Landfill (313)697-7830

SURCHARGE APPLIED

WRITTEN BY: JMC DATE: 5/18/95

ACCT. NAME: SEVENSON ENVIRONMENTAL SERVICE

ACCOUNT NUMBER: 1084 SHORT NAME: SEVENS

CODE: D018 - D - QUANTITY: 5

Approval # 50895-MF

EPA# OHD980609994

REMARKS: SUMMIT NATIONAL PRP SITE
Manifest # MI4180405
Hauler DART-11AM
Time In 10:53 AM Time Out 2:39 PM

I understand and acknowledge that entry is permitted only at my own risk. I, both personally and on behalf of my employer release Wayne Disposal, Inc. and/or Michigan Disposal, Inc. from any and all liability not caused by its gross negligence or willful misconduct.

Ticket # 161093

DELIVERED BY

NO SALVAGING ON PREMISES

CUSTOMER COPY

ENVOTECH
SERVICES INC.
1349 HURON
Ypsilanti, Michigan 48197

Office: (313)485-6464
I-94 Landfill (313)697-7830

SURCHARGE APPLIED

WRITTEN BY: JMC DATE: 5/18/95

ACCT. NAME: SEVENSON ENVIRONMENTAL SERVICE

ACCOUNT NUMBER: 1084 SHORT NAME: SEVENS

CODE: D018 - D -- - QUANTITY: 3

Approval # 50895-MF

EPA# OHD980609994

REMARKS:
SUMMIT NATIONAL PRP SITE
Manifest # MI4180405
Hauler DART-11AM
Time In 10:54 AM Time Out 2:40 PM

I understand and acknowledge that entry is permitted only at my own risk. I, both personally and on behalf of my employer release Wayne Disposal, Inc. and/or Michigan Disposal, Inc. from any and all liability not caused by its gross negligence or willful misconduct.

Ticket # 161094

DELIVERED BY

NO SALVAGING ON PREMISES

BILLING DEPT. 2
PRESS HARD

☑ Dart Trucking Co. Inc.
Dump Divn. (216) 533-3358 1-800-533-0255
Roll-off Divn. (419) 729-0500 1-800-423-0220
Flatbed Divn. (216) 533-2679 1-800-541-9158

TYPE OF LOAD
☐ DUMP
☐ FLATBED
☐ ROLL-OFFS
☐ TANKS
☑ VANS
☐ PNEUMATIC

LOAD No. V120117668

BILLING ADDRESS
61 Railroad Street
P.O. Box 89
Canfield, OH 44406

DATE 05-17-95

DRIVER'S NAME	DRIVER'S NO.	OWNER'S NAME	TRUCK NO.	TRAILER NO.
JAMES E. SCHILLER	921	DART TRUCKING CO INC	175	5V

SHIPPER'S SIGNATURE (IF APPLICABLE):

BILL OF LADING NO. MI 4180403

SHIPPER (Company & Address)
SUMMIT NATIONAL SUPERFUND SITE
9186 STATE RT 224
DEERFIELD, OHIO 44411

CONSIGNEE (Company & Address)
MICHIGAN DISPOSAL
49350 N. I-94 SERVICE DRIVE
BELLEVILLE MI 48111

☐ PREPAID ☐ COLLECT ☐ COMMODITY: ☐ HAZARDOUS ☐ NONHAZARDOUS

QUANTITY	DESCRIPTION	WEIGHT	RATE	AMOUNT
51 Drums	SEE MANIFESTS #'S MI 4180403 +	GROSS:		
	04 + 05	TARE:		
		NET:		

COMMENTS
1 PICK UP
1 DELIVERY

ADVANCES
CHECK NO. _____ AMT. _____
CHECK NO. _____ AMT. _____
CHECK NO. _____ AMT. _____
CHECK NO. _____ AMT. _____

RECEIVED ABOVE PROPERTY IN GOOD CONDITION

FULL NAME OF RECEIVING COMPANY: MICHIGAN DISPOSAL
NAME OF RECEIVING CLERK:
DATE: 05-18-95

SPECIAL CHARGES

☐ LIVE LOAD
☐ SET
☐ PULL
☐ TARP CRANK
☐ TARP CHARGE
☐ LINER
☐ HOURLY TIME
☐ STOPOFF
☐ BLOWER
☐ SPOTTING
☐ RECONSIGNMENT
☐ TRUCK ORDERED NOT USED
☐ REDELIVERY
☐ EQUIPMENT OPERATOR
☐ HOLIDAY
☐ OTHER

BEG. ODOMETER: 283590 / 283625
END ODOMETER: 283625 / 283972

DELAY VERIFICATION

	LOADING AM	LOADING PM	UNLOADING AM	UNLOADING PM
TIME ARRIVED			10:45	
TIME RELEASED				3:00
TOTAL TIME				
FREE TIME				
MEAL TIME				
DETENTION TIME				

AUTHORIZATION OF DELAY
(LOADING) BY _____ FIRM _____
(UNLOADING) BY _____ FIRM _____

DELIVERED BY (FULL NAME) DRIVER: James E. Schiller

Load #7
Grp 3 6V

DNR

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

V2U-1'16'15
167-943-6V

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 9-3

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. OHD980699495 Manifest Document No. 10

2. Page 1 of 2

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Summit National Superfund Site
8186 State Rt. 224, Deerfield, Ohio 44411

4. Generator's Phone (216) 947-0632

A. State Manifest Document Number MI 4180406

B. State Generator's ID Same T663HB

5. Transporter 1 Company Name: DART TRUCKING CO., INC.

6. US EPA ID Number: OHD009865825

C. State Transporter's ID 7926MF OH

D. Transporter's Phone (216)533-9841

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
Michigan Disposal
49350 N. I-94, Service Drive
Belleville MI, 48111

10. US EPA ID Number: MID000724831

G. State Facility's ID

H. Facility's Phone (313) 697-7830

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.
a. RQ, Hazardous Waste Solid, N.O.S., 9, NA3077, PG III, (D006)(D007)	X	005	DM	Approximate 02250 ~~02250~~	P	D006
b. RQ, Hazardous Waste Solid, N.O.S., 9, NA3077, PG III, (D005)(D007)	X	005	DM	Approximate 02250	P	D005
c. RQ, Hazardous Waste Solid, N.O.S., 9, NA3077, PG III, (D006)(D007)	X	110	DM	~~Approximate~~ Approximate 04500	P	D006
d. RQ, Hazardous, Waste Solid, N.O.S., 9, NA3077, PG III (D006)(D032)	X	007	DM	Approximate 03150	P	D006

J. Additional Descriptions for Materials Listed Above
11a. (Comp. 24) D006,D007,D008,D009 D032 EQ # 050895MF
11b. (Comp. 23) D005,D007,D008 D040, 001D, EQ# 050895MF
11c. (Comp. 1A) D006,D007,D009,D028,D032,D040 EQ # 050895 MF
11d. (Comp. 18) D006,D032 EQ# 050895 MF

K. Handling Codes for Wastes Listed Above
a/x / 16/100,01,02,03
b/x /
c/x /
d/x /

15. Special Handling Instructions and Additional Information EQ # 050895 MF
Phone/Contact (216) 947-~~0832~~ 0637, Chris Miller, Emergency Response Guide #31

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 determin to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes t 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 wa generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Gary Gifford | Signature | Date Month Day Y 05 17 0

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: James E Oberer | Signature | Date Month Day Y 05 17 9

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Date Month Day Y

FACILITY

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: Edward Mulk | Signature | Date Month Day Y

GENERATOR

ALL ...S MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN M... CENTER AT 1-800-424-8802 24 HOURS PER DAY.

...N AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE

EPA Form 8700-22 (Rev. 9/88)

RECEIVED MAY 23 1995

TRANSPORTER COPY

PR 5 Rev.

CUSTOMER COPY

ENVOTECH
SERVICES INC.
1349 HURON
Ypsilanti, Michigan 48197

Office: (313)485-6464
I-94 Landfill (313)697-7830

SURCHARGE APPLIED

WRITTEN BY: EM DATE: 5/18/95

ACCT. NAME: SEVENSON ENVIRONMENTAL SERVICE

ACCOUNT NUMBER: 1084 SHORT NAME: SEVENS

CODE: D018 - D - QUANTITY: 5

Approval # 50853 M

REMARKS: EPA# OHD980609994
SUMMIT NATIONAL PRP SITE
Manifest # M74130406
Hauler CART-12PM
Time In 10:58 AM Time Out 4:20 PM

I understand and acknowledge that entry is permitted only at my own risk. I, both personally and on behalf of my employer release Wayne Disposal, Inc. and/or Michigan Disposal, Inc. from any and all liability not caused by its gross negligence or willful misconduct.

Ticket # 161100

DELIVERED BY

NO SALVAGING ON PREMISES

CUSTOMER COPY

ENVOTECH
SERVICES INC.
1349 HURON
Ypsilanti, Michigan 48197

Office: (313)483-6464
I-94 Landfill (313)697-7830

SURCHARGE APPLIED

WRITTEN BY: EM DATE: 5/18/95

ACCT. NAME: SEVENSON ENVIRONMENTAL SERVICE

ACCOUNT NUMBER: 1084 SHORT NAME: SEVENS

CODE: D015 - D - Approval # 50893 QUANTITY: 5

REMARKS: EPA# OHD980609774
SUMMIT NATIONAL PRP SITE
Manifest # MI4150406
Hauler DART-12PM
Time In 10:58 AM Time Out 4:21 PM

I understand and acknowledge that entry is permitted only at my own risk. I, both personally and on behalf of my employer release Wayne Disposal, Inc. and/or Michigan Disposal, Inc. from any and all liability not caused by its gross negligence or willful misconduct.

Ticket # 161101

DELIVERED BY

NO SALVAGING ON PREMISES

CUSTOMER COPY

ENVOTECH
SERVICES INC.
1349 HURON
Ypsilanti, Michigan 48197

Office: (313)485-6464
I-94 Landfill (313)697-7830

SURCHARGE APPLIED
EM 5/18/95

WRITTEN BY: DATE:

ACCT. NAME: SEVENSON ENVIRONMENTAL SERVICE

1084 SEVENS

ACCOUNT NUMBER: SHORT NAME:

D016 - D - 10

CODE: Approval # 5089 QUANTITY:

REMARKS: EPA# OHD980609994
SUMMIT NATIONAL PRP SITE
Manifest # MT4180406
Hauler DART-12PM
Time In 10:58 AM Time Out 4:21 PM

I understand and acknowledge that entry is permitted only at my own risk. I, both personally and on behalf of my employer release Wayne Disposal, Inc. and/or Michigan Disposal, Inc. from any and all liability not caused by its gross negligence or willful misconduct.

Ticket # 161102

DELIVERED BY

NO SALVAGING ON PREMISES

CUSTOMER COPY

ENVOTECH
SERVICES INC.
1349 HURON
Ypsilanti, Michigan 48197

Office: (313)485-6464
I-94 Landfill (313)697-7830

SURCHARGE APPLIED

WRITTEN BY: EM DATE: 5/18/95

ACCT. NAME: SEVENSON ENVIRONMENTAL SERVICE

ACCOUNT NUMBER: 1084 SHORT NAME: SEVENS

CODE: D018 - D - 7

Approval # 50897 QUANTITY:

REMARKS: EPA# OHD980609994
SUMMIT NATIONAL PRP SITE
Manifest # MI4180406
Hauler DART-12PM
Time In 10:59 AM Time Out 4:21 PM

I understand and acknowledge that entry is permitted only at my own risk. I, both personally and on behalf of my employer release Wayne Disposal, Inc. and/or Michigan Disposal, Inc. from any and all liability not caused by its gross negligence or willful misconduct.

Ticket # 161103

DELIVERED BY

NO SALVAGING ON PREMISES

Load #7
Truck 6V
Grp.3

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

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: OHD980609994 — Manifest Document No.: 950110
2. Page XX of 2 — Information in the sha[illegible] areas is not required b[illegible] [illegible]eral law.

3. Generator's Name and Mailing Address
Summit National Superfund Site
8186 State Rt. 224, Deerfield, Ohio 44411

4. Generator's Phone (216) 947-0632

A. State Manifest Document Number: MI 4180407

B. State Generator's ID: Same

5. Transporter 1 Company Name: DART TRUCKING CO., INC.
6. US EPA ID Number: OHD0[illegible]9865825

C. State Transporter's ID: [illegible] OH

D. Transporter's Phone: (216)933-9841

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
Michigan Disposal
49350 N. I-94, Service Drive
Belleville, MI 48111

10. US EPA ID Number: MID000724831

G. State Facility's ID:

H. Facility's Phone: (313) 697-7830

	HM	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER).	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/A
a.	X	RQ, Hazardous Waste Solid, N.O.S., 9, NA3077 PG III,,(D009)(D032)	004	DM	Approximate 01800	P	D009	H
b.	X	RQ, Hazardous Waste Solid, N.O.S., 9, NA3077, PG III, (D006)(D008)	008	DM	Approximate 03600	P	D006	H
c.	X	RQ, Hazardous Waste Solid, N.O.S., 9, NA3077, PG III, (D007)(D008)	001	DM	Approximate 00450	P	D007	H
d.	X	RQ, Hazardous Waste Solid, N.O.S., 9, NA3077 PG III, (D005)(D008)	003	DM	Approximate 01350	P	D005	H

J. Additional Descriptions for Materials Listed Above
11a. (Comp. 18) D009,D032,D040 D032 Gm
11b. (Comp. 11) D006,D008,D007,D032, D040,001D
11c. (Comp.41) D007,D008,D018,D032, 003D
11d. (Comp.12A) D005,D008,D039,D040, 001D

K. Handling Codes for Wastes Listed Above
a/x /
b/x /
c/x /
d/x /

161 104,05,06,07

15. Special Handling Instructions and Additional Information
EQ # 050895 MF
Phone/Contact : (216) 947-0632, Chris MIller, Emergency Response Guide # 31

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 determin[illegible] to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes t[illegible] 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 wa[illegible] generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Gary Gifford — Signature: [signature] — Date: Month Day Y[illegible] 05 17 9[illegible]

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: [signature] — Signature: [signature] — Date: Month Day Y[illegible] 05 17 9[illegible]

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: — Signature: — Date: Month Day Y[illegible]

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] Mulk — Signature: [signature] — Date: Month Day Y[illegible] 05 18 [illegible]

GENERATOR — TRANSPORTER — FACILITY

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev. 9/88)

TRANSPORTER COPY

PR [illegible] Rev.

CUSTOMER COPY

E N V O T E C H
S E R V I C E S I N C .
1349 HURON
Ypsilanti, Michigan 48197

Office: (313)485-6464
I-94 Landfill (313)697-7830

SURCHARGE APPLIED
EM 5/18/95

WRITTEN BY: DATE:

ACCT. NAME: SEVENSON ENVIRONMENTAL SERVICE

ACCOUNT NUMBER: 1084 SHORT NAME: SEVENS

CODE: D018 - D - QUANTITY: 4

Approval # 50895 XP

REMARKS: EPA# GHD980609994
SUMMIT NATIONAL PRP SITE
Manifest # MI4180407
Hauler DART-12PM
Time In 10:59 AM Time Out 4:21 PM

I understand and acknowledge that entry is permitted only at my own risk. I, both personally and on behalf of my employer release Wayne Disposal, Inc. and/or Michigan Disposal, Inc. from any and all liability not caused by its gross negligence or willful misconduct.

Ticket # 161104

DELIVERED BY

NO SALVAGING ON PREMISES

CUSTOMER COPY

E N V O T E C H
S E R V I C E S I N C .
1349 HURON
Ypsilanti, Michigan 48197

Office: (313)485-6464
I-94 Landfill (313)697-7830

SURCHARGE APPLIED
EM 5/18/95

WRITTEN BY: DATE:

ACCT. NAME: SEVENSON ENVIRONMENTAL SERVICE

ACCOUNT NUMBER: 1084 SHORT NAME: SEVENS

CODE: D018 - D - 8

Approval # 50895 QUANTITY:

REMARKS: EPA# OHD980609994
SUMMIT NATIONAL PRP SITE
Manifest # MI4180407
Hauler DART-12PM
Time In 10:59 AM Time Out 4:21 PM

I understand and acknowledge that entry is permitted only at my own risk. I, both personally and on behalf of my employer release Wayne Disposal, Inc. and/or Michigan Disposal, Inc. from any and all liability not caused by its gross negligence or willful misconduct.

Ticket # 161105

DELIVERED BY

NO SALVAGING ON PREMISES

CUSTOMER COPY

E N V O T E C H
S E R V I C E S I N C .
1349 HURON
Ypsilanti, Michigan 48197

Office: (313)485-6464
I-94 Landfill (313)697-7830

SURCHARGE APPLIED
EM 5/18/95

WRITTEN BY: DATE:

ACCT. NAME: SEVENSON ENVIRONMENTAL SERVICE

ACCOUNT NUMBER: 1084 SHORT NAME: SEVENS

CODE: D015 - D - Approval # 50895 QUANTITY: 1

REMARKS: EPA# OHD[illegible]
SUMMIT NATIONAL PRP SITE
Manifest # MI4180407
Hauler DART-12PM
Time In 10:59 AM Time Out 4:21 PM

I understand and acknowledge that entry is permitted only at my own risk. I, both personally and on behalf of my employer release Wayne Disposal, Inc. and/or Michigan Disposal, Inc. from any and all liability not caused by its gross negligence or willful misconduct.

Ticket # 161106

DELIVERED BY

NO SALVAGING ON PREMISES

CUSTOMER COPY

E N V O T E C H
S E R V I C E S I N C .
1349 HURON
Ypsilanti, Michigan 48197

Office: (313)485-6464
I-94 Landfill (313)697-7830

SURCHARGE APPLIED
EM 5/18/95

WRITTEN BY: DATE:

ACCT. NAME: SEVENSON ENVIRONMENTAL SERVICE

1084 SEVENS

ACCOUNT NUMBER: SHORT NAME:

D018 - D - 3

CODE: Approval # 50895 WF QUANTITY:

EPA# OHD980609774

REMARKS:
SUMMIT NATIONAL PRP SITE
Manifest # MI4180407
Hauler DART-12PM
Time In 10:59 AM Time Out 4:22 PM

I understand and acknowledge that entry is permitted only at my own risk. I, both personally and on behalf of my employer release Wayne Disposal, Inc. and/or Michigan Disposal, Inc. from any and all liability not caused by its gross negligence or willful misconduct.

Ticket # 161107

DELIVERED BY

NO SALVAGING ON PREMISES

PRESS HARD

☑ Dart Trucking Co. Inc.
Dump Divn. (216) 533-3358 1-800-533-0255
Roll-off Divn. (419) 729-0500 1-800-423-0220
Flatbed Divn. (216) 533-2679 1-800-541-9158

TYPE OF LOAD
☐ DUMP
☐ FLATBED
☐ ROLL-OFFS
☐ TANKS
☑ VANS
☐ PNEUMATIC

LOAD No. V 126117 673

BILLING ADDRESS
61 Railroad Street
P.O. Box 89
Canfield, OH 44406

DATE 5-17-1995

DRIVER'S NAME	DRIVER'S NO.	OWNER'S NAME	TRUCK NO.	TRAILER NO.
James Ober	943		167	60

SHIPPER'S SIGNATURE (IF APPLICABLE)	BILL OF LADING NO.

SHIPPER (Company & Address)
Summit National Superfund Site
Deerfield, OH

CONSIGNEE (Company & Address)
Michigan Disposal
Belleville, MI

☐ PREPAID ☐ COLLECT ☐ COMMODITY: ☐ HAZARDOUS ☐ NONHAZARDOUS

QUANTITY	DESCRIPTION	WEIGHT	RATE	AMOUNT
		GROSS:		
		TARE:		
		NET:		

COMMENTS

ADVANCES
CHECK NO. _____ AMT. _____
CHECK NO. _____ AMT. _____
CHECK NO. _____ AMT. _____
CHECK NO. _____ AMT. _____

RECEIVED ABOVE PROPERTY IN GOOD CONDITION

FULL NAME OF RECEIVING COMPANY	NAME OF RECEIVING CLERK	DATE

SPECIAL CHARGES

☐ LIVE LOAD
☐ SET
☐ PULL
☐ TARP CRANK
☐ TARP CHARGE
☐ LINER
☐ HOURLY TIME
☐ STOPOFF
☐ BLOWER
☐ SPOTTING
☐ RECONSIGNMENT
☐ TRUCK ORDERED NOT USED
☐ REDELIVERY
☐ EQUIPMENT OPERATOR
☐ HOLIDAY
☐ OTHER _____

BEG. ODOMETER END ODOMETER

DELAY VERIFICATION

	LOADING AM	LOADING PM	UNLOADING AM	UNLOADING PM
TIME ARRIVED			1045	
TIME RELEASED				4:30
TOTAL TIME				
FREE TIME				
MEAL TIME				
DETENTION TIME				

AUTHORIZATION TO BILL

(LOADING) BY _____ FIRM _____
(UNLOADING) BY _____ FIRM _____

PRESS HARD—You Are Writing Through Eight Copies
(See Reverse Side for Instructions)

Load #8 - (01D) Group #10

48-14-1 (3/89)—71 Load #8

STATE OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF HAZARDOUS SUBSTANCES REGULATION

HAZARDOUS WASTE MANIFEST

P.O. Box 12820, Albany, New York 12212

Please print or type. Do not Staple.

Form Approved. OMB No. 2050-0039. Expires 9-30-96

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA No. / Manifest Document No.: 0 H D 9 8 0 6 0 9 9 9 4 | 9 5 0 1 1 1
2. Page 1 of 1
Information in the shaded areas is not required by Federal Law.

3. Generator's Name and Mailing Address
Summit National Superfund Site
8186 State Rt. 224 Deerfield, Ohio 44411
4. Generator's Phone (216) 947-0632

A. State Manifest Document No. NY B552011 4
B. Generator's ID Same

5. Transporter 1 (Company Name) ~~DART TRUCKING CO., INC.~~
6. US EPA ID Number ~~O H D 0 0 9 8 6 5 8 2 5~~
C. State Transporter's ID NY 12075P
Transporter's Phone ~~(216) 533-9841~~

7. Transporter 2 (Company Name) HazMat Environmental Group, Inc.
8. US EPA ID Number N Y D 9 8 0 7 6 9 9 4 7
E. State Transporter's ID 12075P NY
F. Transporter's Phone (716) 827-7200

9. Designated Facility Name and Site Address
CWM Chemical Services, Inc.
1550 Balmer Road
Model City, New York 14107
10. US EPA ID Number N Y D 0 4 9 8 3 6 6 7 9
G. State Facility's ID
H. Facility's Phone (716) 754-8231

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ, Waste Flammable Liquid, N.O.S. (PCB), 3, UN1993, PG III, (D001)(D006)	0 1 1	DM	Approximate 0 4 9 5 0	P	EPA D001 STATE B007
b. RQ, Waste Flammable Liquid, N.O.S. (PCB), 3, UN1993, PG III, (D001)(D006)	0 1 9	DM	Approximate 0 8 5 5 0	P	EPA D001 STATE B007
c.		~~DM~~	~~Approximate~~		EPA STATE
d.					EPA STATE

J. Additional Descriptions for Materials listed Above
a D006,D018,D022,D028,D032,D039,D040 (Comp 16A)
b D006,D008,D018,D022,D028,D032,D039, D040 (Comp 9A)

K. Handling Codes for Wastes Listed Above
a B c
b B d

15. Special Handling Instructions and Additional Information
Phone/Contact : (216) 947-0632, Chris Miller FRG ~~#31~~ 27
CWM Profile Number BQ9177 814290 73

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 and state laws and regulations.
If I am a large quantity generator, I certify that I have 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 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 generator, I have made a good faith effort to minimize my waste and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Gary Gifford Signature: Gary Gifford Mo. Day Year: 05 11 95

TRANSPORTER

17. Transporter 1 (Acknowledgement of Receipt of Materials)
Printed/Typed Name: Curtis Williams Signature: Curtis Williams Mo. Day Year: 05 11 95

18. Transporter 2 (Acknowledgement of Receipt of Materials)
Printed/Typed Name Signature Mo. Day Year

FACILITY

19. Discrepancy Indication Space
Transporter #2 IS Transporter #1

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: MARY Comfort Signature: Mary Comfort Mo. Day Year: 05 12 95

GENERATOR

In case of emergency or spill immediately call the National Response Center (800) 424-8802 and the N.Y. Dept. of Environmental Conservation (518) 457-7362.

HAZMAT

ENVIRONMENTAL GROUP, INC.
60 Commerce Drive, Buffalo, NY 14218
FAX (716) 827-7217
(716) 827-7200

HAZMAT

NYDEC # 9A-278
EPA ID# NYD980769947

DATE 74876
5/11/

PICK UP

SHIPPER
NAME: Summit Nat Lead
STREET:
CITY: Deerfield STATE: OH ZIP CODE:
CONTACT NAME: PHONE:
SCHEDULED TIME:

ADDITIONAL INFORMATION:

DELIVERY

CONSIGNEE
NAME: CWM
STREET:
CITY: Model city STATE: NY ZIP CODE:
CONTACT NAME: PHONE:

Pursuant to 6NYCRR 372.2 (b)(2)(ii), HAZMAT certifies that it is authorized to deliver this shipment of manifested waste to the TSDF listed on this Bill of Lading

ADDITIONAL INFORMATION:

PURCHASE ORDER NO.	WORK ORDER NUMBER	MANIFEST NUMBER	H.M. NUMBER
VCC	*	NYB552011 4	51826
LOAD NUMBER	**TRACTOR NUMBER**	**TRAILER NUMBER**	**DRIVER'S NAME**
51826	76	R-67	L. Williams

TYPE (CIRCLE ONE)	MATERIAL DESCRIPTION	QUANTITY
STRAIGHT TRUCK TANK (S/S) VAC DUMP VAN ROLL-OFF BOX # ____ FLATBED	Various RCRA Hazardous Waste	30 DM

PICK UP

PICK UP DATE 5-11-95
ARRIVAL TIME 0930 AM/PM RELEASE TIME 1100 AM/PM
DAY # 2 DATE ____
ARRIVAL TIME ____ AM/PM RELEASE TIME ____ AM/PM
TRAILER EMPTY UPON ARRIVAL ☐ YES ☐ NO
(If not, explain below—)
DIP MEASUREMENT (Tankers Only) ____ INCHES
COMMENTS: (EXPLAIN ALL DELAYS) [illegible] load [illegible] paper work

HAZMAT MATERIALS USED (ex. overpacks, etc): ☐ YES ☐ NO
IF YES EXPLAIN:

I, THE UNDERSIGNED, CERTIFY THAT THE ABOVE INFORMATION IS TRUE AND COMPLETE.

[signature] 5/11/95
SHIPPER'S SIGNATURE Date

DELIVERY

DRIVER HERMANSON DAY #1 DATE 5/12/95
ARRIVAL TIME 707 AM/PM RELEASE TIME ____ AM/PM
DAY #2 DATE ____ ARRIVAL TIME ____ AM/PM RELEASE TIME ____ AM/PM
DAY #3 DATE ____ ARRIVAL TIME ____ AM/PM RELEASE TIME ____ AM/PM
TRAILER CLEAN AND EMPTY UPON DEPARTURE ☐ YES ☐ NO
(If not, explain below—)
COMMENTS: (Explain all delays or discrepancies)
Check in wait to unload unload - paperwork

I, THE UNDERSIGNED, CERTIFY THAT THE ABOVE INFORMATION IS TRUE AND COMPLETE.

Mary Comfort 5/12/95
CONSIGNEE'S SIGNATURE Date

TSDF COPY

Transporter Log

CWM Chemical Services, Inc.
Model City, NY

439

50660 LB 6 1
08:25
05/12/95

1130

35500 LB 6 1
11:24
05/12/95

15160P

Receipt # 81429073 License # 12075P(NY)

Service Req. # VARIOUS Profile # VARIOUS Permit # 9A278

Transporter Name HAZMAT Tractor/Trailer/Roll-off # 55 / B67

Driver's Name Hermanson Generator VARIOUS

Scheduled Arrival: Date 5-12 Time 701

Actual Arrival: Date 5-12 Time In 707 Time Out

Arrived during Blackout? Y / N Notified DEC? Y / N

Receiving: MPC Initials Comments

☐ Leaker ☐ Permit Violation ☐ Placarding/Veh. I.D. Violation

☐ Other (specify)

☐ Bulk to Landfill ☐ No wet line ☐ Flatbed ☐ Stabilization ☒ Drums ☐ Tanker ☐ Transformers

	Time In	Time Out	Initials	Gross Wt.	Comments
Laboratory			YNY		
Stabilization					
Landfill					
Other	1015	1100	WGL		
Truck Wash					

Facility Personnel (*please initial*)

	Smoking or eating in prohibited areas		Leaving truck unattended
	Failure to obey instructions of facility personnel		Failure to display overweight flag
	Failure to wear appropriate PPE		Improper tarping or detarpin
	Unsafe driving practices		Overweight upon arrival
	Other (specify)		

Security Guard Initials: _____
(Indicating receipt of Wash Bay pass, if necessary)

Driver's Comments

White: Records Green & Canary: Accts Rec. Pink: Environmental Goldenrod: Driver

Load # (012) (See Reverse Side for Instructions) First Load 1 of 2

48-14-1 (3/89)—7f

STATE OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF HAZARDOUS SUBSTANCES REGULATION

HAZARDOUS WASTE MANIFEST

P.O. Box 12820, Albany, New York 12212

Please print or type. Do not Staple.

Form Approved. OMB No. 2050-0039. Expires 9-30-96 CA

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA No. 0 H D 9 8 0 6 0 9 9 9 4 — Manifest Document No. 9 5 0 1 2

2. Page 1 of 1

Information in the shaded areas is not required by Federal Law.

3. Generator's Name and Mailing Address
Summit National Superfund Site
8186 State Rt. 224, Deerfield, Ohio, 44411

4. Generator's Phone (216) 947-0632

A. State Manifest Document No. NY B 552010 5

B. Generator's ID Same

5. Transporter 1 (Company Name) ~~DART TRUCKING CO., INC.~~ CM

6. US EPA ID Number ~~O H D 0 0 9 0 6 5 0 2 5~~ CM

C. State Transporter's ID NY 10214 P

D. Transporter's Phone ~~216 533 9041~~ CM

7. Transporter 2 (Company Name) HazMat Environmental Group, Inc.

8. US EPA ID Number N Y D 9 8 0 7 6 9 9 4 7

E. State Transporter's ID 10214P NY

F. Transporter's Phone (716) 827-7200

9. Designated Facility Name and Site Address
CWM Chemical Services, Inc.
1550 Balmer Road
Model City, New York 14107

10. US EPA ID Number N Y D 0 4 9 8 3 6 6 7 9

G. State Facility's ID

H. Facility's Phone (716) 754-8231

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ, Waste FlaMMAble Solid, N.O.S. (PCB), 4.1, UN1325, PG III (D001)(D009)	0 2 1	D M	Approximate 0 9 4 5 0	P	EPA D001 STATE B007
b. RQ, Waste Flammable Solid, N.O.S. (PCB), 4.1, UN 1325, PG III (D001)(D006)	0 0 9	D M	Approximate 0 4 0 5 0	P	EPA D001 STATE B007
c. RQ, Waste Flammable Solid, N.O.S. (PCB), 4.1, UN1325 PG III, (D001)(D00035)	0 0 1	D M	Approximate 0 0 4 5 0	P	EPA D001 STATE B007
d. RQ, Waste Flammable Solid, N.O.S. (PCB), 4.1, UN1325 PG III, (D001)(D006)	0 0 4	D M	Approximate 0 1 8 0 0	P	EPA D001 STATE B007

J. Additional Descriptions for Materials listed Above
a D009,D018,D028,D032,D036 D039,D040 (Comp.6A) 01
c D035,D039,D040 (Comp. 8A) 03
b D006,D007,D008,D009,D018 D028,D032,D039,D040 (Comp.25A) 02
d D006,D008,D028,D035,D040 (Comp. 24A) 04

K. Handling Codes for Wastes Listed Above
a B c B
b B d B

15. Special Handling Instructions and Additional Information
Phone/Contact : (216) 947-0632, Chris Miller
CWM Profile Number BQ9176
ERG # 31
81429058

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 and state laws and regulations.
If I am a large quantity generator, I certify that I have 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 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 generator, I have made a good faith effort to minimize my waste and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Gary Gifford — Signature: Gary Gifford — Mo. Day Year 05 11 95

TRANSPORTER

17. Transporter 1 (Acknowledgement of Receipt of Materials)
Printed/Typed Name: WILLIAM VANCE — Signature: William Vance — Mo. Day Year 05 11 95

18. Transporter 2 (Acknowledgement of Receipt of Materials)
Printed/Typed Name — Signature — Mo. Day Year

FACILITY

19. Discrepancy Indication Space Item 14a,b,c,d S/B "K"
Transporter Number 2 is Transporter Number 1

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19:
Printed/Typed Name: MARY COMFORT — Signature: Mary Comfort — Mo. Day Year 05 12 95

GENERATOR

In case of emergency or spill immediately call the National Response Center (800) 902 and the N.Y. Dept. of Environmental Conservation (518) 457-7362.

(See Reverse Side for Instructions)

48-14-1 (5/87)

Group #11

STATE OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID AND HAZARDOUS WASTE

HAZARDOUS WASTE MANIFEST

P.O. Box 12820, Albany, New York 12212

Please print or type.

Form Approved. OMB No. 2050-0039. Expires 9-30-

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA No. / Manifest Document No.: OHD980609944 95012

2. Page 1 of 1 — Information in the shaded [illegible] is not required by Federal L[illegible]

3. Generator's Name and Mailing Address
Summit National Superfund Site
8186 State Rt. 224, Deerfield, Ohio, 44411

4. Generator's Phone (216) 947-0632

A. State Manifest Document No. NY A728762 4

B. Generator's ID: Same

5. Transporter 1 (Company Name): ~~DART TRUCKING CO., INC.~~ CWM

6. US EPA ID Number: ~~OHD008658250~~ CWM

C. State Transporter's ID: NY 10214P

Transporter's Phone: ~~216 533 9841~~ CWM

7. Transporter 2 (Company Name): HazMat Environmental Group, Inc.

8. US EPA ID Number: ~~NYD988076997~~ CWM

E. State Transporter's ID: 10214P NY

F. Transporter's Phone: (716) 827-7200

9. Designated Facility Name and Site Address
CWM Chemical Services, Inc.
1550 Balmer Road
Model City, New York 14107

10. US EPA ID Number: NYD049836679

G. State Facility's ID

H. Facility's Phone: (716) 754-8231

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ, Waste Flammable Liquid, N.O.S. (PCB), 3, UN1993, PG III, (D001)(D018)	004	DM	Approximate 01800	P	D001 B007
b. RQ, Waste Flammable Liquid, N.O.S. (PCB), 3, UN1993, PG III, (D001)(D006)	~~005~~ 6 CWM	DM	Approximate 02700 ~~02250~~ CWM	P	D001 B007
c.		DM	Approximate	P	
d.					

J. Additional Descriptions for Materials Listed Above
a. D018, D028, D039, D040 (Comp 7A) 05
b. D006, D018, D028, D039, D040 (Comp 5A) 06

K. Handling Codes for Wastes Listed Above
a. B c. B
b. B d. B

15. Special Handling Instructions and Additional Information
Phone/Contact : (216) 947-0632, Chris Miller Emergency Response Guide ~~XXX~~ CWM 27
CWM Profile BQ9178
81429058

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 and state laws and 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 and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Gary Gifford — Signature: Gary Gifford — Mo. Day Year: 05 11 95

17. Transporter 1 (Acknowledgement of Receipt of Materials)
Printed/Typed Name: William Vance — Signature: William Vance — Mo. Day Year: 05 11 95

18. Transporter 2 (Acknowledgement of Receipt of Materials)
Printed/Typed Name — Signature — Mo. Day Year

19. Discrepancy Indication Space: Item I a & b S/B "B002". Item 14 a & b S/B "K".
Transporter Number 2 IS Transporter Number 1.

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: MARY COMFORT — Signature: Mary Comfort — Mo. Day Year: 05 12 95

GENERATOR

In case of emergency or spill immediately call the National Response Center (800) 424-8802 and the N.Y. Department of Transportation (518) 457-7362.

GROUP, INC. FAX (716) 827-7217
o, NY 14218 (716) 827-7200

HAZMAT

NYDEC # 9A-278
EPA ID# NYD980769947

DATE 75031
05/ 11/ 95

DELIVERY

NATIONAL LIQUID DS
2 STATE RTE 225
D STATE OH ZIP CODE 44411
PHONE
SLEY 716-284-0431
08:00 34 DRMS SEE BELOW

CONSIGNEE
NAME CWM CHEMICAL SERVICES
STREET 1550 PALMER RD.
CITY MODEL CITY STATE NY ZIP CODE 14107
CONTACT NAME PHONE

[redacted]

MATION
DRS ARE 85 GAL AND SOME ARE 110 GAL OVERPACKS
THREE LIQUID WITH SOME SOLIDS
E TO HELP IN LOADING
T 210225
509178
SEVENSON ENVIRONMENTAL SVC
NYA7287624

Pursuant to 6NYCRR 372.2 (b)(2)(ii), HazMat certifies that it is authorized to deliver this shipment of manifested waste to the TSDF listed on this Bill of Lading

ADDITIONAL INFORMATION
ALL LDS (0 LGA-WEC) ALL SPEED LIMITS-NO CONVOYING-NO
TAKE-PORTING-NO STOPPING ALONG RT-87 IS N ALW-BE USED ONLY WHEN
LEAVING AND ONLY WHEN INSTR BY GUARD ARRIVE AT YOUR SCHED
TIME-BLACK OUT HOURS 7:30AM-9AM & 2:15PM -3:45PM-OBEY ALL SITE
RULES-ATTN DRIVERS: WITH DO NO DO (DO NOT) INTO W HY-YOU MUST
CLEAN ALL DEBRI FROM THE TAILGATE AREA PRIOR TO LEAVING GREASE
SILICONE SEALANT)

WORK ORDER NUMBER	MANIFEST NUMBER	H.M. NUMBER
	NJ 8552010 5	-51828
TRACTOR NUMBER	TRAILER NUMBER	DRIVER'S NAME
77	[redacted]	WILLIAM VANCE

E) MATERIAL DESCRIPTION	QUANTITY
Mixed waste	45DM

DELIVERY

1 95
7 AM PM RELEASE TIME 9 45 AM PM
AM PM RELEASE TIME AM PM
ARRIVAL ☑ YES ☐ NO
ankers Only) INCHES
ALL DELAYS)
OA Pelwork
ISED (ex. overpacks, etc): ☐ YES ☐ NO
Y THAT THE ABOVE INFORMATION IS
(SES) 5/11/95
RE Date

DRIVER DAY #1 DATE
ARRIVAL TIME AM PM RELEASE TIME AM PM
DAY #2 DATE ARRIVAL TIME AM PM RELEASE TIME AM PM
DAY #3 DATE ARRIVAL TIME AM PM RELEASE TIME AM PM
TRAILER CLEAN AND EMPTY UPON DEPARTURE ☐ YES ☐ NO
(If not, explain below—)
COMMENTS: (Explain all delays or discrepancies)

I, THE UNDERSIGNED, CERTIFY THAT THE ABOVE INFORMATION IS TRUE AND COMPLETE.
Mary Comfort 5/12/95
CONSIGNEE'S SIGNATURE Date

TSDF COPY

Transporter Log

CWM Chemical Services, Inc.
Model City, NY

7 38

51300 LB 6 1
08:17
05/12/95

31680 LB 6 1
10:18
05/12/95 19,620 P

81429058 — Receipt #
10214P(m) — License #
VARIOUS — Service Req. #
VARIOUS — Profile #
9A278 — Permit #
HAZMAT — Transporter Name
92/B85 — Tractor/Trailer/Roll-off #
WALL — Driver's Name
SUMMIT — Generator

Scheduled Arrival: Date 5-12 Time 701

Actual Arrival: Date 5-12 Time In 705 Time Out

Arrived during Blackout? Y / N Notified DEC? Y / N

Receiving: MPC Initials _____ Comments _____

☐ Leaker ☐ Permit Violation ☐ Placarding/Veh. I.D. Violation

☐ Other (specify _____

☐ Bulk to Landfill ☐ No wet line ☒ Flatbed ☐ Stabilization ☒ Drums ☐ Tanker ☐ Transformers

	Time In	Time Out	Initials	Comments
Laboratory	810	905	[illegible]	

	Time In	Time Out	Initials	Gross Wt.	Comments
Stabilization					

	Time In	Time Out	Initials	Comments
Landfill				
Other	0915	1001	WGR	

	Time In	Time Out	Signature (NO Initials)	Comments
Truck Wash				

Facility Personnel (*please initial*)

_____ **Smoking or eating in prohibited areas**

_____ **Failure to obey instructions of facility personnel**

_____ **Failure to wear appropriate PPE**

_____ **Unsafe driving practices**

_____ **Leaving truck unattended**

_____ **Failure to display overweight flag**

_____ **Improper tarping or detarpin**

_____ **Overweight upon arrival**

_____ **Other (specify)** _____

Security Guard Initials: _____
(Indicating receipt of Wash Bay pass, if necessary)

Driver's Comments

White: Records Green & Canary: Accts Rec. Pink: Environmental Goldenrod: Driver

Load #10
Grps.7

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039. Expires 9-30-96

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. 0 H D 9 8 0 6 0 9 9 9 4 — Manifest Document No. 9 5 0 1 3

2. Page 1 of 2

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Summit National Superfund Site
8186 State Rt. 224, Deerfield, Ohio 44411

4. Generator's Phone (216) 947-0632

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name
Great Lakes Environmental Services, Inc.

US EPA ID Number M I D 0 8 7 4 7 8 5 7 4

C. State Transporter's ID Same 63371 MI

D. Transporter's Phone (810) 758-0400

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
Research Oil Company
2655 Transport Road
Cleveland, OH 44115

10. US EPA ID Number O H D 0 0 4 1 7 8 6 1 2

G. State Facility's ID

H. Facility's Phone (216) 623-8383

	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.
a.	RQ, Hazardous Waste Liquid, N.O.S., 9, NA3082 PG III,(D006)(D018)	X	003	DM	Approximate 01350	P	D006
b.	RQ, Hazardous Waste Liquid,N.O.S., 9, NA3082, PG III, (D006)(D018)	X	008	DM	Approximate 03600	P	D006
c.	RQ, Hazardous Waste Liquid, N.O.S., 9, NA3082 PG III, (D006)(D018)	X	011	DM	Approximate 04950	P	D006
d.	RQ, Hazardous Waste Liquid, N.O.S., 9, NA3082 PG III, (D006)(D018)	X	006	DM	Approximate 02700	P	D006

J. Additional Descriptions for Materials Listed Above
11a. (Comp.47) D008, D018,D028,D040 11c. D040
11b. D007, D040 11d. D022, D040

K. Handling Codes for Wastes Listed Above
a) M101 d) M094 (DAF)
b) M094(DAF)
c) M101

15. Special Handling Instructions and Additional Information
Phone /Contact (216) 947-0632, Chris Miller Emergency Response Guide # 31
11a. Comp. 47, 11b. Comp. 44, 11c. Comp.35, 11d. Comp.11A TRK 42
Research Oil # RD 6996-30 TRL 92

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.

GENERATOR

Printed/Typed Name: Gary Gifford — Signature: Gary Gifford — Month Day Year: 0 5 1 8 9 5

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Shawn West — Signature: Shawn West — Month Day Year: 0 5 1 8 9 5

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

FACILITY

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: SHAHER ALLAHHAM — Signature: Shaher Allahham — Month Day Year: 0 5 1 8 9 5

UNIFORM HAZARDOUS WASTE MANIFEST
(Continuation Sheet)

21. Generator's US EPA ID No.	Manifest Document No.	22. Page	Information in the shaded areas is not required by Federal law.
O H D 9 8 0 6 0 9 9 9 4	9 5 0 1 3	2 of 2	

23. Generator's Name
Summit National Superfund Site
8186 State Rt. 224, Deerfield, Ohio 44411
216/947-0632

L. State Manifest Document Number
M. State Generator's ID

24. Transporter _____ Company Name
25. US EPA ID Number
N. State Transporter's ID
O. Transporter's Phone

26. Transporter _____ Company Name
27. US EPA ID Number
P. State Transporter's ID
Q. Transporter's Phone

	28. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM	29. Containers No.	Type	30. Total Quantity	31. Unit Wt/Vol	R. Waste No.
a.	RQ, Waste Cyanide Solution, 6.1, UN1935 PG II (D003)	X	7	DM	Approximate 3150	P	D003
b.	RQ, Waste Flammable Liquid, n.o.s., 3, UN1993, PG III (D001)	X	2	DM	Approximate 1500	P	D001
c.							
d.							
e.							
f.							
g.							
h.							
i.							

S. Additional Descriptions for Materials Listed Above
11a. D003, D007 11b. 15148BQ
RD# 6995-000
Trk 42
Tr 192

T. Handling Codes for Wastes Listed Above
11a) m094 (DAF)
11b) m041

32. Special Handling Instructions and Additional Information

Phone/Contact (216) 947-0632, Chris Miller

Emergency Response Guide:
11a. #55 11b. #27

11a. Comp. 38 RD# 6995-000 11b. #15148BQ

GENERATOR

33. Transporter _____ Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month	Day	Year

34. Transporter _____ Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month	Day	Year

TRANSPORTER

35. Discrepancy Indication Space

FACILITY

REPLACEMENT
T/S/D/F COPY
(FOR LEGIBILITY)
COPY