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25 February 1999

Mr. Anthony J. Rutter, SR-6J
U.S. Environmental Protection Agency
Region V
77 West Jackson Boulevard
Chicago, IL 60604

U.S. EPA Contract No.:68-W7-0026

Work Assignment No.: 001-RARA-05T2

Document Control No.: RFW001-3A-ABZX

Subject: Remedial Action Report
Stoughton City Landfill

Dear Mr. Rutter:

Roy F. Weston, Inc. (WESTON®) is pleased to submit two copies of the revised pages (Section 4, pages 7 and 8, and Section 5, page 2) for the Remedial Action Report in accordance with our conversation of 10 February 1999.

Please contact me at (847) 918-4042 if you have any comments and/or questions.

Very truly yours,

ROY F. WESTON, INC

William F. Karlovitz, P.E.
Site Manager

WFK:me

Enclosure

cc: P. Kozol, WDNR
P. Vogtman, U.S. EPA (letter only)

- Collection and on-site disposal of miscellaneous existing surface debris.
- Abandonment of a portion of existing 8 inch ductile iron waterline and fire hydrant.
- Emptying and on-site disposal of 395 drums containing remedial investigation-derived waste.
- Abandonment of 19 existing monitoring wells.
- Demolition of the existing picnic shelter was completed on 22 April 1998. The shelter was broken into pieces and was disposed of within the limits of the waste consolidation area.
- Other miscellaneous debris was collected at various locations around the site and was disposed of within the limits of the waste consolidation area. This debris was mainly brush, rusted metal, plastic and wood pieces, which were both contaminated and uncontaminated in nature. This activity occurred between the dates of 22 and 29 April 1998.

On 13 May 1998, waste was discovered during excavation for the removal of an existing waterline as called for in the scope of work. The waste was discovered outside of the limits of the landfill, and was not previously identified as waste to be removed and relocated. The waterline abandonment excavation was stopped. An additional investigation, consisting of test pitting, was scheduled to determine the horizontal and vertical extent of waste beyond those areas already identified.

This discovery led to the issuance of Change Orders No.1, No. 2, and No. 3, which are covered in Section 6 of this document.

The emptying and on-site disposal of 395 drums containing remedial investigation derived waste occurred between the dates of 18 and 20 May 1998. Drums were collected from three on-site locations. Drum labels and markings were recorded and listed in Appendix A, Table 5. All emptied drums were crushed and placed in the waste consolidation area. This activity was performed to meet the intent of the project plans and specifications.

Abandonment of 19 existing monitoring wells occurred on the 28 and 29 April 1998. The abandonment of monitoring wells was completed to meet the intent of the specifications.

The shelter demolition, waterline and hydrant abandonment, drum disposal and monitoring well abandonment have all been completed to meet the intent of the specifications.

4.6 TEMPORARY AND PERMANENT ACCESS ROADS

The temporary access road called for in the original plans was eliminated due to relocation of the field support facilities. Job trailers and employee-parking areas were relocated from the southwest corner of the site to the southeast corner, on property owned by Skaalen Homes. Permission to relocate support facilities to this location was obtained from Skaalen Homes, in writing, by Ryan.

The U.S. EPA requested a review of the location for the permanent access road which was designed to cross the landfill cap due to access restrictions.

The U.S. EPA requested the Access Road be moved to outside the permanent fencing. This would still allow access to the monitoring wells located on the west side of the landfill cap, and would not impact the integrity and maintenance of the cap. This would also allow the city and it's residents to use the road to access a proposed walking trail along the Yahara River without impacting the security of the site. Weston revised the final cover system design and issued a drawing incorporating the change in August of 1998. A Change Order was requested by Ryan to cover the costs associated with changes made to the permanent access road.

Construction of the permanent access road began on 3 November 1998 and was completed on 25 November 1998.

SECTION 5

PROJECT REPORTS AND CONTROLS SUMMARY

The following reports were used throughout the project for communication and tracking of progress:

- Daily reports summarizing the activities of each day were submitted to the Weston Project Manager.
- Daily verbal communications were maintained between the Weston site personnel and the Weston Project Manager.
- Weekly reports summarizing the primary activities of the week were submitted to the Weston Project Manager, and after review submitted to the U.S. EPA.
- Monthly reports were prepared by the Weston Project Manager and submitted to the U.S. EPA.
- Monthly meetings were held at the project site with all interested participants. Minutes were taken by Weston and distributed to the U.S. EPA, WDNR, Weston and Ryan.

The following project controls were implemented to ensure that work was performed in compliance with project plans and specifications:

- Submittal log detailing the status of all submittals.
- Decontamination log listing the item, date, time and person responsible for the decontamination event.
- Results of daily air monitoring were recorded in the air monitoring log.
- Results of combustible gas monitoring of monitoring wells were recorded in a CGI monitoring well log.
- Quantities of soils imported to the site were recorded on a daily basis to ensure that required samples were collected in a timely manner.

- Liquid waste disposal log was used to track off-site shipments and disposal of liquid waste.
- Drum disposal log detailed labels and markings of drums emptied and disposed of during the drum disposal activity.
- Rain log was maintained to track precipitation, lost and partial workdays during the project.
- Project photos recording conditions, progress, deficiencies and changes was maintained in the photo log.
- Results of field density tests were maintained in a grading layer field density test log and a clay barrier layer field density test log.
- During trenching activities, a daily log was kept to record the linear feet of trench excavated within three depth zones.
- Training log with information on employee Health and Safety training was maintained to ensure each site worker's training was current.
- Ryan updated the schedule bi-weekly to reflect progress.
- An employee and visitors log was kept to track personnel on-site.

It should be noted that on 22 September 1998, Alan Baumann, a safety inspector for the U.S. EPA, visited the site to conduct a health and safety audit. He noticed that Ryan's Health and Safety Plan does not address emergency equipment or locations but he was informed that these issues are discussed at safety meetings. Mr. Baumann also noted that no written respiratory protection program is available. Since activities related to waste relocation and consolidation had been completed, the use of resporitory protection was not needed to complete the project and therefore no action was taken.

REMEDIAL ACTION REPORT
STOUGHTON CITY LANDFILL
STOUGHTON, WISCONSIN

February 1999

Prepared For:

U.S. Environmental Protection Agency
Superfund Division
Region V
77 West Jackson Boulevard
Chicago, Illinois 60604

This document was prepared by WESTON in accordance with the terms of the U.S. EPA Region V Contract No. 68-W7-0026.

Work Assignment No. 001-RARA-05T2 Document Control No. RFW001-3A-ABXA

Roy F. Weston, Inc.
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4 February 1999

Mr. Anthony J. Rutter, SR-6J
U.S. Environmental Protection Agency
Region V
77 West Jackson Boulevard
Chicago, IL 60604

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Dear Mr. Rutter:

Roy F. Weston, Inc. (WESTON®) is pleased to submit two copies of the Remedial Action Report for the Stoughton City Landfill in Stoughton, Wisconsin.

Please contact me at (847) 918-4042 if you have any comments and/or questions.

Very truly yours,

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SECTION 1
INTRODUCTION

This report is a summary of work performed by Roy F. Weston, Inc. (WESTON®) and its subcontractors, for the closure of the Stoughton City Landfill (SCL) in Stoughton, Wisconsin.

1.1 SITE LOCATION AND DESCRIPTION

The SCL is located in the northeast portion of the City of Stoughton, approximately 13 miles southeast of Madison, in Dane County, Wisconsin. The site encompasses approximately 27 acres and occupies portions of the W ½ of the SW ¼ and of the NW ¼ of section 4, T. 5N., R. 11E.

A wetland area located along the southeast portion of the present property boundary was the initial area of waste disposal. Wetlands are also located in the north portion of the site and west of the site along the Yahara River. The Yahara River is located west of the site and is within approximately 400 feet of the site at its closest distance. The nearest developed land, a residential area, is located south along Amundson Parkway, which serves as the site access road. An extensive residential area is located ¼ mile south of the site. At this time, there is no developed land in the vicinity of the site to the north, west or east. Approximately 1/8 of the site (the portion that consists of wetlands) is located within the 100-year floodplain of the Yahara River. Existing site conditions at the SCL are shown in Figure 1.

1.2 SITE HISTORY

The City of Stoughton purchased the original 40-acre parcel of land in 1952. Fifteen acres of the original site were used for landfilling purposes. Because of land exchanges that occurred after the closure of the landfill in 1982, only 27 of the original 40 acres are still owned by the city. None of

the 13 acres of land transferred during the land exchanges were used for landfilling; however, waste was encountered south of the landfill during closure activities.

The landfill operated from 1952 until it was officially closed in 1982. Between 1952 and 1969, the site was operated as an uncontrolled dump site. During this time, refuse was usually burned or covered by dirt. The site began operation as a state-licensed landfill in 1969. In 1977, the Wisconsin Department of Natural Resources (WDNR) required that the site be closed according to state regulations. Closure activities included construction of a trash transfer station, placement of a cover material borrowed from agricultural areas, application of topsoil, and seeding. From 1978 to 1982, closure work was performed according to WDNR regulations. Only brick, rubble and similar construction materials were accepted at the site during this period.

Common municipal waste and solid and liquid industrial wastes were disposed of at the site during it's years of operation. Industrial sludges containing acetone, tetrahydrofuran, toluene, xylene and other organic substances were disposed at the site from 1954 until 1962. During this period, the liquid wastes were commonly poured down boreholes in the west-central portion of the landfill. (These boreholes had been drilled as part of field testing of drilling equipment.)

The site was placed on the National Priorities List (NPL) in June of 1986. In March 1988, the two potentially responsible parties (PRPs), Uniroyal Plastics, Inc. and the City of Stoughton entered into an Administrative Order of Consent (AOC) with the United States Environmental Protection Agency (U.S. EPA) and the WDNR. This AOC required the completion of a remedial investigation and feasibility study (RI/FS). RI field activities began in March of 1989. The U.S. EPA conducted an ecological site assessment during June 1991. The majority of the RI was completed by September 1991. Based on the work conducted, it was determined that, as a result of the hazardous waste disposal at the landfill, various chemical contaminates had leached into the groundwater beneath the site and have moved towards the Yahara river.

The Record of Decision (ROD) was signed in September of 1991 and identified the Remedial Action for the SCL site. The remedial action included:

- Site security measures, including placement of a fence around the perimeter of the site.
- Land use restrictions to prevent the installation of public or private water supply wells within 1,200 feet of the property boundary and to prevent residential development of the site.
- Excavation and relocation of waste in contact with groundwater and consolidation of wastes as under the final cover system.
- Placement of a solid waste disposal facility cap over the existing fill area and consolidated wastes.
- Extraction and treatment of contaminated groundwater, unless further evaluation of the groundwater indicated a need for design and construction of a contingent groundwater extraction system, to achieve compliance with NR140 groundwater quality standards.
- Long-term groundwater monitoring to confirm the effectiveness of the selected remedial design action (not included in this report).

Based on sampling conducted during the remedial design, it was determined that the contingent groundwater treatment system was not required.

SECTION 2

CHRONOLOGY OF EVENTS

The following is a summary of the major events and the actual start and finish dates associated with the remedial action, beginning with the signing of the ROD in September of 1991. There are some activities that were ongoing throughout the project and the finish date coincides with project completion. The chronological events are discussed in more detail in Section Four, Construction Activities, of this document.

2.1 PRELIMINARY ACTIVITIES

WESTON issued the notice to proceed to Ryan on 28 April 1998.

Development of the Site Specific Health and Safety Plan, Construction Quality Control Plan, and other pre-construction submittals and contractor pre-construction planning. Start date 7April 1998.

Pre-qualification of borrow sources started on 7 April 1998, by CGI, Inc., a sub-contractor to Ryan. Approval was received from Wisconsin DNR on 14 May 1998.

Control and site boundary survey and initial site lay-out and photographic documentation of conditions existing prior to construction activities. Start date was 7 April 1998 and was completed on 27 April 1998.

Mobilization of construction equipment and subcontractors. Start date 10 April 1998. (This activity was ongoing throughout the project.)

A pre-construction meeting was held at the site on 14 April 1998.

2.2 ONSITE ACTIVITIES

Construction of temporary, field support facilities and security fencing was initiated on 10 April 1998.

Clearing and grubbing of trees and brush within the limits of the landfill cap system was started on 15 April 1998 and was completed on 27 April 1998.

Demolition and onsite consolidation of existing on-site facilities and debris, including a picnic shelter, started on 22 April 1998 and was completed on 29 April 1998.

Construction of a decontamination pad and development of a water management plan for water generated from decontamination and dewatering started on 23 April 1998 and was completed on 14 May 1998.

Stripping of existing topsoil within the limits of the capping system started on 27 April 1998 and was completed on 22 May 1998.

The abandonment of 19 monitoring wells started on 28 April 1998, and was completed on April 29, 1998.

Abandonment of an existing waterline and the discovery of additional waste not defined in the remedial action, occurred on 13 May 1998.

Removal and onsite disposal/consolidation of drummed waste, derived from remedial investigation activities started on 18 May 1998 and was completed on 20 May 1998.

Test pit investigation to confirm the actual limits of waste occurred on 18 and 19 May 1998.

Construction of a 100' X 200' dewatering pad started on 19 May 1998 and was completed on 26 May 1998

Installation of soil erosion control measures and construction of flood control berms along the north and east excavation areas started 20 May 1998 and was completed 28 May1998.

Construction of a clay test pad, to verify proposed construction methods and material quality, started on 27 May 1998 and was completed on 9 June 1998.

Excavation, dewatering and on-site consolidation of saturated waste, along with construction of a dewatering pad started 2 June 1998 and was completed 15 July 1998.

Construction of a multilayer soil cover system, consisting of a two foot grading layer, two foot clay layer, two foot vegetative support layer and reinstallation of the topsoil layer, after completion of a clay test pad, started on 21 May 1998 and was completed on 25 November 1998.

Installation of a passive landfill gas vent system was started 20 July 1998 and was completed 1 August 1998.

Extension of monitoring wells remaining within the limits of the capping system occurred on 14 and 15 October 1998.

Construction of a permanent access road along the southern limits of the capping system started on 3 November 1998 and was completed on 25 November 1998.

Installation of permanent perimeter fencing and gates started on 16 November 1998 and was completed on 3 December 1998.

Final grading and restoration including construction of a storm water and erosion control system was started on 20 November 1998 and completed on 3 December 1998.

A final inspection of the remedial action construction activities was conducted on 3 December 1998.

SECTION 3

PERFORMANCE STANDARDS AND CONSTRUCTION QUALITY CONTROL

3.1 CONSTRUCTION QUALITY ASSURANCE PLAN (CQAP)

A CQAP was developed by WESTON, describing the Quality Assurance (QA) activities required to ensure the proper and complete implementation of the landfill remedial action at the SCL site.

The CQAP was prepared in accordance with the approved Remedial Design Work Plan and with the U.S. EPA Technical Guidance Document, "Quality Assurance and Quality Control for Waste Containment Facilities," U.S. EPA/600/R-93/182, Dated September 1993 (U.S. EPA 1993). The CQAP presents the minimum performance standards or requirements that the remedial contractor must meet or exceed in the completion of the SCL remedial project.

The CQAP is an integral part of successfully implementing the planned remedial action at the SCL site. The CQAP is organized into five sections:

- Section 1, Introduction, discusses the overall organization and administrative requirements for implementing the QA program. It includes the purpose and scope of the remedial action, definitions, and a summary of the landfill remedial action.
- Section 2, Responsibilities and Authority, outlines the chain of reporting responsibilities and the authority and qualifications of each member of the QA team. It defines the roles, authority and responsibilities of the U.S. EPA, WDNR, Engineer, Construction Quality Assurance (CQA) consultant, and the contractors which make up the quality assurance organization. The CQAP also defines the lines of communications for the quality assurance organization.
- Section 3, Meetings, describes the method of maintaining effective lines of communication through scheduled and unscheduled meeting and the subsequent dissemination of information. Meetings addressed in the CQAP are the pre-construction, daily progress, weekly progress, work deficiency, and the final inspection/closeout meeting.

- Section 4, Quality Assurance Testing Program, describes the inspections and observations required to be conducted by the CQA officer to insure compliance with the plans and specifications. Specific QA requirements for observation and verification testing were detailed for the preliminary site work, site clearing, grubbing and stripping, waste consolidation activities, earthwork, passive gas venting system, fencing, seed and fertilizer. A table of testing requirements used during the SCL remedial action was part of the contract documents.

- Section 5, Documentation, discusses the recordkeeping requirements for certifying the closure of the SCL site in accordance with the approved plans and specifications. Daily inspection reports, work deficiency reports, project photographs, record drawings, and storage and disposition of records are addressed.

3.2 OTHER REMEDIAL ACTION PLANS

A site-specific Health and Safety Plan (HASP), Construction Quality Control Plan, Environmental Protection Plan and Mobilization Plan were developed to insure the proper implementation of the SCL remedial action.

- A HASP was developed for all phases of the SCL remedial action, and implemented prior to mobilization to the site. The principal items addressed in the HASP are, site description, project description, hazard assessment, site safety regulations, waste excavation, a drum removal contingency plan, submittals, training requirements, air monitoring, Emergency response procedures, decontamination procedures, confined space entry, a spill containment program, inspections, record-keeping, and reporting.

- A Construction Quality Control Plan was developed detailing the quality control organization and the qualifications of the quality control manager and testing laboratory. Procedures for project control, submittals, inspection deficiencies, field sampling and testing, and reporting are detailed in the plan. The Construction Quality Control Plan was approved with comments 11 May 1998.

- The Environmental Protection Plan was developed to establish construction methods and procedures designed to minimize adverse environmental impacts and restore the SCL site to a stable natural state. The plan provides an overview of the project and includes an erosion and sediment control plan, petroleum products control plan, waste disposal plan and noise, dust, odor and pest control plan. The Environmental Protection Plan was approved 11 May 1998.

- The Mobilization Plan was developed to define the activities associated with mobilization and decontamination. The plan includes the procedure and water source for dust control, a traffic control plan, site facilities plan, decontamination plan, leachate collection and storage plan and site access agreement. The mobilization plan was approved 18 May 1998.

A clay borrow study was also conducted according to the guidelines in the Wisconsin Administrative Code NR512.15 and approved 18 June 1998. The study showed the clay cap material from the Rosenbaum quarry located approximately 1.5 miles south of Stoughton on Highway 138, to be of adequate volume and acceptable quality.

3.3 QUALITY CONTROL TESTING SUMMARY

In summary, each layer of the landfill cap was tested for compatibility and compliance with the requirements of the contract documents.

The grading layer was required to meet the specified compaction requirement of 95%. All tests performed met or exceeded this requirement. One test location initially failed, but after rework met the performance requirement. A total of 167 field density tests were taken on the 63,672 cy of grading layer placed.

The clay barrier layer was required to meet two requirements, compaction in excess of or equal to 95% and hydraulic conductivity of less than 1 X 10^{-7} cm/sec. The compaction testing was performed on each eight-inch lift of the clay layer. One test location failed, but after rework met the preformance requirements. A total of 239 field density tests were taken on the 55,119 cy of clay layer placed.

The vegetative cover layer was required to meet grain size, moisture content, and USCS classification. One test per every 7,500 cubic yards was required. Eight tests were taken on the 55,014 cy placed. All tests performed meet performance requirements.

The topsoil from the existing landfill cap was stripped, stockpiled and reused in the final cover system. No tests were required for the existing topsoil, except to determine fertilizer requirements.

SECTION 4
CONSTRUCTION ACTIVITIES

The closure of SCL site involved the excavation and relocation of saturated waste deposited in wetlands, construction of a multilayer soil cover system, installation of a passive gas venting system, and construction of an access road and perimeter security fence. Construction activities were completed between April and December 1998. The final SCL site conditions are shown in Figure 2. The closure effort included the following tasks, which are covered in this report.

- Construction of temporary facilities and security fencing.
- Construction of a decontamination pad and development of a water management plan for water generated from decontamination and dewatering.
- Clearing, grubbing, and stripping of existing topsoil within the limits of the capping system.
- Installation of soil erosion control measures, including a temporary flood control berm along the edge of existing wetlands.
- Demolition and onsite consolidation of existing on-site facilities and debris, including an 8 inch waterline and picnic shelter.
- Abandonment of an existing waterline and certain existing monitoring wells on-site.
- Removal and onsite disposal/consolidation of drummed waste derived from remedial investigation activities.

- Test pit investigation to determine limits of waste.
- Excavation, dewatering and on-site consolidation of saturated waste, along with construction of a dewatering pad.
- Construction of a multilayer soil cover system, after completion of a clay test pad.
- Installation of a passive landfill gas vent system.
- Construction of a permanent access road.
- Installation of permanent perimeter fencing and gates.
- Final grading and restoration including construction of a storm water and erosion control system.

It is worth noting that additional waste was encountered during the abandonment of the existing waterline. This discovery required excavation of additional test pits in areas outside the originally defined waste relocation limits. The southern extent of waste was found to be a few feet north of Skogdalen Drive. The additional 7,351 cubic yards of waste impacted several activities as well. A more detailed discussion of this additional waste is included in Section 6.0 of this document.

The 7,351 cubic yards of additional waste were relocated to the waste consolidation area over eight working days. The job trailers were relocated on June 16 1998 in order to provide access to the additional waste area. Due to the additional waste discovered outside the original waste limits and waste along the east side of the site found at a greater depth than was originally anticipated, the actual amount of waste relocated to the waste consolidation area was 24,987 cubic yards.

With the extra waste being relocated to the center of the site, the original elevations of the final cover system were raised by approximately two feet at the high point and contours were field adjusted. This design change required grading layer, clay layer and vegetative layer material in excess of the originally anticipated quantities. The borrow sources supplied the necessary materials of suitable quality. The additional grading layer, clay layer, vegetative layer and topsoil materials were purchased at the unit price of the original bid.

All work was carried out by Ryan Central, Inc. (Ryan), a subcontractor to Weston, and second tier subcontractors.

4.1 MOBILIZATION AND DEMOBILIZATION

A pre-construction meeting was held at the site 14 April 1998 to begin the project. U.S. EPA, WDNR, Weston and Ryan attended. Upon completion of the meeting, Ryan began mobilization of heavy equipment for earth moving activities and subcontractors for specialized tasks. Job trailers for Ryan and Weston were mobilized prior to the pre-construction meeting in an effort to expedite the project.

Mobilization and demobilization of heavy equipment and personnel was conducted throughout the project due to the various, differing activities.

A final inspection was held at the site on 3 December 1998 to conclude the construction activities. USEPA, WDNR, Weston and Ryan were in attendance. Upon completion of the final inspection Ryan demobilized all support facilities and restored the support area to it's original condition.

Items completed as part of the mobilization phase of the project include:

- Preparation and submission of a Health and Safety Plan.

- Mobilization and demobilization of heavy equipment and personnel.
- Topographic survey of pre-construction conditions and final conditions.
- Installation and removal of temporary field offices, temporary utilities, temporary security fence and associated appurtenances.
- Construction, installation and removal of the construction project sign.
- Submittals for various aspects of the project (see Appendix A, Table 1 for a complete list).
- Installation and removal of a decontamination pad and trailer for equipment and personnel.
- The above activities were completed to meet the intent of the project plans and specifications.

4.2 TEST PIT INVESTIGATION

A test pit investigation was conducted on 18 and 19 May 1998, to provide better definition of the horizontal and vertical extent of waste to be excavated. The wetlands prevented a more accurate determination during RI/FS or design phase of the project. The test pit investigation was conducted prior to the waste relocation activities.

Sixteen pre-designated test pits were excavated in the waste relocation areas. One additional test pit was added near the southwest corner of the work area, due to a proposed location change for the permanent roadway, as requested by the U.S. EPA.

Seven additional test pits were added to the test pit schedule to investigate the extent of additional waste found during the abandonment of the existing waterline. A summary of the findings of these test pit investigations is located in Appendix A.

The test pit investigation requirement for this project was completed to meet the intent of the project plans and specifications.

4.3 EROSION, SEDIMENT AND FLOOD CONTROL STRUCTURES

Erosion and sediment control structures were installed prior to and during the topsoil stripping activities to minimize erosion and prevent excessive sediment from entering the wetland areas to the north and east, and the Yahara River to the west.

Flood control berms were constructed along the north and east sides of the site prior to excavation of waste to minimize water infiltration from the wetlands. These flood control berms were constructed with clay material imported from the approved off-site borrow source. The flood control berms were removed once the excavated areas were backfilled with grading layer material.

Silt fence was installed along the north and east sides of the site. Silt fence was also installed along the west side, immediately east of the topsoil stockpile, and immediately north of the on-site access road.

Upon completion of the finish grading and seeding, permanent erosion and sediment control measures were installed. Erosion bale barriers were installed in perimeter diversion channels along the west and south sides of the site. Erosion control matting was placed on slopes along the permanent access roadway in accordance with the specifications. Silt fence was either repaired or replaced to meet the intent of the specifications along the north and east perimeter of the site.

The flood control berms and silt fence installations were completed to meet the intent of the project plans and specifications.

4.4 CLEARING, GRUBBING AND STRIPPING

Ryan began clearing and grubbing of trees and brush within the limits of the final cover system on 15 April 1998. Trees and brush were chipped and stockpiled. Wood chips were blended into the topsoil during final grading and placement of the topsoil cover. Stumps were removed and placed in the onsite waste consolidation area. The clearing operations schedule was impacted due to rain early in the project.

Topsoil stripping activities began on 27 April 1998. Ryan stripped all topsoil within the limits of the final cover system to a depth of approximately six inches. Topsoil was stockpiled at the southwest corner of the site (in the area originally planned for the site support facilities), outside of the limits of the landfill cover system, for reuse later during restoration activities. Topsoil was also stripped from the affected wetland areas to the east and southeast edges of the site and stockpiled separately for later reuse. Topsoil stripping and stockpiling activities were completed by 22 May 1998.

Clearing, grubbing and topsoil stripping were completed to meet the intent of the project plans and specifications.

4.5 DEMOLITION AND DEBRIS REMOVAL

Demolition and debris removal consisted of:

- Demolition and on-site disposal of an on-site picnic shelter.

- Collection and on-site disposal of miscellaneous existing surface debris.

- Abandonment of a portion of existing 8 inch ductile iron waterline and fire hydrant.

- Emptying and on-site disposal of 395 drums containing remedial investigation-derived waste.

- Abandonment of 19 existing monitoring wells.

- Demolition of the existing picnic shelter was completed on 22 April 1998. The shelter was broken into pieces and was disposed of within the limits of the waste consolidation area.

- Other miscellaneous debris was collected at various locations around the site and was disposed of within the limits of the waste consolidation area. This debris was mainly brush, rusted metal, plastic and wood pieces, which were both contaminated and uncontaminated in nature. This activity occurred between the dates of 22 and 29 April 1998.

On 13 May 1998, waste was discovered during excavation for the removal of an existing waterline as called for in the scope of work. The waste was discovered outside of the limits of the landfill, and was not previously identified as waste to be removed and relocated. The waterline abandonment excavation was stopped. An additional investigation, consisting of test pitting, was scheduled to determine the horizontal and vertical extent of waste beyond those areas already identified.

This discovery led to the issuance of Change Orders No.1, No. 2, and No. 3, which are covered in Section 6 of this document.

The emptying and on-site disposal of 395 drums containing remedial investigation derived waste occurred between the dates of 18 and 20 May 1998. Drums were collected from three on-site

locations. Drum labels and markings were recorded and listed in Appendix A, Table 5. All emptied drums were crushed and placed in the waste consolidation area. This activity was performed to meet the intent of the project plans and specifications.

Abandonment of 19 existing monitoring wells occurred on the 28 and 29 April 1998. The abandonment of monitoring wells was completed to meet the intent of the specifications.

The shelter demolition, waterline and hydrant abandonment, drum disposal and monitoring well abandonment have all been completed to meet the intent of the specifications.

4.6 TEMPORARY AND PERMANENT ACCESS ROADS

The temporary access road called for in the original plans was eliminated due to relocation of the field support facilities. Job trailers and employee-parking areas were relocated from the southwest corner of the site to the southeast corner, on property owned by Skaalen Homes. Permission to relocate support facilities to this location was obtained from Skaalen Homes, in writing, by Ryan.

The USEPA requested a review of the location for the permanent access road. This request was made to accommodate residents from the community. Prior to beginning the closure action, residents used the existing access road as a walking trail. Due to the proposed location of the permanent access road, residents would no longer be able to use the roadway for walking. Weston revised the final cover system design and issued a drawing incorporating the change in August of 1998. A Change Order was requested by Ryan to cover the costs associated with changes made to the permanent access road.

Construction of the permanent access road began on 3 November 1998 and was completed on 25 November 1998.

4.7 LANDFILL GAS VENT SYSTEM

Laterals for the passive landfill gas vent system were installed from 20 July to 1 August 1998. Locations of all risers and connection pieces were surveyed, as were locations along the laterals at 50-foot intervals. Trenches were lined with filter fabric and were backfilled with washed stone. A modification to the plans was requested by Weston to increase the trench depth to include stone and fabric through to the top of the grading layer. A Change Order was requested by Ryan to cover the cost of the additional stone and filter fabric.

Weston also changed the riser design by raising the top of risers by one foot and by adding bird screens, blind flanges, and neoprene gaskets to the risers. These changes were incorporated to enable the passive vent system to be converted to an active system later if required.

After topsoil placement was completed, the installation of the risers for the landfill gas vent system was completed.

4.8 DEWATERING PAD AND APPURTENANCES

A dewatering pad was constructed to dewater saturated waste during waste consolidation operations. The pad was constructed using the same clay material that was approved for the construction of the clay barrier layer. The construction of the dewatering pad began 19 May and was completed on 26 May 1998.

The 100' x 200' dewatering pad incorporated a sump in the southeast corner to collect dewatering liquids for off-site disposal and a perimeter dike system to detain liquids derived from dewatering activities and rain water.

Quality control tests were performed to ensure the pad's integrity. These tests include analysis of grain size, Atterberg limits, and moisture content of the clay. In addition, a moisture density curve was developed for the clay and ten field density tests were performed.

After all relocated waste was dewatered; the dewatering pad was removed and relocated to the waste consolidation area.

4.9 LIQUID WASTE DISPOSAL

Contaminated liquid collected during the project was disposed of off-site at the Madison Wastewater Treatment Plant (WWTP) located in Madison, Wisconsin. Two tanker trucks were maintained on-site by Ryan for the storage of contaminated liquid prior to disposal. Contaminated liquid was derived primarily from the dewatering pad, decontamination pad and waste dewatering (from excavation activities).

Contaminated liquid was encountered on 8 June 1998 during excavation of waste at Area 2, the east excavation area. An excessive amount of liquid was perched in the waste to be relocated.

This required dewatering of the excavation and off-site disposal of the liquid before backfilling operations could be completed.

Ryan requested, and was permitted to transport the contaminated liquid to an interim storage facility located in Milwaukee, Wisconsin until the analytical results of the liquid were available. Based on the results of the analytical testing the liquid was approved for disposal at the Madison WWTP.

After the decontamination pad was removed, the two tanker trucks were no longer needed and were taken offsite on 14 August 1998. The final volume of contaminated liquid disposed of off-site was 192,500 gallons. Details of the off-site liquid disposal are located in Appendix A.

4.10 WASTE CONSOLIDATION

In order to construct the final cover system shown on the plans, waste along the edges of the site required excavation, dewatering, and relocation to the designated waste consolidation area. Excavation of waste began on 2 June1998 and was completed on 15 July 1998.

The excavations were in five areas: Area 1 was at the north end of the site, Area 2 was at the east end, Area 3 ran along the south end of the site, Area 4 included the southwest corner of the site, and Area 5 included the additional waste area that fell outside of the originally anticipated extent of waste to the south of the site.

On 3 June 1998, a drum containing an unidentified viscous liquid was uncovered. Ryan's Photo Ionization Detection meter gave a reading of 15.4 ppm when held near the drum. All other meters showed readings below action levels. A diked area was built outside the waste relocation area and was lined with plastic. The drum was placed in the diked area and was covered with plastic. On 8 June 1998, Safety-Kleen collected samples of the material inside of the drum. Disposal of the drums occurred on 3 August 1998. In all, three steel 55-gallon drums and two plastic overpacks were needed to contain the drum, it's contents, and the soil and plastic from the temporary storage area. These five containers were hauled off-site and disposed of by Safety-Kleen on 4 August 1998. The cost of disposal was covered under Change Order No. 4.

With the exception of the drum described above, all waste excavated was relocated and consolidated on the site. Meter readings were below action levels. 24,987 cubic yards (cy) of waste were

relocated to the center of the site. Furthermore, waste that was excavated during trenching activities required incorporation into the waste consolidation area. The volume of waste exceeded the volume identified in the contract documents. Weston amended the Grading Plan by expanding the limits of the waste relocation area and by raising the elevation of the top of the waste consolidation area. The horizontal limits of the waste consolidation area were also extended to the east approximately sixty-five feet.

4.11 GRADING LAYER

Riverview Trucking, a second tier subcontractor, began importing grading layer to the site from the Halverson Borrow Pits on 21 May 1998. Grading layer was placed over the existing landfill cover, outside the limits of waste relocation to a depth of 6 inches. Grading layer was also used as backfill material in the areas where waste was excavated. Two feet of grading layer was placed over the relocated waste. Grading layer was placed in compacted 8-inch lifts and the final lift was proof-rolled.

Ryan's Quality Control subcontractor, CGC, Inc., performed 171 field density tests on the grading layer. CGC also collected five bag samples for which moisture density curves were developed and grain-size distribution analyses were performed.

Placement of the grading layer was completed on 13 August 1998. A total of 63,672 cy of grading layer material were imported to the site. This number exceeds the original estimate of 55,000 cy of required grading layer material because the landfill cover was raised. 57,774 cy of grading layer was used within the limits of the capping system and 5,898 cy were used in area 5, the additional waste area outside the landfill limits to the south.

4.12 CLAY BARRIER LAYER

Construction of a clay test pad, which was required prior to installation of the clay barrier layer, occurred between 27 May and 9 June 1998. A battery of quality control tests were performed on the clay test pad to verify proposed construction methods and material quality for the clay barrier.

Two full-depth Shelby Tube samples were collected on 9 June 1998. Atterberg limits, moisture content, dry density, grain size distribution, and hydraulic conductivity tests were performed on the samples by 23 June 1998. Shelby Tube results were acceptable.

Thirteen field density tests were performed on the clay test pad between 4 and 9 June 1998. All tests yielded acceptable moisture content and percent compaction.

From 15 June 1998 through 1 July 1998, CGC tested in-place hydraulic conductivity using Boutwell tests. The results indicated that the hydraulic conductivity of the clay test pad met or exceeded the standard of 1.0×10^{-7} cm/sec.

Construction of the clay barrier layer began on 14 August 1998 and was completed on 30 September 1998. A two-foot layer of clay was placed over the grading layer within the limits of the cover system. Clay was placed and compacted in three 8-inch lifts. CGC, Inc. performed a total of 239 field density tests. Eleven bag samples of clay were collected and were analyzed for particle size distribution, water content, and Atterberg limits. A moisture-density curve was also generated for each bag sample. Thirty-six Shelby Tube samples were collected and these samples were analyzed for particle size distribution, water content, Atterberg limits, hydraulic conductivity, USDA classification and unit weight.

A total of 55,119 cy of clay were imported to the site from the Rosenbaum Borrow Pit. This number exceeds the original estimate of 50,500 cy of clay required, because of the changes in the landfill cover system.

4.13 VEGETATIVE LAYER

Construction of the vegetative layer began on 24 September 1998 at the northwest corner of the site. 55,014 cy of vegetative layer material was imported to the site. Of that total, approximately 1/3 came from the Rosenbaum Borrow Pit and 2/3 came from the Halverson Borrow Pit. Import of vegetative layer material was completed on 2 November 1998.

Vegetative layer material was placed in two 12-inch lifts. Six grab samples of vegetative layer material were collected by CGC, Inc. These samples were analyzed for particle size distribution, water content, and USDA classification. The total volume of material required exceeded the original estimated quantity because of the design changes in the landfill cover system.

4.14 EXTENSION OF MONITORING WELLS

Drawing No. 1 of the contract documents gives a listing of monitoring wells that were to be used after the construction phase for site maintenance. These seven wells need to be extended before the landfill cover was completed. On 14 and 15 October 1998, Ryan's subcontractor, Environmental Drilling, extended the selected monitoring wells to meet the intent of the contract documents.

To determine whether landfill gases were migrating offsite, Weston checked twelve monitoring wells with a combustible gas indicator (CGI) on 18 September 1998. All of the wells gave a reading of zero percent LEL so it is likely that landfill gases are not migrating offsite.

4.15 TOPSOIL

Topsoil placement began on 3 November 1998. Previously stripped and stockpiled hydric soil was placed in the wetland areas to the east and southeast edges of the site. Topsoil previously stripped and stockpiled from the landfill area was then placed and fine graded within the limits of the capping system, to meet the intended contours of the site.

A total of 898 cy of topsoil was purchased and placed in the additional waste area and along the permanent access roadway. Placement of topsoil was completed to meet the intent of the specifications on 25 November 1998.

4.16 FENCE AND GATES

Installation of permanent chain link and wood fences and gates began on 16 November 1998 and was completed on 3 December 1998. The location of the wood fence at the south and west side of the site was modified to allow for the installation of the permanent access road.

4.17 FINISH GRADE AND SEEDING

Finish grading and seeding began on 20 November 1998. Fertilizer, lime and seed was applied to the site and disced to a depth of three inches. Upon completion of the seeding, rocks larger than 2 inches were removed from the topsoil. Mulch was then applied and crimped to prevent erosion and to protect the seedbed from inclement weather. Since seeding occurred relatively late in the season, dormant grass seed was used. Final grading and seeding was completed on 3 December 1998.

SECTION 5

PROJECT REPORTS AND CONTROLS SUMMARY

The following reports were used throughout the project for communication and tracking of progress:

- Daily reports summarizing the activities of each day were submitted to the Weston Project Manager.
- Daily verbal communications were maintained between the Weston site personnel and the Weston Project Manager.
- Weekly reports summarizing the primary activities of the week were submitted to the Weston Project Manager, and after review submitted to the U.S. EPA.
- Monthly reports were prepared by the Weston Project Manager and submitted to the U.S. EPA.
- Monthly meetings were held at the project site with all interested participants. Minutes were taken by Weston and distributed to the U.S. EPA, WDNR, Weston and Ryan.

The following project controls were implemented to ensure that work was performed in compliance with project plans and specifications:

- Submittal log detailing the status of all submittals.
- Decontamination log listing the item, date, time and person responsible for the decontamination event.
- Results of daily air monitoring were recorded in the air monitoring log.
- Results of combustible gas monitoring of monitoring wells were recorded in a CGI monitoring well log.
- Quantities of soils imported to the site were recorded on a daily basis to ensure that required samples were collected in a timely manner.

- Liquid waste disposal log was used to track off-site shipments and disposal of liquid waste.
- Drum disposal log detailed labels and markings of drums emptied and disposed of during the drum disposal activity.
- Rain log was maintained to track precipitation, lost and partial workdays during the project.
- Project photos recording conditions, progress, deficiencies and changes was maintained in the photo log.
- Results of field density tests were maintained in a grading layer field density test log and a clay barrier layer field density test log.
- During trenching activities, a daily log was kept to record the linear feet of trench excavated within three depth zones.
- Training log with information on employee Health and Safety training was maintained to ensure each site worker's training was current.
- Ryan updated the schedule bi-weekly to reflect progress.
- An employee and visitors log was kept to track personnel on-site.

It should be noted that on 22 September 1998, Alan Baumann, a safety inspector for the U.S. EPA, visited the site to conduct a health and safety audit. He noticed that Ryan's Health and Safety Plan does not address emergency equipment or locations but he was informed that these issues are discussed at safety meetings. Mr. Baumann also remarked that no written respiratory protection program is available.

SECTION 6
CHANGES IN WORK

The changes made to the SCL Site Closure scope of work have occurred in six areas: mobilization modifications, additional waste relocation and restoration, disposal of drums containing hazardous material, gas vent system modifications, redesign of the permanent access road and minor modifications.

6.1 MOBILIZATION MODIFICATIONS

Prior to the start of the project, the location for the field job trailers and employee parking areas were changed at Ryan's request. The original design called for these items to be located in the southwest corner of the site, within the site property limits.

The request was made for the following reasons: to allow additional flexability for stockpiling topsoil in the southwest corner of the site, to eliminate the amount of truck traffic in front of the residents on the south side of the site and to reduce costs. The location of the job trailers and parking area was moved from the southeast corner of the site to property owned by Skaalen Sunset Homes (Skaalen). The new location was adjacent to the original entrance to the site along the south side of the site. Written permission was obtained from Skaalen for the use of this property.

The temporary access road shown on the plans was eliminated due to the relocation of the job trailers and parking area adjacent to the original entrance. The relocated temporary access road was constructed adjacent to the existing entrance.

6.2 ADDITIONAL WASTE RELOCATION AND RESTORATION

During excavation for the abandonment of the existing waterline on 13 May 1998, waste was discovered outside of the limits of the landfill used in the original design. An investigation, by the use of test pits, into the extent of the additional waste was conducted on 18 and 19 May 1998. WESTON estimated that 8,000 cubic yards of additional waste existed to the south of the southeast corner of the site, on property owned by Skaalen.

Upon completion of the investigation, Change Orders numbers 1, 2, and 3 were issued. These change orders all dealt with the finding of additional waste, and are described in more detail below in section 6.2.1, 6.2.2 and 6.2.3 respectfully.

6.2.1 Change Order No. 1: Relocation of Utilities and Support Facilities

In order to keep the project moving, a field order (No. 1) was issued to Ryan on 10 June 1998 to relocate the trailers and utilities out of the area where additional waste was discovered. Change Order No. 1 was issued to Ryan to relocate the job trailers and parking areas to the north side of Skogdalen Drive, outside of the limits of the additional waste. Change Order No. 1 also required relocation of a power pole and telephone line servicing the job trailers and garage located on Skaalen's property, and then restored to the original location upon completion of the project.

The cost associated with Change Order No.1 was $7,353.69.

6.2.2 Change Order No. 2: Water Hydrant Relocation and Site Restoration

A field order was issued to Ryan to relocate the City's fire hydrant from that location shown on the plans to an area outside the limits of the additional waste. The total cost for Change Order No. 2 was $1,700.00.

6.2.3 Change Order No. 3: Waste Removal and Relocation and Site Restoration

Change Order No. 3 includes removal and consolidation of the additional waste outside of the contract limits, and to backfill and restore the affected area. It also required removal and replacement of the asphalt entrance and concrete curbs, safety fencing and signs, providing topsoil and an aggregate surface for an existing driveway, final grading and seeding, and associated management tasks.

Change Order No. 3 is based on unit price and lump sum pricing with the estimated cost being $132,339.34. The actual cost based on the surveyed quantities was $142,996.98.

The discovery of additional waste created other changes to the project including, modifications to the landfill capping system. These changes are reflected in the increased volumes required to complete the grading layer, clay cap and vegetative layer.

6.3 CONTAINERIZATION, TRANSPORT AND DISPOSAL OF WASTE AND CONTAMINATED SOIL

A buried drum containing a paint-like substance was found on 3 June 1998 during waste relocation

and relocation on the site. The drum was isolated in a diked area of the landfill and sampled. Based on the results of laboratory analysis, the drum and the adjacent soil were containerized and shipped to Dolton, Illinois for thermal destruction, it was removed from the site on 3 August 1998. The total cost of Change Order No. 4 was $8,252.70.

6.4 GAS VENT RISER AND TRENCH MODIFICATIONS

The original design of the gas vent trenches required the trench to extend two feet into the waste or two feet below the water table. Washed stone was to be used as backfill in the trenches, up to the bottom of the grading layer. However, WESTON modified the design by requesting that the trenches be backfilled with stone up to the top of the grading layer in order to provide for gas collection in the grading layer. This change resulted in the need for additional filter fabric and stone.

The original design of the gas vent risers had a PVC tee connection located one foot above the ground surface. Because this location made the tee connection susceptible to damage during later lawn maintenance activities, Weston decided to raise the tee connection to two feet above the ground. Weston also changed the PVC cap on the tee connection to a blind flange with a neoprene gasket. The connection of the elbow pipe to the vertical riser was also changed to a flange connection that includes a neoprene gasket. These changes would more readily facilitate switching the gas venting system from a passive system, to an active system, if the need arose in the future. To prevent small animals and birds from entering the open ends of the risers, screens were added to the discharge end of the vents. Change Order No. 5 was issued in an amount of $17,494.25 for the changes to the gas venting system.

6.5 REDESIGN OF PERMANENT ACCESS ROAD

The U.S. EPA requested a review of the location for the permanent access road at the pre-construction meeting on 14 April 1998. The U.S. EPA requested the access road be located outside of the permanent fencing at the completion of the project. To allow for access to the monitoring wells located outside of the cap but on the west side of the site. This would allow the permanent access road, as designed, to be removed from the top of the Landfill cap, and also allow the City and it's residents to use the road to access a proposed walking trail along the Yahara River.

The line item in the original bid for a permanent access road was deleted and the resultant additional cost was $23,569.28.

6.6 MINOR MODIFICATIONS

On 1 October 1998, the elevation of the bottom of the drainage ditch that runs along the west side of the site was raised. Monitoring wells located at the northwest corner of the site would be situated within the bottom of the ditch. By raising the bottom of the ditch one-foot allows easier access to the wells and simplifies maintenance of the ditch. No change order was required for this design change.

Four (4) Bollards were added around wells 11S, 11D, and 11I. No Bollards previously existed at this location. Cost was $396.00.

Relocation of the fire hydrant required and increase in the length of the riser pipe. Cost was $814.00.

An erosion mat was placed along the slopes of the permanent access road and associated ditches to maintain the seed during the winter. Cost was $1,320.00.

Additional grading was required to reform the slopes at the top of the landfill to accommodate the additional relocated waste. Cost was $6,050.00.

SECTION 7
PROBLEMS ENCOUNTERED

The problems encountered were mainly associated with rainy weather, a small seep at the toe of the landfill cover system, and complaints from neighbors.

7.1 RAINFALL

Between 15 April and 3 December 1998, the site received 37.15 inches of rain. The normal amount of rain for Madison, Wisconsin between these dates is 25.04 inches. Fourty three full work days and 20 partial work days were lost as a result of rainy weather and wet site conditions. Because the nature of the work involved in construction of a multi-layer soil landfill cover is negatively affected by wet conditions, excessive rain is the primary reason that the completion date was extended to 3 December 1998 from 8 October 1998. This resulted in increased management and oversight time for the project. Throughout the project, Ryan optimized the days with good weather and worked six-day work weeks with twelve-hour days. A rainfall log is attached in Appendix A.

7.2 SEEP AT TOE OF LANDFILL COVER

On September 8, 1998, site workers discovered a small seep at the southeast corner of the landfill cover. A trickle of water appeared to flow up from the toe of the slope at the edge of the cover and then into puddles over the ground between the cap and the silt fence at the edge of the site. Weston instructed Ryan to seal the seep with clay. The seep was stopped but reappeared on 21 September 1998. Although the water appeared to be clear, Weston collected samples of the water to be analyzed on 23 September 1998. Results of the analysis showed that the water had a high barium

content, but all other measurements were normal. The seep was sealed off again and did not reappear. At the monthly meeting held on 15 October 1998, the U.S. EPA, WDNR, and Weston agreed that further action on the seep would not be necessary.

7.3 COMPLAINTS FROM NEIGHBORS

On 23 September 1998, one of the local residents who lives on Skogdalen Drive submitted a list of grievances to Weston. She requested monetary reimbursement for the damages allegedly suffered as a result of the construction project. Weston forwarded the list to the U.S. EPA, which decided that no reimbursement would be made until a representative of the U.S. EPA performed an inspection of the damaged property. On 24 September 1998, a second neighbor living on Skogdalen Drive informed the WDNR that they wanted the accumulated dust from the project to be washed off the side of the house. Because Skaalen periodically power-washes the outsides of all of the homes in the development, and because Skaalen's maintenance department has informed Weston that the homes facing the site will be washed once construction activities are completed and weather permits.

SECTION 8

FINAL INSPECTION/CONTRACT CLOSEOUT MEETING

A final inspection and construction closeout meeting was conducted at the site on 3 December 1998. The inspection and meeting was attended by Tony Rutter, U.S. EPA, Remedial Project Manager; Paul Kozol of WDNR, Bill Karlovitz and Jeff Wilson of WESTON, and Dick Vorphal, John Burt and Ron Hill of Ryan. The purpose of the final inspection and meeting was to document any unfinished construction items, deficiencies, and method of corrective action. No deficiencies were found and all unfinished work was completed by 4 December 1998.

This meeting was originally scheduled as a pre-final inspection, but because of the completeness of the project it was also used as the final inspection.

SECTION 9

OPERATION AND MAINTENANCE

The objective of the Operation and Maintenance (O&M) Plan is to describe the inspection and maintenance activities required to maintain the effectiveness of the Stoughton City Landfill Site soil cover system.

The final cover is intended to reduce the infiltration of water through the cap and to reduce the potential for human contact with the waste materials contained under the cap. In order to maintain the integrity of the cap, the inspection shall include the following:

- Evaluate the quality of the vegetative cover.
- Evaluate that erosion of cap and drainage channels has not occurred.
- Security fence inspection.
- Damage to the gas vent risers.
- Mowing the cap.
- Maintenance of the erosion control measures including silt fence and straw bales.

In addition to the inspections, post-construction monitoring shall be performed to meet the following objectives:

- Establish the groundwater quality after construction and determine trends in groundwater quality to assess the effectiveness of the soil cover system.
- Monitor gas from the off-site monitoring wells to determine if gas is migrating off-site.
- Monitor gas from the gas vents to determine changes in quality of gas produced from the landfill.

SECTION 10

SUMMARY OF PROJECT COSTS

The total anticipated cost for construction of the landfill cap was $4,286,500, which was based on the Final Design Report dated 7 February 1997.

Original bid amount	$1,851,878.00
Change orders	
-Relocate utilities and trailers	7,353.69
-Water hydrant relocation	1,700.00
-Additional waste removal, relocation & site restoration	142,996.98
-Buried drum sampling, transportation, and disposal	8,252.70
-Grading layer adjustments	6,050.00
-Revised gas vent riser and trench	17,494.25
-Final access road modifications	23,569.28
-Miscellaneous modifications: bollards, hydrant, erosion mat	2,530.00
-Quantity adjustments from original bid quantities	22,527.78
	$2,084,307.68

Due to the quality of the plans and specifications and the time bids were requested, very competitive bids were received for the project. This provided a substantial savings to the U.S. EPA.

APPENDIX A:

PROJECT CONTROLS

TEST PIT SUMMARY

TEST PIT INVESTIGATION SUMMARY

TP-01 :
Excavated 5/18/98
Edge of was discovered at the toe of slope.
0' to 2' Clay cover
2' to 4' Waste Material was discovered.
4' and below was clean blue clay.

TPA-17
Excavated 5/18/98
This test pit is an addition to those on drawing #4
Edge of waste was discovered 15' south of grid point 1192
0' to 1' Clay cover
1' to 3' Waste Material was discovered.
3' and below was clean blue clay.

TP-02
Excavated 5/18/98
Waste was discovered in all areas that the excavator could reach from the bank.
0' to 1' Hydric soil
1' to 3' Waste Material was discovered.
3' and below was clean blue clay.

TP03
Thru
TP-09
Excavated 5/19/98
All test pits were excavated as far into wetland as excavator could safely reach.
Only a small amount of surface waste was observed in the wetland area.
This waste was picked up and taken to the waste disposal area.
Waste was discovered at the toe of slope.
0' to 2' clay
2' to 6' Waste Material was discovered.
6' and below was clean blue clay

TP-10
Excavated 5/19/98
Edge of waste was discovered 45' east of grid point 1418
0' to 3' Clay cover
3' to 5' Waste Material was discovered.
5' and below was clean blue clay.

TP-11
Excavated 5/19/98
Edge of waste was discovered 35' north of grid point 1341
0' to 1' Clay cover
1' to 4' Waste Material was discovered.
4' and below was clean blue clay.

TP-12
Excavated 5/19/98
Edge of waste was discovered 45' north of grid point 1317
0' to 1' Clay cover
1' to 4' Waste Material was discovered.
4' and below was clean blue clay.

TP-13
Excavated 5/19/98
Edge of waste was discovered 10' north of grid point 1269
0' to 1' Clay cover
1' to 4' Waste Material was discovered.
4' and below was clean blue clay.

TP-14 Excavated 5/19/98
Edge of waste was discovered 30' north of grid point 1197
0' to .5' Clay cover
.5' to 2.5' Waste Material was discovered.
2.5' and below was clean blue clay.

TP-15 Excavated 5/19/98
Edge of waste was discovered 10' west of grid point 1716
0' to 1' Clay cover
1' to 4' Waste Material was discovered.
4' and below was clean gravel.

TP-16 Excavated 5/19/98
Edge of waste was discovered at grid point 1146
0' to 1' Clay cover
1 to 4' Waste Material was discovered.
4' and below was clean blue clay.

All test pits with the exception of TP-15 were consistent, in that waste material was located on top of blue clay that appeared to be beneath a layer of topsoil. It appears that waste was placed on top of the topsoil layer and burnt. No evidence of excavation before dumping of waste is apparent.

TPA-1 Excavated 5/18/98
This test pit is an addition to those on drawing #4
0' to 1' gravel cover
1' to 3' Waste Material was discovered.
3' and below was clean blue clay.

TPA-2 Excavated 5/18/98
These test pits are an addition to those on drawing #4
0' to 1' soil cover
1' to 3' Waste Material was discovered.
3' and below was clean blue clay.
Edge of waste was discovered approximately 10' east of high power lines.

TPA-3 Excavated 5/18/98
These test pits are an addition to those on drawing #4
0' to 1' soil cover
1' to 3' Waste Material was discovered.
3' and below was clean blue clay.

TPA-4 Excavated 5/18/98
This test pit is an addition to those on drawing #4
0' to 1' soil cover
1' to 7' Waste Material was discovered.
7' and below was clean blue clay

TPA-5 Excavated 5/19/98
These test pits are an addition to those on drawing #4
0' to 1' soil cover
1' to 6' Waste Material was discovered.
6' and below was clean blue clay

TPA-6 Excavated 5/18/98
These test pits are in addition to those on drawing #4
0' to 1' gravel cover
1' to 6' Waste Material was discovered.
6' and below was clean blue clay

These additional test pits were also consistent in that waste was discovered on top of a layer of blue clay. Indicating that waste was placed on top of existing ground and covered. A news paper was found while excavating TPA-6 that was dated 1953.
Edge of waste to the east is approximately 10' east of the high power electric line.

DECONTAMINATION

LOG

DECONTAMINATION LOG

STOUGHTON CITY LANDFILL

STOUGHTON, WI

RYAN CENTRAL, INC.

USEPA CONTRACT # 68-W7-0026

WORK ASSIGNMENT # 001-RARA-05T2

DECON NUMBER	DATE	TIME	EQUIPMENT DECONTAMINATED	PRINT NAME	SIGNATURE
1	6-10-98	8:00 AM	TS-14 34-3939R	Steven Vorpahl	
2	6-10-98	1:00 PM	TS14 34-2936	Steven Vorpahl	
3	6-22-98	11:00 AM	Volvo A-25 64-4086R	Steven Vorpahl	
4	6-22-98	1:45 pm	Fire Hydrant - Waste Area	Steven Vorpahl	
5	6-22-98	3:00 pm	Kobelco 400 SZ-4008R	Steven Vorpahl	
6	6-23-98	7:00 AM	Volvo A-25 64-4087R	Steven Vorpahl	
7	6-24 98	1:45 pm	Bucket on SZ-4008R Left Site	~~Steven~~ Steven Vorpahl	
8	6-24-98	5:00	Put Branch in Hyd to be Reused Ron Hill		
9	6-30-98	10:30 AM	Hydrant + Valves	~~Steven~~ Steven Vorpahl	
10	7-6-98	10:45 AM	Grease Truck	Richard Wyman	
11	7/16/98	12:25	Volvo 25A 64-4086R	Kevin Ryan	
12					
13					

LIST OF SUBMITTALS

US EPA REGION V
STOUGHTON CITY LANDFILL CLOSURE
SHOP DRAWING & OPERATIONS/MAINTENANCE LOG
WO. No. 11821-001-100

CONTRACTOR: RYAN INCORPORATED CENTRAL
SUBMITTED BY: John Burt

Shop Dwg. No.	Submittal Description	Date Received	Received By	Review By	Date of Return	Spec. Section/ Dwg No.	Review Markings (1-5)	Review Comments
Not Provided	Project Construction Schedule	4/14/98	WFK	JJO		01300		Awaiting color copies at larger scale per Ryan.
D-01505-001-A	Mobilization Plan	4/20/98	WFK	JJO	4/27/98	01505	4	See comments.
D-01100-001-A	Environmental Protection Plan	4/20/98	WFK	JJO	4/27/98	01100	4	See comments.
D-01400-001-A	CQC Plan	4/20/98	WFK	JJO	4/27/98	01400	4	See comments.
D-02530-001-A	PVC Pipe	4/23/98	WFK	RAM	5/1/98	02530	1	
D-02530-002-A	PVC Fittings	4/23/98	WFK	RAM	5/1/98	02530	5	See comments
D-02530-003-A	Geotextile for Vent System	4/23/98	WFK	RAM	5/1/98	02530	5	See comments
D-02500-001-A	Geotextile for Access Road	4/23/98	WFK	RAM	5/1/98	02500	5	See comments
D-01050-002-A	Existing Topography	4/23/98	WFK	JJO	5/1/98	01050	4	See comments
D-02831-001-A	Perimeter Fencing	5/1/98	WFK	MD	5/11/98	02831	4	See comments

Shop Dwg. No.	Submittal Description	Date Received	Received By	Review By	Date of Return	Spec. Section/ Dwg No.	Review Markings (1-5)	Review Comments
D-01050-001-A	Surveyor Qualifications	3/26/98	WFK	WFK	5/11/98	01050	1	
D-01300-001-A	Project Construction Schedule	5/1/98	WFK	MD	5/11/98	01300	1	
D-02540-001-A	Silt Fence	4/29/98	WFK	MD	5/11/98	02540	1	
D-01400-001-B	CQC Plan	5/2/98	WFK	MD	5/11/98	01400	2	See comments
D-02050-001-A	Well Abandonment	5/11/98	WFK	RAM	5/14/98	02050	1	
D-02050-002-A	Watermain Abandonment	5/11/98	WFK	RAM	5/14/98	02050	1	
D-02530-002-B	PVC Fittings	5/11/98	WFK	RAM	5/14/98	02530	1	
D-01505-001-B	Mobilization Plan	5/15/98	WFK	JJO	5/18/98	01505	1	
D-01300-002-A	Schedule Update	5/18/98	WFK	RAM	6/18/98	01300	1	
D-01400-002-A	Clay Borrow Investigation	5/18/98	WFK	RAM	6/18/98	01400	1	
D-01390-001-A	Health and Safety Plan	4/9/98	WFK	DW	5/11/98	01390	4	See comments
D-02500-001-B	Geotextile for Site Access Roads	5/22/98	WFK	RAM	6/18/98	02500	1	
D-01400-003-A	Grading Layer and Cover Soil	5/27/98	WFK	RAM	6/18/98	01400	1	
D-02831-001-B	Perimeter Fencing	5/29/98	WFK	RAM	6/18/98	02831	1	

Shop Dwg. No.	Submittal Description	Date Received	Received By	Review By	Date of Return	Spec. Section/ Dwg No.	Review Markings (1-5)	Review Comments
D-01300-003-A	Schedule Update	5/31/98	WFK	RAM	6/18/98	01300	1	
D-02200-001-A	Stone for Gas Vent Trenches	6/08/98	WFK	RAM	6/18/98	02200	1	
D-02050-002-A	Well Extensions	6/09/98	WFK	RAM	6/18/98	02050	1	
D-01050-003-A	Post Topsoil Stripping Survey	6/09/98	WFK	RAM	6/18/98	01050	1	
D-01390-002-A	Revised HASP	6/10/98	WFK	RAM	6/26/98	01390	2	
D-02200-001-A	Boutwell Test Results	6/29/98	WFK	RAM	7/07/98	02200	1	
D-02500-002-A	Material Certifications	6/29/98	WFK	RAM	7/07/98	02500	1	
D-01050-002-B	Existing Conditions Topography	6/29/98	WFK	RAM	7/07/98	01050	1	
D-02930-001-A	Mulch	7/30/98	WFK	REK	9/08/98	02930	1	
D-02930-001-A	Erosion Bales	7/30/98	WFK	REK	9/08/98	02930	1	
D-02930-001-A	Fertilizer	7/30/98	WFK	REK	9/08/98	02930	1	
D-02930-001-A	Seed	7/30/98	WFK	REK	9/08/98	02930	5	wetlands seed
D-02930-001-A	Erosion Mat	7/30/98	WFK	REK	9/08/98	02930	5	weight
D-02930-001-A	Lime	7/30/98	WFK	REK	9/08/98	02930	1	
D-02530-005-A	Blind Flange/Bird Screen	7/30/98	WFK	REK	9/08/98	02530	4	clarify - 5" spacing of holes over a 4" pipe

Shop Dwg. No.	Submittal Description	Date Received	Received By	Review By	Date of Return	Spec. Section/ Dwg No.	Review Markings (1-5)	Review Comments
D-01050-004-A	Waste Consolidation Survey	8/13/98	WFK	REK	8/28/98	01050	1	
D-01300-006-A	Schedule Update	8/13/98	WFK	MD	8/28/98	01300	2	
D-02530-005-B	Blind Flange/Bird Screen	9/15/98	WFK	REK	9/24/98	02530	1	
D-01050-005-A	Grading Layer Survey	9/10/98	WFK	REK	10/12/98	01050	4	"final" stamp with surveyor's signature
D-01050-004-B	Waste Consolidation Survey	9/10/98	WFK	REK	10/12/98	01050	1	
D-01050-006-A	As-Built of Gas Vent System	9/11/98	WFK	REK	10/12/98	01050	4	correct length, label riser, define "riser tee"
D-02930-001-D	Subcontractor Letter of Clarification	10/26/98	WFK	REK	11/04/98	02930	1	
D-02930-001-C	WDOT Seed Mix #40 Certification	10/22/98	WFK	REK	11/04/98	02930	1	
D-02930-001-B	Erosion Mat Specifications	10/20/98	WFK	REK	11/04/98	02930	1	
D-02500-002-A	Pipe and End Sections for Access Roads	11/10/98	WFK	RAH	11/16/98	02500	1	
D-01050-006-B	As-Built of Gas Venting System	11/11/98	WFK	RAH	12/10/98	01050	1	

Shop Dwg. No.	Submittal Description	Date Received	Received By	Review By	Date of Return	Spec. Section/ Dwg No.	Review Markings (1-5)	Review Comments
D-02200-004-A	Off-site Topsoil	1/07/99	WFK	RAH	1/21/99	02200	1*	low organic content
D-02500-004-A	Culvert Bedding Sand	1/07/99	WFK	RAH	1/21/99	02500	1	
D-01050-005-B	Grading Layer Survey	12/17/98	WFK	JW/RH	1/22/99	01050	4	hydrant, shed
D-01050-007-A	Clay Layer Survey	12/17/98	WFK	JW/RH	1/22/99	01050	1	
D-01050-008-A	Vegetative Support Layer Survey	12/17/98	WFK	JW/RH	1/22/99	01050	1	
D-01050-009-A	Final Survey	12/17/98	WFK	JW/RH	1/22/99	01050	4	hydrant, shed, culvert, cap limits
D-01050-010-A	Cross Sections	12/17/98	WFK	JW/RH	1/22/99	01050	1	
D-01050-011-A	Final Quantities	12/17/98	WFK	JW/RH	1/22/99	01050	1	

[1] No exceptions taken
[2] Make corrections noted
[3] Rejected
[4] Revise and resubmit
[5] Submit specified item

SOILS IMPORT LOG

SOIL IMPORT LOG

STOUGHTON CITY LANDFILL

STOUGHTON, WI

DAYS HAULED	Date Imported	Clay Tons	Loads Today	Total Clay to Date	Clay Cubic Yards*	Total Clay Cubic Yards to Date	Grading Layer Tons	Total Grading Layer to Date	Grading Layer Cubic Yards*	Total Grading Layer Cubic Yards to Date	Vegetative Support Tons	Total Vegetative Support to Date	Vegetative Support Cubic Yards*	Total Vegetative Support Cubic Yards to Date	Access Road Material Tons	Access Road Material to Date	Access Road Material Cubic Yards*	Total Access Road Material Cubic Yards to Date
97	11/3/98		31												692.74	2240.53	461.83	1493.69
98	11/4/98																	
99	11/5/98																	
100	11/6/98																	
101	11/7/98																	
102	11/8/98																	
103	11/9/98																	
104	11/10/98																	
105	11/11/98																	
106	11/12/98																	
107	11/13/98																	
108	11/14/98																	
109	11/15/98																	
110	11/16/98																	
111	11/17/98																	
112	11/18/98																	
TOTAL		105691	14353		67029		116950		77966		100251		66834		2241		1494	

*Grading Layer and Vegetative Layer Cubic Yards = Tons/1.5

*Clay Layer Cubic Yards = Tons/1.6

Total Loads of Grading Layer Hauled = 5208

Total Days Hauling Grading Layer= 35

Average Loads Hauled Per Day = 148.8

Average Tons Hauled Per Day = 3341

SOIL IMPORT LOG

STOUGHTON CITY LANDFILL

STOUGHTON, WI

DAYS HAULED	Date Imported	Clay Tons	Loads Today	Total Clay to Date	Clay Cubic Yards*	Total Clay Cubic Yards to Date	Grading Layer Tons	Total Grading Layer to Date	Grading Layer Cubic Yards*	Total Grading Layer Cubic Yards to Date	Vegetative Support Tons	Total Vegetative Support to Date	Vegetative Support Cubic Yards*	Total Vegetative Support Cubic Yards to Date	Access Road Material Tons	Access Road Material to Date	Access Road Material Cubic Yards*	Total Access Road Material Cubic Yards to Date
1		2709.51	124		1806.34	1806.34												
2	5/21/98	1475.42	71	4184.93	983.61	2789.95												
3	5/22/98	1166.11	55	5351.04	777.41	3567.36												
4	5/26/98	2935.68	137	8286.72	1957.12	5524.48												
5	5/27/98	2541.95	120	10828.67	1694.63	7219.11												
6	6/2/98		148		0.00	7219.11	3288.46	3288.46	2192.31	2192.31								
7	6/3/98		161		0.00	7219.11	3584.56	6873.02	2389.71	4582.01								
8	6/4/98		175		0.00	7219.11	3840.04	10713.06	2560.03	7142.04								
9	6/5/98		152		0.00	7219.11	3347.7	14060.76	2231.80	9373.84								
10	6/6/98		89		0.00	7219.11	1573.62	15634.38	1049.08	10422.92								
11	6/8/98		162		0.00	7219.11	3596.58	19230.96	2397.72	12820.64								
12	6/15/98		145		0.00	7219.11	3303.24	22534.2	2202.16	15022.80								
13	6/16/98		131		0.00	7219.11	2901.5	25435.7	1934.33	16957.13								
14	6/17/98		133		0.00	7219.11	2815.37	28251.07	1876.91	18834.05								
15	6/18/98		78		0.00	7219.11	1704.29	29955.36	1136.19	19970.24								
16	6/22/98		191		0.00	7219.11	4255.65	34211.01	2837.10	22807.34								
17	6/23/98		178		0.00	7219.11	3898.58	38109.59	2599.05	25406.39								
18	6/24/98		132		0.00	7219.11	2997.87	41107.46	1998.58	27404.97								
19	6/25/98		195		0.00	7219.11	4354.17	45461.63	2902.78	30307.75								
20	6/26/98		122		0.00	7219.11	2761.37	48223	1840.91	32148.67								
21	7/1/98		137		0.00	7219.11	3088.28	51311.28	2058.85	34207.52								
22	7/2/98		170		0.00	7219.11	3856.67	55167.95	2571.11	36778.63								
23	7/3/98		49		0.00	7219.11	1119.69	56287.64	746.46	37525.09								
24	7/6/98		186		0.00	7219.11	4181.04	60468.68	2787.36	40312.45								
25	7/8/98		167		0.00	7219.11	3744.95	64213.63	2496.63	42809.09								
26	7/9/98		166		0.00	7219.11	3674.3	67887.93	2449.53	45258.62								
27	7/10/98		170		0.00	7219.11	3922.03	71809.96	2614.69	47873.31								
28	7/13/98		182		0.00	7219.11	4,117.68	75927.64	2745.12	50618.43								
29	7/14/98		200		0.00	7219.11	4449.52	80377.16	2966.35	53584.77								
30	7/15/98		187		0.00	7219.11	4168.68	84545.84	2779.12	56363.89								
31	7/16/98		89		0.00	7219.11	2061.99	86607.83	1374.66	57738.55								
32	7/17/98		57		0.00	7219.11	1241.34	87849.17	827.56	58566.11								
33	7/30/98		155				3444.04	91293.21	2296.03	60862.14								
34	7/31/98		178				4094.31	95387.52	2729.54	63591.68								
35	8/1/98		92				2122.08	97509.6	1414.72	65006.40								
36	8/3/98		152				3491.61	101001.21	2327.74	67334.14								
37	8/10/98		114				2502.34	103503.55	1668.23	69002.37								
38	8/11/98		198				4595.53	108099.08	3063.69	72066.05								
39	8/12/98		185				4199.87	112298.95	2799.91	74865.97								
40	8/13/98		202				4650.7	116949.65	3100.47	77966.43								
41	8/14/98	2685.92	118	2685.92	1790.61	1678.70												
42	8/15/98	2959.08	129	5645	1972.72	3528.13												
43	8/17/98	851.36	36	6496.36	567.57	4060.23												
44	8/18/98	3130.78	132	9627.14	2087.19	6016.96												
45	8/19/98	2879.99	127	12507.13	1919.99	7816.96												
46	8/20/98	3610.75	163	16117.88	2256.72	10073.68												
47	8/21/98	3287.55	147	19405.43	2054.72	12128.39												
48	8/24/98	2028.86	91	21434.29	1268.04	13396.43												
49	8/25/98	0	0	21434.29	0.00	13396.43												
50	8/26/98	3314.14	146	24748.43	2071.34	15467.77												
51	8/27/98	3160.4	135	27908.83	1975.25	17443.02												
52	8/31/98	4862.74	218	32771.57	3039.21	20482.23												
53	9/1/98	4173.33	190	36944.9	2608.33	23090.56												
54	9/2/98	4237.91	192	41182.81	2648.69	25739.26												
55	9/3/98	4338.54	197	45521.35	2711.59	28450.84												
56	9/4/98	4430.19	200	49951.54	2768.87	31219.71												
57	9/8/98	5551.57	244	55503.11	3469.73	34689.44												
58	9/9/98	5628.54	255	61131.65	3517.84	38207.28												
59	9/10/98	5515.38	248	66647.03	3447.11	41654.39												
60	9/11/98	5062.85	228	71709.88	3164.28	44818.68												
61	9/12/98	2849.05	128	74558.93	1780.66	46599.33												
62	9/21/98	4597.69	202	79156.62	2873.56	49472.89												
63	9/22/98	5202.63	231	84359.25	3251.64	52724.53												
64	9/23/98	5413.89	242	89773.14	3383.68	56108.21												
65	9/24/98	0	222	89773.14	0.00	56108.21					5080.8	5080.8	3387.2	3387.2				
66	9/25/98		225		0.00	0.00					5086.7	10167.50	3391.13	6778.33				
67	9/26/98		158		0.00	0.00					3686.63	13854.13	2457.75	9236.09				
68	9/28/98	2490.04	113	92263.18	1556.28	57664.49					3232.44	17086.57	2154.96	11391.05				
69	9/29/98	0	174	92263.18	0.00	57664.49					3859.93	20946.5	2573.29	13964.33				
70	9/30/98	2598.82	115	94862	1624.26	59288.75					0	20946.5	0.00	13964.33				
71	10/1/98	0	241	94862	0.00	59288.75					5297.14	26243.64	3531.43	17495.76				
72	10/2/98	0	251	94862	0.00	59288.75					5523.68	31767.32	3682.45	21178.21				
73	10/9/98	0	136								3282.73	35050.05	2188.49	23366.70				
74	10/10/98		207								4784.07	39834.12	3189.38	26556.08				
75	10/12/98		259								5849.02	45683.14	3899.35	30455.43				
76	10/13/98		265								5919.24	51602.38	3946.16	34401.59				
77	10/14/98		241								5264.34	56,866.72	3509.56	37911.15				
78	10/15/98		253								5598.64	62,465.36	3732.43	41643.57				
79	10/16/98		229								5130.08	67,595.44	3420.05	45063.63				
80	10/17/98																	
81	10/18/98																	
82	10/19/98																	
83	10/20/98		222								4982.26	72,577.70	3321.51	48385.13				
84	10/21/98		285								6311.86	78,889.56	4207.91	52593.04				
85	10/22/98		265								5887.73	84,777.29	3925.15	56518.19				
86	10/23/98		245								5522.97	90,300.26	3681.98	60200.17				
87	10/24/98		132								3050.64	93,350.90	2033.76	62233.93				
88	10/25/98																	
89	10/26/98		237								5393.67	98,744.57	3595.78	65829.71				
90	10/27/98																	
91	10/28/98																	
92	10/29/98		62								441.65	99,186.22	294.43	66124.15	939.05	939.05	626.03	626.03
93	10/30/98																	
94	10/31/98																	
95	11/1/98																	
96	11/2/98		71								1064.43	100,250.65	709.62	66833.77	608 74	1547.79	405.83	1031.86

LEACHATE DISPOSAL LOG

LEACHATE DISPOSAL LOG

STOUGHTON CITY LANDFILL

STOUGHTON, WI

Date	Manifest Number	Volume (gallons)	Daily Total	Total Volume To Date
6/16/98	02831	6000	12000	12000
6/16/98	02832	6000		
6/17/98	02833	5500	22000	34000
6/17/98	02834	5500		
6/17/98	02835	5500		
6/17/98	02836	5500		
6/19/98	1001	8000	15500	49500
6/19/98	1002	7500		
6/23/98	1003	6500	19500	69000
6/23/98	1004	6500		
6/23/98	1005	6500		
6/24/98	1006	6500	19500	88500
6/24/98	1007	6500		
6/24/98	1008	6500		
6/25/98	1009	6500	6500	95000
6/26/98	1010	6500	13000	108000
6/26/98	1011	6500		
6/29/98	1012	6500	13000	121000
6/29/98	1013	6500		
6/30/98	1014	6500	26000	147000
6/30/98	1015	6500		
6/30/98	1016	6500		
6/30/98	1017	6500		
7/1/98	1018	6500	19500	166500
7/1/98	1019	6500		
7/1/98	1020	6500		
7/2/98	1021	6500	19500	186000
7/2/98	1022	6500		
7/2/98	1023	6500		
8/14/98	1024	6500	6500	192500
TOTAL VOLUME TO DATE:				192500

DRUM DISPOSAL LOG

STOUGHTON CITY LANDFILL CLOSURE
REMEDIAL DESIGN-DERIVED WASTES: DRUM REMOVAL

AREA #1

COUNT	DRUM LABEL	ADDITIONAL MARKINGS
1	N1	
2	N2	
3	W3S	
4	W4S	
5	W5S	
6	N6	
7	W7L	MW-6D: 32 gals MW6S; 11 gals Purge Water
8	W8S	
9	W9S	
10	W10S	Salv
11	N11	
12	N12	
13	W13S	
14	W14S	
15	N15	
16	N16	
17	W17S	
18	W18S	
19	N19	
20	N20	
21	W21S	
22	W22S	
23	N23	
24	W24S	
25	W25S	
26	N26	
27	N27	
28	W28S	

AREA #1

COUNT	DRUM LABEL	ADDITIONAL MARKINGS
29	N29	
30	N30	
31	W31S	
32	W32S	
33	W33S	
34	N34	
35	W35S	
36	N36	
37	W37S	
38	W38S	
39	N39	
40	N40	
41	N41	
42	W42S	
43	N43	
44	W44S	
45	N45	
46	W46S	
47	N47	
48	W48S	
49	N49	
50	W50S	
51	N51	
52	W52S	
53	W53S	
54	N54	
55	N55	
56	W56S	

STOUGHTON CITY LANDFILL CLOSURE
REMEDIAL DESIGN-DERIVED WASTES: DRUM REMOVAL

AREA #1

COUNT	DRUM LABEL	ADDITIONAL MARKINGS
57	N57	
58	W58S	
59	W59S	
60	W60S	
61	N61	
62	W62S	
63	W63S	
64	W64S	
65	N65	
66	N66	
67	N67	
68	N68	
69	N69	
70	W70S	
71	W71S	
72	N72	
73	W73S	
74	W74S	
75	N75	
76	W76S	
77	W77S	
78	N78	
79	N79	
80	N80	
81	W81S	EB-2 0'-70' ND
82	W82S	EB-2 0'-70' ND
83	W83S	EB-4 0'-80' ND
84	W84S	B-3 X76

AREA #1

COUNT	DRUM LABEL	ADDITIONAL MARKINGS
85	W85S	B1
86	W86S	B3
87	W87S	MW-3B 90' -103' ND
88	W88S	EB-4
89	W89S	MB-3B - 0'-80' ND
90	W90S	MW 7-1 0'-20' ND
91	W91S	EB1 50'-75' ND
92	W92S	MW - 3B 0'-80' ND
93	W93S	EB-1 0'-50' ND
94	W94S	EB-3 20'-80' ND
95	W95S	MW - 3B 90'-103' ND
96	W96S	E-5 6/16-94 XEG
97	W97S	
98	W98S	
99	W99S	
100	W100S	
101	W101S	
102	W102S	
103	W103S	
104	W104S	
105	W105S	
106	W106S	
107	W107S	
108	W108S	
109	W109S	
110	W110S	
111	W111S	EMP-VGMP-2XPG
112	W112S	DOT R120 1204 17H

STOUGHTON CITY LANDFILL CLOSURE
REMEDIAL DESIGN-DERIVED WASTES: DRUM REMOVAL

AREA #1

COUNT	DRUM LABEL	ADDITIONAL MARKINGS
113	W113S	MW R+3 90'91' ND
114	W114S	
115	W115S	
116	W116S	MW 9-I 0' 40' ND
117	W117S	MW 9-I 0' 40' ND
118	W118S	MN-3B-80' 90' ND
119	W119S	EB-3 20' 80' ND
120	W120S	MW 3B 80' 90' ND
121	W121S	MW 3B 90' 91' ND
122	W122S	MW 3B 0'-80' ND
123	W123S	MW 3B 80'- 90'ND
124	W124S	MW 3B 0' - 80' ND
125	W125S	MW 3B 80'-90' ND
126	W126S	MW 3B 80'-90' ND
127	W127S	MW 3B 90 - 91 ND
128	W128S	MW 9-1 040 ND
129	W129S	MW 3B 80'-90' ND
130	W130S	USED PPE 10-4-96
131	W131S	DECON PAD PLASTIC 10-96
132	W132S	
133	W133S	
134	W134S	
135	W135S	
136	W136S	MW 3B 80' - 90' ND
137	W137S	
138	W138S	EB-3 0' - 20' ND
139	W139S	XT6
140	W140S	B2

AREA #1

COUNT	DRUM LABEL	ADDITIONAL MARKINGS
141	W141S	
142	W142S	
143	W143S	
144	W144S	
145	W145S	
146	W146S	
147	W147S	
148	W148S	
149	W149S	
150	W150S	
151	W151S	
152	W152S	
153	W153S	
154	W154S	
155	W155S	
156	W156S	
157	W157S	
158	W158S	
159	W159S	
160	W160S	
161	W161S	
162	W162S	
163	W163S	

STOUGHTON CITY LANDFILL CLOSURE
REMEDIAL DESIGN-DERIVED WASTES: DRUM REMOVAL

AREA #2

COUNT	DRUM LABEL	ADDITIONAL MARKINGS
164	W164S	B6 CUTTINGS
165	W165S	
166	W166S	R-1 CUTTINGS
167	W167S	B-1 CUTTINGS
168	W168S	R-1 CUTTINGS
169	W169S	R-1 CUTTINGS
170	W170S	
171	W171S	
172	W172S	
173	W173S	R-1 CUTTINGS 50' 5/94
174	W174S	PW
175	W175S	R1 CUTTINGS 30'-50' 5/94
176	N176	
177	W177S	
178	N178	
179	N179	
180	N180	
181	N181	
182	W182S	
183	N183	
184	N184	
185	N185	
186	N186	
187	N187	
188	W188S	
189	W189S	
190	W190S	MD 3/P CUTTINGS 6-13-94
191	W191S	

AREA #3

COUNT	DRUM LABEL	ADDITIONAL MARKINGS
192	W192S	EW1 CUTTINGS
193	W193S	MW10 SOILS 10/94
194	W194S	MW10 SOILS
195	W195S	MW10 SOILS
196	W196S	MW10 SOILS
197	W197S	MW10 SOILS
198	W198S	MW10 SOILS
199	W199S	
200	W200S	
201	W201S	
202	W202S	MW10 SOILS
203	W203S	
204	W204S	
205	W205S	OW-14 SOILS 10-94
206	W206S	OW-14 SOILS 10-94
207	W207S	OW-04-SOILS
208	W208S	MW-13 SOIL 10-4-94
209	W209S	EW 01 SOIL
210	W210S	MW 13 SOILS
211	W211S	EW 2 6-16-94 XTG
212	W212S	
213	W213S	EW 01 SOIL
214	W214S	MW 13 SOIL
215	W215S	MW 13 SOIL 10-4-94
216	W216S	MW 13 SOIL
217	W217S	OW
218	W218L	PURGE WATER
219	W219L	PURGE WATER

STOUGHTON CITY LANDFILL CLOSURE
REMEDIAL DESIGN-DERIVED WASTES: DRUM REMOVAL

AREA #3

COUNT	DRUM LABEL	ADDITIONAL MARKINGS
220	W220L	PURGE WATER
221	W221S	EW01 SOIL
222	W222L	PURGE WATER
223	W223S	MW10 SOIL
224	W224S	MW10 SOIL
225	W225L	PURGE WATER
226	W226S	MW13 SOIL
227	W227L	PURGE WATER
228	W228S	MW13 SOIL 10-6-94
229	W229S	EW01 SOIL
230	W230S	MW13 SOIL
231	W231S	EW01 SOIL
232	W232S	
233	W233S	EW01 SOIL
234	W234S	OW 02 SOIL 10-94
235	W235S	OW 02 SOIL 10-94
236	W2356S	OW 02 SOIL 10-94
237	W237L	PURGE WATER
238	W238S	MW13 SOIL
239	W239S	MW13 SOIL
240	W240S	MW13 SOIL
241	N241	
242	N242	
243	N243	
244	N244	
245	N245	
246	N246	
247	N247	

AREA #3

COUNT	DRUM LABEL	ADDITIONAL MARKINGS
248	N248	
249	N249	
250	N250	
251	N251	
252	N252	
253	N253	
254	N254	
255	N255	
256	N256	
257	N257	
258	N258	
259	N259	
260	N260	
261	N261	
262	N262	
263	N263	
264	N264	
265	N265	
266	N266	
267	N267	
268	N268	
269	N269	
270	N270	
271	N271	
272	N272	
273	N273	
274	N274	
275	N275	

STOUGHTON CITY LANDFILL CLOSURE
REMEDIAL DESIGN-DERIVED WASTES: DRUM REMOVAL

AREA #3		
COUNT	DRUM LABEL	ADDITIONAL MARKINGS
276	N276	
277	N277	
278	N278	
279	W279S	MW-14D DRILL MUD CUTTINGS, 10-4-96
280	W280S	MW-14D DRILL MUD CUTTINGS, 10-4-96
281	W281S	MW-14D DRILL MUD CUTTINGS, 10-4-96
282	W282S	MW-14I DRILL MUD CUTTINGS, 10-4-96
283	W283S	MW-14D DRILL MUD CUTTINGS, 10-4-96
284	W284L	MW10 PURGE WATER 10-20-96
285	W285S	MW 14I DRILL MUD CUTTINGS 10-4-96
286	W286S	8-1 DRILL MUD CUTTINGS 10-13-96
287	W287L	MW95 30 GAL PURGE WATER 10-22-93
288	W288S	8-5 DRILL MUD CUTTINGS 10-13-96
289	W289S	MW 14D DRILL MUD CUTTINGS 10-4-96
290	W290S	MW 14S DRILL MUD DUTTINGS 10-4-96
291	W291S	MW 14S DRILL MUD CUTTINGS 10-4-96
292	W292S	8-I DRILL MUD CUTTINGS 10-13-96
293	W293S	8-1 CUTS/DRILL MUD 10-13-96
294	W294S	MW15I DRILL MUD CUTS
295	W295S	MW 15D DRILL MUD CUTTINGS 10-9-96
296	W296S	MW 15S DRILL MUD CUTTINGS 10-10-96
297	W297S	MW 15I DRILL MUD CUTTINGS 10-10-96
298	W298S	MW 15D DRILL MUD CUTTINGS 10-9-96
299	W299S	8-5 CUTTINGS MUD 10-13-96
300	W300S	MW 15D DRILL MUD CUTS 10-9-96
301	W301S	MW 15D DRILL MUD CUTS 10-9-96
302	W302S	R-7 SOIL 6-9-94
303	W303S	R-7 SOIL 6-94

AREA #3		
COUNT	DRUM LABEL	ADDITIONAL MARKINGS
304	W304S	MW-10 SOIL 10-94
305	W305S	MW SOIL 9-94
306	W306S	MW11 SOIL 9-94
307	W307S	MW11 SOIL 9-94
308	W308S	MW11 SOIL 9-94
309	W309S	MW11 SOIL 9-96
310	W310S	
311	W311S	MW-13 SOIL
312	W312S	EW2 CUTTINGS 6-16-94
313	W313S	MW11 SOIL 9-94
314	W314S	MW10 SOIL 10-94
315	W315S	MW11 SOIL 9-94
316	W316S	MW11 SOIL 9-94
317	W317S	
318	W318S	MW11 SOIL 9-94
319	W319S	
320	N320	
321	N321	
322	N322	
323	N323	
324	N324	
325	N325	
326	N326	
327	N327	
328	N328	
329	N329	
330	N330	
331	N331	

STOUGHTON CITY LANDFILL CLOSURE
REMEDIAL DESIGN-DERIVED WASTES: DRUM REMOVAL

AREA #3		
COUNT	DRUM LABEL	ADDITIONAL MARKINGS
332	N332	
333	N333	
334	N334	
335	N335	
336	N336	
337	N337	
338	N338	
339	N339	
340	N340	
341	N341	
342	N342	
343	N343	
344	N344	
345	N345	
346	N346	
347	N347	
348	N348	
349	N349	
350	N350	
351	N351	
352	N352	
353	N353	
354	N354	
355	N355	
356	N356	
357	N357	
358	N358	
359	N359	

AREA #3		
COUNT	DRUM LABEL	ADDITIONAL MARKINGS
360	N360	
361	N361	
362	N362	
363	N363	
364	N364	
365	N365	
366	N366	
367	N367	
368	N368	
369	N369	
370	N370	
371	N371	
372	N372	
373	N373	
374	N374	
375	N375	
376	N376	
377	N377	
378	N378	
379	N379	
380	N380	
381	N381	
382	N382	
383	N383	
384	N384	
385	N385	
386	N386	
387	N387	

STOUGHTON CITY LANDFILL CLOSURE
REMEDIAL DESIGN-DERIVED WASTES: DRUM REMOVAL

AREA #3

COUNT	DRUM LABEL	ADDITIONAL MARKINGS
388	N388	
389	N389	
390	N390	
391	N391	
392	N392	
393	N393	
394	N394	
395	N395	

RAIN LOG

RAINFALL LOG
STOUGHTON CITY LANDFILL CLOSURE

Date	Rainfall (Inches)	Weekly Total (Inches)	Monthly Total (Inches)	Normal Monthly Total (Inches)	Total to Date	Time Lost Due to Rain*
4/13/98	0.5				0.5	n
4/14/98	0				0.5	n
4/15/98	1.5				2	p
4/16/98	0.25				2.25	a
4/17/98	0	2.25			2.25	a
4/18/98	0				2.25	a
4/19/98	0				2.25	
4/20/98	0.5				2.75	n
4/21/98	0.25				3	n
4/22/98	0				3	n
4/23/98	0				3	n
4/24/98	0	0.75			3	n
4/25/98	0				3	
4/26/98	0				3	
4/27/98	0.1				3.1	n
4/28/98	0				3.1	n
4/29/98	0				3.1	n
4/30/98	0		3.1	Total Average for Month 3.11	3.1	n
5/1/98	0	0.1			3.1	n
5/2/98	0				3.1	a
5/3/98	1.25				4.35	
5/4/98	0				4.35	a
5/5/98	0				4.35	n
5/6/98	0.3				4.65	n
5/7/98	0.8				5.45	a
5/8/98	0	2.35			5.45	a
5/9/98	0				5.45	a
5/10/98	0				5.45	
5/11/98	0				5.45	n
5/12/98	0.6				6.05	n
5/13/98	0.6				6.65	p
5/14/98	0				6.65	n
5/15/98	0.3	1.5			6.95	n
5/16/98	0				6.95	
5/17/98	0				6.95	
5/18/98	0.1				7.05	n
5/19/98	0				7.05	n
5/20/98	0				7.05	n
5/21/98	0				7.05	n
5/22/98	0	0.1			7.05	n
5/23/98	0				7.05	
5/24/98	1.1				8.15	
5/25/98	0				8.15	
5/26/98	0				8.15	n
5/27/98	0				8.15	n
5/28/98	1				9.15	a
5/29/98	0	2.1			9.15	a
5/30/98	0.8				9.95	a
5/31/98	0		6.85	3.35	9.95	

*a= all planned work for day was delayed
p= part of planned work for day was delayed
n= no work planned for day was delayed

Work Days Lost to Rain: 43
Partial Days Lost to Rain: 20

RAINFALL LOG
STOUGHTON CITY LANDFILL CLOSURE

Date	Rainfall (Inches)	Weekly Total (Inches)	Monthly Total (Inches)	Normal Monthly Total (Inches)	Total to Date	Time Lost Due to Rain*
6/1/98	0				9.95	a
6/2/98	0				9.95	n
6/3/98	0				9.95	n
6/4/98	0				9.95	n
6/5/98	0.1	0.9			10.05	n
6/6/98	0				10.05	n
6/7/98	0				10.05	
6/8/98	0				10.05	n
6/9/98	0.35				10.4	p
6/10/98	0				10.4	a
6/11/98	1.6				12	a
6/12/98	0.3	2.25			12.3	p
6/13/98	0				12.3	a
6/14/98	0				12.3	
6/15/98	0				12.3	n
6/16/98	0				12.3	n
6/17/98	0				12.3	n
6/18/98	1.75				14.05	p
6/19/98	0	1.75			14.05	a
6/20/98	0.1				14.15	a
6/21/98	0				14.15	
6/22/98	0				14.15	n
6/23/98	0				14.15	n
6/24/98	0.25				14.4	n
6/25/98	0.35				14.75	n
6/26/98	0	0.7			14.75	n
6/27/98	0.75				15.5	a
6/28/98	1.75				17.25	
6/29/98	0.2				17.45	p
6/30/98	0		7.5	3.9	17.45	n
7/1/98	0				17.45	n
7/2/98	0				17.45	n
7/3/98	1	3.7			18.45	a
7/4/98	0				18.45	
7/5/98	0				18.45	
7/6/98	0				18.45	n
7/7/98	0.2				18.65	a
7/8/98	0.2				18.85	p
7/9/98	0				18.85	n
7/10/98	0	0.4			18.85	n
7/11/98	0				18.85	n
7/12/98	0				18.85	n
7/13/98	0				18.85	n
7/14/98	0				18.85	n
7/15/98	0				18.85	n
7/16/98	0				18.85	n
7/17/98	0	0			18.85	n
7/18/98	0.3				19.15	n
7/19/98	0				19.15	

Work Days Lost to Rain: 43
Partial Days Lost to Rain: 20

*a= all planned work for day was delayed
p= part of planned work for day was delayed
n= no work planned for day was delayed

RAINFALL LOG
STOUGHTON CITY LANDFILL CLOSURE

Date	Rainfall (Inches)	Weekly Total (Inches)	Monthly Total (Inches)	Normal Monthly Total (Inches)	Total to Date	Time Lost Due to Rain*
7/20/98	1.2				20.35	p
7/21/98	0				20.35	p
7/22/98	0				20.35	n
7/23/98	0				20.35	n
7/24/98	0	1.5			20.35	n
7/25/98	0				20.35	n
7/26/98	0				20.35	
7/27/98	0				20.35	n
7/28/98	0				20.35	n
7/29/98	0				20.35	n
7/30/98	0				20.35	n
7/31/98	0	0	2.9	3.74	20.35	n
8/1/98	0				20.35	n
8/2/98	0				20.35	
8/3/98	0				20.35	n
8/4/98	1.5				21.85	a
8/5/98	1				22.85	a
8/6/98	1.5				24.35	a
8/7/98	0.75	4.75			25.1	a
8/8/98	0				25.1	
8/9/98	0				25.1	
8/10/98	0				25.1	n
8/11/98	0				25.1	n
8/12/98	0				25.1	n
8/13/98	0				25.1	n
8/14/98	0.15	0.15			25.25	p
8/15/98	0				25.25	n
8/16/98	0				25.25	
8/17/98	0.35				25.6	p
8/18/98	0				25.6	n
8/19/98	0				25.6	n
8/20/98	0				25.6	n
8/21/98	0.65	1			26.25	p
8/22/98	0				26.25	a
8/23/98	0				26.25	
8/24/98	0.6				26.85	p
8/25/98	0				26.85	a
8/26/98	0				26.85	n
8/27/98	0.6				27.45	p
8/28/98	0	1.2			27.45	a
8/29/98	0				27.45	a
8/30/98	0				27.45	
8/31/98	0		7.1	3.82	27.45	n
9/1/98	0				27.45	n
9/2/98	0				27.45	n
9/3/98	0				27.45	n
9/4/98	0	0			27.45	n

Work Days Lost to Rain: 43
Partial Days Lost to Rain: 20

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n= no work planned for day was delayed

RAINFALL LOG
STOUGHTON CITY LANDFILL CLOSURE

Date	Rainfall (Inches)	Weekly Total (Inches)	Monthly Total (Inches)	Normal Monthly Total (Inches)	Total to Date	Time Lost Due to Rain*
9/5/98	0				27.45	n
9/6/98	0				27.45	n
9/7/98	0				27.45	n
9/8/98	0				27.45	n
9/9/98	0				27.45	n
9/10/98	0				27.45	n
9/11/98	0	0			27.45	n
9/12/98	0				27.45	n
9/13/98	0				27.45	n
9/14/98	2.45				29.9	a
9/15/98	0.2				30.1	a
9/16/98	0				30.1	a
9/17/98	0				30.1	a
9/18/98	0	2.65			30.1	a
9/19/98	0				30.1	n
9/20/98	0				30.1	
9/21/98	0				30.1	n
9/22/98	0				30.1	n
9/23/98	0.3				30.4	n
9/24/98	0				30.4	n
9/25/98	0	0.3			30.4	n
9/26/98	0.1				30.5	n
9/27/98	0				30.5	
9/28/98	0				30.5	n
9/29/98	0.1				30.6	p
9/30/98	0.3		3.45	3.07	30.9	p
10/1/98	0				30.9	n
10/2/98	1.65	2.15			32.55	p
10/3/98	0				32.55	a
10/4/98	0				32.55	
10/5/98	0				32.55	a
10/6/98	0.35				32.9	a
10/7/98	0.25				33.15	a
10/8/98	0				33.15	a
10/9/98	0	0.6			33.15	n
10/10/98	0				33.15	n
10/11/98	0				33.15	
10/12/98	0				33.15	n
10/13/98	0				33.15	n
10/14/98	0				33.15	n
10/15/98	0				33.15	n
10/16/98	0	0			33.15	n
10/17/98	1.5				34.65	a
10/18/98	0				34.65	
10/19/98	0				34.65	a
10/20/98	0				34.65	n
10/21/98	0				34.65	n

*a= all planned work for day was delayed
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n= no work planned for day was delayed

Work Days Lost to Rain: 43
Partial Days Lost to Rain: 20

RAINFALL LOG
STOUGHTON CITY LANDFILL CLOSURE

Date	Rainfall (Inches)	Weekly Total (Inches)	Monthly Total (Inches)	Normal Monthly Total (Inches)	Total to Date	Time Lost Due to Rain*
10/22/98	0				34.65	n
10/23/98	0	1.5			34.65	n
10/24/98	0				34.65	n
10/25/98	0				34.65	
10/26/98	0				34.65	n
10/27/98	0.55				35.2	a
10/28/98	0				35.2	a
10/29/98	0.15				35.35	p
10/30/98	0	0.7			35.35	n
10/31/98	0		4.45	2.24	35.35	n
11/1/98	0				35.35	
11/2/98	0				35.35	n
11/3/98	0				35.35	n
11/4/98	0				35.35	n
11/5/98	0				35.35	n
11/6/98	0	0			35.35	n
11/7/98	0.1				35.45	n
11/8/98	0				35.45	
11/9/98	1.25				36.7	p
11/10/98	0.35				37.05	a
11/11/98	0				37.05	p
11/12/98	0				37.05	n
11/13/98	0	1.7			37.05	n
11/14/98	0				37.05	n
11/15/98	0				37.05	
11/16/98	0				37.05	n
11/17/98	0				37.05	n
11/18/98	0				37.05	n
11/19/98	0				37.05	n
11/20/98	0	0			37.05	n
11/21/98	0				37.05	n
11/22/98	0				37.05	
11/23/98	0				37.05	n
11/24/98	0				37.05	n
11/25/98	0				37.05	n
11/26/98	0				37.05	n
11/27/98	0	0			37.05	n
11/28/98	0				37.05	n
11/29/98	0				37.05	
11/30/98	0.1		1.8	1.81	37.15	n
12/1/98	0				37.15	n
12/2/98	0				37.15	n
12/3/98	0				37.15	n
12/4/98	0	0.1			37.15	n
Total to Date:		37.15		25.04		

Work Days Lost to Rain: 43
Partial Days Lost to Rain: 20

*a= all planned work for day was delayed
p= part of planned work for day was delayed
n= no work planned for day was delayed

Average Weather Conditions For Madison, Wisconsin

	High (°F)	Low (°F)	Rain (in.)	Snow (in.)
January	25	7	1.10	10
February	30	10	1.02	7
March	41	21	2.17	9
April	57	34	3.11	2
May	70	45	3.35	0
June	79	54	3.90	0
July	82	57	3.74	0
August	81	55	3.82	0
September	72	48	3.07	0
October	61	37	2.24	0
November	45	27	1.81	3
December	30	14	1.54	10

APPENDIX B:

ANALYTICAL TESTING RESULTS

SEEP WATER ANALYSIS

ANALYSIS REPORT
1

INORGANIC ANALYSIS DATA SHEET

CLIENT SAMPLE #: 98Z405S03

Lab Name: CHEMTECH CONSULTING GROUP Contract:

Lab Code: CHEM Case No.: SAS No.: SDG No.: 9169

Matrix (soil/water): WATER Lab Sample ID: 55092S

Level (low/med): LOW Date Received: 09/24/98

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	83.9	B		P
7440-36-0	Antimony	5.0	U		P
7440-38-2	Arsenic	7.0	U		P
7440-39-3	Barium	268			P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	81900			P
7440-47-3	Chromium	1.0	U		P
7440-48-4	Cobalt	2.0	U		P
7440-50-8	Copper	16.0	B		P
7439-89-6	Iron	8470			P
7439-92-1	Lead	2.0	U		P
7439-95-4	Magnesium	33100			P
7439-96-5	Manganese	479			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	1.0	U		P
7440-09-7	Potassium	11600			P
7782-49-2	Selenium	5.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	12900			P
7440-28-0	Thallium	2.0	U		P
7440-62-2	Vanadium	2.0	U		P
7440-66-6	Zinc	21.7			P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO. 98Z405S01

Lab Name: CHEMTECH Contract: ROY F. WESTON, INC.

Project No.: 9169NJ Site: Location: Group: 98Z405S0

Matrix: (soil/water) WATER Lab Sample ID: 055091

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: A4432.D

Level: (low/med) Date Received: 9/24/98

% Moisture: not dec. 100 Date Analyzed: 9/30/98

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-4	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	3.4	J
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO. 98Z405S01

Lab Name: CHEMTECH Contract: ROY F. WESTON, INC.

Project No.: 9169NJ Site: Location: Group: 98Z405S0

Matrix: (soil/water) WATER Lab Sample ID: C55091

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: A4432.D

Level: (low/med) Date Received: 9/24/98

% Moisture: not dec. 100 Date Analyzed: 9/30/98

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/L	Q
1330-20-7	m&p-xylenes	10	U
95-47-6	o-xylene	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

98Z405S01

Lab Name: CHEMTECH Contract: ROY F. WESTON, INC.

Project No.: 9169 Site: Location: Group: 98Z405S0

Matrix: (soil/water) WATER Lab Sample ID: 055091

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: A4432.D

Level: (low/med) Date Received: 9/24/98

% Moisture: not dec. 100 Date Analyzed: 9/30/98

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0 Concentration Units: (ug/L or ug/Kg) ug/L

CAS Number	Compound Name	RT	Est. Conc.	Q
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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

98Z405S02

Lab Name: CHEMTECH Contract: ROY F. WESTON, INC.

Project No.: 9169 Site: Location: Group: 98Z405S0

Matrix: (soil/water) WATER Lab Sample ID: O55090

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: P16035.D

Level: (low/med) Date Received: 9/24/98

% Moisture: not dec. 100 Date Analyzed: 9/29/98

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0 Concentration Units: (ug/L or ug/Kg) ug/L

CAS Number	Compound Name	RT	Est. Conc.	Q
1.				
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VOLATILE ORGANICS ANALYSIS DATA SHEET

98Z405R01

Lab Name: CHEMTECH Contract: ROY F. WESTON, INC.

Project No.: 9169NJ Site: Location: Group: 98Z4C5S0

Matrix: (soil/water) WATER Lab Sample ID: O55093

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: A4431.D

Level: (low/med) Date Received: 9/24/98

% Moisture: not dec. 100 Date Analyzed: 9/29/98

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-4	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

98Z405R01

Lab Name: CHEMTECH Contract: ROY F. WESTON, INC.

Project No.: 9169NJ Site: Location: Group: 98Z405S0

Matrix: (soil/water) WATER Lab Sample ID: O55093

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: A4431.D

Level: (low/med) Date Received: 9/24/98

% Moisture: not dec. 100 Date Analyzed: 9/29/98

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Concentration Units: (ug/L or ug/Kg) ug/L

CAS No.	Compound		Q
1330-20-7	m&p-xylenes	10	U
95-47-6	o-xylene	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.
98Z405R01

Lab Name: CHEMTECH Contract: ROY F. WESTON, INC.

Project No.: 9169 Site: Location: Group: 98Z405S0

Matrix: (soil/water) WATER Lab Sample ID: O55093

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: A4431.D

Level: (low/med) Date Received: 9/24/98

% Moisture: not dec. 100 Date Analyzed: 9/29/98

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 1 Concentration Units: (ug/L or ug/Kg) ug/L

CAS Number	Compound Name	RT	Est. Conc.	Q
1.	UNKNOWN	29.00	6.7	J
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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.: 98Z405R02

Lab Name: CHEMTECH Contract: ROY F. WESTON, INC.

Project No.: 9169NJ Site: Location: Group: 98Z405S0

Matrix: (soil/water) WATER Lab Sample ID: O55094

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: A4430.D

Level: (low/med) Date Received: 9/24/98

% Moisture: not dec. 100 Date Analyzed: 9/29/98

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-4	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroetnene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

98Z405R02

Lab Name: CHEMTECH Contract: ROY F. WESTON, INC.

Project No.: 9169NJ Site: Location: Group: 98Z405S0

Matrix: (soil/water) WATER Lab Sample ID: O55094

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: A4430.D

Level: (low/med) Date Received: 9/24/98

% Moisture: not dec 100 Date Analyzed: 9/29/98

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Concentration Units: (ug/L or ug/Kg) ug/L

CAS No.	Compound		Q
1330-20-7	m&p-xylenes	10	U
95-47-6	o-xylene	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.
98Z405R02

Lab Name: CHEMTECH Contract: ROY F. WESTON, INC.

Project No.: 9169 Site: Location: Group: 98Z405S0

Matrix: (soil/water) WATER Lab Sample ID: O55094

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: A4430.D

Level: (low/med) Date Received: 9/24/98

% Moisture: not dec. 100 Date Analyzed: 9/29/98

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 1 Concentration Units: (ug/L or ug/Kg) ug/L

CAS Number	Compound Name	RT	Est. Conc.	Q
1	Unknown	38 75	5.9	J
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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO

98Z405S02

Lab Name: CHEMTECH Contract: ROY F. WESTON, INC.

Project No.: 9169NJ Site: Location: Group: 98Z405S0

Matrix: (soil/water) WATER Lab Sample ID: O55090

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: P16035.D

Level: (low/med) Date Received: 9/24/98

% Moisture: not dec. 100 Date Analyzed: 9/29/98

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/L	Q
75-71-8	dichlorodifluoromethane	10	U
75-69-4	trichlorofluoromethane	10	U
109-99-9	Tetrahydro furan	10	U

FIGURES

WASTE BOUNDARY

29 DRUMS (EMPTY)

50 DRUMS (SOIL)

60 DRUMS (SOIL)

9 DRUMS (SOIL)

70 DRUMS (EMPTY)

40 DRUMS (SOIL)

41 DRUMS (EMPTY)

50 DRUMS (SOIL)

17 DRUMS (SOIL)

12 DRUMS (EMPTY)

* DRAINAGE CHANNEL LOCATION APPROXIMATELY 120' NORTH

3-8500

3-8600

3-8690

3-8885

3-8865

3-9611

3-9055

3-9080

3-9047

3-9065

NO.	DATE	APPR.	REVISION
	12/96		FINAL (100%) DESIGN SUBMITTAL
	1/98		BID SET
	2/98		REVISED ALIGNMENT OF TEMPORARY ACCESS ROAD

ALTERNATIVE REMEDIAL CONTRACTING STRATEGY
U.S. EPA CONTRACT No. 68-W8-0089
WORK ASSIGNMENT No. 54-5NT2
DOCUMENT CONTROL No. 4500-54-APAZ

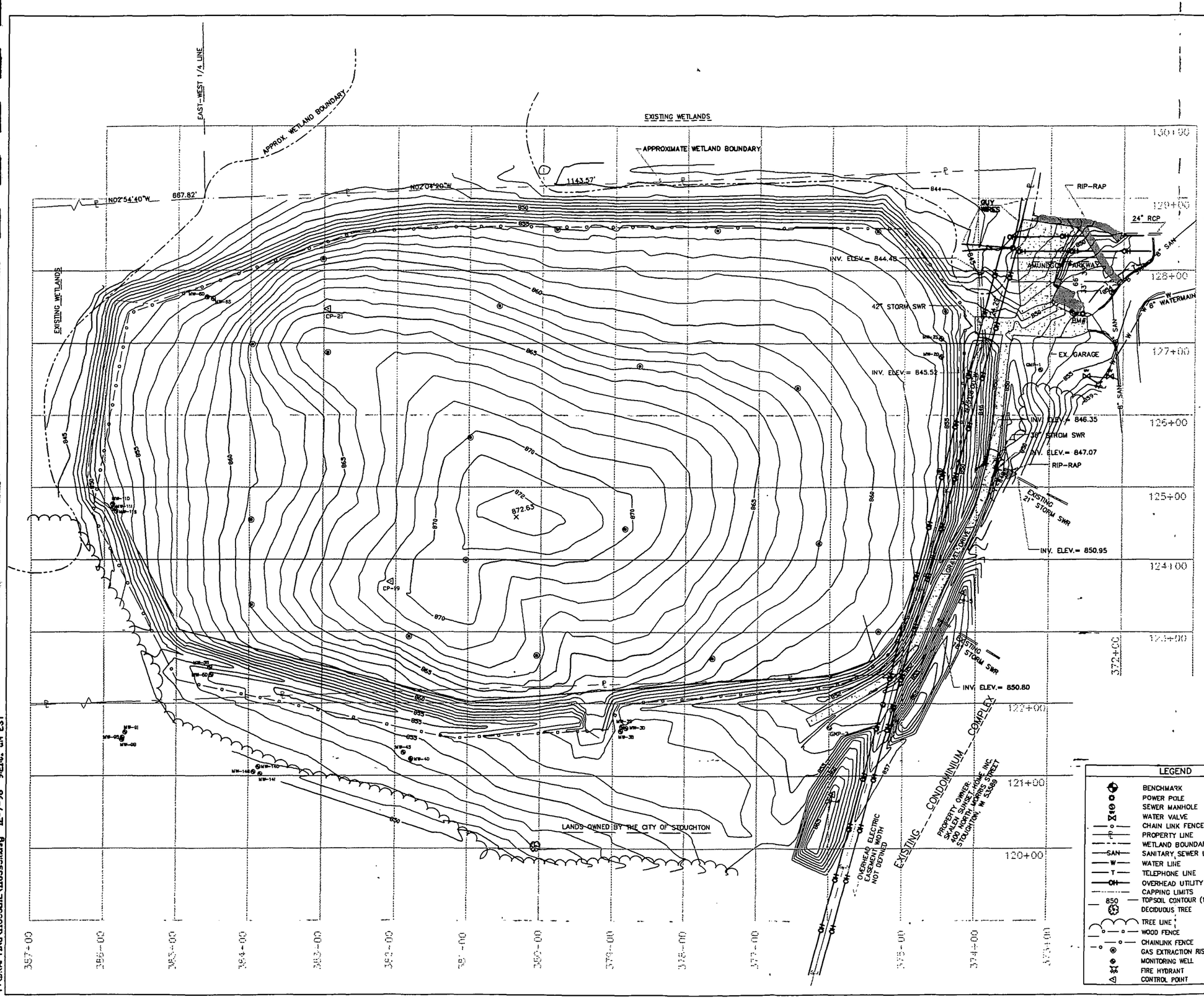
WESTON
WARRENVILLE DESIGNERS/CONSULTANTS
VERNON HILLS ILLINOIS

CHECKED	DATE	CLIENT APPROVALS	DATE
DES. ENG.			
PROJ. ENG. J. J. D.	12/20/96		
PROJ. MGR. W. F. K.	12/30/96		
APPROVED			
APPROVED		ISSUED FOR	DATE

EXISTING SITE CONDITIONS

STOUGHTON CITY LANDFILL CAP REMEDIAL ACTION
Stoughton, Wisconsin

DRAWN R.J.B.	DATE JAN 98	DWG. NO. 3	REV. NO.
SCALE 1" = 120'	W.O. NO. 04500054100490100	SHT. 3 OF 8	



BENCHMARK	ELEV.	DESCRIPTION
BM# 1	857.44	TOP OF GUARD POST

CONTROL POINT #	NORTHING	EASTING	ELEV	DESCRIPTION
CP#4	37594.8219	12075.3187	865.07	1" IRON PIPE
CP#5	37415.9103	12354.7708	857.95	1" IRON PIPE
CP#19	38206.5426	12369.5223	869.20	1" IRON BAR
CP#21	38294.4714	12747.8136	864.67	1" IRON PIPE

COORDINATES AND BEARINGS ARE BASED ON THE WISCONSIN STATE PLANE COORDINATE SYSTEM, SOUTH ZONE. LOCAL SITE GRID CAN BE REFERENCED TO WISCONSIN STATE PLANE GRID BY ADDING 2,100,000 TO THE EASTING AND 3,000,000 TO THE NORTHING COORDINATES.

THE LOCATION OF UNDERGROUND UTILITIES ARE OBTAINED FROM FIELD MEASUREMENTS AND CITY OF STOUGHTON RECORDS. FIELD VERIFY.

LEGAL DESCRIPTION

PART OF THE SOUTHWEST 1/4 OF THE SOUTHWEST 1/4 SECTION 4, TOWNSHIP 5 NORTH, RANGE 11 EAST, CITY OF STOUGHTON, DANE COUNTY, WISCONSIN.

I, THOMAS A. RADENZ, REGISTERED LAND SURVEYOR, HEREBY REPRESENT THAT I HAVE MADE THIS SURVEY BY THE DIRECTION OF RYAN INC., CENTRAL. I FURTHER REPRESENT THAT THIS IS A TRUE AND CORRECT REPRESENTATION OF SAID SURVEY MADE, AND THAT THIS SURVEY IS CORRECT TO THE BEST OF MY KNOWLEDGE.

R.E.I.
THOMAS A. RADENZ (AGENT)
CHIEF OF SURVEYS
R.L.S. 2095

NORTH

GRAPHIC SCALE

(IN FEET)
1 inch = 60 ft.

LEGEND

- BENCHMARK
- POWER POLE
- SEWER MANHOLE
- WATER VALVE
- CHAIN LINK FENCE
- PROPERTY LINE
- WETLAND BOUNDARY
- SANITARY SEWER LINE
- WATER LINE
- TELEPHONE LINE
- OVERHEAD UTILITY LINE
- CAPPING LIMITS
- 850 TOPSOIL CONTOUR (1' INTERVAL)
- DECIDUOUS TREE
- TREE LINE
- WOOD FENCE
- CHAINLINK FENCE
- GAS EXTRACTION RISER
- MONITORING WELL
- FIRE HYDRANT
- CONTROL POINT

DATE	REVISION	BY	CHK'D
12/16/98	HIGH POINT, GRAVEL CONTOUR	DDD	

REI
CIVIL & ENVIRONMENTAL ENGINEERING, SURVEYING
4080 N. 20th AVENUE
WAUSAU, WISCONSIN 54401
PHONE: (715) 675-9784 FAX: (715) 675-4060
EMAIL: rei@pcpros.net

FINAL TOPO
STOUGHTON LANDFILL
STOUGHTON, WISCONSIN

DESIGNED BY:	CHECKED BY: T.A.R.
SURVEYED BY: T.A.R.	APPROVED BY:
DRAWN BY: N.J.W.	DATE: 12/3/98
SHEET 1 OF 1	PROJECT No. 1183