5 OLD FARM ROAD
RED HOOK, NY 12571
Phone: 845-758-5011
Fax: 845-758-9240

B/T GENERAL CONTRACTORS, INC.

RECEIVED
JUN 27 2005

Fax

To: Mark Mateunas **From:** Billy Cole

Fax: 518-402-9819 **Date:**

Phone: ~~Pages:~~ Email WCOLE71563@aol.com

Re: **CC:**

☐ Urgent ☒ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

•Comments:

Mark,

Thanks for your time in this matter. I have been to 4 meetings in the town, the town board likes what I have done to the area (Landfill property), the cleanup, the removal of tires + junk and all are in favor of me putting up storage units. The letter attached from Mr. Fergen states contamination in the water, I am doing new water tests (waiting for results) and Mr. Cunningham who owns Clermont Farms next to this property also did tests and they were fine, He is a lawyer who was going to buy property but could not close in 2003, he was waiting for county to take over. This property was a car junk yard for the previous 40 yrs. There are many positive people that want something done to this site because it has been a eyesore for the last 10-12 yrs. Thanks for your time Billy Cole

Steve 518-357-2068

402
9819

KIMBERLEA SHAW REA, ESQ.
ATTORNEY AND COUNSELLOR

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FAX (914) 337-3630

October 3, 2005

By FAX and Regular Mail
(518) 537-5324

Hon. William Banks
Supervisor
Town of Clermont
1795 Route 9
Clermont, NY 12526

Re: LaMunyan Site Compliance Issues

Dear Supervisor Banks:

I just received a telephone call from Steve Schassler, DEC Region 4 Director, in response to my written inquiries about the LaMunyan site. Mr. Schassler said that the Department would shortly be issuing a letter to new owner of the site, requiring him to bring the site into compliance with the State's Solid Waste Management Regulations, 6 NYCRR Part 360. That would require, at a minimum, an investigation, and possible remediation, depending upon what is found as a result of the investigation.

Therefore, until the DEC has fully resolved the matter with Mr. [illegible] recommend that no further permits be issued on the site of the old landfill.

Sincerely,

Kimberlea Shaw Rea

Cc: Mr. William Cole

Attn 762-9819

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September 6, 2005

By FAX and Regular Mail
(518) 537-5324

Hon. William Banks
Supervisor
Town of Clermont
1795 Route 9
Clermont, NY 12526

Re: Lamunyan C&D Debris Landfill

Dear Supervisor Banks:

At the Town Board meeting on August 1, 2005, I promised you a report on my review of documents obtained from the New York State Department of Environmental Conservation ("NYSDEC"). Because of the site's involved history, involving protracted litigation and disputed claims regarding the nature of the contamination, I said that my report would not "re-fight" those old battles, but would rather emphasize the technical aspects of the contamination that remains on site. I have therefore quoted at length from the technical reports and memoranda contained in some of the agency's documents I reviewed. I also refer to certain of the Town's own documents that I recently reviewed.

Background

Carl Lamunyan began operating the Lamunyan Construction and Demolition Debris ("C&D") landfill during the 1980's, at a time when the State's State Solid Waste Regulation (found at 6 NYCRR Part 360) essentially allowed for the operation of exempt C&D sites for up to one year. The NYSDEC has said that due to the site's exempt status, --others in the Hudson Valley--the State was very limited in its ability to address environmental violations in a timely manner. Nonetheless, it is important to note that the State's Part 360 regulations require remediation of sites that violated their standards.

This landfill accepted large quantities of pulverized C&D waste, mostly from the New York City area. It is clear from the technical documents that some of this C&D waste contained "cocktailed" hazardous substances, and did not consist solely of exempt

C&D materials. Probably worse for the residents who lived in the vicinity of the landfill was the strong "rotten egg" odor of hydrogen sulfide gas, which was produced by disposal of wall board, which became wet and degraded after being covered in the landfill. There were many complaints from neighbors about these odors, and the well-documented adverse health affects that exposure to these gases cause. Moreover, for several months, neighbors reported as many as 100 trucks per day, entering the landfill as early as 5 a.m. and not ceasing operation until 2 a.m. The size of the landfill more than doubled its permitted size of 2 acres, and exceeded the height limits placed on it by the Town. Certain documents I reviewed substantiate the suggestion that users of the site had ties to organized crime; there is no question that the disposal practices were illegal and that they resulted in contamination of the groundwater and soils. Contaminated leachate apparently still leaches into the Stony Kill Creek, which flows into the Village of Tivoli's backup water supply.

In November 1988, the Town was successful in obtaining injunctive relief, in which the Columbia County Supreme Court stopped the operation. Mr. Lamunyan appealed the decision, and sued the Town in other actions that the State and Federal Courts deemed frivolous (in one action, Mr. Lamunyan was ordered to pay the Town's attorney's fees). However, the site remained contaminated. In January, 1990 the NYSDEC entered into a Consent Order with Mr. Lamunyan which required a cleanup. This cleanup included a fence around site, interim control plan for leachate and odors, and closure investigation plan. Due to Mr. Lamunyan's failure to comply with all the terms of the Order, the case was subsequently referred to the Attorney General's office for litigation. The Attorney General's office filed suit, and Mr. Lamunyan lost another of the lawsuits he provoked against the Town. Shortly thereafter, he declared bankruptcy, vacated the site and closed his automotive business. The Site was then, and is now, in violation of the State's Solid Waste Management Regulations. It was never put on the State's Inactive Hazardous Waste Disposal Site Registry (also known as the State Superfund List).

Nature of the Contamination

In 1991, the NYSDEC's remediation contractor, Dunn Geoscience Corporation performed a Preliminary Site Assessment on the site. I am citing parts of the PSA below.

Dunn Geoscience, NYSDEC and the New York State Department of Health sampled and analyzed surface water, sediment, leachate, waste and residential groundwater in proximity to the site. Fortunately, groundwater samples collected from nearby residents did not reveal contaminated groundwater at the neighboring wells. However, leachate samples collected at the site contained detectable levels of benzene (11 parts per billion ("ppb")), ethylbenzene (17 ppb) and xylene (30 ppb). Additional compounds found in leachate samples included methyl isobutyl ketone, acetone and methyl tertiary butyl ether ("MTBE"). Sediment samples contained several semi-volatile compounds and PCBs. However, PCB concentrations were below the hazardous waste criteria of 50 ppm. Elevated levels of copper (68 to 73.5 ppm), cadmium (2.05 to 10.2 ppm), lead (36 to 1240 ppm), and low levels of pesticides were also detected in the sediment samples. Drum samples from excavated drums contained benzene (950 to 2200 ppb), toluene (34,000 to 49,000 ppb), ethylbenzene (28,000 to 33,000 ppb), xylene (100,000 to 160,000 ppb) and several semi-volatile compounds.

Initial environmental sampling was performed for surface water and five sediment locations. Surface water samples reflected iron concentrations in excess of the NYSDEC Part 703 standard for Class C surface water. Likewise, aluminum and cyanide in one sample exceeded the Part 703 standards for Class C surface water. Fortunately, no significant concentrations of volatiles, semivolatiles, pesticides, PCBs and inorganics were reported from the sediment samples, except for one upgradient sample, which had concentrations of the pesticides 4,4'-DDT, 4,4'-DDE and 4,4'-DDD.

The excavation of five test pits and two trenches revealed C&D fill consisting of 35 percent - 60 percent shredded wood with lesser amounts of tires, shingles, railroad ties, carpet, metal, stone, plastic, rubber, and glass. Trace levels of the solvent toluene were found in several test pit samples, and one sample also had low concentrations of the solvents, ethyl benzene and total xylenes. Most of the polynuclear aromatics and several Tentatively Identified Compounds (TICs) were also detected in the test pit samples. Low levels of several target compound list pesticides and two PCBs were found in a majority of the test pit samples. Elevated levels of lead were reported in several test pit samples. These are all typical of "cocktail waste." Please note, however, that the amounts of hazardous substances found did not require the site to be placed on the State Superfund List.

The PSA noted that the site was previously used as a junkyard and noted that this use has likely contributed to offsite release of some of the contaminants. Air sampling conducted during July 1991 revealed sporadic detections of hydrogen sulfide, tetrachloroethene, xylene and trichlorofluoromethane in downwind samples. Toluene and 1,4- dichlorobenzene were detected in upwind and downwind samples suggesting that these compounds are not necessarily site-related. Furthermore, a NYSDOH health survey revealed that many symptoms experienced by respondents to a health questionnaire living in proximity to the site, such as eye and respiratory irritation, are consistent with intermittent exposures to hydrogen sulfide.

Outlined below are the PSA's recommendations:

- The landfill should be properly closed in accordance with NYSDEC Part 360 regulations. The closure should include a cap to reduce infiltration and surface water drainage control.
- Groundwater quality and flow directions should be monitored for the on-site wells to better define the flow directions and potential long term changes in water quality as the nature of the landfill material changes under normal degradative conditions. Additional wells at selected locations may be necessary to better define local groundwater flow direction adjacent to the fill area, and to provide early warning monitoring for those private residences located south of the site.

- Early warning monitoring wells should be sampled on a quarterly basis to protect downgradient residential water supplies.
- If the early warning monitoring program reveals contravention of groundwater standards, steps should be considered to protect the health of those residents potentially impacted.
- Complaints of hydrogen sulfide odors by nearby residents should be closely monitored to determine if additional air sampling is warranted to evaluate seasonal variations of hydrogen sulfide generation from the site.

Subsequent Agency Action

In 1996, the Regional Director of NYSDEC Region 4 summarized the landfill's history in an internal memorandum. In it, Mr. Adamczyk noted that "The physical condition of the site remains pretty much as it was shortly after operations ceased. To date, no cap or leachate control system has been constructed on the landfill. The enforcement case still lies with the Attorney General's Office. The most recent inspection indicated that a small quantity of leachate is still flowing from the western edge of the landfill into the Stonykill and hydrogen sulfide odors appear to have subsided. The most recent groundwater sampling by the Region (1994) indicated continued presence of contamination." His memorandum went on to discuss the fact that many of these types of C&D landfills in the Hudson Valley remained contaminated for a variety of reasons, e.g. "In most cases the owners simply lacked the financial resources to address all of the environmental problems or were able to successfully hide the money received during the operation from the state and local municipalities. While the intensity of the concerns has lessened, particularly regarding the odors from the hydrogen sulfide gas, this site will likely continue to contaminate groundwater as long as it remains uncapped."

He recommended that the Department continue to provide periodic inspections with occasional groundwater sampling, as resources allow, to be sure that environmental conditions have not worsened. He also recommended that the NYSDEC continue to provide technical assistance to the Attorney General's office as needed for any continuing litigation.

In 1997, another round of sampling was conducted by NYSDEC, and reported to the Town Engineer, David Crawford. The results noted continuously heavy leachate seeps, and significant exceedances of groundwater and surface quality standards for iron and manganese. Apparently, there were no exceedances for volatile and semivolatile compounds. However, these results were not conclusive because two monitoring wells were not sampled because of dense brush.

As you know, on May 31, 2005, the Regional Engineer Richard Forgea wrote to the Livalleras, stating that the site is still not in compliance with State regulations, and that it has not been closed as required.

My Recommendations

With your approval, I will call and write to NYSDEC Regional Administrator Steve Schassler, citing the Town's difficulty with the Agency's lack of enforcement, and asking the State to take action. It may be that NYSDEC does not realize that the new owner has been quoted as saying that NYSDEC has said that no further cleanup is necessary. In any case, we need immediate clarification from the Agency. If NYSDEC has reevaluated the site and is willing to give the new owner a no-further-action letter, then the Town would be free to permit certain allowable certain development activities, if the owner asks for permission. However, if the State will not provide the new owner with a no-further-action letter, then it should be willing to enforce its own regulations, and require a Part 360 cap and closure plan, to stop degradation of the environmental media at the site.

I will look forward to discussing this with you at this evening's board meeting.

Very truly yours,

Kimberlea Shaw Rea

Gary Beck – Z3 Consultants- Cemetery Road Randy Bloom

Alfred Jantzen, represented by Garret O'Connor Amandus Fuchs

Amandus Fuchs Thomas Vondell Philip Seymour

William Cole

CLERMONT PLANNING BOARD

APRIL 13, 2005

The Clermont Planning Board held its regular meeting on Wednesday, April 13, 2005. Those members present were Chairman Larry Saulpaugh, Clayton Andrus, Aldo Dusman, Garret O'Connor, Mandy Fuchs, Robert Quierolo and Chris Nolan. Others present were Elizabeth Maher, Judith Neary, Gary Beck, Jr. Z3 Consultants for Cemetery Road project, Randy Bloom and Richard Jones, engineer for Ms. Bloom, Robert Corey, Robert Desmond, Philip Seymour, Thomas Vondell and Al Trezza, Town Attorney.

Chairman Saulpaugh opened the meeting at 7:30 P.M. A motion was made by Mandy Fuchs, seconded by Clayton Andrus to approve the minutes. All in favor. So carried.

A motion was made by Mandy Fuchs, seconded by Clayton Andrus to close the regular meeting and open the public hearing on the subdivision and boundary line change of Alfred Jantzen of 13.119 acres on Pleasantvale Road. Garret O'Connor, member of the Planning Board, stepped down to represent Mr.Jantzen in this subdivision. Mr. Jantzen is subdividing a parcel of 13.119 acres on the north side of Pleasantvale Road and annexing it to Mr. O'Connors 4.886-acre parcel. Notification to adjoining landowners was done, deeds for both parcels were submitted. Robert Corey, a neighbor was present for the hearing. He asked if the pipeline runs through this property, but it does not.

As their was no other discussion, a motion was made to close the hearing and go back into regular session by Mandy Fuchs, seconded by Clayton Andrus.

The Environmental Assessment form was reviewed and declared a negative declaration on a motion made by Mandy Fuchs, seconded by Clayton Andrus. All in favor. So carried. A motion was made to approve the subdivision/boundary line change by Aldo Dusman, seconded by Chris Nolan. All in favor. So carried.

Thomas Vondell approached the board on subdividing a 5.88 acre parcel into two lots on the east side of Route 9, south of Pinho's. The lots would be 1.6 acres and 4.2 acres.

He will need two driveway approvals from the State Highway Superintendent. The driveways should be shown on the survey map and the superintendent's signature affixed to that map. The property has mapped wetlands. As of yet, does not have health department approval. Phil Massaro is the surveyor for this project.

Randy Bloom, developer and Dick Jones, engineer approached the board for the 5 lot subdivision Mr. Bloom is proposing on Langridge Road off of Pleasantvale Road. The discussion started on whether or not Langridge Road is a user road or Town road. Dan Wheeler, our engineer, believes that if a user road is maintained and taken care of for ten years by the Town, it becomes a town road, but others dissagree. There are state regulations whereby a user road maintained by the Town for ten years becomes a town road, but the town does not own fee to road, it is used by the public but is not a dedicated road, remains a user road. An agreement has been reached by Ms. Bloom and Jim Potts, Highway Superintendent, whereby: the turnaround and area to push snow will be enlarged and trees will be removed on the curve for better site distance. Ms. Bloom is willing to turn road over to the Town from the start at her property line to the turnaround with a 15-20' easement for pushing off the snow. The length of the cul-de-sac will exceed the maximum length that the zoning allows, but this is a pre-existing user (Town) road.

Applicant needs the following:

- Metes and bounds description
- Board of Health approval
- Survey
- Deed description –no further subdivision on lots

Gary Beck of Z3 Builders, developer for the former Goodnow property on Cemetery Road, proposing 15 lots on the south side of Cemetery Road came before the board.

Discussion was as follows:

- Stormwater Management area – who owns, maintains drainage easement.

Area is built, subject to approval of engineer and Town highway Superintendent. Receive a fee simple to road, easements to swales and ditches. Usually the management area is on a lot and a drainage easement goes with the property it is on, in this case Lot 6. Once installed it is the towns responsibility. Should check with Jim Potts on his requirements for maintenance easement.

- Access easement and maintenance agreement for stormwater.
- Wetland Buffer is not shown on map
- Need board of health approval on all lots
- Long Enviromental Assessment form
- Road bond – construction bond, maintenance bond – 2 years

Larry will check with Dan Wheeler to see if there is anything else. A preliminary public hearing will be scheduled for next month. Aldo Dusman did ask for info on impact to schools. A motion was made by Chris Nolan, seconded by Clayton Andrus to schedule the public hearing and SEQRA review for May 11 th at 7:30 P.M.

Phil Seymour is proposing a 13 lot subdivision of 25.93 acres on the former Boice property on both sides of Nevis Road. Preliminary deep test were done last fall, however, Board of Health has not been to the site yet. Out engineer must review the maps.

- Escrow fee of $300.00 for engineering fees, etc.
- Board of Health approval
- Drainage ditch crosses 4 of the lots, agreement for landowners that ditch can be cleaned out or maintained.
- Deed restrictions so that nothing can restrict site on road on east side.

4 William Cole is proposing a storage buildings 30 x 150 facing east/west and possibly a 30 x 40 storage *

warehouse in the future in the former garage on three acres on Route 9G on what was the former LaMunyan property. He is also proposing putting the storage units on a 5 inch thick slab so as not to disturb the ground. He has been in contact with Dick Forge of DEC and there was no restriction to use of the land. The board feels he should try to get something in writing from DEC. This proposed use requires a site plan review as it is a commercial use on commercial property.

A motion was made to adjourn by Chris Nolan, seconded by Clayton Andrus.

Respectfully submitted,

Mary Helen Shannon

Secretary

GZA
GeoEnvironmental
of New York

Engineers and Scientists

April 25, 2002
File No. 55024

Mr. John Grathwol, P.E.
New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233

GZA

Re: McKenna Landfill Remedial Closure Project
Final Engineering Report (Site No. 8-37-003)
Albion, New York

Dear Mr. Grathwol:

364 Nagel Drive
Buffalo
New York 14225
716-685-2300
FAX 716-685-3629
http://www.gza.net

GZA GeoEnvironmental of New York (GZA) is pleased to submit two (2) copies of the enclosed Final Engineering Report for the McKenna Landfill Remedial Closure Project (Site No. 8-37-003) in Albion, New York.

Very truly yours,

GZA GEOENVIRONMENTAL OF NEW YORK

Bart A. Klettke

Bart A. Klettke, P.E.
Senior Project Manager

cc: G. Bailey, Esq. – NYSDEC Region 9 (1 copy)

A Subsidiary of GZA
GeoEnvironmental
Technologies, Inc.

GZA

McKENNA LANDFILL
REMEDIAL CLOSURE PROJECT
FINAL ENGINEERING REPORT
(SITE NO. 8-37-003)
ALBION, NEW YORK

Prepared For:
Waste Management of New York, LLC
Fairport, New York

Prepared By:
GZA GeoEnvironmental of New York
Buffalo, New York

December 2001
File: 55024

CERTIFICATION STATEMENT

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL
ALBION, NY
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
(SITE No. 8-37-003)

I hereby certify[1] this document has been prepared in conformance with the requirements of the "Remedial Design and Construction Work Plan" prepared in September 1995, by GZA GeoEnvironmental of New York, as a basis for executing the design and construction of the remedial closure in accordance with the "Record of Decision" issued by the New York State Department of Environmental Conservation (NYSDEC) on March 2, 1995 establishing the closure criteria for the site. Furthermore, I certify that the construction activities were completed, unless so noted, in accordance with the NYSDEC approved "Final Design Rational/Engineering Report" issued by GZA on December 16, 1999, under my signature and stamp as a Professional Engineer in the State of New York.

Bart A. Klettke, P.E.
New York State P.E. No. 069423-1

[1] Certify means to state or declare a professional opinion.

TABLE OF CONTENTS

TABLE OF CONTENTS (CONT'D)

FIGURES

APPENDICES

TABLE OF CONTENTS (CONT'D)

1.00 INTRODUCTION

1.10 GENERAL

This report presents the observations made and data collected during construction observation of the McKenna Landfill Remedial Closure Project (NYSDEC Site No. 8-37-003) in the Town of Albion, Orleans County, New York. GZA GeoEnvironmental of New York (GZA), on behalf of Waste Management of New York, LLC (WMNY), prepared this report. A project locus plan is presented as Figure 1. Limitations to our work and this report are presented in Appendix A. Pertinent correspondence with the New York State Department of Environmental Conservation (NYSDEC) and the New York State Canal Corporation (NYS Canal Corporation) is contained in Appendix B – Correspondence.

WMNY retained the following companies to complete the Remedial Closure construction.

- Ciminelli Services Corporation (CSC) of Tonawanda, New York as the general contractor. CSC performed the earthwork construction and constructed the leachate collection and gas venting systems. CSC subcontracted with Inquip Associates, Inc. (Inquip) of McLean, Virginia to construct the soil-bentonite barrier wall; and subcontracted with TVGA Engineering, Surveying, P.C. (TVGA) of Elma, New York to perform construction layout, measure the constructed lines and grades, and prepare record drawings. Record survey drawings are presented in Appendix G.

- Serrot International Corporation (Serrot) of Reno, Nevada manufactured and installed the linear low density polyethylene (LLDPE) liner.

1.20 BACKGROUND

The McKenna Landfill site is located on the north side of the former Yager Road, west of Transit Road, in the Town of Albion. The site is approximately 500 feet wide (north to south) by 1800 feet long (east to west) and consists of about 20 acres. It is located adjacent to the northeast corner of the Orleans Sanitary Landfill (OSL) site. The landfill occupies approximately 18 acres of the McKenna site. The site is bounded by the New York State Barge Canal to the north, an existing pond and Transit Road to the east, the former Yager Road to the south and an undeveloped portion of the OSL site to the west. An undeveloped portion of the OSL site is also located south of the site on the south side of Yager Road. The site setting is generally rural/agricultural with some sparsely located residences within a one-half mile radius of the site.

The landfill is an unlined facility and was operated during the 1970's and early 1980's; it ceased operation in October 1983. The landfill is presently listed on the New York State

Registry of Inactive Hazardous Waste Sites as a Class 2 site. Reported hazardous materials disposed in the landfill include concentrated acids, silver chloride sediment, solvents, adhesives with high concentrations of vinyl chloride, foundry sands, paint and treatment plant sludges. A proposed remedial action plan was issued by NYSDEC in January 1995, followed by a "Record of Decision" issued by NYSDEC on March 2, 1995 (Reference 1) that established the closure criteria for this site.

The "Record of Decision" mandated construction of the following composite final cover system for remedial closure of the McKenna Landfill.

- A passive gas venting system, consisting of individual gas vents spaced at one per acre, as a minimum;
- A low permeability barrier layer cover, consisting of either a geomembrane (60 mil LLDPE) or 18 inches of a low permeability soil;
- 24 inches of barrier protection soil; and
- 6 inches of topsoil, seeded to establish vegetative cover.

In addition, the closure criteria required a perimeter leachate collection system at the base of the landfill to produce a generally inward groundwater gradient, where practical considering the actual site conditions, and to limit migration of site related contaminants.

A "Remedial Design and Construction Work Plan" was prepared in September 1995 (Reference 2), by GZA, as a basis for executing the design and construction of the remedial closure in accordance with the "Record of Decision". The "Remedial Design and Construction Work Plan" was submitted to NYSDEC and accepted in March 1996. WMNY entered into a consent order agreement with NYSDEC, in March 1998, to develop and execute the remedial closure plan for the McKenna Landfill. GZA was retained by WMNY to collect necessary site information and prepare the remedial closure design including construction drawings, technical specifications, health and safety requirements and a construction quality assurance/quality control plan.

Site data collected or done, and reviewed during the design phase consisted of existing files and reports, planimetric survey and reconnaissance, test pit explorations, test borings, installation of groundwater level observation wells, a landfill gas survey, a wetlands delineation and leachate collection and analysis. The site data collected was summarized in the Final Design Rationale/Engineering Report (Reference 3) prepared for this project in December 1999 by GZA.

2.00 REMEDIAL CLOSURE DESIGN

A detailed discussion regarding the design for the remedial closure construction is presented as Appendix C – Remedial Closure Construction Design Summary, which summarizes the remedial closure design and discusses the engineering considerations used for the design. Additional information is included in Reference 3. A general discussion of the remedial closure design follows.

The remedial closure cover system components consist of, from final grade down:

- 6 inches of topsoil and seeding,
- 24 inches of barrier protection material,
- A cushion geotextile,
- A 60 mil. textured, LLDPE geomembrane barrier layer, and
- A cushion geotextile, overlying a suitably prepared existing cover soil subgrade.

A barrier or cut-off wall was installed around the perimeter of the landfill and generally follows an alignment along the centerline of the perimeter surface water drainage swales (outside the perimeter leachate collection system piping and structures). The barrier/cut-off wall was designed to extend to the top of bedrock and provides a toe of slope connection for the final cover system to the top of bedrock.

The barrier/cut-off wall consists of:

- A three (3) foot wide soil-bentonite (slurry) wall on the north side and at the northeast and northwest corners of the landfill due to the deeper depths to bedrock (i.e. in the range of 10 to 13 feet), considering the site constraints and slope-back required for a deeper excavation, groundwater conditions and the presence of the barge canal, which required protection against construction disturbance; and

- Compacted low permeability soil (clay) barrier wall along the east, south and west sides of the landfill where the depth to bedrock was generally less than about seven feet below existing grades.

Both the soil-bentonite slurry wall and the compacted low permeability soil barrier wall were required to have permeability of $1x10^{-7}$ cm/sec or less.

A leachate collection system consisting of a toe drain around the perimeter of the landfill drains to wet wells located at the northeast and northwest corners of the landfill. The leachate collection pipe and appurtenances are located inside of the barrier/cut-off wall system.

The leachate collection piping consists of perforated, 6 and 8-inch diameter, HDPE pipe. The manholes and wet wells are also constructed of HDPE. The wet wells are 8 feet in diameter and each have a 6-foot deep sump below the lowest pipe invert.

A geosynthetic leachate collection drainage layer was constructed on the lower portion of the landfill slope and connects to the leachate collection system at the bottom of slope. The leachate collection drainage layer is a geocomposite (geogrid with geotextile bonded top and bottom).

A passive gas venting system was installed for the remedial closure that consists of 19 gas vents on the top portion of the landfill and 12 gas vent points along the perimeter leachate collection system. Gas vents have been provided on some of the leachate collection system cleanout risers and on each of the manhole/wet well structures for venting of the perimeter leachate collection drain system.

Gas collection trenches were excavated into the cover soil subgrade/waste on the upper portion of the landfill. A cushion geotextile (Geotextile, Type II) was installed beneath the geomembrane barrier on the top portion of the landfill to serve as a limited gas venting layer. The cushion geotextile ties into the gas collection trenches. The leachate collection drainage layer (Geocomposite) on the lower slope serves as a primary gas venting layer. This leachate collection/gas venting layer was connected to the gas collection and venting trench located along the upper limit of the layer.

3.00 MATERIALS AND LABORATORY TESTING

Material testing was done as required in the approved quality assurance and quality control (QA/QC) plan included in Reference 3. A discussion describing the various materials used for construction in the McKenna Landfill Remedial Closure Project is presented as Appendix D - Materials and Laboratory Testing. Also presented in Appendix D is a summary of the pre-construction and construction laboratory test results, certificates of compliance, and manufacturer's data summarizing material characteristics. Appendix E includes the LLDPE liner installation field and laboratory data sheets.

4.00 REMEDIAL CLOSURE CONSTRUCTION

4.10 GENERAL

This section describes the general procedures used for remedial closure construction. Partial construction was completed in 2000 with substantial work completion in 2001. The work included clearing and grubbing of on-site trees and brush, existing soil recovery, subgrade grading and excavation spoil disposal, barrier/cutoff wall construction, leachate collection and gas venting systems, final cover system, surface water drainage structures, and access road construction.

4.20 CONSTRUCTION PROCEDURES

4.20.1 Clearing and Grubbing and Utility/Structure Removal and Abandonment

CSC cleared or removed trees, brush, down timber and objectionable material from within the work area using an excavator attached with a trash grapple. Cleared material was hauled away in articulated dump trucks and stockpiled outside the work area to be chipped up and disposed of within the designated disposal area of the landfill. CSC grubbed or removed from the ground surface topsoil, organic materials and debris from within the work area using a "Bobcat" attached with a "Brushcat"/mulching mower.

CSC removed or abandoned in-place the following existing utilities as shown on TVGA record survey drawing no. R-4 in Appendix G.

- Removed leachate riser pipe numbers 1 through 8;
- Removed existing gas vent numbers 1 through 3;
- Removed existing corrugated metal drainage pipe (CMP) crossing Yager Road off the southeast corner of the landfill; and
- Abandoned in-place existing manholes/concrete vault numbers 1 through 6.

The leachate riser pipes and gas vents were removed with a backhoe with the resultant excavation backfilled with crushed stone tamped in-place.

The excavation for the CMP was backfilled with excavation spoil compacted to a stable matrix up to about 2 feet below top of pavement elevation. The top 2 feet was backfilled with crushed stone compacted to a stable matrix.

The existing manholes/concrete vaults had cap and manhole barrel sections removed down to at least 2 feet below the level of the prepared subgrade. The remaining manhole sections were backfilled with crushed stone up to top of subgrade.

4.20.2 Existing Soil Recovery

Following clearing and grubbing of the area designated for soil recovery, CSC's surveyor, TVGA, established a grid at 50-foot maximum centers. At each grid point, CSC made a probe hole (test pit) using a mini-excavator to determine the thicknesses of the topsoil and existing cover soil. TVGA then recorded the topsoil and cover soil thicknesses measured and the ground surface elevation and location at each probe location. Based on the thickness probe measurements, CSC estimated the quantity of existing topsoil and cover soil potentially available for re-use.

CSC collected samples of topsoil/cover soil for analytical testing (chemical characterization) to determine their suitability for re-use. Samples were collected at the following frequencies:

Existing Topsoil: 1 sample per 5000 cubic yards (CY) of material potentially available for re-use. Approximately 13,000 CY of topsoil was excavated during soil recovery. Six (6) samples were tested for chemical characterization.

Existing Cover Soil: 1 sample per 5000 CY of material potentially available for re-use. Approximately 8,300 CY of cover soil was excavated during soil recovery. Six (6) samples were tested for chemical characterization.

The analytical results for all the samples tested satisfied the chemical characterization criteria. Results of the testing are presented in Appendix D.

CSC then excavated, with a bulldozer, the existing topsoil using the thickness probe measurements to control the excavation of the topsoil. Excavation work started from the top of the landfill and moved down towards the toe of slope. Material was loaded, with a front-end loader, into articulated dump trucks and stockpiled outside the work area for later use. Following excavation of the topsoil, CSC followed the same procedure for excavation of the existing cover soil.

4.20.3 Subgrade Grading and Excavation Spoil Disposal

CSC excavated over-filled areas of the landfill and filled in areas steeper than 3 horizontal (H) : 1 vertical (V) with compacted suitable fill to grade slopes no steeper than 3H:1V. Excavated soil/waste was deposited in the designated fill area at the east end of the landfill.

CSC graded work areas with bulldozers and excavators as necessary during construction to divert surface water runoff from excavations and to provide positive drainage of embankments and fills.

CSC graded with bulldozers, the existing landfill slope and rolled with vibratory smooth drum rollers as necessary to remove irregularities prior to construction of the landfill final cover system. CSC generally removed from the final subgrade surface, stones or rocks greater than 3 inches, protruding materials and any other unsuitable materials, which could have potentially damaged the geomembrane cover.

Suitable fill was required to be evaluated for geotechnical properties and chemical characterization, as discussed in section 4.20.8.6.

4.20.4 Decommissioning of Existing Monitoring Wells

A total of eight (8) existing monitoring wells on or adjacent to the McKenna landfill were decommissioned and removed as part of the remedial closure project. These wells were designated PL-3TR, OSL-14, B-5, B-8, B-15, McKenna No. 1, McKenna No. 2 and McKenna No. 3. Maxim Technologies, Inc. (Maxim) of Hamburg, New York was subcontracted by CSC to decommission the existing wells.

For wells OSL-14, B-5, B-8, B-15, McKenna No. 1 and McKenna No.2, Maxim overbored the well with 4-1/4 inch inside diameter hollow-stem augers to the bottom of well or the top of rock, whichever was higher. Maxim then removed well materials, including materials extending into rock. Upon removal of the well products the boreholes and open rock holes were flushed with water until the water appeared clean. The boreholes were then backfilled by tremie-grouting with cement-bentonite grout. The well materials were then disposed into the designated disposal area of the landfill.

For wells PL-3TR and McKenna No. 3, Maxim attempted to remove the well products, but the well risers broke off. The well materials were left in-place and the holes were flushed with water until the water appeared clean. The wells were then backfilled by tremie-grouting with cement-bentonite grout.

Groundwater level piezometer PL-6TR was also decommissioned after being damaged by construction equipment. CSC excavated to the bottom of the piezometer (down to the top of bedrock, approx 7 to 8 feet below ground surface), then removed the well materials (riser, screen and pea gravel) from the borehole and backfilled the hole with bentonite and compacted clay.

4.20.5 Soil-Bentonite /Low Permeability Soil Barrier Wall

A barrier or cut-off wall was constructed around the perimeter of the landfill. The barrier wall consists of a 3-foot wide soil-bentonite (slurry) wall, extending to top of rock, on the north side and at the northeast and northwest corners of the landfill. The slurry wall construction was done by Inquip Associates, Inc. (Inquip) of McLean, Virginia. Additionally, a compacted low permeability soil (clay) barrier wall was constructed by CSC along the east, south and west sides of the landfill.

Excavation for the slurry wall construction began at the northwest corner of landfill. Inquip used an excavator equipped with a 3-foot wide bucket to excavate to the top of bedrock (approximately 10-16 feet below ground surface). Where possible, Inquip keyed approximately 6 inches into the bedrock with the teeth of the excavator bucket. As excavation was being done, slurry (mixture of water and bentonite) was pumped into the excavation. The level of slurry within the open trench was maintained within one (1) foot of the top of the trench. Every ten (10) linear feet of excavation, Inquip measured the depth to bottom of trench to record a daily profile for quality control measures.

Following excavation of approximately every 120 linear feet or until the length of the trench was about 10 times the excavated depth, Inquip commenced backfilling of the trench. CSC transported imported backfill material with articulated dump trucks to a mixing area adjacent to the trench. The imported soil was mixed with the bentonite slurry so that a relatively homogeneous mixture (no clods or clumps of soil) was achieved. Mixing of the soil was performed using an excavator to remove the slurry from the trench and mix it with the soil; the slurry and soil were then mixed using a bulldozer. Finally, the relatively homogeneous backfill was placed within the trench. The backfill was tested for slump, with a required slump ranging between three (3) to six (6) inches. The backfill was also tested for density and bentonite content at a minimum of once per 100 CY of trench backfilled. Inquip subcontracted Quality Inspection Services, Inc. (QIS) of Buffalo, New York to perform the QC/QA work on the soil-bentonite slurry wall. QIS and Inquip provided GZA daily reports that included profiles, slump results, locations of slump tests, densities, temperatures, and marsh funnel results of the soil-bentonite slurry. Copies of these reports are included in Appendix D.

Upon completion of the slurry wall, Inquip obtained undisturbed tube samples at a rate of 1 tube per 200 cubic yards of soil-bentonite mix placed, in accordance with the project specifications. Slightly less than 2,000 cubic yards of soil-bentonite mix was placed for construction of the barrier wall. Therefore, ten (10) undisturbed Shelby tube samples were collected from the slurry wall. The samples were collected at approximately 200-foot intervals along the alignment of the slurry wall. Sample locations and depths were selected by GZA. These undisturbed samples were then sent to an independent laboratory to be tested for hydraulic conductivity. SJB Services, Inc. (SJB) of Buffalo, New York, was subcontracted to obtain the undisturbed samples. SJB used a track-mounted drill rig to collect the samples from the specified depths and locations.

After the undisturbed samples were collected, CSC then covered the slurry wall with at least a two (2)-foot thick cover (trench cap) of low permeability soil barrier. An initial loose lift approximately 18-20 inches thick was placed on top of the slurry wall, with a successive loose lift of approximately 8-10 inches thick. Each lift was compacted using a vibratory sheepsfoot roller.

CSC began construction of the low permeability soil barrier wall at the northwest corner of the landfill and worked around the landfill towards the east. An excavator was used to excavate down to the top of bedrock. Once down to top of bedrock the excavation was keyed into the bedrock approximately 6 inches using an excavator equipped with a hydraulic rock chipper. After excavation of approximately 50 linear feet, backfilling the trench began with low permeability soil. CSC installed an initial loose lift approximately 10-12 inches thick and successive loose lifts approximately 8-10 inches. Each lift was compacted with the vibratory sheepsfoot roller.

During construction of the low permeability soil barrier wall, GZA took measurements of the moisture content and dry density of the compacted soil. Details of the field monitoring program are described in Section 5. Subsequent overlying lifts were not placed until the tests or retests met the project specifications.

4.20.6 Leachate Collection System

The leachate collection system consists of a toe drain (approximately 3900 feet in length) around the perimeter of the landfill flowing through manholes to wet wells located at the northeast and northwest corners of the landfill. The leachate collection pipe and appurtenances are located inside of the barrier/cut-off wall system.

The leachate collection system pipes were delivered to the site in 40-foot lengths. Additional specific information related to the pipe is included in Appendix D. CSC's pipe welding subcontractor, Caputo Associates, used a McElroy No. 28 Hydraulic Fusion Machine to butt fuse the pipe on-site. This fusion unit was made by McElroy Manufacturing, Inc. of Tulsa, Oklahoma.

6-inch diameter pipes were installed for the leachate collection system on the east, west and south sides of the landfill, and 8-inch diameter pipes were installed on the north side of the landfill. The leachate collection pipes had perforations consisting of two rows of ½ inch diameter holes spaced approximately 4 inches on center. The two rows were approximately 120 degrees apart. The perforated pipe was placed with the holes facing down. Drainage stone was placed around the leachate collection pipes. The drainage stone was enveloped with a non-woven 6-oz. geotextile. In general, CSC placed the leachate collection system components to the lines and grades shown on the contract drawings. TVGA took record survey measurements during construction of the leachate collection system. The record survey drawings are included in Appendix G.

The wet wells/manholes were placed just prior to construction of the leachate collection system. Bedding stone was put in the wet well/manhole excavation in an approximate 12-inch loose lift thickness. The material was compacted using walk-behind vibratory plate tampers. Concrete anti-flotation anchors were constructed around the base of the wet wells/manholes. Flowable fill or low permeability soil was used to backfill around the wet wells/manholes above the concrete anchors to the ground surface.

During subgrade grading and leachate collection system construction, an existing 4-inch diameter PVC pipe was encountered in the northeast corner of the landfill. GZA directed CSC to connect this pipe with the new leachate collection system trench constructed along the toe of the north slope. Details of this pipe connection were described in a letter report submitted to NYSDEC[1]. The location of the pipe connection is shown on TVGA's survey record drawing no. R-9 in Appendix G.

Prior to completion of the leachate collection system, WMNY subcontracted Bailey Drilling and Septic Service (Bailey) to remove leachate collected by CSC and stored in temporary holding tanks. Bailey transported the leachate to the Town of Albion Wastewater Treatment Plant for disposal. Upon completion of the leachate collection system, Bailey removed leachate from Wet Well Nos. 1 and 2 for disposal. Leachate removal was generally done on a daily basis.

The leachate collection system became operational on October 25, 2000. GZA collected one leachate sample from the two wet wells and combined these two samples into one composite sample for analytical testing. Sampling began October 27, 2000 and was done generally on a quarterly basis during construction. A summary of the test results and analytical data was previously submitted to NYSDEC (Reference 6) and WMNY.

4.20.7 Gas Venting System

The gas venting system consists of 19 gas vents/gas vent risers interconnected with 6 inch slotted Schedule 80 PVC gas venting pipe on the top portion of the landfill, and 12 gas vent points along the perimeter leachate collection system. TVGA took record survey measurements during construction of the gas venting system. The record survey drawings are included in Appendix G.

Excavation for the gas venting trenches was done using an excavator cutting through the existing cover soil/subgrade to make contact with the waste. A non-woven 6-oz. geotextile was placed to line the excavation, followed by an approximate four-inch lift of gas-venting stone placed on top of the geotextile. The gas vent pipe (delivered in 20-foot sections) was placed by hand on top of the bedding stone; connected together using PVC pipe solvent, and covered with a minimum 1 foot of gas venting stone that was then encapsulated with the geotextile.

At gas vent riser locations, CSC used a bobcat outfitted with a post-hole auger, to drill a 12-inch diameter hole extending 5 feet into waste. A 6-inch diameter, Sch. 80 PVC slotted gas vent pipe having a 3-foot screen length was installed. Filter stone was then placed within the hole around the riser pipe. Attached to the slotted pipe was a 6-inch solid Sch. 80 PVC gas vent riser pipe extending 3 feet above the final cover system elevation. The riser

[1] "Existing Leachate Collection Structures/Conditions Encountered Along North Side of Landfill", October 19, 2000.

pipe was then completed with a "riser gooseneck" that consists of two (2) 6-inch Sch. 80 PVC 90° elbows with an attached bird screen.

4.20.8 Final Cover System

The final cover system on the upper portion of the landfill consists of the following components, from final grade down:

- 6 inches of topsoil and seeding,
- 24 inches of barrier protection material,
- A cushion geotextile (i.e. 12 oz./square yard)
- A 60 mil. textured, LLDPE geomembrane barrier layer, and
- A cushion geotextile, overlying a suitably prepared existing cover soil subgrade.

The final cover system on the lower portion of the landfill consists of the same components as above, with the following exceptions:

- A geocomposite leachate collection/gas venting layer was placed between the geomembrane barrier and the suitably prepared subgrade.
- An 18-inch thick weep drain was constructed of crushed stone separating the low permeability soil barrier and the barrier protection material. The weep drain was constructed to allow drainage of surface water infiltration from the barrier protection layer.
- Twenty-four (24) inches of low permeability soil was placed above the cushion geotextile in place of the barrier protection material for the portion of the final cover system below the weep drain.

The limits of the final cover system extend to the toe of the landfill slope and ties in with the perimeter leachate collection and barrier wall system.

4.20.8.1 Subgrade Preparation

Following final grading of the subgrade, the surface was observed by GZA for stones larger than three inches, sharp edged stones, and other irregularities. CSC generally removed stones larger than three inches and sharp edged stones. Serrot also observed the subgrade surface prior to it being covered by the geotextile and geomembrane layers and submitted a written subgrade acceptance form. Copies of the subgrade acceptance forms provided by Serrot are included in Appendix E.

4.20.8.2 Geocomposite Leachate Collection/Gas Venting Layer

The geocomposite was manufactured by Serrot and delivered to the site in plastic wrapped rolls. Each roll was approximately 14.5 feet wide and 300 feet long. Serrot installed the geocomposite for the leachate collection/gas venting layer atop the prepared subgrade.

Serrot deployed the geocomposite with the long dimension generally perpendicular to the toe of slope. Where cross seams occurred, the upper geonet (the HDPE portion of the geocomposite) overlapped on top of the lower geonet with an overlap of at least 1.0 foot. For the long seams, the geonet overlap was at least 3 inches. The geonet overlaps were secured with plastic zip ties placed every 2 feet along the long seams and every 1 foot along the cross seams. Following geonet overlap tying, the adjoining geotextiles were placed back over the geonet seam and sewn together.

The uphill end of the geocomposite was embedded into the gas venting trench, and the downhill end of the geocomposite was embedded into the leachate collection trench.

4.20.8.3 Cushion Geotextile

The 12-oz. cushion geotextile was manufactured by Synthetic Industries and delivered to the site in plastic wrapped rolls. Each roll was approximately 15 feet wide and 300 feet long. Serrot installed the geotextile over the prepared subgrade in areas above the geocomposite leachate collection/gas venting layer. The cushion geotextile was also placed atop the geomembrane with the long dimension generally placed perpendicular to the toe of slope. The seams were sewn together.

4.20.8.4 LLDPE Geomembrane Leachate Collection/Gas Venting Layer

GZA and Serrot observed the prepared subgrade prior to placement of the cushion geotextile or geocomposite. Serrot submitted written acceptance to GZA of the subsurface preparation prior to it being covered by the LLDPE liner and underlying geotextile or geocomposite. Copies of the subgrade surface acceptance sheets provided by Serrot for LLDPE liner construction are included in Appendix E.

The 60-mil thick LLDPE liner was delivered to the site in rolls. Each roll was approximately 23 feet wide and 460 feet long. The panels placed on the slope of the landfill were generally laid perpendicular to the toe of slope. Panels were overlapped approximately 4 inches. GZA observed the panels during deployment and marked defects, holes or other deficiencies that required repair. As the rolls were laid out, the panels were seamed together using a hot-wedge seaming device. In areas where the hot-wedge machine could not be used, the panels were leistered (tack welded) to hold the sheets in place and then seamed together using an extrusion welding process.

Weather information (air temperature and wind speed) was measured by GZA using hand held instruments during the days that LLDPE liner deployment or seam welding was done. This information is included in Appendix E. Welding of LLDPE liner seams was generally not done during precipitation or when sustained wind speeds were in excess of 20 miles per hour.

Prior to initiating seaming activities (generally at the beginning of the work day and following the lunch break), a pre-weld test sample was made for each seaming unit by the qualified seaming person. Pre-weld samples were made, as a minimum, at the beginning of the day and after lunch. The test seams were approximately 2 feet long. Specimens were cut from the test seam and tested with a field electronic tensiometer. Three specimens were tested for peel strength and three for shear strength. The specimens were required to fail in film tear bond (FTB) and meet the following minimum tensile strengths.

Shear Test Min. Value: 72 pounds per inch (ppi)
Peel Test Min. Value: 60 ppi

If the tests indicated that the welded seam failed before failure of the parent material, then another pre-weld sample was made. If the second test also failed, then the seaming equipment and/or seaming person was disqualified from seaming until the deficiency was corrected and a successful test seam had been produced. Data for the fusion and extrusion trial seams are included in Appendix E.

LLDPE liner seams welded by the double hot wedge method were non-destructively tested by Serrot with an air pressure test of the gap between the wedge weld tracks. The gap was pressurized by air injected through a lance inserted into the gap. A minimum pressure of 30 pounds per square inch (psi) was developed in the gap by a compressor. The pressure was monitored by a gauge attached to the lance. If a pressure decrease of 2 psi or less was observed over a 5-minute period, then the seam was considered to be acceptable. If a pressure decrease greater than 2 psi was observed within the 5-minute period, then the seam was considered to be unacceptable. At the conclusion of an acceptable air pressure test, the pressure was released at the seam end opposite the gauge assembly to detect air flow indicating the air space between the track welds was continuous along the seam length. The air pressure test data for the LLDPE liner installation is included in Appendix E.

If the non-destructive test was unacceptable, Serrot observed the length of the tested seam for obvious leaks or defects of the welded seam. If a defect was found, then Serrot scuffed the defect location and placed an extruded bead weld over the defect. The air pressure test was then repeated. In cases where the seam had numerous leaks or the leak location was not readily apparent (i.e., possible leak on the underside), Serrot scuffed and extrusion-welded or capped the entire seam interval and then retested the seam using a vacuum box test.

The LLDPE liner extrusion-welded seams were vacuum box tested by Serrot in accordance with ASTM D4437 and as required by the QA/QC plan. Seams where leaks were detected were repaired (i.e., reground and rewelded) and retested until the vacuum test data were satisfactory. Vacuum test data for the LLDPE liner installations are included in Appendix E.

Samples for destructive testing were obtained at intervals of 500 feet or less on the LLDPE liner seams, as required by the QA/QC plan. The destructive test samples taken were divided into thirds; 1/3 of each sample was destructively tested by Serrot's field tensiometer, 1/3 was destructively tested by an independent laboratory [Texas Research International (TRI)] tensiometer, and the remaining 1/3 of each sample was saved by GZA as an archive. Each tested sample was cut into ten 1-inch wide strips perpendicular to the seam orientation. Five strips were tested for peel strength and five for shear strength. The parent sheet tensile strength and minimum values for shear and peel are listed below. All strips were required to fail in FTB. Destructive test data for the LLDPE liner installations is presented in Appendix E.

Parent Sheet Tensile Strength	90 ppi
Shear Test Minimum Value	72 ppi
Peel Test Minimum Value	60 ppi

An LLDPE liner seam sample was considered to fail if the test results from either Serrot or TRI did not meet the specified criteria. All of the seam samples met the specified criteria. Sample locations are shown on the record drawings provided by TVGA in Appendix G.

4.20.8.5 Low Permeability Soil Layer

Material Evaluation

GEOTECHNICAL TESTING - The soil that was used for the low permeability soil component of the perimeter barrier/cut-off wall and that portion of the final cover system below the weep drain, was obtained from the Walck Brothers borrow source located in Lockport, New York. Samples were collected prior to and during construction from this source. Laboratory testing was done at frequencies greater than or equal to those required in the approved QA/QC plan, as summarized below. Actual test frequencies and laboratory data are summarized in Appendix D.

TEST	FREQUENCY
Moisture content & Atterberg Limits	1 test per 1,000 cy of material
Grain size with hydrometer	1 test per 2,500 cy of material
Moisture-density relationship (Modified Proctor Test)	1 per 5,000 cy of material
Permeability of remolded samples	1 test per 5,000 cy of material
Permeability of undisturbed samples	1 test per 800 cy of material

In addition, one sample was tested in a saturated condition for Consolidated Undrained Triaxial Compressive Strength (ASTM D4767) to determine the effective angle of internal friction (∅). Another sample was tested for interface friction, using the Direct Shear Test Procedure (ASTM D5321), between the low permeability soil barrier and the cushion geotextile. Results of the internal friction angle and interface friction testing are included in Appendix D.

CHEMICAL CHARACTERIZATION TESTING - CSC obtained samples and performed chemical characterization testing to determine the environmental suitability of the low permeability soil. One sample per 5,000 CY of material imported to the site was collected and tested for the following parameters:

Parameter	**Extraction/Preparation** (1)	**Analysis** (1)
TCL(2) Volatile Organic Compound	5050	8260 (95-1)
TCL Semi-Volatile Organic Compound	3540/3550	8270 (95-2)
Pesticides/PCB	3540/3550	8080
Herbicides	3580	8150
TAL(3) metals	3050	95-M
Cyanide	-----	9012

[1] EPA SW-846.
[2] TCL - Target Compound List.
[3] TAL - Target Analyte List.

Actual test frequencies and laboratory data are summarized in Appendix D.

Test Pad Construction

A test pad was constructed for the low permeability soil to observe CSC's proposed construction methods and provide soil compaction and other characteristic information that would guide CSC and GZA during the construction of the low permeability barrier layer. The test pad construction demonstrated that the Walck Bros. clay was suitable for use as low permeability soil. A test pad construction summary was prepared by GZA (Reference 4).

Low Permeability Soil Layer Construction

CSC used bulldozers to spread the low permeability soil into loose lifts that were generally 7 to 8 inches thick. CSC compacted the low permeability soil after it was spread generally using vibratory sheepsfoot and smooth drum rollers. At the end of each work day, the surface of the low permeability soil placed that day was rolled with a vibratory smooth drum roller, which reduced rainwater infiltration and limited desiccation of the low permeability soil. CSC scarified the smooth low permeability soil surface with a vibratory sheepsfoot roller and added water, as necessary, before a subsequent overlying lift of low permeability soil was placed.

Occasionally, low permeability soil was placed at a moisture content greater than 6 percent above optimum moisture content. Consequently, CSC scarified the low permeability soil, allowed it to air dry and then recompacted it. GZA took in-place moisture/density retests following the appropriate remediation process. This procedure was repeated until the test data met the project requirements.

In areas where significant drying or cracking was noted or test results indicated the moisture content was below the specified amount, CSC scarified, added water, reworked and recompacted the low permeability soil until in-place density and moisture tests met the project requirements. CSC maintained a water truck on-site during construction that was used to moisten the exposed low permeability soil surface as needed.

GZA took in-place tests to measure the dry density and moisture content on each lift of low permeability soil after it was compacted. Details of the field monitoring program are described in Section 5. Subsequent overlying lifts were not placed until the tests or retests met the project specifications.

4.20.8.6 Barrier Protection/Suitable Fill Material

Material Evaluation

GEOTECHNICAL TESTING – The soil that was used for the barrier protection/suitable fill material was obtained from on-site soil recovery, the Barre Stone Products borrow source located in Barre, New York, and a soil stockpile in Brockport, New York. Samples were collected from these sources prior to and during construction. Laboratory testing was done at frequencies greater than or equal to those required in the approved QA/QC plan, as summarized below. Actual test frequencies and laboratory data are summarized in Appendix D.

TEST	FREQUENCY
Moisture content & Atterberg Limits	1 test per 2,500 cy of material
Grain size (Sieve only)	1 test per 2,500 cy of material
Moisture-density relationship (Modified Proctor Test)	1 per 5,000 cy of material
Permeability of remolded samples	1 test per 5,000 cy of material

In addition, one sample per borrow source was tested in a saturated condition for Consolidated Undrained Triaxial Compressive Strength to determine the effective angle of internal friction (∅). One sample, per borrow source, was also tested for interface friction, using the Direct Shear Test Procedure (ASTM D5321), between the barrier protection soil/suitable fill and the cushion geotextile. Results of the internal friction angle and interface friction testing are included in Appendix D.

CHEMICAL CHARACTERIZATION TESTING - CSC obtained samples and performed chemical characterization testing to determine the environmental suitability of the barrier protection/suitable fill material. One sample per about 5,000 CY of material[2] used was collected and tested for the following parameters:

[2] Chemical testing of the Barre Stone barrier protection/suitable fill was done at a frequency of about 1 sample per 5,900 cy. See Appendix D, page D-12 for explanation.

Parameter	Extraction/Preparation (1)	Analysis (1)
TCL(2) Volatile Organic Compound	5050	8260 (95-1)
TCL Semi-Volatile Organic Compound	3540/3550	8270 (95-2)
Pesticides/PCB	3540/3550	8080
Herbicides	3580	8150
TAL(3) metals	3050	95-M
Cyanide	-----	9012

[1] EPA SW-846.
[2] TCL - Target Compound List.
[3] TAL - Target Analyte List.

Actual test frequencies and laboratory data are summarized in Appendix D.

Barrier Protection Material Construction

The barrier protection material was placed with bulldozers in uniform lifts generally perpendicular to the toe of slope. The initial lift had an approximate loose lift thickness of 12 to 14 inches. Two (2) succeeding lifts were placed having an approximate loose lift thickness of 6 to 8 inches. Each lift was compacted using a vibratory sheepsfoot roller.

The barrier protection material was placed and compacted at a moisture content generally within $\pm$ 3 percent of its optimum moisture content. Wet soil was scarified with a bulldozer and dried until a suitable moisture content was obtained. Dry soil was moistened and blended until the soil moisture content was uniform and satisfactory.

4.20.8.7 Topsoil

Material Evaluation

GEOTECHNICAL TESTING – Topsoil was obtained from on-site soil recovery, a soil stockpile located in Brockport, New York, the New Guinea Road source near Clarendon, New York, and the Kenyon Road source in the Town of Murray, New York. Samples were collected prior to and during construction from these sources. Laboratory testing was done at frequencies greater than or equal to those required in the approved QA/QC plan, as summarized below. Actual test frequencies and laboratory data are summarized in Appendix D.

TEST	FREQUENCY
pH, Grain size (Sieve only) and Organic Content	1 test per 5,000 cy of material

CHEMICAL CHARACTERIZATION TESTING - CSC obtained samples and performed chemical characterization testing to determine the environmental suitability of the topsoil. One sample per 5,000 CY of material used was collected and tested for the following parameters:

Parameter	Extraction/Preparation (1)	Analysis (1)
TCL(2) Volatile Organic Compound	5050	8260 (95-1)
TCL Semi-Volatile Organic Compound	3540/3550	8270 (95-2)
Pesticides/PCB	3540/3550	8080
Herbicides	3580	8150
TAL(3) metals	3050	95-M
Cyanide	-----	9012

[1] EPA SW-846.
[2] TCL - Target Compound List.
[3] TAL - Target Analyte List.

Actual test frequencies and laboratory data for each borrow source are summarized in Appendix D.

Topsoil Construction

CSC scarified, with a bulldozer, the surface of the underlying barrier protection layer and moistened it before the topsoil was placed to support bonding of the topsoil and barrier protection material. Topsoil was placed, spread and graded to a 6-inch minimum thickness. After the topsoil was spread, GZA notified CSC that deleterious material such as rocks, roots or other foreign matter should be cleared and disposed of by CSC so that the finished surface was acceptable for subsequent compaction and seeding. (As of this date, CSC has not completed removal of deleterious material from the topsoil layer. It is understood that WMNY will remove the deleterious material from the topsoil layer in winter/spring of 2002.) Compaction was performed by tracking the topsoil with a bulldozer. Tracking was done such that the bulldozer traveled perpendicular to the toe of slope. At least two passes of the bulldozer tracks were made over the topsoil area.

4.20.9 Surface Water Drainage Structures

Surface water drainage structures were constructed along the toe of the landfill. Drainage channels were generally formed with 3H:1V side slopes and grass-lined with some sections of the drainage swales lined with rip rap or erosion control material (jute mesh). Corrugated metal culvert pipes were also installed. Drainage structures and channel lining details are shown on the record survey drawings in Appendix G.

4.20.10 Access Roads

New stone access roads were constructed along the east and west sides of the landfill for access to the wet wells and manholes for leachate collection and off-site treatment/disposal. A stone access road was constructed from the southwest corner of the landfill to the top of the landfill.

Suitable fill was placed and compacted to the design elevations for subgrade construction for the roads. The subgrade for the access road leading to the top of the landfill was the barrier protection material. A woven geotextile was placed atop the prepared subgrade and the road was constructed with 12 inches of compacted subbase stone.

5.0 REMEDIAL CLOSURE CONSTRUCTION MONITORING

5.10 GENERAL

This section describes the field and laboratory testing done during and after construction of the various landfill closure components. Laboratory testing of the different components is discussed in Appendix D and E. Photographs taken by GZA showing different aspects of the construction are presented in Appendix F. Survey control procedures used to measure the constructed lines and grades are also discussed.

5.20 FIELD TESTING AND CONSTRUCTION OBSERVATIONS

GZA monitored the remedial closure construction by observing the construction activities and checking the construction for conformance to the contract documents, made field measurements and recorded and summarized the results. Daily field summaries (DFSs) were prepared by GZA, which summarized our observations and testing. The DFSs were previously submitted to WMNY and NYSDEC (Reference 5). The services that we provided, related to the various work components, follows.

5.20.1 Clearing and Grubbing and Utility/Structure Removal and Abandonment

GZA observed that clearing and grubbing was done according to the project specifications. Materials were properly disposed of within the designated disposal area in the east end of the landfill.

GZA observed that removal of the existing leachate riser pipes and corrugated metal drainage pipe, and abandonment of the existing manholes/concrete vaults were done according to the project specifications and properly disposed of within the designated disposal area in the east end of the landfill.

5.20.2 Existing Soil Recovery

GZA observed and documented the excavation activities and assisted CSC in determining the depth of the topsoil/cover soil and cover soil/waste interfaces at each probe location. TVGA recorded and plotted the topsoil and cover soil thicknesses obtained at each location.

CSC obtained samples of the existing topsoil and cover soil for analytical testing (chemical characterization) to determine their suitability for re-use. Sample locations were selected by GZA. CSC and GZA collected separate samples for geotechnical quality assurance testing.

CSC excavated and re-used the existing topsoil and cover soils as determined by the chemical characterization and geotechnical quality assurance testing. GZA monitored the following items during excavation and re-use of existing topsoil and cover soils.

- That the excavation and segregation of the topsoil and cover soils was controlled by thickness probe measurements and observation.

- That excavation did not expose or extend into existing waste fill materials.

- That CSC properly segregated existing topsoil material from the cover material.

- That CSC did not re-use topsoil or cover soil that contained waste materials, debris or otherwise unsuitable characteristics.

- That topsoil or cover soil that appeared to be wet from leachate breakouts or appeared stained from previous leachate breakouts was not re-used.

Following excavation and removal of the topsoil and cover soils for re-use, the remaining soils were graded to form a relatively smooth surface, and the finished subgrade was sealed with a smooth drum roller.

5.20.3 Subgrade Preparation

GZA monitored the placement and compaction of suitable fill used to grade areas to no steeper than 3H:1V. We checked that loose lift thicknesses were 8 inches or less, and took in-place moisture-density tests following material compaction. GZA generally used the compaction criteria specified for barrier protection material as described in section 5.20.11.

We monitored the waste grade preparation and suitable fill placement to check that the surface appeared stable and uniform. Irregularities and other unsuitable materials were removed from the surface.

Excavation subgrades were checked by GZA prior to placement of fill and overlying materials for construction of the leachate collection pipes, gas venting system piping, final cover system drainage structures and other site improvements. GZA looked for the presence of deleterious materials and for disturbed, weathered (softened and/or desiccated) subgrade conditions. CSC was advised of unsuitable subgrade conditions so that the areas could be properly undercut to remove the unsuitable materials before fill placement.

5.20.4 Decommissioning of Existing Monitoring Wells

GZA observed the activities associated with the decommissioning of the monitoring wells designated PL-3TR; OSL-14; B-5; B-8; B-15; McKenna No. 1; McKenna No. 2; McKenna No. 3. and groundwater level piezometer PL-6TR. GZA prepared monitoring well decommissioning logs that were included in the DFSs (report nos. 00-30 and 00-31 for the wells except PL-6TR; see Section 4.20.4 for general description of decommissioning for PL-6TR).

5.20.5 Soil-Bentonite/Low Permeability Soil Barrier Wall

GZA observed and monitored that Inquip constructed the soil-bentonite barrier wall and measured and recorded the required information that was described in the project specifications. Inquip submitted the required records to GZA for review. Copies of Inquip's records are included in Appendix D.

GZA observed and made field tests for construction of the low permeability soil barrier wall constructed on the east, west and south sides of the landfill as described in section 5.20.10.

5.20.6 Leachate Collection System and Gas Venting System

GZA observed the storage and handling of the manholes, pipe and fittings. Damaged materials were not allowed for use. GZA also observed the joining of the pipe and fittings and that the backfilling of the pipe and manholes was compacted to a stable matrix. GZA checked that required fittings and components had been supplied and installed. Pipe that was improperly joined or damaged during backfilling was repaired or replaced.

5.20.7 Geocomposite Leachate Collection/Gas Venting Layer

GZA observed the deployment of each geocomposite roll and advised Serrot of any observed defects, punctures and tears so that repairs could be made. GZA observed the orientation of the panel layout and overlap dimensions. Prior to seaming the geotextile, GZA checked the overlaps and tie spacing where the geonet material was joined. The geotextile seaming was observed for bonding and for holes that resulted from melt-through from the heat bonding. GZA observed pinning operations and frequency and checked them against specifications. Areas found to be deficient were brought to Serrot's attention for remediation.

5.20.8 LLDPE Geomembrane

GZA observed and documented that the geomembrane installation was done as specified. GZA observed the non-destructive (air pressure and vacuum box) testing and reviewed destructive sample test results for conformance to the project specifications results prior to the geomembrane being covered.

Summary field sheets documenting the observation and non-destructive testing of each field seam are included in Appendix E. Included in Appendix E are the destructive sample test results reported by TRI. Based on GZA's observations of the field test data and the destructive sample results, the field seams met the requirements of the QA/QC plan.

5.20.9 Cushion Geotextile

GZA observed the deployment of each geotextile roll and advised Serrot of any observed defects, punctures and tears so that repairs could be made. GZA also observed seams/overlaps and checked them against the specifications. Defective seams/overlaps and patches were identified to Serrot so that repairs could be made before covering.

Cushion geotextile that was deployed atop the geomembrane had portions exposed during the 2000/2001 winter shut-down period. GZA evaluated the geotextile at the re-start of construction in the spring of 2001. GZA's evaluation was summarized in a letter report[3]

[3] "Test Results of Geotextile Exposed During Winter Season 2000-2001, McKenna Landfill Remedial Closure Project (Site No. 8-37-003)", dated May 17, 2001.

submitted to NYSDEC. Our evaluation indicated that the geotextile was not adversely affected by the winter exposure.

5.20.10 Low Permeability Soil Layer

GZA made field tests to measure the dry density and moisture content of the compacted low permeability soil barrier using surface moisture/density gauges. These measurements were made with the gauge in the direct transmission mode with the source rod typically extended 6 inches. The value used for compaction field control is summarized in the following table.

Borrow Source	Compaction Control Value Based on ASTM D1557 Test Results			
	Maximum Dry Density (pcf) ASTM D1557	Minimum Dry Density Required (pcf)	Optimum Moisture Content (ASTM D1557) (%)	Allowable Moisture Content Range (%)
Walck Bros.	111.0	99.9	18.5	20.5-24.5

The low permeability soil was required to be compacted to an in-place density equal to or greater than 90 percent of the maximum dry density with an in-place moisture content generally between 2 to 6 percent above optimum moisture content.

Field test locations were selected by GZA based on construction observations. The compacted low permeability soil surface was observed and test locations were selected where the compacted low permeability soil was generally representative of the surrounding fill. An in-place test was taken at these locations. Tests were made within the compacted area to provide a test frequency of at least nine tests per acre per lift on the landfill slope, and one (1) test per 150 lineal feet per lift where placed in linear excavations (i.e. the low permeability soil barrier wall constructed along the toe of the east, west and south slopes), in accordance with the QA/QC plan. Penetrations into the low permeability soil for moisture/density testing were filled with bentonite pellets.

The test data were required to satisfy the density and moisture content criteria before a subsequent overlying lift could be placed. Areas with test data indicating unsatisfactory density were remediated/reworked as necessary and as previously described. Following remediation, a retest was made generally within 2 feet of the original test location, as stated in the QA/QC plan. If the retest results met the project requirements, no further reworking was done. If the retest results were not satisfactory, the process was repeated until the test measurements satisfied the project requirements.

Field test locations and results are included with the daily field summary reports, which were previously submitted to NYSDEC (Reference 5). Locations of Shelby tubes taken from the low permeability soil placed within linear excavations for low permeability barrier wall construction are shown on Figure 2. Four (4) lifts of low permeability soil were placed and the field test locations (density tests and Shelby tube locations) are shown on Figures 3 through 6, respectively.

GZA collected bulk samples of the low permeability soil at a frequency greater than one sample per 1,000 cubic yards placed. Additional information is included in Appendix D.

5.20.11 Barrier Protection Material

GZA made field tests to measure the dry density and moisture content of the compacted barrier protection material using surface moisture/density gauges. These measurements were made with the gauge in the direct transmission mode with the source rod typically extended 6 to 8 inches. The values used for compaction field control are summarized in the following table.

	Compaction Control Value for Barrier Protection Soil Based on ASTM D1557 Test Results			
Borrow Source	Maximum Dry Density (pcf)	Minimum Dry Density Required (pcf)	Allowable Moisture Content Range (%)	Construction Period When Used
On-site Soil	124.0*	111.6*	8.5- 12.5*	11/15/00-6/5/01*
Barre Stone Products	122.0	109.8	11.0-15.0	5/24/01-6/4/01
	134.5	121.0	5.5-9.5	6/5/01-End of Project
Brockport Site	131.5	118.3	8.0-12.0	7/25/01-End of Project

* - On-site soil recovery material was mainly used for construction of an access road in the areas shown on Figures 2 through 4. This material was placed in one uniform 2-feet thick lift and was observed by GZA to be well compacted by rollers and extensive truck travel. Moisture-density testing of this material was only done on June 5, 2001.

The barrier protection material was required to be compacted to an in-place density equal to or greater than 90 percent of the maximum dry density and generally have a moisture content ranging from 2 percent below the respective optimum moisture content to 2 percent above optimum.

Field test locations were selected by GZA based on construction observations. The compacted barrier protection material surface was observed and test locations were selected that were generally representative of the surrounding fill. In-place tests were taken at these locations. Tests were made within the compacted area to provide a test frequency of at least nine tests per acre per lift in accordance with the QA/QC plan, except for the access road noted above. Penetrations into the barrier protection material for moisture/density testing were filled with bentonite pellets.

The test data were required to satisfy the density criteria before a subsequent overlying lift could be placed. Areas with test data indicating unsatisfactory density were remediated/reworked by CSC, as necessary and as previously described. Following remediation by the contractor, a retest was made generally within 2 feet of the original test location, as stated in the QA/QC plan. If the retest results met the project requirements, no further reworking was done. If the retest results were not satisfactory, the process was repeated until the test measurements satisfied the project requirements.

Field test locations and results are included with the daily field summary reports that were previously submitted to NYSDEC (Reference 5). There were 3 lifts of barrier protection material placed for the barrier protection material layer. The field test locations for lifts 1 through 3 are shown on Figures 7 through 9, respectively.

5.20.12 Topsoil

GZA observed the placement of the topsoil layer to document that the material and placement generally conformed to project requirements. GZA collected bulk samples of topsoil at a frequency greater than one sample per 5,000 cubic yards placed. Additional information is included in Appendix D.

5.20.13 Surface Water Drainage Structures

GZA observed the storage and handling of the pipe, fittings, concrete manhole, jute mesh, etc. Damaged material was not permitted to be used. GZA observed subgrade conditions prior to installation of the concrete manhole. We tested the density of the bedding stone placed and compacted for installation of the concrete manhole for conformance to specifications. GZA also observed the joining of the pipe and fittings and that the backfilling of the pipe and concrete manhole was compacted to a stable matrix. GZA checked that the required fittings and components had been supplied and installed. Pipe that was improperly joined or damaged during backfilling was repaired or replaced. GZA checked that the riprap and jute mesh was installed in accordance with the specifications.

5.20.14 Access Roads

GZA observed that the suitable fill subgrade and road subbase stone was compacted to a stable matrix.

5.30 LABORATORY TESTING

A laboratory testing program was implemented during the construction of the final cover system in accordance with the QA/QC program. Laboratory tests were done to check that samples collected met the project requirements and assess the variability of the soil material properties with respect to pre-construction testing results.

5.30.1 Drainage Stone & Gas Venting Stone

Samples of the drainage stone and gas venting stone were collected during construction by GZA at a rate of about one sample for every 1,000 cubic yards placed, as specified in the QA/QC plan. Each sample collected was tested in the laboratory for gradation. One sample for each 2,500 cubic yards placed was tested for permeability. The samples tested were compacted to a dense condition (112 to 114.5 pcf) in a fixed ring permeameter prior to making the permeability tests. Permeability tests were done using the constant head method as described in Appendix D. The gradation and permeability test results are summarized for the drainage and gas venting stone in Appendix D. The permeability tests results were greater than the required minimum permeability of 1×10^{-2} cm/sec for the drainage and gas venting stone.

5.30.2 Soil-Bentonite Barrier Wall

Upon completion of slurry wall construction, Inquip obtained ten (10) undisturbed Shelby tube samples from the slurry wall. The undisturbed tube samples were required to have a hydraulic conductivity of 1×10^{-7} cm/sec. or less. The test results ranged from 2.6×10^{-8} to 9.5×10^{-8} cm/sec, which meet the project requirements. Copies of the laboratory test results are included in Appendix D.

5.30.3 Geomembrane

Non-destructive seam testing was observed by GZA and recorded in the DFS's (Reference 5). Copies of the recorded geomembrane installation details including non-destructive seam testing results, are included in Appendix E. The LLDPE liner seams met the requirements stated in the QA/QC plan.

The geomembrane installer collected destructive seam samples at intervals of 500 feet or less. Peel and shear tests were made on the samples as described in Section 4.20.8.4. Destructive test data for the geomembrane are included in Appendix E. The test results met project requirements or the seam was capped as required by the QA/QC plan.

5.30.4 Low Permeability Soil

Samples of low permeability soil were collected during construction. Atterberg limits, gradation, moisture/density relationship and reconstituted permeability testing was done as required in the QA/QC Plan. GZA, prior to construction and during construction, collected bag samples of low permeability soil fill at a rate of about one sample for every 1,000 cubic yards placed. Each bag sample was tested for Atterberg limits and moisture content. One sample for each 2,500 cubic yards placed was tested for grain size. One sample for each 5,000 cubic yards placed was tested for moisture/density relationship and permeability.

GZA also collected Shelby tube samples of the compacted low permeability soil layer. Shelby tube samples were taken at a rate of about one Shelby tube per 800 cubic yards placed. Shelby tube samples were collected by pushing the Shelby tubes into the compacted low permeability soil. The Shelby tube holes were backfilled with bentonite pellets and tamped with a metal rod.

GZA collected 21 Shelby tube samples during construction of the low permeability soil layer. The Shelby tube sample locations are shown on Figures 2 through 6. A soil sample was extracted from each Shelby tube and the permeability measured using the falling head test method. The permeability test results for the low permeability soil layer have a range from 1.1×10^{-8} to 9.6×10^{-9} cm/sec. These results meet the permeability requirement to be less than or equal to 1.0×10^{-7} cm/sec.

5.30.5 Barrier Protection/Suitable Fill Material

Samples of barrier protection/suitable fill material were collected during construction. Moisture content, Atterberg limits, gradation, moisture/density relationship and reconstituted permeability testing was done as required in the QA/QC Plan. GZA collected bag samples of barrier protection/suitable fill material at a rate of about one sample for every 2,500 cubic yards placed. Each bag sample was tested for moisture content, Atterberg limits and gradation. One sample for each 5,000 cubic yards placed was tested for moisture/density relationship and reconstituted permeability. The results of the laboratory testing indicate that the barrier protection material met project requirements.

5.30.6 Topsoil

Samples of topsoil were collected during construction of the topsoil layer. Gradation, pH and organic content testing was done as required in the QA/QC plan. GZA collected bag samples of topsoil at a rate of about one sample for every 5,000 cubic yards placed. Each sample was tested for gradation, pH and organic content. The results of the laboratory testing indicate that the topsoil met project requirements.

5.40 SURVEY DATA

TVGA made survey measurements of the prepared subgrade before the final cover system construction began. They established a baseline system and made ground surface elevation measurements at maximum 50 foot grid point intervals. Measurements were also made at changes in slope. This data was compared to the post-construction data to assist in determining the final cover system component thicknesses. TVGA:

- Staked the locations of the gas vent systems, leachate collection systems, drainage structures, access road and other site improvements prior to construction;
- Measured and recorded the locations and elevations of constructed items to produce record drawings of the construction;
- Measured and recorded the centerline location and elevations of the bottom and top of the soil-bentonite/low permeability soil barrier wall during construction at maximum 50-foot intervals along the wall alignment;
- Checked the location, elevation and layout of the leachate collection pipes and gas venting pipes as they were being installed;
- Measured and recorded the alignment and invert elevations of the collection pipes at maximum 50-foot intervals and at all bends and elbows (Note: Some sections of the gas collection pipes were not recorded by TVGA since the pipes were covered over by CSC prior to record measurement by TVGA.);
- Measured and recorded the limits of geomembrane placement;
- Located panel seams, destructive test locations, non-destructive failed areas, and patches;
- Measured and recorded the limits of geocomposite and geotextile placement; and
- Prepared record drawings that are presented in Appendix G.

6.0 CONCLUSION

GZA has monitored the construction of the McKenna Landfill Remedial Closure Project according to generally accepted practices. Based on field observations made by GZA and field and laboratory test data, it is GZA's professional opinion that the construction observed at the site, as described herein, generally complied with drawings, technical specifications and QA/QC plan approved by NYSDEC for Site No. 8-37-003. Limitations and additional considerations are contained in Appendix A.

REFERENCES

1. "Record of Decision, McKenna Landfill Site, Town of Albion, Orleans County, Site Number 8-37-003", New York State Department of Environmental Conservation, March 1995.

2. "Remedial Design and Construction Work Plan, McKenna Landfill (Site No. 8-37-003), Town of Albion, Orleans County, New York", GZA GeoEnvironmental of New York, September 1995.

3. "Final Design Rationale/Engineering Report, McKenna Landfill, Remedial Closure Project, NYSDEC Site No. 8-37-003", GZA GeoEnvironmental of New York, December 1999.

4. "Test Pad Construction Summary, Walck Bros. Borrow Site, McKenna Landfill Remedial Closure Project, Site No. 8-37-003", GZA GeoEnvironmental of New York, August 2000.

5. Daily Field Summary (DFS) Transmittals:

2000

6/30/00	Report No. 00-1 (Dated 5/16/00) through Report No. 00-23 (Dated 6/23/00)
8/3/00	Report No. 00-24 (Dated 6/26/00) through Report No. 00-35 (Dated 7/12/00)
10/9/00	Report No. 00-36 (Dated 7/13/00) through Report No. 00- 76 (Dated 9/01/00)
11/8/00	Report No. 00-77 (Dated 9/5/00) through Report No. 00-110 (Dated 10/19/00)
1/4/01	Report No. 00-111 (Dated 10/20/00) through Report No. 00-147 (Dated 12/18/00)

2001

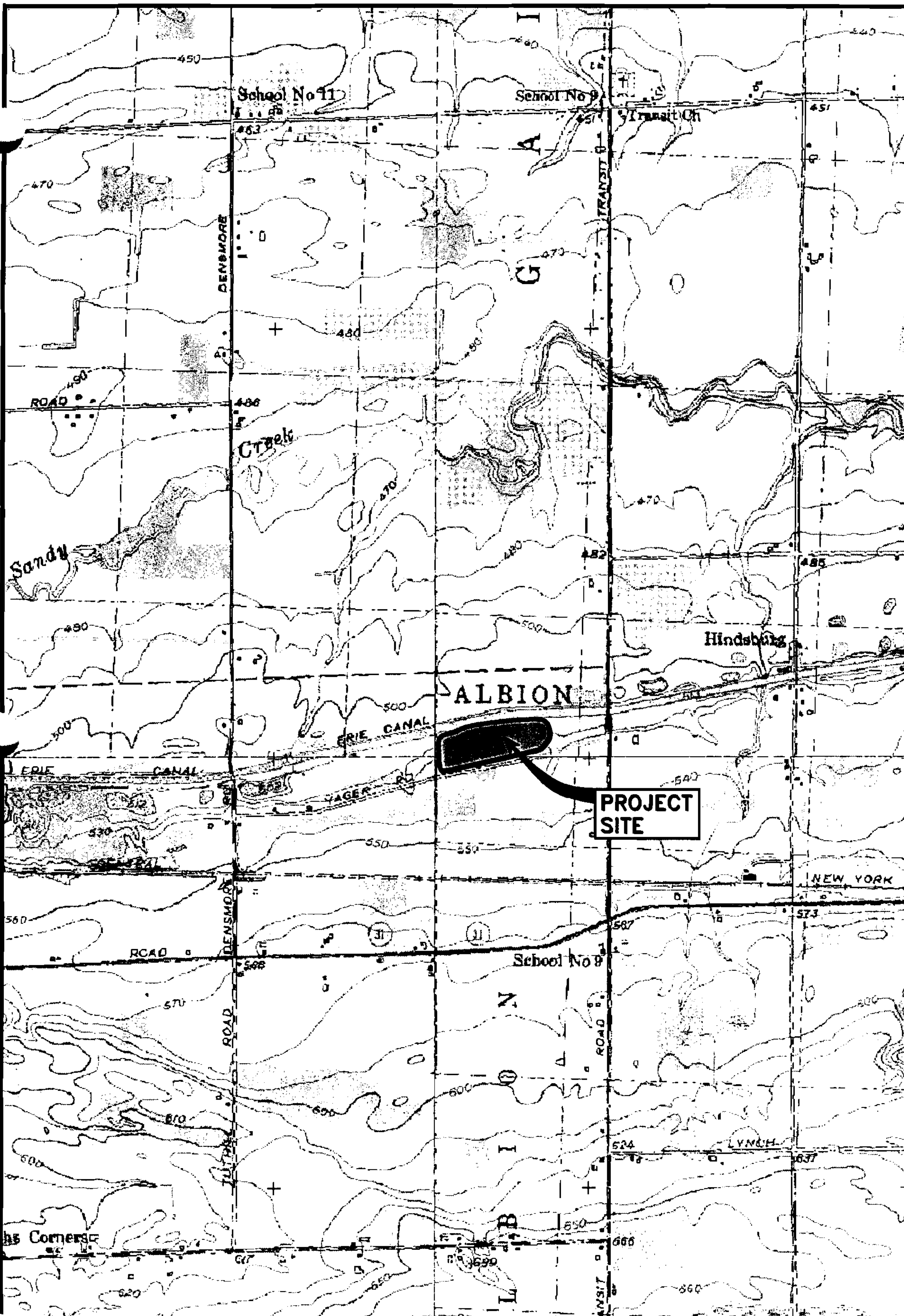
9/6/01	Report No. 01-1 (Dated 5/20/01) through Report No. 01-24 (Dated 6/8/01)
9/27/01	Report No. 01-25 (Dated 6/11/01) through Report No. 01-62 (Dated 8/3/01)

REFERENCES (cont.)

10/15/01	Report No. 01-63 (Dated 8/6/01) through Report No. 01-95 (Dated 9/20/01)
12/6/01	Report No. 01-96 (Dated 9/21/01) through Report No. 01-137 (Dated 11/28/01)

6. Transmittals of Analytical Sample Data for Composite Leachate Sampling of Wet Well Nos. 1&2.

9/17/01	Sample Data for 1/26/00, 5/4/00, 5/15/00, 8/2/00, 10/27/00, 1/31/01, 5/30/01, & 7/03/01
12/14/01	Sample Data for 10/23/01



DRAWN BY: DEW

DATE: DECEMBER 2001

GZA GeoEnvironmental of New York

SCALE IN FEET

0 1000 2000 4000

WASTE MANAGEMENT OF NEW YORK, LLC

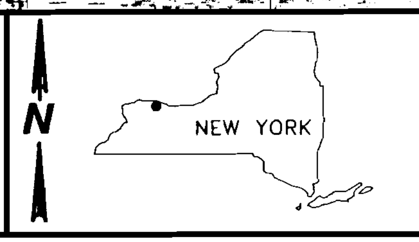
McKENNA LANDFILL REMEDIATION CLOSURE PROJECT

ALBION, NEW YORK

LOCUS PLAN

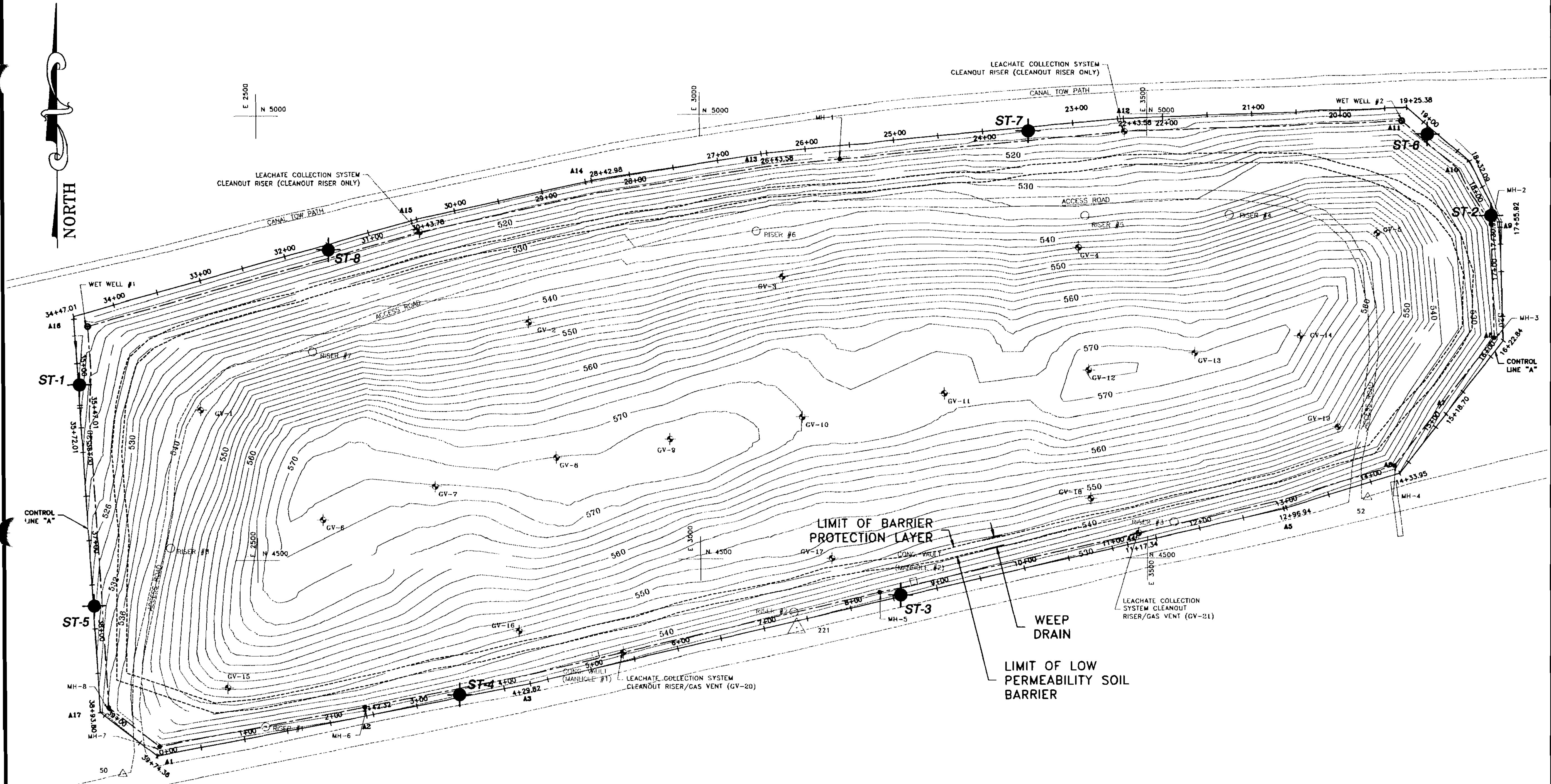
NOTE:

BASE MAP ADAPTED FROM U.S.G.S. QUADRANGLE MAPS ALBION, N.Y. – 1950, HOLLEY, N.Y. – 1950, KENT, N.Y. – 1978 AND KENDALL, N.Y. – 1978.



PROJECT No. 55024

FIGURE No. 1



LEGEND:

ST- ● THIN-WALLED SHELBY TUBE SAMPLE LOCATION

NOTES:

1. SHELBY TUBE AND DENSITY TEST LOCATIONS WERE REFERENCED BY GZA TO SITE SURVEY CONTROL ESTABLISHED BY TVGA, PLS., P.C.

2. ELEVATIONS SHOWN IN LANDFILL FOOTPRINT AREA REPRESENT TOP OF DESIGN FINAL GRADE.

SHELBY TUBE LOCATIONS

SHELBY TUBE No.	PERMEABILITY (cm/sec.)	TEST DRY DENSITY (pcf)	TEST MOISTRURE CONTENT (%)
ST-1	3.1E-08	102.9	21.4
ST-2	1.1E-08	102.3	23.6
ST-3	8.9E-09	104.2	22.8
ST-4	4.7E-08	97.7	24.9
ST-5	2.1E-08	96.0	19.5
ST-6	1.3E-08	102.0	23.6
ST-7	8.5E-09	99.6	24.4
ST-8	1.2E-08	98.9	26.5

REV No.	DESCRIPTION	BY	DATE

DRAWN BY: DEW

DATE: DECEMBER 2001

SCALE IN FEET: 30, 60, 120, 240

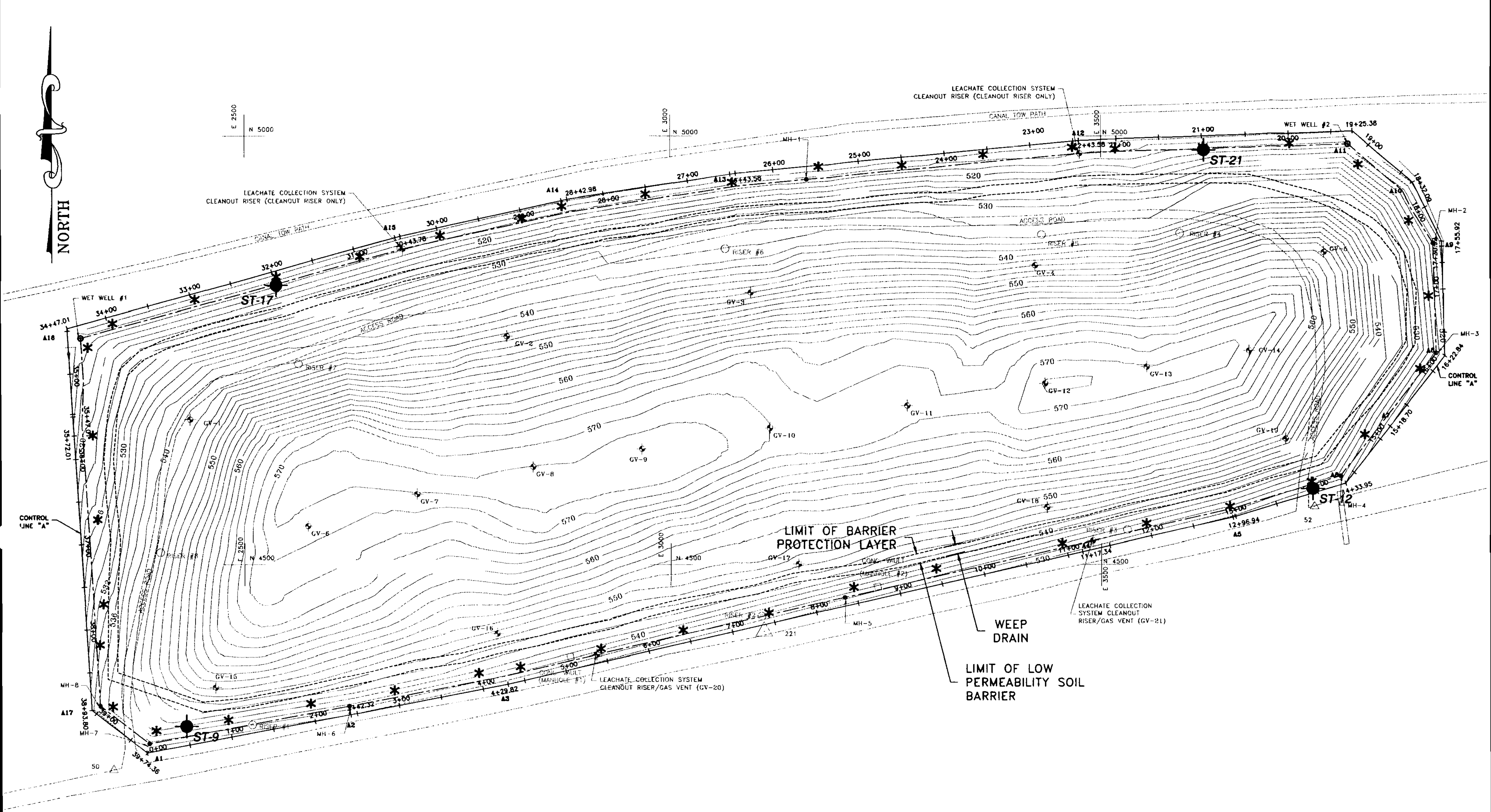
GZA GeoEnvironmental of New York

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIATION CLOSURE PROJECT
ALBION, NEW YORK

CLAY BARRIER WALL
SHELBY TUBE LOCATIONS

PROJECT No. 55024

FIGURE No. 2



LEGEND:

* IN-PLACE MOISTURE/DENSITY TEST LOCATION

ST- THIN-WALLED SHELBY TUBE SAMPLE LOCATION

NOTES:

1. SHELBY TUBE AND DENSITY TEST LOCATIONS WERE REFERENCED BY GZA TO SITE SURVEY CONTROL ESTABLISHED BY TVGA, PLS., P.C.

2. ELEVATIONS SHOWN IN LANDFILL FOOTPRINT AREA REPRESENT TOP OF DESIGN FINAL GRADE.

SHELBY TUBE LOCATIONS

SHELBY TUBE No.	PERMEABILITY (cm/sec.)	TEST DRY DENSITY (pcf)	TEST MOISTRURE CONTENT (%)
ST-9	1.4E-08	97.8	26.3
ST-12	2.1E-08	99.1	24.8
ST-17	1.5E-08	95.7	27.3
ST-21	9.6E-08	99.6	24.4

REV No.	DESCRIPTION	BY	DATE

DRAWN BY: DEW

DATE: DECEMBER 2001

SCALE IN FEET 30 60 120 240

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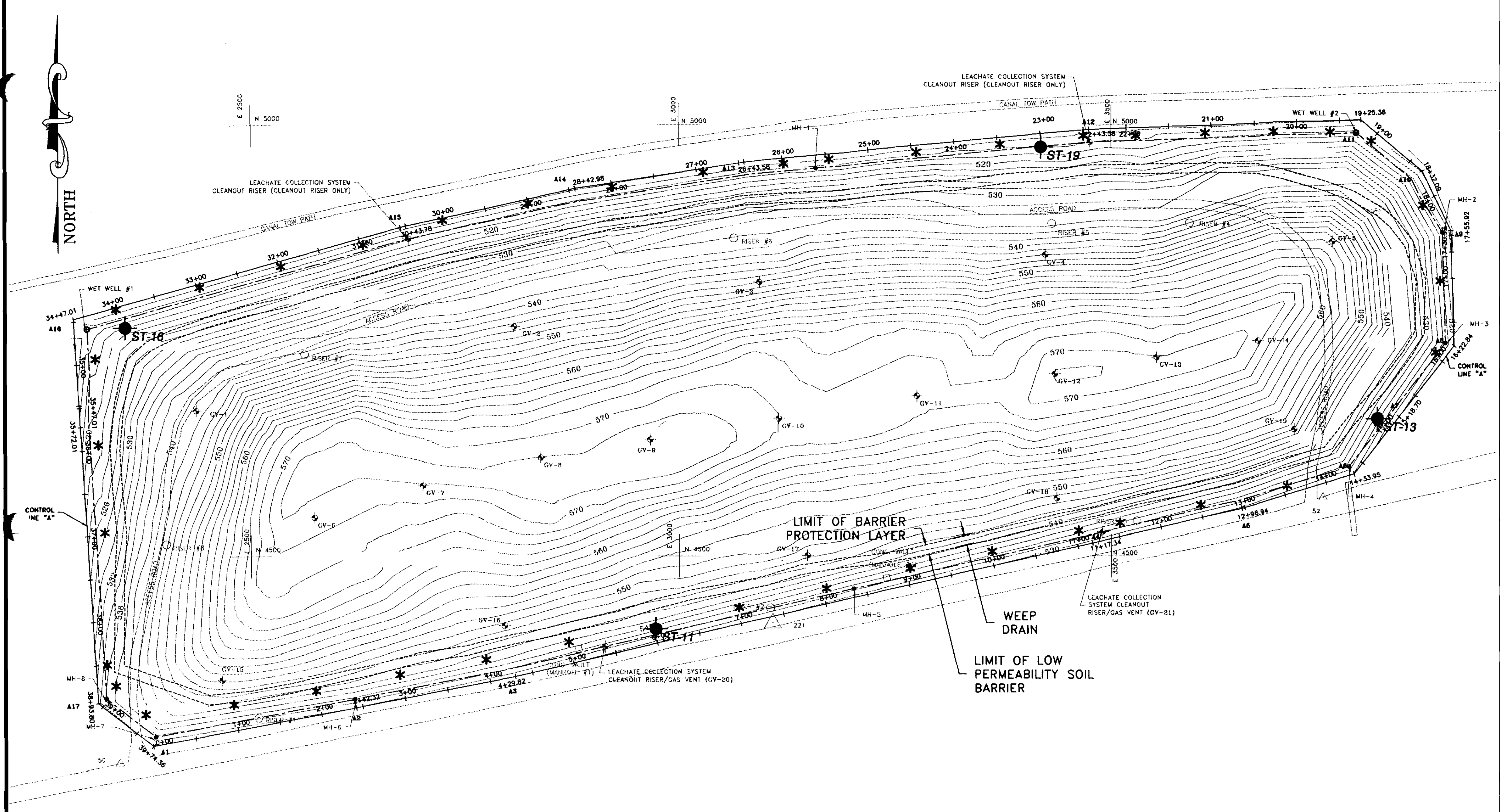
McKENNA LANDFILL REMEDIATION CLOSURE PROJECT
ALBION, NEW YORK

LOW PERMEABILITY SOIL LAYER
SHELBY TUBE AND DENSITY TEST LOCATIONS – FIRST LIFT

PROJECT No. 55024

FIGURE No. 3



LEGEND:

* IN-PLACE MOISTURE/DENSITY TEST LOCATION

ST- THIN-WALLED SHELBY TUBE SAMPLE LOCATION

NOTES:

1. SHELBY TUBE AND DENSITY TEST LOCATIONS WERE REFERENCED BY GZA TO SITE SURVEY CONTROL ESTABLISHED BY TVGA, PLS., P.C.

2. ELEVATIONS SHOWN IN LANDFILL FOOTPRINT AREA REPRESENT TOP OF DESIGN FINAL GRADE.

SHELBY TUBE LOCATIONS

SHELBY TUBE No.	PERMEABILITY (cm/sec.)	TEST DRY DENSITY (pcf)	TEST MOISTRURE CONTENT (%)
ST-11	1.7E-09	99.9	25.9
ST-13	1.4E-08	92.7	29.3
ST-16	1.2E-08	97.9	25.2
ST-19	1.5E-08	93.0	30.7

REV No.	DESCRIPTION	BY	DATE

DRAWN BY: DEW

DATE: DECEMBER 2001

SCALE IN FEET 30 60 120 240

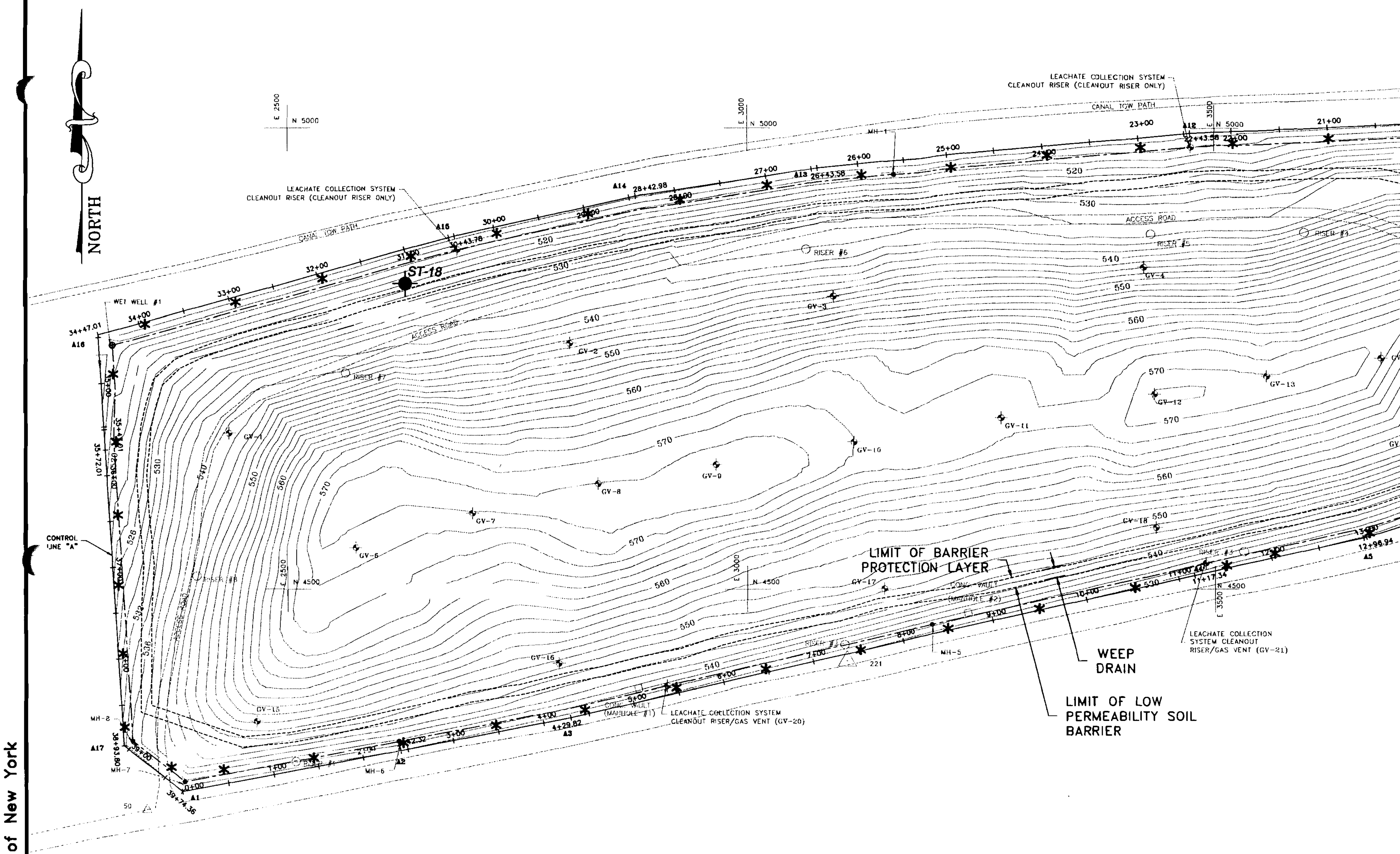
GZA GeoEnvironmental of New York

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIATION CLOSURE PROJECT
ALBION, NEW YORK

LOW PERMEABILITY SOIL LAYER
SHELBY TUBE AND DENSITY TEST LOCATIONS – THIRD LIFT

PROJECT No. 55024

FIGURE No. 5



LEGEND:

* IN-PLACE MOISTURE/DENSITY TEST LOCATION

ST- THIN-WALLED SHELBY TUBE SAMPLE LOCATION

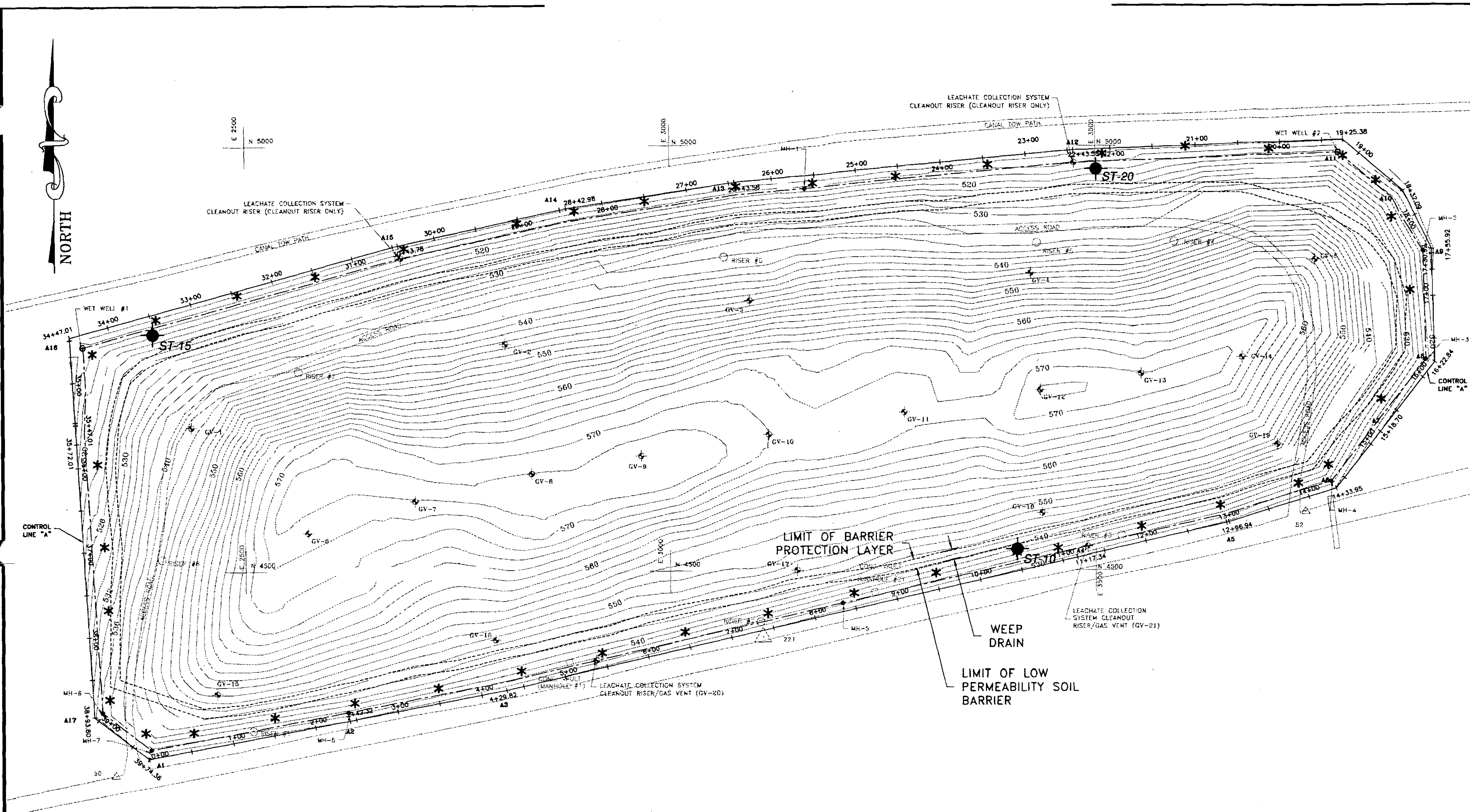
NOTES:

1. SHELBY TUBE AND DENSITY TEST LOCATIONS WERE REFERENCED BY GZA TO SITE SURVEY CONTROL ESTABLISHED BY TVGA, PLS., P.C.

2. ELEVATIONS SHOWN IN LANDFILL FOOTPRINT AREA REPRESENT TOP OF DESIGN FINAL GRADE.

SHELBY TUBE

SHELBY TUBE No.	PERMEABILITY (cm/sec.)	DRY
ST-14	9.3E-09	
ST-18	1.4E-08	



LEGEND:

* IN-PLACE MOISTURE/DENSITY TEST LOCATION

ST- THIN-WALLED SHELBY TUBE SAMPLE LOCATION

NOTES:

1. SHELBY TUBE AND DENSITY TEST LOCATIONS WERE REFERENCED BY GZA TO SITE SURVEY CONTROL ESTABLISHED BY TVGA, PLS., P.C.

2. ELEVATIONS SHOWN IN LANDFILL FOOTPRINT AREA REPRESENT TOP OF DESIGN FINAL GRADE.

SHELBY TUBE LOCATIONS

SHELBY TUBE No.	PERMEABILITY (cm/sec.)	TEST DRY DENSITY (pcf)	TEST MOISTRURE CONTENT (%)
ST-10	8.3E-09	107.0	20.5
ST-15	1.2E-08	101.4	22.6
ST-20	2.3E-08	98.2	25.4

REV No.	DESCRIPTION	BY	DATE

DRAWN BY: DEW

DATE: DECEMBER 2001

SCALE IN FEET
30 60 120 240

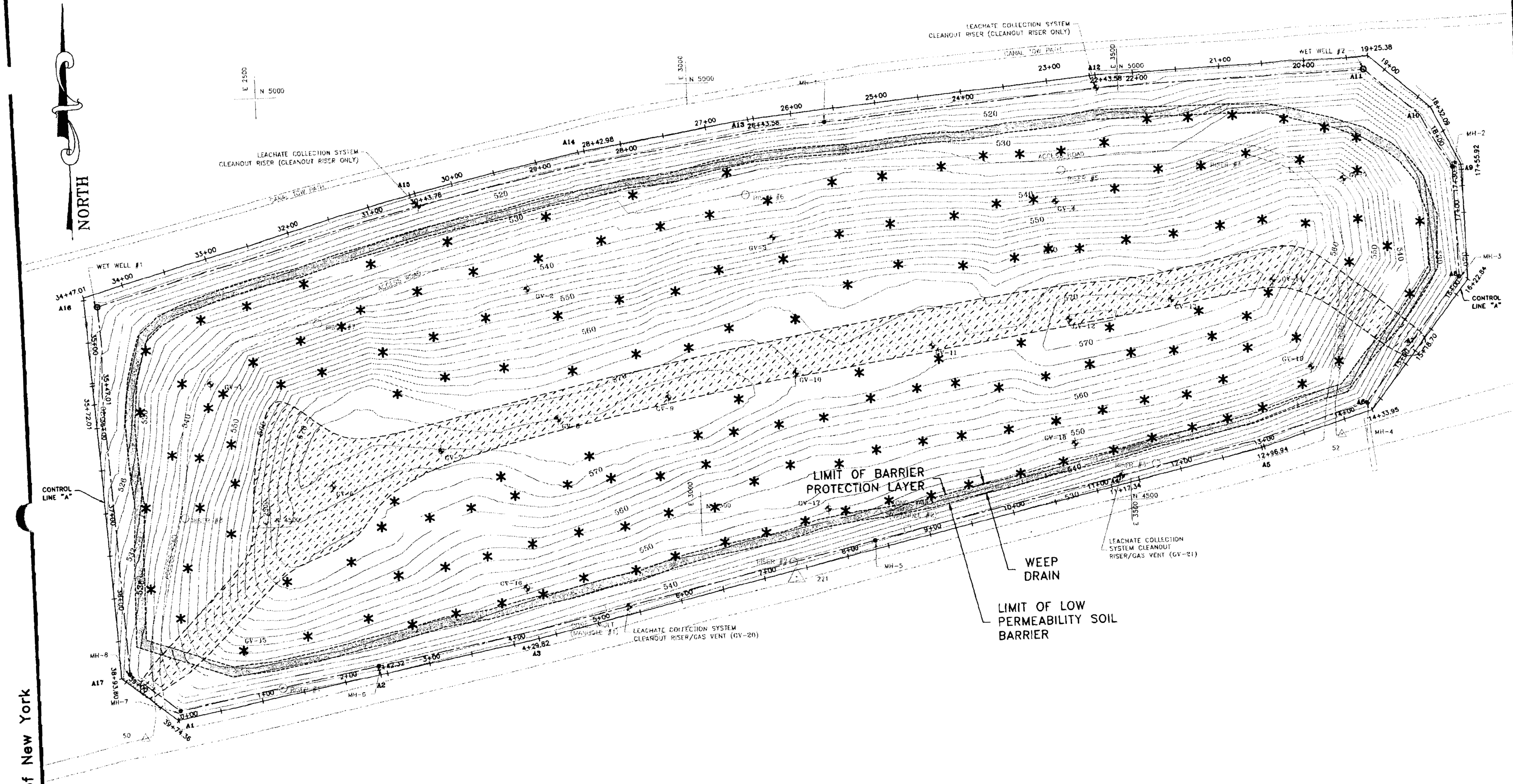
GZA GeoEnvironmental of New York

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIATION CLOSURE PROJECT
ALBION, NEW YORK

LOW PERMEABILITY SOIL LAYER
SHELBY TUBE AND DENSITY TEST LOCATIONS – SECOND LIFT

PROJECT No. 55024

FIGURE No. 4



LEGEND:

* IN-PLACE MOISTURE/DENSITY TEST LOCATION

AREA OF ACCESS ROAD CONSTRUCTED FOR BARRIER PROTECTION MATERIAL PLACEMENT. MATERIAL PLACED IN ONE UNIFORM 2-FOOT THICK LIFT, WELL COMPACTED BY ROLLERS AND TRUCK TRAVEL.

NOTES:

1. DENSITY TEST LOCATIONS WERE REFERENCED BY GZA TO SITE SURVEY CONTROL ESTABLISHED BY TVGA, PLS., P.C.

2. ELEVATIONS SHOWN IN LANDFILL FOOTPRINT AREA REPRESENT TOP OF DESIGN FINAL GRADE.

REV No.	DESCRIPTION	BY	DATE

DRAWN BY: DEW

DATE: DECEMBER 2001

SCALE IN FEET

30 60 120 240

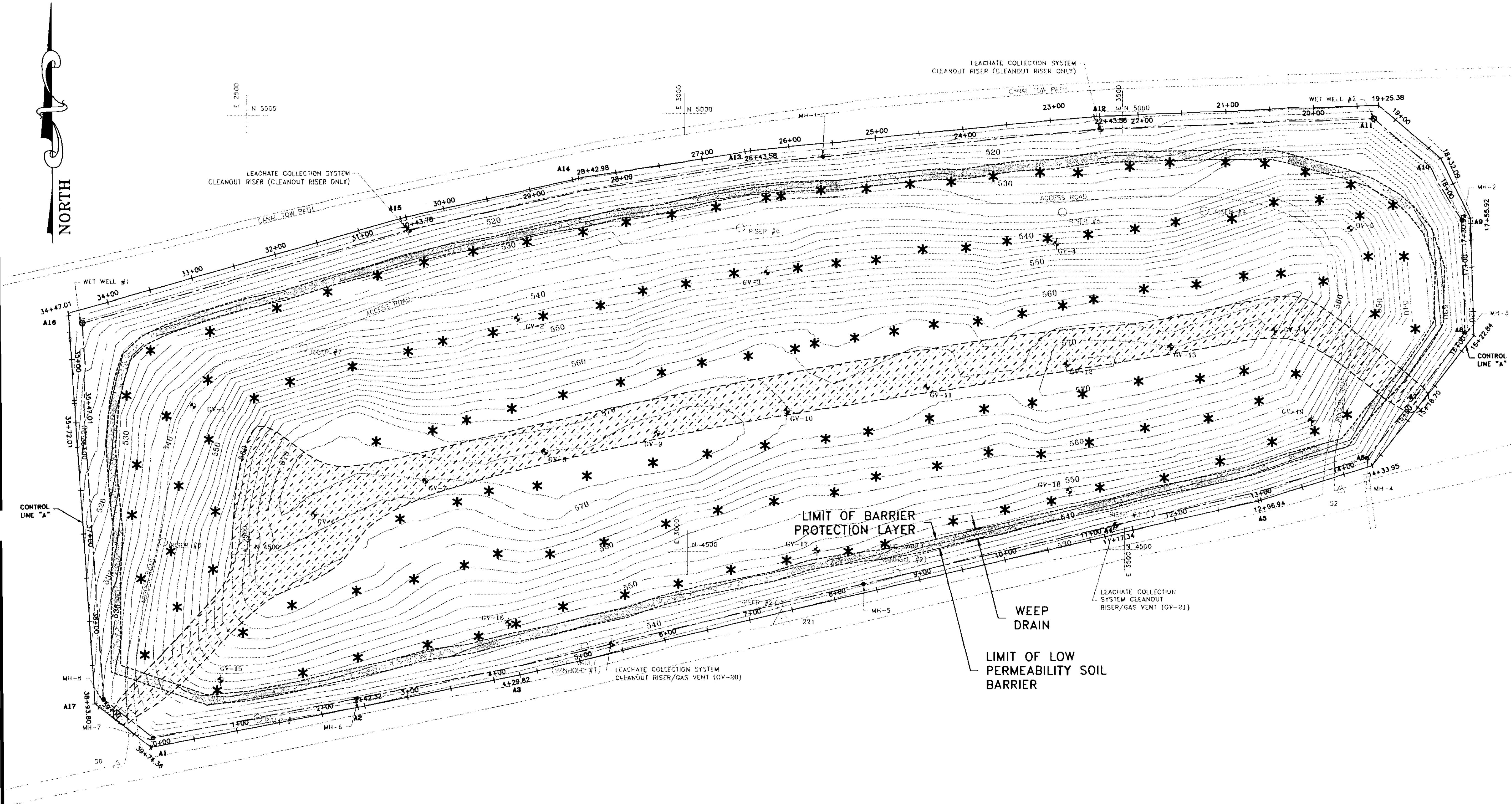
GZA GeoEnvironmental of New York

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIATION CLOSURE PROJECT
ALBION, NEW YORK

BARRIER PROTECTION MATERIAL
DENSITY TEST LOCATIONS –
FIRST LIFT

PROJECT No. 55024

FIGURE No. 7



LEGEND:

* IN-PLACE MOISTURE/DENSITY TEST LOCATION

AREA OF ACCESS ROAD CONSTRUCTED FOR BARRIER PROTECTION MATERIAL PLACEMENT. MATERIAL PLACED IN ONE UNIFORM 2-FOOT THICK LIFT, WELL COMPACTED BY ROLLERS AND TRUCK TRAVEL.

NOTES:

1. DENSITY TEST LOCATIONS WERE REFERENCED BY GZA TO SITE SURVEY CONTROL ESTABLISHED BY TVGA, PLS., P.C.

2. ELEVATIONS SHOWN IN LANDFILL FOOTPRINT AREA REPRESENT TOP OF DESIGN FINAL GRADE.

REV No.	DESCRIPTION	BY	DATE

DRAWN BY: DEW

DATE: DECEMBER 2001

GZA GeoEnvironmental of New York

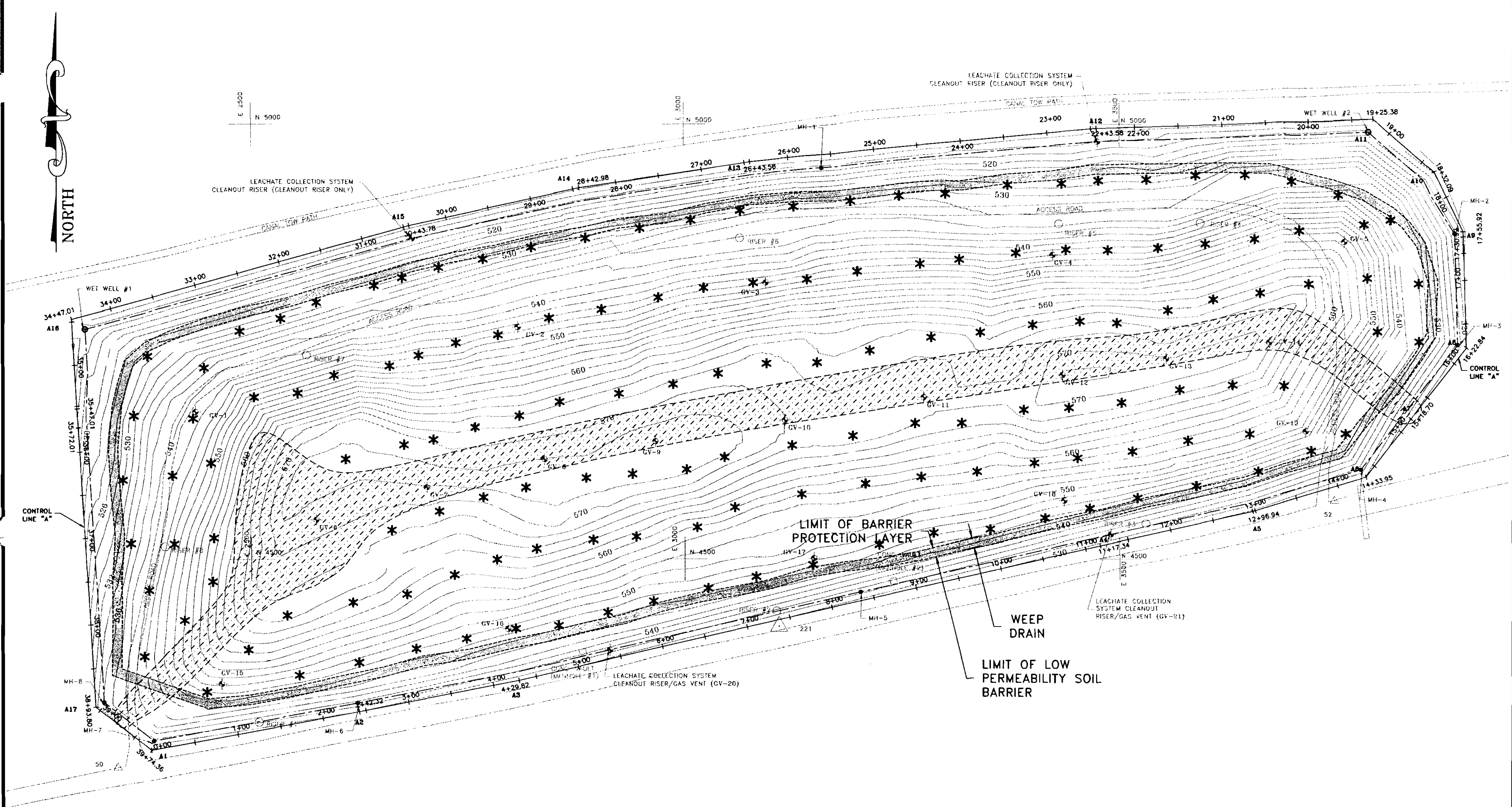
SCALE IN FEET 30 60 120 240

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIATION CLOSURE PROJECT
ALBION, NEW YORK

BARRIER PROTECTION MATERIAL DENSITY TEST LOCATIONS – SECOND LIFT

PROJECT No. 55024

FIGURE No. 8



LEGEND:

* IN-PLACE MOISTURE/DENSITY TEST LOCATION

AREA OF ACCESS ROAD CONSTRUCTED FOR BARRIER PROTECTION MATERIAL PLACEMENT. MATERIAL PLACED IN ONE UNIFORM 2-FOOT THICK LIFT, WELL COMPACTED BY ROLLERS AND TRUCK TRAVEL.

NOTES:

1. DENSITY TEST LOCATIONS WERE REFERENCED BY GZA TO SITE SURVEY CONTROL ESTABLISHED BY TVGA, PLS., P.C.

2. ELEVATIONS SHOWN IN LANDFILL FOOTPRINT AREA REPRESENT TOP OF DESIGN FINAL GRADE.

REV No.	DESCRIPTION	BY	DATE

DRAWN BY: DEW

DATE: DECEMBER 2001

SCALE IN FEET: 30 60 120 240

GZA GeoEnvironmental of New York

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIATION CLOSURE PROJECT
ALBION, NEW YORK

BARRIER PROTECTION MATERIAL DENSITY TEST LOCATIONS – THIRD LIFT

PROJECT No. 55024

FIGURE No. 9

APPENDIX A

LIMITATIONS

1. This construction monitoring report was prepared by GZA GeoEnvironmental of New York (GZA) for Waste Management of New York, LLC (WMNY) for the specific application to the construction for the McKenna Landfill Remedial Closure Project in accordance with generally accepted soil and foundation engineering practices. No warranty, expressed or implied, is made.

2. The observations and testing described in this report were made under the conditions stated. Conclusions made in this report were based on our observations, information provided by others as stated, and data obtained from widely spaced in-situ tests and laboratory tests from widely spaced samples. Variations in soil and material properties between test locations may occur.

GZA
GeoEnvironmental
of New York

Engineers and Scientists

August 7, 2000
File No. 55024

Mr. Richard P. Manns
New York State Canal Corporation
Buffalo Division
3901 Genesse Street
P.O. Box 121
Buffalo, New York 14225-0121

364 Nagel Drive
Buffalo
New York 14225
716-685-2300
FAX 716-685-3629
http://www.gza.net

Re: Canal Work Permit No. 030E700
for McKenna Landfill Site
Albion, New York

Dear Mr. Manns,

GZA GeoEnvironmental of New York (GZA) has executed the enclosed Canal Work Permit No. 030E700 for the McKenna Landfill Remedial Closure Project in Albion, New York, received by GZA on July 17, 2000. We are returning both copies of the permit for execution by the New York State Canal Corporation.

We trust you have received our insurance certificates. Please contact me should you have any questions or require additional information.

Very truly yours,

GZA GEOENVIRONMENTAL OF NEW YORK

John J. Danzer, P.E.
Senior Project Manager

A Subsidiary of GZA
GeoEnvironmental
Technologies, Inc.

Enclosures: 2 Executed Copies of Permit

cc: D. Sturges - WMNY (w/o enclosures)

New York State Canal Corporation

Buffalo Division
3901 Genesee Street
P. O. Box 121
Buffalo, New York 14225-0121

John T. Brizzell, P.E.
Deputy Executive
Director/Chief Engineer

William G. Leslie, P.E.
Division Director

Phone (716) 631-9017
Fax (716) 626-1328

July 13, 2000

Mr. John Danzer, P.E.
GZA GeoEnvironmental of New York
364 Nagel Drive
Buffalo NY 14225

Re: Canal Work Permit 030E700
McKenna Landfill Remedial Closure Project
Town of Albion, Orleans County

Dear Mr. Danzer:

Our Legal Department has reviewed your comments on the marked-up permit. Accordingly, we can not execute this permit with the crossed out language in paragraph eight. Enclosed please find the original and one copy of Canal Permit 030E700 with the name change as requested.

Please sign both and return them to this office. When they are signed by the Division Canal Engineer, one copy will be returned to you for your records. The approved copy will be your authorization to use Canal property for the purpose outlined in the Permit.

If you have any questions, please contact Rick Manns of this office at (716) 635-6250.

Very truly yours,

David J. Martin, P.E.
Division Canal Engineer
By: Richard P. Manns
Richard P. Manns
Permit Engineer

Enclosures

cc: Canal Corp., Albany HQ
J. Dergosits
S. Hoffman
R. Sturges
Waste Mgmt. of NY, LLC
425 Perinton Parkway
Fairport NY 14450

No. 030E700

New York State Canal Corporation

CANAL WORK PERMIT

Permit No.	030E700	Exp. Date	10/31/01
App. Fee	$25.00	CPM No.	143-144
Permit Fee	$0.00	Cl Sta.	4231+80-4255+80±
Total Recd	$25.00	Side	South
Tn/Vil/Cty	Albion	Parcel No.	3415-A/3750/3418
County of	Orleans	Buoy No.	N/A

Permittee	GZA GeoEnvironmental of New York		
Address	364 Nagel Drive		
Tn/Vil/Cty	Buffalo	State NY	Zip 14225
Tel No.	Work (716)685-2300		
Fax No.			

Under the provisions of the Canal Law, PERMISSION IS HEREBY GRANTED to the Permittee to conduct the following work upon the above-identified New York State Canal Corporation (the "Canal Corporation") property (the "Property"):

> implementing the municipal landfill closure plan for the McKenna Landfill Site (Site #8-37-003) in accordance with the Department of Environmental Conservation (DEC) Order on Consent # B8-0374-91-06, as amended, the Final Design Rationale/Engineering Report received by DEC on December 20, 1999 and approved by DEC on January 10, 2000, the Closure Remedial Program Work Plan, and the letter agreement between the Canal Corporation and the Permittee dated August 16, 1999

as set forth and presented in the attached application and in accordance with any plans or maps, hereto attached or incorporated by reference, and pursuant to the conditions and regulations, whether general or special, which are hereinafter set forth; all of which form part of this permit.

CONDITIONS AND REGULATIONS:

1. Notice - IT IS ABSOLUTELY NECESSARY THAT THE PERMITTEE NOTIFY, **Rick Manns** NYS Canal Corporation, at 3901 Genesee St., Buffalo, NY 14225, Tel. No. (716) 635-6250 BEFORE WORK IS STARTED AND UPON COMPLETION OF THE WORK.

2. The Permit hereby granted will terminate 10/31/01 but it may be revoked by the Canal Corporation at any time if it is determined that the Permittee is not in compliance with all the provisions hereof or if it is determined that the permitted work or use is no longer consistent with the operational needs of the Canal Corporation. Upon revocation, the Permittee shall promptly discontinue operations, surrender and deliver up the Property into the possession and use of the Canal Corporation in good condition and remove all structures and facilities from the Property at the Permittee's expense, approved improvements excepted. If the Permittee fails to remove the same in a timely manner after reasonable notice, the Canal Corporation will do so and the reimbursement of the costs thereof will be the responsibility of the Permittee.

3. This Permit grants no right, title, ownership, or interest of any kind in the Property. In addition, the Canal Corporation retains the right to make changes and additions to the Conditions and Regulations of this Permit; and such additions and changes shall form a part of the Permit heretofore issued and shall be complied with immediately.

4. This Permit shall not be subleased, assigned or transferred in whole or in part without the prior written permission of the Canal Corporation. Any attempt to sublease, assign, transfer or convey the authority granted to perform described use as stated above without the prior written permission of the Canal Corporation will be considered an automatic revocation of this Permit.

5. The Permittee shall perform the work authorized herein in compliance with any and all applicable federal, state, and local laws, ordinances, codes, rules and regulations now in effect or that may hereinafter become effective. The Permittee shall not conduct any other work upon the Property without the prior written permission of the Canal Corporation. Under no circumstances shall the Permittee make any alterations, excavations, modifications or improvements of any kind to the Property or modifications to the use authorized by this Permit without the prior written permission of the Canal Corporation. The Permittee is responsible for obtaining all required permits from federal, state and local agencies, including but not limited to the U.S. Army Corps of Engineers, NYS Department of Environmental Conservation, and NYS Historical Preservation Office. The Permittee agrees to comply with every condition in these permits.

6. New York State Thruway Authority (the "Thruway Authority") and the Canal Corporation reserve the right to enter on the Property with such personnel, agents or employees, contractors, subcontractors and invitees and with such equipment as it deems necessary for canal purposes, including but not limited to annual environmental audits as required by the New York State of Environmental Conservation. The Canal Corporation reserves the right, to inspect the Property, any improvements on the Property, and any work being conducted on the Property at any time it deems appropriate.

7. Prior to commencement of this permit, the Permittee shall furnish the Canal Corporation with a certificate(s) of insurance on the Canal Corporation's form executed by a duly authorized representative of each insurer, showing compliance with the insurance requirements set forth below. All insurance required by the agreement shall be obtained at the sole cost and expense of the Permittee, shall be maintained with insurance carriers licensed to do business in New York State, and shall be acceptable to the Canal Corporation. The New York State Thruway Authority and the New York State Canal Corporation officers, agents, and employees shall be named as additional insureds. All certificates shall provide for 30 days' written notice to the Canal Corporation prior to the cancellation, non-renewal, or material alteration of any insurance policy referred to therein. This notice shall be sent by certified mail. Failure of the Canal Corporation to demand such certificate or other evidence of full compliance with these insurance requirements or failure of the Canal Corporation to identify a deficiency from evidence that is provided shall not be construed as a waiver of the Permittee's obligation to maintain such insurance.

Failure to maintain the required insurance may result in termination of this agreement at the Canal Corporation's option. If the Permittee fails to maintain the insurance as set forth herein, the Canal Corporation shall have the right, but not the obligation, to purchase said insurance at the Permittee's expense. The Permittee shall provide certified copies of all insurance policies required herein within 10 days of the Canal Corporation's written request for said copies.

No Representation of Coverage Adequacy - By requiring insurance herein, the Canal Corporation does not represent that coverage and limits will necessarily be adequate to protect the Permittee, and such coverage and limits shall not be deemed as a limitation on the Permittee's liability under the indemnities granted to the Canal Corporation under this agreement.

Cross-Liability Coverage - If the Permittee's liability policies do not contain the standard ISO separation of insureds provision, or a substantially similar clause, they shall be endorsed to provide cross-liability coverage.

The Permittee shall obtain insurance of the types and in the amounts described below:

(a) Commercial General Liability and Umbrella Liability Insurance -The Permittee shall maintain commercial general liability (CGL) and, if necessary, commercial umbrella insurance with a limit of not less than $2,000,000 each occurrence. If such CGL insurance contains a general aggregate limit, it shall apply separately to this agreement. CGL insurance shall be written on ISO occurrence form CG 00 01 10 93 (or a substitute form providing equivalent coverage) and shall cover liability arising from premises, operations, independent contractors, products-completed operations, personal injury and advertising injury, and liability assumed under an insured contract. The Authority shall be included as an insured under the CGL, using ISO additional insured endorsement CG 20 10 11 85 or a substitute providing equivalent coverage, and under the commercial umbrella, if any. This insurance shall apply as primary insurance with respect to any other insurance or self-insurance programs afforded to the Canal Corporation.

(b) Workers Compensation Insurance - The Permittee shall maintain Workers Compensation, Employers Liability, and Disability Benefits as statutorily required by New York State. If employees will be working on, near or over navigable waters, US Longshore and Harbor Work Compensation Act endorsement must be included.

(c) Environmental Insurance - If the work involves abatement, removal, repair, replacement, enclosure, encapsulation and/or disposal of any hazardous material or substance, the Permittee shall maintain in full force and effect throughout the term thereof, pollution legal liability insurance with limits of not less than $5,000,000, providing coverage for bodily injury and property damage, including loss of use of damaged property or of property that has not been physically injured. Such policy shall provide coverage for actual, alleged or threatened emission, discharge, dispersal, seepage, release or escape of pollutants, including any loss, cost or expense incurred as a result of any cleanup of pollutants or in the investigation, settlement or defense of any claim, suit, or proceedings against the Canal Corporation arising from the Permittee's work.

   1. If coverage is written on a claims-made policy, the Permittee warrants that any applicable retroactive date precedes the effective date of this Permit; and that continuous coverage will be maintained, or an extended discovery period exercised, for a period of not less than 2 years from the time work under this Permit is completed.
   2. If the Permit includes disposal of materials from the job site, the Permittee must furnish to the Canal Corporation, evidence of pollution legal liability insurance in the amount of $1,000,000 maintained by the disposal site operator for losses arising from the disposal site accepting waste under this Permit.

8. The Permittee understands that no liability of any kind shall attach to or rest upon the Thruway Authority or the Canal Corporation for any damage on account of the granting or revocation of any Permit. Neither the Canal Corporation nor the Thruway Authority shall be responsible for any loss of real property or personal property. The Permittee therefore undertakes and agrees to protect, indemnify, hold harmless and defend the Thruway Authority, the Canal Corporation, and their respective officers, agents, employees, assigns, contractors and subcontractors and the successors and assigns of each of the foregoing from and against any and all liabilities, penalties, fines, forfeitures, demands, losses, claims, judgments, suits, causes of action and the costs and expenses incidental thereto and damages of any nature whatsoever which are directly or indirectly caused by or arising out Permittee's use of and/or work conducted upon the Property including but not limited to:

(a) any planning, design, work or construction done in, on or about the Property or any part thereof;
(b) any possession, occupation, condition, operation, maintenance or management of the Property or any part thereof by the Permittee, its officers, agents, employees, contractors or subcontractors;
(c) any act, omission or negligence on the part of the Permittee or any of its officers, agents, employees, contractors, subcontractors, or invitees;
(d) any accident, injury or damage to any person or property occurring in, on or about the Property, including loss of natural resources;
(e) any failure on the part of the Permittee to perform or comply with any of the covenants, agreements, terms, provisions, conditions or limitations contained in this Permit on its part to be performed or complied with;
(f) any Environmental condition (as defined in Paragraph 9(a) of this Permit) created on or introduced to the Property by the Permittee, its officers, agents, employees, contractors, subcontractors, or invitees;
(g) any investigation, monitoring, removal or remediation activities necessitated solely and directly by the increase in areal extent or severity of any Hazardous Condition caused or contributed by the Permittee's actions or activities or by those of its officers, agents, employees, contractors or subcontractors, or invitees;
(h) any claims asserted by any person or entity in connection with or in any way arising out of the presence, storage, use, disposal, generation, transportation, or treatment of any Hazardous Waste (as defined in Paragraph 9(a) of this Permit) at, upon, under or within the Property; or
(i) non-compliance with, or violation of, any federal, state or local environmental law, rule or regulation, or any governmental action, order, directive, administrative proceeding, or ruling whatsoever. As used herein, the term "Environmental Law" shall mean any local, state, of federal law, rule, ordinance or regulation, government action, order, directive, administrative proceeding or ruling whatsoever either in existence as of the date hereof or enacted or promulgated after the date of this Permit, related to the existence, management , control, discharge, treatment, containment, transportation, and/or removal of substances or materials that are or may become a threat to the public health or environment; any common law theory based on nuisance, trespass, negligence, strict liability, aiding and abetting or other tortious conduct.

The Permittee agrees that such indemnity shall not be limited by reason of insurance coverage and shall survive the termination of this Permit. Upon termination or expiration of this Permit, the Permittee will furnish the Canal Corporation with a general release of any and all damages claimed to have been sustained by the Permittee arising from its use, operation or occupancy of or relating to the Property.

9. Environmental Terms and Conditions:

(a) The Permittee shall not store, handle, treat, dispose of, discharge, or produce Hazardous Waste upon the Property, except as permitted by applicable laws. As used herein, the term "Hazardous Waste" shall mean:

1. Any waste, product, substance or material that is regulated or monitored by any federal, State or local law, ordinance, or governmental authority, including without limitation the United States Environmental Protection Agency;
2. Any waste, product, substance or material whose use, storage, handling, treatment, disposal, discharge, or production is likewise regulated or monitored; or
3. Any material or substance that is:

(i) Defined or designated as a "hazardous substance" or "hazardous waste" under the laws of the State of New York;
(ii) Petroleum;
(iii) Asbestos;
(iv) Designated as a "hazardous substance" pursuant to the Federal Water Pollution Control Act (33 U.S.C. §1321);
(v) Defined as a "hazardous waste" pursuant to the Federal Resource Conservation and Recovery Act (42 U.S.C. §6903);
(vi) Defined as a "hazardous substance" pursuant to the Comprehensive Environmental Response Compensation and Liability Act (42 U.S.C. §9601);
(vii) "Polychlorinated biphenyls" ("PCBs") under the Toxic Substances Control Act (15 USCA §2601); or
(viii) Defined as a "regulated substance" pursuant to the Solid Waste Disposal Act (Regulation of Underground Storage Tanks), (42 U.S.C. §6991).

(b) The Permittee shall not cause or permit the occurrence of any Environmental Condition on or at the Property. As used herein, the term "Environmental Condition" shall mean any adverse impact on the air, soil, surface water, groundwater, and stream sediments, including any release to the environment of materials referred to in Paragraph 9(a) of this Permit.
(c) The Permittee represents and warrants that the Permittee does not intend and will not use any Hazardous Waste (as defined in Paragraph 9(a) of this Permit) on the Property. The Permittee must receive the written approval of the Canal Corporation prior to using any Hazardous Waste (as defined in Paragraph 9(a) of this Permit) on the Property.
(d) In the event the Permittee encounters any Environmental Condition in connection with the Property that was not introduced directly or indirectly by the Permittee, its officers, agents, employees, permitted assigns, contractors, subcontractors, or invitees, the Permittee shall be responsible and held liable for any investigation, removal, or remedial activities or measures necessitated by the increase in areal extent or severity of the Environmental Condition which measure was caused, either in whole or in part, by the Permittee's actions or activities.
(e) In the event of any Environmental Condition (including without limitation, the presence or release of any material defined in Paragraph 9(a) of this Permit), the Permittee must immediately notify the Canal Corporation by phone. If the Environmental Condition appears to be the result of conduct of the Permittee, its officers, agents, employees, permitted assigns, contractors, subcontractors, or invitees, including any release resulting from the use, operation and/or maintenance of the Property, the Permittee shall promptly remediate such Environmental Condition to the satisfaction of the Canal Corporation. In the event the Permittee does not with reasonable promptness remediate such Environmental Condition, the Canal Corporation may, at its option, elect to remediate same and recover the cost incurred for such remediation by adding it to the permit fee due from the Permittee or through utilization of any other legal means for such recovery.
(f) Prior to bringing any fill material on to the Property, the Permittee must first obtain the approval of the Canal Corporation. Such fill material must either be from an approved virgin source or sampled and analyzed by the Permittee or its agent using methods approved by the Canal Corporation, with two (2) copies of the resulting data package provided to the Canal Corporation.

10. If any of the provisions of this Permit are held invalid, such provision shall be held for naught as though not contained herein, and the remainder of this Permit shall remain in full force and effect.

11. The Canal Corporation reserves the right to issue more that one work permit for any one location.

12. Special Conditions:

(a) Permittee shall comply with and implement the municipal landfill closure plan for the McKenna Landfill Site (Site #8-37-003) in accordance with: the letter from Thomas Andrews to Richard Manns dated April 26, 2000; the Department of Environmental Conservation (DEC) Order on Consent # B8-0374-91-06, as amended; the Final Design Rationale/Engineering Report received by the Department of Environmental Conservation on December 20, 1999 and approved by DEC on January 10, 2000; the Closure Remedial Program Work Plan; the letter agreement between the Canal Corporation and the Permittee dated August 16, 1999; and the Remedial Closure Contract Drawings by GZA Engineers dated April 25, 2000, all of which are hereby incorporated by reference.
(b) The Permittee agrees to supply the New York State Canal Corporation's Division Engineer located at 3901 Genesee Street, Buffalo, NY 14225 and the Canal Environmental Engineer located at New York State Canal Corporation 200 Southern Boulevard, Albany, NY 12209-2098 with copies of all reports, data, information and results for all activities undertaken by the Permittee on the Property. All information is to be transmitted within 90 days of field work and/or data collection.

IN CONSIDERATION of the granting of a Permit, the undersigned accepts all the above described conditions as well as the Rules and Regulations of the New York State Canal Corporation and the Regulations Governing Occupancy and Work Permits which are incorporated as though stated fully in this Permit.

GZA GeoEnvironmental of NY

ACCEPTANCE OF PERMIT: Ernest R. Hanna Date 08/07/00
Signature of Permittee

ACCEPTANCE OF PERMIT:________________ Date________
Signature of Permittee (If Joint Application)

OFFICIAL SIGNATURE:________________ Date________
Division Canal Engineer

THIS PERMIT IS NOT VALID UNTIL IT IS APPROVED AND SIGNED BY THE DIVISION CANAL ENGINEER

GZA
GeoEnvironmental
of New York

Engineers and Scientists

December 8, 2000
File: 55024

Mr. John Grathwol, P.E.
Division of Hazardous Waste Remediation
Bureau of Construction Services
New York State Department of Environmental Conservation
50 Wolf Road
Albany, New York 12233-7010

364 Nagel Drive
Buffalo
New York 14225
716-685-2300
FAX 716-685-3629
http://www.gza.net

Re: Revisions to Winterization Contingency Plan
and Overall Project Schedule
McKenna Landfill Remedial Closure Project
(Site No. 8-37-003)
Albion, New York

Dear Mr. Grathwol:

In follow up to our recent discussions, it has become necessary to revise the Winterization Contingency Plan and Project Schedule, submitted on October 27, 2000, for the McKenna Landfill Remedial Closure Project in Albion, New York.

Ciminelli Services Corp. (CSC) continued to incur schedule delays during the month of November due to rain and the on set of winter weather conditions. Therefore, the project will not be progressed as far as originally proposed in the October 27, 2000 Winterization Contingency Plan. This letter presents proposed modifications to the contingency plan for winterizing the site over the upcoming winter months and a new schedule for completing the project in 2001.

These revisions are being submitted to New York State Department of Environmental Conservation (NYSDEC) for review and concurrence. A copy is also being forwarded to the New York State Canal Corporation (NYS Canal Corp.).

A Subsidiary of GZA
GeoEnvironmental
Technologies, Inc.

Current Project Status

As of Tuesday, December 5, 2000, Serrot International, Inc. completed installation of the geosynthetics, including the 60 mil, LLDPE, geomembrane barrier and the overlying 12 oz/sy, non-woven, polypropylene geotextile cushion layer (Geotextile, Type II). CSC had commenced placement of the barrier protection layer soil on the southwest corner of the landfill and on the western portion of the top of the landfill. The barrier protection placed to date was generally to provide an access road and turn around area to perform the barrier protection layer construction operation.

CSC has not been able to continue with this operation due to the current weather conditions and concerns that such operations could potentially damage the completed geosynthetics. CSC, therefore, has indicated that it does not intend to proceed further with this operation, this construction season.

CSC, however, has indicated it will complete the anchor trench backfill, re-establish temporary surface water drainage, set up appropriate erosion and sedimentation controls and then demobilize from the project site for the winter (until about late April, 2001). This remaining work is expected to be done over the next two to three weeks.

We note that the gas venting system and leachate collection system are currently operational and that the exposed geosynthetics should be secure once the anchor trench backfilling is completed.

Revised Schedule to Complete the Project

CSC plans to generally demobilize from the project site between about the end of December, 2000 and about late April, 2001. As stated in the October 27, 2000 contingency plan, leachate, from the new system, will be collected and treated on an on-going "as needed" basis during the demobilization period and until the project is completed in 2001. Frequent inspection of the site will also be done during the demobilization period.

Ciminelli plans to remobilize late in April, 2001 or possibly sooner depending on the weather and complete the remaining work (i.e. remaining barrier protection layer, topsoil and seeding, finish grading of drainage swales, drainage infrastructure installation, final access road construction and final site restoration). Due to the barrier protection layer not being progressed as far as anticipated in the October 27, 2000 plan, it is now expected that the project would be completed by about mid to late July, 2001.

Winter Contingency Plan Modifications

The following sections present modifications to the October 27, 2000 contingency plan for winterizing (i.e. securing, operating and monitoring) the site over the winter shutdown period and recommencing the construction in the spring of 2001. These modifications generally address the exposed geosynthetics and the proposed quality assurance program to be implemented in the Spring of 2001, to evaluate their integrity before the barrier protection layer construction continues.

A. <u>Potential Impacts On Exposed Geosynthetics</u>

Based on our discussions with Serrot International, Inc. (the geosynthetics manufacturer, supplier and installer), there should be no environmental/weather exposure impact to the geomembrane layer, provided that backfilling of the anchor trench is completed. Serrot has indicated that there are case histories of geomembrane material being exposed for up to a year or longer with insignificant or no impact on the geomembrane properties. As stated above, the geomembrane has been covered with the geotextile cushion layer, thus limiting its exposure to the weather/sunlight.

As discussed with NYSDEC, the area of potential concern with regard to weather (i.e. sunlight) exposure would be the exposed geotextile cushion layer. Case studies and information indicate the geotextile material can undergo strength degradation when exposed to sunlight (i.e. UV exposure) for long periods. The information we currently have is from studies done in the south. At this time, we do not have any information on any cases where the geotextile material has been exposed over the winter months in a wintery northern climate (i.e. with varying snow cover and more limited sunlight). Therefore, it is difficult to predict to what degree the strength properties of the geotextile cushion layer may be impacted from its exposure over the winter shutdown period.

WMNY and GZA have evaluated the possibility of placing a sacrificial synthetic cover over this material, however, the material and installation costs appear to be more costly than the cost of replacing the geotextile cushion layer, if it would become detrimentally degraded. Therefore, we are proposing to leave the geotextile layer exposed and then evaluate the exposure impacts in the Spring of 2001 and determine if any replacement would be necessary.

B. Quality Assurance Program for Evaluating the Geotextile Exposure

Prior to commencing placement of the barrier protection material, sample coupons of the exposed cushion geotextile, will be collected at random and relatively uniformly spaced intervals and at a frequency of at least one sample per acre of exposed geotextile. Each sample shall be tested for the following properties:

Property	Test Method
Unit Weight (oz/yd^2)	ASTM D5261
Grab Tensile Strength (lbs)	ASTM D4632
Puncture Resistance (lbs)	ASTM D4833
Mullen Burst Strength (psi)	ASTM D3786

GZA has evaluated the cushioning and separation strength properties required of the cushion geotextile layer, which provide a suitable factor of safety with respect to the overlying barrier protection material gradation and the construction placement. These analyses are enclosed as Attachment 1. The required properties are also compared with the strength properties of the Geotextile, Type II material which has been specified, supplied and place over the geomembrane. In general, the Geotextile, Type II strength properties significantly exceed the required strength properties.

Based on our analyses, it is recommended that the strength properties of the test coupons meet or exceed the following values.

Property	Value
Unit Weight (oz/yd^2)	6
Grab Tensile Strength (lbs)	200
Puncture Resistance (lbs)	100
Mullen Burst Strength (psi)	200

Should the sample test results not meet these minimum requirements, then the geotextile material shall be removed and replaced with respect to the unacceptable test sample locations. Additional samples should be collected and tested as necessary to assist in determining the limits of any required geotextile replacement. Test sample locations should also be compared with deployment records to assist in determining the extent of any required replacement. Any geotextile cushioning material which is required to be replaced shall be replaced with Geotextile, Type II material and re-installed as originally specified.

In addition to the above testing program, the exposed geosynthethics shall also be carefully observed in the field for any visual evidence of degradation or physical damage, prior to placing the barrier protection material over it. Such inspections shall be documented in GZA's daily field reports.

C. Site Inspection

A program of scheduled weekly inspections, of the site, will be performed by a representative of GZA and CSC during the winter shutdown period as originally proposed in the October 27, 2000 contingency plan. The proposed inspection form (Attachment 2) has been modified to address the inspection of the exposed geosynthetics.

We trust that the revised project schedule and modified winter contingency plan will be acceptable with NYSDEC. Please contact the undersigned or Mr. Richard Sturges at WMNY, if you have any questions or comments regarding this information.

Very truly yours,

GZA GEOENVIRONMENTAL OF NEW YORK

John J. Danzer, P.E.
Senior Project Manager

Ernest R. Hanna, P.E.
Associate Principal

cc: R. Sturges - WMNY
R. Hilts - Ciminelli Services Corp.
R. Long - NYSDEC, Region 8
J. Dergosits - NYS Canal Corp.

ATTACHMENT 1

EVALUATION OF REQUIRED PROPERTIES FOR GEOTEXTILE CUSHION MATERIAL

GZA GeoEnvironmental of New York
Engineers and Scientists

Project McKENNA LANDFILL REMEDIAL CLOSURE		File No.	55024
Location ALBION, NEW YORK	Date 12/6/00	By	J. DANZER
Subject	Checked 12/20/00	By	E. Hanna
Based on	Revised	By	

EVALUATION OF CUSHION GEOTEXTILE (12 oz/SY - NON WOVEN, POLYPROPYLENE GEOTEXTILE) OVER GEOMEMBRANE

ASSUMPTIONS:

1. CUSHION GEOTEXTILE (GEOTEXTILE, TYPE II) IS SYNTHETIC INDUSTRIES MODEL 1291 - MANUFACTURERS SPEC. IS ATTACHED

2. ASSUME TRUCK TIRE INFLATION PRESSURE OF 75 PSI

3. BARRIER PROTECTION MATERIAL PLACED OVER CUSHION GEOTEXTILE WILL HAVE A MAXIMUM PARTICLE SIZE OF 4", AS SPECIFIED AND A D_{50} AVERAGE OF ABOUT 0.10 mm

REFERENCES:

1. "DESIGNING WITH GEOSYNTHETICS"; FOURTH EDITION BY ROBERT M KOERNER, PHD, P.E.; COPYRIGHT 1998 - PRENTICE HALL PUBLISHERS; PAGES 151 TO 158 AND 535 TO 537 (ATTACHED)

EVALUATION OF CUSHION PROTECTION:

A. REQUIRED MASS PER UNIT AREA

$p_{ALLOW} = F.S \times p_{ACTUAL}$ WHERE

p_{ACTUAL} = TIRE INFLATION (0.75) = 75 psi (0.75) = 56 psi
= 388 KN/m²

F.S. = 3.0

$\therefore p_{ALLOW} = 3.0 (387) = 1161$ KN/m²

Project	McKenna Landfill Remedial Closure		File No.	55024	
Location	Albion, New York	Date	12/6/00	By	J. Danzer
Subject		Checked	12/8/00	By	E. Hanna
Based on		Revised		By	

$$P_{ALLOW} = \left(50 + 0.00045 \frac{M}{H^2}\right)\left[\frac{1}{MF_S \times MF_{PD} \times MF_A}\right]\left[\frac{1}{RF_{CR} \times RF_{CBD}}\right]$$

WHERE:

M = GEOTEXTILE MASS / UNIT AREA

H = PROTRUSION HEIGHT (ASSUME 1") ≈ 0.025 m

MF_S = SHAPE FACTOR - 0.5

MF_{PD} = PACKING DENSITY - ASSUME 0.20

MF_A = ARCHING FACTOR - 0.75

RF_{CBD} = DEGRADATION FACTOR - 1.0

RF_{CR} = LONG TERM CREEP - 1.10

$$1161 = \left(50 + 0.00045 \frac{(M)}{0.025^2}\right)\left[\frac{1}{0.5\,(0.2)(0.75)}\right]\left[\frac{1}{1.1\,(1.0)}\right]$$

$$1161 = (50 + 0.72\,(M))\,(13.3)(0.91)$$

$$1161 = 604.5 + 8.71\,(M)$$

$$M = 64\ G/m^2 \times 0.03527\ oz/G \times 0.836\ m^2/S.Y.$$

$$= 2\ oz/SY$$ REQUIRED FOR F.S. ≈ 3.0

SYNTHETIC INDUSTRIES MODEL 1291 IS 12 oz/SY

Project McKENNA LANDFILL REMEDIAL CLOSURE File No. 55024
Location ALBION, NEW YORK Date 12/6/00 By J. DANZER
Subject Checked 12/8/00 By E. Hanna
Based on Revised By

EVALUATION OF SEPARATION PROPERTIES:

A. BURST RESISTANCE

PRESSURE @ INTERFACE = 0.75 (75 psi) = 56 psi
= 388 KN/m²

SAY 400 KN/m²

FROM DESIGN CHART (REFERENCE 1):

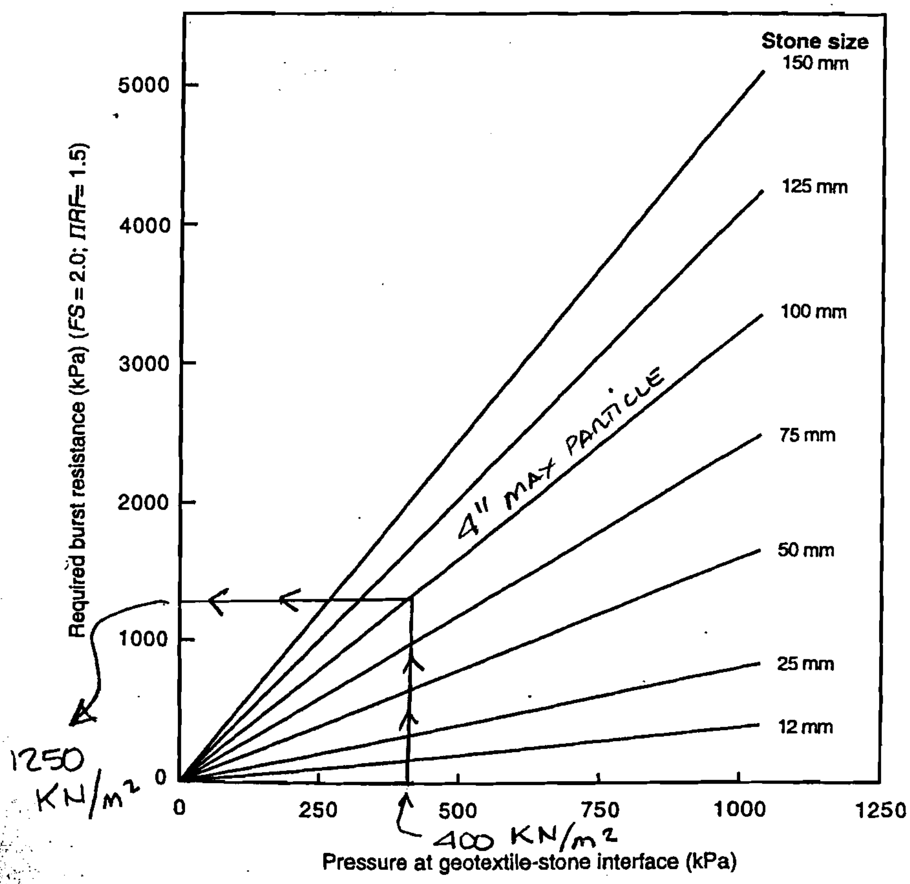


Figure 2.29 Design guide for burst analysis of geotextile used in a separation function based on cumulative reduction factors of 1.5 and a factor of safety of 2.0.

REQUIRED BURST STRENGTH = 1250 KN/m² = 181 psi

SYNTHETIC INDUSTRIES 1291, MULLEN BURST IS 620 psi

Project McKENNA LANDFILL REMEDIAL CLOSURE File No. 55024
Location ALBION, NEW YORK Date 12/6/00 By J. DANZER
Subject Checked 12/13/00 By E. Hanna
Based on Revised By

B. TENSILE STRENGTH REQUIREMENT

$T_{REQ'D} = p'(d_V)^2[f(e)]$

WHERE:

p' = APPLIED PRESSURE - 0.75(75 psi) = 56 psi
d_V = 0.33 d_A = 0.33(4") = 1.32"
$f(e)$ = STRAIN FUNCTION, ASSUME y = 1" b = 2"
∴ $f(e)$ = 0.50

$T_{REQ'D}$ = 56(1.32)^2(0.50) = 49 POUNDS

FOR F.S. = 2.0 AND REDUCTION FACTOR OF 2.0
FOR INSTALLATION

$T_{REQ'D}$ = (2.0)(2.0)(49) = 196 POUNDS

SYNTHETIC INDUSTRIES 1291, TENSILE STRENGTH = 320 POUNDS

Project	McKenna Landfill Remedial Closure			File No.	55024
Location	Albion, New York	Date	12/6/00	By	J. Danzer
Subject		Checked	12/8/00	By	E. Hanna
Based on		Revised		By	

C. <u>Puncture Resistance</u>

Pressure @ interface = 0.75 (75) psi = 56 psi
= 388 KN/m²

Say 400 KN/m²

From Design Chart (Reference 1):

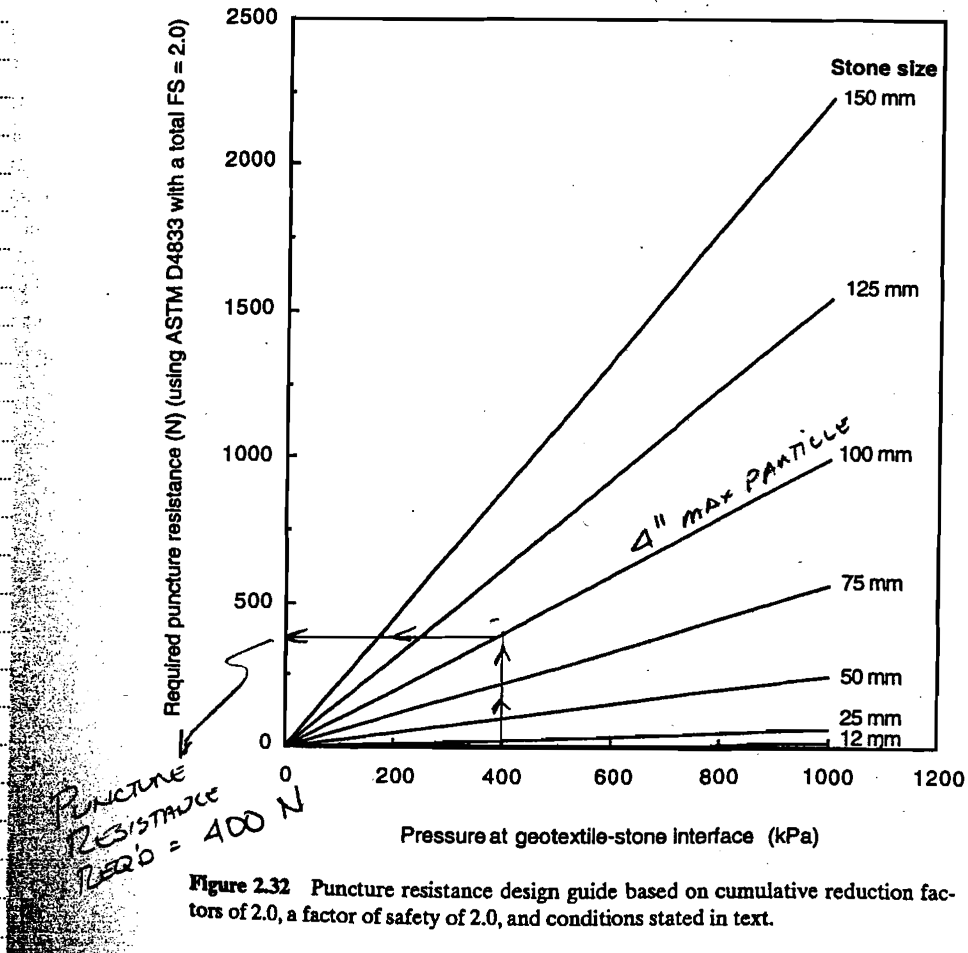


Figure 2.32 Puncture resistance design guide based on cumulative reduction factors of 2.0, a factor of safety of 2.0, and conditions stated in text.

Required Puncture Resistance = 400 N = 89 pounds

Synthetic Industries 1291, Puncture Resistance = 210 pounds

CATERPILLAR PERFORMANCE HANDBOOK

a CAT publication

by Caterpillar Inc., Peoria, Illinois, U.S.A.

OCTOBER 1986

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Materials and specifications are subject to change without notice.

CATERPILLAR

Printed in U.S.A.

AEKQ6990

ADT . . . ARTICULATED DUMP TRUCKS — Radials														
Model	Tire Size	Strength Index	Pressure (Michelin)						Pressure (Goodyear)					
			Front		Center		Rear		Front		Center		Rear	
			kPa	psi	kPa	psi	kPa	psi	kPa	psi	kPa	psi	kPa	psi
D25C	26.5R25	★★	400	58	—	—	400	58	517	75	—	—	517	75
D30C	29.5R25	★★	351	51	—	—	448	65	517	75	—	—	517	75
D35C	F: 29.5R25 R: 33.25R29	★★	351	51	—	—	503	73	517	75	—	—	517	75
D35HP	F: 29.5R25 R: 33.25R29	★★	351	51	—	—	503	73	517	75	—	—	517	75
D44	33.25R29	★★	503	73	—	—	503	73	517	75	—	—	517	75
D250B	20.5R25	★★	400	58	400	58	400	58	400	58	400	58	400	58
	25/65R25	★★	350	51	350	51	350	51	350	51	350	51	350	51
D300B	23.5R25	★★	320	46	320	46	320	46	320	46	320	46	320	46
D350C	26.5R25	★★	351	51	351	51	351	51	517	75	517	75	517	75
D400	26.5R25	★★	400	58	400	58	400	58	517	75	517	75	517	75
D550	33.25R29	★★	379	55	427	62	400	58	517	75	517	75	517	75

SYNTHETIC INDUSTRIES

Geosynthetic Products Division

9/28/2000

Serrot International Inc PA
Connie Turner
167 Anderson Rd
Cranberry Twp PA 16066
BOL 80068303 PO 14461QD
Ref: Job 10057 Order 00003176 WMI of NY Albion-MC Kenna

This is to certify that Product GEOTEX 1291, a nonwoven polypropylene geotextile produced by Synthetic Industries, will meet the following certifiable minimum average values when tested in accordance with the proper ASTM test methods. A minimum average roll value is calculated as the mean minus two standard deviations, yielding a 97.5 percent confidence level. This geotextile has been continuously inspected for the presence of needles and none were detected.

Physical Property	Test Method	MARV		SI Unit	
Mass Per Unit Area	ASTM D-5261	12.0	oz/yd2	(406.8)	g/m2
Thickness	ASTM D-5199	115	mils	(2.921)	mm
Tensile Strength	ASTM D-4632	320	lbs	(1424)	N
Elongation	ASTM D-4632	50	%	50	%
Trapezoidal Tear	ASTM D-4533	125	lbs	(556.25)	N
Mullen Burst	ASTM D-3786	620	psi	(4274.2	kPa
Puncture Strength	ASTM D-4833	210	lbs	(934.5)	N
A.O.S.	ASTM D-4751	100	Sieve	0.15	mm
Permittivity	ASTM D-4491	0.80	sec-1	0.80	sec-1
Permeability	ASTM D-4491	0.29	cm/sec	0.29	cm/sec
Water Flow Rate	ASTM D-4491	60	gpm/ft2	(2444.682	lpm/m2
UV Resistance	ASTM D-4355	70	%	70	%

Strength Retained after 500 hours exposure in Xenon Arc Weatherometer

Sincerely

Patti Weaver

Patti Weaver
Technical Manager
Geosynthetic Products Division

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Synthetic Industries, Inc.
4019 Industry Drive • Chattanooga, Tennessee • 37416 • USA
Telephone • 423-899-0444 • Fax • 423-899-7619 • 1-800-621-0444

Fourth Edition

Designing with Geosynthetics

Robert M. Koerner, Ph.D., P.E.

H. L. Bowman Professor of Civil Engineering, Drexel University and Director, Geosynthetic Research Institute

PRENTICE HALL

Upper Saddle River, New Jersey 07458

E IN EQ. (2.25a)

Factors	
Chemical Clogging†	Biological Clogging
1.0 to 1.2	1.0 to 1.3
1.2 to 1.5	2.0 to 4.0
1.0 to 1.2	2.0 to 4.0
1.2 to 1.5	5 to 10‡
1.2 to 1.5	1.2 to 1.5
1.1 to 1.3	1.1 to 1.3

either the upper values or include

eater than 5000 mg/l.

(2.25b)

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could be said, in a general sens
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will not be served properly. The
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lly, and in such cases the geot

2.5.1 Overview of Applications

Perhaps the target application that best illustrates the use of geotextiles as separators is their placement between a reasonably firm soil subgrade (beneath) and a stone base course, aggregate, or ballast (above). We say "reasonably firm" because it is assumed that the subgrade deformation is not sufficiently large to mobilize uniformly high tensile stress in the geotextile. (The application of geotextiles in unpaved roads on soft soils with membrane-type reinforcement is treated later in Section 2.6.1.) Thus for a separation function to occur the geotextile has only to be placed on the soil subgrade and then have stone placed, spread, and compacted on top of it. The subsequent deformations are very localized and occur around each individual stone particle. A number of scenarios can be developed showing which geotextile properties are required for a given situation.

2.5.2 Burst Resistance

Consider a geotextile on a soil subgrade with stone of average particle diameter (d_a) placed above it. If the stone is uniformly sized, there will be voids within it that will be available for the geotextile to enter. This entry is caused by the simultaneous action of the traffic loads being transmitted to the stone, through the geotextile, and into the underlying soil. The stressed soil then tries to push the geotextile up into the voids within the stone. The situation is shown schematically in Figure 2.28. Giroud [64] provides a formulation for the required geotextile strength that can be adopted for this application.

$$T_{\text{reqd}} = \frac{1}{2} p' d_v [f(\varepsilon)] \tag{2.26}$$

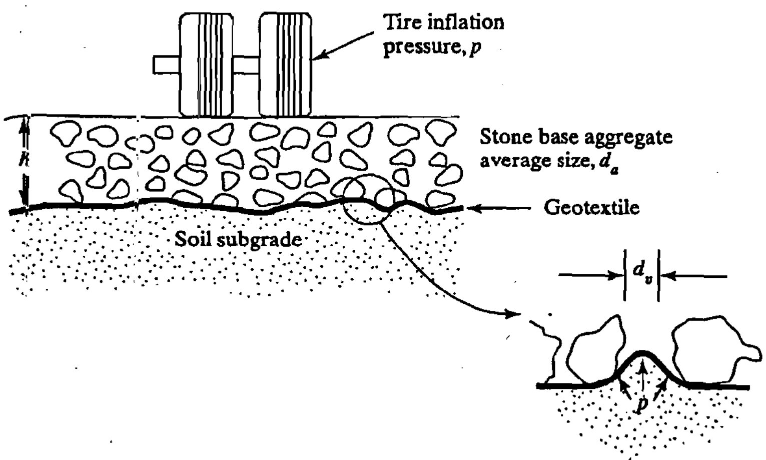

Figure 2.28 Geotextile being forced up into voids of stone base by traffic tire loads.

where

T_{reqd} = required geotextile burst strength;
p' = stress at the geotextile's surface, which is less than or equal to p, the tire inflation pressure at the ground surface;
d_v = maximum void diameter of the stone $\cong 0.33d_a$;
d_a = the average stone diameter,
$f(\varepsilon)$ = strain function of the deformed geotextile
$= \frac{1}{4}\left(\frac{2y}{b} + \frac{b}{2y}\right)$, in which
b = width of opening (or void), and
y = deformation into the opening (or void).

The field situation is analogous to the ASTM D3786 (Mullen) burst test, which has the geotextile being stressed into a gradually increasing hemispherical shape until it fails in radial tension (recall Section 2.3.3). Thus, the adapted form of Eq. (2.26) is:

$$T_{ult} = \frac{1}{2}p_{test}d_{test}[f(\varepsilon)] \tag{2.27}$$

where

T_{ult} = ultimate geotextile strength,
p_{test} = burst test pressure, and
d_{test} = diameter of the burst test device (= 30 mm).

Knowing that $T_{allow} = T_{ult}/(\Pi RF)$, where ΠRF = cumulative reduction factors, we can formulate an expression for the FS as follows:

$$FS = \frac{T_{allow}}{T_{reqd}} = \frac{(p_{test}d_{test})}{(\Pi RF)p'd_v}$$

For example, if d_{test} = 30 mm, $d_v = 0.33\,d_a$, and $\Pi FS = 1.5$ (which is not particularly low since creep is not an issue with this application), then the FS is the following, with d_a in mm.

$$FS = \frac{p_{test}(30)}{(1.5)p'(0.33d_a)}$$

$$FS = \frac{60.6p_{test}}{p'd_a} \tag{2.28}$$

Example 2.7

Given a 700 kPa truck tire inflation pressure on a poorly graded stone-base course consisting of 50 mm maximum-size stone, what is the factor of safety using a geotextile with an ultimate burst strength of 2000 kPa and cumulative reduction factors of 1.5?

Solution: Assum
thickness of the s

Note that with t
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For a range of
(p'), and cumulative
the design guide in F
sofar as the require
poorly graded aggre
design; hence this a

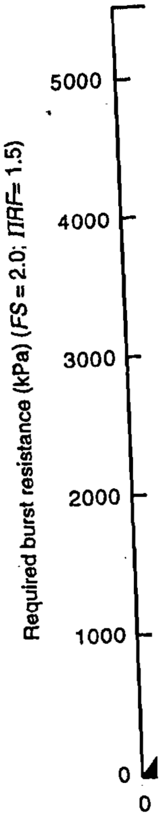


Figure 2.2
tion based

Solution: Assuming that the tire inflation pressure is not significantly reduced through the thickness of the stone base, we can solve Eq. (2.28) as follows.

$$FS = \frac{60.6(2000)}{700(50)}$$

$$= 3.5$$

Note that with the cumulative reduction factors of 1.5 already included, the resulting factor of safety value is acceptable.

For a range of stone-base particle diameters (d_a), values of tire inflation pressure (p'), and cumulative reduction factors of 1.5, along with a factor of safety of 2.0, we get the design guide in Figure 2.29. Here it can be seen that stone size is quite significant insofar as the required burst-pressure values are concerned. Note also that these are poorly graded aggregates and that the presence of fines will lessen the severity of the design; hence this approach should be considered to be a worst-case design.

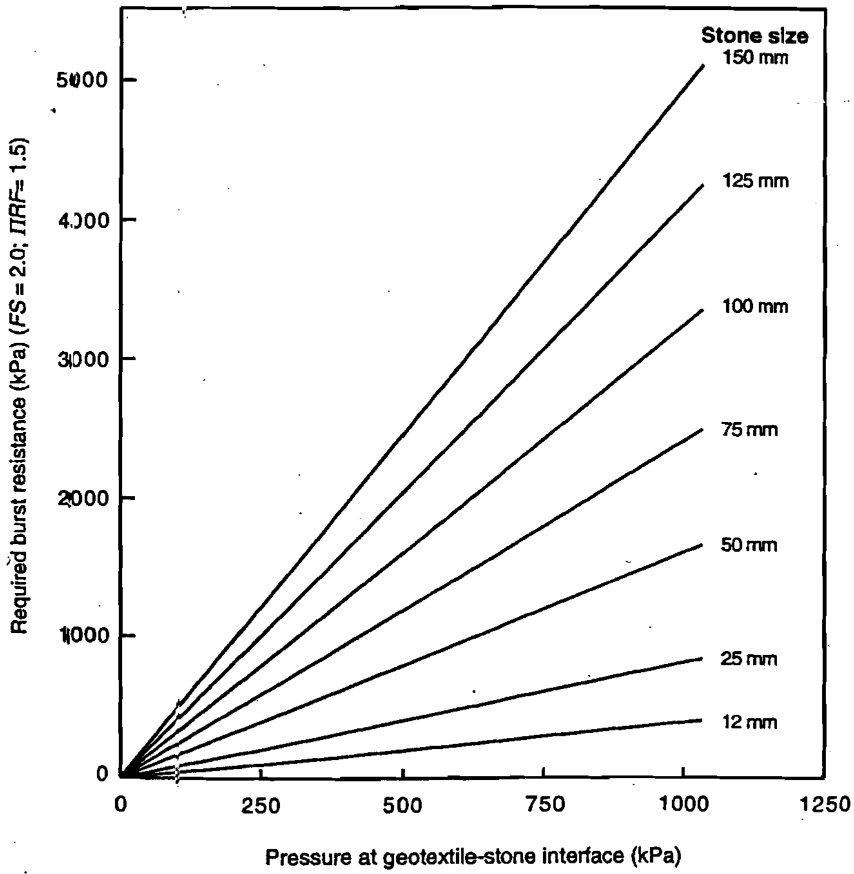


Figure 2.29 Design guide for burst analysis of geotextile used in a separation function based on cumulative reduction factors of 1.5 and a factor of safety of 2.0.

2.5.3 Tensile Strength Requirement

Continuing the discussion of the general problem, there is a process acting on the geotextile simultaneously as its tendency to burst in an out-of-plane mode: tensile stress mobilized by in-plane deformation. This occurs as the geotextile is locked into position by the stone-base aggregate above it and soil subgrade below it. A lateral or in-plane tensile stress in the geotextile is mobilized when an upper piece of aggregate is forced between two lower pieces that lie against the geotextile. The analogy to the grab tensile test can be readily visualized, as illustrated in Figure 2.30. Here we can estimate the maximum strain that the geotextile will undergo as the upper stone wedges itself down to the level of the geotextile. Using the dimensions shown (where $S \sim d/2$ and l_f = deformed geotextile length), the maximum strain with no slippage or stone breakage can be calculated.

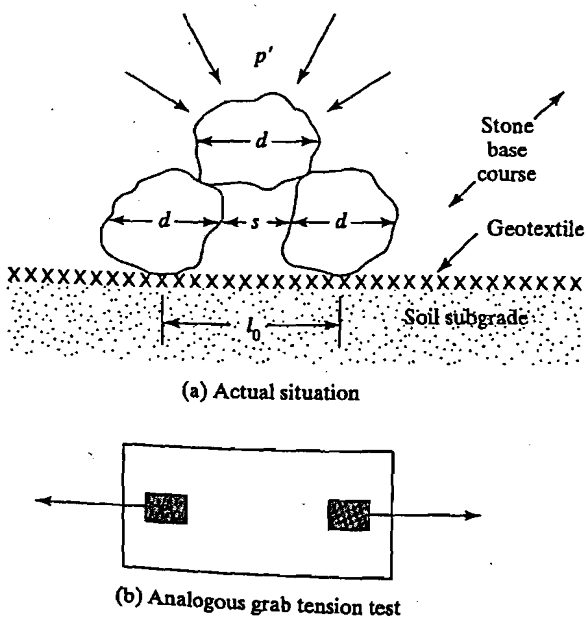
$$\varepsilon = \frac{l_f - l_o}{l_o}(100)$$

$$= \frac{[d + 2(d/2)] - 3(d/2)}{3(d/2)}(100)$$

$$= \frac{4(d/2) - 3(d/2)}{3(d/2)}(100)$$

$$= 33\%$$

Note that the preceding assumptions result in a strain that is independent of particle size. Thus the strain in the geotextile could be as high as 33% given the idealized



(a) Actual situation

(b) Analogous grab tension test

Figure 2.30 Geotextile being subjected to tensile stress as surface pressure is applied and stone base attempts to spread laterally.

(upper-bound) assum
to the pressure exerte

where

T_{reqd} = required
p' = applied
d_v = maximu
d_a = average
$f(\varepsilon)$ = strain fu
$= \frac{1}{4}\left(\frac{2y}{b} + \right.$
b = width of
y = deforma

Example 2.8 illustrate

Example 2.8

Given a 700 kPa
maximum-size st
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Solution: (a) Usi
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(b) The factor of
reduction factors

2.5.4 Puncture Res

The geotextile must
tion of separation; i
without it the best o

(upper-bound) assumptions stated above. The tensile force being mobilized is related to the pressure exerted on the stone as follows [64].

$$T_{\text{reqd}} = p'(d_v)^2[f(\varepsilon)] \tag{2.29}$$

where

T_{reqd} = required grab tensile force;
p' = applied pressure;
d_v = maximum void diameter ≈ 0.33 d_a, where
d_a = average stone diameter; and
$f(\varepsilon)$ = strain function of the deformed geotextile;
$= \dfrac{1}{4}\left(\dfrac{2y}{b} + \dfrac{b}{2y}\right)$, where
b = width of stone void, and
y = deformation into stone void.

Example 2.8 illustrates the design procedure above.

Example 2.8

Given a 700 kPa truck-tire inflation pressure on a stone-base course consisting of 50 mm maximum-size stone with a geotextile beneath it, calculate **(a)** the required grab tensile stress on the geotextile, and **(b)** the factor of safety for a geotextile whose grab strength at 33% is 500 N with cumulative reduction factors of 2.5 and $f(\varepsilon) = 0.52$.

Solution: (a) Using an empirical relationship that $d_v = 0.33\ d_a$ and $f(\varepsilon) = 0.52$, the required grab tensile strength from Eq. (2.29) is as follows.

$$\begin{aligned} T_{\text{reqd}} &= p'(d_v)^2(0.52) \\ &= p'(0.33d_a)^2(0.52) \\ &= 0.057\,p'd_a^2 \\ &= 0.057(700)(1000)(0.050)^2 \\ &= 100\ \text{N} \end{aligned}$$

(b) The factor of safety for a 500 N grab tensile geotextile at 33% strain with cumulative reduction factors of 2.5 is as follows.

$$\begin{aligned} \text{FS} &= \frac{T_{\text{allow}}}{T_{\text{reqd}}} \\ &= \frac{500/2.5}{100} \\ &= 2.0 \qquad \text{which is acceptable.} \end{aligned}$$

2.5.4 Puncture Resistance

The geotextile must survive the installation process. This is not just related to the function of separation; indeed, fabric survivability is critical in all types of applications—without it the best of designs are futile (recall Figure 2.19). In this regard, sharp stones,

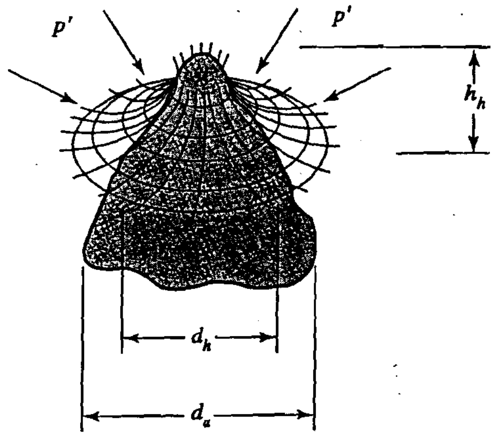


Figure 2.31 Visualization of a stone puncturing a geotextile as pressure is applied from above.

tree stumps, roots, miscellaneous debris, and other items, either on the ground surface beneath the geotextile or placed above it, could puncture through the geotextile after backfilling and traffic loads are imposed. The design method suggested for this situation is shown schematically in Figure 2.31. For these conditions, the vertical force exerted on the geotextile (which is gradually tightening around the protruding object) is as follows:

$$F_{\text{reqd}} = p' d_a^2 S_1 S_2 S_3 \tag{2.30}$$

where

- F_{reqd} = required vertical force to be resisted;
- d_a = average diameter of the puncturing aggregate or sharp object;
- p' = pressure exerted on the geotextile (approximately 100% of tire inflation pressure at the ground surface for thin covering thicknesses);
- S_1 = protrusion factor = h_h/d_a;
- h_h = protrusion height $\leq d_a$;
- S_2 = scale factor to adjust the ASTM D4833 puncture test value (which uses an 8.0 mm diameter puncture probe) to the diameter of the actual puncturing object = d_{probe}/d_a;
- S_3 = shape factor to adjust the ASTM D4833 flat puncture probe to the actual shape of puncturing object = $1 - A_p/A_c$, (values for A_p/A_c range from 0.8 for rounded sand, to 0.7 for run-of-bank gravel, to 0.4 for crushed rock, to 0.3 for shot rock);
- A_p = projected area of puncturing particle;
- A_c = area of smallest circumscribed circle around puncturing particle.

Example 2.9

What is the factor of safety against puncture of a geotextile from a 50 mm stone on the ground surface mobilized by a loaded truck with a tire inflation pressure of 550 kPa traveling on the surface of the base course? The geotextile has an ultimate puncture strength of 200 N, according to ASTM D4833.

Solution: Using the full stress on the geotextile of 550 kPa and the values 0.33, 0.15, and 0.6 for the factors S_1, S_2, and S_3, respectively,

$$\begin{aligned} F_{reqd} &= p' d_a^2 S_1 S_2 S_3 \\ &= (550)(1000)(50 \times 0.001)^2(0.33)(0.15)(0.6) \\ &= 40.8 \text{ N} \end{aligned}$$

Assuming that the cumulative reduction factors are 2.0, the factor of safety is as follows:

$$\begin{aligned} FS &= \frac{F_{allow}}{F_{reqd}} \\ &= \frac{200/2.0}{40.8} \\ &= 2.4 \quad \text{which is acceptable} \end{aligned}$$

Using the following assumptions (which can be modified as desired), a design guide can be developed as shown in Figure 2.32: the geotextile has an angular subgrade

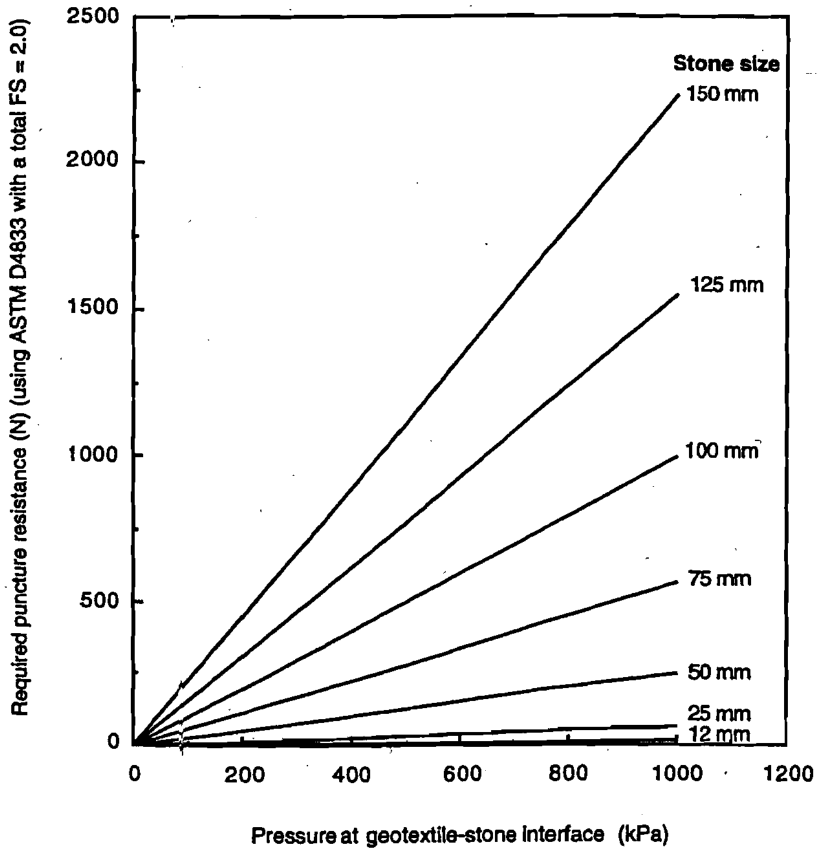


Figure 2.32 Puncture resistance design guide based on cumulative reduction factors of 2.0, a factor of safety of 2.0, and conditions stated in text.

above it such that $S_1 = 0.33$, $S_2 = 0.15$, and $S_3 = 0.5$; the cumulative reduction factors are 2.0; and the factor of safety is also 2.0.

$$F_{\text{reqd}} = p'd_a^2(0.33)(0.15)(0.5)$$

$$= 0.0248p'd_a^2$$

$$\text{FS} = \frac{F_{\text{ult}}/\Pi\text{RF}}{F_{\text{reqd}}}$$

$$2.0 = \frac{F_{\text{ult}}/2.0}{0.0248p'd_a^2}$$

$$F_{\text{ult}} = 0.099p'd_a^2 \qquad \text{which is graphed accordingly.}$$

2.5.5 Impact (Tear) Resistance

As with the puncture requirement just described, the resistance of a geotextile to impact is as much a survivability criterion as it is a separation function. Yet in many applications of separation, the geotextile must resist the impact of various objects. The most obvious one is a rock falling on it, but there are also situations in which construction equipment and materials can cause or contribute to impact damage on geotextiles.

The problem concerns the energy mobilized by a free-falling object of known weight and the height of the drop. Rarely will an object be intentionally impelled onto an exposed geotextile with additional force, so only gravitational energy will be assumed.

To develop a design guide, we assume free-falling stones of specific gravity of 2.60, varying in diameter from 25 to 600 mm and falling from heights of 0.5 to 5 m. Using this data the design curves of Figure 2.33 are developed. The relationship is as follows.

$$E = mgh$$

$$= (V \times \rho)gh$$

$$= [V \times (\rho_w G_s)]gh$$

$$= \left(\frac{\pi(d_a/1000)^3}{6}\right)\left(\frac{1000kg}{m^3}\right)(2.6)(9.81)h$$

$$E = 13.35 \times 10^{-6} d_a^3 h \tag{2.31}$$

where

E = energy developed (joules),
m = mass of the object (kg),
g = acceleration due to gravity (m/s²),
h = height of fall (m),

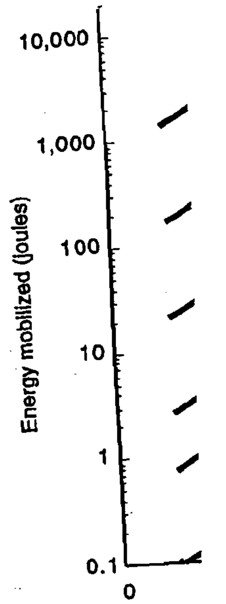


Figure 2.33 Ene
yielding support.

V = volume of t
ρ = density of t
ρ_w = density of w
G_s = specific gra
d_a = diameter o

Note that these calcula
ing surface, that is, the
forms, the geotextile ca
ways the case, the redu
curves of Figure 2.33. C
the allowable impact st
test as discussed in Sec

Example 2.10

What energy is mo
textile? The geotex
4. If the geotextile

Solution: The necessary information for solving the design equation is

(a) For out-of-plane tension testing, the yield-stress of HDPE (from Table 5.5c) is conservatively estimated as 20,000 kPa.
(b) The mobilization distance for HDPE at 50 × 12.5 = 625 kPa (from Fig. 5.10) is approximately 80 mm.
(c) The friction angle (from Table 5.7) for HDPE against Ottawa sand (δ_U) is 18°.
(d) The friction angle for HDPE against a geonet (separate test results) (δ_L) is 10°.
(e) These values give the required geomembrane thickness.

$$t = \frac{(625)(0.080)[\tan 18 + \tan 10]}{(20{,}000)[\cos 20 - (\sin 20)(\tan 10)]}$$

$$= \frac{25.1}{17600}$$

$$= 0.00143 \text{ m}$$

$$t = 1.43 \text{ mm}$$

Thus the regulated values of 1.5 mm in the U.S. or 2.0 mm in German regulations would control in this situation.

5.6.7 Puncture Protection

There are many circumstances where geomembranes are placed on or beneath soils containing relatively large-sized stones, for example poorly prepared soil subgrades with stones protruding from the surface or resting on the surface, soil subgrades over which geomembranes (particularly textured) have been dragged dislodging near-surface stones, and cases where crushed-stone drainage layers are to be placed above the geomembrane. All of these situations, particularly the last (which is unavoidable since it is a design situation), could use a protective geotextile to avoid puncturing the geomembrane. Note that if the soil subgrade is a CCL, a geotextile cannot be used and the isolated stones must be physically removed. For the drainage layer case, which is common to all landfills, a nonwoven needle-punched geotextile can provide significant puncture protection (recall Figure 5.8). The issue of required mass per unit area of the geotextile becomes critical.

In a series of papers, Wilson-Fahmy, Narejo, and Koerner [71, 72, 73] have presented a design method that focuses on the protection of 1.5 mm thick HDPE geomembranes. The method uses the conventional factor of safety equation.

$$\text{FS} = \frac{p_{\text{allow}}}{p_{\text{act}}} \tag{5.32}$$

where

FS = factor of safety (against geomembrane puncture),
p_{act} = actual pressure due to the landfill contents (or surface impoundment), and

TABLE 5.18 MODIFICATION FACTORS AND REDUCTION FACTORS FOR GEOMEMBRANE PROTECTION DESIGN USING NONWOVEN NEEDLE-PUNCHED GEOTEXTILES

Modification Factors

MF_S		MF_{PD}		MF_A	
Angular	1.0	Isolated	1.0	Hydrostatic	1.0
Subrounded	0.5	Dense, 38 mm	0.83	Geostatic, shallow	0.75
Rounded	0.25	Dense, 25 mm	0.67	Geostatic, mod.	0.50
		Dense, 12 mm	0.50	Geostatic, deep	0.25

Reduction Factors

RF_{CBD}		RF_{CR}			
		Mass per unit area (g/m²)	Protrusion (mm) 38	25	12
Mild leachate	1.1	Geomembrane alone	N/R	N/R	N/R
Moderate leachate	1.3	270	N/R	N/R	> 1.5
Harsh leachate	1.5	550	N/R	1.5	1.3
		1100	1.3	1.2	1.1
		> 1100	≅ 1.2	≅ 1.1	≅ 1.0

N/R = Not recommended

p_{allow} = allowable pressure using different types of geotextiles and site-specific conditions.

Based on a large number of ASTM 5514 experiments, an empirical relationship for p_{allow} has been obtained, Eq. (5.33). It requires the set of modification factors and reduction factors given in Table 5.18.

$$p_{allow} = \left(50 + 0.00045\frac{M}{H^2}\right)\left[\frac{1}{MF_S \times MF_{PD} \times MF_A}\right]\left[\frac{1}{RF_{CR} \times RF_{CBD}}\right] \quad (5.33)$$

where

p_{allow} = allowable pressure (kPa),
M = geotextile mass per unit area (g/m²),
H = protrusion height (m),
MF_S = modification factor for protrusion shape,
MF_{PD} = modification factor for packing density,
MF_A = modification factor for arching in solids,
RF_{CR} = reduction factor for long-term creep, and
RF_{CBD} = reduction factor for long-term chemical/biological degradation.

Note that in the above all MF values ≤ 1.0 and all RF values ≥ 1.0.

The situation can be approached from a given mass per unit area geotextile to determine the unknown FS value, or from an unknown mass per unit area geotextile and a given FS value. Example 5.19 uses the latter approach.

Example 5.19

Given a coarse-gravel (d_{50} = 38 mm) leachate collection layer to be placed on a 1.5 mm HDPE geomembrane under a 50 m high landfill, what geotextile mass per unit area is necessary for a FS value of 3.0? Assume that the solid waste weighs 12 kN/m³.

Solution: Use H = 25 mm = 0.025 m, which is an estimate since the gravel particles are not isolated, but are adjacent to one another, MF_S = 1.0 for shape, MF_{PD} = 0.20 for packing density, MF_A = 0.50 for arching, RF_{CR} = 1.5 for creep, and RF_{CBD} = 1.5 for long-term degradation.

Now calculate the value of p_{allow} using Eq. (5.32).

$$FS = \frac{p_{\text{allow}}}{p_{\text{act}}}$$

$$3.0 = \frac{p_{\text{allow}}}{(50)(12)}$$

$$p_{\text{allow}} = 1800 \text{ kN/m}^2$$

Then calculate the required mass per unit area of the geotextile using Eq. (5.33).

$$p_{\text{allow}} = \left(50 + 0.00045\frac{M}{H^2}\right)\left[\frac{1}{MF_S \times MF_{PD} \times MF_A}\right]\left[\frac{1}{FS_{CR} \times FS_{CBD}}\right]$$

$$1800 = \left[50 + 0.00045\frac{M}{(0.025)^2}\right]\left[\frac{1}{1.0 \times 0.20 \times 0.50}\right]\left[\frac{1}{1.5 \times 1.5}\right]$$

$$M = 493 \text{ g/m}^2 \qquad \text{use a 500 g/m}^2 \text{ geotextile}$$

5.6.8 Runout and Anchor Trenches

The terminus of geomembranes (and geonets if they are also involved) is a short horizontal runout at the top of the slope (recall Figure 5.30), and then (usually) a short drop into an anchor trench (recall Figure 5.31). The anchor trench is backfilled with soil and suitably compacted. Concrete anchor trenches with full fixity to the liner should generally not be used since geomembrane pullout is probably more desirable than geomembrane failure, although both should obviously be avoided.

The design method is explained and illustrated in Section 5.3.6 and will not be repeated here. Both analyses (runout alone and runout plus anchor trench) are applicable, with the latter being the most common.

For termination of double liner systems, the designer is faced with a number of possible choices (see Figure 5.46). The major considerations are to protect the integrity of both geomembranes and to keep surface water out of the leak detection system (shown as a geonet in Figure 5.46).

ATTACHMENT 2

REVISED WINTER SHUTDOWN SITE INSPECTION REPORT FORM

ATTACHMENT 2

McKenna Landfill Remedial Closure
Albion, New York

WINTER SHUTDOWN SITE
INSPECTION REPORT FORM

Date:____________________

Inspection Completed by: ____

Weather and General Site Conditions During the Day of the Inspection:

____

____

Inspection Record:
Were any of the conditions listed below observed?

<u>**Conditions**</u>	<u>**Yes**</u>	<u>**No**</u>
Final Cover System		
1) Any Major Erosion Gullies/Washouts	( )	( )
2) Any Wind Damage to Exposed Geosynthetics	( )	( )
3) Any Problems Along Geosynthetic Anchor Trenches	( )	( )
4) Any Visible Damage to Geosynthetics	( )	( )
5) Any Seeps or Soft Spots	( )	( )
6) Any Sloughing or Slope Problems	( )	( )
Gas Venting System		
7) Any Visible Damage to Gas Vents	( )	( )
8) Any Unusual Conditions Along Gas Venting Trench Alignments	( )	( )
Leachate Collection System		
9) Any Visual Damage to Manholes and Wet Wells	( )	( )
10) Any Damage to Clean-out Risers	( )	( )
11) Any Unusual Conditions Along Leachate Collection Trench Alignments	( )	( )
12) Any Apparent Problems with Leachate Collection and Pumping	( )	( )

WINTER SHUTDOWN SITE
INSPECTION REPORT FORM (Con't)

	Yes	No
General Site Conditions		
13) Any Silt Fence Down or Damaged	( )	( )
14) Any Hay Bales Need Replacing	( )	( )
15) Any Drainage Swales Blocked or Prevented From Flowing Properly	( )	( )
16) Any Unusual Standing Water	( )	( )
17) Access Roads Passable and in Suitable Condition	( )	( )
18) Any Temporary Fencing Down or Damaged or Problems with Gate	( )	( )
19) Any Problems with Stored Materials	( )	( )
20) Any Problems with Field Offices/Trailers	( )	( )
21) Any Other Unusual Site Conditions Observed or Vandalism	( )	( )

If any of the conditions listed in 1-21 above indicate potential problems, then describe your observations (s), including locations, in further detail and indicate the recommended corrective action, if any, that should be taken in the space provided below. If needed, please provide a sketch and/or photographs of the subject area.

____

( ) Please check if additional information is attached

WINTER SHUTDOWN SITE
INSPECTION REPORT FORM (Con't)

Location/Photographs
and Additional Information:

Bart Klettke

From: "John Grathwol" <jcgrathw@gw.dec.state.ny.us>
To: <bklettke@gza.com>
Sent: Monday, May 21, 2001 10:12 AM
Subject: McKenna Landfill (site Code 8-37-003)

Based on the geotextile test results included in your May 17, 2001 letter, the Department concurs with your recommendation that coverage of the geotextile with barrier protection material/low permeability soil may proceed without remediation of the existing geotextile.

APPENDIX C

LANDFILL DESIGN SUMMARY

LIMITS OF WASTE

The limits of waste encountered by the design phase test pit explorations extended beyond the north line of the McKenna property onto the NYS Canal Corporation right-of-way. The remedial closure design was prepared based on the understanding that the waste materials which extended onto the NYS Canal Corporation property along the north side of the landfill would generally remain in-place and that portions of the remedial closure components would be allowed to be constructed on the NYS Canal Corporation property under modifications to WMNY's Consent Order Agreement.

The limits of waste encountered by the field explorations were within the general mound of the McKenna Landfill (i.e. waste was not encountered at the test pit locations beyond the toe of the existing fill slopes). The limits of the final cover system and the alignment of the perimeter leachate collection system drain piping and barrier wall system were established at or outside the limits of waste encountered.

EXISTING SOIL RECOVERY

Test pit explorations were made during the design phase to evaluate existing cover soil and topsoil for potential soil recovery and re-use. Existing topsoil thicknesses ranged between 0.1 and 0.8 feet. The underlying existing cover soil thicknesses (soil between the topsoil layer and existing waste materials) ranged between 1.0 and 3.9 feet at the test pit locations.

The intent of the existing soil recovery plan was to remove the existing topsoil and a portion of the existing cover soils for re-use as part of the remedial closure construction.

The acceptable topsoil, was re-used as topsoil material for the final cover system construction and/or for final site restoration outside the landfill cover system. The acceptable existing cover soil materials, were re-used as barrier protection layer material for the final cover system construction and/or as suitable fill for subgrade filling.

The Contractor was required to implement the procedures specified to evaluate the potential quantity of existing topsoil and cover soil available for recovery and re-use, determine their acceptability for re-use (i.e. through chemical characterization testing) and to control excavation and grading during the borrow soil recovery. If some or all of the existing topsoil and cover soil materials were determined to be unacceptable for re-use then the unacceptable materials would be left in place and properly prepared and graded as existing subgrade for construction of the gas venting system and final cover system. Alternatively, portions could be used as cover material over the area designated for excavation spoil disposal in the eastern end of the landfill.

SUBGRADE GRADING AND EXCAVATION SPOIL DISPOSAL

Portions of the existing north slope were as steep as 2H:1V. The remedial closure design included regrading (i.e. cutting and filling) of the north slope to flatten the steep portions to at least 3H:1V. The Contractor was required to grade the final subgrade surfaces over the landfill area as necessary to provide final subgrade slopes which were not steeper than 3H:1V and no flatter than 5 percent.

Excavations required for the north slope regrading and for construction of the perimeter leachate collection and barrier wall system encountered waste. The east end of the landfill was relatively flat and provided sufficient space for disposal of excavation spoil material (waste and soils unsuitable for re-use) that was generated during closure construction. This area was re-graded as necessary to provide proper drainage with slopes no steeper than 3H:1V and no flatter than 5 percent.

Construction of the final cover system then proceeded on subgrade surfaces, which had been properly prepared by the Contractor and accepted by GZA.

DECOMMISSIONING OF EXISTING MONITORING WELLS

A total of eight (8) existing monitoring wells on or adjacent to the McKenna Landfill were decommissioned and removed as part of the remedial closure construction project. These wells were designated PL-3TR; OSL-14; B-5; B-8; B-15; McKenna No. 1; McKenna No. 2 and McKenna No. 3. A groundwater level piezometer, PL-6TR, damaged during closure construction, was also decommissioned and removed.

BARRIER/CUT-OFF WALL

A barrier or cut-off wall was installed around the entire perimeter of the landfill and generally follows an alignment at or adjacent to the centerline of the perimeter surface water drainage swales (outside the perimeter leachate collection system piping and structures). The barrier/cut-off wall was designed to extend to the top of bedrock. Bedrock was encountered by the design phase explorations at depths ranging from a few feet to about 13 feet below the existing perimeter grades. The barrier/cut-off wall provides a toe of slope connection for the final cover system to the top of bedrock.

The barrier/cut-off wall consists of a 3 foot wide soil-bentonite (slurry) wall on the north side and at the northeast and northwest corners of the landfill (approximately 1840 feet in length). A slurry wall was proposed along the north side of the site due to the deeper depths to bedrock (i.e. in the range of 10 to 13 feet), and considering the site constraints and slope-back required for a deeper excavation, groundwater conditions and the presence of the barge canal, which required protection against construction disturbance. A root barrier (i.e. vinyl sheet piling) was incorporated on the outside of the soil-bentonite barrier wall in the areas where future plantings (by others) are proposed as part of the overall OSL/McKenna Landfill site development and screening plan.

A compacted low permeability soil (clay) barrier wall was installed along the east, south and west sides of the landfill where the depth to bedrock was generally less than about seven feet below existing grades. Both the soil-bentonite slurry wall and the compacted low permeability soil barrier wall were required to have permeability of $1x10^{-7}$ cm/sec or less.

LEACHATE COLLECTION SYSTEM

The leachate collection system consists of a toe drain system (approximately 3900 feet in length) around the perimeter of the landfill flowing to wet wells located at the northeast and northwest corners of the landfill. The leachate collection pipe and appurtenances are located inside of the barrier/cut-off wall system.

Leachate collection flows along the south side of the landfill to the east and west from a high point located at manhole MH-6. The leachate collection piping then flows northerly along the east and west sides to the wet well locations. Leachate collection flows along the north side of the landfill to the east and west (to the wet well locations) from a high point located at manhole MH-1.

The leachate collection piping consists of perforated, 6 and 8 inch diameter, HDPE pipe. The manholes and wet wells are also constructed of HDPE. The wet wells are 8 feet in diameter and each have a 6 foot deep sump below the lowest incoming pipe.

A geosynthetic leachate collection drainage layer was constructed on the lower portion of the landfill slopes and connects to the leachate collection system at the bottom of slope. The leachate collection drainage layer is a geocomposite drainage layer (geogrid with geotextile bonded top and bottom).

The design required either removing or abandoning in-place the existing leachate collection manholes depending on location and the proposed construction grades.

GAS VENTING SYSTEM

A passive gas venting system was installed for the remedial closure. The gas venting system consists of 19 gas vents on the top portion of the landfill and 12 gas vent points along the perimeter leachate collection system. Gas vents have been provided on some of the leachate collection system cleanout risers and on each of the manhole/wet well structures for venting of the perimeter leachate collection drain system.

Three (3) existing gas vents located on top of the landfill were removed and abandoned prior to construction of the final cover system.

Gas collection trenches (totaling approximately 5340 linear feet) were excavated on the upper portion of the landfill. A cushion geotextile (Geotextile, Type II) was installed beneath the geomembrane barrier on the top portion of the landfill and serve as a limited gas venting layer. The cushion geotextile ties into the gas collection trenches. The leachate collection drainage layer (Geocomposite) on the lower slope areas serve as a primary gas venting layer. The leachate collection/gas venting layer was connected to the gas collection and venting trench located along the upper limit of the layer.

The following controls have been incorporated in the gas venting system to control gas migration from the landfill towards the canal area.

1. The access covers for the wet wells, at the northwest and northeast corners of the landfill were designed to be a bolted air-tight cover, similar to the manholes. Valves were placed on the wet well vents, which will be normally closed, except when the wet wells are to be pumped down.

2. Valves, which will be normally closed, were placed on the vents for manholes MH-1 and MH-2.

3. Valves were placed on the mid-slope gas vents (GV-1 through GV-5), which can be closed if an odor problem develops.

FINAL COVER SYSTEM

The final cover system on the upper portion of the landfill consists of the following components, from final grade down:

- 6 inches of topsoil and seeding,
- 24 inches of barrier protection material,
- A cushion geotextile (i.e. 12 oz./square yard)
- A 60 mil. textured, linear low density polyethylene geomembrane barrier layer, and
- A cushion geotextile, overlying a suitably prepared existing cover soil subgrade.

The final cover system on the lower portion of the landfill consists of the same components as above, with the following exceptions:

- the leachate collection/gas venting layer (geocomposite) was placed between the geomembrane barrier and the suitably prepared subgrade for the portion of landfill below the weep drain; and

- 24 inches of low permeability soil was placed above the cushion geotextile in place of the barrier protection material.

The limits of the final cover system extend to the toe of the landfill slopes and tie in with the perimeter leachate collection and barrier wall system.

An 18-inch thick weep drain was constructed of crushed stone separating the low permeability soil barrier and the barrier protection material. The weep drain was constructed to allow drainage of surface water infiltration from the barrier protection layer.

SURFACE WATER DRAINAGE STRUCTURES

Surface water drainage consists of sheet flow from the landfill slopes to perimeter drainage swales, constructed along the toe of the slopes. The drainage swale along the south side of the landfill is located between the toe of the slope and the north edge of former Yager Road. Flow along the south drainage swale will be both to the west and east from a high point located near manhole MH-6. Drainage along the east and west side swales will be to the north connecting to the drainage swale which flows westerly along the south side of the canal. The existing drainage swale along the south side of the canal was reconstructed and re-graded adjacent to the north slope of the landfill. The drainage structures also included the installation of culvert pipes and the lining of some sections of the drainage swales with rip rap and erosion control material.

ACCESS ROADS

New access roads were constructed along the east and west sides of the landfill to the wet wells for leachate collection and off-site treatment/disposal. Access along the north side of the landfill is executed using the existing canal towpath road. Some subbase stone resurfacing of the canal towpath road has been done in conjunction with final site restoration. Access along the south side of the landfill will continue to be via former Yager Road. Access to the top of the landfill has been provided by a new access road off of the west access road. The existing access road on the east, north and west slopes of the landfill has been abandoned with the final cover construction, however, a bench remains, as part of the final cover system, in the location of the existing access road around the landfill. Access to the north side of the landfill will be via the existing canal towpath.

Three (3) gate structures were installed at the access points to the McKenna Landfill site from the canal towpath. The entrance gate structures are 4 feet high by 20 feet wide, double swing gate structure (two 10 feet wide gates).

APPENDIX D

MATERIALS AND LABORATORY TESTING

STONE PRODUCTS

1. Gas Vent/Drainage Stone

The gas vent/drainage stone was produced at Barre Stone Products, located in Barre, New York. Barre Stone is an approved NYSDOT source (Source No. 4-18R). The stone was a washed crushed stone product, generally having a maximum particle size of 2 inches, and complies with NYSDOT Standard Specifications Section 304. The gas vent/drainage stone was required to have a minimum in-place permeability of 1×10^{-2} cm/sec.

Two bulk samples (nos. 05310-1 and 05310-2) of stone were collected prior to construction. Grain size analyses were made to estimate the suitability of the stone for use in the gas venting system and leachate collection system. A permeability test was also done for sample no. 05310-1. The permeability test result for Sample No. 05310-1 was $1.5 \times 10^{+1}$ cm/sec. This value is greater than the required minimum value of 1×10^{-2} cm/sec, thereby making the material suitable for use for the gas venting system and leachate collection system.

GZA also collected bulk samples of the gas venting and drainage stone at an approximate frequency of one sample per 1,000 cubic yards of stone placed. It is estimated that about 5,000 cubic yards of stone was required to construct the gas venting system and the leachate collection system. GZA collected a total of 5 bulk samples and tested each for gradation. Additionally, 3 samples were tested for permeability, which corresponds to a testing frequency of about one permeability test per 2330 cubic yards (cy). This is a greater frequency than required (1 test per 2,500 cy) in the approved quality assurance/quality control plan. The test results are summarized on Table D1. Testing met project requirements. Included also is laboratory test data from Barre Stone Products.

Table D1

SUMMARY OF BULK SAMPLE LABORATORY TESTING
BARRE STONE PRODUCTS DRAINAGE/GAS VENT STONE

WASTE MANAGEMENT OF NEW YORK
MCKENNA LANDFILL REMEDIAL CLOSURE PROJECT

SAMPLE NUMBER	NATURAL MOISTURE CONTENT (%)	ATTERBERG LIMITS			GRADATION		MODIFIED PROCTOR		RECONSTITUTED PERMEABILITY			
		LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PLASTICITY INDEX	% FINER THAN #200 SEIVE	% FINER THAN 2 MICRONS	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE CONTENT (%)	PERMEABILITY (CM/SEC)	CONFINING PRESSURE (PSF)	TEST DRY DENSITY (PCF)	TEST MOISTURE CONTENT (%)
05310-1					<1				1.5E+01		112.2	3.2
05310-2					<1							
05141-1					1				1.60E+01		113.3	5.2
05141-2					1				1.40E+01		114.5	0.7
12111-1					<1							

May 9, 2000

Mark Keeler
13519 West Lee Road
Albion, New York 14411

ACCEPTABLE FOR DRAINAGE STONE & GAS VENTING STONE

Dear Mark Keeler,

Material Gradation

The following results are from a washed gradation on Item 703.02 (#2 Washed Stone) sampled by a representative of Barre Stone Products.

Sieve Size	Weight Retained	Percent Retained	Percent Passing	Specification
1.5"	0.0	0.0	100	100
1"	0.00	0.0	100	90-100
½"	7.78	86.1	13.9	0-15
¼"	1.28	13.3	0.5	
No.200	0.05	0.4	0.1	0-1.0
Pan	0.01	0.1		
Total	9.12	100		

This material meets all requirements set forth in the specifications.

If you should need any other information, feel free to contact me at 589-1812. We will be happy to assist you in any capacity that we can.

Sincerely,

Todd Krenzer

Todd Krenzer
Quality Control Manger
Barre Stone Products

2. Gas Vent Riser Stone

The gas vent riser stone used around the gas vent riser pipes was produced by Barre Stone Products. The material was an open-graded, washed No. 1A stone product meeting the requirements of the New York State Department of Transportation (NYSDOT) Standard Specifications, Section 703-02 coarse aggregate. Two gradation tests and one constant head permeability test was done during construction. The permeability test result was 2.6 cm/sec. This value is greater than the required minimum value of $1x10^{-2}$ cm/sec, thereby making the material suitable for use as gas vent riser stone. The test results are summarized on Table D2. Included also is laboratory test data from Barre Stone Products.

Table D2

SUMMARY OF BULK SAMPLE LABORATORY TESTING
BARRE STONE PRODUCTS GAS VENT RISER STONE

WASTE MANAGEMENT OF NEW YORK
MCKENNA LANDFILL REMEDIAL CLOSURE PROJECT

SAMPLE NUMBER	NATURAL MOISTURE CONTENT (%)	ATTERBERG LIMITS			GRADATION		MODIFIED PROCTOR		RECONSTITUTED PERMEABILITY			
		LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PLASTICITY INDEX	% FINER THAN #200 SEIVE	% FINER THAN 2 MICRONS	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE CONTENT (%)	PERMEABILITY (CM/SEC)	CONFINING PRESSURE (PSF)	TEST DRY DENSITY (PCF)	TEST MOISTURE CONTENT (%)
05310-3					1				2.6E+00		109.6	1.1
05310-4					1							

May 15, 2000

Mark Keeler
13519 West Lee Road
Albion, New York 14411

ACCEPTABLE FOR FILTER STONE

Dear Mark Keeler,

Material Gradation

The following results are from a washed gradation on Item 703.02 (#1A Washed Stone) sampled by a representative of Barre Stone Products.

Sieve Size	Weight Retained	Percent Retained	Percent Passing	Specification
½"	0.0	0.0	100	100
¼"	0.05	0.4	99.6	90-100
1/8"	11.85	92.9	6.6	0-15
No.200	0.82	6.4	0.3	0-1.0
Pan	0.02	0.3		
Total	12.75	100		

This material meets all requirements set forth in the specifications.

If you should need any other information, feel free to contact me at 589-1812. We will be happy to assist you in any capacity that we can.

Sincerely,

Todd Krenzer

Todd Krenzer
Quality Control Manger
Barre Stone Products

3. Subbase Stone

The subbase stone was used for the construction of the final site access roads and construction of the weep drain. The stone was a 2-inch quarried crusher run meeting the requirements of the NYSDOT, Standard Specifications, Type 4 Subbase Item 304.05. Two gradation tests and one moisture/density test was done during construction. The test results are summarized on Table D3. Included also is laboratory test data from Barre Stone Products.

Table D3

SUMMARY OF BULK SAMPLE LABORATORY TESTING
BARRE STONE PRODUCTS SUBBASE STONE

WASTE MANAGEMENT OF NEW YORK
MCKENNA LANDFILL REMEDIAL CLOSURE PROJECT

SAMPLE NUMBER	NATURAL MOISTURE CONTENT (%)	ATTERBERG LIMITS			GRADATION		MODIFIED PROCTOR		RECONSTITUTED PERMEABILITY			
		LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PLASTICITY INDEX	% FINER THAN #200 SEIVE	% FINER THAN 2 MICRONS	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE CONTENT (%)	PERMEABILITY (CM/SEC)	CONFINING PRESSURE (PSF)	TEST DRY DENSITY (PCF)	TEST MOISTURE CONTENT (%)
05300-1					5		130.3					
05300-2					3							

CME Associates, Inc.

Construction Materials Evaluation

LABORATORY TEST REPORT

CLIENT: Barre Stone **PAGE:** 1 of 1 **DATE:** 01/28/00

PROJECT: 2000 Laboratory Testing **REPORT NO:** 5954S-01-0100

On January 18, 2000 granular material was sampled by a representative of CME Associates, Inc. and delivered to our laboratory for testing as required.

Sample identification is as follows:

Sample No.:	Location/Source:
RL-4328	Pit Stockpile/Barre Stone

MECHANICAL ANALYSIS (ASTM C-136 & C-117)

ACCEPTABLE FOR SUBBASE STONE

Sieve Size	Percent Passing By Weight
2"	100
1 1/2"	98
3/4"	77
3/8"	60
#4	42
#10	26
#40	13
100	9
# 200 (wash)	7.3

MATERIAL CLASSIFICATION

Classification: Run-of-Crush Stone (2" minus)

LABORATORY MOISTURE-DENSITY RELATIONSHIP (ASTM D-1557C & D-4718)

100% Maximum Dry Density = 150.9 pcf
Optimum Moisture Content = 5.5 %

The Laboratory Moisture Density Curve is attached.

Feel free to contact this office should you have any questions.

Respectfully submitted,

CME ASSOCIATES, INC.

Robert V. Knowles, P.E.
Branch Manager

4. Bedding Stone

Bedding stone was used for bedding around drainage culvert pipes and beneath the catch basin and manhole structures. The stone was a 1-inch quarried crusher run meeting the requirements of the NYSDOT, Standard Specifications, Section 304. Three gradation tests and one moisture/density test was done during construction. The test results are summarized on Table D4. Included also is laboratory test data from Barre Stone Products.

LOW PERMEABILITY SOIL

Low permeability soil (LPS) fill for the final cover system construction was obtained from the Walck Brothers borrow pit located in Lockport, New York. The LPS was required to have an in-place permeability less than or equal to 1×10^{-7} centimeters per second (cm/sec). The LPS was also required to have a minimum effective internal angle of friction of 27 degrees.

Approximately 16,500 cubic yards of Walck Brothers borrow was used for LPS barrier construction. Pre-construction and construction testing consisted of natural moisture content, grain size analysis, Atterberg limits, moisture-density relationship, remolded permeability, chemical characterization testing and determination of effective internal angle of friction. Test frequencies are summarized below.

WALCK BROTHERS LPS GEOTECHNICAL LAB TESTING SUMMARY

Test Designation	Required Frequency	Number of Tests Done	Estimated Quantity of Fill Placed	Estimated Test Frequency
Atterberg Limits (ASTM D4318)	Ea. 1,000 Cubic Yards	18	16,500 Cubic Yards	Ea. 900 Cubic Yards Placed
Grain Size Analysis (ASTM D422)	Ea. 2,500 Cubic Yards	9	16,500 Cubic Yards	Ea. 1,800 Cubic Yards Placed
Moisture Density Relationship, Modified Proctor (ASTM D1557)	Ea. 5,000 Cubic Yards	5	16,500 Cubic Yards	Ea. 3,300 Cubic Yards Placed
Remolded Permeability (ASTM D5084)	Ea. 5,000 Cubic Yards	5	16,500 Cubic Yards	Ea. 3,300 Cubic Yards Placed
Angle of Internal Friction	1 per Borrow Source	1	16,500 Cubic Yards	1 per Borrow Source

Geotechnical Testing Summary

A test pad was constructed using Walck Brothers borrow. GZA monitored the test pad construction and submitted a report to NYSDEC[1]. Based on the test results summarized in that report, GZA considered the Walck Brothers borrow source acceptable for LPS.

[1] "Test Pad Construction Summary, Walck Bros. Borrow Site, Lockport, New York" prepared for Waste Management of New York, LLC; by GZA GeoEnvironmental of New York; dated August 22, 2000.

Pre-construction and construction-phase geotechnical testing results are summarized on Table D5.

Also included herein is pre-construction lab testing provided by CSC, including results of triaxial compressive strength testing for the clay. The strength test and accompanying calculation show that the clay has an effective internal angle of friction exceeding 27 degrees when the soil cohesion value from the lab test is considered. The results of the geotechnical testing for the Walck Brothers clay, therefore, indicate the clay was acceptable for use as low permeability soil.

Chemical Testing Summary

Pre-construction chemical characterization testing was done for the Walck Bros. source. Chemical characterization testing was required for every 5,000 cubic yards of soil used. Four samples were tested for a test frequency of about 1 test per 4,100 cubic yards. The samples were tested for the following parameters.

Parameter	Extraction/Preparation [1]	Analysis [1]
TCL[2] Volatile Organic Compounds	5050	8260 (95-1)
TCL Semi-Volatile Organic Compounds	3540/3550	8270 (95-2)
Pesticides/PCB's	3540/3550	8080
Herbicides	3580	8150
TAL[3] Metals	3050	95-M
Cyanide	----	9012

[1] EPA SW-846.
[2] TCL – Target Compound List.
[3] TAL – Target Analyte List.

GZA reviewed the laboratory test results submitted by CSC's analytical laboratory, Upstate Laboratories, Inc., (Upstate) and tabulated the compounds detected for each sample. A table of the compounds detected for each material type is included herein as Table D6, along with the laboratory data. GZA compared the reported chemical concentrations versus recommended soil cleanup objective values and eastern United States background values shown in the tables.

The data shows elevated values for methylene chloride, acetone and antimony. GZA discussed thesed values with Upstate. Upstate stated that the values for the methylene chloride and acetone were probably attributable to laboratory contamination, since these compounds are common laboratory solvents. Upstate also stated that the apparent elevated values for antimony may be caused by matrix interference with other common elements, such as aluminum.

Based on GZA's review and consultation with Upstate, the chemical characterization test results for this material was acceptable. Therefore, the Walck Bros. borrow material was considered acceptable for low permeability soil construction.

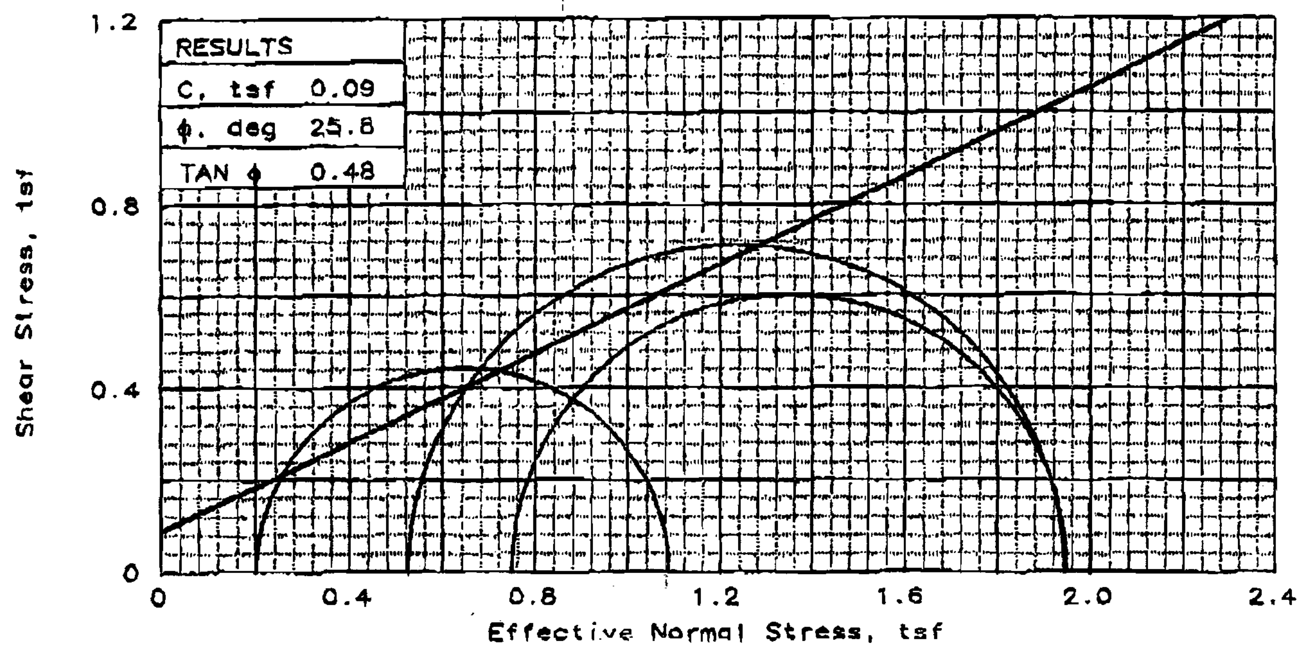
Table D5

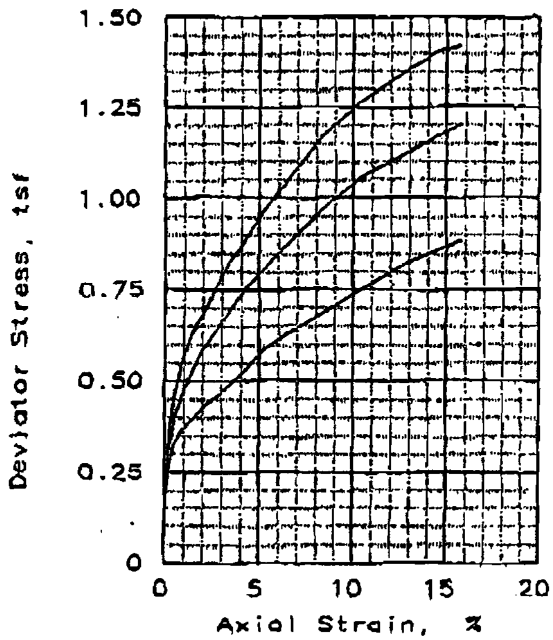
SUMMARY OF BULK SAMPLE LABORATORY TESTING
WALCK CLAY PIT LOW PERMEABILITY BARRIER SOIL

WASTE MANAGEMENT OF NEW YORK

MCKENNA LANDFILL REMEDIAL CLOSURE PROJECT

SAMPLE NUMBER	NATURAL MOISTURE CONTENT (%)	ATTERBERG LIMITS			GRADATION		MODIFIED PROCTOR		RECONSTITUTED PERMEABILITY			
		LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PLASTICITY INDEX	% FINER THAN #200 SEIVE	% FINER THAN 2 MICRONS	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE CONTENT (%)	PERMEABILITY (CM/SEC)	CONFINING PRESSURE (PSF)	TEST DRY DENSITY (PCF)	TEST MOISTURE CONTENT (%)
06270-1	26.7	59	19	40	99	74	110.5	18.5	1.7E-08	720	99.3	20.3
06270-2	25.5	60	19	41								
06270-3	25.5	58	18	40	90	66						
06270-4	27.6	60	20	40								
06270-5	25.4	57	17	40	100	72	111.0	18.5	2.1E-08	720	99.3	18.2
06270-6	26.4	60	19	41								
06270-7	26.3	59	19	40								
06270-8	26.3	63	19	44	100	71						
06270-9	24.3	57	18	39								
06270-10	27.4	62	19	43	99	77	110.5	18.5	1.5E-08	720	99.7	19.9
08210-1	21.6	54	16	38	94		114.0	17.0	2.1E-08	720	102.2	16.9
08210-2	36.5	64	19	45	97							
08300-1	32.3	50	16	34	97		116.0	13.5	4.4E-08	720	104.1	15.3
08300-2	32.3	48	16	32	97							
05071-1	23.1	46	16	30								
05071-2	29.5	53	15	38								
05071-3	23.3	40	16	24								
05071-4	35.5	39	13	26								





SAMPLE NO.:		1	2	3
INITIAL	WATER CONTENT, %	22.2	22.2	22.2
	DRY DENSITY, pcf	96.1	96.4	96.5
	SATURATION, %	81.6	82.1	82.3
	VOID RATIO	0.721	0.717	0.715
	DIAMETER, in	2.80	2.80	2.80
	HEIGHT, in	5.60	5.60	5.60
AT TEST	WATER CONTENT, %	31.1	30.1	29.3
	DRY DENSITY, pcf	96.1	96.4	96.5
	SATURATION, %	114.3	111.1	108.5
	VOID RATIO	0.721	0.717	0.715
	DIAMETER, in	2.80	2.80	2.80
	HEIGHT, in	5.60	5.60	5.60
Strain rate, %/min		0.10	0.10	0.10
EFF CELL PRESSURE, tsf		0.72	1.08	1.44
FAIL. STRESS, tsf		0.89	1.20	1.42
TOTAL PORE PR., tsf		4.12	3.93	4.51
STRAIN, %		15.8	15.8	15.7
ULT. STRESS, tsf				
TOTAL PORE PR., tsf				
STRAIN, %				
$\bar{\sigma}_1$ FAILURE, tsf		1.09	1.95	1.94
$\bar{\sigma}_3$ FAILURE, tsf		0.20	0.75	0.53

TYPE OF TEST:
CU with Pore Pressures
SAMPLE TYPE: Recompacted
DESCRIPTION: Elastic Silt - MH

LL= 54 PL= 24 PI= 30
SPECIFIC GRAVITY= 2.65
REMARKS: 90% Proctor @ 2% Over

Tested By:

CLIENT: Ciminelli

PROJECT: McKenna Landfill

SAMPLE LOCATION: Walck Brothers Clay

PROJ. NO.: 00-1024 DATE: 8-25-00

TRIAXIAL SHEAR TEST REPORT

GLYNN GEOTECHNICAL ENGINEERING

GZA GeoEnvironmental of New York
Engineers and Scientists

Page No. 1/1

Project: McKenna Landfill Closure		File No. 55024	
Location: Albion NY	Date 12-14-01	By BAK	
Subject: Stability Analysis of	Checked	By	
Based on: Proposed Borrow	Revised	By	

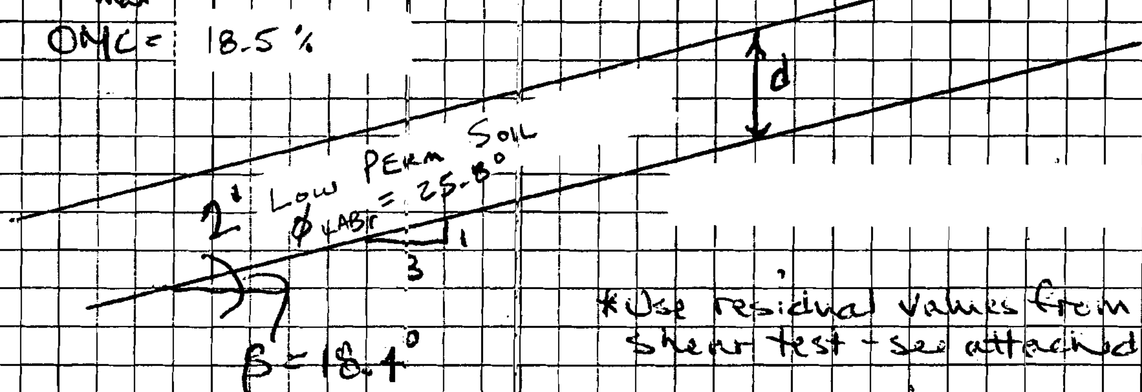
WALCK BROS. CLAY (INTERNAL FRICTION ANGLE)

Infinite Slope Stability Analysis

$$\text{Factor of Safety} = \frac{c' + d\gamma' \cos^2\beta \tan\phi}{d\gamma' \sin\beta \cos\beta} \quad (1)$$

$\gamma_{d\,max}$ = 111.0 PCF c' = .09 TSF = 180 PSF

OMC = 18.5 %



*Use residual values from direct shear test – see attached data sheets

Assume placed @ 90% of maximum dry density and @ 20.5 moisture

$\therefore \gamma = 111.0(.90)(1.205) = 120.4$ PCF

$$\text{Factor of Safety (F)} = \frac{180 \frac{lbs}{ft^2} + 2\,ft\left(120.4 \frac{lbs}{ft^3}\right)\cos^2(18.4)\tan(25.8)}{2\,ft\left(120.4 \frac{lbs}{ft^3}\right)\sin(18.4)\cos(18.4)}$$

$$= \frac{285 \ lbs/ft^2}{72} = 3.9 \checkmark \quad \text{OK}$$

> 1.5

(1) Reference: Course notes "Seepage, Slopes and Embankments" CEE 530, Department of Civil and Environmental Engineering, University of Wisconsin-Madison, Tuncer B. Edil, Ph. 1986.

GGE

a member of the GLYNN GROUP

Civil • Structural • Geotechnical, Materials Testing • Consulting

TRIAXIAL PERMEABILITY

ASTM D-5084

PROJECT: McKENNA LANDFILL

DATE REPORTED: AUGUST 10, 2000

LOCATION: ALBION, NEW YORK

PROJECT NO.: 00-1027

CLIENT: CIMINELLI

SAMPLE NO.: 00-09

DATE RECEIVED: MAY 31, 2000

DEPTH: NOT PROVIDED

SAMPLE DESCRIPTION: LOW PERMEABILITY SOIL MATERIAL - WALCK BROTHERS

SAMPLE CLASSIFICATION: ELASTIC SILT - MH

INITIAL DATA		
Initial Height	7.6	cm
Initial Diameter	7.1	cm
Moisture Content	22.2	%
Wet Density	117.6	pcf
% Proctor	89.9	%

FINAL DATA		
Final Height	7.7	cm
Final Diameter	7.1	cm
Moisture Content	32.5	%
Wet Density	126.3	pcf
Minimum Saturation	98	%

TEST DATA		
Confining Pressure	53	psi
Head Water Pressure	48	psi
Tail Water Pressure	45	psi
Average Gradient, i	30	

NOTES

MATERIAL COMPACTED TO DESIRED DENSITY VIA MANUAL COMPACTION METHODS.

DEAIRED WATER WAS UTILIZED AS THE PERMEANT LIQUID.

RESULTS

AVERAGE PERMEABILITY, K = 1.5×10^{-7} *(cm/sec) at 20° c*

REPORTED BY: ALAN R. HOPKINS

REVIEWED BY: A.R.H. / MARK W. GLYNN, P.E.

DOCFILE:TRIAXRPT

GLYNN GEOTECHNICAL ENGINEERING

415 South Transit Street, Lockport, New York 14094

voice 716.625.6933 / fax 716.625.6983

www.glynngroup.com

SOIL ★ OUR STRENGTH

WALCK BROS. AG. SERVICE INC. Agricultural Lime Products

1080 HINMAN ROAD P. O. BOX 512 • SANBORN, NEW YORK 14132 716 - 433-5480

REPORT OF MATERIALS TESTING

Material: A sample of Clay Material was delivered to on July 24, 1996 from Bowen Road, Lockport, New York. The proposed material was tested in accordance with the proper ASTM requirements. The sample was classified after testing as Clay, some silt, trace sand, trace gravel (CL).

Water (Moisture) Content of Soils and Rock - ASTM D 2216

Water Content (As received) - 24.1 %

Particle Size Analysis of Soils - ASTM D 422

Sieve Size	Percent Passing
1.5"	100
1.0"	99.7
.75"	99.6
.5"	99.6
.375"	99.4
.25"	99.2
#4	99.1
#10	99.0
#20	98.6
#40	98.0
#100	96.5
#200	95.1

Description of Material:

Clay	66.7 %
Silt	28.3 %
Sand	4.1 %
Gravel	0.9 %

Modified Proctor - ASTM D 1557

Maximum Dry Density	114.9 PCF.
Optimum Moisture Content	15.2 %

Soils Permeability - EM - 1110 - 2 - 1906

Average Hydraulic Conductivity	3.6×10^{-8} cm/sec.

Liquid Limit, Plastic Limit, and Plasticity Index of Soils - ASTM D 4318

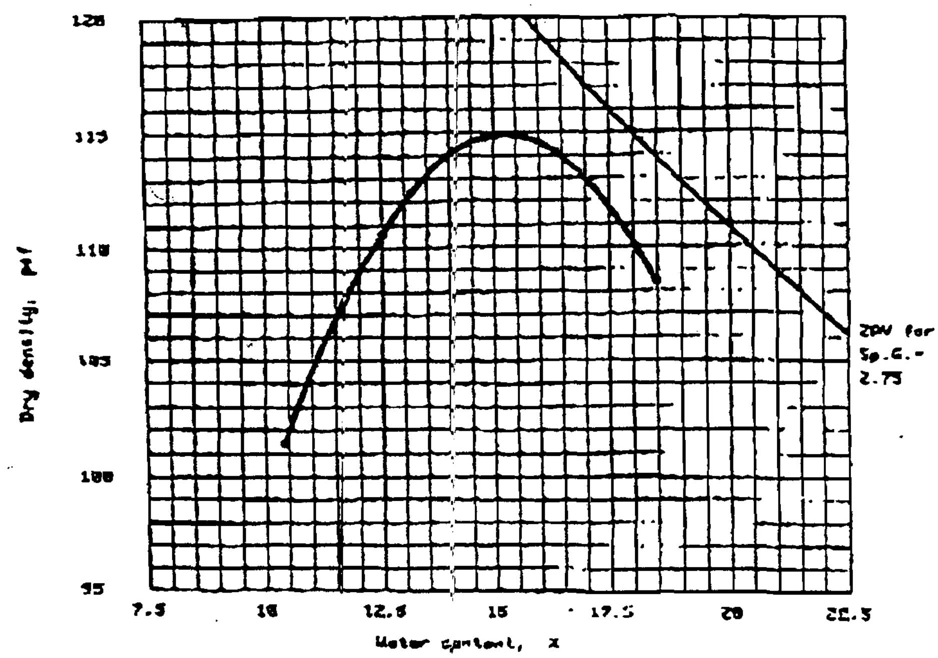
Liquid Limit	35
Plastic Limit	17
Plasticity Index	18

If you should have any questions regarding the data as presented please feel free to contact our office at any time.

Respectfully Submitted,

James T. Handzlik

James T. Handzlik
Civil Manager



Method of Test: Modified Proctor ASTM 1557
Procedure Used: Method "A"
Optimum Water Content: 15.2 %
Maximum Dry Density: 114.9 pcf.
Rammer used: manual

Table D6

Chemical Characterization Test Results for Walck Clay

McKenna Landfill Remedial Closure Project
Albion, New York

Parameter	Recommended Soil Cleanup Objective ppm	Eastern USA Background ppm	Walck Clay (pre-construction) 05/30/2000 ppm	Walck Clay - 5000 08/16/2000 ppm	Walck Clay - 10,000 08/30/2000 ppm	Walck Clay - 15,000 09/13/2000 ppm
VOC - EPA Method 8260 (mg/kg)						
Methylene Chloride	0.1	N/A	0.012	0.025	0.025	0.020
Acetone	0.2	N/A	0.024	0.035	ND	ND
2-Butanone	0.3	N/A	N/D	ND	ND	ND
SVOC - EPA Method 8270 (mg/kg)						
No Compounds Detected		N/A	N/D	NA	NA	NA
HERBICIDES - EPA Method 8150 (mg/kg)						
No Compounds Detected		N/A	N/D	NA	NA	NA
TCL Pesticides/Aroclors EPA Method 8080 (mg/kg)						
No Compounds Detected		N/A	N/D	NA	NA	NA
Priority Pollutant Metals (mg/kg)						
Aluminum	SB	33,000	21000	23,000	23,000	25,000
Antimony	SB	N/A	48	55	46	56
Arsenic	7.5 or SB	3-12	2.5	6.9	5	5.2
Barium	300 or SB	15-600	190	140	170	220
Beryllium	0.16 or SB	0-1.75	1.1	1.6	1.5	1.8
Cadmium	1 or SB	0.1-1	4.3	8.4	6.8	8
Calcium	SB	130-35,000	58,000	68,000	73,000	70,000
Chromium	10 or SB	1.5-40	31	45	43	45
Cobalt	30 or SB	2.5-60	83	86	70	82
Copper	25 or SB	1-50	26	30	20	27
Iron	2000 or SB	2000-550,000	26,000	31,000	25,000	32,000
Lead	SB	See Note 5	N/D	ND	ND	ND
Magnesium	SB	100-5000	12,000	15,000	15,000	15,000
Manganese	SB	50-5000	400	550	510	490
Mercury	0.1	0.001-0.2	N/D	0.22	0.19	0.22
Nickel	13 or SB	0.5-25	43	60	54	61
Potassium	SB	8500-43,000	3900	4300	4000	4900
Selenium	2 or SB	0.1-3.9	N/D	ND	ND	ND
Silver	SB	N/A	N/D	8.6	7.8	7.9
Sodium	SB	6000-8000	340	630	540	530
Thallium	SB	N/A	0.65	ND	ND	ND
Vanadium	150 or SB	1-300	36	57	51	54
Zinc	20 or SB	9-50	64	83	81	77

Notes:
1. Only compounds detected in one or more samples are presented on this table. Refer to original data sheets for list of all compounds included in analysis.
2. Analytical testing completed by Upstate Laboratories, Inc.
3. Recommended soil cleanup objectives are based on the Division Technical and Administrative Guidance Memorandum (TAGM) 4046 on Determination of Soil Cleanup Objectives and Cleanup Levels in its final form.
4. ND = not detected, N/A = not available, NA = not applicable
5. Background levels for lead vary widely. Average levels in undeveloped, rural areas may range from 4-61 ppm. Average background levels in metropolitan or suburban areas or near highways are much higher and typically range from 200-500 ppm.
6. mg/kg = parts per million (ppm)

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by: Client

ID:15200020 Mat:Solid 29-00-0002 MCKENNA LANDFILL WALCH CLAY 1430H 05/30/00 G

	PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
	Percent Solids	93%	06/01/00		WD0453
	Total Cyanide	<1.1mg/kg dw	06/13/00		WD0468
Total	Aluminum	21000mg/kg dw	06/09/00		MB2436
Total	Antimony	48mg/kg dw	06/09/00		MB2436
Total	Arsenic by furnace method	2.5mg/kg dw	06/09/00		MB2438
Total	Barium	190mg/kg dw	06/09/00		MB2436
Total	Beryllium	1.1mg/kg dw	06/09/00		MB2436
Total	Cadmium	4.3mg/kg dw	06/09/00		MB2436
Total	Calcium	58000mg/kg dw	06/09/00		MB2436
Total	Chromium	31mg/kg dw	06/09/00		MB2436
Total	Cobalt	83mg/kg dw	06/09/00		MB24[illegible]
Total	Copper	26mg/kg dw	06/09/00		MB24[illegible]
Total	Iron	26000mg/kg dw	06/09/00		MB2436
Total	Lead	<11mg/kg dw	06/09/00		MB2436
Total	Magnesium	12000mg/kg dw	06/09/00		MB2436
Total	Manganese	400mg/kg dw	06/09/00		MB2436
Total	Mercury	<0.3mg/kg dw	06/06/00		MB2420
Total	Nickel	43mg/kg dw	06/09/00		MB2436
Total	Potassium	3900mg/kg dw	06/12/00		MB2443
Total	Selenium by furnace method	<0.2mg/kg dw	06/09/00		MB2439
Total	Silver	<5.3mg/kg dw	06/09/00		MB2436
Total	Sodium	340mg/kg dw	06/12/00		MB2443
Total	Thallium by furnace method	0.65mg/kg dw	06/14/00		ME2870
Total	Vanadium	36mg/kg dw	06/09/00		MB2436
Total	Zinc	64mg/kg dw	06/09/00		MB2436

TCL Volatiles by EPA Method 8260

	PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
	Chloromethane	<3ug/kg dw	06/06/00		VM2909
	Bromomethane	<3ug/kg dw	06/06/00		VM2909
	Vinyl Chloride	<2ug/kg dw	06/06/00		VM2909
	Chloroethane	<3ug/kg dw	06/06/00		VM2909
	Methylene Chloride	12ug/kg dw	06/06/00	44	VM2909
	Acetone	24ug/kg dw	06/06/00	44	VM2909
	Carbon Disulfide	<3ug/kg dw	06/06/00		VM2909
	1,1-Dichloroethene	<3ug/kg dw	06/06/00		VM2909

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by: Client

ID:15200020 Mat:Solid 29-00-0002 MCKENNA LANDFILL WALCH CLAY 1430H 05/30/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
1,1-Dichloroethane	<3ug/kg dw	06/06/00		VM2909
trans-1,2-Dichloroethene	<3ug/kg dw	06/06/00		VM2909
cis-1,2-Dichloroethene	<3ug/kg dw	06/06/00		VM2909
Chloroform	<3ug/kg dw	06/06/00		VM2909
1,2-Dichloroethane	<3ug/kg dw	06/06/00		VM2909
2-Butanone	<11ug/kg dw	06/06/00		VM2909
1,1,1-Trichloroethane	<3ug/kg dw	06/06/00		VM2909
Carbon Tetrachloride	<3ug/kg dw	06/06/00		VM2909
Bromodichloromethane	<3ug/kg dw	06/06/00		VM2909
1,2-Dichloropropane	<3ug/kg dw	06/06/00		VM2909
cis-1,3-Dichloropropene	<3ug/kg dw	06/06/00		VM2909
Trichloroethene	<3ug/kg dw	06/06/00		VM2909
Dibromochloromethane	<3ug/kg dw	06/06/00		VM2909
1,1,2-Trichloroethane	<3ug/kg dw	06/06/00		VM2909
Benzene	<3ug/kg dw	06/06/00		VM2909
trans-1,3-Dichloropropene	<3ug/kg dw	06/06/00		VM2909
Bromoform	<3ug/kg dw	06/06/00		VM2909
4-Methyl-2-pentanone	<11ug/kg dw	06/06/00		VM2909
2-Hexanone	<11ug/kg dw	06/06/00		VM2909
Tetrachloroethene	<3ug/kg dw	06/06/00		VM2909
1,1,2,2-Tetrachloroethane	<3ug/kg dw	06/06/00		VM2909
Toluene	<3ug/kg dw	06/06/00		VM2909
Chlorobenzene	<3ug/kg dw	06/06/00		VM2909
Ethylbenzene	<3ug/kg dw	06/06/00		VM2909
Styrene	<3ug/kg dw	06/06/00		VM2909
m-Xylene and p-Xylene	<3ug/kg dw	06/06/00		VM2909
o-Xylene	<3ug/kg dw	06/06/00		VM2909
TCL Semivolatiles by EPA Method 8270				
Phenol	<360ug/kg dw	06/07/00		SA2432
bis(2-Chloroethyl)ether	<360ug/kg dw	06/07/00		SA2432
2-Chlorophenol	<360ug/kg dw	06/07/00		SA2432
1,3-Dichlorobenzene	<360ug/kg dw	06/07/00		SA2432
1,4-Dichlorobenzene	<360ug/kg dw	06/07/00		SA2432
1,2-Dichlorobenzene	<360ug/kg dw	06/07/00		SA2432
2-Methylphenol	<360ug/kg dw	06/07/00		SA2432
2,2'-Oxybis(1-Chloropropane)	<360ug/kg dw	06/07/00		SA2432
4-Methylphenol	<360ug/kg dw	06/07/00		SA2432
n-Nitrosodi-n-propylamine	<360ug/kg dw	06/07/00		SA2432
Hexachloroethane	<360ug/kg dw	06/07/00		SA2432
Nitrobenzene	<360ug/kg dw	06/07/00		SA2432
Isophorone	<360ug/kg dw	06/07/00		SA2432
2-Nitrophenol	<360ug/kg dw	06/07/00		SA2432
2,4-Dimethylphenol	<360ug/kg dw	06/07/00		SA2432

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by: Client

ID:15200020 Mat:Solid 29-00-0002 MCKENNA LANDFILL WALCH CLAY 1430H 05/30/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
bis(2-Chloroethoxy)methane	<360ug/kg dw	06/07/00		SA2432
2,4-Dichlorophenol	<360ug/kg dw	06/07/00		SA2432
1,2,4-Trichlorobenzene	<360ug/kg dw	06/07/00		SA2432
Naphthalene	<360ug/kg dw	06/07/00		SA2432
4-Chloroaniline	<360ug/kg dw	06/07/00		SA2432
Hexachlorobutadiene	<360ug/kg dw	06/07/00		SA2432
4-Chloro-3-methylphenol	<360ug/kg dw	06/07/00		SA2432
2-Methylnaphthalene	<360ug/kg dw	06/07/00		SA2432
Hexachlorocyclopentadiene	<360ug/kg dw	06/07/00		SA2432
2,4,6-Trichlorophenol	<360ug/kg dw	06/07/00		SA2432
2,4,5-Trichlorophenol	<360ug/kg dw	06/07/00		SA2432
2-Chloronaphthalene	<360ug/kg dw	06/07/00		SA2432
2-Nitroaniline	<3600ug/kg dw	06/07/00		SA2432
Dimethylphthalate	<360ug/kg dw	06/07/00		SA2432
Acenaphthylene	<360ug/kg dw	06/07/00		SA2432
2,6-Dinitrotoluene	<360ug/kg dw	06/07/00		SA2432
3-Nitroaniline	<3600ug/kg dw	06/07/00		SA2432
Acenaphthene	<360ug/kg dw	06/07/00		SA2432
2,4-Dinitrophenol	<3600ug/kg dw	06/07/00		SA2432
4-Nitrophenol	<3600ug/kg dw	06/07/00		SA243
Dibenzofuran	<360ug/kg dw	06/07/00		SA24
2,4-Dinitrotoluene	<360ug/kg dw	06/07/00		SA2432
Diethylphthalate	<360ug/kg dw	06/07/00		SA2432
4-Chlorophenylphenylether	<360ug/kg dw	06/07/00		SA2432
Fluorene	<360ug/kg dw	06/07/00		SA2432
4-Nitroaniline	<3600ug/kg dw	06/07/00		SA2432
2-Methyl-4,6-dinitrophenol	<3600ug/kg dw	06/07/00		SA2432
n-Nitrosodiphenylamine	<360ug/kg dw	06/07/00		SA2432
4-Bromophenylphenylether	<360ug/kg dw	06/07/00		SA2432
Hexachlorobenzene	<360ug/kg dw	06/07/00		SA2432
Pentachlorophenol	<720ug/kg dw	06/07/00		SA2432
Phenanthrene	<360ug/kg dw	06/07/00		SA2432
Anthracene	<360ug/kg dw	06/07/00		SA2432
Carbazole	<360ug/kg dw	06/07/00		SA2432
di-n-butylphthalate	<360ug/kg dw	06/07/00		SA2432
Fluoranthene	<360ug/kg dw	06/07/00		SA2432
Pyrene	<360ug/kg dw	06/07/00		SA2432
Butylbenzylphthalate	<360ug/kg dw	06/07/00		SA2432
3,3'-Dichlorobenzidine	<360ug/kg dw	06/07/00		SA2432
Benzo(a)anthracene	<360ug/kg dw	06/07/00		SA2432
Chrysene	<360ug/kg dw	06/07/00		SA2432
bis(2-Ethylhexyl)phthalate	<360ug/kg dw	06/07/00		SA2432
di-n-octylphthalate	<360ug/kg dw	06/07/00		SA2432
Benzo(b)fluoranthene	<360ug/kg dw	06/07/00		SA2432

dw = Dry weight

DATE: / /

U- tate Laboratories, Inc.
ysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:_ _ _ _
QC: _ _ _ _ _
Lab I.D.: 10170
Sampled by: Client

ID:15200020 Mat:Solid 29-00-0002 MCKENNA LANDFILL WALCH CLAY 1430H 05/30/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Benzo(k)fluoranthene	<360ug/kg dw	06/07/00		SA2432
Benzo(a)pyrene	<360ug/kg dw	06/07/00		SA2432
Indeno(1,2,3-cd)pyrene	<360ug/kg dw	06/07/00		SA2432
Dibenzo(a,h)anthracene	<360ug/kg dw	06/07/00		SA2432
Benzo(ghi)perylene	<360ug/kg dw	06/07/00		SA2432
EPA Method 8150				
2,4-D	<3.5ug/kg dw	06/13/00		GA0130
2,4,5-T	<3.5ug/kg dw	06/13/00		GA0130
2,4,5-TP (Silvex)	<3.5ug/kg dw	06/13/00		GA0130
Dinoseb	<3.5ug/kg dw	06/13/00		GA0130
TCL Pesticides/Aroclors by EPA 8080				
BHC (a-isomer)	<1.8ug/kg dw	06/13/00		GA0129
BHC (b-isomer)	<1.8ug/kg dw	06/13/00		GA0129
BHC (d-isomer)	<1.8ug/kg dw	06/13/00		GA0129
BHC (g-isomer)	<1.8ug/kg dw	06/13/00		GA0129
Heptachlor	<1.8ug/kg dw	06/13/00		GA0129
Aldrin	<1.8ug/kg dw	06/13/00		GA0129
Heptachlor Epoxide	<1.8ug/kg dw	06/13/00		GA0129
Endosulfan I	<1.8ug/kg dw	06/13/00		GA0129
Dieldrin	<3.5ug/kg dw	06/13/00		GA0129
4,4'-DDE	<3.5ug/kg dw	06/13/00		GA0129
Endrin	<3.5ug/kg dw	06/13/00		GA0129
Endosulfan II	<3.5ug/kg dw	06/13/00		GA0129
4,4'-DDD	<3.5ug/kg dw	06/13/00		GA0129
Endosulfan Sulfate	<3.5ug/kg dw	06/13/00		GA0129
4,4'-DDT	<3.5ug/kg dw	06/13/00		GA0129
Methoxychlor	<18ug/kg dw	06/13/00		GA0129
Endrin Ketone	<3.5ug/kg dw	06/13/00		GA0129
Endrin Aldehyde	<3.5ug/kg dw	06/13/00		GA0129
alpha-Chlordane	<1.8ug/kg dw	06/13/00		GA0129
gamma-Chlordane	<1.8ug/kg dw	06/13/00		GA0129
Toxaphene	<183ug/kg dw	06/13/00		GA0129
Aroclor 1016	<1.8ug/kg dw	06/13/00		GA0129
Aroclor 1221	<1.8ug/kg dw	06/13/00		GA0129
Aroclor 1232	<1.8ug/kg dw	06/13/00		GA0129
Aroclor 1242	<1.8ug/kg dw	06/13/00		GA0129
Aroclor 1248	<1.8ug/kg dw	06/13/00		GA0129
Aroclor 1254	<1.8ug/kg dw	06/13/00		GA0129
Aroclor 1260	<1.8ug/kg dw	06/13/00		GA0129

dw = Dry weight

Upstate Laboratories inc.

Shipping: 6034 Corporate Dr. • E. Syracuse, NY 13057-1017 • (315) 437-0255 • Fax (315) 437-1209
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Binghamton (607) 724-0478
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Rochester (716) 436-9070
New Jersey (201) 703-1324

FACSIMILE TRANSMITTAL

TO: Tom Andrews/John Lang
Ciminelli Services Corp.
FAX NO: 716-447-7005

RE: McKenna Landfill Analytical Results

FROM: Phil Shaw
DATE: October 20, 2000
TIME: 9:30 AM
NUMBER OF PAGES *(including this sheet)*: 13

MESSAGE:

Included are results for the Mckenna Landfill, sampled 8/16/00-9-13/00.

If you have any questions concerning this matter, please give me a call at 315-437-0255.

Thank You,
Phil Shaw

NY Lab ID 10170 NJ Lab ID 73750 PA Lab ID 68375

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
ort Number: 26200206
ent I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by: Client

ID:26200206 Mat:Soil 29-00-0002 MCCKENNA LANDFILL LOW PERM CLAY 5000 0800H 08/16/00 G

	PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
	Percent Solids	80%	09/20/00		WD1834
Total	Aluminum	23000mg/kg dw	10/02/00		MB2870
Total	Antimony	55mg/kg dw	10/02/00		MB2870
Total	Arsenic by furnace method	6.9mg/kg dw	10/16/00		MB2916
Total	Barium	140mg/kg dw	10/02/00		MB2870
Total	Beryllium	1.6mg/kg dw	10/02/00		MB2870
Total	Cadmium	8.4mg/kg dw	10/02/00		MB2870
Total	Calcium	68000mg/kg dw	10/02/00		MB2870
Total	Chromium	45mg/kg dw	10/02/00		MB2870
Total	Cobalt	86mg/kg dw	10/16/09		MB2933
Total	Copper	30mg/kg dw	10/02/00		MB2870
Total	Iron	31000mg/kg dw	10/02/00		MB2870
Total	Lead	<11mg/kg dw	10/02/00		MB2870
Total	Magnesium	15000mg/kg dw	10/02/00		MB2870
Total	Manganese	550mg/kg dw	10/02/00		MB2870
Total	Mercury	0.22mg/kg	09/28/00		MB2866
Total	Nickel	60mg/kg dw	10/02/00		MB2870
Total	Potassium	4300mg/kg dw	10/04/00		MB2878
Total	Selenium by furnace method	<0.2mg/kg dw	10/12/00		MB2910
Total	Silver	8.6mg/kg dw	10/02/00		MB2870
Total	Sodium	630mg/kg dw	10/04/00		MB2878
Total	Thallium by furnace method	<0.4mg/kg dw	10/04/00		ME3190
Total	Vanadium	57mg/kg dw	10/02/00		MB2870
Total	Zinc	83mg/kg dw	10/02/00		MB2870

TCL Volatiles by EPA Method 8260

	PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
	Chloromethane	<4ug/kg dw	09/25/00		VM3056
	Bromomethane	<4ug/kg dw	09/25/00		VM3056
	Vinyl Chloride	<3ug/kg dw	09/25/00		VM3056
	Chloroethane	<4ug/kg dw	09/25/00		VM3056
	Methylene Chloride	25ug/kg dw	09/25/00	44	VM3056
	Acetone	35ug/kg dw	09/25/00	44	VM3056
	Carbon Disulfide	<4ug/kg dw	09/25/00		VM3056
	1,1-Dichloroethene	<4ug/kg dw	09/25/00		VM3056
	1,1-Dichloroethane	<4ug/kg dw	09/25/00		VM3056
	trans-1,2-Dichloroethene	<4ug/kg dw	09/25/00		VM3056
	cis-1,2-Dichloroethene	<4ug/kg dw	09/25/00		VM3056
	Chloroform	<4ug/kg dw	09/25/00		VM3056
	1,2-Dichloroethane	<4ug/kg dw	09/25/00		VM3056
	2-Butanone	<13ug/kg dw	09/25/00		VM3056
	1,1,1-Trichloroethane	<4ug/kg dw	09/25/00		VM3056
	Carbon Tetrachloride	<4ug/kg dw	09/25/00		VM3056
	Bromodichloromethane	<4ug/kg dw	09/25/00		VM3056
	1,2-Dichloropropane	<4ug/kg dw	09/25/00		VM3056

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 26200206
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:_ _ _ _
QC:_ _ _ _
Lab I.D.: 10170
Sampled by: Client

ID:26200206 Mat:Soil 29-00-0002 MCCKENNA LANDFILL LOW PERM CLAY 5000 0800H 08/16/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
cis-1,3-Dichloropropene	<4ug/kg dw	09/25/00		VM3056
Trichloroethene	<4ug/kg dw	09/25/00		VM3056
Dibromochloromethane	<4ug/kg dw	09/25/00		VM3056
1,1,2-Trichloroethane	<4ug/kg dw	09/25/00		VM3056
Benzene	<4ug/kg dw	09/25/00		VM3056
trans-1,3-Dichloropropene	<4ug/kg dw	09/25/00		VM3056
Bromoform	<4ug/kg dw	09/25/00		VM3056
4-Methyl-2-pentanone	<13ug/kg dw	09/25/00		VM3056
2-Hexanone	<13ug/kg dw	09/25/00		VM3056
Tetrachloroethene	<4ug/kg dw	09/25/00		VM3056
1,1,2,2-Tetrachloroethane	<4ug/kg dw	09/25/00		VM3056
Toluene	<4ug/kg dw	09/25/00		VM3056
Chlorobenzene	<4ug/kg dw	09/25/00		VM3056
Ethylbenzene	<4ug/kg dw	09/25/00		VM3056
Styrene	<4ug/kg dw	09/25/00		VM3056
m-Xylene and p-Xylene	<4ug/kg dw	09/25/00		VM3056
o-Xylene	<4ug/kg dw	09/25/00		VM3056
TCL Semivolatiles by EPA Method 8270				
Phenol	<420ug/kg dw	09/28/00		SA2575
bis(2-Chloroethyl)ether	<420ug/kg dw	09/28/00		SA2[illegible]
2-Chlorophenol	<420ug/kg dw	09/28/00		SA2[illegible]
1,3-Dichlorobenzene	<420ug/kg dw	09/28/00		SA2575
1,4-Dichlorobenzene	<420ug/kg dw	09/28/00		SA2575
1,2-Dichlorobenzene	<420ug/kg dw	09/28/00		SA2575
2-Methylphenol	<420ug/kg dw	09/28/00		SA2575
2,2'-Oxybis(1-Chloropropane)	<420ug/kg dw	09/28/00		SA2575
4-Methylphenol	<420ug/kg dw	09/28/00		SA2575
n-Nitrosodi-n-propylamine	<420ug/kg dw	09/28/00		SA2575
Hexachloroethane	<420ug/kg dw	09/28/00		SA2575
Nitrobenzene	<420ug/kg dw	09/28/00		SA2575
Isophorone	<420ug/kg dw	09/28/00		SA2575
2-Nitrophenol	<420ug/kg dw	09/28/00		SA2575
2,4-Dimethylphenol	<420ug/kg dw	09/28/00		SA2575
bis(2-Chloroethoxy)methane	<420ug/kg dw	09/28/00		SA2575
2,4-Dichlorophenol	<420ug/kg dw	09/28/00		SA2575
1,2,4-Trichlorobenzene	<420ug/kg dw	09/28/00		SA2575
Naphthalene	<420ug/kg dw	09/28/00		SA2575
4-Chloroaniline	<420ug/kg dw	09/28/00		SA2575
Hexachlorobutadiene	<420ug/kg dw	09/28/00		SA2575
4-Chloro-3-methylphenol	<420ug/kg dw	09/28/00		SA2575
2-Methylnaphthalene	<420ug/kg dw	09/28/00		SA2575
Hexachlorocyclopentadiene	<420ug/kg dw	09/28/00		SA2575
2,4,6-Trichlorophenol	<420ug/kg dw	09/28/00		SA2575

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 26200206
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by: Client

ID:26200206 Mat:Soil 29-00-0002 MCCKENNA LANDFILL LOW PERM CLAY 5000 0800H 08/16/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
2,4,5-Trichlorophenol	<420ug/kg dw	09/28/00		SA2575
2-Chloronaphthalene	<420ug/kg dw	09/28/00		SA2575
2-Nitroaniline	<4200ug/kg dw	09/28/00		SA2575
Dimethylphthalate	<420ug/kg dw	09/28/00		SA2575
Acenaphthylene	<420ug/kg dw	09/28/00		SA2575
2,6-Dinitrotoluene	<420ug/kg dw	09/28/00		SA2575
3-Nitroaniline	<4200ug/kg dw	09/28/00		SA2575
Acenaphthene	<420ug/kg dw	09/28/00		SA2575
2,4-Dinitrophenol	<4200ug/kg dw	09/28/00		SA2575
4-Nitrophenol	<4200ug/kg dw	09/28/00		SA2575
Dibenzofuran	<420ug/kg dw	09/28/00		SA2575
2,4-Dinitrotoluene	<420ug/kg dw	09/28/00		SA2575
Diethylphthalate	<420ug/kg dw	09/28/00		SA2575
4-Chlorophenylphenylether	<420ug/kg dw	09/28/00		SA2575
Fluorene	<420ug/kg dw	09/28/00		SA2575
4-Nitroaniline	<4200ug/kg dw	09/28/00		SA2575
2-Methyl-4,6-dinitrophenol	<4200ug/kg dw	09/28/00		SA2575
n-Nitrosodiphenylamine	<420ug/kg dw	09/28/00		SA2575
4-Bromophenylphenylether	<420ug/kg dw	09/28/00		SA2575
Hexachlorobenzene	<420ug/kg dw	09/28/00		SA2575
Pentachlorophenol	<830ug/kg dw	09/28/00		SA2575
Phenanthrene	<420ug/kg dw	09/28/00		SA2575
Anthracene	<420ug/kg dw	09/28/00		SA2575
Carbazole	<420ug/kg dw	09/28/00		SA2575
di-n-butylphthalate	<420ug/kg dw	09/28/00		SA2575
Fluoranthene	<420ug/kg dw	09/28/00		SA2575
Pyrene	<420ug/kg dw	09/28/00		SA2575
Butylbenzylphthalate	<420ug/kg dw	09/28/00		SA2575
3,3'-Dichlorobenzidine	<420ug/kg dw	09/28/00		SA2575
Benzo(a)anthracene	<420ug/kg dw	09/28/00		SA2575
Chrysene	<420ug/kg dw	09/28/00		SA2575
bis(2-Ethylhexyl)phthalate	<420ug/kg dw	09/28/00		SA2575
di-n-octylphthalate	<420ug/kg dw	09/28/00		SA2575
Benzo(b)fluoranthene	<420ug/kg dw	09/28/00		SA2575
Benzo(k)fluoranthene	<420ug/kg dw	09/28/00		SA2575
Benzo(a)pyrene	<420ug/kg dw	09/28/00		SA2575
Indeno(1,2,3-cd)pyrene	<420ug/kg dw	09/28/00		SA2575
Dibenzo(a,h)anthracene	<420ug/kg dw	09/28/00		SA2575
Benzo(ghi)perylene	<420ug/kg dw	09/28/00		SA2575
EPA Method 8150				
2,4-D	<41ug/kg dw	10/04/00		GA0358
2,4,5-T	<41ug/kg dw	10/04/00		GA0358
2,4,5-TP (Silvex)	<41ug/kg dw	10/04/00		GA0358

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 26200206
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by: Client

ID:26200206 Mat:Soil 29-00-0002 MCCKENNA LANDFILL LOW PERM CLAY 5000 0800H 08/16/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Dinoseb	<41ug/kg dw	10/04/00		GA0358
PCB (Aroclors) by EPA Method 8080				
Aroclor 1016	<0.1mg/kg dw	10/03/00		GA0355
Aroclor 1221	<0.1mg/kg dw	10/03/00		GA0355
Aroclor 1232	<0.1mg/kg dw	10/03/00		GA0355
Aroclor 1242	<0.1mg/kg dw	10/03/00		GA0355
Aroclor 1248	<0.1mg/kg dw	10/03/00		GA0355
Aroclor 1254	<0.1mg/kg dw	10/03/00		GA0355
Aroclor 1260	<0.1mg/kg dw	10/03/00		GA0355
Total PCB	<0.1mg/kg dw	10/03/00		GA0355
TCL Pesticides by EPA Method 8080				
BHC (a-isomer)	<2.1ug/kg dw	10/03/00		GA0353
BHC (b-isomer)	<2.1ug/kg dw	10/03/00		GA0353
BHC (d-isomer)	<2.1ug/kg dw	10/03/00		GA0353
BHC (g-isomer)	<2.1ug/kg dw	10/03/00		GA0353
Heptachlor	<2.1ug/kg dw	10/03/00		GA0353
Aldrin	<2.1ug/kg dw	10/03/00		GA0353
Heptachlor Epoxide	<2.1ug/kg dw	10/03/00		GA0[illegible]
Endosulfan I	<2.1ug/kg dw	10/03/00		GA0[illegible]
Dieldrin	<4.1ug/kg dw	10/03/00		GA0353
4,4'-DDE	<4.1ug/kg dw	10/03/00		GA0353
Endrin	<4.1ug/kg dw	10/03/00		GA0353
Endosulfan II	<4.1ug/kg dw	10/03/00		GA0353
4,4'-DDD	<4.1ug/kg dw	10/03/00		GA0353
Endosulfan Sulfate	<4.1ug/kg dw	10/03/00		GA0353
4,4'-DDT	<4.1ug/kg dw	10/03/00		GA0353
Methoxychlor	<2.1ug/kg dw	10/03/00		GA0353
Endrin Ketone	<4.1ug/kg dw	10/03/00		GA0353
Endrin Aldehyde	<4.1ug/kg dw	10/03/00		GA0353
alpha-Chlordane	<2.1ug/kg dw	10/03/00		GA0353
gamma-Chlordane	<2.1ug/kg dw	10/03/00		GA0353
Toxaphene	<200ug/kg dw	10/03/00		GA0353

ID:26200207 Mat:Soil 29-00-0002 MCCKENNA LANDFILL LOW PERM CLAY 10000 0800H 08/30/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Percent Solids	81%	09/20/00		WD1834
Total Aluminum	23000mg/kg dw	10/02/00		MB2870
Total Antimony	46mg/kg dw	10/02/00		MB2870
Total Arsenic by furnace method	5.0mg/kg dw	10/16/00		MB2916
Total Barium	170mg/kg dw	10/02/00		MB2870

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 26200206
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by: Client

ID:26200207 Mat:Soil 29-00-0002 MCCKENNA LANDFILL LOW PERM CLAY 10000 0800H 08/30/00 G

PARAMETERS		RESULTS	DATE ANAL.	KEY	FILE#
Total	Beryllium	1.5mg/kg dw	10/02/00		MB2870
Total	Cadmium	6.8mg/kg dw	10/02/00		MB2870
Total	Calcium	73000mg/kg dw	10/02/00		MB2870
Total	Chromium	43mg/kg dw	10/02/00		MB2870
Total	Cobalt	70mg/kg dw	10/19/00		MB2933
Total	Copper	20mg/kg dw	10/02/00		MB2870
Total	Iron	25000mg/kg dw	10/02/00		MB2870
Total	Lead	<12mg/kg dw	10/02/00		MB2870
Total	Magnesium	15000mg/kg dw	10/02/00		MB2870
Total	Manganese	510mg/kg dw	10/02/00		MB2870
Total	Mercury	0.19mg/kg	09/28/00		MB2866
Total	Nickel	54mg/kg dw	10/02/00		MB2870
Total	Potassium	4000mg/kg dw	10/04/00		MB2878
Total	Selenium by furnace method	<0.2mg/kg dw	10/12/00		MB2910
Total	Silver	7.8mg/kg dw	10/02/00		MB2870
Total	Sodium	540mg/kg dw	10/04/00		MB2878
Total	Thallium by furnace method	<0.4mg/kg dw	10/04/00		ME3190
Total	Vanadium	51mg/kg dw	10/02/00		MB2870
Total	Zinc	81mg/kg dw	10/02/00		MB2870
	TCL Volatiles by EPA Method 8260				
	Chloromethane	<4ug/kg dw	09/22/00		VM3051
	Bromomethane	<4ug/kg dw	09/22/00		VM3051
	Vinyl Chloride	<2ug/kg dw	09/22/00		VM3051
	Chloroethane	<4ug/kg dw	09/22/00		VM3051
	Methylene Chloride	25ug/kg dw	09/22/00	44	VM3051
	Acetone	<12ug/kg dw	09/22/00		VM3051
	Carbon Disulfide	<4ug/kg dw	09/22/00		VM3051
	1,1-Dichloroethene	<4ug/kg dw	09/22/00		VM3051
	1,1-Dichloroethane	<4ug/kg dw	09/22/00		VM3051
	trans-1,2-Dichloroethene	<4ug/kg dw	09/22/00		VM3051
	cis-1,2-Dichloroethene	<4ug/kg dw	09/22/00		VM3051
	Chloroform	<4ug/kg dw	09/22/00		VM3051
	1,2-Dichloroethane	<4ug/kg dw	09/22/00		VM3051
	2-Butanone	<12ug/kg dw	09/22/00		VM3051
	1,1,1-Trichloroethane	<4ug/kg dw	09/22/00		VM3051
	Carbon Tetrachloride	<4ug/kg dw	09/22/00		VM3051
	Bromodichloromethane	<4ug/kg dw	09/22/00		VM3051
	1,2-Dichloropropane	<4ug/kg dw	09/22/00		VM3051
	cis-1,3-Dichloropropene	<4ug/kg dw	09/22/00		VM3051
	Trichloroethene	<4ug/kg dw	09/22/00		VM3051
	Dibromochloromethane	<4ug/kg dw	09/22/00		VM3051
	1,1,2-Trichloroethane	<4ug/kg dw	09/22/00		VM3051
	Benzene	<4ug/kg dw	09/22/00		VM3051

dw = Dry weight

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Upstate Laboratories, Inc.
Analysis Results
Report Number: 26200206
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by: Client

ID:26200207 Mat:Soil 29-00-0002 MCCKENNA LANDFILL LOW PERM CLAY 10000 0800H 08/30/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
trans-1,3-Dichloropropene	<4ug/kg dw	09/22/00		VM3051
Bromoform	<4ug/kg dw	09/22/00		VM3051
4-Methyl-2-pentanone	<12ug/kg dw	09/22/00		VM3051
2-Hexanone	<12ug/kg dw	09/22/00		VM3051
Tetrachloroethene	<4ug/kg dw	09/22/00		VM3051
1,1,2,2-Tetrachloroethane	<4ug/kg dw	09/22/00		VM3051
Toluene	<4ug/kg dw	09/22/00		VM3051
Chlorobenzene	<4ug/kg dw	09/22/00		VM3051
Ethylbenzene	<4ug/kg dw	09/22/00		VM3051
Styrene	<4ug/kg dw	09/22/00		VM3051
m-Xylene and p-Xylene	<4ug/kg dw	09/22/00		VM3051
o-Xylene	<4ug/kg dw	09/22/00		VM3051
TCL Semivolatiles by EPA Method 8270				
Phenol	<410ug/kg dw	09/28/00		SA2575
bis(2-Chloroethyl)ether	<410ug/kg dw	09/28/00		SA2575
2-Chlorophenol	<410ug/kg dw	09/28/00		SA2575
1,3-Dichlorobenzene	<410ug/kg dw	09/28/00		SA2575
1,4-Dichlorobenzene	<410ug/kg dw	09/28/00		SA2575
1,2-Dichlorobenzene	<410ug/kg dw	09/28/00		SA2575
2-Methylphenol	<410ug/kg dw	09/28/00		SA2575
2,2'-Oxybis(1-Chloropropane)	<410ug/kg dw	09/28/00		SA2[illegible]
4-Methylphenol	<410ug/kg dw	09/28/00		SA2[illegible]

DATE: / /

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
ort Number: 26200206
ent I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by: Client

ID:26200207 Mat:Soil 29-00-0002 MCCKENNA LANDFILL LOW PERM CLAY 10000 0800H 08/30/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
2,6-Dinitrotoluene	<410ug/kg dw	09/28/00		SA2575
3-Nitroaniline	<4100ug/kg dw	09/28/00		SA2575
Acenaphthene	<410ug/kg dw	09/28/00		SA2575
2,4-Dinitrophenol	<4100ug/kg dw	09/28/00		SA2575
4-Nitrophenol	<4100ug/kg dw	09/28/00		SA2575
Dibenzofuran	<410ug/kg dw	09/28/00		SA2575
2,4-Dinitrotoluene	<410ug/kg dw	09/28/00		SA2575
Diethylphthalate	<410ug/kg dw	09/28/00		SA2575
4-Chlorophenylphenylether	<410ug/kg dw	09/28/00		SA2575
Fluorene	<410ug/kg dw	09/28/00		SA2575
4-Nitroaniline	<4100ug/kg dw	09/28/00		SA2575
2-Methyl-4,6-dinitrophenol	<4100ug/kg dw	09/28/00		SA2575
n-Nitrosodiphenylamine	<410ug/kg dw	09/28/00		SA2575
4-Bromophenylphenylether	<410ug/kg dw	09/28/00		SA2575
Hexachlorobenzene	<410ug/kg dw	09/28/00		SA2575
Pentachlorophenol	<820ug/kg dw	09/28/00		SA2575
Phenanthrene	<410ug/kg dw	09/28/00		SA2575
Anthracene	<410ug/kg dw	09/28/00		SA2575
Carbazole	<410ug/kg dw	09/28/00		SA2575
di-n-butylphthalate	<410ug/kg dw	09/28/00		SA2575
Fluoranthene	<410ug/kg dw	09/28/00		SA2575
Pyrene	<410ug/kg dw	09/28/00		SA2575
Butylbenzylphthalate	<410ug/kg dw	09/28/00		SA2575
3,3'-Dichlorobenzidine	<410ug/kg dw	09/28/00		SA2575
Benzo(a)anthracene	<410ug/kg dw	09/28/00		SA2575
Chrysene	<410ug/kg dw	09/28/00		SA2575
bis(2-Ethylhexyl)phthalate	<410ug/kg dw	09/28/00		SA2575
di-n-octylphthalate	<410ug/kg dw	09/28/00		SA2575
Benzo(b)fluoranthene	<410ug/kg dw	09/28/00		SA2575
Benzo(k)fluoranthene	<410ug/kg dw	09/28/00		SA2575
Benzo(a)pyrene	<410ug/kg dw	09/28/00		SA2575
Indeno(1,2,3-cd)pyrene	<410ug/kg dw	09/28/00		SA2575
Dibenzo(a,h)anthracene	<410ug/kg dw	09/28/00		SA2575
Benzo(ghi)perylene	<410ug/kg dw	09/28/00		SA2575
EPA Method 8150				
2,4-D	<41ug/kg dw	10/04/00		GA0358
2,4,5-T	<41ug/kg dw	10/04/00		GA0358
2,4,5-TP (Silvex)	<41ug/kg dw	10/04/00		GA0358
Dinoseb	<41ug/kg dw	10/04/00		GA0358
PCB (Aroclors) by EPA Method 8080				
Aroclor 1016	<0.1mg/kg dw	10/03/00		GA0355
Aroclor 1221	<0.1mg/kg dw	10/03/00		GA0355

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 26200206
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:_ _ _ _
QC:_ _ _ _ _
Lab I.D.: 10170
Sampled by: Client

ID:26200207 Mat:Soil 29-00-0002 MCCKENNA LANDFILL LOW PERM CLAY 10000 0800H 08/30/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Aroclor 1232	<0.1mg/kg dw	10/03/00		GA0355
Aroclor 1242	<0.1mg/kg dw	10/03/00		GA0355
Aroclor 1248	<0.1mg/kg dw	10/03/00		GA0355
Aroclor 1254	<0.1mg/kg dw	10/03/00		GA0355
Aroclor 1260	<0.1mg/kg dw	10/03/00		GA0355
Total PCB	<0.1mg/kg dw	10/03/00		GA0355
TCL Pesticides by EPA Method 8080				
BHC (a-isomer)	<2.1ug/kg dw	10/03/00		GA0353
BHC (b-isomer)	<2.1ug/kg dw	10/03/00		GA0353
BHC (d-isomer)	<2.1ug/kg dw	10/03/00		GA0353
BHC (g-isomer)	<2.1ug/kg dw	10/03/00		GA0353
Heptachlor	<2.1ug/kg dw	10/03/00		GA0353
Aldrin	<2.1ug/kg dw	10/03/00		GA0353
Heptachlor Epoxide	<2.1ug/kg dw	10/03/00		GA0353
Endosulfan I	<2.1ug/kg dw	10/03/00		GA0353
Dieldrin	<4.1ug/kg dw	10/03/00		GA0353
4,4'-DDE	<4.1ug/kg dw	10/03/00		GA0353
Endrin	<4.1ug/kg dw	10/03/00		GA0353
Endosulfan II	<4.1ug/kg dw	10/03/00		GA0353
4,4'-DDD	<4.1ug/kg dw	10/03/00		GA03[illegible]
Endosulfan Sulfate	<4.1ug/kg dw	10/03/00		GA0[illegible]
4,4'-DDT	<4.1ug/kg dw	10/03/00		GA03[illegible]
Methoxychlor	<21.0ug/kg dw	10/03/00		GA0353
Endrin Ketone	<4.1ug/kg dw	10/03/00		GA0353
Endrin Aldehyde	<4.1ug/kg dw	10/03/00		GA0353
alpha-Chlordane	<2.1ug/kg dw	10/03/00		GA0353
gamma-Chlordane	<2.1ug/kg dw	10/03/00		GA0353
Toxaphene	<200ug/kg dw	10/03/00		GA0353

ID:26200208 Mat:Soil 29-00-0002 MCCKENNA LANDFILL LOW PERM CLAY 15000 1200H 09/13/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Percent Solids	77%	09/20/00		WD1834
Total Aluminum	25000mg/kg dw	10/02/00		MB2870
Total Antimony	56mg/kg dw	10/02/00		MB2870
Total Arsenic by furnace method	5.2mg/kg dw	10/16/00		MB2916
Total Barium	220mg/kg dw	10/02/00		MB2870
Total Beryllium	1.8mg/kg dw	10/02/00		MB2870
Total Cadmium	8.0mg/kg dw	10/02/00		MB2870
Total Calcium	70000mg/kg dw	10/02/00		MB2870
Total Chromium	45mg/kg dw	10/02/00		MB2870
Total Cobalt	82mg/kg dw	10/19/00		MB2933

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
ort Number: 26200206
ent I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL: ___
QC: ___
Lab I.D.: 10170
Sampled by: Client

ID:26200208 Mat:Soil 29-00-0002 MCCKENNA LANDFILL LOW PERM CLAY 15000 1200H 09/13/00 G

	PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Total	Copper	27mg/kg dw	10/02/00		MB2870
Total	Iron	32000mg/kg dw	10/02/00		MB2870
Total	Lead	<11mg/kg dw	10/02/00		MB2870
Total	Magnesium	15000mg/kg dw	10/02/00		MB2870
Total	Manganese	490mg/kg dw	10/02/00		MB2870
Total	Mercury	0.22mg/kg	09/28/00		MB2866
Total	Nickel	61mg/kg dw	10/02/00		MB2870
Total	Potassium	4900mg/kg dw	10/04/00		MB2878
Total	Selenium by furnace method	<0.2mg/kg dw	10/12/00		MB2910
Total	Silver	7.9mg/kg dw	10/02/00		MB2870
Total	Sodium	530mg/kg dw	10/04/00		MB2878
Total	Thallium by furnace method	<0.4mg/kg dw	10/04/00		ME3190
Total	Vanadium	54mg/kg dw	10/02/00		MB2870
Total	Zinc	77mg/kg dw	10/02/00		MB2870
	TCL Volatiles by EPA Method 8260				
	Chloromethane	<4ug/kg dw	09/22/00		VM3051
	Bromomethane	<4ug/kg dw	09/22/00		VM3051
	Vinyl Chloride	<3ug/kg dw	09/22/00		VM3051
	Chloroethane	<4ug/kg dw	09/22/00		VM3051
	Methylene Chloride	20ug/kg dw	09/22/00	44	VM3051
	Acetone	<13ug/kg dw	09/22/00		VM3051
	Carbon Disulfide	<4ug/kg dw	09/22/00		VM3051
	1,1-Dichloroethene	<4ug/kg dw	09/22/00		VM3051
	1,1-Dichloroethane	<4ug/kg dw	09/22/00		VM3051
	trans-1,2-Dichloroethene	<4ug/kg dw	09/22/00		VM3051
	cis-1,2-Dichloroethene	<4ug/kg dw	09/22/00		VM3051
	Chloroform	<4ug/kg dw	09/22/00		VM3051
	1,2-Dichloroethane	<4ug/kg dw	09/22/00		VM3051
	2-Butanone	<13ug/kg dw	09/22/00		VM3051
	1,1,1-Trichloroethane	<4ug/kg dw	09/22/00		VM3051
	Carbon Tetrachloride	<4ug/kg dw	09/22/00		VM3051
	Bromodichloromethane	<4ug/kg dw	09/22/00		VM3051
	1,2-Dichloropropane	<4ug/kg dw	09/22/00		VM3051
	cis-1,3-Dichloropropene	<4ug/kg dw	09/22/00		VM3051
	Trichloroethene	<4ug/kg dw	09/22/00		VM3051
	Dibromochloromethane	<4ug/kg dw	09/22/00		VM3051
	1,1,2-Trichloroethane	<4ug/kg dw	09/22/00		VM3051
	Benzene	<4ug/kg dw	09/22/00		VM3051
	trans-1,3-Dichloropropene	<4ug/kg dw	09/22/00		VM3051
	Bromoform	<4ug/kg dw	09/22/00		VM3051
	4-Methyl-2-pentanone	<13ug/kg dw	09/22/00		VM3051
	2-Hexanone	<13ug/kg dw	09/22/00		VM3051
	Tetrachloroethene	<4ug/kg dw	09/22/00		VM3051

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 26200206
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
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ID:26200208 Mat:Soil 29-00-0002 MCCKENNA LANDFILL LOW PERM CLAY 15000 1200H 09/13/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
1,1,2,2-Tetrachloroethane	<4ug/kg dw	09/22/00		VM3051
Toluene	<4ug/kg dw	09/22/00		VM3051
Chlorobenzene	<4ug/kg dw	09/22/00		VM3051
Ethylbenzene	<4ug/kg dw	09/22/00		VM3051
Styrene	<4ug/kg dw	09/22/00		VM3051
m-Xylene and p-Xylene	<4ug/kg dw	09/22/00		VM3051
o-Xylene	<4ug/kg dw	09/22/00		VM3051
TCL Semivolatiles by EPA Method 8270				
Phenol	<430ug/kg dw	09/28/00		SA2575
bis(2-Chloroethyl)ether	<430ug/kg dw	09/28/00		SA2575
2-Chlorophenol	<430ug/kg dw	09/28/00		SA2575
1,3-Dichlorobenzene	<430ug/kg dw	09/28/00		SA2575
1,4-Dichlorobenzene	<430ug/kg dw	09/28/00		SA2575
1,2-Dichlorobenzene	<430ug/kg dw	09/28/00		SA2575
2-Methylphenol	<430ug/kg dw	09/28/00		SA2575
2,2'-Oxybis(1-Chloropropane)	<430ug/kg dw	09/28/00		SA2575
4-Methylphenol	<430ug/kg dw	09/28/00		SA2575
n-Nitrosodi-n-propylamine	<430ug/kg dw	09/28/00		SA2575
Hexachloroethane	<430ug/kg dw	09/28/00		SA2575
Nitrobenzene	<430ug/kg dw	09/28/00		SA2[illegible]
Isophorone	<430ug/kg dw	09/28/00		SA2[illegible]
2-Nitrophenol	<430ug/kg dw	09/28/00		SA2575
2,4-Dimethylphenol	<430ug/kg dw	09/28/00		SA2575
bis(2-Chloroethoxy)methane	<430ug/kg dw	09/28/00		SA2575
2,4-Dichlorophenol	<430ug/kg dw	09/28/00		SA2575
1,2,4-Trichlorobenzene	<430ug/kg dw	09/28/00		SA2575
Naphthalene	<430ug/kg dw	09/28/00		SA2575
4-Chloroaniline	<430ug/kg dw	09/28/00		SA2575
Hexachlorobutadiene	<430ug/kg dw	09/28/00		SA2575
4-Chloro-3-methylphenol	<430ug/kg dw	09/28/00		SA2575
2-Methylnaphthalene	<430ug/kg dw	09/28/00		SA2575
Hexachlorocyclopentadiene	<430ug/kg dw	09/28/00		SA2575
2,4,6-Trichlorophenol	<430ug/kg dw	09/28/00		SA2575
2,4,5-Trichlorophenol	<430ug/kg dw	09/28/00		SA2575
2-Chloronaphthalene	<430ug/kg dw	09/28/00		SA2575
2-Nitroaniline	<4300ug/kg dw	09/28/00		SA2575
Dimethylphthalate	<430ug/kg dw	09/28/00		SA2575
Acenaphthylene	<430ug/kg dw	09/28/00		SA2575
2,6-Dinitrotoluene	<430ug/kg dw	09/28/00		SA2575
3-Nitroaniline	<4300ug/kg dw	09/28/00		SA2575
Acenaphthene	<430ug/kg dw	09/28/00		SA2575
2,4-Dinitrophenol	<4300ug/kg dw	09/28/00		SA2575
4-Nitrophenol	<4300ug/kg dw	09/28/00		SA2575

dw = Dry weight

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Upstate Laboratories, Inc.
Analysis Results
port Number: 26200206
ient I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
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ID:26200208 Mat:Soil 29-00-0002 MCCKENNA LANDFILL LOW PERM CLAY 15000 1200H 09/13/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Dibenzofuran	<430ug/kg dw	09/28/00		SA2575
2,4-Dinitrotoluene	<430ug/kg dw	09/28/00		SA2575
Diethylphthalate	<430ug/kg dw	09/28/00		SA2575
4-Chlorophenylphenylether	<430ug/kg dw	09/28/00		SA2575
Fluorene	<430ug/kg dw	09/28/00		SA2575
4-Nitroaniline	<4300ug/kg dw	09/28/00		SA2575
2-Methyl-4,6-dinitrophenol	<4300ug/kg dw	09/28/00		SA2575
n-Nitrosodiphenylamine	<430ug/kg dw	09/28/00		SA2575
4-Bromophenylphenylether	<430ug/kg dw	09/28/00		SA2575
Hexachlorobenzene	<430ug/kg dw	09/28/00		SA2575
Pentachlorophenol	<870ug/kg dw	09/28/00		SA2575
Phenanthrene	<430ug/kg dw	09/28/00		SA2575
Anthracene	<430ug/kg dw	09/28/00		SA2575
Carbazole	<430ug/kg dw	09/28/00		SA2575
di-n-butylphthalate	<430ug/kg dw	09/28/00		SA2575
Fluoranthene	<430ug/kg dw	09/28/00		SA2575
Pyrene	<430ug/kg dw	09/28/00		SA2575
Butylbenzylphthalate	<430ug/kg dw	09/28/00		SA2575
3,3'-Dichlorobenzidine	<430ug/kg dw	09/28/00		SA2575
Benzo(a)anthracene	<430ug/kg dw	09/28/00		SA2575
Chrysene	<430ug/kg dw	09/28/00		SA2575
bis(2-Ethylhexyl)phthalate	<430ug/kg dw	09/28/00		SA2575
di-n-octylphthalate	<430ug/kg dw	09/28/00		SA2575
Benzo(b)fluoranthene	<430ug/kg dw	09/28/00		SA2575
Benzo(k)fluoranthene	<430ug/kg dw	09/28/00		SA2575
Benzo(a)pyrene	<430ug/kg dw	09/28/00		SA2575
Indeno(1,2,3-cd)pyrene	<430ug/kg dw	09/28/00		SA2575
Dibenzo(a,h)anthracene	<430ug/kg dw	09/28/00		SA2575
Benzo(ghi)perylene	<430ug/kg dw	09/28/00		SA2575
EPA Method 8150				
2,4-D	<43ug/kg dw	10/04/00		GA0358
2,4,5-T	<43ug/kg dw	10/04/00		GA0358
2,4,5-TP (Silvex)	<43ug/kg dw	10/04/00		GA0358
Dinoseb	<43ug/kg dw	10/04/00		GA0358
PCB (Aroclors) by EPA Method 8080				
Aroclor 1016	<0.1mg/kg dw	10/03/00		GA0355
Aroclor 1221	<0.1mg/kg dw	10/03/00		GA0355
Aroclor 1232	<0.1mg/kg dw	10/03/00		GA0355
Aroclor 1242	<0.1mg/kg dw	10/03/00		GA0355
Aroclor 1248	<0.1mg/kg dw	10/03/00		GA0355
Aroclor 1254	<0.1mg/kg dw	10/03/00		GA0355
Aroclor 1260	<0.1mg/kg dw	10/03/00		GA0355

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 26200206
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by: Client

ID:26200208 Mat:Soil 29-00-0002 MCCKENNA LANDFILL LOW PERM CLAY 15000 1200H 09/13/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Total PCB	<0.1mg/kg dw	10/03/00		GA0355
TCL Pesticides by EPA Method 8080				
BHC (a-isomer)	<2.2ug/kg dw	10/03/00		GA0353
BHC (b-isomer)	<2.2ug/kg dw	10/03/00		GA0353
BHC (d-isomer)	<2.2ug/kg dw	10/03/00		GA0353
BHC (g-isomer)	<2.2ug/kg dw	10/03/00		GA0353
Heptachlor	<2.2ug/kg dw	10/03/00		GA0353
Aldrin	<2.2ug/kg dw	10/03/00		GA0353
Heptachlor Epoxide	<2.2ug/kg dw	10/03/00		GA0353
Endosulfan I	<2.2ug/kg dw	10/03/00		GA0353
Dieldrin	<4.3ug/kg dw	10/03/00		GA0353
4,4'-DDE	<4.3ug/kg dw	10/03/00		GA0353
Endrin	<4.3ug/kg dw	10/03/00		GA0353
Endosulfan II	<4.3ug/kg dw	10/03/00		GA0353
4,4'-DDD	<4.3ug/kg dw	10/03/00		GA0353
Endosulfan Sulfate	<4.3ug/kg dw	10/03/00		GA0353
4,4'-DDT	<4.3ug/kg dw	10/03/00		GA0353
Methoxychlor	<22.0ug/kg dw	10/03/00		GA0353
Endrin Ketone	<4.3ug/kg dw	10/03/00		GA0353
Endrin Aldehyde	<4.3ug/kg dw	10/03/00		GA0[illegible]
alpha-Chlordane	<2.2ug/kg dw	10/03/00		GA[illegible]
gamma-Chlordane	<2.2ug/kg dw	10/03/00		GA0353
Toxaphene	<200ug/kg dw	10/03/00		GA0353

dw = Dry weight

BARRIER PROTECTION SOIL/ SUITABLE FILL

Barrier protection soil (BPS) and suitable fill for the McKenna Landfill Remedial Closure Project construction was obtained from the following sources.

1. Recovery of existing cover soils;
2. Barre Stone Products borrow pit located in Barre, New York; and
3. The Brockport borrow pit located in Brockport, New York.

GZA estimates that approximately 49,000 cubic yards of BPS was used for barrier protection material construction and approximately 18,000 cubic yards of soil was used for suitable fill. Pre-construction and construction laboratory testing for each source consisted of natural moisture content (ASTM D2216), grain size analysis (ASTM D422), Atterberg limits (ASTM D4318), moisture-density relationship (ASTM D1557), remolded permeability (ASTM D5084), internal friction angle testing (minimum friction angle of 27 degrees required) and chemical characterization analysis. Based on the laboratory test results, GZA considered the borrow sources acceptable for use as BPS. Test results are summarized on the following pages.

1. EXISTING COVER SOILS

Geotechnical Testing Summary

Approximately 5,000 and 6,500 cubic yards of the existing cover soil was used for BPS and suitable fill construction, respectively. Test frequencies are summarized on the following page. Table D7 summarizes the geotechnical laboratory test results.

Also included herein are results of triaxial compressive strength testing for the existing cover soils. The test shows that the soil has an effective internal angle of friction exceeding 27 degrees. The results of the geotechnical testing for the existing cover soils, therefore, indicate the soil was acceptable for use as barrier protection material and suitable fill.

EXISTING COVER SOIL BPS & SUITABLE FILL GEOTECHNICAL LAB TESTING SUMMARY

Test Designation	Required Frequency	Number of Tests Done	Estimated Quantity of Fill Placed	Estimated Test Frequency
Atterberg Limits (ASTM D4318)	Ea. 2,500 Cubic Yards	6	11,500 Cubic Yards	Ea. 1,900 Cubic Yards Placed
Moisture Content (ASTM D3017)	Ea. 2,500 Cubic Yards	6	11,500 Cubic Yards	Ea. 1,900 Cubic Yards Placed
Grain Size Analysis (ASTM D422)	Ea. 2,500 Cubic Yards	6	11,500 Cubic Yards	Ea. 1,900 Cubic Yards Placed
Moisture Density Relationship, Modified Proctor (ASTM D1557)	Ea. 5,000 Cubic Yards	4	11,500 Cubic Yards	Ea. 2,900 Cubic Yards Placed
Remolded Permeability (For BPS Only) (ASTM D5084)	Ea. 5,000 Cubic Yards	2	5,000 Cubic Yards	2,500 Cubic Yards Placed
Angle of Internal Friction	1 per Borrow Source	1	11,500 Cubic Yards	1 per Borrow Source

Chemical Testing Summary

Pre-construction chemical characterization testing was done for the on-site cover soils. Chemical characterization testing was required for every 5,000 cubic yards of soil used. Six samples were tested for a test frequency of about 1 test per 1,900 cubic yards. The samples were tested for the following parameters.

Parameter	Extraction/Preparation (1)	Analysis (1)
TCL[2] Volatile Organic Compounds	5050	8260 (95-1)
TCL Semi-Volatile Organic Compounds	3540/3550	8270 (95-2)
Pesticides/PCB's	3540/3550	8080
Herbicides	3580	8150
TAL[3] Metals	3050	95-M
Cyanide	----	9012

[1] EPA SW-846.
[2] TCL – Target Compound List.
[3] TAL – Target Analyte List.

GZA reviewed the laboratory test results submitted by CSC's analytical laboratory, Upstate, and tabulated the compounds detected for each sample. A table of the compounds detected for each material type is included herein as Table D8, along with the laboratory data. GZA compared the reported chemical concentrations versus recommended soil cleanup objective values and eastern United States background values shown in the tables.

Based on GZA's review, the chemical characterization test results for this material was acceptable. Therefore, the on-site cover soil was considered acceptable for barrier protection soil and suitable fill.

Table D7

SUMMARY OF BULK SAMPLE LABORATORY TESTING
ON-SITE COVER MATERIAL
FOR BARRIER PROTECTION SOIL AND SUITABLE FILL

WASTE MANAGEMENT OF NEW YORK
MCKENNA LANDFILL REMEDIAL CLOSURE PROJECT

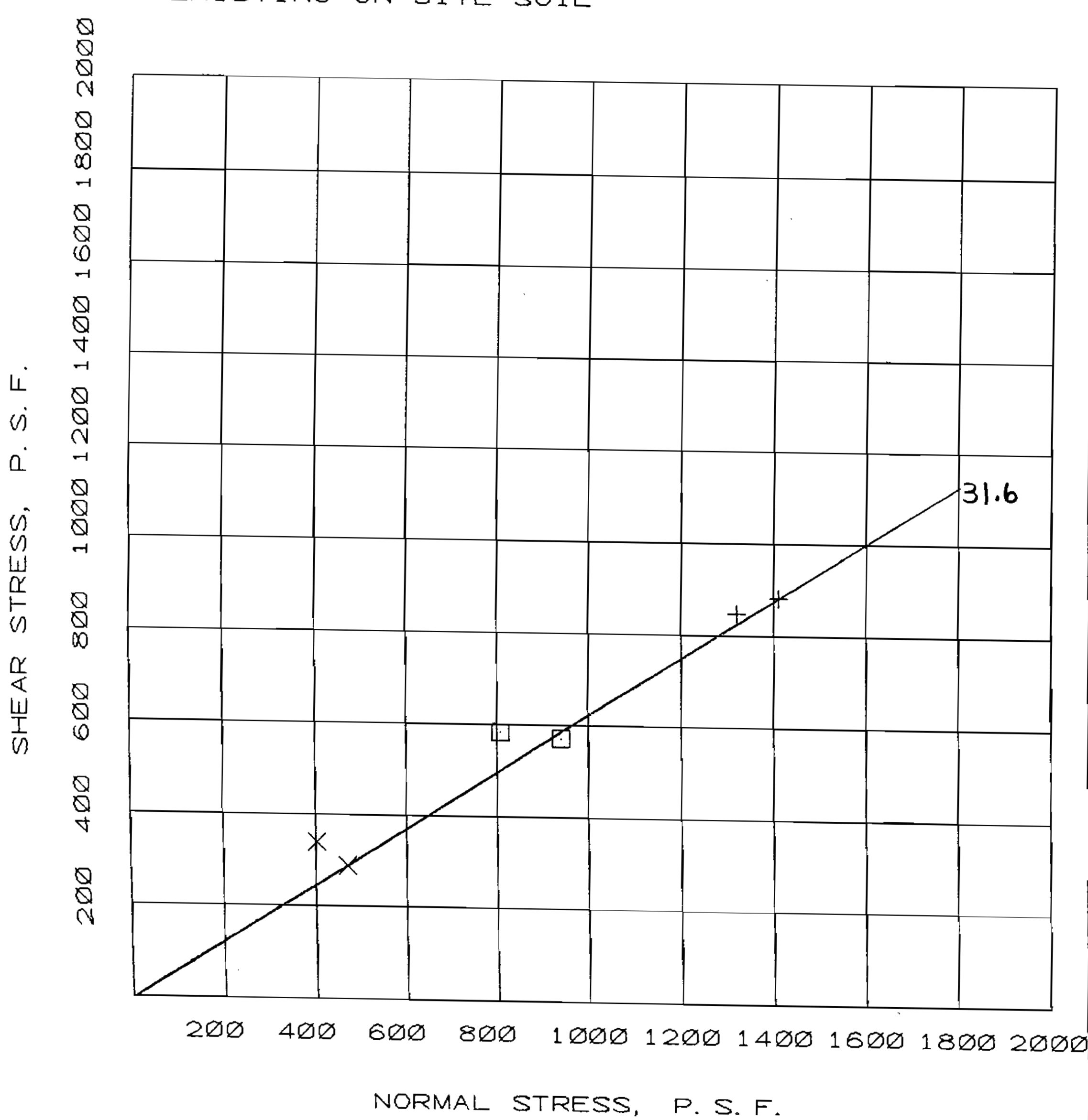
SAMPLE NUMBER	NATURAL MOISTURE CONTENT (%)	ATTERBERG LIMITS			GRADATION		MODIFIED PROCTOR		RECONSTITUTED PERMEABILITY			
		LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PLASTICITY INDEX	% FINER THAN #200 SEIVE	% FINER THAN 2 MICRONS	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE CONTENT (%)	PERMEABILITY (CM/SEC)	CONFINING PRESSURE (PSF)	TEST DRY DENSITY (PCF)	TEST MOISTURE CONTENT (%)
05220-1	13.5	21	17	4	50		124.0	10.5	3.4E-06	7.2E+02	111.8	10.4
08070-1	14.4	35	13	22	60		120.0	12.0				
08070-2	11.6	26	11	15	43							
08070-3	7.6	26	13	13	37		126.5	9.5				
08070-4	20.1	35	14	21	71							
12111-2	13.2	23	13	10	54		131.0	7.5	1.7E-07	7.2E+02	111.5	8.9

Membrane Type:

NA

Sample Description:

EXISTING ON-SITE SOIL



TEST NUMBER		PEAK STRESS: PSF		RESIDUAL STRESS: PSF	
		SHEAR	NORMAL	SHEAR	NORMAL
DS1.3	+	847	1321	881	1411
DS1.1	×	338	402	288	470
DS1.2	⊡	583	808	570	941

TEST NUMBER		RESIDUAL STRESS: PSF		RESIDUAL STRESS: PSF	
		SHEAR	NORMAL	SHEAR	NORMAL
DS1.3	+				
DS1.1	×				
DS1.2	⊡				

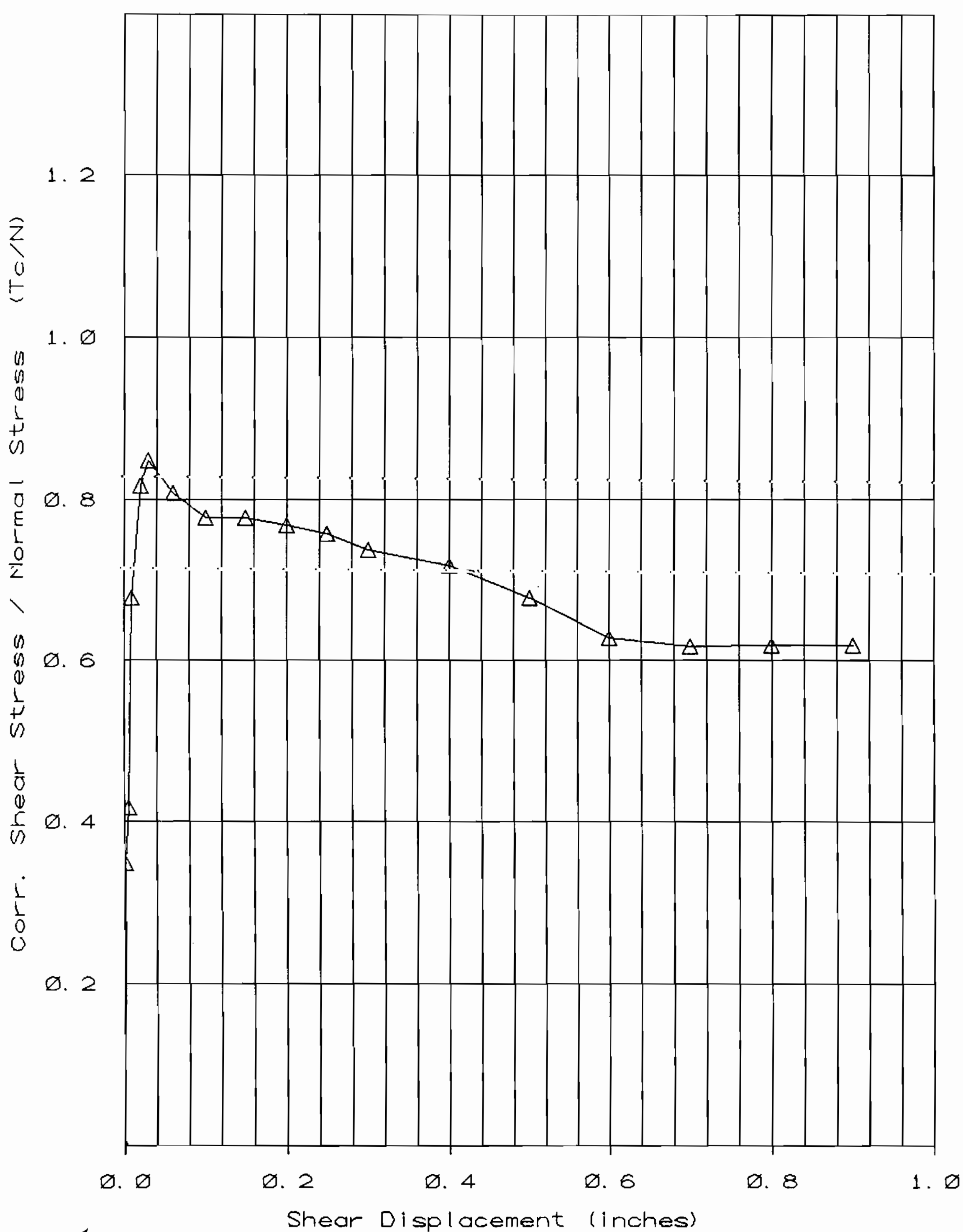
MCKENNA LANDFILL
ALBION NY

DIRECT SHEAR TEST
MOHR ENVELOPE

Tech: MST　　Date: 8-28-00

Reviewer: MCM　　File No: 55024

GZA GeoEnvironmental, Inc.



Test Number:	DS1.1
Normal Stress (psf):	400
IWc (%): FWc (%):	12.0 17.0
Dry Density Before Initial Consol (pcf):	111.6
Dry Density After This Stress (pcf):	112.2
Rate of Shear Deformation (in/min):	.004

Membrane Manufacturer:

Membrane Type:
NA

Surface:
SOIL VS SOIL

Sample Description:
EXISTING ON-SITE SOIL

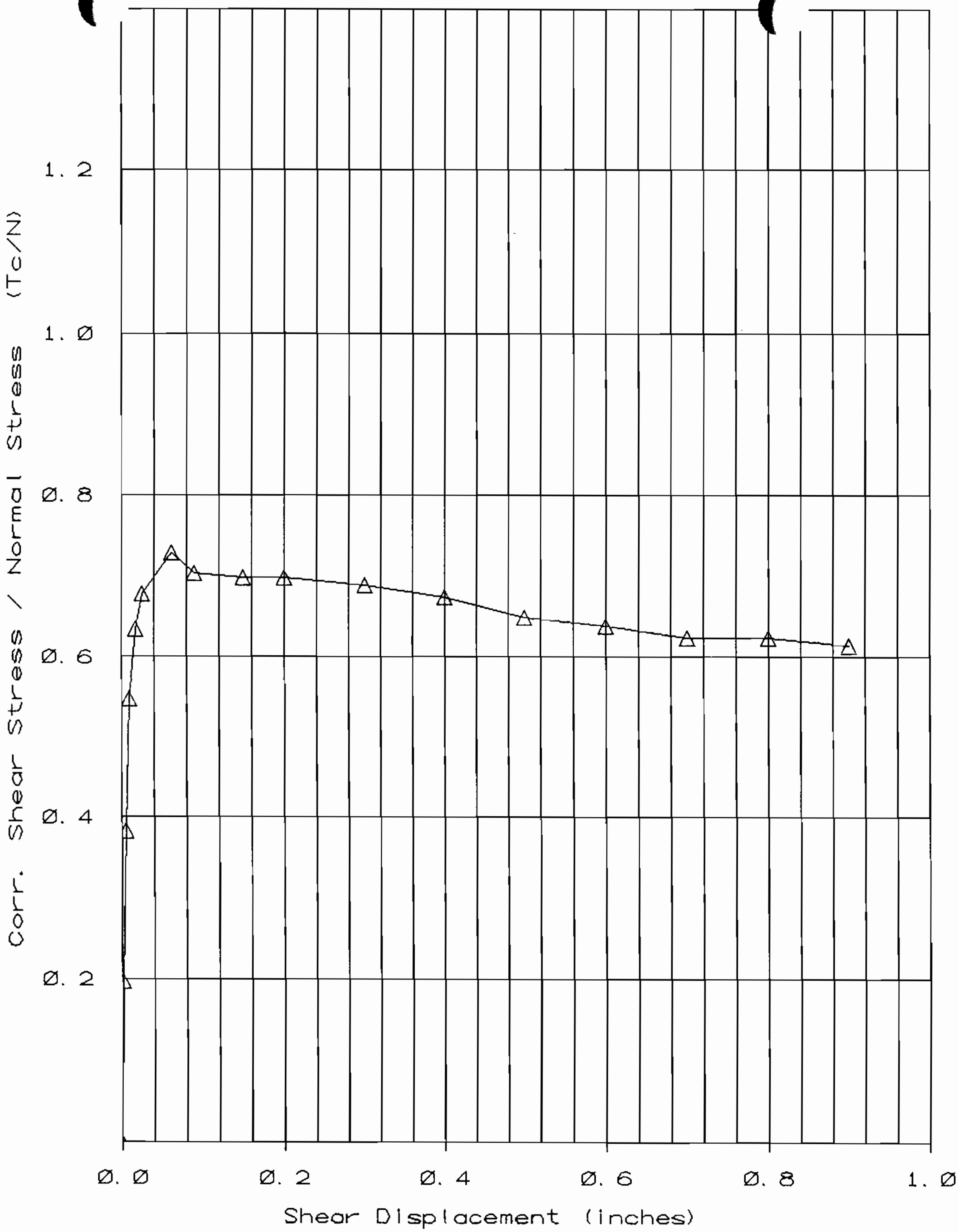
MCKENNA LANDFILL
ALBION, NY.

DIRECT SHEAR TEST

Tech: MST Date: 8-28-00

Reviewer: MCM File No. [illegible]5024

GZA GeoEnvironmental, Inc.



GZA GeoEnvironmental, Inc.

Test Number:	DS1.2
Normal Stress (psf):	800
IWc (%): FWc (%):	12.0 15.9
Dry Density Before Initial Consol (pcf):	111.6
Dry Density After This Stress (pcf):	112.5
Rate of Shear Deformation (in/min):	.004

Membrane Manufacturer:

Membrane Type:
NA

Surface:
SOIL VS SOIL

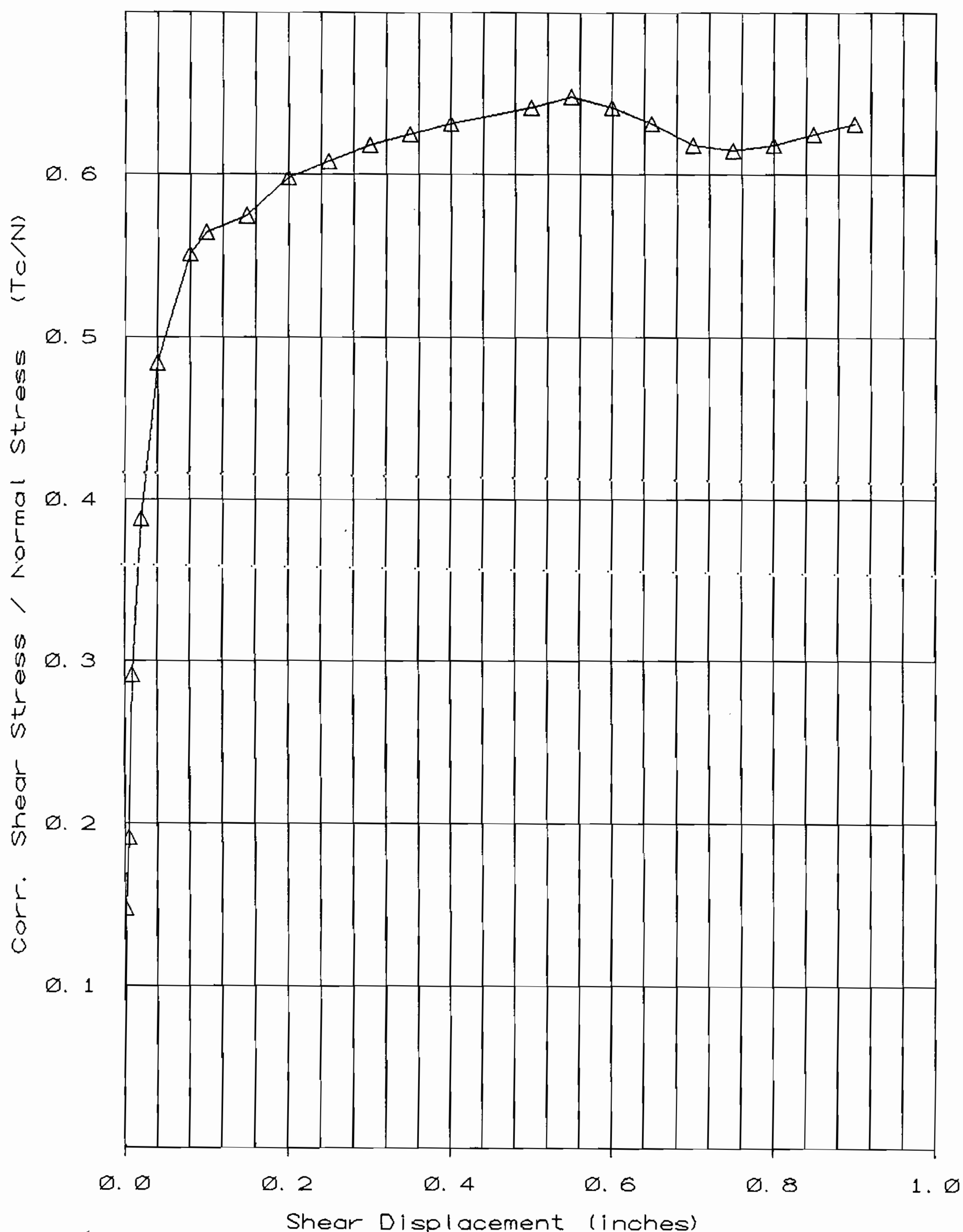
Sample Description:
EXISTING ON-SITE SOIL

MCKENNA LANDFILL
ALBION NY

DIRECT SHEAR TEST

Tech: MST Date: 8-28-00

Reviewer: MCM File No: 55024



Test Number:	DS1.3
Normal Stress (psf):	12ØØ
IWc (%): FWc (%):	12.Ø 15.6
Dry Density Before Initial Consol (pcf):	111.6
Dry Density After This Stress (pcf):	113.2
Rate of Shear Deformation (in/min):	.ØØ4

Membrane Manufacturer:

Membrane Type:
NA

Surface:
SOIL VS. SOIL

Sample Description:
EXISTING ON-SITE SOIL

MCKENNA LANDFILL
ALBION, NY.

DIRECT SHEAR TEST

Tech: MST Date: 8-28-ØØ

Reviewer: MCM File No Ø24

GZA GeoEnvironmental, Inc.

Table D8

Chemical Characterization Results for On-Site Cover Soil Samples
A16, E3, H17, A24, D14 and J5

McKenna Landfill Remedial Closure Project
Albion, New York

Parameter	Recommended Soil Cleanup Objective ppm	Eastern USA Background ppm	A16 ppm	E3 ppm	H17 ppm	A24 ppm	D14 ppm	J5 ppm
VOC - EPA Method 8260 (ppm)								
Methylene Chloride	0.1	N/A	0.013	0.013	0.008	0.011	0.015	0.011
Acetone	0.2	N/A	N/D	N/D	N/D	N/D	N/D	N/D
2-Butanone	0.3	N/A	N/D	N/D	N/D	N/D	N/D	N/D
SVOC - EPA Method 8270 (ppm)								
No Compounds Detected		N/A	N/D	N/D	N/D	N/D	N/D	N/D
HERBICIDES - EPA Method 8150 (ppm)								
2,4 -D	0.5	N/A	N/D	N/D	N/D	N/D	N/D	N/D
TCL Pesticides/Aroclors EPA Method 8080 (ppm)								
4,4' - DDE	2.1	N/A	N/D	N/D	N/D	N/D	N/D	N/D
Priority Pollutant Metals (ppm)								
Aluminum	SB	33,000	8,300	3,500	4,600	7,600	4,000	3,300
Antimony	SB	N/A	N/D	N/D	N/D	N/D	N/D	N/D
Arsenic	7.5 or SB	3-12	5.20	6.60	4.50	2.1	1.6	1.7
Barium	300 or SB	15-600	N/D	N/D	N/D	140	N/D	N/D
Beryllium	0.16 or SB	0-1.75	N/D	N/D	N/D	1	N/D	N/D
Cadmium	1 or SB	0.1-1	1.70	1.10	1.50	2	1	1
Calcium	SB	130-35,000	39,000	21,000	70,000	16,000	36,000	48,000
Chromium	10 or SB	1.5-40	13	7	11	14	7	6
Cobalt	30 or SB	2.5-60	39	21	25	38	24	21
Copper	25 or SB	1-50	12	6.7	15	20	10	7
Iron	2,000 or SB	2,000-550,000	12,000	6,500	7,800	12,000	6,100	4,900
Lead	SB	See Note 5	N/D	N/D	15	60	N/D	N/D
Magnesium	SB	100-5,000	5,100	4,300	10,000	6,000	7,500	2,800
Manganese	SB	50-5,000	340	330	250	330	360	370
Mercury	0.1	0.001-0.2	N/D	N/D	N/D	N/D	N/D	N/D
Nickel	13 or SB	0.5-25	24	12	21	19	15	14
Potassium	SB	8,500-43,000	2,200	730	1,300	380	590	890
Selenium	2 or SB	0.1-3.9	0.23	0.16	N/D	0.22	N/D	0
Silver	SB	N/A	N/D	N/D	N/D	9	7	7
Sodium	SB	6,000-8,000	420	460	440	240	240	320
Thallium	SB	N/A	N/D	N/D	1.30	N/D	1.4	1.4
Vanadium	150 or SB	1-300	N/D	N/D	N/D	N/D	N/D	N/D
Zinc	20 or SB	9-50	45	86	50	76	42	46

Notes:
1. Only compounds detected in one or more samples are presented on this table. Refer to original data sheets for list of all compounds included in analysis.
2. Analytical testing completed by Upstate Laboratories, Inc.
3. Recommended soil cleanup objectives are based on the Division Technical and Administrative Guidance Memorandum (TAGM) 4046 on Determination of Soil Cleanup Objectives and Cleanup Levels in its final form.
4. ND = not detected, NA = not available
5. Background levels for lead vary widely. Average levels in undeveloped, rural areas may range from 4-61 ppm. Average background levels in metropolitan or suburban areas or near highways are much higher and typically range from 200-500 ppm.
6. mg/kg = ppm

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 14000075
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by: Client

ID:15200015 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID A-27 TOPSOIL 0700H 05/30/00 G

	PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
	2,4,5-TP (Silvex)	<4.6ug/kg dw	06/13/00		GA0130
	Dinoseb	<4.6ug/kg dw	06/13/00		GA0130
	TCL Pesticides/Aroclors by EPA 8080				
	BHC (a-isomer)	<2.4ug/kg dw	06/13/00		GA0129
	BHC (b-isomer)	<2.4ug/kg dw	06/13/00		GA0129
	BHC (d-isomer)	<2.4ug/kg dw	06/13/00		GA0129
	BHC (g-isomer)	<2.4ug/kg dw	06/13/00		GA0129
	Heptachlor	<2.4ug/kg dw	06/13/00		GA0129
	Aldrin	<2.4ug/kg dw	06/13/00		GA0129
	Heptachlor Epoxide	<2.4ug/kg dw	06/13/00		GA0129
	Endosulfan I	<2.4ug/kg dw	06/13/00		GA0129
	Dieldrin	<4.6ug/kg dw	06/13/00		GA0129
	4,4'-DDE	<4.6ug/kg dw	06/13/00		GA0129
	Endrin	<4.6ug/kg dw	06/13/00		GA0129
	Endosulfan II	<4.6ug/kg dw	06/13/00		GA0129
	4,4'-DDD	<4.6ug/kg dw	06/13/00		GA0129
	Endosulfan Sulfate	<4.6ug/kg dw	06/13/00		GA012
	4,4'-DDT	<4.6ug/kg dw	06/13/00		GA012
	Methoxychlor	<24.0ug/kg dw	06/13/00		GA0129
	Endrin Ketone	<4.6ug/kg dw	06/13/00		GA0129
	Endrin Aldehyde	<4.6ug/kg dw	06/13/00		GA0129
	alpha-Chlordane	<2.4ug/kg dw	06/13/00		GA0129
	gamma-Chlordane	<2.4ug/kg dw	06/13/00		GA0129
	Toxaphene	<240.0ug/kg dw	06/13/00		GA0129
	Aroclor 1016	<2.4ug/kg dw	06/13/00		GA0129
	Aroclor 1221	<2.4ug/kg dw	06/13/00		GA0129
	Aroclor 1232	<2.4ug/kg dw	06/13/00		GA0129
	Aroclor 1242	<2.4ug/kg dw	06/13/00		GA0129
	Aroclor 1248	<2.4ug/kg dw	06/13/00		GA0129
	Aroclor 1254	<2.4ug/kg dw	06/13/00		GA0129
	Aroclor 1260	<2.4ug/kg dw	06/13/00		GA0129

ID:15200016 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID A-16 COVER 0700H 05/30/00 G

	PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
	Percent Solids	78%	06/01/00		WD0453
	Total Cyanide	<1.2mg/kg dw	06/13/00		WD0468
Total	Aluminum	8300mg/kg dw	06/09/00		MB2436
Total	Antimony	<38mg/kg dw	06/09/00		MB2436
Total	Arsenic by furnace method	5.2mg/kg dw	06/09/00		MB2438
Total	Barium	<38mg/kg dw	06/09/00		MB2436
Total	Beryllium	<0.64mg/kg dw	06/09/00		MB2436

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL: _ _ _
QC: _ _ _ _ Lab I.D.: 10170
Sampled by: Client

ID: 15200016 Mat: Soil 29-00-0002 MCKENNA LANDFILL GRID A-16 COVER 0700H 05/30/00 G

PARAMETERS		RESULTS	DATE ANAL.	KEY	FILE#
Total	Cadmium	1.7mg/kg dw	06/09/00		MB2436
Total	Calcium	59000mg/kg dw	06/09/00		MB2436
Total	Chromium	13mg/kg dw	06/09/00		MB2436
Total	Cobalt	39mg/kg dw	06/09/00		MB2436
Total	Copper	12mg/kg dw	06/09/00		MB2436
Total	Iron	12000mg/kg dw	06/09/00		MB2436
Total	Lead	<13mg/kg dw	06/09/00		MB2436
Total	Magnesium	5100mg/kg dw	06/09/00		MB2436
Total	Manganese	340mg/kg dw	06/09/00		MB2436
Total	Mercury	<0.4mg/kg dw	06/06/00		MB2420
Total	Nickel	24mg/kg dw	06/09/00		MB2436
Total	Potassium	2200mg/kg dw	06/12/00		MB2443
Total	Selenium by furnace method	0.23mg/kg dw	06/09/00		MB2439
Total	Silver	<6.4mg/kg dw	06/09/00		MB2436
Total	Sodium	420mg/kg dw	06/12/00		MB2443
Total	Thallium by furnace method	<0.4mg/kg dw	06/14/00		ME2870
Total	Vanadium	<38mg/kg dw	06/09/00		MB2436
Total	Zinc	45mg/kg dw	06/09/00		MB2436

TCL Volatiles by EPA Method 8260

	RESULTS	DATE ANAL.	KEY	FILE#
Chloromethane	<4ug/kg dw	06/05/00		VM2906
Bromomethane	<4ug/kg dw	06/05/00		VM2906
Vinyl Chloride	<3ug/kg dw	06/05/00		VM2906
Chloroethane	<4ug/kg dw	06/05/00		VM2906
Methylene Chloride	13ug/kg dw	06/05/00	44	VM2906
Acetone	<13ug/kg dw	06/05/00		VM2906
Carbon Disulfide	<4ug/kg dw	06/05/00		VM2906
1,1-Dichloroethene	<4ug/kg dw	06/05/00		VM2906
1,1-Dichloroethane	<4ug/kg dw	06/05/00		VM2906
trans-1,2-Dichloroethene	<4ug/kg dw	06/05/00		VM2906
cis-1,2-Dichloroethene	<4ug/kg dw	06/05/00		VM2906
Chloroform	<4ug/kg dw	06/05/00		VM2906
1,2-Dichloroethane	<4ug/kg dw	06/05/00		VM2906
2-Butanone	<13ug/kg dw	06/05/00		VM2906
1,1,1-Trichloroethane	<4ug/kg dw	06/05/00		VM2906
Carbon Tetrachloride	<4ug/kg dw	06/05/00		VM2906
Bromodichloromethane	<4ug/kg dw	06/05/00		VM2906
1,2-Dichloropropane	<4ug/kg dw	06/05/00		VM2906
cis-1,3-Dichloropropene	<4ug/kg dw	06/05/00		VM2906
Trichloroethene	<4ug/kg dw	06/05/00		VM2906
Dibromochloromethane	<4ug/kg dw	06/05/00		VM2906
1,1,2-Trichloroethane	<4ug/kg dw	06/05/00		VM2906
Benzene	<4ug/kg dw	06/05/00		VM2906
trans-1,3-Dichloropropene	<4ug/kg dw	06/05/00		VM2906

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by: Client

ID: 15200016 Mat: Soil 29-00-0002 MCKENNA LANDFILL GRID A-16 COVER 0700H 05/30/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Bromoform	<4ug/kg dw	06/05/00		VM2906
4-Methyl-2-pentanone	<13ug/kg dw	06/05/00		VM2906
2-Hexanone	<13ug/kg dw	06/05/00		VM2906
Tetrachloroethene	<4ug/kg dw	06/05/00		VM2906
1,1,2,2-Tetrachloroethane	<4ug/kg dw	06/05/00		VM2906
Toluene	<4ug/kg dw	06/05/00		VM2906
Chlorobenzene	<4ug/kg dw	06/05/00		VM2906
Ethylbenzene	<4ug/kg dw	06/05/00		VM2906
Styrene	<4ug/kg dw	06/05/00		VM2906
m-Xylene and p-Xylene	<4ug/kg dw	06/05/00		VM2906
o-Xylene	<4ug/kg dw	06/05/00		VM2906
TCL Semivolatiles by EPA Method 8270				
Phenol	<430ug/kg dw	06/07/00		SA2432
bis(2-Chloroethyl)ether	<430ug/kg dw	06/07/00		SA2432
2-Chlorophenol	<430ug/kg dw	06/07/00		SA2432
1,3-Dichlorobenzene	<430ug/kg dw	06/07/00		SA2432
1,4-Dichlorobenzene	<430ug/kg dw	06/07/00		SA24[illegible]
1,2-Dichlorobenzene	<430ug/kg dw	06/07/00		SA24[illegible]
2-Methylphenol	<430ug/kg dw	06/07/00		SA2432
2,2'-Oxybis(1-Chloropropane)	<430ug/kg dw	06/07/00		SA2432
4-Methylphenol	<430ug/kg dw	06/07/00		SA2432
n-Nitrosodi-n-propylamine	<430ug/kg dw	06/07/00		SA2432
Hexachloroethane	<430ug/kg dw	06/07/00		SA2432
Nitrobenzene	<430ug/kg dw	06/07/00		SA2432
Isophorone	<430ug/kg dw	06/07/00		SA2432
2-Nitrophenol	<430ug/kg dw	06/07/00		SA2432
2,4-Dimethylphenol	<430ug/kg dw	06/07/00		SA2432
bis(2-Chloroethoxy)methane	<430ug/kg dw	06/07/00		SA2432
2,4-Dichlorophenol	<430ug/kg dw	06/07/00		SA2432
1,2,4-Trichlorobenzene	<430ug/kg dw	06/07/00		SA2432
Naphthalene	<430ug/kg dw	06/07/00		SA2432
4-Chloroaniline	<430ug/kg dw	06/07/00		SA2432
Hexachlorobutadiene	<430ug/kg dw	06/07/00		SA2432
4-Chloro-3-methylphenol	<430ug/kg dw	06/07/00		SA2432
2-Methylnaphthalene	<430ug/kg dw	06/07/00		SA2432
Hexachlorocyclopentadiene	<430ug/kg dw	06/07/00		SA2432
2,4,6-Trichlorophenol	<430ug/kg dw	06/07/00		SA2432
2,4,5-Trichlorophenol	<430ug/kg dw	06/07/00		SA2432
2-Chloronaphthalene	<430ug/kg dw	06/07/00		SA2432
2-Nitroaniline	<4300ug/kg dw	06/07/00		SA2432
Dimethylphthalate	<430ug/kg dw	06/07/00		SA2432
Acenaphthylene	<430ug/kg dw	06/07/00		SA2432
2,6-Dinitrotoluene	<430ug/kg dw	06/07/00		SA2432

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by: Client

ID:15200016 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID A-16 COVER 0700H 05/30/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
3-Nitroaniline	<4300ug/kg dw	06/07/00		SA2432
Acenaphthene	<430ug/kg dw	06/07/00		SA2432
2,4-Dinitrophenol	<4300ug/kg dw	06/07/00		SA2432
4-Nitrophenol	<4300ug/kg dw	06/07/00		SA2432
Dibenzofuran	<430ug/kg dw	06/07/00		SA2432
2,4-Dinitrotoluene	<430ug/kg dw	06/07/00		SA2432
Diethylphthalate	<430ug/kg dw	06/07/00		SA2432
4-Chlorophenylphenylether	<430ug/kg dw	06/07/00		SA2432
Fluorene	<430ug/kg dw	06/07/00		SA2432
4-Nitroaniline	<4300ug/kg dw	06/07/00		SA2432
2-Methyl-4,6-dinitrophenol	<4300ug/kg dw	06/07/00		SA2432
n-Nitrosodiphenylamine	<430ug/kg dw	06/07/00		SA2432
4-Bromophenylphenylether	<430ug/kg dw	06/07/00		SA2432
Hexachlorobenzene	<430ug/kg dw	06/07/00		SA2432
Pentachlorophenol	<860ug/kg dw	06/07/00		SA2432
Phenanthrene	<430ug/kg dw	06/07/00		SA2432
Anthracene	<430ug/kg dw	06/07/00		SA2432
Carbazole	<430ug/kg dw	06/07/00		SA2432
di-n-butylphthalate	<430ug/kg dw	06/07/00		SA2432
Fluoranthene	<430ug/kg dw	06/07/00		SA2432
Pyrene	<430ug/kg dw	06/07/00		SA2432
Butylbenzylphthalate	<430ug/kg dw	06/07/00		SA2432
3,3'-Dichlorobenzidine	<430ug/kg dw	06/07/00		SA2432
Benzo(a)anthracene	<430ug/kg dw	06/07/00		SA2432
Chrysene	<430ug/kg dw	06/07/00		SA2432
bis(2-Ethylhexyl)phthalate	<430ug/kg dw	06/07/00		SA2432
di-n-octylphthalate	<430ug/kg dw	06/07/00		SA2432
Benzo(b)fluoranthene	<430ug/kg dw	06/07/00		SA2432
Benzo(k)fluoranthene	<430ug/kg dw	06/07/00		SA2432
Benzo(a)pyrene	<430ug/kg dw	06/07/00		SA2432
Indeno(1,2,3-cd)pyrene	<430ug/kg dw	06/07/00		SA2432
Dibenzo(a,h)anthracene	<430ug/kg dw	06/07/00		SA2432
Benzo(ghi)perylene	<430ug/kg dw	06/07/00		SA2432
EPA Method 8150				
2,4-D	<4.2ug/kg dw	06/13/00		GA0130
2,4,5-T	<4.2ug/kg dw	06/13/00		GA0130
2,4,5-TP (Silvex)	<4.2ug/kg dw	06/13/00		GA0130
Dinoseb	<4.2ug/kg dw	06/13/00		GA0130
TCL Pesticides/Aroclors by EPA 8080				
BHC (a-isomer)	<2.2ug/kg dw	06/13/00		GA0129
BHC (b-isomer)	<2.2ug/kg dw	06/13/00		GA0129
BHC (d-isomer)	<2.2ug/kg dw	06/13/00		GA0129

dw = Dry weight

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Upstate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL: ___
QC: ___
Lab I.D.: 10170
Sampled by: Client

ID:15200016 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID A-16 COVER 0700H 05/30/00 G

	PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
	BHC (g-isomer)	<2.2ug/kg dw	06/13/00		GA0129
	Heptachlor	<2.2ug/kg dw	06/13/00		GA0129
	Aldrin	<2.2ug/kg dw	06/13/00		GA0129
	Heptachlor Epoxide	<2.2ug/kg dw	06/13/00		GA0129
	Endosulfan I	<2.2ug/kg dw	06/13/00		GA0129
	Dieldrin	<4.2ug/kg dw	06/13/00		GA0129
	4,4'-DDE	<4.2ug/kg dw	06/13/00		GA0129
	Endrin	<4.2ug/kg dw	06/13/00		GA0129
	Endosulfan II	<4.2ug/kg dw	06/13/00		GA0129
	4,4'-DDD	<4.2ug/kg dw	06/13/00		GA0129
	Endosulfan Sulfate	<4.2ug/kg dw	06/13/00		GA0129
	4,4'-DDT	<4.2ug/kg dw	06/13/00		GA0129
	Methoxychlor	<22.0ug/kg dw	06/13/00		GA0129
	Endrin Ketone	<4.2ug/kg dw	06/13/00		GA0129
	Endrin Aldehyde	<4.2ug/kg dw	06/13/00		GA0129
	alpha-Chlordane	<2.2ug/kg dw	06/13/00		GA0129
	gamma-Chlordane	<2.2ug/kg dw	06/13/00		GA0129
	Toxaphene	<220ug/kg dw	06/13/00		GA0129
	Aroclor 1016	<2.2ug/kg dw	06/13/00		GA01
	Aroclor 1221	<2.2ug/kg dw	06/13/00		GA01
	Aroclor 1232	<2.2ug/kg dw	06/13/00		GA0129
	Aroclor 1242	<2.2ug/kg dw	06/13/00		GA0129
	Aroclor 1248	<2.2ug/kg dw	06/13/00		GA0129
	Aroclor 1254	<2.2ug/kg dw	06/13/00		GA0129
	Aroclor 1260	<2.2ug/kg dw	06/13/00		GA0129

ID:15200017 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID E-3 COVER 0700H 05/30/00 G

	PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
	Percent Solids	86%	06/01/00		WD0453
	Total Cyanide	<1.1mg/kg dw	06/13/00		WD0468
Total	Aluminum	3500mg/kg dw	06/09/00		MB2436
Total	Antimony	<35mg/kg dw	06/09/00		MB2436
Total	Arsenic by furnace method	6.6mg/kg dw	06/09/00		MB2438
Total	Barium	<35mg/kg dw	06/09/00		MB2436
Total	Beryllium	<0.58mg/kg dw	06/09/00		MB2436
Total	Cadmium	1.1mg/kg dw	06/09/00		MB2436
Total	Calcium	21000mg/kg dw	06/09/00		MB2436
Total	Chromium	7.0mg/kg dw	06/09/00		MB2436
Total	Cobalt	21mg/kg dw	06/09/00		MB2436
Total	Copper	6.7mg/kg dw	06/09/00		MB2436
Total	Iron	6500mg/kg dw	06/09/00		MB2436
Total	Lead	<12mg/kg dw	06/09/00		MB2436

dw = Dry weight

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Upstate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by: Client

ID:15200017 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID E-3 COVER 0700H 05/30/00 G

PARAMETERS		RESULTS	DATE ANAL.	KEY	FILE#
Total	Magnesium	4300mg/kg dw	06/09/00		MB2436
Total	Manganese	330mg/kg dw	06/09/00		MB2436
Total	Mercury	<0.3mg/kg dw	06/06/00		MB2420
Total	Nickel	12mg/kg dw	06/09/00		MB2436
Total	Potassium	730mg/kg dw	06/12/00		MB2443
Total	Selenium by furnace method	0.16mg/kg dw	06/09/00		MB2439
Total	Silver	<5.8mg/kg dw	06/09/00		MB2436
Total	Sodium	460mg/kg dw	06/12/00		MB2443
Total	Thallium by furnace method	<0.4mg/kg dw	06/14/00		ME2870
Total	Vanadium	<35mg/kg dw	06/09/00		MB2436
Total	Zinc	86mg/kg dw	06/09/00		MB2436
	TCL Volatiles by EPA Method 8260				
	Chloromethane	<3ug/kg dw	06/05/00		VM2906
	Bromomethane	<3ug/kg dw	06/05/00		VM2906
	Vinyl Chloride	<2ug/kg dw	06/05/00		VM2906
	Chloroethane	<3ug/kg dw	06/05/00		VM2906
	Methylene Chloride	13ug/kg dw	06/05/00	44	VM2906
	Acetone	<12ug/kg dw	06/05/00		VM2906
	Carbon Disulfide	<3ug/kg dw	06/05/00		VM2906
	1,1-Dichloroethene	<3ug/kg dw	06/05/00		VM2906
	1,1-Dichloroethane	<3ug/kg dw	06/05/00		VM2906
	trans-1,2-Dichloroethene	<3ug/kg dw	06/05/00		VM2906
	cis-1,2-Dichloroethene	<3ug/kg dw	06/05/00		VM2906
	Chloroform	<3ug/kg dw	06/05/00		VM2906
	1,2-Dichloroethane	<3ug/kg dw	06/05/00		VM2906
	2-Butanone	<12ug/kg dw	06/05/00		VM2906
	1,1,1-Trichloroethane	<3ug/kg dw	06/05/00		VM2906
	Carbon Tetrachloride	<3ug/kg dw	06/05/00		VM2906
	Bromodichloromethane	<3ug/kg dw	06/05/00		VM2906
	1,2-Dichloropropane	<3ug/kg dw	06/05/00		VM2906
	cis-1,3-Dichloropropene	<3ug/kg dw	06/05/00		VM2906
	Trichloroethene	<3ug/kg dw	06/05/00		VM2906
	Dibromochloromethane	<3ug/kg dw	06/05/00		VM2906
	1,1,2-Trichloroethane	<3ug/kg dw	06/05/00		VM2906
	Benzene	<3ug/kg dw	06/05/00		VM2906
	trans-1,3-Dichloropropene	<3ug/kg dw	06/05/00		VM2906
	Bromoform	<3ug/kg dw	06/05/00		VM2906
	4-Methyl-2-pentanone	<12ug/kg dw	06/05/00		VM2906
	2-Hexanone	<12ug/kg dw	06/05/00		VM2906
	Tetrachloroethene	<3ug/kg dw	06/05/00		VM2906
	1,1,2,2-Tetrachloroethane	<3ug/kg dw	06/05/00		VM2906
	Toluene	<3ug/kg dw	06/05/00		VM2906
	Chlorobenzene	<3ug/kg dw	06/05/00		VM2906

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:_ _ _ _
QC:_ _ _ _ Lab I.D.: 10170
Sampled by: Client

ID:15200017 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID E-3 COVER 0700H 05/30/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Ethylbenzene	<3ug/kg dw	06/05/00		VM2906
Styrene	<3ug/kg dw	06/05/00		VM2906
m-Xylene and p-Xylene	<3ug/kg dw	06/05/00		VM2906
o-Xylene	<3ug/kg dw	06/05/00		VM2906
TCL Semivolatiles by EPA Method 8270				
Phenol	<390ug/kg dw	06/07/00		SA2432
bis(2-Chloroethyl)ether	<390ug/kg dw	06/07/00		SA2432
2-Chlorophenol	<390ug/kg dw	06/07/00		SA2432
1,3-Dichlorobenzene	<390ug/kg dw	06/07/00		SA2432
1,4-Dichlorobenzene	<390ug/kg dw	06/07/00		SA2432
1,2-Dichlorobenzene	<390ug/kg dw	06/07/00		SA2432
2-Methylphenol	<390ug/kg dw	06/07/00		SA2432
2,2'-Oxybis(1-Chloropropane)	<390ug/kg dw	06/07/00		SA2432
4-Methylphenol	<390ug/kg dw	06/07/00		SA2432
n-Nitrosodi-n-propylamine	<390ug/kg dw	06/07/00		SA2432
Hexachloroethane	<390ug/kg dw	06/07/00		SA2432
Nitrobenzene	<390ug/kg dw	06/07/00		SA2[illegible]
Isophorone	<390ug/kg dw	06/07/00		SA2[illegible]
2-Nitrophenol	<390ug/kg dw	06/07/00		SA2432
2,4-Dimethylphenol	<390ug/kg dw	06/07/00		SA2432
bis(2-Chloroethoxy)methane	<390ug/kg dw	06/07/00		SA2432
2,4-Dichlorophenol	<390ug/kg dw	06/07/00		SA2432
1,2,4-Trichlorobenzene	<390ug/kg dw	06/07/00		SA2432
Naphthalene	<390ug/kg dw	06/07/00		SA2432
4-Chloroaniline	<390ug/kg dw	06/07/00		SA2432
Hexachlorobutadiene	<390ug/kg dw	06/07/00		SA2432
4-Chloro-3-methylphenol	<390ug/kg dw	06/07/00		SA2432
2-Methylnaphthalene	<390ug/kg dw	06/07/00		SA2432
Hexachlorocyclopentadiene	<390ug/kg dw	06/07/00		SA2432
2,4,6-Trichlorophenol	<390ug/kg dw	06/07/00		SA2432
2,4,5-Trichlorophenol	<390ug/kg dw	06/07/00		SA2432
2-Chloronaphthalene	<390ug/kg dw	06/07/00		SA2432
2-Nitroaniline	<3900ug/kg dw	06/07/00		SA2432
Dimethylphthalate	<390ug/kg dw	06/07/00		SA2432
Acenaphthylene	<390ug/kg dw	06/07/00		SA2432
2,6-Dinitrotoluene	<390ug/kg dw	06/07/00		SA2432
3-Nitroaniline	<3900ug/kg dw	06/07/00		SA2432
Acenaphthene	<390ug/kg dw	06/07/00		SA2432
2,4-Dinitrophenol	<3900ug/kg dw	06/07/00		SA2432
4-Nitrophenol	<3900ug/kg dw	06/07/00		SA2432
Dibenzofuran	<390ug/kg dw	06/07/00		SA2432
2,4-Dinitrotoluene	<390ug/kg dw	06/07/00		SA2432
Diethylphthalate	<390ug/kg dw	06/07/00		SA2432

dw = Dry weight

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Upstate Laboratories, Inc.
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Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL: _ _ _ _
QC: _ _ _ _
Lab I.D.: 10170
Sampled by: Client

ID:15200017 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID E-3 COVER 0700H 05/30/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
4-Chlorophenylphenylether	<390ug/kg dw	06/07/00		SA2432
Fluorene	<390ug/kg dw	06/07/00		SA2432
4-Nitroaniline	<3900ug/kg dw	06/07/00		SA2432
2-Methyl-4,6-dinitrophenol	<3900ug/kg dw	06/07/00		SA2432
n-Nitrosodiphenylamine	<390ug/kg dw	06/07/00		SA2432
4-Bromophenylphenylether	<390ug/kg dw	06/07/00		SA2432
Hexachlorobenzene	<390ug/kg dw	06/07/00		SA2432
Pentachlorophenol	<780ug/kg dw	06/07/00		SA2432
Phenanthrene	<390ug/kg dw	06/07/00		SA2432
Anthracene	<390ug/kg dw	06/07/00		SA2432
Carbazole	<390ug/kg dw	06/07/00		SA2432
di-n-butylphthalate	<390ug/kg dw	06/07/00		SA2432
Fluoranthene	<390ug/kg dw	06/07/00		SA2432
Pyrene	<390ug/kg dw	06/07/00		SA2432
Butylbenzylphthalate	<390ug/kg dw	06/07/00		SA2432
3,3'-Dichlorobenzidine	<390ug/kg dw	06/07/00		SA2432
Benzo(a)anthracene	<390ug/kg dw	06/07/00		SA2432
Chrysene	<390ug/kg dw	06/07/00		SA2432
bis(2-Ethylhexyl)phthalate	<390ug/kg dw	06/07/00		SA2432
di-n-octylphthalate	<390ug/kg dw	06/07/00		SA2432
Benzo(b)fluoranthene	<390ug/kg dw	06/07/00		SA2432
Benzo(k)fluoranthene	<390ug/kg dw	06/07/00		SA2432
Benzo(a)pyrene	<390ug/kg dw	06/07/00		SA2432
Indeno(1,2,3-cd)pyrene	<390ug/kg dw	06/07/00		SA2432
Dibenzo(a,h)anthracene	<390ug/kg dw	06/07/00		SA2432
Benzo(ghi)perylene	<390ug/kg dw	06/07/00		SA2432
EPA Method 8150				
2,4-D	<3.8ug/kg dw	06/13/00		GA0130
2,4,5-T	<3.8ug/kg dw	06/13/00		GA0130
2,4,5-TP (Silvex)	<3.8ug/kg dw	06/13/00		GA0130
Dinoseb	<3.8ug/kg dw	06/13/00		GA0130
TCL Pesticides/Aroclors by EPA 8080				
BHC (a-isomer)	<2.0ug/kg dw	06/13/00		GA0129
BHC (b-isomer)	<2.0ug/kg dw	06/13/00		GA0129
BHC (d-isomer)	<2.0ug/kg dw	06/13/00		GA0129
BHC (g-isomer)	<2.0ug/kg dw	06/13/00		GA0129
Heptachlor	<2.0ug/kg dw	06/13/00		GA0129
Aldrin	<2.0ug/kg dw	06/13/00		GA0129
Heptachlor Epoxide	<2.0ug/kg dw	06/13/00		GA0129
Endosulfan I	<2.0ug/kg dw	06/13/00		GA0129
Dieldrin	<3.8ug/kg dw	06/13/00		GA0129
4,4'-DDE	<3.8ug/kg dw	06/13/00		GA0129

dw = Dry weight

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Upstate Laboratories, Inc.
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Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by: Client

ID:15200017 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID E-3 COVER 0700H 05/30/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Endrin	<3.8ug/kg dw	06/13/00		GA0129
Endosulfan II	<3.8ug/kg dw	06/13/00		GA0129
4,4'-DDD	<3.8ug/kg dw	06/13/00		GA0129
Endosulfan Sulfate	<3.8ug/kg dw	06/13/00		GA0129
4,4'-DDT	<3.8ug/kg dw	06/13/00		GA0129
Methoxychlor	<20.0ug/kg dw	06/13/00		GA0129
Endrin Ketone	<3.8ug/kg dw	06/13/00		GA0129
Endrin Aldehyde	<3.8ug/kg dw	06/13/00		GA0129
alpha-Chlordane	<2.0ug/kg dw	06/13/00		GA0129
gamma-Chlordane	<2.0ug/kg dw	06/13/00		GA0129
Toxaphene	<200ug/kg dw	06/13/00		GA0129
Aroclor 1016	<2.0ug/kg dw	06/13/00		GA0129
Aroclor 1221	<2.0ug/kg dw	06/13/00		GA0129
Aroclor 1232	<2.0ug/kg dw	06/13/00		GA0129
Aroclor 1242	<2.0ug/kg dw	06/13/00		GA0129
Aroclor 1248	<2.0ug/kg dw	06/13/00		GA0129
Aroclor 1254	<2.0ug/kg dw	06/13/00		GA0129
Aroclor 1260	<2.0ug/kg dw	06/13/00		GA0129

ID:15200018 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID H-17 COVER 0700H 05/30/00 G

	PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
	Percent Solids	80%	06/01/00		WD0453
	Total Cyanide	<1.2mg/kg dw	06/13/00		WD0468
Total	Aluminum	4600mg/kg dw	06/09/00		MB2436
Total	Antimony	<40mg/kg dw	06/09/00		MB2436
Total	Arsenic by furnace method	4.5mg/kg dw	06/09/00		MB2438
Total	Barium	<40mg/kg dw	06/09/00		MB2436
Total	Beryllium	<0.7mg/kg dw	06/09/00		MB2436
Total	Cadmium	1.5mg/kg dw	06/09/00		MB2436
Total	Calcium	70,000mg/kg dw	06/09/00		MB2436
Total	Chromium	11mg/kg dw	06/09/00		MB2436
Total	Cobalt	25mg/kg dw	06/09/00		MB2436
Total	Copper	15mg/kg dw	06/09/00		MB2436
Total	Iron	7800mg/kg dw	06/09/00		MB2436
Total	Lead	15mg/kg dw	06/09/00		MB2436
Total	Magnesium	10,000mg/kg dw	06/09/00		MB2436
Total	Manganese	250mg/kg dw	06/09/00		MB2436
Total	Mercury	<0.4mg/kg dw	06/06/00		MB2420
Total	Nickel	21mg/kg dw	06/09/00		MB2436
Total	Potassium	1300mg/kg dw	06/12/00		MB2443
Total	Selenium by furnace method	<0.2mg/kg dw	06/09/00		MB2439
Total	Silver	<7mg/kg dw	06/09/00		MB2436

dw = Dry Weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL: _ _ _ _
QC: _ _ _ _
Lab I.D.: 10170
Sampled by: Client

ID:15200018 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID R-17 COVER 0700H 05/30/00 G

PARAMETERS		RESULTS	DATE ANAL.	KEY	FILE#
Total	Sodium	440mg/kg dw	06/12/00		MB2443
Total	Thallium by furnace method	1.3mg/kg dw	06/14/00		MB2870
Total	Vanadium	<40mg/kg dw	06/09/00		MB2436
Total	Zinc	50mg/kg dw	06/09/00		MB2436
TCL Volatiles by EPA Method 8260					
	Chloromethane	<4ug/kg dw	06/06/00		VM2909
	Bromomethane	<4ug/kg dw	06/06/00		VM2909
	Vinyl Chloride	<3ug/kg dw	06/06/00		VM2909
	Chloroethane	<4ug/kg dw	06/06/00		VM2909
	Methylene Chloride	8ug/kg dw	06/06/00	44	VM2909
	Acetone	<13ug/kg dw	06/06/00		VM2909
	Carbon Disulfide	<4ug/kg dw	06/06/00		VM2909
	1,1-Dichloroethene	<4ug/kg dw	06/06/00		VM2909
	1,1-Dichloroethane	<4ug/kg dw	06/06/00		VM2909
	trans-1,2-Dichloroethene	<4ug/kg dw	06/06/00		VM2909
	cis-1,2-Dichloroethene	<4ug/kg dw	06/06/00		VM2909
	Chloroform	<4ug/kg dw	06/06/00		VM2909
	1,2-Dichloroethane	<4ug/kg dw	06/06/00		VM2909
	2-Butanone	<13ug/kg dw	06/06/00		VM2909
	1,1,1-Trichloroethane	<4ug/kg dw	06/06/00		VM2909
	Carbon Tetrachloride	<4ug/kg dw	06/06/00		VM2909
	Bromodichloromethane	<4ug/kg dw	06/06/00		VM2909
	1,2-Dichloropropane	<4ug/kg dw	06/06/00		VM2909
	cis-1,3-Dichloropropene	<4ug/kg dw	06/06/00		VM2909
	Trichloroethene	<4ug/kg dw	06/06/00		VM2909
	Dibromochloromethane	<4ug/kg dw	06/06/00		VM2909
	1,1,2-Trichloroethane	<4ug/kg dw	06/06/00		VM2909
	Benzene	<4ug/kg dw	06/06/00		VM2909
	trans-1,3-Dichloropropene	<4ug/kg dw	06/06/00		VM2909
	Bromoform	<4ug/kg dw	06/06/00		VM2909
	4-Methyl-2-pentanone	<13ug/kg dw	06/06/00		VM2909
	2-Hexanone	<13ug/kg dw	06/06/00		VM2909
	Tetrachloroethene	<4ug/kg dw	06/06/00		VM2909
	1,1,2,2-Tetrachloroethane	<4ug/kg dw	06/06/00		VM2909
	Toluene	<4ug/kg dw	06/06/00		VM2909
	Chlorobenzene	<4ug/kg dw	06/06/00		VM2909
	Ethylbenzene	<4ug/kg dw	06/06/00		VM2909
	Styrene	<4ug/kg dw	06/06/00		VM2909
	m-Xylene and p-Xylene	<4ug/kg dw	06/06/00		VM2909
	o-Xylene	<4ug/kg dw	06/06/00		VM2909
TCL Semivolatiles by EPA Method 8270					
	Phenol	<420ug/kg dw	06/07/00		SA2432

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by: Client

ID:15200018 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID H-17 COVER 0700H 05/30/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
bis(2-Chloroethyl)ether	<420ug/kg dw	06/07/00		SA2432
2-Chlorophenol	<420ug/kg dw	06/07/00		SA2432
1,3-Dichlorobenzene	<420ug/kg dw	06/07/00		SA2432
1,4-Dichlorobenzene	<420ug/kg dw	06/07/00		SA2432
1,2-Dichlorobenzene	<420ug/kg dw	06/07/00		SA2432
2-Methylphenol	<420ug/kg dw	06/07/00		SA2432
2,2'-Oxybis(1-Chloropropane)	<420ug/kg dw	06/07/00		SA2432
4-Methylphenol	<420ug/kg dw	06/07/00		SA2432
n-Nitrosodi-n-propylamine	<420ug/kg dw	06/07/00		SA2432
Hexachloroethane	<420ug/kg dw	06/07/00		SA2432
Nitrobenzene	<420ug/kg dw	06/07/00		SA2432
Isophorone	<420ug/kg dw	06/07/00		SA2432
2-Nitrophenol	<420ug/kg dw	06/07/00		SA2432
2,4-Dimethylphenol	<420ug/kg dw	06/07/00		SA2432
bis(2-Chloroethoxy)methane	<420ug/kg dw	06/07/00		SA2432
2,4-Dichlorophenol	<420ug/kg dw	06/07/00		SA2432
1,2,4-Trichlorobenzene	<420ug/kg dw	06/07/00		SA2432
Naphthalene	<420ug/kg dw	06/07/00		SA2432
4-Chloroaniline	<420ug/kg dw	06/07/00		SA24[illegible]
Hexachlorobutadiene	<420ug/kg dw	06/07/00		SA243[illegible]
4-Chloro-3-methylphenol	<420ug/kg dw	06/07/00		SA2432
2-Methylnaphthalene	<420ug/kg dw	06/07/00		SA2432
Hexachlorocyclopentadiene	<420ug/kg dw	06/07/00		SA2432
2,4,6-Trichlorophenol	<420ug/kg dw	06/07/00		SA2432
2,4,5-Trichlorophenol	<420ug/kg dw	06/07/00		SA2432
2-Chloronaphthalene	<420ug/kg dw	06/07/00		SA2432
2-Nitroaniline	<4200ug/kg dw	06/07/00		SA2432
Dimethylphthalate	<420ug/kg dw	06/07/00		SA2432
Acenaphthylene	<420ug/kg dw	06/07/00		SA2432
2,6-Dinitrotoluene	<420ug/kg dw	06/07/00		SA2432
3-Nitroaniline	<4200ug/kg dw	06/07/00		SA2432
Acenaphthene	<420ug/kg dw	06/07/00		SA2432
2,4-Dinitrophenol	<4200ug/kg dw	06/07/00		SA2432
4-Nitrophenol	<4200ug/kg dw	06/07/00		SA2432
Dibenzofuran	<420ug/kg dw	06/07/00		SA2432
2,4-Dinitrotoluene	<420ug/kg dw	06/07/00		SA2432
Diethylphthalate	<420ug/kg dw	06/07/00		SA2432
4-Chlorophenylphenylether	<420ug/kg dw	06/07/00		SA2432
Fluorene	<420ug/kg dw	06/07/00		SA2432
4-Nitroaniline	<4200ug/kg dw	06/07/00		SA2432
2-Methyl-4,6-dinitrophenol	<4200ug/kg dw	06/07/00		SA2432
n-Nitrosodiphenylamine	<420ug/kg dw	06/07/00		SA2432
4-Bromophenylphenylether	<420ug/kg dw	06/07/00		SA2432
Hexachlorobenzene	<420ug/kg dw	06/07/00		SA2432

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by: Client

ID:15200018 Mat:Soil 29-00-0003 MCKENNA LANDFILL GRID H-17 COVER 0700H 05/30/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Pentachlorophenol	<840ug/kg dw	06/07/00		SA2432
Phenanthrene	<420ug/kg dw	06/07/00		SA2432
Anthracene	<420ug/kg dw	06/07/00		SA2432
Carbazole	<420ug/kg dw	06/07/00		SA2432
di-n-butylphthalate	<420ug/kg dw	06/07/00		SA2432
Fluoranthene	<420ug/kg dw	06/07/00		SA2432
Pyrene	<420ug/kg dw	06/07/00		SA2432
Butylbenzylphthalate	<420ug/kg dw	06/07/00		SA2432
3,3'-Dichlorobenzidine	<420ug/kg dw	06/07/00		SA2432
Benzo(a)anthracene	<420ug/kg dw	06/07/00		SA2432
Chrysene	<420ug/kg dw	06/07/00		SA2432
bis(2-Ethylhexyl)phthalate	<420ug/kg dw	06/07/00		SA2432
di-n-octylphthalate	<420ug/kg dw	06/07/00		SA2432
Benzo(b)fluoranthene	<420ug/kg dw	06/07/00		SA2432
Benzo(k)fluoranthene	<420ug/kg dw	06/07/00		SA2432
Benzo(a)pyrene	<420ug/kg dw	06/07/00		SA2432
Indeno(1,2,3-cd)pyrene	<420ug/kg dw	06/07/00		SA2432
Dibenzo(a,h)anthracene	<420ug/kg dw	06/07/00		SA2432
Benzo(ghi)perylene	<420ug/kg dw	06/07/00		SA2432
EPA Method 8150				
2,4-D	<4.1ug/kg dw	06/13/00		GA0130
2,4,5-T	<4.1ug/kg dw	06/13/00		GA0130
2,4,5-TP (Silvex)	<4.1ug/kg dw	06/13/00		GA0130
Dinoseb	<4.1ug/kg dw	06/13/00		GA0130
TCL Pesticides/Aroclors by EPA 8080				
BHC (a-isomer)	<2.1ug/kg dw	06/13/00		GA0129
BHC (b-isomer)	<2.1ug/kg dw	06/13/00		GA0129
BHC (d-isomer)	<2.1ug/kg dw	06/13/00		GA0129
BHC (g-isomer)	<2.1ug/kg dw	06/13/00		GA0129
Heptachlor	<5.8ug/kg dw	06/13/00		GA0129
Aldrin	<2.1ug/kg dw	06/13/00		GA0129
Heptachlor Epoxide	<2.1ug/kg dw	06/13/00		GA0129
Endosulfan I	<2.1ug/kg dw	06/13/00		GA0129
Dieldrin	<4.1ug/kg dw	06/13/00		GA0129
4,4'-DDE	<4.1ug/kg dw	06/13/00		GA0129
Endrin	<4.1ug/kg dw	06/13/00		GA0129
Endosulfan II	<4.1ug/kg dw	06/13/00		GA0129
4,4'-DDD	<4.1ug/kg dw	06/13/00		GA0129
Endosulfan Sulfate	<4.1ug/kg dw	06/13/00		GA0129
4,4'-DDT	<4.1ug/kg dw	06/13/00		GA0129
Methoxychlor	<21ug/kg dw	06/13/00		GA0129
Endrin Ketone	<4.1ug/kg dw	06/13/00		GA0129

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by: Client

ID:15200018 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID H-17 COVER 0700H 05/30/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Endrin Aldehyde	<4.1ug/kg dw	06/13/00		GA0129
alpha-Chlordane	<2.1ug/kg dw	06/13/00		GA0129
gamma-Chlordane	<2.1ug/kg dw	06/13/00		GA0129
Toxaphene	<200ug/kg dw	06/13/00		GA0129
Aroclor 1016	<2.1ug/kg dw	06/13/00		GA0129
Aroclor 1221	<2.1ug/kg dw	06/13/00		GA0129
Aroclor 1232	<2.1ug/kg dw	06/13/00		GA0129
Aroclor 1242	<2.1ug/kg dw	06/13/00		GA0129
Aroclor 1248	<2.1ug/kg dw	06/13/00		GA0129
Aroclor 1254	<2.1ug/kg dw	06/13/00		GA0129
Aroclor 1260	<2.1ug/kg dw	06/13/00		GA0129

ID:15200019 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID D-9 TOPSOIL 0700H 05/30/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Percent Solids	75%	06/01/00		WD0453
Total Cyanide	<1.3mg/kg dw	06/13/00		WD0469
Total Aluminum	<900mg/kg dw	06/09/00		MB243
Total Antimony	<40mg/kg dw	06/09/00		MB2436
Total Arsenic by furnace method	2.5mg/kg dw	06/09/00		MB2438
Total Barium	61mg/kg dw	06/09/00		MB2436
Total Beryllium	<0.66mg/kg dw	06/09/00		MB2436
Total Cadmium	1.7mg/kg dw	06/09/00		MB2436
Total Calcium	5900mg/kg dw	06/09/00		MB2436
Total Chromium	12mg/kg dw	06/09/00		MB2436
Total Cobalt	32mg/kg dw	06/09/00		MB2436
Total Copper	13mg/kg dw	06/09/00		MB2436
Total Iron	10000mg/kg dw	06/09/00		MB2436
Total Lead	<13mg/kg dw	06/09/00		MB2436
Total Magnesium	2300mg/kg dw	06/09/00		MB2436
Total Manganese	380mg/kg dw	06/09/00		MB2436
Total Mercury	<0.4mg/kg dw	06/06/00		MB2420
Total Nickel	17mg/kg dw	06/09/00		MB2436
Total Potassium	730mg/kg dw	06/12/00		MB2443
Total Selenium by furnace method	0.40mg/kg dw	06/09/00		MB2439
Total Silver	<6.6mg/kg dw	06/09/00		MB2436
Total Sodium	530mg/kg dw	06/12/00		MB2443
Total Thallium by furnace method	0.79mg/kg dw	06/14/00		MB2870
Total Vanadium	<40mg/kg dw	06/09/00		MB2436
Total Zinc	40mg/kg dw	06/09/00		MB2436
TCL Volatiles by EPA Method 8260				
Chloromethane	<4ug/kg dw	06/06/00		VM2909

dw = Dry weight

ATE: / /

Up[illegible]te Laboratories, Inc. APPROVAL:_ _ _ _
nalysis Results QC:_ P_ _ _ _
eport Number: 14000079 Lab I.D.: 10170
lient I.D.: CIMINELLI SERVICES GROUP CORP. Sampled by: Client

D:15300042 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID J-5 COVER 1300H 05/31/00 G

	PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
	Percent Solids	96%	06/01/00		WD0454
	Total Cyanide	<1.0mg/kg dw	06/13/00		WD0468
Total	Aluminum	3300mg/kg dw	06/14/00		MB2460
Total	Antimony	<31mg/kg dw	06/14/00		MB2460
Total	Arsenic by furnace method	1.7mg/kg dw	06/09/00		MB2438
Total	Barium	<31mg/kg dw	06/14/00		MB2460
Total	Beryllium	<0.52mg/kg dw	06/14/00		MB2460
Total	Cadmium	0.97mg/kg dw	06/14/00		MB2460
Total	Calcium	48000mg/kg dw	06/14/00		MB2460
Total	Chromium	6.2mg/kg dw	06/14/00		MB2460
Total	Cobalt	21mg/kg dw	06/14/00		MB2460
Total	Copper	7.3mg/kg dw	06/14/00		MB2460
Total	Iron	4900mg/kg dw	06/14/00		MB2460
Total	Lead	<10mg/kg dw	06/14/00		MB2460
Total	Magnesium	2800mg/kg dw	06/14/00		MB2460
Total	Manganese	370mg/kg dw	06/14/00		MB2460
Total	Mercury	<0.3mg/kg dw	06/06/00		MB2420
Total	Nickel	14mg/kg dw	06/14/00		MB2460
Total	Potassium	890mg/kg dw	06/14/00		MB2461
Total	Selenium by furnace method	0.11mg/kg dw	06/09/00		MB2439
Total	Silver	6.6mg/kg dw	06/14/00		MB2460
Total	Sodium	320mg/kg dw	06/14/00		MB2461
Total	Thallium by furnace method	1.4mg/kg dw	06/14/00		ME2870
Total	Vanadium	<31mg/kg dw	06/14/00		MB2460
Total	Zinc	46mg/kg dw	06/14/00		MB2460

TCL Volatiles by EPA Method 8260

	RESULTS	DATE ANAL.	KEY	FILE#
Chloromethane	<3ug/kg dw	06/06/00		VM2909
Bromomethane	<3ug/kg dw	06/06/00		VM2909
Vinyl Chloride	<2ug/kg dw	06/06/00		VM2909
Chloroethane	<3ug/kg dw	06/06/00		VM2909
Methylene Chloride	11ug/kg dw	06/06/00	44	VM2909
Acetone	<10ug/kg dw	06/06/00		VM2909
Carbon Disulfide	<3ug/kg dw	06/06/00		VM2909
1,1-Dichloroethene	<3ug/kg dw	06/06/00		VM2909
1,1-Dichloroethane	<3ug/kg dw	06/06/00		VM2909
trans-1,2-Dichloroethene	<3ug/kg dw	06/06/00		VM2909
cis-1,2-Dichloroethene	<3ug/kg dw	06/06/00		VM2909
Chloroform	<3ug/kg dw	06/06/00		VM2909
1,2-Dichloroethane	<3ug/kg dw	06/06/00		VM2909
2-Butanone	<10ug/kg dw	06/06/00		VM2909
1,1,1-Trichloroethane	<3ug/kg dw	06/06/00		VM2909
Carbon Tetrachloride	<3ug/kg dw	06/06/00		VM2909
Bromodichloromethane	<3ug/kg dw	06/06/00		VM2909

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:____
QC:_____
Lab I.D.: 10170
Sampled by: Client

ID:15300042 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID J-5 COVER 1300H 05/31/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
1,2-Dichloropropane	<3ug/kg dw	06/06/00		VM2909
cis-1,3-Dichloropropene	<3ug/kg dw	06/06/00		VM2909
Trichloroethene	<3ug/kg dw	06/06/00		VM2909
Dibromochloromethane	<3ug/kg dw	06/06/00		VM2909
1,1,2-Trichloroethane	<3ug/kg dw	06/06/00		VM2909
Benzene	<3ug/kg dw	06/06/00		VM2909
trans-1,3-Dichloropropene	<3ug/kg dw	06/06/00		VM2909
Bromoform	<3ug/kg dw	06/06/00		VM2909
4-Methyl-2-pentanone	<10ug/kg dw	06/06/00		VM2909
2-Hexanone	<10ug/kg dw	06/06/00		VM2909
Tetrachloroethene	<3ug/kg dw	06/06/00		VM2909
1,1,2,2-Tetrachloroethane	<3ug/kg dw	06/06/00		VM2909
Toluene	<3ug/kg dw	06/06/00		VM2909
Chlorobenzene	<3ug/kg dw	06/06/00		VM2909
Ethylbenzene	<3ug/kg dw	06/06/00		VM2909
Styrene	<3ug/kg dw	06/06/00		VM2909
m-Xylene and p-Xylene	<3ug/kg dw	06/06/00		VM2909
o-Xylene	<3ug/kg dw	06/06/00		VM2909
TCL Semivolatiles by EPA Method 8270				
Phenol	<350ug/kg dw	06/09/00		SA2433
bis(2-Chloroethyl)ether	<350ug/kg dw	06/09/00		SA2433
2-Chlorophenol	<350ug/kg dw	06/09/00		SA2433
1,3-Dichlorobenzene	<350ug/kg dw	06/09/00		SA2433
1,4-Dichlorobenzene	<350ug/kg dw	06/09/00		SA2433
1,2-Dichlorobenzene	<350ug/kg dw	06/09/00		SA2433
2-Methylphenol	<350ug/kg dw	06/09/00		SA2433
2,2'-Oxybis(1-Chloropropane)	<350ug/kg dw	06/09/00		SA2433
4-Methylphenol	<350ug/kg dw	06/09/00		SA2433
n-Nitrosodi-n-propylamine	<350ug/kg dw	06/09/00		SA2433
Hexachloroethane	<350ug/kg dw	06/09/00		SA2433
Nitrobenzene	<350ug/kg dw	06/09/00		SA2433
Isophorone	<350ug/kg dw	06/09/00		SA2433
2-Nitrophenol	<350ug/kg dw	06/09/00		SA2433
2,4-Dimethylphenol	<350ug/kg dw	06/09/00		SA2433
bis(2-Chloroethoxy)methane	<350ug/kg dw	06/09/00		SA2433
2,4-Dichlorophenol	<350ug/kg dw	06/09/00		SA2433
1,2,4-Trichlorobenzene	<350ug/kg dw	06/09/00		SA2433
Naphthalene	<350ug/kg dw	06/09/00		SA2433
4-Chloroaniline	<350ug/kg dw	06/09/00		SA2433
Hexachlorobutadiene	<350ug/kg dw	06/09/00		SA2433
4-Chloro-3-methylphenol	<350ug/kg dw	06/09/00		SA2433
2-Methylnaphthalene	<350ug/kg dw	06/09/00		SA2433
Hexachlorocyclopentadiene	<350ug/kg dw	06/09/00		SA2433

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL: ____
QC: ____
Lab I.D.: 10170
Sampled by: Client

ID:15300042 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID J-5 COVER 1300H 05/31/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
2,4,6-Trichlorophenol	<350ug/kg dw	06/09/00		SA2433
2,4,5-Trichlorophenol	<350ug/kg dw	06/09/00		SA2433
2-Chloronaphthalene	<350ug/kg dw	06/09/00		SA2433
2-Nitroaniline	<3500ug/kg dw	06/09/00		SA2433
Dimethylphthalate	<350ug/kg dw	06/09/00		SA2433
Acenaphthylene	<350ug/kg dw	06/09/00		SA2433
2,6-Dinitrotoluene	<350ug/kg dw	06/09/00		SA2433
3-Nitroaniline	<3500ug/kg dw	06/09/00		SA2433
Acenaphthene	<350ug/kg dw	06/09/00		SA2433
2,4-Dinitrophenol	<3500ug/kg dw	06/09/00		SA2433
4-Nitrophenol	<3500ug/kg dw	06/09/00		SA2433
Dibenzofuran	<350ug/kg dw	06/09/00		SA2433
2,4-Dinitrotoluene	<350ug/kg dw	06/09/00		SA2433
Diethylphthalate	<350ug/kg dw	06/09/00		SA2433
4-Chlorophenylphenylether	<350ug/kg dw	06/09/00		SA2433
Fluorene	<350ug/kg dw	06/09/00		SA2433
4-Nitroaniline	<3500ug/kg dw	06/09/00		SA2433
2-Methyl-4,6-dinitrophenol	<3500ug/kg dw	06/09/00		SA2433
n-Nitrosodiphenylamine	<350ug/kg dw	06/09/00		SA2433
4-Bromophenylphenylether	<350ug/kg dw	06/09/00		SA2433
Hexachlorobenzene	<350ug/kg dw	06/09/00		SA2433
Pentachlorophenol	<700ug/kg dw	06/09/00		SA2433
Phenanthrene	<350ug/kg dw	06/09/00		SA2433
Anthracene	<350ug/kg dw	06/09/00		SA2433
Carbazole	<350ug/kg dw	06/09/00		SA2433
di-n-butylphthalate	<350ug/kg dw	06/09/00		SA2433
Fluoranthene	<350ug/kg dw	06/09/00		SA2433
Pyrene	<350ug/kg dw	06/09/00		SA2433
Butylbenzylphthalate	<350ug/kg dw	06/09/00		SA2433
3,3'-Dichlorobenzidine	<350ug/kg dw	06/09/00		SA2433
Benzo(a)anthracene	<350ug/kg dw	06/09/00		SA2433
Chrysene	<350ug/kg dw	06/09/00		SA2433
bis(2-Ethylhexyl)phthalate	<350ug/kg dw	06/09/00		SA2433
di-n-octylphthalate	<350ug/kg dw	06/09/00		SA2433
Benzo(b)fluoranthene	<350ug/kg dw	06/09/00		SA2433
Benzo(k)fluoranthene	<350ug/kg dw	06/09/00		SA2433
Benzo(a)pyrene	<350ug/kg dw	06/09/00		SA2433
Indeno(1,2,3-cd)pyrene	<350ug/kg dw	06/09/00		[illegible]
Dibenzo(a,h)anthracene	<350ug/kg dw	06/09/00		[illegible]
Benzo(ghi)perylene	<350ug/kg dw	06/09/00		[illegible]

EPA Method 8150

2,4-D	<3.4ug/kg dw	06/13/00		G
2,4,5-T	<3.4ug/kg dw	06/13/00		G

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL: _ _ _ _
QC: __ _ _ _ _
Lab I.D.: 10170
Sampled by: Client

ID:15300042 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID J-5 COVER 1300H 05/31/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
2,4,5-TP (Silvex)	<3.4ug/kg dw	06/13/00		GA0130
Dinoseb	<3.4ug/kg dw	06/13/00		GA0130
TCL Pesticides/Aroclors by EPA 8080				
BHC (a-isomer)	<1.8ug/kg dw	06/13/00		GA0129
BHC (b-isomer)	<1.8ug/kg dw	06/13/00		GA0129
BHC (d-isomer)	<1.8ug/kg dw	06/13/00		GA0129
BHC (g-isomer)	<1.8ug/kg dw	06/13/00		GA0129
Heptachlor	<1.8ug/kg dw	06/13/00		GA0129
Aldrin	<1.8ug/kg dw	06/13/00		GA0129
Heptachlor Epoxide	<1.8ug/kg dw	06/13/00		GA0129
Endosulfan I	<1.8ug/kg dw	06/13/00		GA0129
Dieldrin	<3.4ug/kg dw	06/13/00		GA0129
4,4'-DDE	<3.4ug/kg dw	06/13/00		GA0129
Endrin	<3.4ug/kg dw	06/13/00		GA0129
Endosulfan II	<3.4ug/kg dw	06/13/00		GA0129
4,4'-DDD	<3.4ug/kg dw	06/13/00		GA0129
Endosulfan Sulfate	<3.4ug/kg dw	06/13/00		GA012[illegible]
4,4'-DDT	<3.4ug/kg dw	06/13/00		GA01[illegible]
Methoxychlor	<18ug/kg dw	06/13/00		GA0129
Endrin Ketone	<3.4ug/kg dw	06/13/00		GA0129
Endrin Aldehyde	<3.4ug/kg dw	06/13/00		GA0129
alpha-Chlordane	<1.8ug/kg dw	06/13/00		GA0129
gamma-Chlordane	<1.8ug/kg dw	06/13/00		GA0129
Toxaphene	<180ug/kg dw	06/13/00		GA0129
Aroclor 1016	<1.8ug/kg dw	06/13/00		GA0129
Aroclor 1221	<1.8ug/kg dw	06/13/00		GA0129
Aroclor 1232	<1.8ug/kg dw	06/13/00		GA0129
Aroclor 1242	<1.8ug/kg dw	06/13/00		GA0129
Aroclor 1248	<1.8ug/kg dw	06/13/00		GA0129
Aroclor 1254	<1.8ug/kg dw	06/13/00		GA0129
Aroclor 1260	<1.8ug/kg dw	06/13/00		GA0129

ID:15300043 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID A-24 COVER 1300H 05/31/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Percent Solids	98%	06/01/00		WD0454
Total Cyanide	<1.0mg/kg dw	06/13/00		WD0468
Total Aluminum	7600mg/kg dw	06/14/00		MB2460
Total Antimony	<31mg/kg dw	06/14/00		MB2460
Total Arsenic by furnace method	2.1mg/kg dw	06/09/00		MB2438
Total Barium	140mg/kg dw	06/14/00		MB2460
Total Beryllium	0.65mg/kg dw	06/14/00		MB2460

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by: Client

ID:15300043 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID A-24 COVER 1300H 05/31/00 G

PARAMETERS		RESULTS	DATE ANAL.	KEY	FILE#
Total	Cadmium	2.1mg/kg dw	06/14/00		MB2460
Total	Calcium	16000mg/kg dw	06/14/00		MB2460
Total	Chromium	14mg/kg dw	06/14/00		MB2460
Total	Cobalt	38mg/kg dw	06/14/00		MB2460
Total	Copper	20mg/kg dw	06/14/00		MB2460
Total	Iron	12000mg/kg dw	06/14/00		MB2460
Total	Lead	60mg/kg dw	06/14/00		MB2460
Total	Magnesium	6000mg/kg dw	06/14/00		MB2460
Total	Manganese	330mg/kg dw	06/14/00		MB2460
Total	Mercury	<0.3mg/kg dw	06/06/00		MB2420
Total	Nickel	19mg/kg dw	06/14/00		MB2460
Total	Potassium	380mg/kg dw	06/14/00		MB2461
Total	Selenium by furnace method	0.22mg/kg dw	06/09/00		MB2439
Total	Silver	8.6mg/kg dw	06/14/00		MB2460
Total	Sodium	240mg/kg dw	06/14/00		MB2461
Total	Thallium by furnace method	<0.4mg/kg dw	06/14/00		ME2870
Total	Vanadium	<31mg/kg dw	06/14/00		MB2460
Total	Zinc	76mg/kg dw	06/14/00		MB2460

TCL Volatiles by EPA Method 8260

	RESULTS	DATE ANAL.	KEY	FILE#
Chloromethane	<3ug/kg dw	06/06/00		VM2909
Bromomethane	<3ug/kg dw	06/06/00		VM2909
Vinyl Chloride	<2ug/kg dw	06/06/00		VM2909
Chloroethane	<3ug/kg dw	06/06/00		VM2909
Methylene Chloride	11ug/kg dw	06/06/00	44	VM2909
Acetone	<10ug/kg dw	06/06/00		VM2909
Carbon Disulfide	<3ug/kg dw	06/06/00		VM2909
1,1-Dichloroethene	<3ug/kg dw	06/06/00		VM2909
1,1-Dichloroethane	<3ug/kg dw	06/06/00		VM2909
trans-1,2-Dichloroethene	<3ug/kg dw	06/06/00		VM2909
cis-1,2-Dichloroethene	<3ug/kg dw	06/06/00		VM2909
Chloroform	<3ug/kg dw	06/06/00		VM2909
1,2-Dichloroethane	<3ug/kg dw	06/06/00		VM2909
2-Butanone	<10ug/kg dw	06/06/00		VM2909
1,1,1-Trichloroethane	<3ug/kg dw	06/06/00		VM2909
Carbon Tetrachloride	<3ug/kg dw	06/06/00		VM2909
Bromodichloromethane	<3ug/kg dw	06/06/00		VM2909
1,2-Dichloropropane	<3ug/kg dw	06/06/00		VM2909
cis-1,3-Dichloropropene	<3ug/kg dw	06/06/00		VM2909
Trichloroethene	<3ug/kg dw	06/06/00		VM2909
Dibromochloromethane	<3ug/kg dw	06/06/00		VM2909
1,1,2-Trichloroethane	<3ug/kg dw	06/06/00		VM2909
Benzene	<3ug/kg dw	06/06/00		VM2909
trans-1,3-Dichloropropene	<3ug/kg dw	06/06/00		VM2909

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
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Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by: Client

ID:15300043 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID A-24 COVER 1300H 05/31/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Bromoform	<3ug/kg dw	06/06/00		VM2909
4-Methyl-2-pentanone	<10ug/kg dw	06/06/00		VM2909
2-Hexanone	<10ug/kg dw	06/06/00		VM2909
Tetrachloroethene	<3ug/kg dw	06/06/00		VM2909
1,1,2,2-Tetrachloroethane	<3ug/kg dw	06/06/00		VM2909
Toluene	<3ug/kg dw	06/06/00		VM2909
Chlorobenzene	<3ug/kg dw	06/06/00		VM2909
Ethylbenzene	<3ug/kg dw	06/06/00		VM2909
Styrene	<3ug/kg dw	06/06/00		VM2909
m-Xylene and p-Xylene	<3ug/kg dw	06/06/00		VM2909
o-Xylene	<3ug/kg dw	06/06/00		VM2909
TCL Semivolatiles by EPA Method 8270				
Phenol	<340ug/kg dw	06/09/00		SA2433
bis(2-Chloroethyl)ether	<340ug/kg dw	06/09/00		SA2433
2-Chlorophenol	<340ug/kg dw	06/09/00		SA2433
1,3-Dichlorobenzene	<340ug/kg dw	06/09/00		SA2433
1,4-Dichlorobenzene	<340ug/kg dw	06/09/00		SA2433
1,2-Dichlorobenzene	<340ug/kg dw	06/09/00		SA24[illegible]
2-Methylphenol	<340ug/kg dw	06/09/00		SA24[illegible]
2,2'-Oxybis(1-Chloropropane)	<340ug/kg dw	06/09/00		SA2433
4-Methylphenol	<340ug/kg dw	06/09/00		SA2433
n-Nitrosodi-n-propylamine	<340ug/kg dw	06/09/00		SA2433
Hexachloroethane	<340ug/kg dw	06/09/00		SA2433
Nitrobenzene	<340ug/kg dw	06/09/00		SA2433
Isophorone	<340ug/kg dw	06/09/00		SA2433
2-Nitrophenol	<340ug/kg dw	06/09/00		SA2433
2,4-Dimethylphenol	<340ug/kg dw	06/09/00		SA2433
bis(2-Chloroethoxy)methane	<340ug/kg dw	06/09/00		SA2433
2,4-Dichlorophenol	<340ug/kg dw	06/09/00		SA2433
1,2,4-Trichlorobenzene	<340ug/kg dw	06/09/00		SA2433
Naphthalene	<340ug/kg dw	06/09/00		SA2433
4-Chloroaniline	<340ug/kg dw	06/09/00		SA2433
Hexachlorobutadiene	<340ug/kg dw	06/09/00		SA2433
4-Chloro-3-methylphenol	<340ug/kg dw	06/09/00		SA2433
2-Methylnaphthalene	<340ug/kg dw	06/09/00		SA2433
Hexachlorocyclopentadiene	<340ug/kg dw	06/09/00		SA2433
2,4,6-Trichlorophenol	<340ug/kg dw	06/09/00		SA2433
2,4,5-Trichlorophenol	<340ug/kg dw	06/09/00		SA2433
2-Chloronaphthalene	<340ug/kg dw	06/09/00		SA2433
2-Nitroaniline	<3400ug/kg dw	06/09/00		SA2433
Dimethylphthalate	<340ug/kg dw	06/09/00		SA2433
Acenaphthylene	<340ug/kg dw	06/09/00		SA2433
2,6-Dinitrotoluene	<340ug/kg dw	06/09/00		SA2433

dw = Dry weight

DATE: / /

J[illegible]te Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL: _ _ _ _
QC: _ _ _ _ _
Lab I.D.: 10170
Sampled by: Client

ID:15300043 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID A-24 COVER 1300H 05/31/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
3-Nitroaniline	<3400ug/kg dw	06/09/00		SA2433
Acenaphthene	<340ug/kg dw	06/09/00		SA2433
2,4-Dinitrophenol	<3400ug/kg dw	06/09/00		SA2433
4-Nitrophenol	<3400ug/kg dw	06/09/00		SA2433
Dibenzofuran	<340ug/kg dw	06/09/00		SA2433
2,4-Dinitrotoluene	<340ug/kg dw	06/09/00		SA2433
Diethylphthalate	<340ug/kg dw	06/09/00		SA2433
4-Chlorophenylphenylether	<340ug/kg dw	06/09/00		SA2433
Fluorene	<340ug/kg dw	06/09/00		SA2433
4-Nitroaniline	<3400ug/kg dw	06/09/00		SA2433
2-Methyl-4,6-dinitrophenol	<3400ug/kg dw	06/09/00		SA2433
n-Nitrosodiphenylamine	<340ug/kg dw	06/09/00		SA2433
4-Bromophenylphenylether	<340ug/kg dw	06/09/00		SA2433
Hexachlorobenzene	<340ug/kg dw	06/09/00		SA2433
Pentachlorophenol	<680ug/kg dw	06/09/00		SA2433
Phenanthrene	<340ug/kg dw	06/09/00		SA2433
Anthracene	<340ug/kg dw	06/09/00		SA2433
Carbazole	<340ug/kg dw	06/09/00		SA2433
di-n-butylphthalate	<340ug/kg dw	06/09/00		SA2433
Fluoranthene	<340ug/kg dw	06/09/00		SA2433
Pyrene	<340ug/kg dw	06/09/00		SA2433
Butylbenzylphthalate	<340ug/kg dw	06/09/00		SA2433
3,3'-Dichlorobenzidine	<340ug/kg dw	06/09/00		SA2433
Benzo(a)anthracene	<340ug/kg dw	06/09/00		SA2433
Chrysene	<340ug/kg dw	06/09/00		SA2433
bis(2-Ethylhexyl)phthalate	<340ug/kg dw	06/09/00		SA2433
di-n-octylphthalate	<340ug/kg dw	06/09/00		SA2433
Benzo(b)fluoranthene	<340ug/kg dw	06/09/00		SA2433
Benzo(k)fluoranthene	<340ug/kg dw	06/09/00		SA2433
Benzo(a)pyrene	<340ug/kg dw	06/09/00		SA2433
Indeno(1,2,3-cd)pyrene	<340ug/kg dw	06/09/00		SA2433
Dibenzo(a,h)anthracene	<340ug/kg dw	06/09/00		SA2433
Benzo(ghi)perylene	<340ug/kg dw	06/09/00		SA2433
EPA Method 8150				
2,4-D	<3.4ug/kg dw	06/13/00		GA013C
2,4,5-T	<3.4ug/kg dw	06/13/00		GA013C
2,4,5-TP (Silvex)	<3.4ug/kg dw	06/13/00		GA013C
Dinoseb	<3.4ug/kg dw	06/13/00		GA013C
TCL Pesticides/Aroclors by EPA 8080				
BHC (a-isomer)	<1.7ug/kg dw	06/13/00		GA0129
BHC (b-isomer)	<1.7ug/kg dw	06/13/00		GA0129
BHC (d-isomer)	<1.7ug/kg dw	06/13/00		GA0129

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL: ____
QC: ____
Lab I.D.: 10170
Sampled by: Client

ID:15300043 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID A-24 COVER 1300H 05/31/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
BHC (g-isomer)	<1.7ug/kg dw	06/13/00		GA0129
Heptachlor	<3.6ug/kg dw	06/13/00		GA0129
Aldrin	<1.7ug/kg dw	06/13/00		GA0129
Heptachlor Epoxide	<1.7ug/kg dw	06/13/00		GA0129
Endosulfan I	<1.7ug/kg dw	06/13/00		GA0129
Dieldrin	<3.4ug/kg dw	06/13/00		GA0129
4,4'-DDE	<3.7ug/kg dw	06/13/00		GA0129
Endrin	<3.4ug/kg dw	06/13/00		GA0129
Endosulfan II	<3.4ug/kg dw	06/13/00		GA0129
4,4'-DDD	<3.4ug/kg dw	06/13/00		GA0129
Endosulfan Sulfate	<3.4ug/kg dw	06/13/00		GA0129
4,4'-DDT	<3.4ug/kg dw	06/13/00		GA0129
Methoxychlor	<17ug/kg dw	06/13/00		GA0129
Endrin Ketone	<3.4ug/kg dw	06/13/00		GA0129
Endrin Aldehyde	<3.4ug/kg dw	06/13/00		GA0129
alpha-Chlordane	<1.7ug/kg dw	06/13/00		GA0129
gamma-Chlordane	<1.7ug/kg dw	06/13/00		GA0129
Toxaphene	<170ug/kg dw	06/13/00		GA0129
Aroclor 1016	<1.7ug/kg dw	06/13/00		GA0129
Aroclor 1221	<1.7ug/kg dw	06/13/00		GA01[illegible]
Aroclor 1232	<1.7ug/kg dw	06/13/00		GA01[illegible]
Aroclor 1242	<1.7ug/kg dw	06/13/00		GA0129
Aroclor 1248	<1.7ug/kg dw	06/13/00		GA0129
Aroclor 1254	<1.7ug/kg dw	06/13/00		GA0129
Aroclor 1260	<1.7ug/kg dw	06/13/00		GA0129

ID:15300044 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID D-14 COVER 1300H 05/31/00 G

	PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
	Percent Solids	97%	06/01/00		WD0454
	Total Cyanide	<1.0mg/kg dw	06/13/00		WD0468
Total	Aluminum	4000mg/kg dw	06/14/00		MB2460
Total	Antimony	<31mg/kg dw	06/14/00		MB2460
Total	Arsenic by furnace method	1.6mg/kg dw	06/09/00		MB2438
Total	Barium	<31mg/kg dw	06/14/00		MB2460
Total	Beryllium	<0.52mg/kg dw	06/14/00		MB2460
Total	Cadmium	1.2mg/kg dw	06/14/00		MB2460
Total	Calcium	35000mg/kg dw	06/14/00		MB2460
Total	Chromium	7.4mg/kg dw	06/14/00		MB2460
Total	Cobalt	24mg/kg dw	06/14/00		MB2460
Total	Copper	9.6mg/kg dw	06/14/00		MB2460
Total	Iron	6100mg/kg dw	06/14/00		MB2460
Total	Lead	<10mg/kg dw	06/14/00		MB2460

dw = Dry weight

DATE: / /

U[illegible]ate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL: _ _ _ _
QC: _ _ _ _ _
Lab I.D.: 10170
Sampled by: Client

ID:15300044 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID D-14 COVER 1300H 05/31/00 G

PARAMETERS		RESULTS	DATE ANAL.	KEY	FILE#
Total	Magnesium	7500mg/kg dw	06/14/00		MB2460
Total	Manganese	360mg/kg dw	06/14/00		MB2460
Total	Mercury	<0.3mg/kg dw	06/06/00		MB2120
Total	Nickel	15mg/kg dw	06/14/00		MB2460
Total	Potassium	590mg/kg dw	06/14/00		MB2461
Total	Selenium by furnace method	<0.2mg/kg dw	06/09/00		MB2439
Total	Silver	6.8mg/kg dw	06/14/00		MB2460
Total	Sodium	240mg/kg dw	06/14/00		MB2461
Total	Thallium by furnace method	1.4mg/kg dw	06/14/00		MB2870
Total	Vanadium	<31mg/kg dw	06/14/00		MB2460
Total	Zinc	42mg/kg dw	06/14/00		MB2460
	TCL Volatiles by EPA Method 8260				
	Chloromethane	<3ug/kg dw	06/06/00		VM2909
	Bromomethane	<3ug/kg dw	06/06/00		VM2909
	Vinyl Chloride	<2ug/kg dw	06/06/00		VM2909
	Chloroethane	<3ug/kg dw	06/06/00		VM2909
	Methylene Chloride	15ug/kg dw	06/06/00		VM2909
	Acetone	<10ug/kg dw	06/06/00		VM2909
	Carbon Disulfide	<3ug/kg dw	06/06/00		VM2909
	1,1-Dichloroethene	<3ug/kg dw	06/06/00		VM2909
	1,1-Dichloroethane	<3ug/kg dw	06/06/00		VM2909
	trans-1,2-Dichloroethene	<3ug/kg dw	06/06/00		VM2909
	cis-1,2-Dichloroethene	<3ug/kg dw	06/06/00		VM2909
	Chloroform	<3ug/kg dw	06/06/00		VM2909
	1,2-Dichloroethane	<3ug/kg dw	06/06/00		VM2909
	2-Butanone	<10ug/kg dw	06/06/00		VM2909
	1,1,1-Trichloroethane	<3ug/kg dw	06/06/00		VM2909
	Carbon Tetrachloride	<3ug/kg dw	06/06/00		VM2909
	Bromodichloromethane	<3ug/kg dw	06/06/00		VM2909
	1,2-Dichloropropane	<3ug/kg dw	06/06/00		VM2909
	cis-1,3-Dichloropropene	<3ug/kg dw	06/06/00		VM2909
	Trichloroethene	<3ug/kg dw	06/06/00		VM2909
	Dibromochloromethane	<3ug/kg dw	06/06/00		VM2909
	1,1,2-Trichloroethane	<3ug/kg dw	06/06/00		VM2909
	Benzene	<3ug/kg dw	06/06/00		VM2909
	trans-1,3-Dichloropropene	<3ug/kg dw	06/06/00		VM2909
	Bromoform	<3ug/kg dw	06/06/00		VM2909
	4-Methyl-2-pentanone	<10ug/kg dw	06/06/00		VM2909
	2-Hexanone	<10ug/kg dw	06/06/00		VM2909
	Tetrachloroethene	<3ug/kg dw	06/06/00		VM2909
	1,1,2,2-Tetrachloroethane	<3ug/kg dw	06/06/00		VM2909
	Toluene	<3ug/kg dw	06/06/00		VM2909
	Chlorobenzene	<3ug/kg dw	06/06/00		VM2909

w = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL: _ _ _ _
QC: ___
Lab I.D.: 10170
Sampled by: Client

ID:15300044 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID D-14 COVER 1300H 05/31/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Ethylbenzene	<3ug/kg dw	06/06/00		VM2909
Styrene	<3ug/kg dw	06/06/00		VM2909
m-Xylene and p-Xylene	<3ug/kg dw	06/06/00		VM2909
o-Xylene	<3ug/kg dw	06/06/00		VM2909
TCL Semivolatiles by EPA Method 8270				
Phenol	<340ug/kg dw	06/09/00		SA2433
bis(2-Chloroethyl)ether	<340ug/kg dw	06/09/00		SA2433
2-Chlorophenol	<340ug/kg dw	06/09/00		SA2433
1,3-Dichlorobenzene	<340ug/kg dw	06/09/00		SA2433
1,4-Dichlorobenzene	<340ug/kg dw	06/09/00		SA2433
1,2-Dichlorobenzene	<340ug/kg dw	06/09/00		SA2433
2-Methylphenol	<340ug/kg dw	06/09/00		SA2433
2,2'-Oxybis(1-Chloropropane)	<340ug/kg dw	06/09/00		SA2433
4-Methylphenol	<340ug/kg dw	06/09/00		SA2433
n-Nitrosodi-n-propylamine	<340ug/kg dw	06/09/00		SA2433
Hexachloroethane	<340ug/kg dw	06/09/00		SA2433
Nitrobenzene	<340ug/kg dw	06/09/00		SA2433
Isophorone	<340ug/kg dw	06/09/00		SA2433
2-Nitrophenol	<340ug/kg dw	06/09/00		SA2433
2,4-Dimethylphenol	<340ug/kg dw	06/09/00		SA2433
bis(2-Chloroethoxy)methane	<340ug/kg dw	06/09/00		SA2433
2,4-Dichlorophenol	<340ug/kg dw	06/09/00		SA2433
1,2,4-Trichlorobenzene	<340ug/kg dw	06/09/00		SA2433
Naphthalene	<340ug/kg dw	06/09/00		SA2433
4-Chloroaniline	<340ug/kg dw	06/09/00		SA2433
Hexachlorobutadiene	<340ug/kg dw	06/09/00		SA2433
4-Chloro-3-methylphenol	<340ug/kg dw	06/09/00		SA2433
2-Methylnaphthalene	<340ug/kg dw	06/09/00		SA2433
Hexachlorocyclopentadiene	<340ug/kg dw	06/09/00		SA2433
2,4,6-Trichlorophenol	<340ug/kg dw	06/09/00		SA2433
2,4,5-Trichlorophenol	<340ug/kg dw	06/09/00		SA2433
2-Chloronaphthalene	<340ug/kg dw	06/09/00		SA2433
2-Nitroaniline	<3400ug/kg dw	06/09/00		SA2433
Dimethylphthalate	<340ug/kg dw	06/09/00		SA2433
Acenaphthylene	<340ug/kg dw	06/09/00		SA2433
2,6-Dinitrotoluene	<340ug/kg dw	06/09/00		SA2433
3-Nitroaniline	<3400ug/kg dw	06/09/00		SA2433
Acenaphthene	<340ug/kg dw	06/09/00		SA2433
2,4-Dinitrophenol	<3400ug/kg dw	06/09/00		SA2433
4-Nitrophenol	<3400ug/kg dw	06/09/00		SA2433
Dibenzofuran	<340ug/kg dw	06/09/00		SA2433
2,4-Dinitrotoluene	<340ug/kg dw	06/09/00		SA2433
Diethylphthalate	<340ug/kg dw	06/09/00		SA2433

dw = Dry weight

DATE: / /

I[illegible]te Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL: _ _ _ _
QC: _ _ _ _
Lab I.D.: 10170
Sampled by: Client

ID:15300044 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID D-14 COVER 1300H 05/31/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
4-Chlorophenylphenylether	<340ug/kg dw	06/09/00		SA2433
Fluorene	<340ug/kg dw	06/09/00		SA2433
4-Nitroaniline	<3400ug/kg dw	06/09/00		SA2433
2-Methyl-4,6-dinitrophenol	<3400ug/kg dw	06/09/00		SA2433
n-Nitrosodiphenylamine	<340ug/kg dw	06/09/00		SA2433
4-Bromophenylphenylether	<340ug/kg dw	06/09/00		SA2433
Hexachlorobenzene	<340ug/kg dw	06/09/00		SA2433
Pentachlorophenol	<680ug/kg dw	06/09/00		SA2433
Phenanthrene	<340ug/kg dw	06/09/00		SA2433
Anthracene	<340ug/kg dw	06/09/00		SA2433
Carbazole	<340ug/kg dw	06/09/00		SA2433
di-n-butylphthalate	<340ug/kg dw	06/09/00		SA2433
Fluoranthene	<340ug/kg dw	06/09/00		SA2433
Pyrene	<340ug/kg dw	06/09/00		SA2433
Butylbenzylphthalate	<340ug/kg dw	06/09/00		SA2433
3,3'-Dichlorobenzidine	<340ug/kg dw	06/09/00		SA2433
Benzo(a)anthracene	<340ug/kg dw	06/09/00		SA2433
Chrysene	<340ug/kg dw	06/09/00		SA2433
bis(2-Ethylhexyl)phthalate	<340ug/kg dw	06/09/00		SA2433
di-n-octylphthalate	<340ug/kg dw	06/09/00		SA2433
Benzo(b)fluoranthene	<340ug/kg dw	06/09/00		SA2433
Benzo(k)fluoranthene	<340ug/kg dw	06/09/00		SA2433
Benzo(a)pyrene	<340ug/kg dw	06/09/00		SA2433
Indeno(1,2,3-cd)pyrene	<340ug/kg dw	06/09/00		SA2433
Dibenzo(a,h)anthracene	<340ug/kg dw	06/09/00		SA24[illegible]
Benzo(ghi)perylene	<340ug/kg dw	06/09/00		SA24[illegible]
EPA Method 8150				
2,4-D	<3.4ug/kg dw	06/13/00		GA01
2,4,5-T	<3.4ug/kg dw	06/13/00		GA01
2,4,5-TP (Silvex)	<3.4ug/kg dw	06/13/00		GA01
Dinoseb	<3.4ug/kg dw	06/13/00		GA01
TCL Pesticides/Aroclors by EPA 8080				
BHC (a-isomer)	<1.8ug/kg dw	06/13/00		GA0[illegible]
BHC (b-isomer)	<1.8ug/kg dw	06/13/00		GA01[illegible]
BHC (d-isomer)	<1.8ug/kg dw	06/13/00		GA0129
BHC (g-isomer)	<1.8ug/kg dw	06/13/00		GA0129
Heptachlor	<1.8ug/kg dw	06/13/00		GA0129
Aldrin	<1.8ug/kg dw	06/13/00		GA0129
Heptachlor Epoxide	<1.8ug/kg dw	06/13/00		GA0129
Endosulfan I	<1.8ug/kg dw	06/13/00		GA0129
Dieldrin	<3.4ug/kg dw	06/13/00		GA0129
4,4'-DDE	<3.4ug/kg dw	06/13/00		GA0129

d: Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by: Client

ID:15300044 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID D-14 COVER 1300H 05/31/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Endrin	<3.4ug/kg dw	06/13/00		GA0129
Endosulfan II	<3.4ug/kg dw	06/13/00		GA0129
4,4'-DDD	<3.4ug/kg dw	06/13/00		GA0129
Endosulfan Sulfate	<3.4ug/kg dw	06/13/00		GA0129
4,4'-DDT	<3.4ug/kg dw	06/13/00		GA0129
Methoxychlor	<18ug/kg dw	06/13/00		GA0129
Endrin Ketone	<3.4ug/kg dw	06/13/00		GA0129
Endrin Aldehyde	<3.4ug/kg dw	06/13/00		GA0129
alpha-Chlordane	<1.8ug/kg dw	06/13/00		GA0129
gamma-Chlordane	<1.8ug/kg dw	06/13/00		GA0129
Toxaphene	<175ug/kg dw	06/13/00		GA0129
Aroclor 1016	<1.8ug/kg dw	06/13/00		GA0129
Aroclor 1221	<1.8ug/kg dw	06/13/00		GA0129
Aroclor 1232	<1.8ug/kg dw	06/13/00		GA0129
Aroclor 1242	<1.8ug/kg dw	06/13/00		GA0129
Aroclor 1248	<1.8ug/kg dw	06/13/00		GA0129
Aroclor 1254	<1.8ug/kg dw	06/13/00		GA0129
Aroclor 1260	<1.8ug/kg dw	06/13/00		GA0129

dw = Dry weight

2. BARRE STONE PRODUCTS BPS

Geotechnical Testing Summary

Approximately 13,000 and 10,500 cubic yards of the Barre Stone Products soil was used for BPS and suitable fill construction, respectively. Test frequencies are summarized below. Table D9 summarizes the geotechnical laboratory test results.

Also included herein is pre-construction lab testing provided by CSC, including results of triaxial compressive strength testing for the existing cover soils. The strength test shows that the soil has an effective internal angle of friction exceeding 27 degrees. The results of the geotechnical testing for the Barre Stone Products soil, therefore, indicate the soil was acceptable for use as barrier protection material and suitable fill.

BARRE STONE PRODUCTS BPS AND SUITABLE FILL GEOTECHNICAL LAB TESTING SUMMARY

Test Designation	Required Frequency	Number of Tests Done	Estimated Quantity of Fill Placed	Estimated Test Frequency
Atterberg Limits (ASTM D4318)	Ea. 2,500 Cubic Yards	18	23,500 Cubic Yards	Ea. 1,300 Cubic Yards Placed
Moisture Content (ASTM D3017)	Ea. 2,500 Cubic Yards	18	23,500 Cubic Yards	Ea. 1,300 Cubic Yards Placed
Grain Size Analysis (ASTM D422)	Ea. 2,500 Cubic Yards	18	23,500 Cubic Yards	Ea. 1,300 Cubic Yards Placed
Moisture Density Relationship, Modified Proctor (ASTM D1557)	Ea. 5,000 Cubic Yards	9	23,500 Cubic Yards	Ea. 2,600 Cubic Yards Placed
Remolded Permeability (For BPS Only) (ASTM D5084)	Ea. 5,000 Cubic Yards	9	13,000 Cubic Yards	Ea. 1,400 Cubic Yards Placed
Angle of Internal Friction	1 per Borrow Source	1	23,500 Cubic Yards	1 per Borrow Source

Chemical Testing Summary

Pre-construction chemical characterization testing was done for the Barre Stone Products soil. Chemical characterization testing was required for every 5,000 cubic yards of soil used. Four samples were tested for a test frequency of about 1 test per 5,900 cubic yards[2]. The samples were tested for the following parameters.

[2] Barre soil used for portions of the suitable fill located outside the landfill (i.e. road subbase) was mostly rock material screened out from material to be used as BPS. GZA estimates that approximately 4,000 cubic yards of the screened rock material was used as suitable fill. Therefore, approximately 19,500 cubic yards of "soily" material from Barre was suitable for chemical testing. This would mean that chemical testing was done at a rate of about 1 test per 5,000 cubic yards. It is GZA's opinion, therefore, that sufficient chemical characterization testing was done for this material.

Parameter	Extraction/Preparation [1]	Analysis [1]
TCL[2] Volatile Organic Compounds	5050	8260 (95-1)
TCL Semi-Volatile Organic Compounds	3540/3550	8270 (95-2)
Pesticides/PCB's	3540/3550	8080
Herbicides	3580	8150
TAL[3] Metals	3050	95-M
Cyanide	----	9012

[1] EPA SW-846.
[2] TCL – Target Compound List.
[3] TAL – Target Analyte List.

GZA reviewed the laboratory test results submitted by CSC's analytical laboratory, Upstate, and tabulated the compounds detected for each sample. A table of the compounds detected for each material type is included herein as Table D10, along with the laboratory data. GZA compared the reported chemical concentrations versus recommended soil cleanup objective values and eastern United States background values shown in the tables.

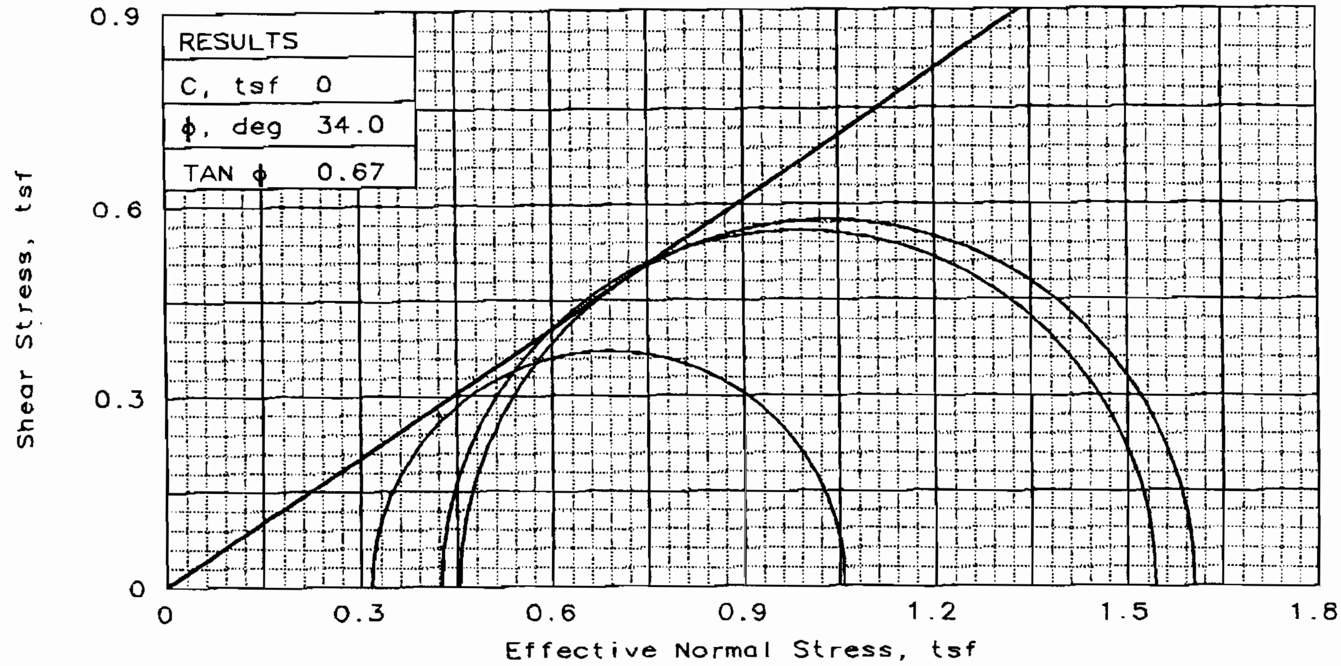
Based on GZA's review, the chemical characterization test results for this material was acceptable. Therefore, the Barre Stone Products soil was considered acceptable for barrier protection soil and suitable fill.

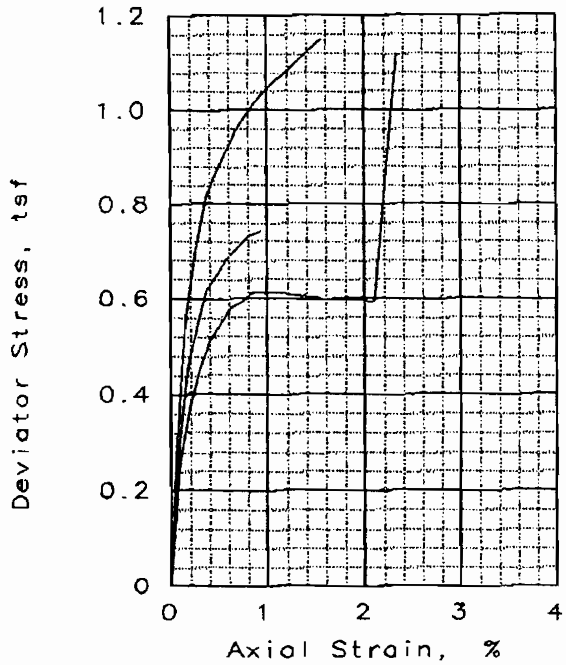
Table D9

SUMMARY OF BULK SAMPLE LABORATORY TESTING
BARRE STONE PRODUCTS
BARRIER PROTECTION MATERIAL AND SUITABLE FILL

WASTE MANAGEMENT OF NEW YORK
MCKENNA LANDFILL REMEDIAL CLOSURE PROJECT

SAMPLE NUMBER	NATURAL MOISTURE CONTENT (%)	ATTERBERG LIMITS			GRADATION		MODIFIED PROCTOR		RECONSTITUTED PERMEABILITY			
		LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PLASTICITY INDEX	% FINER THAN #200 SEIVE	% FINER THAN 2 MICRONS	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE CONTENT (%)	PERMEABILITY (CM/SEC)	CONFINING PRESSURE (PSF)	TEST DRY DENSITY (PCF)	TEST MOISTURE CONTENT (%)
08180-1	20.0	21	12	9	90		121.5	12.5	1.2E-05	720	109.4	12.3
08180-2	19.5	20	11	9	91		122.0	13.0	7.1E-07	720	109.7	15.0
08180-3	21.2	31	12	19	93		119.5	14.0	1.5E-06	720	107.3	16.1
08180-4	17.8	26	11	15	90							
08180-5	16.3	24	11	13	86							
05071-1	11.8	17	9	8	57	13	134.5	7.5	6.6E-07	720	118.6	6.8
05071-2	13.2	17	10	7	55	12	135.0	8.0	1.4E-06	720	118.9	6.9
05071-3	73.8	16	11	5	59	13	134.5	7.5	8.0E-07	720	119.1	6.9
05071-4	14.1	19	11	8	57	13	135.0	7.5	1.1E-06	720	118.5	6.9
05071-5	13.2	19	11	8	57	14	135.5	7.5	5.9E-07	720	118.9	6.4
05071-6	11.7	18	11	7	54	11	137.0	6.5	7.6E-07	720	118.3	6.2
05091-1	10.4	18	11	7	57	12						
05091-2	10.1	19	11	8	57	13						
05091-3	10.6	16	9	7	56	12						
05091-4	10.2	18	11	7	56	12						
05091-5	10.8	18	10	8	54	12						
05091-6	10.4	18	10	8	58	12						
05091-7	11	17	11	6	52	11						





SAMPLE NO.:		1	2	3
INITIAL	WATER CONTENT, %	8.9	8.9	8.9
	DRY DENSITY, pcf	119.0	118.8	118.9
	SATURATION, %	71.5	71.0	74.1
	VOID RATIO	0.311	0.314	0.297
	DIAMETER, in	2.80	2.80	2.80
	HEIGHT, in	5.60	5.60	5.60
AT TEST	WATER CONTENT, %	11.9	12.4	11.5
	DRY DENSITY, pcf	119.0	118.8	118.9
	SATURATION, %	95.6	99.2	95.4
	VOID RATIO	0.311	0.314	0.297
	DIAMETER, in	2.80	2.80	2.80
	HEIGHT, in	5.60	5.60	5.60
Strain rate, %/min		0.10	0.10	0.10
EFF CELL PRESSURE, tsf		0.72	1.44	1.08
FAIL. STRESS, tsf		0.74	1.12	1.15
TOTAL PORE PR., tsf		4.36	4.98	4.59
STRAIN, %		0.9	2.3	1.6
ULT. STRESS, tsf				
TOTAL PORE PR., tsf				
STRAIN, %				
$\bar{\sigma}_1$ FAILURE, tsf		1.06	1.54	1.60
$\bar{\sigma}_3$ FAILURE, tsf		0.32	0.42	0.45

TYPE OF TEST:
CU with Pore Pressures

SAMPLE TYPE: Recompacted

DESCRIPTION: Silty Sand - SM

SPECIFIC GRAVITY= 2.5

REMARKS: 90% Proctor @ 2% Over

Tested By:

CLIENT: Ciminelli

PROJECT: McKenna Landfill

SAMPLE LOCATION: Barrier Protection
Barre Pit

PROJ. NO.: 00-1027 DATE: 8-1-00

TRIAXIAL SHEAR TEST REPORT

GLYNN GEOTECHNICAL ENGINEERING

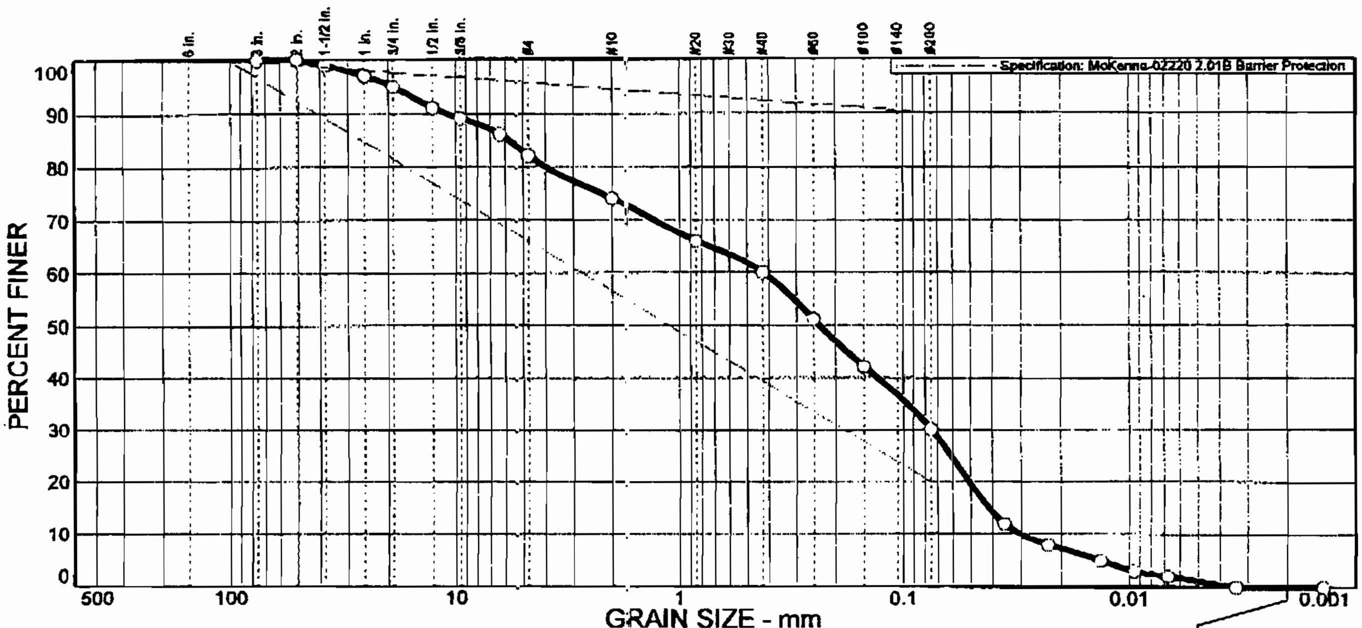
GGE
a member of the GLYNN GROUP

Grain Size Analysis
ASTM D-422

Project: Materials Testing **Project No.:** 00-1027

Client: Ciminelli Services Corp.

Sample No: 00-07 **Source of Sample:** **Date:** 7/14/00
Location: Barrier Protection Layer Material- Barre **Elev./Depth:**



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0	5	13	8	14	30	30	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100		
2 in.	100		
1.5 in.	99		
1 in.	97		
3/4 in.	95		
1/2 in.	91		
3/8 in.	89		
1/4 in.	86		
#4	82		
#10	74		
#20	66		
#40	60		
#60	51		
#100	42		
#200	30	20 - 90	

Soil Description

Silty sand with gravel

Atterberg Limits

PL= LL= PI= N.P.

Coefficients

D_{85}= 5.87 D_{60}= 0.425 D_{50}= 0.237
D_{30}= 0.0750 D_{15}= 0.0414 D_{10}= 0.0303
C_u= 14.02 C_c= 0.44

Classification

USCS= SM AASHTO=

Remarks

* McKenna-02220 2.01B Barrier Protection

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Reported/Reviewed by

GGE

a member of the GLYNN GROUP

COMPACTION TEST DATA

ASTM D - 698 - 78 / ASTM D - 1557 - 78

Civil • Structural • Geotechnical • Materials Testing • Consulting

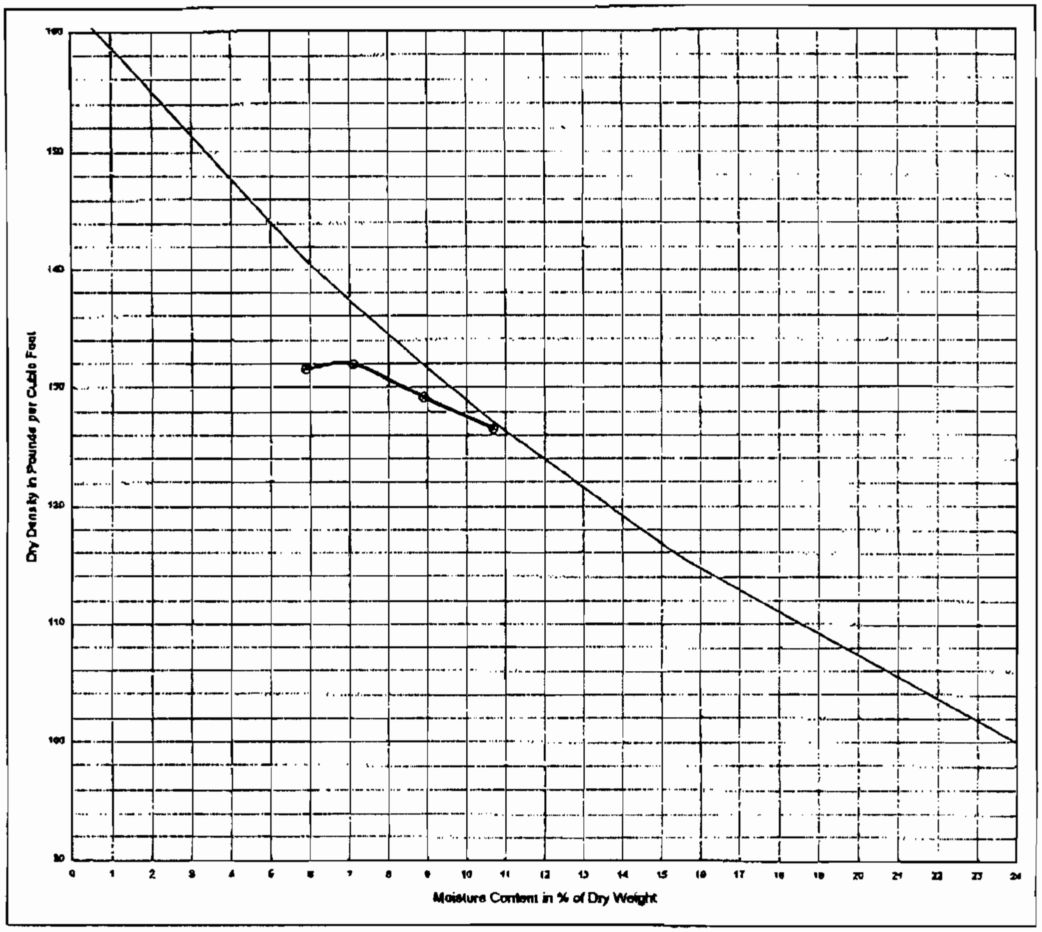
PROJECT:	MATERIALS TESTING	DATE REPORTED:	JULY 18, 2000
LOCATION:	McKENNA LANDFILL	PROJECT NO.:	00 - 1027
CLIENT:	CIMINELLI	SAMPLE NO.:	00 - 07
DATE RECEIVED:	JULY 11, 2000	DEPTH:	UNKNOWN

SAMPLE DESCRIPTION: BORROW MATERIAL - BARRE

SAMPLE CLASSIFICATION: SILTY SAND WITH GRAVEL - SM

STANDARD A.S.T.M. D - 698 - 78 ____ MODIFIED A.S.T.M. D - 1557 - 78 X CORRECTION METHOD C

HAMMER USED: AUTOMATIC X MANUAL ____ PREPARATION METHOD: DRY ____ MOIST X



MAXIMUM DRY DENSITY	132.0 p.c.f.	OPTIMUM MOISTURE	6.9 %
ZERO AIR VOIDS CURVE AT	2.60	SPECIFIC GRAVITY	

REPORTED BY: EDWARD LOVER

REVIEWED BY: A.R.H. / MARK V. GLYNN, P.G.

GLYNN GEOTECHNICAL ENGINEERING

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TRIAXIAL PERMEABILITY

ASTM D - 5084

PROJECT: McKENNA LANDFILL
LOCATION: ALBION, NEW YORK
CLIENT: CIMINELLI
DATE RECEIVED: JULY 11, 2000
DATE REPORTED: AUGUST 1, 2000
PROJECT NO.: 00-1027
SAMPLE NO.: 00-07
DEPTH: NOT PROVIDED
SAMPLE DESCRIPTION: BORROW MATERIAL - BARRE
SAMPLE CLASSIFICATION: SILTY SAND WITH GRAVEL - SM

INITIAL DATA		
Initial Height	7.6	cm
Initial Diameter	7.1	cm
Moisture Content	8.9	%
Wet Density	129.3	pcf
% Proctor	90.0	%

FINAL DATA		
Final Height	7.4	cm
Final Diameter	7.0	cm
Moisture Content	10.8	%
Wet Density	140.9	pcf
Minimum Saturation	95	%

TEST DATA		
Confining Pressure	63	psi
Head Water Pressure	58	psi
Tail Water Pressure	55	psi
Average Gradient, i	28	

NOTES

MATERIAL COMPACTED TO DESIRED DENSITY VIA MANUAL COMPACTION METHODS.
DEAIRED WATER WAS UTILIZED AS THE PERMEANT LIQUID.

RESULTS

AVERAGE PERMEABILITY, K = 4.1×10^{-5} *(cm/sec) at 20° c*

REPORTED BY: ALAN R. HOPKINS

REVIEWED BY: A.R.H. / MARK W. GLYNN, P.E.

DOCFILE:TRIAXRPT

GLYNN GEOTECHNICAL ENGINEERING

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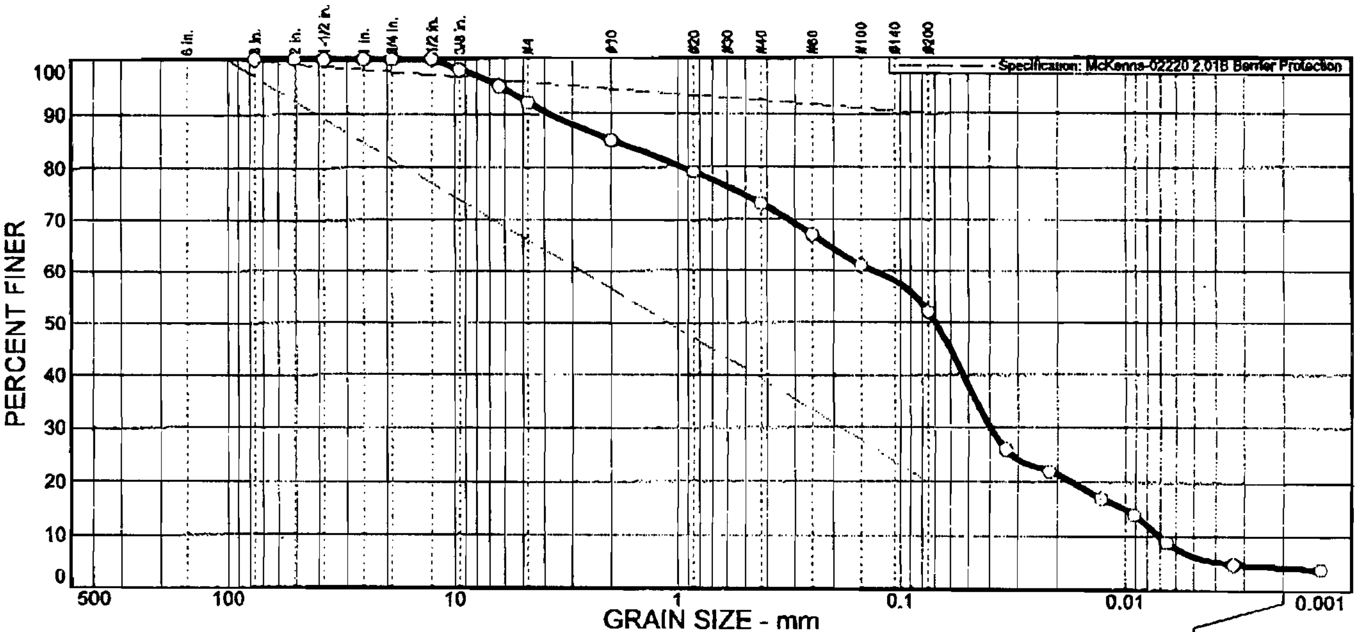
Grain Size Analysis
ASTM D-422

Project: Materials Testing **Project No.:** 00-1027

Client: Ciminelli Services Corp.

Sample No: 00-08 **Source of Sample:** **Date:** 7/14/00

Location: Barrier Protection Layer - Albion School **Elev./Depth:**



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0	0	8	7	12	21	48	4

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100		
2 in.	100		
1.5 in.	100		
1 in.	100		
3/4 in.	100		
1/2 in.	100		
3/8 in.	98		
1/4 in.	95		
#4	92		
#10	85		
#20	79		
#40	73		
#60	67		
#100	61		
#200	52	20 - 90	

Soil Description

Sandy silt

Atterberg Limits

PL= 21 LL= 23 PI= 2

Coefficients

D_{85}= 2.00 D_{60}= 0.133 D_{50}= 0.0699
D_{30}= 0.0398 D_{15}= 0.0100 D_{10}= 0.0070
C_u= 18.92 C_c= 1.68

Classification

USCS= ML AASHTO=

Remarks

* McKenna-02220 2.01B Barrier Protection

GLYNN GEOTECHNICAL ENGINEERING
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Reported/Reviewed by

GGE

a member of the GLYNN GROUP

COMPACTION TEST DATA

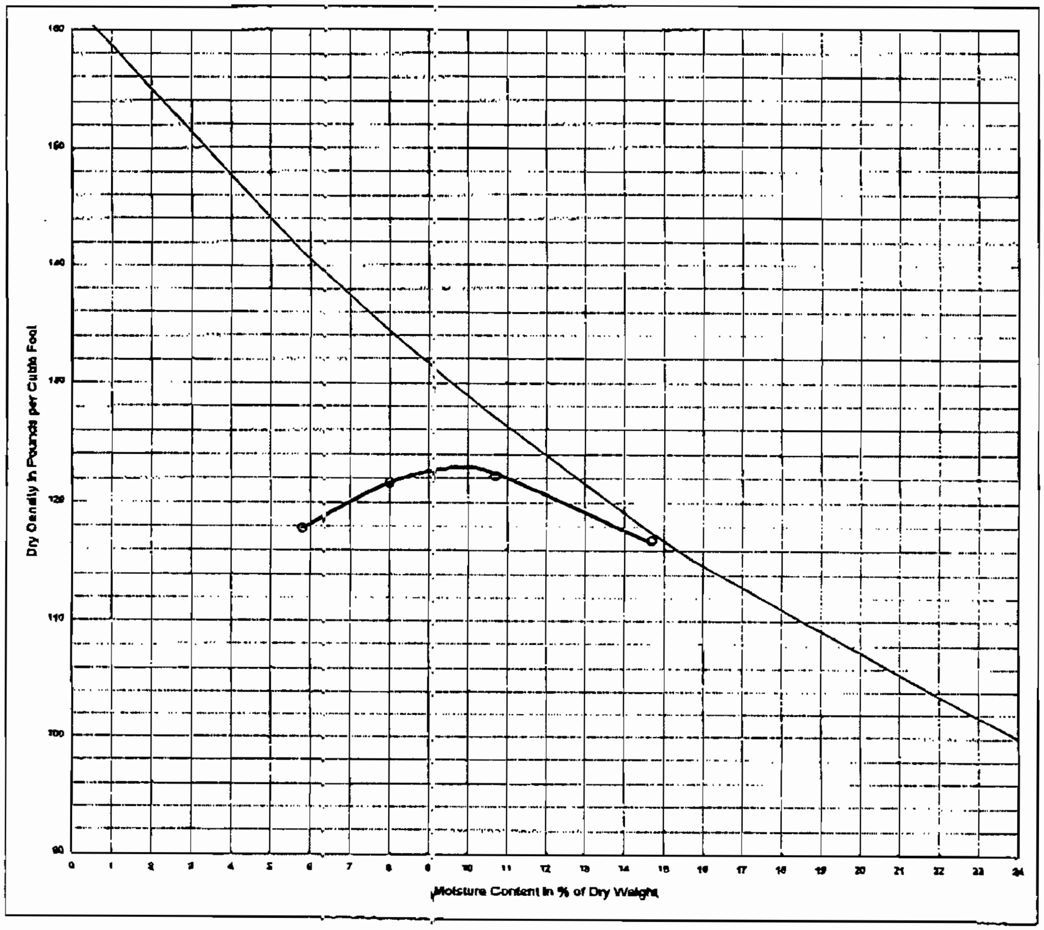
ASTM D - 698 - 78 / ASTM D - 1557 - 78

Civil • Structural • Geotechnical • Materials Testing • Consulting

PROJECT:	MATERIALS TESTING	DATE REPORTED:	JULY 18, 2000
LOCATION:	McKENNA LANDFILL	PROJECT NO.:	00 - 1027
CLIENT:	CIMINELLI	SAMPLE NO.:	00 - 08
DATE RECEIVED:	JULY 11, 2000	DEPTH:	UNKNOWN
SAMPLE DESCRIPTION:	BORROW MATERIAL - ALBION SCHOOL		
SAMPLE CLASSIFICATION:	SILT WITH SAND - ML		

STANDARD A.S.T.M. D - 698 - 78 ____ MODIFIED A.S.T.M. D - 1557 - 78 X CORRECTION METHOD C

HAMMER USED: AUTOMATIC X MANUAL ____ PREPARATION METHOD: DRY ____ MOIST X



MAXIMUM DRY DENSITY 122.5 p.c.f. OPTIMUM MOISTURE 9.9 %

ZERO AIR VOIDS CURVE AT 2.60 SPECIFIC GRAVITY

REPORTED BY: EDWARD LOVER

REVIEWED BY: A.R.H. / MARK W. GLYNN, P.E.

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TRIAXIAL PERMEABILITY
ASTM D - 5084

Civil • Structural • Geotechnical • Materials Testing • Consulting

PROJECT:	McKENNA LANDFILL	DATE REPORTED:	AUGUST 1, 2000
LOCATION:	ALBION, NEW YORK	PROJECT NO.:	00 - 1027
CLIENT:	CIMINELLI	SAMPLE NO.:	00 - 08
DATE RECEIVED:	JULY 11, 2000	DEPTH:	NOT PROVIDED

SAMPLE DESCRIPTION: BORROW MATERIAL - ALBION SCHOOLS

SAMPLE CLASSIFICATION: SILT WITH SAND - ML

INITIAL DATA		
Initial Height	7.6	cm
Initial Diameter	7.1	cm
Moisture Content	11.9	%
Wet Density	122.4	pcf
% Proctor	89.3	%

FINAL DATA		
Final Height	7.7	cm
Final Diameter	7.0	cm
Moisture Content	18.6	%
Wet Density	130.0	pcf
Minimum Saturation	96	%

TEST DATA		
Confining Pressure	63	psi
Head Water Pressure	58	psi
Tail Water Pressure	55	psi
Average Gradient, i	30	

NOTES

MATERIAL COMPACTED TO DESIRED DENSITY VIA MANUAL COMPACTION METHODS.
DEAIRED WATER WAS UTILIZED AS THE PERMEANT LIQUID.

RESULTS

AVERAGE PERMEABILITY, K = 1.8×10^{-6} *(cm/sec) at 20° c*

REPORTED BY: ALAN R. HOPKINS

REVIEWED BY: A.R.H. / MARK W. GLYNN, P.E.

DOCFILE:TRIAXRPT

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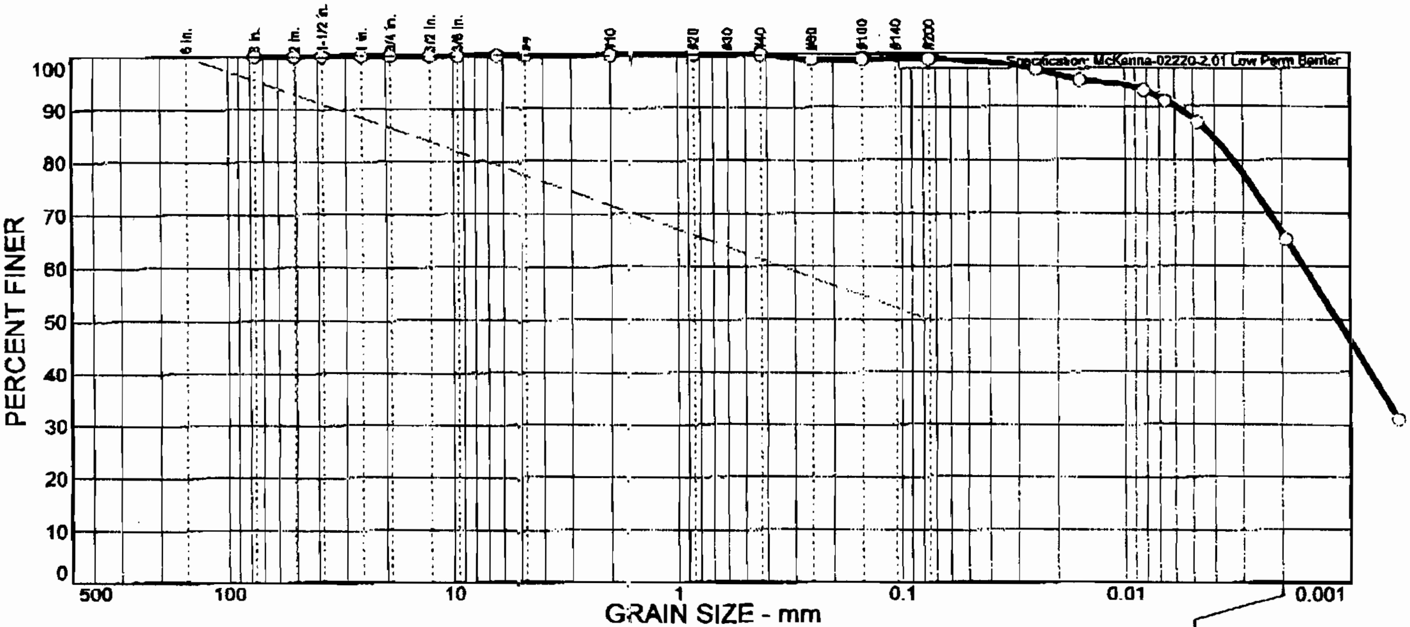
Grain Size Analysis
ASTM D-422

Project: Materials Testing **Project No.:** 00-1027

Client: Ciminelli Services Corp.

Sample No: 00-09 **Source of Sample:** **Date:** 7/31/00

Location: Low Permeability Barrier Material -- Walck Bros. **Elev./Depth:**



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0	0	0	0	0	1	33	66

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100		
2 in.	100		
1.5 in.	100		
1 in.	100		
3/4 in.	100		
1/2 in.	100		
3/8 in.	100		
1/4 in.	100		
#4	100		
#10	100		
#20	100		
#40	100		
#60	99		
#100	99		
#200	99	50 - 100	

Soil Description

Elastic silt

Atterberg Limits

PL= 30 LL= 54 PI= 24

Coefficients

D_{85}= D_{60}= D_{50}=

D_{30}= D_{15}= D_{10}=

C_u= C_c=

Classification

USCS= MH AASHTO=

Remarks

As Recieved Moisture = 13.7 %

* McKenna-02220-2.01 Low Perm Barrier

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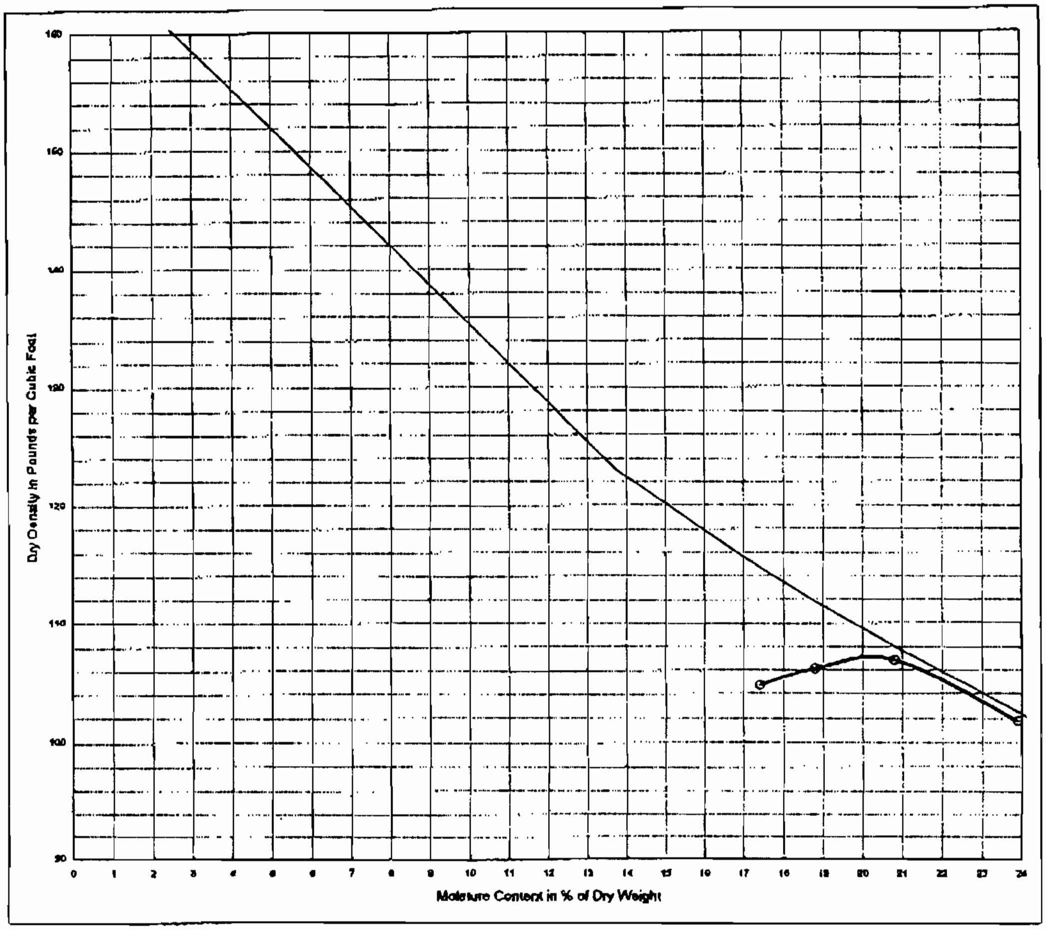
COMPACTION TEST DATA

ASTM D - 698 - 78 / ASTM D - 1557 - 78

PROJECT: MATERIALS TESTING
LOCATION: McKENNA LANDFILL
CLIENT: CIMINELLI
DATE RECEIVED: MAY 31, 2000
DATE REPORTED: JULY 31, 2000
PROJECT NO.: 00 - 1027
SAMPLE NO.: 00 - 09
DEPTH: UNKNOWN
SAMPLE DESCRIPTION: LOW PERMEABILITY BARRIER MATERIAL - WALCK BROTHERS
SAMPLE CLASSIFICATION: ELASTIC SILT - MH

STANDARD A.S.T.M. D-698-78 ____ MODIFIED A.S.T.M. D-1557-78 X CORRECTION METHOD A
HAMMER USED: AUTOMATIC X MANUAL ____ PREPARATION METHOD: DRY ____ MOIST X



MAXIMUM DRY DENSITY 107.0 p.c.f. OPTIMUM MOISTURE 20.2 %
ZERO AIR VOIDS CURVE AT 2.70 SPECIFIC GRAVITY

REPORTED BY: EDWARD LOVER

REVIEWED BY: ARH / A.R.H. / MARK W. GLYNN, P.E.

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Table D10

Chemical Characterization Results for
Barre Stone Borrow Site - Barrier Protection Material
Barre-Pre-Constuction, Barre-1, Barre-2, Barre-3

McKenna Landfill Remedial Closure Project
Albion, New York

Parameter	Recommended Soil Cleanup Objective ppm	Eastern USA Background ppm	Barre (pre-construction) 7/10/00 ppm	Barre-1 ppm	Barre-2 ppm	Barre-3 ppm
VOC - EPA Method 8260 (ppm)						
Methylene Chloride	0.1	N/A	ND	0.009	0.012	0.011
Acetone	0.2	N/A	ND	ND	ND	ND
2-Butanone	0.3	N/A	ND	ND	ND	ND
Tetrachloroethane	1.4	N/A	ND	ND	0.003	ND
SVOC - EPA Method 8270 (ppm)						
No Compounds Detected		N/A	ND	ND	ND	ND
HERBICIDES - EPA Method 8150 (ppm)						
2,4 -D	0.5	N/A	ND	ND	ND	ND
TCL Pesticides/Aroclors EPA Method 8080 (ppm)						
4,4' - DDE	2.1	N/A	ND	ND	ND	ND
Priority Pollutant Metals (ppm)						
Aluminum	SB	33,000	1,800	6,300	5,800	7,200
Antimony	SB	N/A	ND	ND	ND	48
Arsenic	7.5 or SB	3-12	ND	2.9	2.4	2.5
Barium	300 or SB	15-600	ND	42	38	48
Beryllium	0.16 or SB	0-1.75	ND	ND	ND	ND
Cadmium	1 or SB	0.1-1	0.89	1.5	1.5	1.8
Calcium	SB	130-35,000	52,000	46,000	42,000	41,000
Chromium	10 or SB	1.5-40	6.9	12	10	13
Cobalt	30 or SB	2.5-60	16	38	34	35
Copper	25 or SB	1-50	10	15	11	13
Iron	2,000 or SB	2,000-550,000	5,000	11,000	10,000	12,000
Lead	SB	See Note 5	6	ND	ND	ND
Magnesium	SB	100-5,000	11,000	14,000	11,000	10,000
Manganese	SB	50-5,000	300	370	320	340
Mercury	0.1	0.001-0.2	ND	ND	ND	ND
Nickel	13 or SB	0.5-25	11	17	14	17
Potassium	SB	8,500-43,000	450	1,400	1,400	1,700
Selenium	2 or SB	0.1-3.9	ND	ND	ND	ND
Silver	SB	N/A	ND	ND	ND	ND
Sodium	SB	6,000-8,000	310	500	400	420
Thallium	SB	N/A	ND	ND	ND	ND
Vanadium	150 or SB	1-300	ND	ND	ND	ND
Zinc	20 or SB	9-50	23	35	32	42

Notes:
1. Only compounds detected in one or more samples are presented on this table. Refer to original data sheets for list of all compounds included in analysis.
2. Analytical testing completed by Upstate Laboratories, Inc.
3. Recommended soil cleanup objectives are based on the Division Technical and Administrative Guidance Memorandum (TAGM) 4046 on Determination of Soil Cleanup Objectives and Cleanup Levels in its final form.
4. ND = not detected, NA = not available
5. Background levels for lead vary widely. Average levels in undeveloped, rural areas may range from 4-61 ppm. Average background levels in metropolitan or suburban areas or near highways are much higher and typically range from 200-500 ppm.
6. mg/kg = ppm

DATE: 08/14/00

Upstate Laboratories, Inc.
Analysis Results
port Number: 19400086
ient I.D.: CIMINELLI SERVICES GROUP CORP. MCKENNA LF ALBION NY
Sampled by: Client
BARRIER SJOW 1500H 07/10/00 G

APPROVAL: QJS
QC: PS
Lab I.D.: 10170

ULI I.D.: 19400086 Matrix: Solid

	PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
	Percent Solids	100%	07/12/00		WD0939
Total	Aluminum	1800mg/kg dw	08/04/00		MB2671
Total	Antimony by furnace method	<0.4mg/kg dw	08/07/00		MB2677
Total	Arsenic	<50mg/kg dw	08/04/00		MB2671
Total	Barium	<30mg/kg dw	08/04/00		MB2671
Total	Beryllium	<0.50mg/kg dw	08/04/00		MB2671
Total	Cadmium	0.89mg/kg dw	08/04/00		MB2671
Total	Calcium	52000mg/kg dw	08/04/00		MB2671
Total	Chromium	6.9mg/kg dw	08/04/00		MB2671
Total	Cobalt	16mg/kg dw	08/04/00		MB2671
Total	Copper	10mg/kg dw	08/04/00		MB2671
Total	Iron	5000mg/kg dw	08/04/00		MB2671
Total	Lead by furnace method	6.3mg/kg dw	08/07/00		MB2678
Total	Magnesium	11000mg/kg dw	08/04/00		MB2671
Total	Manganese	300mg/kg dw	08/04/00		MB2671
Total	Nickel	11mg/kg dw	08/04/00		MB2671
Total	Potassium	450mg/kg dw	08/08/00		MB2681
Total	Selenium	<50mg/kg dw	08/04/00		MB2671
Total	Silver	<5.0mg/kg dw	08/04/00		MB2671
Total	Sodium	310mg/kg dw	08/08/00		MB2681
Total	Thallium by furnace method	<0.4mg/kg dw	08/11/00		ME3003
Total	Vanadium	<30mg/kg dw	08/04/00		MB2671
Total	Zinc	23mg/kg dw	08/04/00		MB2671
	TCL Volatiles by EPA Method 8260				
	Chloromethane	<3ug/kg dw	07/14/00		VM2955
	Bromomethane	<3ug/kg dw	07/14/00		VM2955
	Vinyl Chloride	<2ug/kg dw	07/14/00		VM2955
	Chloroethane	<3ug/kg dw	07/14/00		VM2955
	Methylene Chloride	<3ug/kg dw	07/14/00		VM2955
	Acetone	<10ug/kg dw	07/14/00		VM2955
	Carbon Disulfide	<3ug/kg dw	07/14/00		VM2955
	1,1-Dichloroethene	<3ug/kg dw	07/14/00		VM2955
	1,1-Dichloroethane	<3ug/kg dw	07/14/00		VM2955
	trans-1,2-Dichloroethene	<3ug/kg dw	07/14/00		VM2955
	cis-1,2-Dichloroethene	<3ug/kg dw	07/14/00		VM2955
	Chloroform	<3ug/kg dw	07/14/00		VM2955
	1,2-Dichloroethane	<3ug/kg dw	07/14/00		VM2955
	2-Butanone	<10ug/kg dw	07/14/00		VM2955
	1,1,1-Trichloroethane	<3ug/kg dw	07/14/00		VM2955

dw = Dry weight

DATE: 08/14/00

Upstate Laboratories, Inc.
Analysis Results
Report Number: 19400086
Client I.D.: CIMINELLI SERVICES GROUP CORP MCKENNA LF ALBION NY
Sampled by: Client BARRIER SJOW 1500H 07/10/00 G

APPROVAL: GJS
QC: PS
Lab I.D.: 10170

ULI I.D.: 19400086 Matrix: Solid

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Carbon Tetrachloride	<3ug/kg dw	07/14/00		VM2955
Bromodichloromethane	<3ug/kg dw	07/14/00		VM2955
1,2-Dichloropropane	<3ug/kg dw	07/14/00		VM2955
cis-1,3-Dichloropropene	<3ug/kg dw	07/14/00		VM2955
Trichloroethene	<3ug/kg dw	07/14/00		VM2955
Dibromochloromethane	<3ug/kg dw	07/14/00		VM2955
1,1,2-Trichloroethane	<3ug/kg dw	07/14/00		VM2955
Benzene	<3ug/kg dw	07/14/00		VM2955
trans-1,3-Dichloropropene	<3ug/kg dw	07/14/00		VM2955
Bromoform	<3ug/kg dw	07/14/00		VM2955
4-Methyl-2-pentanone	<10ug/kg dw	07/14/00		VM2955
2-Hexanone	<10ug/kg dw	07/14/00		VM2955
Tetrachloroethene	<3ug/kg dw	07/14/00		VM2955
1,1,2,2-Tetrachloroethane	<3ug/kg dw	07/14/00		VM2955
Toluene	<3ug/kg dw	07/14/00		VM2955
Chlorobenzene	<3ug/kg dw	07/14/00		VM2955
Ethylbenzene	<3ug/kg dw	07/14/00		VM2955
Styrene	<3ug/kg dw	07/14/00		VM2955
m-Xylene and p-Xylene	<3ug/kg dw	07/14/00		VM2955
o-Xylene	<3ug/kg dw	07/14/00		VM2955
TCL Semivolatiles by EPA Method 8270				
Phenol	<330ug/kg dw	07/21/00		SA2470
bis(2-Chloroethyl)ether	<330ug/kg dw	07/21/00		SA2470
2-Chlorophenol	<330ug/kg dw	07/21/00		SA2470
1,3-Dichlorobenzene	<330ug/kg dw	07/21/00		SA2470
1,4-Dichlorobenzene	<330ug/kg dw	07/21/00		SA2470
1,2-Dichlorobenzene	<330ug/kg dw	07/21/00		SA2470
2-Methylphenol	<330ug/kg dw	07/21/00		SA2470
2,2'-Oxybis(1-Chloropropane)	<330ug/kg dw	07/21/00		SA2470
4-Methylphenol	<330ug/kg dw	07/21/00		SA2470
n-Nitrosodi-n-propylamine	<330ug/kg dw	07/21/00		SA2470
Hexachloroethane	<330ug/kg dw	07/21/00		SA2470
Nitrobenzene	<330ug/kg dw	07/21/00		SA2470
Isophorone	<330ug/kg dw	07/21/00		SA2470
2-Nitrophenol	<330ug/kg dw	07/21/00		SA2470
2,4-Dimethylphenol	<330ug/kg dw	07/21/00		SA2470
bis(2-Chloroethoxy)methane	<330ug/kg dw	07/21/00		SA2470
2,4-Dichlorophenol	<330ug/kg dw	07/21/00		SA2470
1,2,4-Trichlorobenzene	<330ug/kg dw	07/21/00		SA2470

dw = Dry weight

DATE: 08/14/00

Upstate Laboratories, Inc.
Analysis Results
port Number: 19400086
ient I.D.: CIMINELLI SERVICES GROUP CORP. MCKENNA LF ALBION NY
Sampled by: Client

APPROVAL: GJS
QC: RS
Lab I.D.: 10170

BARRIER SJOW 1500H 07/10/00 G

ULI I.D.: 19400086 Matrix: Solid

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Naphthalene	<330ug/kg dw	07/21/00		SA2470
4-Chloroaniline	<330ug/kg dw	07/21/00		SA2470
Hexachlorobutadiene	<330ug/kg dw	07/21/00		SA2470
4-Chloro-3-methylphenol	<330ug/kg dw	07/21/00		SA2470
2-Methylnaphthalene	<330ug/kg dw	07/21/00		SA2470
Hexachlorocyclopentadiene	<330ug/kg dw	07/21/00		SA2470
2,4,6-Trichlorophenol	<330ug/kg dw	07/21/00		SA2470
2,4,5-Trichlorophenol	<330ug/kg dw	07/21/00		SA2470
2-Chloronaphthalene	<330ug/kg dw	07/21/00		SA2470
2-Nitroaniline	<3300ug/kg dw	07/21/00		SA2470
Dimethylphthalate	<330ug/kg dw	07/21/00		SA2470
Acenaphthylene	<330ug/kg dw	07/21/00		SA2470
2,6-Dinitrotoluene	<330ug/kg dw	07/21/00		SA2470
3-Nitroaniline	<3300ug/kg dw	07/21/00		SA2470
Acenaphthene	<330ug/kg dw	07/21/00		SA2470
2,4-Dinitrophenol	<3300ug/kg dw	07/21/00		SA2470
4-Nitrophenol	<3300ug/kg dw	07/21/00		SA2470
Dibenzofuran	<330ug/kg dw	07/21/00		SA2470
2,4-Dinitrotoluene	<330ug/kg dw	07/21/00		SA2470
Diethylphthalate	<330ug/kg dw	07/21/00		SA2470
4-Chlorophenylphenylether	<330ug/kg dw	07/21/00		SA2470
Fluorene	<330ug/kg dw	07/21/00		SA2470
4-Nitroaniline	<3300ug/kg dw	07/21/00		SA2470
2-Methyl-4,6-dinitrophenol	<3300ug/kg dw	07/21/00		SA2470
n-Nitrosodiphenylamine	<330ug/kg dw	07/21/00		SA2470
4-Bromophenylphenylether	<330ug/kg dw	07/21/00		SA2470
Hexachlorobenzene	<330ug/kg dw	07/21/00		SA2470
Pentachlorophenol	<660ug/kg dw	07/21/00		SA2470
Phenanthrene	<330ug/kg dw	07/21/00		SA2470
Anthracene	<330ug/kg dw	07/21/00		SA2470
Carbazole	<330ug/kg dw	07/21/00		SA2470
di-n-butylphthalate	<330ug/kg dw	07/21/00		SA2470
Fluoranthene	<330ug/kg dw	07/21/00		SA2470
Pyrene	<330ug/kg dw	07/21/00		SA2470
Butylbenzylphthalate	<330ug/kg dw	07/21/00		SA2470
3,3'-Dichlorobenzidine	<330ug/kg dw	07/21/00		SA2470
Benzo(a)anthracene	<330ug/kg dw	07/21/00		SA2470
Chrysene	<330ug/kg dw	07/21/00		SA2470
bis(2-Ethylhexyl)phthalate	<330ug/kg dw	07/21/00		SA2470
di-n-octylphthalate	<330ug/kg dw	07/21/00		SA2470

dw = Dry weight

DATE: 08/14/00

Upstate Laboratories, Inc.
Analysis Results
Report Number: 19400086
Client I.D.: CIMINELLI SERVICES GROUP CORP. MCKENNA LF ALBION NY
Sampled by: Client

APPROVAL: GJS
QC: PB
Lab I.D.: 10170
BARRIER SJOW 1500H 07/10/00 G

ULI I.D.: 19400086 Matrix: Solid

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Benzo(b)fluoranthene	<330ug/kg dw	07/21/00		SA2470
Benzo(k)fluoranthene	<330ug/kg dw	07/21/00		SA2470
Benzo(a)pyrene	<330ug/kg dw	07/21/00		SA2470
Indeno(1,2,3-cd)pyrene	<330ug/kg dw	07/21/00		SA2470
Dibenzo(a,h)anthracene	<330ug/kg dw	07/21/00		SA2470
Benzo(ghi)perylene	<330ug/kg dw	07/21/00		SA2470
EPA Method 8150				
2,4-D	<33.3ug/kg dw	07/25/00		GA0216
2,4,5-T	<33.3ug/kg dw	07/25/00		GA0216
2,4,5-TP (Silvex)	<33.3ug/kg dw	07/25/00		GA0216
Dinoseb	<33.3ug/kg dw	07/25/00		GA0216
PCB (Aroclors) by EPA Method 8080				
Aroclor 1016	<0.08mg/kg dw	07/17/00		GA0192
Aroclor 1221	<0.08mg/kg dw	07/17/00		GA0192
Aroclor 1232	<0.08mg/kg dw	07/17/00		GA0192
Aroclor 1242	<0.08mg/kg dw	07/17/00		GA0192
Aroclor 1248	<0.08mg/kg dw	07/17/00		GA0192
Aroclor 1254	<0.08mg/kg dw	07/17/00		GA[illegible]
Aroclor 1260	<0.08mg/kg dw	07/17/00		GA0[illegible]
Total PCB	<0.08mg/kg dw	07/17/00		GA0192
TCL Pesticides by EPA Method 8080				
BHC (a-isomer)	<1.7ug/kg dw	08/11/00		GA0256
BHC (b-isomer)	<1.7ug/kg dw	08/11/00		GA0256
BHC (d-isomer)	<1.7ug/kg dw	08/11/00		GA0256
BHC (g-isomer)	<1.7ug/kg dw	08/11/00		GA0256
Heptachlor	<1.7ug/kg dw	08/11/00		GA0256
Aldrin	<1.7ug/kg dw	08/11/00		GA0256
Heptachlor Epoxide	<1.7ug/kg dw	08/11/00		GA0256
Endosulfan I	<1.7ug/kg dw	08/11/00		GA0256
Dieldrin	<3.3ug/kg dw	08/11/00		GA0256
4,4'-DDE	<3.3ug/kg dw	08/11/00		GA0256
Endrin	<3.3ug/kg dw	08/11/00		GA0256
Endosulfan II	<3.3ug/kg dw	08/11/00		GA0256
4,4'-DDD	<3.3ug/kg dw	08/11/00		GA0256
Endosulfan Sulfate	<3.3ug/kg dw	08/11/00		GA0256
4,4'-DDT	<3.3ug/kg dw	08/11/00		GA0256
Methoxychlor	<17.0ug/kg dw	08/11/00		GA0256

dw = Dry weight

DATE: 08/14/00

Upstate Laboratories, Inc.
Analysis Results
Report Number: 19400086
Client I.D.: CIMINELLI SERVICES GROUP CORP. MCKENNA LF ALBION NY
Sampled by: Client

APPROVAL: GJS
QC: RS
Lab I.D.: 10170

BARRIER SJOW 1500H 07/10/00 G

ULI I.D.: 19400086 Matrix: Solid

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Endrin Ketone	<3.3ug/kg dw	08/11/00		GA0256
Endrin Aldehyde	<3.3ug/kg dw	08/11/00		GA0256
alpha-Chlordane	<1.7ug/kg dw	08/11/00		GA0256
gamma-Chlordane	<1.7ug/kg dw	08/11/00		GA0256
Toxaphene	<170.0ug/kg dw	08/11/00		GA0256

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 22501066
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by:

ID:22501066 Mat:Soil MCKENNA LANDFILL BARRE 1 08/09/01

PARAMETERS		RESULTS	DATE ANAL.	KEY	FILE#
	Percent Solids	98%	08/14/01		WD5867
	Total Cyanide	<1.9mg/kg dw	09/07/01		WD6161
Total	Aluminum	6300mg/kg dw	08/14/01		MB3751
Total	Antimony	<29mg/kg dw	08/14/01		MB3751
Total	Arsenic by furnace method	2.9mg/kg dw	08/16/01		MB3740
Total	Barium	42mg/kg dw	08/14/01		MB3751
Total	Beryllium	<0.49mg/kg dw	08/14/01		MB3751
Total	Cadmium	1.5mg/kg dw	08/14/01		MB3751
Total	Calcium	46000mg/kg dw	08/14/01		MB3751
Total	Chromium	12mg/kg dw	08/14/01		MB3751
Total	Cobalt	38mg/kg dw	08/14/01		MB3751
Total	Copper	15mg/kg dw	08/14/01		MB3751
Total	Iron	11000mg/kg dw	08/14/01		MB3751
Total	Lead	<9.8mg/kg dw	08/14/01		MB3751
Total	Magnesium	14000mg/kg dw	08/14/01		MB3751
Total	Manganese	370mg/kg dw	08/14/01		MB3751
Total	Mercury	<0.16mg/kg dw	09/05/01		MB3799
Total	Nickel	17mg/kg dw	08/14/01		MB3751
Total	Potassium	1400mg/kg dw	08/26/01		MB3781
Total	Selenium by furnace method	<0.10mg/kg dw	08/14/01		MB3479
Total	Silver	<4.9mg/kg dw	08/14/01		MB3751
Total	Sodium	500mg/kg dw	08/26/01		MB3781
Total	Thallium by furnace method	<0.3mg/kg dw	08/28/01		ME4215
Total	Vanadium	<29mg/kg dw	08/14/01		MB3751
Total	Zinc	35mg/kg dw	08/14/01		MB3751

TCL Volatiles by EPA Method 8260

	RESULTS	DATE ANAL.	KEY	FILE#
Chloromethane	<3ug/kg dw	08/17/01		VM3579
Bromomethane	<3ug/kg dw	08/17/01		VM3579
Vinyl Chloride	<2ug/kg dw	08/17/01		VM3579
Chloroethane	<3ug/kg dw	08/17/01		VM3579
Methylene Chloride	9ug/kg dw	08/17/01	44	VM3579
Acetone	<10ug/kg dw	08/17/01		VM3579
Carbon Disulfide	<3ug/kg dw	08/17/01		VM3579
1,1-Dichloroethene	<3ug/kg dw	08/17/01		VM3579
1,1-Dichloroethane	<3ug/kg dw	08/17/01		VM3579
trans-1,2-Dichloroethene	<3ug/kg dw	08/17/01		VM3579
cis-1,2-Dichloroethene	<3ug/kg dw	08/17/01		VM3579
Chloroform	<3ug/kg dw	08/17/01		VM3579
1,2-Dichloroethane	<3ug/kg dw	08/17/01		VM3579
2-Butanone	<10ug/kg dw	08/17/01		VM3579
1,1,1-Trichloroethane	<3ug/kg dw	08/17/01		VM3579
Carbon Tetrachloride	<3ug/kg dw	08/17/01		VM3579
Bromodichloromethane	<3ug/kg dw	08/17/01		VM3579

dw = Dry weight

DATE: / /

state Laboratories, Inc.
alysis Results
Report Number: 22501066
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by:

ID:225C1066 Mat:Soil MCKENNA LANDFILL BARRE 1 08/09/01

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
1,2-Dichloropropane	<3ug/kg dw	08/17/01		VM3579
cis-1,3-Dichloropropene	<3ug/kg dw	08/17/01		VM3579
Trichloroethene	<3ug/kg dw	08/17/01		VM3579
Dibromochloromethane	<3ug/kg dw	08/17/01		VM3579
1,1,2-Trichloroethane	<3ug/kg dw	08/17/01		VM3579
Benzene	<3ug/kg dw	08/17/01		VM3579
trans-1,3-Dichloropropene	<3ug/kg dw	08/17/01		VM3579
Bromoform	<3ug/kg dw	08/17/01		VM3579
4-Methyl-2-pentanone	<10ug/kg dw	08/17/01		VM3579
2-Hexanone	<10ug/kg dw	08/17/01		VM3579
Tetrachloroethene	<3ug/kg dw	08/17/01		VM3579
1,1,2,2-Tetrachloroethane	<3ug/kg dw	08/17/01		VM3579
Toluene	<3ug/kg dw	08/17/01		VM3579
Chlorobenzene	<3ug/kg dw	08/17/01		VM3579
Ethylbenzene	<3ug/kg dw	08/17/01		VM3579
Styrene	<3ug/kg dw	08/17/01		VM3579
m,p-xylene	<3ug/kg dw	08/17/01		VM3579
o-Xylene	<3ug/kg dw	08/17/01		VM3579

TCL Semivolatiles by EPA Method 8270

Phenol	<340ug/kg dw	08/16/01		SA2951
bis(2-Chloroethyl)ether	<340ug/kg dw	08/16/01		SA2951
2-Chlorophenol	<340ug/kg dw	08/16/01		SA2951
1,3-Dichlorobenzene	<340ug/kg dw	08/16/01		SA2951
1,4-Dichlorobenzene	<340ug/kg dw	08/16/01		SA2951
1,2-Dichlorobenzene	<340ug/kg dw	08/16/01		SA2951
2-Methylphenol	<340ug/kg dw	08/16/01		SA2951
2,2'-Oxybis(1-Chloropropane)	<340ug/kg dw	08/16/01		SA2951
4-Methylphenol	<340ug/kg dw	08/16/01		SA2951
n-Nitrosodi-n-propylamine	<340ug/kg dw	08/16/01		SA2951
Hexachloroethane	<340ug/kg dw	08/16/01		SA2951
Nitrobenzene	<340ug/kg dw	08/16/01		SA2951
Isophorone	<340ug/kg dw	08/16/01		SA2951
2-Nitrophenol	<340ug/kg dw	08/16/01		SA2951
2,4-Dimethylphenol	<340ug/kg dw	08/16/01		SA2951
bis(2-Chloroethoxy)methane	<340ug/kg dw	08/16/01		SA2951
2,4-Dichlorophenol	<340ug/kg dw	08/16/01		SA2951
1,2,4-Trichlorobenzene	<340ug/kg dw	08/16/01		SA2951
Naphthalene	<340ug/kg dw	08/15/01		SA2951
4-Chloroaniline	<340ug/kg dw	08/16/01		SA2951
Hexachlorobutadiene	<340ug/kg dw	08/16/01		SA2951
4-Chloro-3-methylphenol	<340ug/kg dw	08/16/01		SA2951
2-Methylnaphthalene	<340ug/kg dw	08/16/01		SA2951
Hexachlorocyclopentadiene	<340ug/kg dw	08/16/01		SA2951

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 22501066
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL: ___
QC: ___
Lab I.D.: 10170
Sampled by:

ID:22501066 Mat:Soil MCKENNA LANDFILL BARRE 1 08/09/01

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
2,4,6-Trichlorophenol	<340ug/kg dw	08/16/01		SA2951
2,4,5-Trichlorophenol	<340ug/kg dw	08/16/01		SA2951
2-Chloronaphthalene	<340ug/kg dw	08/16/01		SA2951
2-Nitroaniline	<3400ug/kg dw	08/16/01		SA2951
Dimethylphthalate	<340ug/kg dw	08/16/01		SA2951
Acenaphthylene	<340ug/kg dw	08/16/01		SA2951
2,6-Dinitrotoluene	<340ug/kg dw	08/16/01		SA2951
3-Nitroaniline	<3400ug/kg dw	08/16/01		SA2951
Acenaphthene	<340ug/kg dw	08/16/01		SA2951
2,4-Dinitrophenol	<3400ug/kg dw	08/16/01		SA2951
4-Nitrophenol	<3400ug/kg dw	08/16/01		SA2951
Dibenzofuran	<340ug/kg dw	08/16/01		SA2951
2,4-Dinitrotoluene	<340ug/kg dw	08/16/01		SA2951
Diethylphthalate	<340ug/kg dw	08/16/01		SA2951
4-Chlorophenylphenylether	<340ug/kg dw	08/16/01		SA2951
Fluorene	<340ug/kg dw	08/16/01		SA2951
4-Nitroaniline	<3400ug/kg dw	08/16/01		SA2951
2-Methyl-4,6-dinitrophenol	<3400ug/kg dw	08/16/01		SA2951
n-Nitrosodiphenylamine	<340ug/kg dw	08/16/01		SA2951
4-Bromophenylphenylether	<340ug/kg dw	08/16/01		SA2951
Hexachlorobenzene	<340ug/kg dw	08/16/01		SA2951
Pentachlorophenol	<680ug/kg dw	08/16/01		SA2951
Phenanthrene	<340ug/kg dw	08/16/01		SA2951
Anthracene	<340ug/kg dw	08/16/01		SA2951
Carbazole	<340ug/kg dw	08/16/01		SA2951
di-n-butylphthalate	<340ug/kg dw	08/16/01		SA2951
Fluoranthene	<340ug/kg dw	08/16/01		SA2951
Pyrene	<340ug/kg dw	08/16/01		SA2951
Butylbenzylphthalate	<340ug/kg dw	08/16/01		SA2951
3,3'-Dichlorobenzidine	<340ug/kg dw	08/16/01		SA2951
Benzo(a)anthracene	<340ug/kg dw	08/16/01		SA2951
Chrysene	<340ug/kg dw	08/16/01		SA2951
bis(2-Ethylhexyl)phthalate	<340ug/kg dw	08/16/01		SA2951
di-n-octylphthalate	<340ug/kg dw	08/16/01		SA2951
Benzo(b)fluoranthene	<340ug/kg dw	08/16/01		SA2951
Benzo(k)fluoranthene	<340ug/kg dw	08/16/01		SA2951
Benzo(a)pyrene	<340ug/kg dw	08/16/01		SA2951
Indeno(1,2,3-cd)pyrene	<340ug/kg dw	08/16/01		SA2951
Dibenzo(a,h)anthracene	<340ug/kg dw	08/16/01		SA2951
Benzo(ghi)perylene	<340ug/kg dw	08/16/01		SA2951
EPA Method 8150				
2,4-D	<34ug/kg dw	08/25/01		GA0923
2,4,5-T	<34ug/kg dw	08/25/01		GA0923

dw = Dry weight

DATE: / /

tato Laboratories, Inc.
Analysis Results
Report Number: 22501066
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:_ _ _ _
QC:_ _ _ _ Lab I.D.: 10170
Sampled by:

ID:22501066 Mat:Soil MCKENNA LANDFILL BARRE 1 08/09/01

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
2,4,5-TP (Silvex)	<34ug/kg dw	08/25/01		GA0923
Dinoseb	<34ug/kg dw	08/25/01		GA0923
TCL Pesticides/Aroclors by EPA 8082				
BHC (a-isomer)	<1.7ug/kg dw	08/22/01		GA0911
BHC (b-isomer)	<1.7ug/kg dw	08/22/01		GA0911
BHC (d-isomer)	<1.7ug/kg dw	08/22/01		GA0911
BHC (g-isomer)	<1.7ug/kg dw	08/22/01		GA0911
Heptachlor	<1.7ug/kg dw	08/22/01		GA0911
Aldrin	<1.7ug/kg dw	08/22/01		GA0911
Heptachlor Epoxide	<1.7ug/kg dw	08/22/01		GA0911
Endosulfan I	<1.7ug/kg dw	08/22/01		GA0911
Dieldrin	<3.3ug/kg dw	08/22/01		GA0911
4,4'-DDE	<3.3ug/kg dw	08/22/01		GA0911
Endrin	<3.3ug/kg dw	08/22/01		GA0911
Endosulfan II	<3.3ug/kg dw	08/22/01		GA0911
4,4'-DDD	<3.3ug/kg dw	08/22/01		GA0911
Endosulfan Sulfate	<3.3ug/kg dw	08/22/01		GA0911
4,4'-DDT	<3.3ug/kg dw	08/22/01		GA0911
Methoxychlor	<17ug/kg dw	08/22/01		GA0911
Endrin Ketone	<3.3ug/kg dw	08/22/01		GA0911
Endrin Aldehyde	<3.3ug/kg dw	08/22/01		GA0911
alpha-Chlordane	<1.7ug/kg dw	08/22/01		GA0911
gamma-Chlordane	<1.7ug/kg dw	08/22/01		GA0911
Toxaphene	<170ug/kg dw	08/22/01		GA0911
Aroclor 1016	<1.7ug/kg dw	08/22/01		GA0911
Aroclor 1221	<1.7ug/kg dw	08/22/01		GA0911
Aroclor 1232	<1.7ug/kg dw	08/22/01		GA0911
Aroclor 1242	<1.7ug/kg dw	08/22/01		GA0911
Aroclor 1248	<1.7ug/kg dw	08/22/01		GA0911
Aroclor 1254	<1.7ug/kg dw	08/22/01		GA0911
Aroclor 1260	<1.7ug/kg dw	08/22/01		GA0911

ID:22501067 Mat:Soil MCKENNA LANDFILL BARRE 2 08/09/01

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Percent Solids	96%	08/14/01		WD5867
Total Cyanide	<0.9mg/kg dw	08/23/01		WD5891
Total Aluminum	5800mg/kg dw	08/14/01		MB3751
Total Antimony	<29mg/kg dw	08/14/01		MB3751
Total Arsenic by furnace method	2.4mg/kg dw	08/16/01		MB3740
Total Barium	38mg/kg dw	08/14/01		MB3751
Total Beryllium	<0.49mg/kg dw	08/14/01		MB3751

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 22501066
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL: _ _ _ _
QC: _ _ _ _ _
Lab I.D.: 10170
Sampled by:

ID:22501067 Mat:Soil MCKENNA LANDFILL BARRE 2 08/09/01

PARAMETERS		RESULTS	DATE ANAL.	KEY	FILE#
Total	Cadmium	1.5mg/kg dw	08/14/01		MB3751
Total	Calcium	42000mg/kg dw	08/14/01		MB3751
Total	Chromium	10mg/kg dw	08/14/01		MB3751
Total	Cobalt	34mg/kg dw	08/14/01		MB3751
Total	Copper	11mg/kg dw	08/14/01		MB3751
Total	Iron	10000mg/kg dw	08/14/01		MB3751
Total	Lead	<9.7mg/kg dw	08/14/01		MB3751
Total	Magnesium	11000mg/kg dw	08/14/01		MB3751
Total	Manganese	320mg/kg dw	08/14/01		MB3751
Total	Mercury	<0.16mg/kg dw	09/05/01		MB3799
Total	Nickel	14mg/kg dw	08/14/01		MB3751
Total	Potassium	1400mg/kg dw	08/26/01		MB3781
Total	Selenium by furnace method	<0.10mg/kg dw	08/14/01		MB3479
Total	Silver	<4.9mg/kg dw	08/14/01		MB3751
Total	Sodium	400mg/kg dw	08/26/01		MB3781
Total	Thallium by furnace method	<0.4mg/kg dw	08/28/01		ME4215
Total	Vanadium	<29mg/kg dw	08/14/01		MB3751
Total	Zinc	32mg/kg dw	08/14/01		MB3751

TCL Volatiles by EPA Method 8260

Parameter	Results	Date Anal.	Key	File#
Chloromethane	<3ug/kg dw	08/17/01		VM3579
Bromomethane	<3ug/kg dw	08/17/01		VM3579
Vinyl Chloride	<2ug/kg dw	08/17/01		VM3579
Chloroethane	<3ug/kg dw	08/17/01		VM3579
Methylene Chloride	12ug/kg dw	08/17/01	44	VM3579
Acetone	<10ug/kg dw	08/17/01		VM3579
Carbon Disulfide	<3ug/kg dw	08/17/01		VM3579
1,1-Dichloroethene	<3ug/kg dw	08/17/01		VM3579
1,1-Dichloroethane	<3ug/kg dw	08/17/01		VM3579
trans-1,2-Dichloroethene	<3ug/kg dw	08/17/01		VM3579
cis-1,2-Dichloroethene	<3ug/kg dw	08/17/01		VM3579
Chloroform	<3ug/kg dw	08/17/01		VM3579
1,2-Dichloroethane	<3ug/kg dw	08/17/01		VM3579
2-Butanone	<10ug/kg dw	08/17/01		VM3579
1,1,1-Trichloroethane	<3ug/kg dw	08/17/01		VM3579
Carbon Tetrachloride	<3ug/kg dw	08/17/01		VM3579
Bromodichloromethane	<3ug/kg dw	08/17/01		VM3579
1,2-Dichloropropane	<3ug/kg dw	08/17/01		VM3579
cis-1,3-Dichloropropene	<3ug/kg dw	08/17/01		VM3579
Trichloroethene	<3ug/kg dw	08/17/01		VM3579
Dibromochloromethane	<3ug/kg dw	08/17/01		VM3579
1,1,2-Trichloroethane	<3ug/kg dw	08/17/01		VM3579
Benzene	<3ug/kg dw	08/17/01		VM3579
trans-1,3-Dichloropropene	<3ug/kg dw	08/17/01		VM3579

dw = Dry weight

DATE: / /

state Laboratories, Inc.
nalysis Results
Report Number: 22501066
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL: _ _ _ _
QC: _ _ _ _ Lab I.D.: 10170
Sampled by:

ID:22501067 Mat:Soil MCKENNA LANDFILL BARRE 2 08/09/01

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Bromoform	<3ug/kg dw	08/17/01		VM3579
4-Methyl-2-pentanone	<10ug/kg dw	08/17/01		VM3579
2-Hexanone	<10ug/kg dw	08/17/01		VM3579
Tetrachloroethene	3ug/kg dw	08/17/01		VM3579
1,1,2,2-Tetrachloroethane	<3ug/kg dw	08/17/01		VM3579
Toluene	<3ug/kg dw	08/17/01		VM3579
Chlorobenzene	<3ug/kg dw	08/17/01		VM3579
Ethylbenzene	<3ug/kg dw	08/17/01		VM3579
Styrene	<3ug/kg dw	08/17/01		VM3579
m,p-xylene	<3ug/kg dw	08/17/01		VM3579
o-Xylene	<3ug/kg dw	08/17/01		VM3579
TCL Semivolatiles by EPA Method 8270				
Phenol	<350ug/kg dw	08/16/01		SA2951
bis(2-Chloroethyl)ether	<350ug/kg dw	08/16/01		SA2951
2-Chlorophenol	<350ug/kg dw	08/16/01		SA2951
1,3-Dichlorobenzene	<350ug/kg dw	08/16/01		SA2951
1,4-Dichlorobenzene	<350ug/kg dw	08/16/01		SA2951
1,2-Dichlorobenzene	<350ug/kg dw	08/16/01		SA2951
2-Methylphenol	<350ug/kg dw	08/16/01		SA2951
2,2'-Oxybis(1-Chloropropane)	<350ug/kg dw	08/16/01		SA2951
4-Methylphenol	<350ug/kg dw	08/16/01		SA2951
n-Nitrosodi-n-propylamine	<350ug/kg dw	08/16/01		SA2951
Hexachloroethane	<350ug/kg dw	08/16/01		SA2951
Nitrobenzene	<350ug/kg dw	08/16/01		SA2951
Isophorone	<350ug/kg dw	08/16/01		SA2951
2-Nitrophenol	<350ug/kg dw	08/16/01		SA2951
2,4-Dimethylphenol	<350ug/kg dw	08/16/01		SA2951
bis(2-Chloroethoxy)methane	<350ug/kg dw	08/16/01		SA2951
2,4-Dichlorophenol	<350ug/kg dw	08/16/01		SA2951
1,2,4-Trichlorobenzene	<350ug/kg dw	08/16/01		SA2951
Naphthalene	<350ug/kg dw	08/16/01		SA2951
4-Chloroaniline	<350ug/kg dw	08/16/01		SA2951
Hexachlorobutadiene	<350ug/kg dw	08/16/01		SA2951
4-Chloro-3-methylphenol	<350ug/kg dw	08/16/01		SA2951
2-Methylnaphthalene	<350ug/kg dw	08/16/01		SA2951
Hexachlorocyclopentadiene	<350ug/kg dw	08/16/01		SA2951
2,4,6-Trichlorophenol	<350ug/kg dw	08/16/01		SA2951
2,4,5-Trichlorophenol	<350ug/kg dw	08/16/01		SA2951
2-Chloronaphthalene	<350ug/kg dw	08/16/01		SA2951
3-Nitroaniline	<3500ug/kg dw	08/16/01		SA2951
Dimethylphthalate	<350ug/kg dw	08/16/01		SA2951
Acenaphthylene	<350ug/kg dw	08/16/01		SA2951
2,6-Dinitrotoluene	<350ug/kg dw	08/16/01		SA2951

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 22501066
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by:

ID:22501067 Mat:Soil MCKENNA LANDFILL BARRE 2 08/09/01

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
3-Nitroaniline	<3500ug/kg dw	08/16/01		SA2951
Acenaphthene	<350ug/kg dw	08/16/01		SA2951
2,4-Dinitrophenol	<3500ug/kg dw	08/16/01		SA2951
4-Nitrophenol	<3500ug/kg dw	08/16/01		SA2951
Dibenzofuran	<350ug/kg dw	08/16/01		SA2951
2,4-Dinitrotoluene	<350ug/kg dw	08/16/01		SA2951
Diethylphthalate	<350ug/kg dw	08/16/01		SA2951
4-Chlorophenylphenylether	<350ug/kg dw	08/16/01		SA2951
Fluorene	<350ug/kg dw	08/16/01		SA2951
4-Nitroaniline	<3500ug/kg dw	08/16/01		SA2951
2-Methyl-4,6-dinitrophenol	<3500ug/kg dw	08/16/01		SA2951
n-Nitrosodiphenylamine	<350ug/kg dw	08/16/01		SA2951
4-Bromophenylphenylether	<350ug/kg dw	08/16/01		SA2951
Hexachlorobenzene	<350ug/kg dw	08/16/01		SA2951
Pentachlorophenol	<690ug/kg dw	08/16/01		SA2951
Phenanthrene	<350ug/kg dw	08/16/01		SA2951
Anthracene	<350ug/kg dw	08/16/01		SA2951
Carbazole	<350ug/kg dw	08/16/01		SA2951
di-n-butylphthalate	<350ug/kg dw	08/16/01		SA2951
Fluoranthene	<350ug/kg dw	08/16/01		SA2951
Pyrene	<350ug/kg dw	08/16/01		SA2951
Butylbenzylphthalate	<350ug/kg dw	08/16/01		SA2951
3,3'-Dichlorobenzidine	<350ug/kg dw	08/16/01		SA2951
Benzo(a)anthracene	<350ug/kg dw	08/16/01		SA2951
Chrysene	<350ug/kg dw	08/16/01		SA2951
bis(2-Ethylhexyl)phthalate	<350ug/kg dw	08/16/01		SA2951
di-n-octylphthalate	<350ug/kg dw	08/16/01		SA2951
Benzo(b)fluoranthene	<350ug/kg dw	08/16/01		SA2951
Benzo(k)fluoranthene	<350ug/kg dw	08/16/01		SA2951
Benzo(a)pyrene	<350ug/kg dw	08/16/01		SA2951
Indeno(1,2,3-cd)pyrene	<350ug/kg dw	08/16/01		SA2951
Dibenzo(a,h)anthracene	<350ug/kg dw	08/16/01		SA2951
Benzo(ghi)perylene	<350ug/kg dw	08/16/01		SA2951
EPA Method 8150				
2,4-D	<34ug/kg dw	08/25/01		GA0923
2,4,5-T	<34ug/kg dw	08/25/01		GA0923
2,4,5-TP (Silvex)	<34ug/kg dw	08/25/01		GA0923
Dinoseb	<34ug/kg dw	08/25/01		GA0923
TCL Pesticides/Aroclors by EPA 8082				
BHC (a-isomer)	<1.8ug/kg dw	08/22/01		GA0911
BHC (b-isomer)	<1.8ug/kg dw	08/22/01		GA0911
BHC (d-isomer)	<1.8ug/kg dw	08/22/01		GA0911

dw = Dry weight

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Report Number: 22501066
Client I.D.: CIMINELLI SERVICES GROUP CORP.

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Lab I.D.: 10170
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ID:22501067 Mat:Soil MCKENNA LANDFILL BARRE 2 08/09/01

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
BHC (g-isomer)	<1.8ug/kg dw	08/22/01		GA0911
Heptachlor	<1.8ug/kg dw	08/22/01		GA0911
Aldrin	<1.8ug/kg dw	08/22/01		GA0911
Heptachlor Epoxide	<1.8ug/kg dw	08/22/01		GA0911
Endosulfan I	<1.8ug/kg dw	08/22/01		GA0911
Dieldrin	<3.4ug/kg dw	08/22/01		GA0911
4,4'-DDE	<3.4ug/kg dw	08/22/01		GA0911
Endrin	<3.4ug/kg dw	08/22/01		GA0911
Endosulfan II	<3.4ug/kg dw	08/22/01		GA0911
4,4'-DDD	<3.4ug/kg dw	08/22/01		GA0911
Endosulfan Sulfate	<3.4ug/kg dw	08/22/01		GA0911
4,4'-DDT	<3.4ug/kg dw	08/22/01		GA0911
Methoxychlor	<18ug/kg dw	08/22/01		GA0911
Endrin Ketone	<3.4ug/kg dw	08/22/01		GA0911
Endrin Aldehyde	<3.4ug/kg dw	08/22/01		GA0911
alpha-Chlordane	<1.8ug/kg dw	08/22/01		GA0911
gamma-Chlordane	<1.8ug/kg dw	08/22/01		GA0911
Toxaphene	<180ug/kg dw	08/22/01		GA0911
Aroclor 1016	<1.8ug/kg dw	08/22/01		GA0911
Aroclor 1221	<1.8ug/kg dw	08/22/01		GA0911
Aroclor 1232	<1.8ug/kg dw	08/22/01		GA0911
Aroclor 1242	<1.8ug/kg dw	08/22/01		GA0911
Aroclor 1248	<1.8ug/kg dw	08/22/01		GA0911
Aroclor 1254	<1.8ug/kg dw	08/22/01		GA0911
Aroclor 1260	<1.8ug/kg dw	08/22/01		GA0911

ID:22501068 Mat:Soil MCKENNA LANDFILL BARRE 3 08/09/01

	PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
	Percent Solids	98%	08/14/01		WD5867
	Total Cyanide	<1.0mg/kg dw	08/23/01		WD5891
Total	Aluminum	7200mg/kg dw	08/14/01		MB3751
Total	Antimony	48mg/kg dw	08/14/01		MB3751
Total	Arsenic by furnace method	2.5mg/kg dw	08/16/01		MB3740
Total	Barium	48mg/kg dw	08/14/01		MB3751
Total	Beryllium	<0.49mg/kg dw	08/14/01		MB3751
Total	Cadmium	1.8mg/kg dw	08/14/01		MB3751
Total	Calcium	41000mg/kg dw	08/14/01		MB3751
Total	Chromium	13mg/kg dw	08/14/01		MB3751
Total	Cobalt	35mg/kg dw	08/14/01		MB3751
Total	Copper	13mg/kg dw	08/14/01		MB3751
Total	Iron	12000mg/kg dw	08/14/01		MB3751
Total	Lead	<9.8mg/kg dw	08/14/01		MB3751

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 22501066
Client I.D.: CIMINELLI SERVICES GROUP CORP.

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QC:
Lab I.D.: 10170
Sampled by:

ID:22501068 Mat:Soil MCKENNA LANDFILL BARRE 3 08/09/01

PARAMETERS		RESULTS	DATE ANAL.	KEY	FILE#
Total	Magnesium	10000mg/kg dw	08/14/01		MB3751
Total	Manganese	340mg/kg dw	08/14/01		MB3751
Total	Mercury	<0.16mg/kg dw	09/05/01		MB3799
Total	Nickel	17mg/kg dw	08/14/01		MB3751
Total	Potassium	1700mg/kg dw	08/26/01		MB3781
Total	Selenium by furnace method	<0.10mg/kg dw	08/14/01		MB3479
Total	Silver	<4.9mg/kg dw	08/14/01		MB3751
Total	Sodium	420mg/kg dw	08/26/01		MB3781
Total	Thallium by furnace method	<0.3mg/kg dw	08/28/01		ME4215
Total	Vanadium	<30mg/kg dw	08/14/01		MB3751
Total	Zinc	42mg/kg dw	08/14/01		MB3751
	TCL Volatiles by EPA Method 8260				
	Chloromethane	<3ug/kg dw	08/17/01		VM3579
	Bromomethane	<3ug/kg dw	08/17/01		VM3579
	Vinyl Chloride	<2ug/kg dw	08/17/01		VM3579
	Chloroethane	<3ug/kg dw	08/17/01		VM3579
	Methylene Chloride	11ug/kg dw	08/17/01	44	VM3579
	Acetone	<10ug/kg dw	08/17/01		VM3579
	Carbon Disulfide	<3ug/kg dw	08/17/01		VM3579
	1,1-Dichloroethene	<3ug/kg dw	08/17/01		VM3579
	1,1-Dichloroethane	<3ug/kg dw	08/17/01		VM3579
	trans-1,2-Dichloroethene	<3ug/kg dw	08/17/01		VM3579
	cis-1,2-Dichloroethene	<3ug/kg dw	08/17/01		VM3579
	Chloroform	<3ug/kg dw	08/17/01		VM3579
	1,2-Dichloroethane	<3ug/kg dw	08/17/01		VM3579
	2-Butanone	<10ug/kg dw	08/17/01		VM3579
	1,1,1-Trichloroethane	<3ug/kg dw	08/17/01		VM3579
	Carbon Tetrachloride	<3ug/kg dw	08/17/01		VM3579
	Bromodichloromethane	<3ug/kg dw	08/17/01		VM3579
	1,2-Dichloropropane	<3ug/kg dw	08/17/01		VM3579
	cis-1,3-Dichloropropene	<3ug/kg dw	08/17/01		VM3579
	Trichloroethene	<3ug/kg dw	08/17/01		VM3579
	Dibromochloromethane	<3ug/kg dw	08/17/01		VM3579
	1,1,2-Trichloroethane	<3ug/kg dw	08/17/01		VM3579
	Benzene	<3ug/kg dw	08/17/01		VM3579
	trans-1,3-Dichloropropene	<3ug/kg dw	08/17/01		VM3579
	Bromoform	<3ug/kg dw	08/17/01		VM3579
	4-Methyl-2-pentanone	<10ug/kg dw	08/17/01		VM3579
	2-Hexanone	<10ug/kg dw	08/17/01		VM3579
	Tetrachloroethene	<3ug/kg dw	08/17/01		VM3579
	1,1,2,2-Tetrachloroethane	<3ug/kg dw	08/17/01		VM3579
	Toluene	<3ug/kg dw	08/17/01		VM3579
	Chlorobenzene	<3ug/kg dw	08/17/01		VM3579

dw = Dry weight

DATE: / /

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lysis Results
Report Number: 22501066
Client I.D.: CIMINELLI SERVICES GROUP CORP.

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QC:
Lab I.D.: 10170
Sampled by:

ID:22501068 Mat:Soil MCKENNA LANDFILL BARRE 3 08/09/01

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Ethylbenzene	<3ug/kg dw	08/17/01		VM3579
Styrene	<3ug/kg dw	08/17/01		VM3579
m,p-xylene	<3ug/kg dw	08/17/01		VM3579
o-Xylene	<3ug/kg dw	08/17/01		VM3579
TCL Semivolatiles by EPA Method 8270				
Phenol	<340ug/kg dw	08/16/01		SA2951
bis(2-Chloroethyl)ether	<340ug/kg dw	08/16/01		SA2951
2-Chlorophenol	<340ug/kg dw	08/16/01		SA2951
1,3-Dichlorobenzene	<340ug/kg dw	08/16/01		SA2951
1,4-Dichlorobenzene	<340ug/kg dw	08/16/01		SA2951
1,2-Dichlorobenzene	<340ug/kg dw	08/16/01		SA2951
2-Methylphenol	<340ug/kg dw	08/16/01		SA2951
2,2'-Oxybis(1-Chloropropane)	<340ug/kg dw	08/16/01		SA2951
4-Methylphenol	<340ug/kg dw	08/16/01		SA2951
n-Nitrosodi-n-propylamine	<340ug/kg dw	08/16/01		SA2951
Hexachloroethane	<340ug/kg dw	08/16/01		SA2951
Nitrobenzene	<340ug/kg dw	08/16/01		SA2951
Isophorone	<340ug/kg dw	08/16/01		SA2951
2-Nitrophenol	<340ug/kg dw	08/16/01		SA2951
2,4-Dimethylphenol	<340ug/kg dw	08/16/01		SA2951
bis(2-Chloroethoxy)methane	<340ug/kg dw	08/16/01		SA2951
2,4-Dichlorophenol	<340ug/kg dw	08/16/01		SA2951
1,2,4-Trichlorobenzene	<340ug/kg dw	08/16/01		SA2951
Naphthalene	<340ug/kg dw	08/16/01		SA2951
4-Chloroaniline	<340ug/kg dw	08/16/01		SA2951
Hexachlorobutadiene	<340ug/kg dw	08/16/01		SA2951
4-Chloro-3-methylphenol	<340ug/kg dw	08/16/01		SA2951
2-Methylnaphthalene	<340ug/kg dw	08/16/01		SA2951
Hexachlorocyclopentadiene	<340ug/kg dw	08/16/01		SA2951
2,4,6-Trichlorophenol	<340ug/kg dw	08/16/01		SA2951
2,4,5-Trichlorophenol	<340ug/kg dw	08/16/01		SA2951
2-Chloronaphthalene	<340ug/kg dw	08/16/01		SA2951
2-Nitroaniline	<3400ug/kg dw	08/16/01		SA2951
Dimethylphthalate	<340ug/kg dw	08/16/01		SA2951
Acenaphthylene	<340ug/kg dw	08/16/01		SA2951
2,6-Dinitrotoluene	<340ug/kg dw	08/16/01		SA2951
3-Nitroaniline	<3400ug/kg dw	08/16/01		SA2951
Acenaphthene	<340ug/kg dw	08/16/01		SA2951
2,4-Dinitrophenol	<3400ug/kg dw	08/16/01		SA2951
4-Nitrophenol	<3400ug/kg dw	08/16/01		SA2951
Dibenzofuran	<340ug/kg dw	08/16/01		SA2951
2,4-Dinitrotoluene	<340ug/kg dw	08/16/01		SA2951
Diethylphthalate	<340ug/kg dw	08/16/01		SA2951

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 22501066
Client I.D.: CIMINELLI SERVICES GROUP CORP.

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QC:_ _ _ _
Lab I.D.: 10170
Sampled by:

ID:22501068 Mat:Soil MCKENNA LANDFILL BARRE 3 08/09/01

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
4-Chlorophenylphenylether	<340ug/kg dw	08/16/01		SA2951
Fluorene	<340ug/kg dw	08/16/01		SA2951
4-Nitroaniline	<3400ug/kg dw	08/16/01		SA2951
2-Methyl-4,6-dinitrophenol	<3400ug/kg dw	08/16/01		SA2951
n-Nitrosodiphenylamine	<340ug/kg dw	08/16/01		SA2951
4-Bromophenylphenylether	<340ug/kg dw	08/16/01		SA2951
Hexachlorobenzene	<340ug/kg dw	08/16/01		SA2951
Pentachlorophenol	<680ug/kg dw	08/16/01		SA2951
Phenanthrene	<340ug/kg dw	08/16/01		SA2951
Anthracene	<340ug/kg dw	08/16/01		SA2951
Carbazole	<340ug/kg dw	08/16/01		SA2951
di-n-butylphthalate	<340ug/kg dw	08/16/01		SA2951
Fluoranthene	<340ug/kg dw	08/16/01		SA2951
Pyrene	<340ug/kg dw	08/16/01		SA2951
Butylbenzylphthalate	<340ug/kg dw	08/16/01		SA2951
3,3'-Dichlorobenzidine	<340ug/kg dw	08/16/01		SA2951
Benzo(a)anthracene	<340ug/kg dw	08/16/01		SA2951
Chrysene	<340ug/kg dw	08/16/01		SA2951
bis(2-Ethylhexyl)phthalate	<340ug/kg dw	08/16/01		SA2951
di-n-octylphthalate	<340ug/kg dw	08/16/01		SA2951
Benzo(b)fluoranthene	<340ug/kg dw	08/16/01		SA2951
Benzo(k)fluoranthene	<340ug/kg dw	08/16/01		SA2951
Benzo(a)pyrene	<340ug/kg dw	08/16/01		SA2951
Indeno(1,2,3-cd)pyrene	<340ug/kg dw	08/16/01		SA2951
Dibenzo(a,h)anthracene	<340ug/kg dw	08/16/01		SA2951
Benzo(ghi)perylene	<340ug/kg dw	08/16/01		SA2951
EPA Method 8150				
2,4-D	<34ug/kg dw	08/25/01		GA0923
2,4,5-T	<34ug/kg dw	08/25/01		GA0923
2,4,5-TP (Silvex)	<34ug/kg dw	08/25/01		GA0923
Dinoseb	<34ug/kg dw	08/25/01		GA0923
TCL Pesticides/Aroclors by EPA 8082				
BHC (a-isomer)	<1.7ug/kg dw	09/13/01		GA0966
BHC (b-isomer)	<1.7ug/kg dw	09/13/01		GA0966
BHC (d-isomor)	<1.7ug/kg dw	09/13/01		GA0966
BHC (g-isomer)	<1.7ug/kg dw	09/13/01		GA0966
Heptachlor	<1.7ug/kg dw	09/13/01		GA0966
Aldrin	<1.7ug/kg dw	09/13/01		GA0966
Heptachlor Epoxide	<1.7ug/kg dw	09/13/01		GA0966
Endosulfan I	<1.7ug/kg dw	09/13/01		GA0966
Dieldrin	<3.4ug/kg dw	09/13/01		GA0966
4,4'-DDE	<3.4ug/kg dw	09/13/01		GA0966

dw = Dry weight

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QC:
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ID:22501068 Mat:Soil MCKENNA LANDFILL BARRE 3 08/09/01

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Endrin	<3.4ug/kg dw	09/13/01		GA0966
Endosulfan II	<3.4ug/kg dw	09/13/01		GA0966
4,4'-DDD	<3.4ug/kg dw	09/13/01		GA0966
Endosulfan Sulfate	<3.4ug/kg dw	09/13/01		GA0966
4,4'-DDT	<3.4ug/kg dw	09/13/01		GA0966
Methoxychlor	<17ug/kg dw	09/13/01		GA0966
Endrin Ketone	<3.4ug/kg dw	09/13/01		GA0966
Endrin Aldehyde	<3.4ug/kg dw	09/13/01		GA0966
alpha-Chlordane	<1.7ug/kg dw	09/13/01		GA0966
gamma-Chlordane	<1.7ug/kg dw	09/13/01		GA0966
Toxaphene	<170ug/kg dw	09/13/01		GA0966
Aroclor 1016	<1.7ug/kg dw	09/13/01		GA0966
Aroclor 1221	<1.7ug/kg dw	09/13/01		GA0966
Aroclor 1232	<1.7ug/kg dw	09/13/01		GA0966
Aroclor 1242	<1.7ug/kg dw	09/13/01		GA0966
Aroclor 1248	<1.7ug/kg dw	09/13/01		GA0966
Aroclor 1254	<1.7ug/kg dw	09/13/01		GA0966
Aroclor 1260	<1.7ug/kg dw	09/13/01		GA0966

dw = Dry weight

3. BROCKPORT STOCKPILE BPS

Geotechnical Testing Summary

Approximately 32,000 cubic yards of the Brockport soil was used for BPS construction. Test frequencies are summarized on the following page. Table D11 summarizes the geotechnical laboratory test results.

Also included herein is pre-construction lab testing provided by CSC, including results of triaxial compressive strength testing for the existing cover soils. The strength test shows that the soil has an effective internal angle of friction exceeding 27 degrees. The results of the geotechnical testing for the Brockport soil, therefore, indicate the soil was acceptable for use as barrier protection material.

BROCKPORT BPS GEOTECHNICAL LAB TESTING SUMMARY

Test Designation	Required Frequency	Number of Tests Done	Estimated Quantity of Fill Placed	Estimated Test Frequency
Atterberg Limits (ASTM D4318)	Ea. 2,500 Cubic Yards	13	32,000 Cubic Yards	Ea. 2,500 Cubic Yards Placed
Moisture Content (ASTM D3017)	Ea. 2,500 Cubic Yards	13	32,000 Cubic Yards	Ea. 2,500 Cubic Yards Placed
Grain Size Analysis (ASTM D422)	Ea. 2,500 Cubic Yards	13	32,000 Cubic Yards	Ea. 2,500 Cubic Yards Placed
Moisture Density Relationship, Modified Proctor (ASTM D1557)	Ea. 5,000 Cubic Yards	7	32,000 Cubic Yards	Ea. 4,600 Cubic Yards Placed
Remolded Permeability (ASTM D5084)	Ea. 5,000 Cubic Yards	7	32,000 Cubic Yards	Ea. 4,600 Cubic Yards Placed
Angle of Internal Friction	1 per Borrow Source	1	32,000 Cubic Yards	1 per Borrow Source

Chemical Testing Summary

Pre-construction chemical characterization testing was done for the Brockport soil. Chemical characterization testing was required for every 5,000 cubic yards of soil used. Seven samples were tested for a test frequency of about 1 test per 4,600 cubic yards. The samples were tested for the following parameters.

Parameter	Extraction/Preparation [(1)]	Analysis [(1)]
TCL[(2)] Volatile Organic Compounds	5050	8260 (95-1)
TCL Semi-Volatile Organic Compounds	3540/3550	8270 (95-2)
Pesticides/PCB's	3540/3550	8080
Herbicides	3580	8150
TAL[(3)] Metals	3050	95-M
Cyanide	----	9012

[1] EPA SW-846.

[2] TCL – Target Compound List.

[3] TAL – Target Analyte List.

GZA reviewed the laboratory test results submitted by CSC's analytical laboratory, Upstate, and tabulated the compounds detected for each sample. A table of the compounds detected for each material type is included herein as Table D12, along with the laboratory data. GZA compared the reported chemical concentrations versus recommended soil cleanup objective values and eastern United States background values shown in the tables.

Based on GZA's review, the chemical characterization test results for this material was acceptable. Therefore, the Brockport soil was considered acceptable for barrier protection soil.

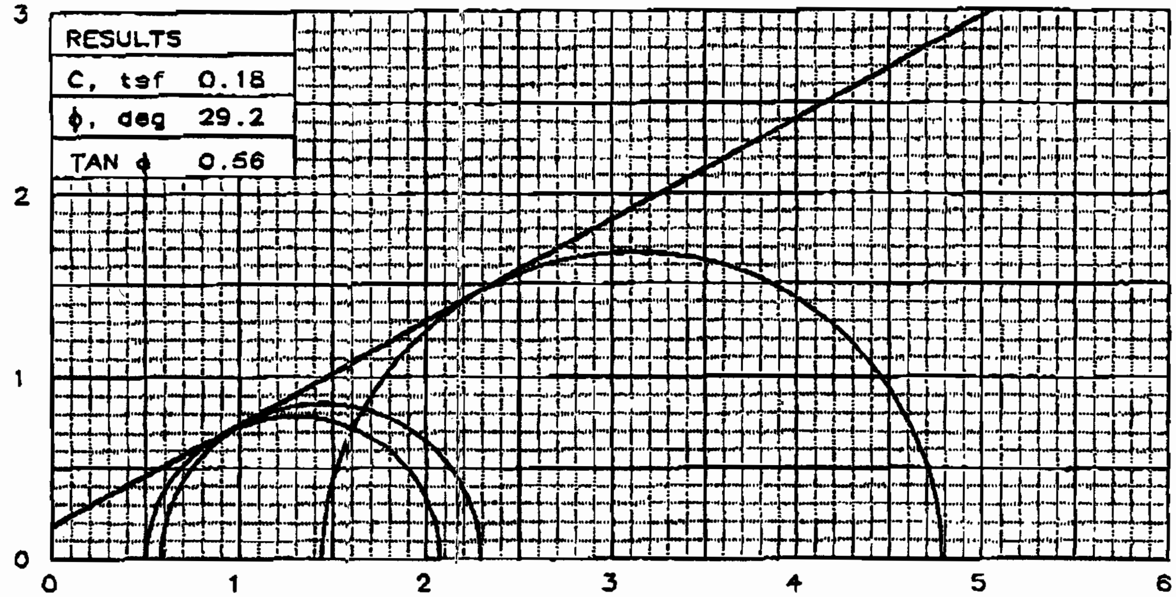
Table D11

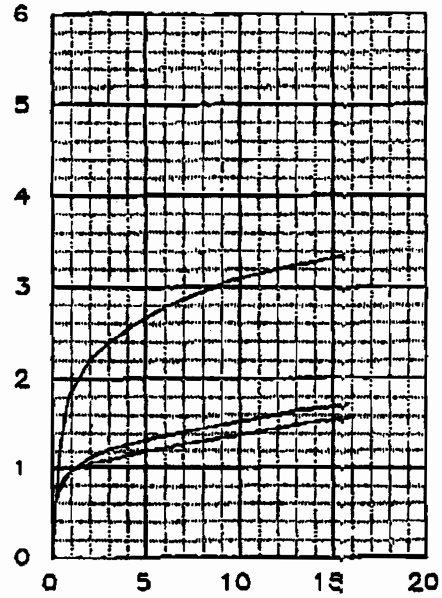
SUMMARY OF BULK SAMPLE LABORATORY TESTING
BROCKPORT
BARRIER PROTECTION MATERIAL

WASTE MANAGEMENT OF NEW YORK

MCKENNA LANDFILL REMEDIAL CLOSURE PROJECT

SAMPLE NUMBER	NATURAL MOISTURE CONTENT (%)	ATTERBERG LIMITS			GRADATION		MODIFIED PROCTOR		RECONSTITUTED PERMEABILITY			
		LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PLASTICITY INDEX	% FINER THAN #200 SEIVE	% FINER THAN 2 MICRONS	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE CONTENT (%)	PERMEABILITY (CM/SEC)	CONFINING PRESSURE (PSF)	TEST DRY DENSITY (PCF)	TEST MOISTURE CONTENT (%)
07171-1	13.9	26	13	13	51		124	11.0	1.2E-07	720	112.5	8.6
07241-1	9	29	15	14	40							
07241-2	8.8	24	15	9	45							
07301-1	9.7	22	14	8	56	10	133.0	8.0	8.5E-07	720	116.2	7.9
08021-1	10.7	17	11	6	59	11						
08061-1	9.4	17	10	7	62	12	132.0	8.0	2.0E-06	720	115.9	7.6
08081-1	9.9	21	11	10	60	14						
08091-1	9.1	17	13	4	55		132.5	8	2.2E-06	720	116.2	7.9
08161-1	9.3	20	13	7	58		132.0	8.0	5.9E-07	720	116.0	8.1
08211-1	9.6	19	11	8	56							
08231-1	11.2	17	13	4	52		133.5	7.0	2.8E-06	720	117.4	7.0
08301-1	10.1	18	13	5	55							
09071-1	9.7	18	13	5	51		133.0	7.5	3.5E-06	720	116.0	7.6





SAMPLE NO.:		1	2	3
INITIAL	WATER CONTENT, %	11.7	11.7	11.7
	DRY DENSITY, pcf	118.3	118.6	118.3
	SATURATION, %	77.8	78.4	77.9
	VOID RATIO	0.398	0.395	0.398
	DIAMETER, in	2.80	2.80	2.80
	HEIGHT, in	5.60	5.60	5.60
AT TEST	WATER CONTENT, %	14.5	16.2	14.6
	DRY DENSITY, pcf	122.7	124.8	125.5
	SATURATION, %	110.4	132.1	121.8
	VOID RATIO	0.348	0.326	0.318
	DIAMETER, in	2.80	2.80	2.80
	HEIGHT, in	5.40	5.32	5.28
Strain rate, %/min		0.10	0.10	0.10
EFF CELL PRESSURE, tsf		0.72	1.08	1.44
FAIL. STRESS, tsf		3.35	1.71	1.57
TOTAL PORE PR., tsf		4.32	5.54	5.98
STRAIN, %		15.6	15.8	15.9
ULT. STRESS, tsf				
TOTAL PORE PR., tsf				
STRAIN, %				
$\bar{\sigma}_1$ FAILURE, tsf		4.79	2.30	2.08
$\bar{\sigma}_3$ FAILURE, tsf		1.44	0.58	0.50

TYPE OF TEST:
CU with Pore Pressures
SAMPLE TYPE: Recompacted
DESCRIPTION: 01-03 Sandy Silt

SPECIFIC GRAVITY= 2.65
REMARKS: 90% Proctor @ 2% Over

Tested By:

CLIENT: Ciminelli

PROJECT: McKenna landfill

SAMPLE LOCATION: Barrier Protection Layer

PROJ. NO.: 00-1027 DATE: 7/24/01

TRIAXIAL SHEAR TEST REPORT

GLYNN GEOTECHNICAL ENGINEERING

GGE

a member of the GLYNN GROUP

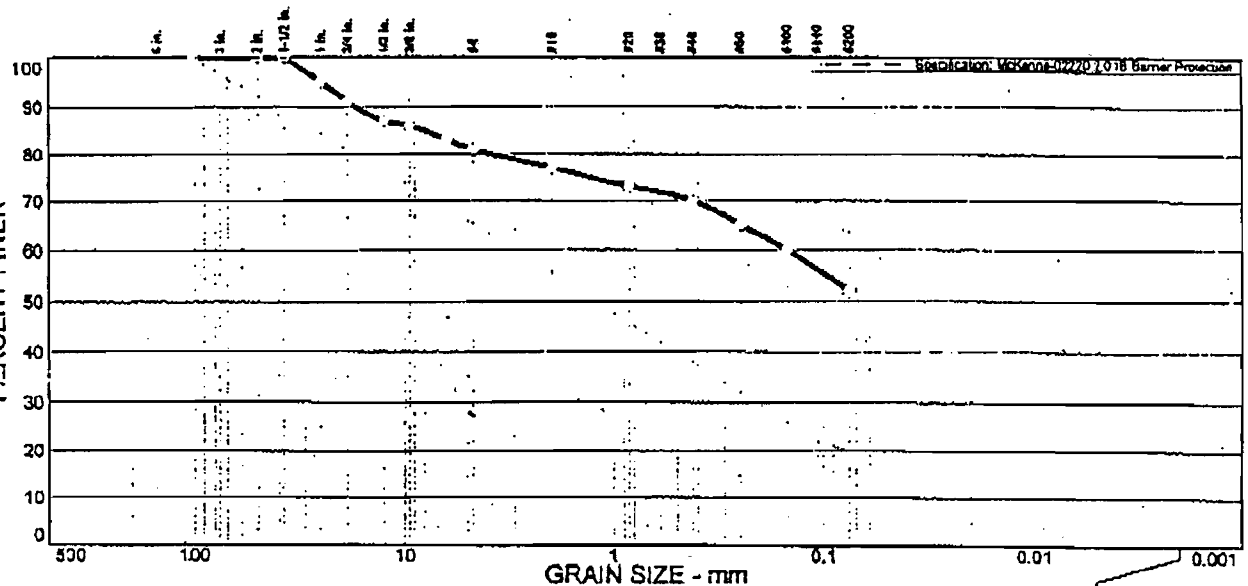
GRAIN SIZE ANALYSIS
ASTM D-422

Project: Materials Testing **Project No.:** 00-1027

Client: Ciminelli Services Corp.

Sample No: 01-03 **Source of Sample:** **Date:** 7/13/01

Location: Barrier Protection Layer **Elev./Depth:**



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0	9	10	4	7	18	52	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
4 in.	100	100 - 100	
2 in.	100		
1.3 in.	100		
1 in.	95		
3/4 in.	91		
1/2 in.	87		
3/8 in.	86		
1/4 in.	83		
#4	81		
#10	77		
#20	73		
#40	71		
#60	65		
#100	60		
#200	52	[illegible]	

Soil Description

Sandy silt with gravel

Atterberg Limits

PL= 19 LL= 21 PI= 2

Coefficients

D_{85}= 8.11 D_{60}= 0.150 D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= ML AASHTO=

Remarks

As Received Moisture = 10.7%

* McKenna-022207.018 [illegible]

GLYNN GEOTECHNICAL ENGINEERING
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[illegible]

GGE
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GRAIN SIZE ANALYSIS
ASTM D-422

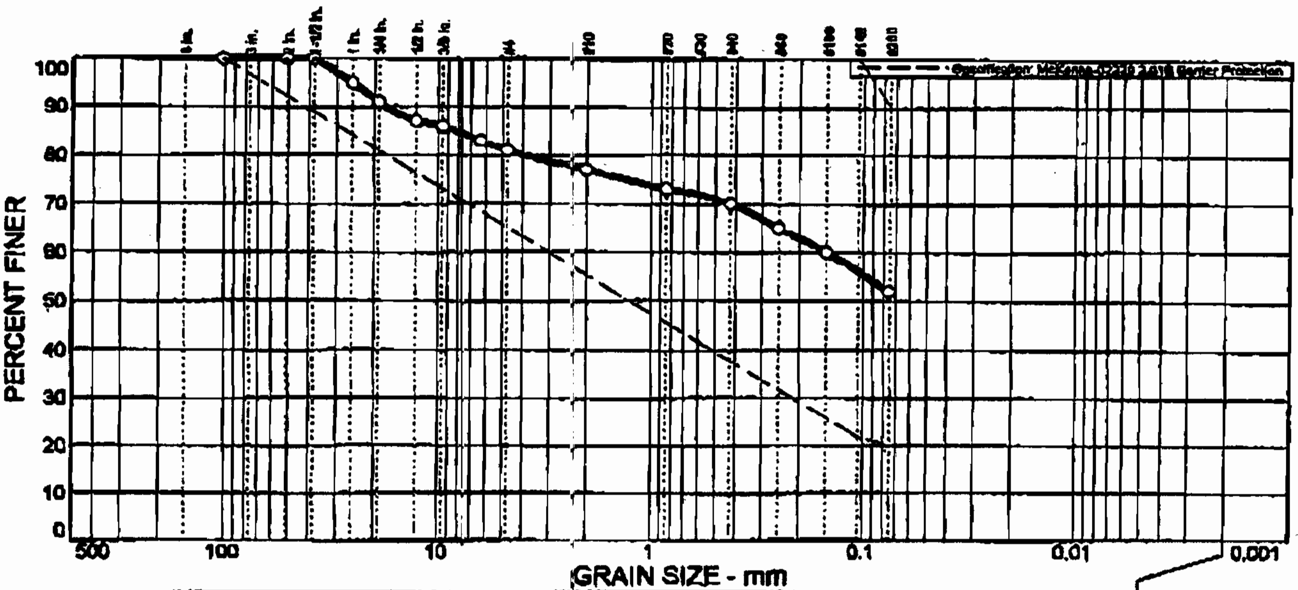
Civil • Structural • Geotechnical • Materials Testing • Consulting

Project: Materials Testing **Project No.:** 00-1027

Client: Ciminelli Services Corp.

Sample No: 01-03 **Source of Sample:** **Date:** 7/13/01

Location: Barrier Protection Layer **Elev./Depth:**



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0	9	10	4	7	18	52	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
4 in.	100	100 - 100	
2 in.	100		
1.5 in.	100		
1 in.	95		
3/4 in.	91		
1/2 in.	87		
3/8 in.	86		
1/4 in.	83		
#4	81		
#10	77		
#20	73		
#40	70		
#60	65		
#100	60		
#200	52	20 - 90	

Soil Description

Sandy silt with gravel

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 8.11 D_{60}= 0.150 D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= ML AASHTO=

Remarks

As Received Moisture = 10.7%

* McKenna-02220 2.01B Barrier Protection

GLYNN GEOTECHNICAL ENGINEERING
415 South Transit Street, Lockport, New York 14094
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www.glynngroup.com

Reported/Reviewed by

GGE

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Civil • Structural • Geotechnical • Materials Testing • Consulting

COMPACTION TEST DATA

ASTM D-698-78 / ASTM D-1557-78

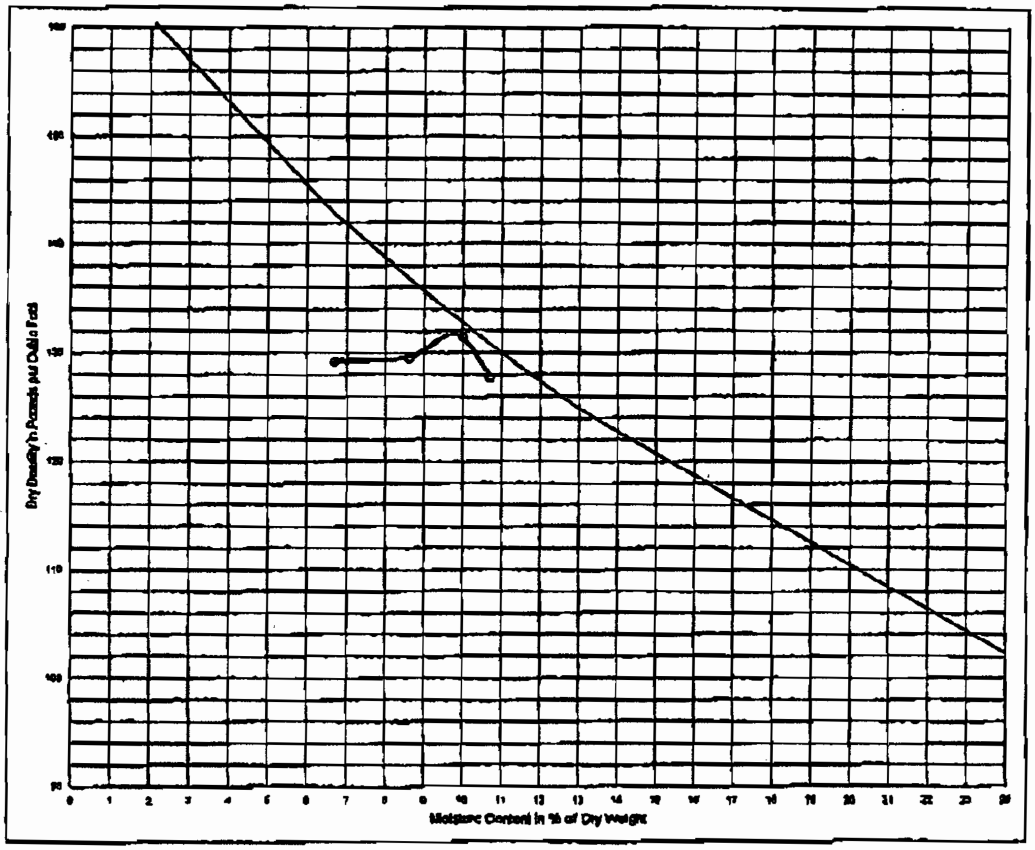
PROJECT:	McKENNA LANDFILL	DATE REPORTED:	JUNE 27, 2001
LOCATION:	ALBION, NEW YORK	PROJECT NO.:	01-1054
CLIENT:	CIMINELLI	SAMPLE NO.:	01-02
DATE RECEIVED:	JULY 12, 2001	DEPTH:	STOCKPILE

SAMPLE DESCRIPTION: BARRIER PROTECTION LAYER

SAMPLE CLASSIFICATION: SANDY SILT WITH GRAVEL - ML

STANDARD A.S.T.M. D-698-78 ____ MODIFIED A.S.T.M. D-1557-78 X CORRECTION METHOD C

HAMMER USED: AUTOMATIC X MANUAL ____ PREPARATION METHOD: DRY ____ MOIST X



MAXIMUM DRY DENSITY 131.5 p.c.f. OPTIMUM MOISTURE 9.7 %

ZERO AIR VOIDS CURVE AT 2.70 SPECIFIC GRAVITY

REPORTED BY: ALAN R. HOPKINS

REVIEWED BY: A.R.M. / MARK W. GLYNN, P.E.

GLYNN GEOTECHNICAL ENGINEERING

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TRIAXIAL PERMEABILITY
ASTM D-5084

Civil • Structural • Geotechnical • Materials Testing • Consulting

PROJECT:	McKENNA LANDFILL	DATE REPORTED:	JULY 24, 2001
LOCATION:	ALBION, NEW YORK	PROJECT NO.:	00-1027
CLIENT:	CIMINELLI	SAMPLE NO.:	01-03
DATE RECEIVED:	JULY 12, 2001	DEPTH:	NOT PROVIDED

SAMPLE DESCRIPTION: BARRIER PROTECTION LAYER
SAMPLE CLASSIFICATION: SANDY SILT WITH GRAVEL - ML

INITIAL DATA		
Initial Height	5.6	cm
Initial Diameter	7.1	cm
Moisture Content	11.7	%
Wet Density	132.2	pcf
% Proctor	90.0	%

FINAL DATA		
Final Height	5.6	cm
Final Diameter	7.1	cm
Moisture Content	16.6	%
Wet Density	134.1	pcf
Minimum Saturation	96	%

TEST DATA		
Confining Pressure	67	psi
Head Water Pressure	62	psi
Tail Water Pressure	60	psi
Average Gradient, i	25	

NOTES

MATERIAL COMPACTED TO DESIRED DENSITY VIA MANUAL COMPACTION METHODS.
DEAIRED WATER WAS UTILIZED AS THE PERMEANT LIQUID.

RESULTS

AVERAGE PERMEABILITY, K = 5.9×10^{-6} *(cm/sec) at 20° c*

REPORTED BY: ALAN R. HOPKINS

REVIEWED BY: A.R.H. / MARK W. GLYNN, P.E.

DOCRL\TRIAXPT

GLYNN GEOTECHNICAL ENGINEERING

415 South Transit Street, Lockport, New York 14094
voice 716.625.6933 / fax 716.625.6983
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Table D12

Chemical Charaterization Results for Brockport Source - Barrier Protection Material
Brockport-PC, Brockport-1, Brockport-2, Brockport-3, Brockport-4, Brockport-5, Brockport-7

McKenna Landfill Remedial Closure Project
Albion, New York

Parameter	Recommended Soil Cleanup Objective ppm	Eastern USA Background ppm	Brockport-PC ppm	Brockport-1 ppm	Brockport-2 ppm	Brockport-3 ppm	Brockport-4 ppm	Brockport-5 ppm	Brockport-7 ppm
VOC - EPA Method 8260 (ppm)									
Methylene Chloride	0.1	N/A	ND	0.01	0.01	0.01	0.007	0.006	0.007
Acetone	0.2	N/A	ND	ND	ND	ND	ND	ND	ND
2-Butanone	0.3	N/A	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethane	1.4	N/A	ND	ND	ND	ND	ND	ND	ND
SVOC - EPA Method 8270 (ppm)									
No Compounds Detected		N/A	ND	ND	ND	ND	ND	ND	ND
HERBICIDES - EPA Method 8150 (ppm)									
2,4 -D	0.5	N/A	ND	ND	ND	ND	ND	ND	ND
TCL Pesticides/Aroclors EPA Method 8080 (ppm)									
4,4' - DDE	2.1	N/A	0.014	0.003	ND	ND	0.028	0.022	0.037
Priority Pollutant Metals (ppm)									
Aluminum	SB	33,000	6,800	3,400	4,400	4,400	4,600	4,300	5,500
Antimony	SB	N/A	120	ND	ND	45	ND	ND	ND
Arsenic	7.5 or SB	3-12	7	2.5	2.4	2.6	3.2	2.9	2.9
Barium	300 or SB	15-600	56	44	47	66	47	290	55
Beryllium	0.16 or SB	0-1.75	ND	ND	ND	ND	ND	ND	ND
Cadmium	1 or SB	0.1-1	0.85	2.1	0.9	0.75	ND	ND	ND
Calcium	SB	130-35,000	38,000	37,000	46,000	51,000	57,000	54,000	38,000
Chromium	10 or SB	1.5-40	10	6.9	8.5	7.6	7.8	7.2	8.5
Cobalt	30 or SB	2.5-60	31	16	15	16	7	7.3	9.5
Copper	25 or SB	1-50	10	9.9	10	12	10	11	9.9
Iron	2,000 or SB	2,000-550,000	9,800	7,900	8,200	8,400	8,000	7,900	8,700
Lead	SB	See Note 5	ND	ND	ND	ND	ND	ND	ND
Magnesium	SB	100-5,000	4,500	3,600	4,300	6,200	3,900	4,800	4,700
Manganese	SB	50-5,000	340	230	260	420	280	270	300
Mercury	0.1	0.001-0.2	ND	0.59	ND	ND	ND	ND	ND
Nickel	13 or SB	0.5-25	14	16	14	12	15	14	16
Potassium	SB	8,500-43,000	1,800	1,100	1,200	1,200	1,400	1,300	1,400
Selenium	2 or SB	0.1-3.9	ND	ND	ND	ND	ND	ND	ND
Silver	SB	N/A	6.1	ND	ND	ND	ND	ND	ND
Sodium	SB	6,000-8,000	ND	420	400	570	400	460	370
Thallium	SB	N/A	ND	ND	ND	ND	ND	ND	ND
Vanadium	150 or SB	1-300	ND	ND	ND	ND	ND	ND	ND
Zinc	20 or SB	9-50	23	27	22	19	22	20	23

Notes:
1. Only compounds detected in one or more samples are presented on this table. Refer to original data sheets for list of all compounds included in analysis.
2. Analytical testing completed by Upstate Laboratories, Inc.
3. Recommended soil cleanup objectives are based on the Division Technical and Administrative Guidance Memorandum (TAGM) 4046 on Determination of Soil Cleanup Objectives and Cleanup Levels in its final form.
4. ND = not detected, NA = not available
5. Background levels for lead vary widely. Average levels in undeveloped, rural areas may range from 4-61 ppm. Average background levels in metropolitan or suburban areas or near highways are much higher and typically range from 200-500 ppm.
6. mg/kg = ppm

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 20101066
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by: Client

ID:20101066 Mat:Soil MCKENNA LANDFILL SOIL SAMPLE 07/18/01 C

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
cis-1,3-Dichloropropene	<3ug/kg dw	07/24/01		VM3542
Trichloroethene	<3ug/kg dw	07/24/01		VM3542
Dibromochloromethane	<3ug/kg dw	07/24/01		VM3542
1,1,2-Trichloroethane	<3ug/kg dw	07/24/01		VM3542
Benzene	<3ug/kg dw	07/24/01		VM3542
trans-1,3-Dichloropropene	<3ug/kg dw	07/24/01		VM3542
Bromoform	<3ug/kg dw	07/24/01		VM3542
4-Methyl-2-pentanone	<11ug/kg dw	07/24/01		VM3542
2-Hexanone	<11ug/kg dw	07/24/01		VM3542
Tetrachloroethene	<3ug/kg dw	07/24/01		VM3542
1,1,2,2-Tetrachloroethane	<3ug/kg dw	07/24/01		VM3542
Toluene	<3ug/kg dw	07/24/01		VM3542
Chlorobenzene	<3ug/kg dw	07/24/01		VM3542
Ethylbenzene	<3ug/kg dw	07/24/01		VM3542
Styrene	<3ug/kg dw	07/24/01		VM3542
m-Xylene and p-Xylene	<3ug/kg dw	07/24/01		VM3542
o-Xylene	<3ug/kg dw	07/24/01		VM3542
TCL Semivolatiles by EPA Method 8270				
Phenol	<350ug/kg dw	07/26/01		SA2922
bis(2-Chloroethyl)ether	<350ug/kg dw	07/26/01		SA2922
2-Chlorophenol	<350ug/kg dw	07/26/01		SA2922
1,3-Dichlorobenzene	<350ug/kg dw	07/26/01		SA2922
1,4-Dichlorobenzene	<350ug/kg dw	07/26/01		SA2922
1,2-Dichlorobenzene	<350ug/kg dw	07/26/01		SA2922
2-Methylphenol	<350ug/kg dw	07/26/01		SA2922
2,2'-Oxybis(1-Chloropropane)	<350ug/kg dw	07/26/01		SA2922
4-Methylphenol	<350ug/kg dw	07/26/01		SA2922
n-Nitrosodi-n-propylamine	<350ug/kg dw	07/26/01		SA2922
Hexachloroethane	<350ug/kg dw	07/26/01		SA2922
Nitrobenzene	<350ug/kg dw	07/26/01		SA2922
Isophorone	<350ug/kg dw	07/26/01		SA2922
2-Nitrophenol	<350ug/kg dw	07/26/01		SA2922
2,4-Dimethylphenol	<350ug/kg dw	07/26/01		SA2922
bis(2-Chloroethoxy)methane	<350ug/kg dw	07/26/01		SA2922
2,4-Dichlorophenol	<350ug/kg dw	07/26/01		SA2922
1,2,4-Trichlorobenzene	<350ug/kg dw	07/26/01		SA2922
Naphthalene	<350ug/kg dw	07/26/01		SA2922
4-Chloroaniline	<350ug/kg dw	07/26/01		SA2922
Hexachlorobutadiene	<350ug/kg dw	07/26/01		SA2922
4-Chloro-3-methylphenol	<350ug/kg dw	07/26/01		SA2922
2-Methylnaphthalene	<350ug/kg dw	07/26/01		SA2922
Hexachlorocyclopentadiene	<350ug/kg dw	07/26/01		SA2922
2,4,6-Trichlorophenol	<350ug/kg dw	07/26/01		SA2922

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 20101066
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by: Client

ID:20101066 Nat:Soil MCKENNA LANDFILL SOIL SAMPLE 07/18/01 C

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
2,4,5-Trichlorophenol	<350ug/kg dw	07/26/01		SA2922
2-Chloronaphthalene	<350ug/kg dw	07/26/01		SA2922
2-Nitroaniline	<3500ug/kg dw	07/26/01		SA2922
Dimethylphthalate	<350ug/kg dw	07/26/01		SA2922
Acenaphthylene	<350ug/kg dw	07/26/01		SA2922
2,6-Dinitrotoluene	<350ug/kg dw	07/26/01		SA2922
3-Nitroaniline	<3500ug/kg dw	07/26/01		SA2922
Acenaphthene	<350ug/kg dw	07/26/01		SA2922
2,4-Dinitrophenol	<3500ug/kg dw	07/26/01		SA2922
4-Nitrophenol	<3500ug/kg dw	07/26/01		SA2922
Dibenzofuran	<350ug/kg dw	07/26/01		SA2922
2,4-Dinitrotoluene	<350ug/kg dw	07/26/01		SA2922
Diethylphthalate	<350ug/kg dw	07/26/01		SA2922
4-Chlorophenylphenylether	<350ug/kg dw	07/26/01		SA2922
Fluorene	<350ug/kg dw	07/26/01		SA2922
4-Nitroaniline	<3500ug/kg dw	07/26/01		SA2922
2-Methyl-4,6-dinitrophenol	<3500ug/kg dw	07/26/01		SA2922
n-Nitrosodiphenylamine	<350ug/kg dw	07/26/01		SA2922
4-Bromophenylphenylether	<350ug/kg dw	07/26/01		SA2922
Hexachlorobenzene	<350ug/kg dw	07/26/01		SA2922
Pentachlorophenol	<700ug/kg dw	07/26/01		SA2922
Phenanthrene	<350ug/kg dw	07/26/01		SA2922
Anthracene	<350ug/kg dw	07/26/01		SA2922
Carbazole	<350ug/kg dw	07/26/01		SA2922
di-n-butylphthalate	<350ug/kg dw	07/26/01		SA2922
Fluoranthene	<350ug/kg dw	07/26/01		SA2922
Pyrene	<350ug/kg dw	07/26/01		SA2922
Butylbenzylphthalate	<350ug/kg dw	07/26/01		SA2922
3,3'-Dichlorobenzidine	<350ug/kg dw	07/26/01		SA2922
Benzo(a)anthracene	<350ug/kg dw	07/26/01		SA2922
Chrysene	<350ug/kg dw	07/26/01		SA2922
7 bis(2-Ethylhexyl)phthalate 50 ppm	800ug/kg dw	07/26/01		SA2922
di-n-octylphthalate	<350ug/kg dw	07/26/01		SA2922
Benzo(b)fluoranthene	<350ug/kg dw	07/26/01		SA2922
Benzo(k)fluoranthene	<350ug/kg dw	07/26/01		SA2922
Benzo(a)pyrene	<350ug/kg dw	07/26/01		SA2922
Indeno(1,2,3-cd)pyrene	<350ug/kg dw	07/26/01		SA2922
Dibenzo(a,h)anthracene	<350ug/kg dw	07/26/01		SA2922
Benzo(ghi)perylene	<350ug/kg dw	07/26/01		SA2922
EPA Method 8150				
2,4-D	<35ug/kg dw	07/26/01		GA0827
2,4,5-T	<35ug/kg dw	07/26/01		GA0827
2,4,5-TP (Silvex)	<35ug/kg dw	07/26/01		GA0827

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 20101066
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL: _ _ _ _
QC: _ _ _ _
Lab I.D.: 10170
Sampled by: Client

ID:20101066 Mat:Soil MCKENNA LANDFILL SOIL SAMPLE 07/18/01 C

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Dinoseb	<35ug/kg dw	07/26/01		GA0827
TCL Pesticides/Aroclors by EPA 8082				
BHC (a-isomer)	<1.8ug/kg dw	07/24/01		GA0822
BHC (b-isomer)	<1.8ug/kg dw	07/24/01		GA0822
BHC (d-isomer)	<1.8ug/kg dw	07/24/01		GA0822
BHC (g-isomer)	<1.8ug/kg dw	07/24/01		GA0822
Heptachlor	<1.8ug/kg dw	07/24/01		GA0822
Aldrin	<1.8ug/kg dw	07/24/01		GA0822
Heptachlor Epoxide	<1.8ug/kg dw	07/24/01		GA0822
Endosulfan I	<1.8ug/kg dw	07/24/01		GA0822
Dieldrin	<3.5ug/kg dw	07/24/01		GA0822
4,4'-DDE	14ug/kg dw	07/24/01		GA0822
Endrin	<3.5ug/kg dw	07/24/01		GA0822
Endosulfan II	<3.5ug/kg dw	07/24/01		GA0822
4,4'-DDD	<3.5ug/kg dw	07/24/01		GA0822
Endosulfan Sulfate	<3.5ug/kg dw	07/24/01		GA0822
4,4'-DDT	<3.5ug/kg dw	07/24/01		GA0822
Methoxychlor	<18ug/kg dw	07/24/01		GA0822
Endrin Ketone	<3.5ug/kg dw	07/24/01		GA0822
Endrin Aldehyde	<3.5ug/kg dw	07/24/01		GA0822
alpha-Chlordane	<1.8ug/kg dw	07/24/01		GA0822
gamma-Chlordane	<1.8ug/kg dw	07/24/01		GA0822
Toxaphene	<180ug/kg dw	07/24/01		GA0822
Aroclor 1016	<1.8ug/kg dw	07/24/01		GA0822
Aroclor 1221	<1.8ug/kg dw	07/24/01		GA0822
Aroclor 1232	<1.8ug/kg dw	07/24/01		GA0822
Aroclor 1242	<1.8ug/kg dw	07/24/01		GA0822
Aroclor 1248	<1.8ug/kg dw	07/24/01		GA0822
Aroclor 1254	<1.8ug/kg dw	07/24/01		GA0822
Aroclor 1260	<1.8ug/kg dw	07/24/01		GA0822

Recomm. soil cleanup objective
2.1 ppm
.014 ppm
OK

dw = Dry weight

DATE: / /

ate Laboratories, Inc.
Analysis Results
Report Number: 23301033
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:_ _ _ _
QC:_ _ _ _
Lab I.D.: 10170
Sampled by: Client

ID:23301033 Mat:Soil MCKENNA LANDFILL BROCKPORT 1 08/17/01

	PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
	Percent Solids	96%	08/23/01		WD6033
	Total Cyanide	<1.0mg/kg dw	08/28/01		WD5988
Total	Aluminum	3400mg/kg dw	08/24/01		MB3777
Total	Antimony	<31mg/kg dw	08/24/01		MB3777
Total	Arsenic by furnace method	2.5mg/kg dw	08/29/01		MB3790
Total	Barium	44mg/kg dw	08/24/01		MB3777
Total	Beryllium	<0.52mg/kg dw	08/24/01		MB3777
Total	Cadmium Above Eastern Background	2.1mg/kg dw	08/24/01		MB3777
Total	Calcium " " "	37000mg/kg dw	08/24/01		MB3777
Total	Chromium	6.9mg/kg dw	08/24/01		MB3777
Total	Cobalt	16mg/kg dw	08/24/01		MB3777
Total	Copper	9.9mg/kg dw	08/24/01		MB3777
Total	Iron	7900mg/kg dw	08/24/01		MB3777
Total	Lead	<10mg/kg dw	08/24/01		MB3777
Total	Magnesium	3600mg/kg dw	08/24/01		MB3777
Total	Manganese	230mg/kg dw	08/24/01		MB3777
Total	Mercury Above Eastern Background	0.59mg/kg dw	08/29/01		MB3788
Total	Nickel	16mg/kg dw	08/24/01		MB3777
Total	Potassium	1100mg/kg dw	08/27/01		MB3783
Total	Selenium by furnace method	<0.11mg/kg dw	08/24/01		MB3778
Total	Silver	<5.2mg/kg dw	08/24/01		MB3777
Total	Sodium	420mg/kg dw	08/27/01		MB3783
Total	Thallium	<0.32mg/kg dw	09/11/01		MB3821
Total	Vanadium	<31mg/kg dw	08/24/01		MB3777
Total	Zinc	27mg/kg dw	08/24/01		MB3777

TCL Volatiles by EPA Method 8260

	PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
	Chloromethane	<3ug/kg dw	08/22/01		VM3585
	Bromomethane	<3ug/kg dw	08/22/01		VM3585
	Vinyl Chloride	<2ug/kg dw	08/22/01		VM3585
	Chloroethane	<3ug/kg dw	08/22/01		VM3585
	Methylene Chloride	10ug/kg dw	08/22/01	44	VM3585
	Acetone	<10ug/kg dw	08/22/01		VM3585
	Carbon Disulfide	<3ug/kg dw	08/22/01		VM3585
	1,1-Dichloroethene	<3ug/kg dw	08/22/01		VM3585
	1,1-Dichloroethane	<3ug/kg dw	08/22/01		VM3585
	trans-1,2-Dichloroethene	<3ug/kg dw	08/22/01		VM3585
	cis-1,2-Dichloroethene	<3ug/kg dw	08/22/01		VM3585
	Chloroform	<3ug/kg dw	08/22/01		VM3585
	1,2-Dichloroethane	<3ug/kg dw	08/22/01		VM3585
	2-Butanone	<10ug/kg dw	08/22/01		VM3585
	1,1,1-Trichloroethane	<3ug/kg dw	08/22/01		VM3585
	Carbon Tetrachloride	<3ug/kg dw	08/22/01		VM3585
	Bromodichloromethane	<3ug/kg dw	08/22/01		VM3585

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 23301033
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by: Client

ID:23301033 Mat:Soil MCKENNA LANDFILL BROCKPORT 1 08/17/01

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
1,2-Dichloropropane	<3ug/kg dw	08/22/01		VM3585
cis-1,3-Dichloropropene	<3ug/kg dw	08/22/01		VM3585
Trichloroethene	<3ug/kg dw	08/22/01		VM3585
Dibromochloromethane	<3ug/kg dw	08/22/01		VM3585
1,1,2-Trichloroethane	<3ug/kg dw	08/22/01		VM3585
Benzene	<3ug/kg dw	08/22/01		VM3585
trans-1,3-Dichloropropene	<3ug/kg dw	08/22/01		VM3585
Bromoform	<3ug/kg dw	08/22/01		VM3585
4-Methyl-2-pentanone	<10ug/kg dw	08/22/01		VM3585
2-Hexanone	<10ug/kg dw	08/22/01		VM3585
Tetrachloroethene	<3ug/kg dw	08/22/01		VM3585
1,1,2,2-Tetrachloroethane	<3ug/kg dw	08/22/01		VM3585
Toluene	<3ug/kg dw	08/22/01		VM3585
Chlorobenzene	<3ug/kg dw	08/22/01		VM3585
Ethylbenzene	<3ug/kg dw	08/22/01		VM3585
Styrene	<3ug/kg dw	08/22/01		VM3585
m,p-xylene	<3ug/kg dw	08/22/01		VM3585
o-Xylene	<3ug/kg dw	08/22/01		VM3585
TCL Semivolatiles by EPA Method 8270				
Phenol	<350ug/kg dw	09/06/01		SA2969
bis(2-Chloroethyl)ether	<350ug/kg dw	09/06/01		SA2969
2-Chlorophenol	<350ug/kg dw	09/06/01		SA2969
1,3-Dichlorobenzene	<350ug/kg dw	09/06/01		SA2969
1,4-Dichlorobenzene	<350ug/kg dw	09/06/01		SA2969
1,2-Dichlorobenzene	<350ug/kg dw	09/06/01		SA2969
2-Methylphenol	<350ug/kg dw	09/06/01		SA2969
2,2'-Oxybis(1-Chloropropane)	<350ug/kg dw	09/06/01		SA2969
4-Methylphenol	<350ug/kg dw	09/06/01		SA2969
n-Nitrosodi-n-propylamine	<350ug/kg dw	09/06/01		SA2969
Hexachloroethane	<350ug/kg dw	09/06/01		SA2969
Nitrobenzene	<350ug/kg dw	09/06/01		SA2969
Isophorone	<350ug/kg dw	09/06/01		SA2969
2-Nitrophenol	<350ug/kg dw	09/06/01		SA2969
2,4-Dimethylphenol	<350ug/kg dw	09/06/01		SA2969
bis(2-Chloroethoxy)methane	<350ug/kg dw	09/06/01		SA2969
2,4-Dichlorophenol	<350ug/kg dw	09/06/01		SA2969
1,2,4-Trichlorobenzene	<350ug/kg dw	09/06/01		SA2969
Naphthalene	<350ug/kg dw	09/06/01		SA2969
4-Chloroaniline	<350ug/kg dw	09/06/01		SA2969
Hexachlorobutadiene	<350ug/kg dw	09/06/01		SA2969
4-Chloro-3-methylphenol	<350ug/kg dw	09/06/01		SA2969
2-Methylnaphthalene	<350ug/kg dw	09/06/01		SA2969
Hexachlorocyclopentadiene	<350ug/kg dw	09/06/01		SA2969

dw = Dry weight

DATE: / /

pstate Laboratories, Inc.
nalysis Results
Report Number: 23301033
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by: Client

ID:23301033 Mat:Soil MCKENNA LANDFILL BROCKPORT I 08/17/01

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
2,4,6-Trichlorophenol	<350ug/kg dw	09/06/01		SA2969
2,4,5-Trichlorophenol	<350ug/kg dw	09/06/01		SA2969
2-Chloronaphthalene	<350ug/kg dw	09/06/01		SA2969
2-Nitroaniline	<3500ug/kg dw	09/06/01		SA2969
Dimethylphthalate	<350ug/kg dw	09/06/01		SA2969
Acenaphthylene	<350ug/kg dw	09/06/01		SA2969
2,6-Dinitrotoluene	<350ug/kg dw	09/06/01		SA2969
3-Nitroaniline	<3500ug/kg dw	09/06/01		SA2969
Acenaphthene	<350ug/kg dw	09/06/01		SA2969
2,4-Dinitrophenol	<3500ug/kg dw	09/06/01		SA2969
4-Nitrophenol	<3500ug/kg dw	09/06/01		SA2969
Dibenzofuran	<350ug/kg dw	09/06/01		SA2969
2,4-Dinitrotoluene	<350ug/kg dw	09/06/01		SA2969
Diethylphthalate	<350ug/kg dw	09/06/01		SA2969
4-Chlorophenylphenylether	<350ug/kg dw	09/06/01		SA2969
Fluorene	<350ug/kg dw	09/06/01		SA2969
4-Nitroaniline	<3500ug/kg dw	09/06/01		SA2969
2-Methyl-4,6-dinitrophenol	<3500ug/kg dw	09/06/01		SA2969
n-Nitrosodiphenylamine	<350ug/kg dw	09/06/01		SA2969
4-Bromophenylphenylether	<350ug/kg dw	09/06/01		SA2969
Hexachlorobenzene	<350ug/kg dw	09/06/01		SA2969
Pentachlorophenol	<690ug/kg dw	09/06/01		SA2969
Phenanthrene	<350ug/kg dw	09/06/01		SA2969
Anthracene	<350ug/kg dw	09/06/01		SA2969
Carbazole	<350ug/kg dw	09/06/01		SA2969
di-n-butylphthalate	<350ug/kg dw	09/06/01		SA2969
Fluoranthene	<350ug/kg dw	09/06/01		SA2969
Pyrene	<350ug/kg dw	09/06/01		SA2969
Butylbenzylphthalate	<350ug/kg dw	09/06/01		SA2969
3,3'-Dichlorobenzidine	<350ug/kg dw	09/06/01		SA2969
Benzo(a)anthracene	<350ug/kg dw	09/06/01		SA2969
Chrysene	<350ug/kg dw	09/06/01		SA2969
bis(2-Ethylhexyl)phthalate	<350ug/kg dw	09/06/01		SA2969
di-n-octylphthalate	<350ug/kg dw	09/06/01		SA2969
Benzo(b)fluoranthene	<350ug/kg dw	09/06/01		SA2969
Benzo(k)fluoranthene	<350ug/kg dw	09/06/01		SA2969
Benzo(a)pyrene	<350ug/kg dw	09/06/01		SA2969
Indeno(1,2,3-cd)pyrene	<350ug/kg dw	09/06/01		SA2969
Dibenzo(a,h)anthracene	<350ug/kg dw	09/06/01		SA2969
Benzo(ghi)perylene	<350ug/kg dw	09/06/01		SA2969
EPA Method 8150				
2,4-D	<34ug/kg dw	08/25/01		GA0823
2,4,5-T	<34ug/kg dw	08/25/01		GA0823

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 23301033
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by: Client

ID:23301033 Mat:Soil MCKENNA LANDFILL BROCKPORT 1 08/17/01

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
2,4,5-TP (Silvex)	<34ug/kg dw	08/25/01		GA0823
Dinoseb	<34ug/kg dw	08/25/01		GA0823
TCL Pesticides/Aroclors by EPA 8082				
BHC (a-isomer)	<1.8ug/kg dw	08/25/01		GA0922
BHC (b-isomer)	<1.8ug/kg dw	08/25/01		GA0922
BHC (d-isomer)	<1.8ug/kg dw	08/25/01		GA0922
BHC (g-isomer)	<1.8ug/kg dw	08/25/01		GA0922
Heptachlor	<1.8ug/kg dw	08/25/01		GA0922
Aldrin	<1.8ug/kg dw	08/25/01		GA0922
Heptachlor Epoxide	<1.8ug/kg dw	08/25/01		GA0922
Endosulfan I	<1.8ug/kg dw	08/25/01		GA0922
Dieldrin	<3.4ug/kg dw	08/25/01		GA0922
4,4'-DDE	<3.4ug/kg dw	08/25/01		GA0922
Endrin	<3.4ug/kg dw	08/25/01		GA0922
Endosulfan II	<3.4ug/kg dw	08/25/01		GA0922
4,4'-DDD	<3.4ug/kg dw	08/25/01		GA0922
Endosulfan Sulfate	<3.4ug/kg dw	08/25/01		GA0922
4,4'-DDT	<3.4ug/kg dw	08/25/01		GA0922
Methoxychlor	<18ug/kg dw	08/25/01		GA0922
Endrin Ketone	<3.4ug/kg dw	08/25/01		GA0922
Endrin Aldehyde	<3.4ug/kg dw	08/25/01		GA0922
alpha-Chlordane	<1.8ug/kg dw	08/25/01		GA0922
gamma-Chlordane	<1.8ug/kg dw	08/25/01		GA0922
Toxaphene	<180ug/kg dw	08/25/01		GA0922
Aroclor 1016	<1.8ug/kg dw	08/25/01		GA0922
Aroclor 1221	<1.8ug/kg dw	08/25/01		GA0922
Aroclor 1232	<1.8ug/kg dw	08/25/01		GA0922
Aroclor 1242	<1.8ug/kg dw	08/25/01		GA0922
Aroclor 1248	<1.8ug/kg dw	08/25/01		GA0922
Aroclor 1254	<1.8ug/kg dw	08/25/01		GA0922
Aroclor 1260	<1.8ug/kg dw	08/25/01		GA0922

ID:23301034 Mat:Soil MCKENNA LANDFILL BROCKPORT 2 08/17/01

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Percent Solids	96%	08/23/01		WD6033
Total Cyanide	<1.0mg/kg dw	08/28/01		WD5988
Total Aluminum	4400mg/kg dw	08/24/01		MB3777
Total Antimony	<31mg/kg dw	08/24/01		MB3777
Total Arsenic by furnace method	2.4mg/kg dw	08/29/01		MB3790
Total Barium	47mg/kg dw	08/24/01		MB3777
Total Beryllium	<0.51mg/kg dw	08/24/01		MB3777

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 23301033
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by: Client

ID:23301034 Mat:Soil MCKENNA LANDFILL BROCKPORT 2 08/17/01

	PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Total	Cadmium	0.90mg/kg dw	08/24/01		MB3777
Total	Calcium Above Eastern Background	46000mg/kg dw	08/24/01		MB3777
Total	Chromium	8.5mg/kg dw	08/24/01		MB3777
Total	Cobalt	15mg/kg dw	08/24/01		MB3777
Total	Copper	10mg/kg dw	08/24/01		MB3777
Total	Iron	8200mg/kg dw	08/24/01		MB3777
Total	Lead	<10mg/kg dw	08/24/01		MB3777
Total	Magnesium	4300mg/kg dw	08/24/01		MB3777
Total	Manganese	260mg/kg dw	08/24/01		MB3777
Total	Mercury	<0.15mg/kg dw	08/29/01		MB3788
Total	Nickel	14mg/kg dw	08/24/01		MB3777
Total	Potassium	1200mg/kg dw	08/27/01		MB3783
Total	Selenium by furnace method	<0.11mg/kg dw	08/24/01		MB3778
Total	Silver	<5.1mg/kg dw	08/24/01		MB3777
Total	Sodium	400mg/kg dw	08/27/01		MB3783
Total	Thallium	<0.32mg/kg dw	09/11/01		MB3821
Total	Vanadium	<31mg/kg dw	08/24/01		MB3777
Total	Zinc	22mg/kg dw	08/24/01		MB3777

TCL Volatiles by EPA Method 8260

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Chloromethane	<3ug/kg dw	08/22/01		VM3585
Bromomethane	<3ug/kg dw	08/22/01		VM3585
Vinyl Chloride	<2ug/kg dw	08/22/01		VM3585
Chloroethane	<3ug/kg dw	08/22/01		VM3585
Methylene Chloride	10ug/kg dw	08/22/01	44	VM3585
Acetone	<10ug/kg dw	08/22/01		VM3585
Carbon Disulfide	<3ug/kg dw	08/22/01		VM3585
1,1-Dichloroethene	<3ug/kg dw	08/22/01		VM3585
1,1-Dichloroethane	<3ug/kg dw	08/22/01		VM3585
trans-1,2-Dichloroethene	<3ug/kg dw	08/22/01		VM3585
cis-1,2-Dichloroethene	<3ug/kg dw	08/22/01		VM3585
Chloroform	<3ug/kg dw	08/22/01		VM3585
1,2-Dichloroethane	<3ug/kg dw	08/22/01		VM3585
2-Butanone	<10ug/kg dw	08/22/01		VM3585
1,1,1-Trichloroethane	<3ug/kg dw	08/22/01		VM3585
Carbon Tetrachloride	<3ug/kg dw	08/22/01		VM3585
Bromodichloromethane	<3ug/kg dw	08/22/01		VM3585
1,2-Dichloropropane	<3ug/kg dw	08/22/01		VM3585
cis-1,3-Dichloropropene	<3ug/kg dw	08/22/01		VM3585
Trichloroethene	<3ug/kg dw	08/22/01		VM3585
Dibromochloromethane	<3ug/kg dw	08/22/01		VM3585
1,1,2-Trichloroethane	<3ug/kg dw	08/22/01		VM3585
Benzene	<3ug/kg dw	08/22/01		VM3585
trans-1,3-Dichloropropene	<3ug/kg dw	08/22/01		VM3585

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 23301033
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by: Client

ID:23301034 Mat:Soil MCKENNA LANDFILL BROCKPORT 2 08/17/01

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Bromoform	<3ug/kg dw	08/22/01		VM3585
4-Methyl-2-pentanone	<10ug/kg dw	08/22/01		VM3585
2-Hexanone	<10ug/kg dw	08/22/01		VM3585
Tetrachloroethene	<3ug/kg dw	08/22/01		VM3585
1,1,2,2-Tetrachloroethane	<3ug/kg dw	08/22/01		VM3585
Toluene	<3ug/kg dw	08/22/01		VM3585
Chlorobenzene	<3ug/kg dw	08/22/01		VM3585
Ethylbenzene	<3ug/kg dw	08/22/01		VM3585
Styrene	<3ug/kg dw	08/22/01		VM3585
m,p-xylene	<3ug/kg dw	08/22/01		VM3585
o-Xylene	<3ug/kg dw	08/22/01		VM3585
TCL Semivolatiles by EPA Method 8270				
Phenol	<350ug/kg dw	09/06/01		SA2969
bis(2-Chloroethyl)ether	<350ug/kg dw	09/06/01		SA2969
2-Chlorophenol	<350ug/kg dw	09/06/01		SA2969
1,3-Dichlorobenzene	<350ug/kg dw	09/06/01		SA2969
1,4-Dichlorobenzene	<350ug/kg dw	09/06/01		SA2969
1,2-Dichlorobenzene	<350ug/kg dw	09/06/01		SA2969
2-Methylphenol	<350ug/kg dw	09/06/01		SA2969
2,2'-Oxybis(1-Chloropropane)	<350ug/kg dw	09/06/01		SA2969
4-Methylphenol	<350ug/kg dw	09/06/01		SA2969
n-Nitrosodi-n-propylamine	<350ug/kg dw	09/06/01		SA2969
Hexachloroethane	<350ug/kg dw	09/06/01		SA2969
Nitrobenzene	<350ug/kg dw	09/06/01		SA2969
Isophorone	<350ug/kg dw	09/06/01		SA2969
2-Nitrophenol	<350ug/kg dw	09/06/01		SA2969
2,4-Dimethylphenol	<350ug/kg dw	09/06/01		SA2969
bis(2-Chloroethoxy)methane	<350ug/kg dw	09/06/01		SA2969
2,4-Dichlorophenol	<350ug/kg dw	09/06/01		SA2969
1,2,4-Trichlorobenzene	<350ug/kg dw	09/06/01		SA2969
Naphthalene	<350ug/kg dw	09/06/01		SA2969
4-Chloroaniline	<350ug/kg dw	09/06/01		SA2969
Hexachlorobutadiene	<350ug/kg dw	09/06/01		SA2969
4-Chloro-3-methylphenol	<350ug/kg dw	09/06/01		SA2969
2-Methylnaphthalene	<350ug/kg dw	09/06/01		SA2969
Hexachlorocyclopentadiene	<350ug/kg dw	09/06/01		SA2969
2,4,6-Trichlorophenol	<350ug/kg dw	09/06/01		SA2969
2,4,5-Trichlorophenol	<350ug/kg dw	09/06/01		SA2969
2-Chloronaphthalene	<350ug/kg dw	09/06/01		SA2969
2-Nitroaniline	<3500ug/kg dw	09/06/01		SA2969
Dimethylphthalate	<350ug/kg dw	09/06/01		SA2969
Acenaphthylene	<350ug/kg dw	09/06/01		SA2969
2,6-Dinitrotoluene	<350ug/kg dw	09/06/01		SA2969

dw = Dry weight

DATE: / /

pstate Laboratories, Inc.
Analysis Results
Report Number: 23301033
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL: ____
QC: ____
Lab I.D.: 10170
Sampled by: Client

ID:23301034 Mat:Soil MCKENNA LANDFILL BROCKPORT 2 08/17/01

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
3-Nitroaniline	<3500ug/kg dw	09/06/01		SA2969
Acenaphthene	<350ug/kg dw	09/06/01		SA2969
2,4-Dinitrophenol	<3500ug/kg dw	09/06/01		SA2969
4-Nitrophenol	<3500ug/kg dw	09/06/01		SA2969
Dibenzofuran	<350ug/kg dw	09/06/01		SA2969
2,4-Dinitrotoluene	<350ug/kg dw	09/06/01		SA2969
Diethylphthalate	<350ug/kg dw	09/06/01		SA2969
4-Chlorophenylphenylether	<350ug/kg dw	09/06/01		SA2969
Fluorene	<350ug/kg dw	09/06/01		SA2969
4-Nitroaniline	<3500ug/kg dw	09/06/01		SA2969
2-Methyl-4,6-dinitrophenol	<3500ug/kg dw	09/06/01		SA2969
n-Nitrosodiphenylamine	<350ug/kg dw	09/06/01		SA2969
4-Bromophenylphenylether	<350ug/kg dw	09/06/01		SA2969
Hexachlorobenzene	<350ug/kg dw	09/06/01		SA2969
Pentachlorophenol	<690ug/kg dw	09/06/01		SA2969
Phenanthrene	<350ug/kg dw	09/06/01		SA2969
Anthracene	<350ug/kg dw	09/06/01		SA2969
Carbazole	<350ug/kg dw	09/06/01		SA2969
di-n-butylphthalate	<350ug/kg dw	09/06/01		SA2969
Fluoranthene	<350ug/kg dw	09/06/01		SA2969
Pyrene	<350ug/kg dw	09/06/01		SA2969
Butylbenzylphthalate	<350ug/kg dw	09/06/01		SA2969
3,3'-Dichlorobenzidine	<350ug/kg dw	09/06/01		SA2969
Benzo(a)anthracene	<350ug/kg dw	09/06/01		SA2969
Chrysene	<350ug/kg dw	09/06/01		SA2969
bis(2-Ethylhexyl)phthalate	<350ug/kg dw	09/06/01		SA2969
di-n-octylphthalate	<350ug/kg dw	09/06/01		SA2969
Benzo(b)fluoranthene	<350ug/kg dw	09/06/01		SA2969
Benzo(k)fluoranthene	<350ug/kg dw	09/06/01		SA2969
Benzo(a)pyrene	<350ug/kg dw	09/05/01		SA2969
Indeno(1,2,3-cd)pyrene	<350ug/kg dw	09/05/01		SA2969
Dibenzo(a,h)anthracene	<350ug/kg dw	09/06/01		SA2969
Benzo(ghi)perylene	<350ug/kg dw	09/06/01		SA2969
EPA Method 8150				
2,4-D	<34ug/kg dw	08/25/01		GA0923
2,4,5-T	<34ug/kg dw	08/25/01		GA0923
2,4,5-TP (Silvex)	<34ug/kg dw	08/25/01		GA0923
Dinoseb	<34ug/kg dw	08/25/01		GA0923
TCL Pesticides/Aroclors by EPA 8082				
BHC (a-isomer)	<1.8ug/kg dw	08/25/01		GA0922
BHC (b-isomer)	<1.8ug/kg dw	08/25/01		GA0922
BHC (d-isomer)	<1.8ug/kg dw	08/25/01		GA0922

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 23301033
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by: Client

ID:23301034 Mat:Soil MCKENNA LANDFILL BROCKPORT 2 08/17/01

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
BHC (g-isomer)	<1.8ug/kg dw	08/25/01		GA0922
Heptachlor	<1.8ug/kg dw	08/25/01		GA0922
Aldrin	<1.8ug/kg dw	08/25/01		GA0922
Heptachlor Epoxide	<1.8ug/kg dw	08/25/01		GA0922
Endosulfan I	<1.8ug/kg dw	08/25/01		GA0922
Dieldrin	<3.4ug/kg dw	08/25/01		GA0922
4,4'-DDE	<3.4ug/kg dw	08/25/01		GA0922
Endrin	<3.4ug/kg dw	08/25/01		GA0922
Endosulfan II	<3.4ug/kg dw	08/25/01		GA0922
4,4'-DDD	<3.4ug/kg dw	08/25/01		GA0922
Endosulfan Sulfate	<3.4ug/kg dw	08/25/01		GA0922
4,4'-DDT	<3.4ug/kg dw	08/25/01		GA0922
Methoxychlor	<18ug/kg dw	08/25/01		GA0922
Endrin Ketone	<3.4ug/kg dw	08/25/01		GA0922
Endrin Aldehyde	<3.4ug/kg dw	08/25/01		GA0922
alpha-Chlordane	<1.8ug/kg dw	08/25/01		GA0922
gamma-Chlordane	<1.8ug/kg dw	08/25/01		GA0922
Toxaphene	<180ug/kg dw	08/25/01		GA0922
Aroclor 1016	<1.8ug/kg dw	08/25/01		GA0922
Aroclor 1221	<1.8ug/kg dw	08/25/01		GA0922
Aroclor 1232	<1.8ug/kg dw	08/25/01		GA0922
Aroclor 1242	<1.8ug/kg dw	08/25/01		GA0922
Aroclor 1248	<1.8ug/kg dw	08/25/01		GA0922
Aroclor 1254	<1.8ug/kg dw	08/25/01		GA0922
Aroclor 1260	<1.8ug/kg dw	08/25/01		GA0922

ID:23301035 Mat:Soil MCKENNA LANDFILL BROCKPORT 3 08/17/01

	PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
	Percent Solids	95%	08/23/01		WD6033
	Total Cyanide	<1.0mg/kg dw	08/28/01		WD5988
Total	Aluminum	4400mg/kg dw	08/24/01		MB3777
Total	Antimony SB, no # for Eastern Background	45mg/kg dw	08/24/01		MB3777
Total	Arsenic by furnace method	2.6mg/kg dw	08/29/01		MB3790
Total	Barium	66mg/kg dw	08/24/01		MB3777
Total	Beryllium	<0.52mg/kg dw	08/24/01		MB3777
Total	Cadmium	0.75mg/kg dw	08/24/01		MB3777
Total	Calcium Above Eastern Background	51000mg/kg dw	08/24/01		MB3777
Total	Chromium	7.6mg/kg dw	08/24/01		MB3777
Total	Cobalt	16mg/kg dw	08/24/01		MB3777
Total	Copper	12mg/kg dw	08/24/01		MB3777
Total	Iron	8400mg/kg dw	08/24/01		MB3777
Total	Lead	<10mg/kg dw	08/24/01		MB3777

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 23301033
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL: ____
QC: ____ Lab I.D.: 10170
Sampled by: Client

ID:23301035 Mat:Soil MCKENNA LANDFILL BROCKPORT 3 08/17/01

	PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Total	Magnesium Above Eastern Background	6200mg/kg dw	08/24/01		MB3777
Total	Manganese	420mg/kg dw	08/24/01		MB3777
Total	Mercury	<0.15mg/kg dw	08/29/01		MB3788
Total	Nickel	12mg/kg dw	08/24/01		MB3777
Total	Potassium	1200mg/kg dw	08/27/01		MB3783
Total	Selenium by furnace method	<0.11mg/kg dw	08/24/01		MB3778
Total	Silver	<5.2mg/kg dw	08/24/01		MB3777
Total	Sodium	570mg/kg dw	08/27/01		MB3783
Total	Thallium	<0.32mg/kg dw	09/11/01		MB3821
Total	Vanadium	<31mg/kg dw	08/24/01		MB3777
Total	Zinc	19mg/kg dw	08/24/01		MB3777
	TCL Volatiles by EPA Method 8260				
	Chloromethane	<3ug/kg dw	08/22/01		VM3585
	Bromomethane	<3ug/kg dw	08/22/01		VM3585
	Vinyl Chloride	<2ug/kg dw	08/22/01		VM3585
	Chloroethane	<3ug/kg dw	08/22/01		VM3585
	Methylene Chloride	10ug/kg dw	08/22/01	44	VM3585
	Acetone	<11ug/kg dw	08/22/01		VM3585
	Carbon Disulfide	<3ug/kg dw	08/22/01		VM3585
	1,1-Dichloroethene	<3ug/kg dw	08/22/01		VM3585
	1,1-Dichloroethane	<3ug/kg dw	08/22/01		VM3585
	trans-1,2-Dichloroethene	<3ug/kg dw	08/22/01		VM3585
	cis-1,2-Dichloroethene	<3ug/kg dw	08/22/01		VM3585
	Chloroform	<3ug/kg dw	08/22/01		VM3585
	1,2-Dichloroethane	<3ug/kg dw	08/22/01		VM3585
	2-Butanone	<11ug/kg dw	08/22/01		VM3585
	1,1,1-Trichloroethane	<3ug/kg dw	08/22/01		VM3585
	Carbon Tetrachloride	<3ug/kg dw	08/22/01		VM3585
	Bromodichloromethane	<3ug/kg dw	08/22/01		VM3585
	1,2-Dichloropropane	<3ug/kg dw	08/22/01		VM3585
	cis-1,3-Dichloropropene	<3ug/kg dw	08/22/01		VM3585
	Trichloroethene	<3ug/kg dw	08/22/01		VM3585
	Dibromochloromethane	<3ug/kg dw	08/22/01		VM3585
	1,1,2-Trichloroethane	<3ug/kg dw	08/22/01		VM3585
	Benzene	<3ug/kg dw	08/22/01		VM3585
	trans-1,3-Dichloropropene	<3ug/kg dw	08/22/01		VM3585
	Bromoform	<3ug/kg dw	08/22/01		VM3585
	4-Methyl-2-pentanone	<11ug/kg dw	08/22/01		VM3585
	2-Hexanone	<11ug/kg dw	08/22/01		VM3585
	Tetrachloroethene	<3ug/kg dw	08/22/01		VM3585
	1,1,2,2-Tetrachloroethane	<3ug/kg dw	08/22/01		VM3585
	Toluene	<3ug/kg dw	08/22/01		VM3585
	Chlorobenzene	<3ug/kg dw	08/22/01		VM3585

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 23301033
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL: ____
QC: ____ Lab I.D.: 10170
Sampled by: Client

ID:23301035 Mat:Soil MCKENNA LANDFILL BROCKPORT 3 08/17/01

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Ethylbenzene	<3ug/kg dw	08/22/01		VM3585
Styrene	<3ug/kg dw	08/22/01		VM3585
m,p-xylene	<3ug/kg dw	08/22/01		VM3585
o-Xylene	<3ug/kg dw	08/22/01		VM3585
TCL Semivolatiles by EPA Method 8270				
Phenol	<350ug/kg dw	09/06/01		SA2969
bis(2-Chloroethyl)ether	<350ug/kg dw	09/06/01		SA2969
2-Chlorophenol	<350ug/kg dw	09/06/01		SA2969
1,3-Dichlorobenzene	<350ug/kg dw	09/06/01		SA2969
1,4-Dichlorobenzene	<350ug/kg dw	09/06/01		SA2969
1,2-Dichlorobenzene	<350ug/kg dw	09/06/01		SA2969
2-Methylphenol	<350ug/kg dw	09/06/01		SA2969
2,2'-Oxybis(1-Chloropropane)	<350ug/kg dw	09/06/01		SA2969
4-Methylphenol	<350ug/kg dw	09/06/01		SA2969
n-Nitrosodi-n-propylamine	<350ug/kg dw	09/06/01		SA2969
Hexachloroethane	<350ug/kg dw	09/06/01		SA2969
Nitrobenzene	<350ug/kg dw	09/06/01		SA2969
Isophorone	<350ug/kg dw	09/06/01		SA2969
2-Nitrophenol	<350ug/kg dw	09/06/01		SA2969
2,4-Dimethylphenol	<350ug/kg dw	09/06/01		SA2969
bis(2-Chloroethoxy)methane	<350ug/kg dw	09/06/01		SA2969
2,4-Dichlorophenol	<350ug/kg dw	09/06/01		SA2969
1,2,4-Trichlorobenzene	<350ug/kg dw	09/06/01		SA2969
Naphthalene	<350ug/kg dw	09/06/01		SA2969
4-Chloroaniline	<350ug/kg dw	09/06/01		SA2969
Hexachlorobutadiene	<350ug/kg dw	09/06/01		SA2969
4-Chloro-3-methylphenol	<350ug/kg dw	09/06/01		SA2969
2-Methylnaphthalene	<350ug/kg dw	09/06/01		SA2969
Hexachlorocyclopentadiene	<350ug/kg dw	09/06/01		SA2969
2,4,6-Trichlorophenol	<350ug/kg dw	09/06/01		SA2969
2,4,5-Trichlorophenol	<350ug/kg dw	09/06/01		SA2969
2-Chloronaphthalene	<350ug/kg dw	09/06/01		SA2969
2-Nitroaniline	<3500ug/kg dw	09/06/01		SA2969
Dimethylphthalate	<350ug/kg dw	09/06/01		SA2969
Acenaphthylene	<350ug/kg dw	09/06/01		SA2969
2,6-Dinitrotoluene	<350ug/kg dw	09/06/01		SA2969
3-Nitroaniline	<3500ug/kg dw	09/06/01		SA2969
Acenaphthene	<350ug/kg dw	09/06/01		SA2969
2,4-Dinitrophenol	<3500ug/kg dw	09/06/01		SA2969
4-Nitrophenol	<3500ug/kg dw	09/06/01		SA2969
Dibenzofuran	<350ug/kg dw	09/06/01		SA2969
2,4-Dinitrotoluene	<350ug/kg dw	09/06/01		SA2969
Diethylphthalate	<350ug/kg dw	09/06/01		SA2969

dw = Dry weight

DATE: / /

ostate Laboratories, Inc.
nalysis Results
Report Number: 23301033
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by: Client

ID:23301035 Mat:Soil MCKENNA LANDFILL BROCKPORT 3 08/17/01

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
4-Chlorophenylphenylether	<350ug/kg dw	09/06/01		SA2969
Fluorene	<350ug/kg dw	09/06/01		SA2969
4-Nitroaniline	<3500ug/kg dw	09/06/01		SA2969
2-Methyl-4,6-dinitrophenol	<3500ug/kg dw	09/06/01		SA2969
n-Nitrosodiphenylamine	<350ug/kg dw	09/06/01		SA2969
4-Bromophenylphenylether	<350ug/kg dw	09/06/01		SA2969
Hexachlorobenzene	<350ug/kg dw	09/06/01		SA2969
Pentachlorophenol	<700ug/kg dw	09/06/01		SA2969
Phenanthrene	<350ug/kg dw	09/06/01		SA2969
Anthracene	<350ug/kg dw	09/06/01		SA2969
Carbazole	<350ug/kg dw	09/06/01		SA2969
di-n-butylphthalate	<350ug/kg dw	09/06/01		SA2969
Fluoranthene	<350ug/kg dw	09/06/01		SA2969
Pyrene	<350ug/kg dw	09/06/01		SA2969
Butylbenzylphthalate	<350ug/kg dw	09/06/01		SA2969
3,3'-Dichlorobenzidine	<350ug/kg dw	09/06/01		SA2969
Benzo(a)anthracene	<350ug/kg dw	09/06/01		SA2969
Chrysene	<350ug/kg dw	09/06/01		SA2969
bis(2-Ethylhexyl)phthalate	<350ug/kg dw	09/06/01		SA2969
di-n-octylphthalate	<350ug/kg dw	09/06/01		SA2969
Benzo(b)fluoranthene	<350ug/kg dw	09/06/01		SA2969
Benzo(k)fluoranthene	<350ug/kg dw	09/06/01		SA2969
Benzo(a)pyrene	<350ug/kg dw	09/06/01		SA2969
Indeno(1,2,3-cd)pyrene	<350ug/kg dw	09/06/01		SA2969
Dibenzo(a,h)anthracene	<350ug/kg dw	09/06/01		SA2969
Benzo(ghi)perylene	<350ug/kg dw	09/05/01		SA2969
EPA Method 8150				
2,4-D	<35ug/kg dw	08/25/01		GA0923
2,4,5-T	<35ug/kg dw	08/25/01		GA0923
2,4,5-TP (Silvex)	<35ug/kg dw	08/25/01		GA0923
Dinoseb	<35ug/kg dw	08/25/01		GA0923
TCL Pesticides/Aroclors by EPA 8082				
BHC (a-isomer)	<1.8ug/kg dw	08/25/01		GA0922
BHC (b-isomer)	<1.8ug/kg dw	08/25/01		GA0922
BHC (d-isomer)	<1.8ug/kg dw	08/25/01		GA0922
BHC (g-isomer)	<1.8ug/kg dw	08/25/01		GA0922
Heptachlor	<1.8ug/kg dw	08/25/01		GA0922
Aldrin	<1.8ug/kg dw	08/25/01		GA0922
Heptachlor Epoxide	<1.8ug/kg dw	08/25/01		GA0922
Endosulfan I	<1.8ug/kg dw	08/25/01		GA0922
Dieldrin	<3.4ug/kg dw	08/25/01		GA0922
4,4'-DDE	<3.4ug/kg dw	08/25/01		GA0922

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 23301033
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by: Client

ID:23301035 Mat:Soil MCKENNA LANDFILL BROCKPORT 3 08/17/01

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Endrin	<3.4ug/kg dw	08/25/01		GA0922
Endosulfan II	<3.4ug/kg dw	08/25/01		GA0922
4,4'-DDD	<3.4ug/kg dw	08/25/01		GA0922
Endosulfan Sulfate	<3.4ug/kg dw	08/25/01		GA0922
4,4'-DDT	<3.4ug/kg dw	08/25/01		GA0922
Methoxychlor	<18ug/kg dw	08/25/01		GA0922
Endrin Ketone	<3.4ug/kg dw	08/25/01		GA0922
Endrin Aldehyde	<3.4ug/kg dw	08/25/01		GA0922
alpha-Chlordane	<1.8ug/kg dw	08/25/01		GA0922
gamma-Chlordane	<1.8ug/kg dw	08/25/01		GA0922
Toxaphene	<180ug/kg dw	08/25/01		GA0922
Aroclor 1016	<1.8ug/kg dw	08/25/01		GA0922
Aroclor 1221	<1.8ug/kg dw	08/25/01		GA0922
Aroclor 1232	<1.8ug/kg dw	08/25/01		GA0922
Aroclor 1242	<1.8ug/kg dw	08/25/01		GA0922
Aroclor 1248	<1.8ug/kg dw	08/25/01		GA0922
Aroclor 1254	<1.8ug/kg dw	08/25/01		GA0922
Aroclor 1260	<1.8ug/kg dw	08/25/01		GA0922

dw = Dry weight

DATE: 09/21/01

~~state Laboratories, Inc.   APPROVAL:
alysis Results   QC:
eport Number: 23601001   Lab I.D.: 10170
Client I.D.: CIMINELLI SERVICES GROUP CORP. MCKENNA LANDFILL
Sampled by: Client   BROCKPORT 4 08/22/01 G

ULI I.D.: 23601001   Matrix: Soil

	PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
	Percent Solids	89%	08/27/01		WD6049
	Total Cyanide	<1.1mg/kg dw	09/05/01		WD6161
Total	Aluminum	4600mg/kg dw	08/26/01		MB3779
Total	Antimony	<34mg/kg dw	08/26/01		MB3779
Total	Arsenic by furnace method	3.2mg/kg dw	08/29/01		MB3790
Total	Barium	47mg/kg dw	08/26/01		MB3779
Total	Beryllium	<0.56mg/kg dw	08/26/01		MB3779
Total	Cadmium	<0.56mg/kg dw	08/26/01		MB3779
Total	Calcium	57000mg/kg dw	08/26/01		MB3779
Total	Chromium	7.8mg/kg dw	08/26/01		MB3779
Total	Cobalt	7.0mg/kg dw	08/26/01		MB3779
Total	Copper	10mg/kg dw	08/26/01		MB3779
Total	Iron	8000mg/kg dw	08/26/01		MB3779
Total	Lead	<11mg/kg dw	08/26/01		MB3779
Total	Magnesium	3900mg/kg dw	08/26/01		MB3779
Total	Manganese	280mg/kg dw	08/26/01		MB3779
Total	Mercury	<0.17mg/kg dw	09/11/01		MB3809
Total	Nickel	15mg/kg dw	08/26/01		MB3779
Total	Potassium	1400mg/kg dw	08/27/01		MB3783
Total	Selenium by furnace method	<0.12mg/kg dw	08/24/01		MB3778
Total	Silver	<5.6mg/kg dw	08/26/01		MB3779
Total	Sodium	400mg/kg dw	08/27/01		MB3783
Total	Thallium by furnace method	<0.34mg/kg dw	09/11/01		MB3821
Total	Vanadium	<34mg/kg dw	08/26/01		MB3779
Total	Zinc	22mg/kg dw	08/26/01		MB3779
	TCL Volatiles by EPA Method 8260				
	Chloromethane	<3ug/kg dw	08/28/01		VM3592
	Bromomethane	<3ug/kg dw	08/28/01		VM3592
	Vinyl Chloride	<2ug/kg dw	08/28/01		VM3592
	Chloroethane	<3ug/kg dw	08/28/01		VM3592
	Methylene Chloride	7ug/kg dw	08/28/01	44	VM3592
	Acetone	<11ug/kg dw	08/28/01		VM3592
	Carbon Disulfide	<3ug/kg dw	08/28/01		VM3592
	1,1-Dichloroethene	<3ug/kg dw	08/28/01		VM3592
	1,1-Dichloroethane	<3ug/kg dw	08/28/01		VM3592
	trans-1,2-Dichloroethene	<3ug/kg dw	08/28/01		VM3592
	cis-1,2-Dichloroethene	<3ug/kg dw	08/28/01		VM3592
	Chloroform	<3ug/kg dw	08/28/01		VM3592
	1,2-Dichloroethane	<3ug/kg dw	08/28/01		VM3592

dw = Dry weight

DATE: 09/21/01

Upstate Laboratories, Inc.
Analysis Results
Report Number: 23601001
Client I.D.: CIMINELLI SERVICES GROUP CORP. MCKENNA LANDFILL
Sampled by: Client BROCKPORT 4 08/22/01 G

APPROVAL:
QC:
Lab I.D.: 10170

ULI I.D.: 23601001 Matrix: Soil

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
2,4-Dichlorophenol	<370ug/kg dw	08/30/01		SA2976
1,2,4-Trichlorobenzene	<370ug/kg dw	08/30/01		SA2976
Naphthalene	<370ug/kg dw	08/30/01		SA2976
4-Chloroaniline	<370ug/kg dw	08/30/01		SA2976
Hexachlorobutadiene	<370ug/kg dw	08/30/01		SA2976
4-Chloro-3-methylphenol	<370ug/kg dw	08/30/01		SA2976
2-Methylnaphthalene	<370ug/kg dw	08/30/01		SA2976
Hexachlorocyclopentadiene	<370ug/kg dw	08/30/01		SA2976
2,4,6-Trichlorophenol	<370ug/kg dw	08/30/01		SA2976
2,4,5-Trichlorophenol	<370ug/kg dw	08/30/01		SA2976
2-Chloronaphthalene	<370ug/kg dw	08/30/01		SA2976
2-Nitroaniline	<3700ug/kg dw	08/30/01		SA2976
Dimethylphthalate	<370ug/kg dw	08/30/01		SA2976
Acenaphthylene	<370ug/kg dw	08/30/01		SA2976
2,6-Dinitrotoluene	<370ug/kg dw	08/30/01		SA2976
3-Nitroaniline	<3700ug/kg dw	08/30/01		SA2976
Acenaphthene	<370ug/kg dw	08/30/01		SA2976
2,4-Dinitrophenol	<3700ug/kg dw	08/30/01		SA2976
4-Nitrophenol	<3700ug/kg dw	08/30/01		SA2976
Dibenzofuran	<370ug/kg dw	08/30/01		SA2[illegible]
2,4-Dinitrotoluene	<370ug/kg dw	08/30/01		SA[illegible]
Diethylphthalate	<370ug/kg dw	08/30/01		SA2976
4-Chlorophenylphenylether	<370ug/kg dw	08/30/01		SA2976
Fluorene	<370ug/kg dw	08/30/01		SA2976
4-Nitroaniline	<3700ug/kg dw	08/30/01		SA2976
2-Methyl-4,6-dinitrophenol	<3700ug/kg dw	08/30/01		SA2976
n-Nitrosodiphenylamine	<370ug/kg dw	08/30/01		SA2976
4-Bromophenylphenylether	<370ug/kg dw	08/30/01		SA2976
Hexachlorobenzene	<370ug/kg dw	08/30/01		SA2976
Pentachlorophenol	<750ug/kg dw	08/30/01		SA2976
Phenanthrene	<370ug/kg dw	08/30/01		SA2976
Anthracene	<370ug/kg dw	08/30/01		SA2976
Carbazole	<370ug/kg dw	08/30/01		SA2976
di-n-butylphthalate	<370ug/kg dw	08/30/01		SA2976
Fluoranthene	<370ug/kg dw	08/30/01		SA2976
Pyrene	<370ug/kg dw	08/30/01		SA2976
Butylbenzylphthalate	<370ug/kg dw	08/30/01		SA2976
3,3'-Dichlorobenzidine	<370ug/kg dw	08/30/01		SA2976
Benzo(a)anthracene	<370ug/kg dw	08/30/01		SA2976
Chrysene	<370ug/kg dw	08/30/01		SA2976

dw = Dry weight

DATE: 09/21/01

"'ostate Laboratories, Inc.
alysis Results
Report Number: 23601001
Client I.D.: CIMINELLI SERVICES GROUP CORP. MCKENNA LANDFILL
Sampled by: Client

APPROVAL:
QC:
Lab I.D.: 10170
BROCKPORT 4 08/22/01 G

ULI I.D.: 23601001 Matrix: Soil

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
2-Butanone	<11ug/kg dw	08/28/01		VM3592
1,1,1-Trichloroethane	<3ug/kg dw	08/28/01		VM3592
Carbon Tetrachloride	<3ug/kg dw	08/28/01		VM3592
Bromodichloromethane	<3ug/kg dw	08/28/01		VM3592
1,2-Dichloropropane	<3ug/kg dw	08/28/01		VM3592
cis-1,3-Dichloropropene	<3ug/kg dw	08/28/01		VM3592
Trichloroethene	<3ug/kg dw	08/28/01		VM3592
Dibromochloromethane	<3ug/kg dw	08/28/01		VM3592
1,1,2-Trichloroethane	<3ug/kg dw	08/28/01		VM3592
Benzene	<3ug/kg dw	08/28/01		VM3592
trans-1,3-Dichloropropene	<3ug/kg dw	08/28/01		VM3592
Bromoform	<3ug/kg dw	08/28/01		VM3592
4-Methyl-2-pentanone	<11ug/kg dw	08/28/01		VM3592
2-Hexanone	<11ug/kg dw	08/28/01		VM3592
Tetrachloroethene	<3ug/kg dw	08/28/01		VM3592
1,1,2,2-Tetrachloroethane	<3ug/kg dw	08/28/01		VM3592
Toluene	<3ug/kg dw	08/28/01		VM3592
Chlorobenzene	<3ug/kg dw	08/28/01		VM3592
Ethylbenzene	<3ug/kg dw	08/28/01		VM3592
Styrene	<3ug/kg dw	08/28/01		VM3592
m,p-xylene	<3ug/kg dw	08/28/01		VM3592
o-Xylene	<3ug/kg dw	08/28/01		VM3592
TCL Semivolatiles by EPA Method 8270				
Phenol	<370ug/kg dw	08/30/01		SA2976
bis(2-Chloroethyl)ether	<370ug/kg dw	08/30/01		SA2976
2-Chlorophenol	<370ug/kg dw	08/30/01		SA2976
1,3-Dichlorobenzene	<370ug/kg dw	08/30/01		SA2976
1,4-Dichlorobenzene	<370ug/kg dw	08/30/01		SA2976
1,2-Dichlorobenzene	<370ug/kg dw	08/30/01		SA2976
2-Methylphenol	<370ug/kg dw	08/30/01		SA2976
2,2'-Oxybis(1-Chloropropane)	<370ug/kg dw	08/30/01		SA2976
4-Methylphenol	<370ug/kg dw	08/30/01		SA2976
n-Nitrosodinpropylamine	<370ug/kg dw	08/30/01		SA2976
Hexachloroethane	<370ug/kg dw	08/30/01		SA2976
Nitrobenzene	<370ug/kg dw	08/30/01		SA2976
Isophorone	<370ug/kg dw	08/30/01		SA2976
2-Nitrophenol	<370ug/kg dw	08/30/01		SA2976
2,4-Dimethylphenol	<370ug/kg dw	08/30/01		SA2976
bis(2-Chloroethoxy)methane	<370ug/kg dw	08/30/01		SA2976

dw = Dry weight

DATE: 09/21/01

Upstate Laboratories, Inc.
Analysis Results
Report Number: 23601001
Client I.D.: CIMINELLI SERVICES GROUP CORP. MCKENNA LANDFILL
Sampled by: Client BROCKPORT 4 08/22/01 G

APPROVAL:
QC:
Lab I.D.: 10170

ULI I.D.: 23601001 Matrix: Soil

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
bis(2-Ethylhexyl)phthalate	<370ug/kg dw	08/30/01		SA2976
di-n-octylphthalate	<370ug/kg dw	08/30/01		SA2976
Benzo(b)fluoranthene	<370ug/kg dw	08/30/01		SA2976
Benzo(k)fluoranthene	<370ug/kg dw	08/30/01		SA2976
Benzo(a)pyrene	<370ug/kg dw	08/30/01		SA2976
Indeno(1,2,3-cd)pyrene	<370ug/kg dw	08/30/01		SA2976
Dibenzo(a,h)anthracene	<370ug/kg dw	08/30/01		SA2976
Benzo(ghi)perylene	<370ug/kg dw	08/30/01		SA2976
EPA Method 8150				
2,4-D	<37ug/kg dw	09/06/01		GA0952
2,4,5-T	<37ug/kg dw	09/06/01		GA0952
2,4,5-TP (Silvex)	<37ug/kg dw	09/06/01		GA0952
Dinoseb	<37ug/kg dw	09/06/01		GA0952
TCL Pesticides/Aroclors by EPA 8082				
BHC (a-isomer)	<1.9ug/kg dw	09/11/01		GA0960
BHC (b-isomer)	<1.9ug/kg dw	09/11/01		GA[illegible]
BHC (d-isomer)	<1.9ug/kg dw	09/11/01		GA[illegible]
BHC (g-isomer)	<1.9ug/kg dw	09/11/01		GA0960
Heptachlor	<1.9ug/kg dw	09/11/01		GA0960
Aldrin	<1.9ug/kg dw	09/11/01		GA0960
Heptachlor Epoxide	<1.9ug/kg dw	09/11/01		GA0960
Endosulfan I	<1.9ug/kg dw	09/11/01		GA0960
Dieldrin	<3.7ug/kg dw	09/11/01		GA0960
4,4'-DDE	28ug/kg dw	09/11/01		GA0960
Endrin	<3.7ug/kg dw	09/11/01		GA0960
Endosulfan II	<3.7ug/kg dw	09/11/01		GA0960
4,4'-DDD	<3.7ug/kg dw	09/11/01		GA0960
Endosulfan Sulfate	<3.7ug/kg dw	09/11/01		GA0960
4,4'-DDT	<3.7ug/kg dw	09/11/01		GA0960
Methoxychlor	<19ug/kg dw	09/11/01		GA0960
Endrin Ketone	<3.7ug/kg dw	09/11/01		GA0960
Endrin Aldehyde	<3.7ug/kg dw	09/11/01		GA0960
alpha-Chlordane	<1.9ug/kg dw	09/11/01		GA0960
gamma-Chlordane	<1.9ug/kg dw	09/11/01		GA0960
Toxaphene	<190ug/kg dw	09/11/01		GA0960
Aroclor 1016	<37ug/kg dw	09/11/01		GA0960
Aroclor 1221	<37ug/kg dw	09/11/01		GA0960
Aroclor 1232	<37ug/kg dw	09/11/01		GA0960

dw = Dry weight

DATE: 09/21/01

`state Laboratories, Inc.
alysis Results
Report Number: 23601001
Client I.D.: CIMINELLI SERVICES GROUP CORP. MCKENNA LANDFILL
Sampled by: Client

APPROVAL:
QC:
Lab I.D.: 10170

BROCKPORT 4 08/22/01 G

ULI I.D.: 23601001 Matrix: Soil

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Aroclor 1242	<37ug/kg dw	09/11/01		GA0960
Aroclor 1248	<37ug/kg dw	09/11/01		GA0960
Aroclor 1254	<37ug/kg dw	09/11/01		GA0960
Aroclor 1260	<37ug/kg dw	09/11/01		GA0960

dw = Dry weight

DATE: 09/21/01

Upstate Laboratories, Inc.
Analysis Results
Report Number: 23601001
Client I.D.: CIMINELLI SERVICES GROUP CORP. MCKENNA LANDFILL
Sampled by: Client

APPROVAL:
QC:
Lab I.D.: 10170

BROCKPORT 5 08/22/01 G

ULI I.D.: 23601002 Matrix: Soil

	PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
	Percent Solids	90%	08/27/01		WD6049
	Total Cyanide	<1.1mg/kg dw	09/05/01		WD6161
Total	Aluminum	4300mg/kg dw	08/26/01		MB3779
Total	Antimony	<33mg/kg dw	08/26/01		MB3779
Total	Arsenic by furnace method	2.9mg/kg dw	08/29/01		MB3790
Total	Barium	290mg/kg dw	08/26/01		MB3779
Total	Beryllium	<0.55mg/kg dw	08/26/01		MB3779
Total	Cadmium	<0.55mg/kg dw	08/26/01		MB3779
Total	Calcium	54000mg/kg dw	08/26/01		MB3779
Total	Chromium	7.2mg/kg dw	08/26/01		MB3779
Total	Cobalt	7.3mg/kg dw	08/26/01		MB3779
Total	Copper	11mg/kg dw	08/26/01		MB3779
Total	Iron	7900mg/kg dw	08/26/01		MB3779
Total	Lead	<11mg/kg dw	08/26/01		MB3779
Total	Magnesium	4800mg/kg dw	08/26/01		MB3779
Total	Manganese	270mg/kg dw	08/26/01		MB3779
Total	Mercury	<0.17mg/kg dw	09/11/01		MB3809
Total	Nickel	14mg/kg dw	08/26/01		MB3779
Total	Potassium	1300mg/kg dw	08/27/01		MB3783
Total	Selenium by furnace method	<0.12mg/kg dw	08/24/01		MB[illegible]
Total	Silver	<5.5mg/kg dw	08/26/01		MB[illegible]
Total	Sodium	460mg/kg dw	08/27/01		MB3783
Total	Thallium by furnace method	<0.34mg/kg dw	09/11/01		MB3821
Total	Vanadium	<33mg/kg dw	08/26/01		MB3779
Total	Zinc	20mg/kg dw	08/26/01		MB3779

TCL Volatiles by EPA Method 8260

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Chloromethane	<3ug/kg dw	08/28/01		VM3592
Bromomethane	<3ug/kg dw	08/28/01		VM3592
Vinyl Chloride	<2ug/kg dw	08/28/01		VM3592
Chloroethane	<3ug/kg dw	08/28/01		VM3592
Methylene Chloride	6ug/kg dw	08/28/01	44	VM3592
Acetone	<11ug/kg dw	08/28/01		VM3592
Carbon Disulfide	<3ug/kg dw	08/28/01		VM3592
1,1-Dichloroethene	<3ug/kg dw	08/28/01		VM3592
1,1-Dichloroethane	<3ug/kg dw	08/28/01		VM3592
trans-1,2-Dichloroethene	<3ug/kg dw	08/28/01		VM3592
cis-1,2-Dichloroethene	<3ug/kg dw	08/28/01		VM3592
Chloroform	<3ug/kg dw	08/28/01		VM3592
1,2-Dichloroethane	<3ug/kg dw	08/28/01		VM3592

dw = Dry weight

DATE: 09/21/01

~state Laboratories, Inc.
~alysis Results
Report Number: 23601001
Client I.D.: CIMINELLI SERVICES GROUP CORP. MCKENNA LANDFILL
Sampled by: Client BROCKPORT 5 08/22/01 G

APPROVAL:
QC:
Lab I.D.: 10170

ULI I.D.: 23601002 Matrix: Soil

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
2-Butanone	<11ug/kg dw	08/28/01		VM3592
1,1,1-Trichloroethane	<3ug/kg dw	08/28/01		VM3592
Carbon Tetrachloride	<3ug/kg dw	08/28/01		VM3592
Bromodichloromethane	<3ug/kg dw	08/28/01		VM3592
1,2-Dichloropropane	<3ug/kg dw	08/28/01		VM3592
cis-1,3-Dichloropropene	<3ug/kg dw	08/28/01		VM3592
Trichloroethene	<3ug/kg dw	08/28/01		VM3592
Dibromochloromethane	<3ug/kg dw	08/28/01		VM3592
1,1,2-Trichloroethane	<3ug/kg dw	08/28/01		VM3592
Benzene	<3ug/kg dw	08/28/01		VM3592
trans-1,3-Dichloropropene	<3ug/kg dw	08/28/01		VM3592
Bromoform	<3ug/kg dw	08/28/01		VM3592
4-Methyl-2-pentanone	<11ug/kg dw	08/28/01		VM3592
2-Hexanone	<11ug/kg dw	08/28/01		VM3592
Tetrachloroethene	<3ug/kg dw	08/28/01		VM3592
1,1,2,2-Tetrachloroethane	<3ug/kg dw	08/28/01		VM3592
Toluene	<3ug/kg dw	08/28/01		VM3592
Chlorobenzene	<3ug/kg dw	08/28/01		VM3592
Ethylbenzene	<3ug/kg dw	08/28/01		VM3592
Styrene	<3ug/kg dw	08/28/01		VM3592
m,p-xylene	<3ug/kg dw	08/28/01		VM3592
o-Xylene	<3ug/kg dw	08/28/01		VM3592
TCL Semivolatiles by EPA Method 8270				
Phenol	<370ug/kg dw	08/30/01		SA2976
bis(2-Chloroethyl)ether	<370ug/kg dw	08/30/01		SA2976
2-Chlorophenol	<370ug/kg dw	08/30/01		SA2976
1,3-Dichlorobenzene	<370ug/kg dw	08/30/01		SA2976
1,4-Dichlorobenzene	<370ug/kg dw	08/30/01		SA2976
1,2-Dichlorobenzene	<370ug/kg dw	08/30/01		SA2976
2-Methylphenol	<370ug/kg dw	08/30/01		SA2976
2,2'-Oxybis(1-Chloropropane)	<370ug/kg dw	08/30/01		SA2976
4-Methylphenol	<370ug/kg dw	08/30/01		SA2976
n-Nitrosodinpropylamine	<370ug/kg dw	08/30/01		SA2976
Hexachloroethane	<370ug/kg dw	08/30/01		SA2976
Nitrobenzene	<370ug/kg dw	08/30/01		SA2976
Isophorone	<370ug/kg dw	08/30/01		SA2976
2-Nitrophenol	<370ug/kg dw	08/30/01		SA2976
2,4-Dimethylphenol	<370ug/kg dw	08/30/01		SA2976
bis(2-Chloroethoxy)methane	<370ug/kg dw	08/30/01		SA2976

dw = Dry weight

DATE: 09/21/01

Upstate Laboratories, Inc.
Analysis Results
Report Number: 23601001
Client I.D.: CIMINELLI SERVICES GROUP CORP. MCKENNA LANDFILL
BROCKPORT 5 08/22/01 G
Sampled by: Client

APPROVAL:
QC:
Lab I.D.: 10170

ULI I.D.: 23601002 Matrix: Soil

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
2,4-Dichlorophenol	<370ug/kg dw	08/30/01		SA2976
1,2,4-Trichlorobenzene	<370ug/kg dw	08/30/01		SA2976
Naphthalene	<370ug/kg dw	08/30/01		SA2976
4-Chloroaniline	<370ug/kg dw	08/30/01		SA2976
Hexachlorobutadiene	<370ug/kg dw	08/30/01		SA2976
4-Chloro-3-methylphenol	<370ug/kg dw	08/30/01		SA2976
2-Methylnaphthalene	<370ug/kg dw	08/30/01		SA2976
Hexachlorocyclopentadiene	<370ug/kg dw	08/30/01		SA2976
2,4,6-Trichlorophenol	<370ug/kg dw	08/30/01		SA2976
2,4,5-Trichlorophenol	<370ug/kg dw	08/30/01		SA2976
2-Chloronaphthalene	<370ug/kg dw	08/30/01		SA2976
2-Nitroaniline	<3700ug/kg dw	08/30/01		SA2976
Dimethylphthalate	<370ug/kg dw	08/30/01		SA2976
Acenaphthylene	<370ug/kg dw	08/30/01		SA2976
2,6-Dinitrotoluene	<370ug/kg dw	08/30/01		SA2976
3-Nitroaniline	<3700ug/kg dw	08/30/01		SA2976
Acenaphthene	<370ug/kg dw	08/30/01		SA2976
2,4-Dinitrophenol	<3700ug/kg dw	08/30/01		SA2976
4-Nitrophenol	<3700ug/kg dw	08/30/01		SA2976
Dibenzofuran	<370ug/kg dw	08/30/01		SA[illegible]
2,4-Dinitrotoluene	<370ug/kg dw	08/30/01		SA2[illegible]
Diethylphthalate	<370ug/kg dw	08/30/01		SA2976
4-Chlorophenylphenylether	<370ug/kg dw	08/30/01		SA2976
Fluorene	<370ug/kg dw	08/30/01		SA2976
4-Nitroaniline	<3700ug/kg dw	08/30/01		SA2976
2-Methyl-4,6-dinitrophenol	<3700ug/kg dw	08/30/01		SA2976
n-Nitrosodiphenylamine	<370ug/kg dw	08/30/01		SA2976
4-Bromophenylphenylether	<370ug/kg dw	08/30/01		SA2976
Hexachlorobenzene	<370ug/kg dw	08/30/01		SA2976
Pentachlorophenol	<740ug/kg dw	08/30/01		SA2976
Phenanthrene	<370ug/kg dw	08/30/01		SA2976
Anthracene	<370ug/kg dw	08/30/01		SA2976
Carbazole	<370ug/kg dw	08/30/01		SA2976
di-n-butylphthalate	<370ug/kg dw	08/30/01		SA2976
Fluoranthene	<370ug/kg dw	08/30/01		SA2976
Pyrene	<370ug/kg dw	08/30/01		SA2976
Butylbenzylphthalate	<370ug/kg dw	08/30/01		SA2976
3,3'-Dichlorobenzidine	<370ug/kg dw	08/30/01		SA2976
Benzo(a)anthracene	<370ug/kg dw	08/30/01		SA2976
Chrysene	<370ug/kg dw	08/30/01		SA2976

dw = Dry weight

DATE: 09/21/01

"pstate Laboratories, Inc.
alysis Results
Report Number: 23601001
Client I.D.: CIMINELLI SERVICES GROUP CORP. MCKENNA LANDFILL
Sampled by: Client

APPROVAL:
QC:
Lab I.D.: 10170
BROCKPORT 5 08/22/01 G

ULI I.D.: 23601002 Matrix: Soil

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
bis(2-Ethylhexyl)phthalate	<370ug/kg dw	08/30/01		SA2976
di-n-octylphthalate	<370ug/kg dw	08/30/01		SA2976
Benzo(b)fluoranthene	<370ug/kg dw	08/30/01		SA2976
Benzo(k)fluoranthene	<370ug/kg dw	08/30/01		SA2976
Benzo(a)pyrene	<370ug/kg dw	08/30/01		SA2976
Indeno(1,2,3-cd)pyrene	<370ug/kg dw	08/30/01		SA2976
Dibenzo(a,h)anthracene	<370ug/kg dw	08/30/01		SA2976
Benzo(ghi)perylene	<370ug/kg dw	08/30/01		SA2976
EPA Method 8150				
2,4-D	<37ug/kg dw	09/06/01		GA0952
2,4,5-T	<37ug/kg dw	09/06/01		GA0952
2,4,5-TP (Silvex)	<37ug/kg dw	09/06/01		GA0952
Dinoseb	<37ug/kg dw	09/06/01		GA0952
TCL Pesticides/Aroclors by EPA 8082				
BHC (a-isomer)	<1.9ug/kg dw	09/11/01		GA0960
BHC (b-isomer)	<1.9ug/kg dw	09/11/01		GA0960
BHC (d-isomer)	<1.9ug/kg dw	09/11/01		GA0960
BHC (g-isomer)	<1.9ug/kg dw	09/11/01		GA0960
Heptachlor	<1.9ug/kg dw	09/11/01		GA0960
Aldrin	<1.9ug/kg dw	09/11/01		GA0960
Heptachlor Epoxide	<1.9ug/kg dw	09/11/01		GA0960
Endosulfan I	<1.9ug/kg dw	09/11/01		GA0960
Dieldrin	<3.7ug/kg dw	09/11/01		GA0960
4,4'-DDE	22ug/kg dw	09/11/01		GA0960
Endrin	<3.7ug/kg dw	09/11/01		GA0960
Endosulfan II	<3.7ug/kg dw	09/11/01		GA0960
4,4'-DDD	<3.7ug/kg dw	09/11/01		GA0960
Endosulfan Sulfate	<3.7ug/kg dw	09/11/01		GA0960
4,4'-DDT	<3.7ug/kg dw	09/11/01		GA0960
Methoxychlor	<19ug/kg dw	09/11/01		GA0960
Endrin Ketone	<3.7ug/kg dw	09/11/01		GA0960
Endrin Aldehyde	<3.7ug/kg dw	09/11/01		GA0960
alpha-Chlordane	<1.9ug/kg dw	09/11/01		GA0960
gamma-Chlordane	<1.9ug/kg dw	09/11/01		GA0960
Toxaphene	<190ug/kg dw	09/11/01		GA0960
Aroclor 1016	<37ug/kg dw	09/11/01		GA0960
Aroclor 1221	<37ug/kg dw	09/11/01		GA0960
Aroclor 1232	<37ug/kg dw	09/11/01		GA0960

dw = Dry weight

DATE: 09/21/01

Upstate Laboratories, Inc.
Analysis Results
Report Number: 23601001
Client I.D.: CIMINELLI SERVICES GROUP CORP. MCKENNA LANDFILL
Sampled by: Client

APPROVAL:
QC:
Lab I.D.: 10170

BROCKPORT 5 08/22/01 G

ULI I.D.: 23601002   Matrix: Soil

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Aroclor 1242	<37ug/kg dw	09/11/01		GA0960
Aroclor 1248	<37ug/kg dw	09/11/01		GA0960
Aroclor 1254	<37ug/kg dw	09/11/01		GA0960
Aroclor 1260	<37ug/kg dw	09/11/01		GA0960

dw = Dry weight

DATE: 09/21/01

Upstate Laboratories, Inc.
Analysis Results
Report Number: 23601001
Client I.D.: CIMINELLI SERVICES GROUP CORP. MCKENNA LANDFILL
Sampled by: Client

APPROVAL:
QC:
Lab I.D.: 10170

BROCKPORT 7 SUITABLE FILL 08/22/01 G
BARRIER PROTECTION

ULI I.D.: 23601003
Matrix: Soil

	PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
	Percent Solids	90%	08/27/01		WD6049
	Total Cyanide	<1.1mg/kg dw	09/05/01		WD6161
Total	Aluminum	5500mg/kg dw	08/26/01		MB3779
Total	Antimony	<33ug/kg dw	08/26/01		MB3779
Total	Arsenic by furnace method	2.9mg/kg dw	08/29/01		MB3790
Total	Barium	55mg/kg dw	08/26/01		MB3779
Total	Beryllium	<0.56mg/kg dw	08/26/01		MB3779
Total	Cadmium	<0.56mg/kg dw	08/26/01		MB3779
Total	Calcium	38000mg/kg dw	08/26/01		MB3779
Total	Chromium	8.5mg/kg dw	08/26/01		MB3779
Total	Cobalt	9.5mg/kg dw	08/26/01		MB3779
Total	Copper	9.9mg/kg dw	08/26/01		MB3779
Total	Iron	8700mg/kg dw	08/26/01		MB3779
Total	Lead	<11mg/kg dw	08/26/01		MB3779
Total	Magnesium	4700mg/kg dw	08/26/01		MB3779
Total	Manganese	300mg/kg dw	08/26/01		MB3779
Total	Mercury	<0.17mg/kg dw	09/11/01		MB3809
Total	Nickel	16mg/kg dw	08/26/01		MB3779
Total	Potassium	1400mg/kg dw	08/27/01		MB3783
Total	Selenium by furnace method	<0.12mg/kg dw	08/24/01		MB3778
Total	Silver	<5.6mg/kg dw	08/26/01		MB3779
Total	Sodium	370mg/kg dw	08/27/01		MB3783
Total	Thallium by furnace method	<0.34mg/kg dw	09/11/01		MB3821
Total	Vanadium	<33mg/kg dw	08/26/01		MB3779
Total	Zinc	23mg/kg dw	08/26/01		MB3779

TCL Volatiles by EPA Method 8260

	RESULTS	DATE ANAL.	KEY	FILE#
Chloromethane	<3ug/kg dw	08/28/01		VM3592
Bromomethane	<3ug/kg dw	08/28/01		VM3592
Vinyl Chloride	<2ug/kg dw	08/28/01		VM3592
Chloroethane	<3ug/kg dw	08/28/01		VM3592
Methylene Chloride	7ug/kg dw	08/28/01	44	VM3592
Acetone	<11ug/kg dw	08/28/01		VM3592
Carbon Disulfide	<3ug/kg dw	08/28/01		VM3592
1,1-Dichloroethene	<3ug/kg dw	08/28/01		VM3592
1,1-Dichloroethane	<3ug/kg dw	08/28/01		VM3592
trans-1,2-Dichloroethene	<3ug/kg dw	08/28/01		VM3592
cis-1,2-Dichloroethene	<3ug/kg dw	08/28/01		VM3592
Chloroform	<3ug/kg dw	08/28/01		VM3592
1,2-Dichloroethane	<3ug/kg dw	08/28/01		VM3592

dw = Dry weight

DATE: 09/21/01

Upstate Laboratories, Inc.
Analysis Results
Report Number: 23601001
Client I.D.: CIMINELLI SERVICES GROUP CORP. MCKENNA LANDFILL
Sampled by: Client

APPROVAL:
QC:
Lab I.D.: 10170

BROCKPORT 7 SUITABLE FILL 08/22/01 G
BARRIER PROTECTION

ULI I.D.: 23601003 Matrix: Soil

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
2-Butanone	<11ug/kg dw	08/28/01		VM3592
1,1,1-Trichloroethane	<3ug/kg dw	08/28/01		VM3592
Carbon Tetrachloride	<3ug/kg dw	08/28/01		VM3592
Bromodichloromethane	<3ug/kg dw	08/28/01		VM3592
1,2-Dichloropropane	<3ug/kg dw	08/28/01		VM3592
cis-1,3-Dichloropropene	<3ug/kg dw	08/28/01		VM3592
Trichloroethene	<3ug/kg dw	08/28/01		VM3592
Dibromochloromethane	<3ug/kg dw	08/28/01		VM3592
1,1,2-Trichloroethane	<3ug/kg dw	08/28/01		VM3592
Benzene	<3ug/kg dw	08/28/01		VM3592
trans-1,3-Dichloropropene	<3ug/kg dw	08/28/01		VM3592
Bromoform	<3ug/kg dw	08/28/01		VM3592
4-Methyl-2-pentanone	<11ug/kg dw	08/28/01		VM3592
2-Hexanone	<11ug/kg dw	08/28/01		VM3592
Tetrachloroethene	<3ug/kg dw	08/28/01		VM3592
1,1,2,2-Tetrachloroethane	<3ug/kg dw	08/28/01		VM3592
Toluene	<3ug/kg dw	08/28/01		VM3592
Chlorobenzene	<3ug/kg dw	08/28/01		VM3592
Ethylbenzene	<3ug/kg dw	08/28/01		VM3592
Styrene	<3ug/kg dw	08/28/01		VM[illegible]
m,p-xylene	<3ug/kg dw	08/28/01		VM3[illegible]
o-Xylene	<3ug/kg dw	08/28/01		VM3592
TCL Semivolatiles by EPA Method 8270				
Phenol	<370ug/kg dw	08/30/01		SA2976
bis(2-Chloroethyl)ether	<370ug/kg dw	08/30/01		SA2976
2-Chlorophenol	<370ug/kg dw	08/30/01		SA2976
1,3-Dichlorobenzene	<370ug/kg dw	08/30/01		SA2976
1,4-Dichlorobenzene	<370ug/kg dw	08/30/01		SA2976
1,2-Dichlorobenzene	<370ug/kg dw	08/30/01		SA2976
2-Methylphenol	<370ug/kg dw	08/30/01		SA2976
2,2'-Oxybis(1-Chloropropane)	<370ug/kg dw	08/30/01		SA2976
4-Methylphenol	<370ug/kg dw	08/30/01		SA2976
n-Nitrosodinpropylamine	<370ug/kg dw	08/30/01		SA2976
Hexachloroethane	<370ug/kg dw	08/30/01		SA2976
Nitrobenzene	<370ug/kg dw	08/30/01		SA2976
Isophorone	<370ug/kg dw	08/30/01		SA2976
2-Nitrophenol	<370ug/kg dw	08/30/01		SA2976
2,4-Dimethylphenol	<370ug/kg dw	08/30/01		SA2976
bis(2-Chloroethoxy)methane	<370ug/kg dw	08/30/01		SA2976

dw = Dry weight

DATE: 09/21/01

"pstate Laboratories, Inc.
alysis Results
eport Number: 23601001
Client I.D.: CIMINELLI SERVICES GROUP CORP. MCKENNA LANDFILL
Sampled by: Client

APPROVAL:
QC:
Lab I.D.: 10170

BROCKPORT 7 SUITABLE FILL 08/22/01 G
BARRIER PROTECTION

ULI I.D.: 23601003   Matrix: Soil

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
2,4-Dichlorophenol	<370ug/kg dw	08/30/01		SA2976
1,2,4-Trichlorobenzene	<370ug/kg dw	08/30/01		SA2976
Naphthalene	<370ug/kg dw	08/30/01		SA2976
4-Chloroaniline	<370ug/kg dw	08/30/01		SA2976
Hexachlorobutadiene	<370ug/kg dw	08/30/01		SA2976
4-Chloro-3-methylphenol	<370ug/kg dw	08/30/01		SA2976
2-Methylnaphthalene	<370ug/kg dw	08/30/01		SA2976
Hexachlorocyclopentadiene	<370ug/kg dw	08/30/01		SA2976
2,4,6-Trichlorophenol	<370ug/kg dw	08/30/01		SA2976
2,4,5-Trichlorophenol	<370ug/kg dw	08/30/01		SA2976
2-Chloronaphthalene	<370ug/kg dw	08/30/01		SA2976
2-Nitroaniline	<3700ug/kg dw	08/30/01		SA2976
Dimethylphthalate	<370ug/kg dw	08/30/01		SA2976
Acenaphthylene	<370ug/kg dw	08/30/01		SA2976
2,6-Dinitrotoluene	<370ug/kg dw	08/30/01		SA2976
3-Nitroaniline	<3700ug/kg dw	08/30/01		SA2976
Acenaphthene	<370ug/kg dw	08/30/01		SA2976
2,4-Dinitrophenol	<3700ug/kg dw	08/30/01		SA2976
4-Nitrophenol	<3700ug/kg dw	08/30/01		SA2976
Dibenzofuran	<370ug/kg dw	08/30/01		SA2976
2,4-Dinitrotoluene	<370ug/kg dw	08/30/01		SA2976
Diethylphthalate	<370ug/kg dw	08/30/01		SA2976
4-Chlorophenylphenylether	<370ug/kg dw	08/30/01		SA2976
Fluorene	<370ug/kg dw	08/30/01		SA2976
4-Nitroaniline	<3700ug/kg dw	08/30/01		SA2976
2-Methyl-4,6-dinitrophenol	<3700ug/kg dw	08/30/01		SA2976
n-Nitrosodiphenylamine	<370ug/kg dw	08/30/01		SA2976
4-Bromophenylphenylether	<370ug/kg dw	08/30/01		SA2976
Hexachlorobenzene	<370ug/kg dw	08/30/01		SA2976
Pentachlorophenol	<740ug/kg dw	08/30/01		SA2976
Phenanthrene	<370ug/kg dw	08/30/01		SA2976
Anthracene	<370ug/kg dw	08/30/01		SA2976
Carbazole	<370ug/kg dw	08/30/01		SA2976
di-n-butylphthalate	<370ug/kg dw	08/30/01		SA2976
Fluoranthene	<370ug/kg dw	08/30/01		SA2976
Pyrene	<370ug/kg dw	08/30/01		SA2976
Butylbenzylphthalate	<370ug/kg dw	08/30/01		SA2976
3,3'-Dichlorobenzidine	<370ug/kg dw	08/30/01		SA2976
Benzo(a)anthracene	<370ug/kg dw	08/30/01		SA2976
Chrysene	<370ug/kg dw	08/30/01		SA2976

dw = Dry weight

DATE: 09/21/01

Upstate Laboratories, Inc.
Analysis Results
Report Number: 23601001
Client I.D.: CIMINELLI SERVICES GROUP CORP. MCKENNA LANDFILL
Sampled by: Client

APPROVAL:
QC:
Lab I.D.: 10170

BROCKPORT 7 SUITABLE FILL 08/22/01 G
BARRIER PROTECTION

ULI I.D.: 23601003 Matrix: Soil

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
bis(2-Ethylhexyl)phthalate	<370ug/kg dw	08/30/01		SA2976
di-n-octylphthalate	<370ug/kg dw	08/30/01		SA2976
Benzo(b)fluoranthene	<370ug/kg dw	08/30/01		SA2976
Benzo(k)fluoranthene	<370ug/kg dw	08/30/01		SA2976
Benzo(a)pyrene	<370ug/kg dw	08/30/01		SA2976
Indeno(1,2,3-cd)pyrene	<370ug/kg dw	08/30/01		SA2976
Dibenzo(a,h)anthracene	<370ug/kg dw	08/30/01		SA2976
Benzo(ghi)perylene	<370ug/kg dw	08/30/01		SA2976
EPA Method 8150				
2,4-D	<37ug/kg dw	09/06/01		GA0952
2,4,5-T	<37ug/kg dw	09/06/01		GA0952
2,4,5-TP (Silvex)	<37ug/kg dw	09/06/01		GA0952
Dinoseb	<37ug/kg dw	09/06/01		GA0952
TCL Pesticides/Aroclors by EPA 8082				
BHC (a-isomer)	<1.9ug/kg dw	09/11/01		GA0960
BHC (b-isomer)	<1.9ug/kg dw	09/11/01		GA0[illegible]
BHC (d-isomer)	<1.9ug/kg dw	09/11/01		GA0[illegible]
BHC (g-isomer)	<1.9ug/kg dw	09/11/01		GA0960
Heptachlor	<1.9ug/kg dw	09/11/01		GA0960
Aldrin	<1.9ug/kg dw	09/11/01		GA0960
Heptachlor Epoxide	<1.9ug/kg dw	09/11/01		GA0960
Endosulfan I	<1.9ug/kg dw	09/11/01		GA0960
Dieldrin	<3.7ug/kg dw	09/11/01		GA0960
4,4'-DDE	37ug/kg dw	09/11/01		GA0960
Endrin	<3.7ug/kg dw	09/11/01		GA0960
Endosulfan II	<3.7ug/kg dw	09/11/01		GA0960
4,4'-DDD	<3.7ug/kg dw	09/11/01		GA0960
Endosulfan Sulfate	<3.7ug/kg dw	09/11/01		GA0960
4,4'-DDT	<3.7ug/kg dw	09/11/01		GA0960
Methoxychlor	<19ug/kg dw	09/11/01		GA0960
Endrin Ketone	<3.7ug/kg dw	09/11/01		GA0960
Endrin Aldehyde	<3.7ug/kg dw	09/11/01		GA0960
alpha-Chlordane	<1.9ug/kg dw	09/11/01		GA0960
gamma-Chlordane	<1.9ug/kg dw	09/11/01		GA0960
Toxaphene	<190ug/kg dw	09/11/01		GA0960
Aroclor 1016	<37ug/kg dw	09/11/01		GA0960
Aroclor 1221	<37ug/kg dw	09/11/01		GA0960
Aroclor 1232	<37ug/kg dw	09/11/01		GA0960

dw = Dry weight

DATE: 09/21/01

Upstate Laboratories, Inc.
Analysis Results
Report Number: 23601001
Client I.D.: CIMINELLI SERVICES GROUP CORP. MCKENNA LANDFILL
Sampled by: Client

APPROVAL:
QC:
Lab I.D.: 10170

BROCKPORT 7 SUITABLE FILL 08/22/01 G
BARRIER PROTECTION

ULI I.D.: 23601003 Matrix: Soil

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Aroclor 1242	<37ug/kg dw	09/11/01		GA0960
Aroclor 1248	<37ug/kg dw	09/11/01		GA0960
Aroclor 1254	<37ug/kg dw	09/11/01		GA0960
Aroclor 1260	<37ug/kg dw	09/11/01		GA0960

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 20101066
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL: ___
QC:
Lab I.D.: 10170
Sampled by: Client

ID:20101066 Mat:Soil MCKENNA LANDFILL SOIL SAMPLE 07/18/01 C

	PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
	Percent Solids	94%	07/23/01		WD5608
	Total Cyanide	<1.0mg/kg dw	07/24/01		WD5601
Total	Aluminum	6800mg/kg dw	07/23/01		MB3695
Total	Antimony	120mg/kg dw	07/23/01		MB3695
Total	Arsenic by furnace method	7.4mg/kg dw	07/23/01		MB3709
Total	Barium	56mg/kg dw	07/23/01		MB3695
Total	Beryllium	<0.52mg/kg dw	07/23/01		MB3695
Total	Cadmium	0.85mg/kg dw	07/23/01		MB3695
Total	Calcium	38000mg/kg dw	07/23/01		MB3695
Total	Chromium	10mg/kg dw	07/23/01		MB3695
Total	Cobalt	31mg/kg dw	07/23/01		MB3695
Total	Copper	10mg/kg dw	07/23/01		MB3695
Total	Iron	9800mg/kg dw	07/23/01		MB3695
Total	Lead	<10mg/kg dw	07/23/01		MB3695
Total	Magnesium	4500mg/kg dw	07/23/01		MB3695
Total	Manganese	340mg/kg dw	07/23/01		MB3695
Total	Mercury	<0.16mg/kg dw	07/27/01		MB3705
Total	Nickel	14mg/kg dw	07/23/01		MB3695
Total	Potassium	1800mg/kg dw	07/26/01		MB3710
Total	Selenium by furnace method	<0.11mg/kg dw	07/26/01		MB3703
Total	Silver	6.1mg/kg dw	07/23/01		MB3695
Total	Thallium by furnace method	<0.31mg/kg dw	07/25/01		MB4097
Total	Vanadium	<32mg/kg dw	07/23/01		MB3695
Total	Zinc	23mg/kg dw	07/23/01		MB3695
	TCL Volatiles by EPA Method 8260				
	Chloromethane	<3ug/kg dw	07/24/01		VM3542
	Bromomethane	<3ug/kg dw	07/24/01		VM3542
	Vinyl Chloride	<2ug/kg dw	07/24/01		VM3542
	Chloroethane	<3ug/kg dw	07/24/01		VM3542
	Methylene Chloride	<3ug/kg dw	07/24/01		VM3542
	Acetone	<11ug/kg dw	07/24/01		VM3542
	Carbon Disulfide	<3ug/kg dw	07/24/01		VM3542
	1,1-Dichloroethene	<3ug/kg dw	07/24/01		VM3542
	1,1-Dichloroethane	<3ug/kg dw	07/24/01		VM3542
	trans-1,2-Dichloroethene	<3ug/kg dw	07/24/01		VM3542
	cis-1,2-Dichloroethene	<3ug/kg dw	07/24/01		VM3542
	Chloroform	<3ug/kg dw	07/24/01		VM3542
	1,2-Dichloroethane	<3ug/kg dw	07/24/01		VM3542
	2-Butanone	<11ug/kg dw	07/24/01		VM3542
	1,1,1-Trichloroethane	<3ug/kg dw	07/24/01		VM3542
	Carbon Tetrachloride	<3ug/kg dw	07/24/01		VM3542
	Bromodichloromethane	<3ug/kg dw	07/24/01		VM3542
	1,2-Dichloropropane	<3ug/kg dw	07/24/01		VM3542

dw - Dry weight

TOPSOIL

Topsoil for the McKenna Landfill Remedial Closure Project final cover system construction was obtained from the following sources.

1. Recovery of existing topsoil from the landfill;
2. The Brockport borrow pit located in Brockport, New York;
3. The New Guinea Rd. borrow pit located in Clarendon, New York; and
4. The Kenyon Rd. borrow pit located in Fancher, New York.

Approximately 20,000 cubic yards of topsoil was used for topsoil construction. Laboratory testing consisted of natural moisture content (ASTM D2216), grain size analysis (ASTM D422), organic content (ASTM D2974), pH (ASTM D4972) and chemical characterization testing. Samples were collected at a rate of one sample per 5,000 cubic yards placed. Based on the laboratory test results, GZA considered the above sources acceptable for use as topsoil. Test results are summarized on the following pages.

1. EXISTING TOPSOIL RECOVERY

Geotechnical Testing Summary

Approximately 13,000 cubic yards of the existing topsoil recovered from the landfill was used for topsoil construction. Test frequencies are summarized below. Table D13 summarizes the geotechnical laboratory test results.

EXISTING TOPSOIL GEOTECHNICAL LAB TESTING SUMMARY

Test Designation	Required Frequency	Number of Tests Done	Estimated Quantity of Fill Placed	Estimated Test Frequency
Natural Moisture Content (ASTM D2216)	Ea. 5,000 Cubic Yards	3	13,000 Cubic Yards	Ea. 4,300 Cubic Yards Placed
Grain Size Analysis (ASTM D422)	Ea. 5,000 Cubic Yards	3	13,000 Cubic Yards	Ea. 4,300 Cubic Yards Placed
Organic Content (ASTM D2974)	Ea. 5,000 Cubic Yards	3	13,000 Cubic Yards	Ea. 4,300 Cubic Yards Placed
pH (ASTM D4972)	Ea. 5,000 Cubic Yards	3	13,000 Cubic Yards	Ea. 4,300 Cubic Yards Placed

Chemical Testing Summary

Pre-construction chemical characterization testing was done for the recovered on-site topsoil. Chemical characterization testing was required for every 5,000 cubic yards of soil used. Six (6) samples were tested for a test frequency of about 1 test per 2,200 cubic yards. The samples were tested for the following parameters.

Parameter	Extraction/Preparation (1)	Analysis (1)
TCL[2] Volatile Organic Compounds	5050	8260 (95-1)
TCL Semi-Volatile Organic Compounds	3540/3550	8270 (95-2)
Pesticides/PCB's	3540/3550	8080
Herbicides	3580	8150
TAL[3] Metals	3050	95-M
Cyanide	----	9012

[1] EPA SW-846.
[2] TCL – Target Compound List.
[3] TAL – Target Analyte List.

GZA reviewed the laboratory test results submitted by CSC's analytical laboratory, Upstate, and tabulated the compounds detected for each sample. A table of the compounds detected for each material type is included herein as Table D14, along with the laboratory data GZA compared the reported chemical concentrations versus recommended soil cleanup objective values and eastern United States background values shown in the tables.

Based on GZA's review, the chemical characterization test results for this material was acceptable. Therefore, the on-site recovered topsoil was considered acceptable for topsoil.

Table D13

SUMMARY OF BULK SAMPLE LABORATORY TESTING
ON-SITE TOPSOIL

MCKENNA LANDFILL REMEDIAL CLOSURE PROJECT ALBION, NY

SAMPLE NUMBER	NATURAL MOISTURE CONTENT	ORGANIC CONTENT (%)	ASH (%)	% FINER THAN #200 SEIVE	pH in H_2O	pH in 0.01M $CaCl_2$	BORROW SOURCE
09121-1	17.9	3.4	96.6	40	7.6	5.8	On-Site Source
09131-1	13.5	3.8	96.2	32	7.1	7.3	On-Site Source
12111-3	25.5	4.2	95.8	44	7.2	7.3	On-Site Source

Table D14

Chemical Characterization Results for On-Site Topsoil Samples
A27, D9, D21, G25, H2 and H12 Taken from Soil Recovery Area

McKenna Landfill Remedial Closure Project
Albion, New York

Parameter	Recommended Soil Cleanup Objective ppm	Eastern USA Background ppm	A27 ppm	D9 ppm	D21 ppm	G25 ppm	H2 ppm	H12 ppm
VOC - EPA Method 8260 (ppm)								
Methylene Chloride	0.1	N/A	0.016	0.012	0.012	0.012	0.015	0.007
Acetone	0.2	N/A	0.37	N/D	ND	ND	0.05	ND
2-Butanone	0.3	N/A	N/D	N/D	ND	ND	ND	ND
m-Xylene and p-Xylene	1.2	N/A	0.011	N/D	ND	ND	ND	ND
SVOC - EPA Method 8270 (ppm)								
No Compounds Detected		N/A	ND	ND	ND	ND	ND	ND
HERBICIDES - EPA Method 8150 (ppm)								
2,4 -D	0.5	N/A	ND	ND	ND	ND	ND	0.0073
TCL Pesticides/Aroclors EPA Method 8080 (ppm)								
4,4' - DDE	2.1	N/A	ND	ND	0.008	ND	ND	ND
Priority Pollutant Metals (ppm)								
Aluminum	SB	33,000	6900	ND	5400	6100	5900	6700
Antimony	SB	N/A	ND	ND	ND	ND	ND	ND
Arsenic	7.5 or SB	3-12	2.3	2.5	1.5	4.1	2.1	4
Barium	300 or SB	15-600	58	61	ND	45	51	68
Beryllium	0.16 or SB	0-1.75	ND	ND	0.63	ND	ND	ND
Cadmium	1 or SB	0.1-1	1.9	1.7	1.9	1.6	1.3	1.6
Calcium	SB	130-35,000	22,000	5,900	110,000	3300	13,000	4500
Chromium	10 or SB	1.5-40	13	12	12	10	9.3	10
Cobalt	30 or SB	2.5-60	39	32	41	29	29	34
Copper	25 or SB	1-50	15	13	15	9.1	11	11
Iron	2000 or SB	2000-550,000	12,000	10,000	12,000	8800	9200	9500
Lead	SB	See Note 5	ND	ND	15	12	ND	ND
Magnesium	SB	100-5000	3,900	2,300	14,000	1700	3600	2000
Manganese	SB	50-5000	340	380	360	290	420	320
Mercury	0.1	0.001-0.2	N/D	N/D	ND	ND	ND	ND
Nickel	13 or SB	0.5-25	21	17	23	14	17	14
Potassium	SB	8500-43,000	1300	730	1700	750	730	580
Selenium	2 or SB	0.1-3.9	0.59	0.4	0.16	ND	ND	0.24
Silver	SB	N/A	N/D	N/D	ND	ND	ND	ND
Sodium	SB	6000-8000	420	330	340	320	360	350
Thallium	SB	N/A	1.8	0.79	ND	ND	ND	ND
Vanadium	150 or SB	1-300	ND	ND	ND	ND	ND	ND
Zinc	20 or SB	9-50	46	40	36	30	29	42

Notes:
1. Only compounds detected in one or more samples are presented on this table. Refer to original data sheets for list of all compounds included in analysis.
2. Analytical testing completed by Upstate Laboratories, Inc.
3. Recommended soil cleanup objectives are based on the Division Technical and Administrative Guidance Memorandum (TAGM) 4046 on Determination of Soil Cleanup Objectives and Cleanup Levels in its final form.
4. ND = not detected, NA = not available
5. Background levels for lead vary widely. Average levels in undeveloped, rural areas may range from 4-61 ppm. Average background levels in metropolitan or suburban areas or near highways are much higher and typically range from 200-500 ppm.
6. mg/kg = ppm

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL: ____
QC: ____
Lab I.D.: 10170
Sampled by: Client

ID:14000080 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID H2 1700H 05/16/00 G

PARAMETERS		RESULTS	DATE ANAL.	KEY	FILE#
Total	Cadmium	1.3mg/kg dw	06/09/00		MB2436
Total	Calcium	13000mg/kg dw	06/09/00		MB2436
Total	Chromium	9.3mg/kg dw	06/09/00		MB2436
Total	Cobalt	29mg/kg dw	06/09/00		MB2436
Total	Copper	11mg/kg dw	06/09/00		MB2436
Total	Iron	9200mg/kg dw	06/09/00		MB2436
Total	Lead	<11mg/kg dw	06/09/00		MB2436
Total	Magnesium	3600mg/kg dw	06/09/00		MB2436
Total	Manganese	420mg/kg dw	06/09/00		MB2436
Total	Mercury	<0.3mg/kg dw	05/26/00		MB2384
Total	Nickel	17mg/kg dw	06/09/00		MB2436
Total	Potassium	730mg/kg dw	06/12/00		MB2443
Total	Selenium by furnace method	<0.2mg/kg dw	05/30/00		WD2391
Total	Silver	<5.4mg/kg dw	06/09/00		MB2436
Total	Sodium	360mg/kg dw	06/12/00		MB2443
Total	Thallium by furnace method	<0.4mg/kg dw	06/09/00		ME2863
Total	Vanadium	<33mg/kg dw	06/09/00		MB2436
Total	Zinc	29mg/kg dw	06/09/00		MB2436

TCL Volatiles by EPA Method 8260

	RESULTS	DATE ANAL.	KEY	FILE#
Chloromethane	<3ug/kg dw	05/26/00		VM2899
Bromomethane	<3ug/kg dw	05/26/00		VM2899
Vinyl Chloride	<2ug/kg dw	05/26/00		VM2899
Chloroethane	<3ug/kg dw	05/26/00		VM2899
Methylene Chloride	15ug/kg dw	05/26/00	44	VM2899
Acetone	50ug/kg dw	05/26/00	44	VM2899
Carbon Disulfide	<3ug/kg dw	05/26/00		VM2899
1,1-Dichloroethene	<3ug/kg dw	05/26/00		VM2899
1,1-Dichloroethane	<3ug/kg dw	05/26/00		VM2899
trans-1,2-Dichloroethene	<3ug/kg dw	05/26/00		VM2899
cis-1,2-Dichloroethene	<3ug/kg dw	05/26/00		VM2899
Chloroform	<3ug/kg dw	05/26/00		VM2899
1,2-Dichloroethane	<3ug/kg dw	05/26/00		VM2899
2-Butanone	<11ug/kg dw	05/26/00		VM2899
1,1,1-Trichloroethane	<3ug/kg dw	05/26/00		VM2899
Carbon Tetrachloride	<3ug/kg dw	05/26/00		VM2899
Bromodichloromethane	<3ug/kg dw	05/26/00		VM2899
1,2-Dichloropropane	<3ug/kg dw	05/26/00		VM2899
cis-1,3-Dichloropropene	<3ug/kg dw	05/26/00		VM2899
Trichloroethene	<3ug/kg dw	05/26/00		VM2899
Dibromochloromethane	<3ug/kg dw	05/26/00		VM2899
1,1,2-Trichloroethane	<3ug/kg dw	05/26/00		VM2899
Benzene	<3ug/kg dw	05/26/00		VM2899
trans-1,3-Dichloropropene	<3ug/kg dw	05/26/00		VM2899

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
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APPROVAL:
QC:
Lab I.D.: 10170
Sampled by: Client

ID:14000080 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID H2 1700H 05/16/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Bromoform	<3ug/kg dw	05/26/00		VM2899
4-Methyl-2-pentanone	<11ug/kg dw	05/26/00		VM2899
2-Hexanone	<11ug/kg dw	05/26/00		VM2899
Tetrachloroethene	<3ug/kg dw	05/26/00		VM2899
1,1,2,2-Tetrachloroethane	<3ug/kg dw	05/26/00		VM2899
Toluene	<3ug/kg dw	05/26/00		VM2899
Chlorobenzene	<3ug/kg dw	05/26/00		VM2899
Ethylbenzene	<3ug/kg dw	05/26/00		VM2899
Styrene	<3ug/kg dw	05/26/00		VM2899
m-Xylene and p-Xylene	<3ug/kg dw	05/26/00		VM2899
o-Xylene	<3ug/kg dw	05/26/00		VM2899
TCL Semivolatiles by EPA Method 8270				
Phenol	<370ug/kg dw	06/01/00		SA2428
bis(2-Chloroethyl)ether	<370ug/kg dw	06/01/00		SA2428
2-Chlorophenol	<370ug/kg dw	06/01/00		SA2428
1,3-Dichlorobenzene	<370ug/kg dw	06/01/00		SA2428
1,4-Dichlorobenzene	<370ug/kg dw	06/01/00		SA2428
1,2-Dichlorobenzene	<370ug/kg dw	06/01/00		SA2428
2-Methylphenol	<370ug/kg dw	06/01/00		SA2428
2,2'-Oxybis(1-Chloropropane)	<370ug/kg dw	06/01/00		SA2428
4-Methylphenol	<370ug/kg dw	06/01/00		SA2428
n-Nitrosodi-n-propylamine	<370ug/kg dw	06/01/00		SA2428
Hexachloroethane	<370ug/kg dw	06/01/00		SA2428
Nitrobenzene	<370ug/kg dw	06/01/00		SA2428
Isophorone	<370ug/kg dw	06/01/00		SA2428
2-Nitrophenol	<370ug/kg dw	06/01/00		SA2428
2,4-Dimethylphenol	<370ug/kg dw	06/01/00		SA2428
bis(2-Chloroethoxy)methane	<370ug/kg dw	06/01/00		SA2428
2,4-Dichlorophenol	<370ug/kg dw	06/01/00		SA2428
1,2,4-Trichlorobenzene	<370ug/kg dw	06/01/00		SA2428
Naphthalene	<370ug/kg dw	06/01/00		SA2428
4-Chloroaniline	<370ug/kg dw	06/01/00		SA2428
Hexachlorobutadiene	<370ug/kg dw	06/01/00		SA2428
4-Chloro-3-methylphenol	<370ug/kg dw	06/01/00		SA2428
2-Methylnaphthalene	<370ug/kg dw	06/01/00		SA2428
Hexachlorocyclopentadiene	<370ug/kg dw	06/01/00		SA2428
2,4,6-Trichlorophenol	<370ug/kg dw	06/01/00		SA2428
2,4,5-Trichlorophenol	<370ug/kg dw	06/01/00		SA2428
2-Chloronaphthalene	<370ug/kg dw	06/01/00		SA2428
2-Nitroaniline	<3700ug/kg dw	06/01/00		SA2428
Dimethylphthalate	<370ug/kg dw	06/01/00		SA2428
Acenaphthylene	<370ug/kg dw	06/01/00		SA2428
2,6-Dinitrotoluene	<370ug/kg dw	06/01/00		SA2428

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL: ____
QC: ____
Lab I.D.: 10170
Sampled by: Client

ID:14000080 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID H2 1700H 05/16/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
3-Nitroaniline	<3700ug/kg dw	06/01/00		SA2428
Acenaphthene	<370ug/kg dw	06/01/00		SA2428
2,4-Dinitrophenol	<3700ug/kg dw	06/01/00		SA2428
4-Nitrophenol	<3700ug/kg dw	06/01/00		SA2428
Dibenzofuran	<370ug/kg dw	06/01/00		SA2428
2,4-Dinitrotoluene	<370ug/kg dw	06/01/00		SA2428
Diethylphthalate	<370ug/kg dw	06/01/00		SA2428
4-Chlorophenylphenylether	<370ug/kg dw	06/01/00		SA2428
Fluorene	<370ug/kg dw	06/01/00		SA2428
4-Nitroaniline	<3700ug/kg dw	06/01/00		SA2428
2-Methyl-4,6-dinitrophenol	<3700ug/kg dw	06/01/00		SA2428
n-Nitrosodiphenylamine	<370ug/kg dw	06/01/00		SA2428
4-Bromophenylphenylether	<370ug/kg dw	06/01/00		SA2428
Hexachlorobenzene	<370ug/kg dw	06/01/00		SA2428
Pentachlorophenol	<740ug/kg dw	06/01/00		SA2428
Phenanthrene	<370ug/kg dw	06/01/00		SA2428
Anthracene	<370ug/kg dw	06/01/00		SA2428
Carbazole	<370ug/kg dw	06/01/00		SA2428
di-n-butylphthalate	<370ug/kg dw	06/01/00		SA2428
Fluoranthene	<370ug/kg dw	06/01/00		SA2428
Pyrene	<370ug/kg dw	06/01/00		SA2428
Butylbenzylphthalate	<370ug/kg dw	06/01/00		SA2428
3,3'-Dichlorobenzidine	<370ug/kg dw	06/01/00		SA2428
Benzo(a)anthracene	<370ug/kg dw	06/01/00		SA2428
Chrysene	<370ug/kg dw	06/01/00		SA2428
bis(2-Ethylhexyl)phthalate	<370ug/kg dw	06/01/00		SA2428
di-n-octylphthalate	<370ug/kg dw	06/01/00		SA2428
Benzo(b)fluoranthene	<370ug/kg dw	06/01/00		SA2428
Benzo(k)fluoranthene	<370ug/kg dw	06/01/00		SA2428
Benzo(a)pyrene	<370ug/kg dw	06/01/00		SA2428
Indeno(1,2,3-cd)pyrene	<370ug/kg dw	06/01/00		SA2428
Dibenzo(a,h)anthracene	<370ug/kg dw	06/01/00		SA2428
Benzo(ghi)perylene	<370ug/kg dw	06/01/00		SA2428
EPA Method 8150				
2,4-D	<3.6ug/kg dw	06/01/00		GA0107
2,4,5-T	<3.6ug/kg dw	06/01/00		GA0107
2,4,5-TP (Silvex)	<3.6ug/kg dw	06/01/00		GA0107
Dinoseb	<3.6ug/kg dw	06/01/00		GA0107
TCL Pesticides/Aroclors by EPA 8080				
BHC (a-isomer)	<1.9ug/kg dw	06/02/00		GA0111
BHC (b-isomer)	<1.9ug/kg dw	06/02/00		GA0111
BHC (d-isomer)	<1.9ug/kg dw	06/02/00		GA0111

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
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ID:14000080 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID H2 1700H 05/16/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
BHC (g-isomer)	<1.9ug/kg dw	06/02/00		GA0111
Heptachlor	<1.9ug/kg dw	06/02/00		GA0111
Aldrin	<1.9ug/kg dw	06/02/00		GA0111
Heptachlor Epoxide	<1.9ug/kg dw	06/02/00		GA0111
Endosulfan I	<1.9ug/kg dw	06/02/00		GA0111
Dieldrin	<3.6ug/kg dw	06/02/00		GA0111
4,4'-DDE	<3.6ug/kg dw	06/02/00		GA0111
Endrin	<3.6ug/kg dw	06/02/00		GA0111
Endosulfan II	<3.6ug/kg dw	06/02/00		GA0111
4,4'-DDD	<3.6ug/kg dw	06/02/00		GA0111
Endosulfan Sulfate	<3.6ug/kg dw	06/02/00		GA0111
4,4'-DDT	<3.6ug/kg dw	06/02/00		GA0111
Methoxychlor	<19ug/kg dw	06/02/00		GA0111
Endrin Ketone	<3.6ug/kg dw	06/02/00		GA0111
Endrin Aldehyde	<3.6ug/kg dw	06/02/00		GA0111
alpha-Chlordane	<1.9ug/kg dw	06/02/00		GA0111
gamma-Chlordane	<1.9ug/kg dw	06/02/00		GA0111
Toxaphene	<187ug/kg dw	06/02/00		GA0111
Aroclor 1016	<1.9ug/kg dw	06/02/00		GA0111
Aroclor 1221	<1.9ug/kg dw	06/02/00		GA0111
Aroclor 1232	<1.9ug/kg dw	06/02/00		GA0111
Aroclor 1242	<1.9ug/kg dw	06/02/00		GA0111
Aroclor 1248	<1.9ug/kg dw	06/02/00		GA0111
Aroclor 1254	<1.9ug/kg dw	06/02/00		GA0111
Aroclor 1260	<1.9ug/kg dw	06/02/00		GA0111

ID:14000081 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID H12 1700H 05/16/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Percent Solids	85%	05/19/00		WD0313
Total Cyanide	<1.1mg/kg dw	06/06/00		WD0423
Total Aluminum	6700mg/kg dw	06/09/00		MB2436
Total Antimony	<35mg/kg dw	06/09/00		MB2436
Total Arsenic by furnace method	4.0mg/kg dw	05/30/00		MB2390
Total Barium	68mg/kg dw	06/09/00		MB2436
Total Beryllium	<0.58mg/kg dw	06/09/00		MB2436
Total Cadmium	1.6mg/kg dw	06/09/00		MB2436
Total Calcium	4500mg/kg dw	06/09/00		MB2436
Total Chromium	10mg/kg dw	06/09/00		MB2436
Total Cobalt	34mg/kg dw	06/09/00		MB2436
Total Copper	11mg/kg dw	06/09/00		MB2436
Total Iron	9500mg/kg dw	06/09/00		MB2436
Total Lead	<12mg/kg dw	06/09/00		MB2436

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
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Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:_ _ _ _
QC:_ _ _ _ _
Lab I.D.: 10170
Sampled by: Client

ID:14000081 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID H12 1700H 05/16/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Total Magnesium	2000mg/kg dw	06/09/00		MB2436
Total Manganese	320mg/kg dw	06/09/00		MB2436
Total Mercury	<0.3mg/kg dw	05/26/00		MB2384
Total Nickel	14mg/kg dw	06/09/00		MB2436
Total Potassium	580mg/kg dw	06/12/00		MB2443
Total Selenium by furnace method	0.24mg/kg dw	05/30/00		WD2391
Total Silver	<5.8mg/kg dw	06/09/00		MB2436
Total Sodium	350mg/kg dw	06/12/00		MB2443
Total Thallium by furnace method	<0.4mg/kg dw	06/09/00		ME2863
Total Vanadium	<35mg/kg dw	06/09/00		MB2436
Total Zinc	42mg/kg dw	06/09/00		MB2436
TCL Volatiles by EPA Method 8260				
Chloromethane	<4ug/kg dw	05/30/00		VM2900
Bromomethane	<4ug/kg dw	05/30/00		VM2900
Vinyl Chloride	<2ug/kg dw	05/30/00		VM2900
Chloroethane	<4ug/kg dw	05/30/00		VM2900
Methylene Chloride	7ug/kg dw	05/30/00	44	VM2900
Acetone	<13ug/kg dw	05/30/00		VM2900
Carbon Disulfide	<4ug/kg dw	05/30/00		VM2900
1,1-Dichloroethene	<4ug/kg dw	05/30/00		VM2900
1,1-Dichloroethane	<4ug/kg dw	05/30/00		VM2900
trans-1,2-Dichloroethene	<4ug/kg dw	05/30/00		VM2900
cis-1,2-Dichloroethene	<4ug/kg dw	05/30/00		VM2900
Chloroform	<4ug/kg dw	05/30/00		VM2900
1,2-Dichloroethane	<4ug/kg dw	05/30/00		VM2900
2-Butanone	<13ug/kg dw	05/30/00		VM2900
1,1,1-Trichloroethane	<4ug/kg dw	05/30/00		VM2900
Carbon Tetrachloride	<4ug/kg dw	05/30/00		VM2900
Bromodichloromethane	<4ug/kg dw	05/30/00		VM2900
1,2-Dichloropropane	<4ug/kg dw	05/30/00		VM2900
cis-1,3-Dichloropropene	<4ug/kg dw	05/30/00		VM2900
Trichloroethene	<4ug/kg dw	05/30/00		VM2900
Dibromochloromethane	<4ug/kg dw	05/30/00		VM2900
1,1,2-Trichloroethane	<4ug/kg dw	05/30/00		VM2900
Benzene	<4ug/kg dw	05/30/00		VM2900
trans-1,3-Dichloropropene	<4ug/kg dw	05/30/00		VM2900
Bromoform	<4ug/kg dw	05/30/00		VM2900
4-Methyl-2-pentanone	<13ug/kg dw	05/30/00		VM2900
2-Hexanone	<13ug/kg dw	05/30/00		VM2900
Tetrachloroethene	<4ug/kg dw	05/30/00		VM2900
1,1,2,2-Tetrachloroethane	<4ug/kg dw	05/30/00		VM2900
Toluene	<4ug/kg dw	05/30/00		VM2900
Chlorobenzene	<4ug/kg dw	05/30/00		VM2900

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
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Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL: _ _ _ _
QC: _ _ _ _ _
Lab I.D.: 10170
Sampled by: Client

ID: 14000081 Mat: Soil 29-00-0002 MCKENNA LANDFILL GRID H12 1700H 05/16/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Ethylbenzene	<4ug/kg dw	05/30/00		VM2900
Styrene	<4ug/kg dw	05/30/00		VM2900
m-Xylene and p-Xylene	<4ug/kg dw	05/30/00		VM2900
o-Xylene	<4ug/kg dw	05/30/00		VM2900
TCL Semivolatiles by EPA Method 8270				
Phenol	<390ug/kg dw	06/01/00		SA2428
bis(2-Chloroethyl)ether	<390ug/kg dw	06/01/00		SA2428
2-Chlorophenol	<390ug/kg dw	06/01/00		SA2428
1,3-Dichlorobenzene	<390ug/kg dw	06/01/00		SA2428
1,4-Dichlorobenzene	<390ug/kg dw	06/01/00		SA2428
1,2-Dichlorobenzene	<390ug/kg dw	06/01/00		SA2428
2-Methylphenol	<390ug/kg dw	06/01/00		SA2428
2,2'-Oxybis(1-Chloropropane)	<390ug/kg dw	06/01/00		SA2428
4-Methylphenol	<390ug/kg dw	06/01/00		SA2428
n-Nitrosodi-n-propylamine	<390ug/kg dw	06/01/00		SA2428
Hexachloroethane	<390ug/kg dw	06/01/00		SA2428
Nitrobenzene	<390ug/kg dw	06/01/00		SA2428
Isophorone	<390ug/kg dw	06/01/00		SA2428
2-Nitrophenol	<390ug/kg dw	06/01/00		SA2428
2,4-Dimethylphenol	<390ug/kg dw	06/01/00		SA2428
bis(2-Chloroethoxy)methane	<390ug/kg dw	06/01/00		SA2428
2,4-Dichlorophenol	<390ug/kg dw	06/01/00		SA2428
1,2,4-Trichlorobenzene	<390ug/kg dw	06/01/00		SA2428
Naphthalene	<390ug/kg dw	06/01/00		SA2428
4-Chloroaniline	<390ug/kg dw	06/01/00		SA2428
Hexachlorobutadiene	<390ug/kg dw	06/01/00		SA2428
4-Chloro-3-methylphenol	<390ug/kg dw	06/01/00		SA2428
2-Methylnaphthalene	<390ug/kg dw	06/01/00		SA2428
Hexachlorocyclopentadiene	<390ug/kg dw	06/01/00		SA2428
2,4,6-Trichlorophenol	<390ug/kg dw	06/01/00		SA2428
2,4,5-Trichlorophenol	<390ug/kg dw	06/01/00		SA2428
2-Chloronaphthalene	<390ug/kg dw	06/01/00		SA2428
2-Nitroaniline	<3900ug/kg dw	06/01/00		SA2428
Dimethylphthalate	<390ug/kg dw	06/01/00		SA2428
Acenaphthylene	<390ug/kg dw	06/01/00		SA2428
2,6-Dinitrotoluene	<390ug/kg dw	06/01/00		SA2428
3-Nitroaniline	<3900ug/kg dw	06/01/00		SA2428
Acenaphthene	<390ug/kg dw	06/01/00		SA2428
2,4-Dinitrophenol	<3900ug/kg dw	06/01/00		SA2428
4-Nitrophenol	<3900ug/kg dw	06/01/00		SA2428
Dibenzofuran	<390ug/kg dw	06/01/00		SA2428
2,4-Dinitrotoluene	<390ug/kg dw	06/01/00		SA2428
Diethylphthalate	<390ug/kg dw	06/01/00		SA2428

dw = Dry weight

DATE: / /

tate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:_ _ _ _
QC: _ _ _ _
Lab I.D.: 10170
Sampled by: Client

ID:14000082 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID D21 1700H 05/16/00 C

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
bis(2-Chloroethyl)ether	<390ug/kg dw	06/01/00		SA2428
2-Chlorophenol	<390ug/kg dw	06/01/00		SA2428
1,3-Dichlorobenzene	<390ug/kg dw	06/01/00		SA2428
1,4-Dichlorobenzene	<390ug/kg dw	06/01/00		SA2428
1,2-Dichlorobenzene	<390ug/kg dw	06/01/00		SA2428
2-Methylphenol	<390ug/kg dw	06/01/00		SA2428
2,2'-Oxybis(1-Chloropropane)	<390ug/kg dw	06/01/00		SA2428
4-Methylphenol	<390ug/kg dw	06/01/00		SA2428
n-Nitrosodi-n-propylamine	<390ug/kg dw	06/01/00		SA2428
Hexachloroethane	<390ug/kg dw	06/01/00		SA2428
Nitrobenzene	<390ug/kg dw	06/01/00		SA2428
Isophorone	<390ug/kg dw	06/01/00		SA2428
2-Nitrophenol	<390ug/kg dw	06/01/00		SA2428
2,4-Dimethylphenol	<390ug/kg dw	06/01/00		SA2428
bis(2-Chloroethoxy)methane	<390ug/kg dw	06/01/00		SA2428
2,4-Dichlorophenol	<390ug/kg dw	06/01/00		SA2428
1,2,4-Trichlorobenzene	<390ug/kg dw	06/01/00		SA2428
Naphthalene	<390ug/kg dw	06/01/00		SA2428
4-Chloroaniline	<390ug/kg dw	06/01/00		SA2428
Hexachlorobutadiene	<390ug/kg dw	06/01/00		SA2428
4-Chloro-3-methylphenol	<390ug/kg dw	06/01/00		SA2428
2-Methylnaphthalene	<390ug/kg dw	06/01/00		SA2428
Hexachlorocyclopentadiene	<390ug/kg dw	06/01/00		SA2428
2,4,6-Trichlorophenol	<390ug/kg dw	06/01/00		SA2428
2,4,5-Trichlorophenol	<390ug/kg dw	06/01/00		SA2428
2-Chloronaphthalene	<390ug/kg dw	06/01/00		SA2428
2-Nitroaniline	<3900ug/kg dw	06/01/00		SA2428
Dimethylphthalate	<390ug/kg dw	06/01/00		SA2428
Acenaphthylene	<390ug/kg dw	06/01/00		SA2428
2,6-Dinitrotoluene	<390ug/kg dw	06/01/00		SA2428
3-Nitroaniline	<3900ug/kg dw	06/01/00		SA2428
Acenaphthene	<390ug/kg dw	06/01/00		SA2428
2,4-Dinitrophenol	<3900ug/kg dw	06/01/00		SA2428
4-Nitrophenol	<3900ug/kg dw	06/01/00		SA2428
Dibenzofuran	<390ug/kg dw	06/01/00		SA2428
2,4-Dinitrotoluene	<390ug/kg dw	06/01/00		SA2428
Diethylphthalate	<390ug/kg dw	06/01/00		SA2428
4-Chlorophenylphenylether	<390ug/kg dw	06/01/00		SA2428
Fluorene	<390ug/kg dw	06/01/00		SA2428
4-Nitroaniline	<3900ug/kg dw	06/01/00		SA2428
2-Methyl-4,6-dinitrophenol	<3900ug/kg dw	06/01/00		SA2428
n-Nitrosodiphenylamine	<390ug/kg dw	06/01/00		SA2428
4-Bromophenylphenylether	<390ug/kg dw	06/01/00		SA2428
Hexachlorobenzene	<390ug/kg dw	06/01/00		SA2428

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by: Client

ID:14000082 Nat:Soil 29-00-0002 MCKENNA LANDFILL GRID D21 1700H 05/16/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Pentachlorophenol	<780ug/kg dw	06/01/00		SA2428
Phenanthrene	<390ug/kg dw	06/01/00		SA2428
Anthracene	<390ug/kg dw	06/01/00		SA2428
Carbazole	<390ug/kg dw	06/01/00		SA2428
di-n-butylphthalate	<390ug/kg dw	06/01/00		SA2428
Fluoranthene	<390ug/kg dw	06/01/00		SA2428
Pyrene	<390ug/kg dw	06/01/00		SA2428
Butylbenzylphthalate	<390ug/kg dw	06/01/00		SA2428
3,3'-Dichlorobenzidine	<390ug/kg dw	06/01/00		SA2428
Benzo(a)anthracene	<390ug/kg dw	06/01/00		SA2428
Chrysene	<390ug/kg dw	06/01/00		SA2428
bis(2-Ethylhexyl)phthalate	<390ug/kg dw	06/01/00		SA2428
di-n-octylphthalate	<390ug/kg dw	06/01/00		SA2428
Benzo(b)fluoranthene	<390ug/kg dw	06/01/00		SA2428
Benzo(k)fluoranthene	<390ug/kg dw	06/01/00		SA2428
Benzo(a)pyrene	<390ug/kg dw	06/01/00		SA2428
Indeno(1,2,3-cd)pyrene	<390ug/kg dw	06/01/00		SA2428
Dibenzo(a,h)anthracene	<390ug/kg dw	06/01/00		SA2428
Benzo(ghi)perylene	<390ug/kg dw	06/01/00		SA2428
EPA Method 8150				
2,4-D	<3.9ug/kg dw	06/01/00		GA0107
2,4,5-T	<3.9ug/kg dw	06/01/00		GA0107
2,4,5-TP (Silvex)	<3.9ug/kg dw	06/01/00		GA0107
Dinoseb	<3.9ug/kg dw	06/01/00		GA0107
TCL Pesticides/Aroclors by EPA 8080				
BHC (a-isomer)	<2.0ug/kg dw	06/03/00		GA0111
BHC (b-isomer)	<2.0ug/kg dw	06/03/00		GA0111
BHC (d-isomer)	<2.0ug/kg dw	06/03/00		GA0111
BHC (g-isomer)	<2.0ug/kg dw	06/03/00		GA0111
Heptachlor	<2.0ug/kg dw	06/03/00		GA0111
Aldrin	<2.0ug/kg dw	06/03/00		GA0111
Heptachlor Epoxide	<2.0ug/kg dw	06/03/00		GA0111
Endosulfan I	<2.0ug/kg dw	06/03/00		GA0111
Dieldrin	<3.9ug/kg dw	06/03/00		GA0111
4,4'-DDE	8.0ug/kg dw	06/03/00		GA0111
Endrin	<3.9ug/kg dw	06/03/00		GA0111
Endosulfan II	<3.9ug/kg dw	06/03/00		GA0111
4,4'-DDD	<3.9ug/kg dw	06/03/00		GA0111
Endosulfan Sulfate	<3.9ug/kg dw	06/03/00		GA0111
4,4'-DDT	<3.9ug/kg dw	06/03/00		GA0111
Methoxychlor	<20ug/kg dw	06/03/00		GA0111
Endrin Ketone	<3.9ug/kg dw	06/03/00		GA0111

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by: Client

ID:14000082 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID D21 1700H 05/16/00 G

	PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
	Endrin Aldehyde	<3.9ug/kg dw	06/03/00		GA0111
	alpha-Chlordane	<2.0ug/kg dw	06/03/00		GA0111
	gamma-Chlordane	<2.0ug/kg dw	06/03/00		GA0111
	Toxaphene	<200ug/kg dw	06/03/00		GA0111
	Aroclor 1016	<2.0ug/kg dw	06/03/00		GA0111
	Aroclor 1221	<2.0ug/kg dw	06/03/00		GA0111
	Aroclor 1232	<2.0ug/kg dw	06/03/00		GA0111
	Aroclor 1242	<2.0ug/kg dw	06/03/00		GA0111
	Aroclor 1248	<2.0ug/kg dw	06/03/00		GA0111
	Aroclor 1254	<2.0ug/kg dw	06/03/00		GA0111
	Aroclor 1260	<2.0ug/kg dw	06/03/00		GA0111

ID:14000083 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID G25 1700H 05/16/00 G

	PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
	Percent Solids	94%	05/19/00		WWD031
	Total Cyanide	<1.0mg/kg dw	06/06/00		WD0423
Total	Aluminum	6100mg/kg dw	06/09/00		MB2436
Total	Antimony	<32mg/kg dw	06/09/00		MB2436
Total	Arsenic by furnace method	4.1mg/kg dw	05/30/00		MB2390
Total	Barium	45mg/kg dw	06/09/00		MB2436
Total	Beryllium	<0.53mg/kg dw	06/09/00		MB2436
Total	Cadmium	1.6mg/kg dw	06/09/00		MB2436
Total	Calcium	3300mg/kg dw	06/09/00		MB2436
Total	Chromium	10mg/kg dw	06/09/00		MB2436
Total	Cobalt	29mg/kg dw	06/09/00		MB2436
Total	Copper	9.1mg/kg dw	06/09/00		MB2436
Total	Iron	8800mg/kg dw	06/09/00		MB2436
Total	Lead	12mg/kg dw	06/09/00		MB2436
Total	Magnesium	1700mg/kg dw	06/09/00		MB2436
Total	Manganese	290mg/kg dw	06/09/00		MB2436
Total	Mercury	<0.3mg/kg dw	05/26/00		MB2384
Total	Nickel	14mg/kg dw	06/09/00		MB2436
Total	Potassium	750mg/kg dw	06/12/00		MB2443
Total	Selenium by furnace method	<0.2mg/kg dw	05/30/00		WD2391
Total	Silver	<5.3mg/kg dw	06/09/00		MB2436
Total	Sodium	320mg/kg dw	06/12/00		MB2443
Total	Thallium by furnace method	<0.4mg/kg dw	06/09/00		ME2863
Total	Vanadium	<32mg/kg dw	06/09/00		MB2436
Total	Zinc	30mg/kg dw	06/09/00		MB2436
	TCL Volatiles by EPA Method 8260				
	Chloromethane	<3ug/kg dw	05/30/00		VM2900

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL: ____
QC: ____
Lab I.D.: 10170
Sampled by: Client

ID:14000083 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID G25 1700H 05/16/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Bromomethane	<3ug/kg dw	05/30/00		VM2900
Vinyl Chloride	<2ug/kg dw	05/30/00		VM2900
Chloroethane	<3ug/kg dw	05/30/00		VM2900
Methylene Chloride	12ug/kg dw	05/30/00	44	VM2900
Acetone	<11ug/kg dw	05/30/00		VM2900
Carbon Disulfide	<3ug/kg dw	05/30/00		VM2900
1,1-Dichloroethene	<3ug/kg dw	05/30/00		VM2900
1,1-Dichloroethane	<3ug/kg dw	05/30/00		VM2900
trans-1,2-Dichloroethene	<3ug/kg dw	05/30/00		VM2900
cis-1,2-Dichloroethene	<3ug/kg dw	05/30/00		VM2900
Chloroform	<3ug/kg dw	05/30/00		VM2900
1,2-Dichloroethane	<3ug/kg dw	05/30/00		VM2900
2-Butanone	<11ug/kg dw	05/30/00		VM2900
1,1,1-Trichloroethane	<3ug/kg dw	05/30/00		VM2900
Carbon Tetrachloride	<3ug/kg dw	05/30/00		VM2900
Bromodichloromethane	<3ug/kg dw	05/30/00		VM2900
1,2-Dichloropropane	<3ug/kg dw	05/30/00		VM2900
cis-1,3-Dichloropropene	<3ug/kg dw	05/30/00		VM2900
Trichloroethene	<3ug/kg dw	05/30/00		VM2900
Dibromochloromethane	<3ug/kg dw	05/30/00		VM2900
1,1,2-Trichloroethane	<3ug/kg dw	05/30/00		VM2900
Benzene	<3ug/kg dw	05/30/00		VM2900
trans-1,3-Dichloropropene	<3ug/kg dw	05/30/00		VM2900
Bromoform	<3ug/kg dw	05/30/00		VM2900
4-Methyl-2-pentanone	<11ug/kg dw	05/30/00		VM2900
2-Hexanone	<11ug/kg dw	05/30/00		VM2900
Tetrachloroethene	<3ug/kg dw	05/30/00		VM2900
1,1,2,2-Tetrachloroethane	<3ug/kg dw	05/30/00		VM2900
Toluene	<3ug/kg dw	05/30/00		VM2900
Chlorobenzene	<3ug/kg dw	05/30/00		VM2900
Ethylbenzene	<3ug/kg dw	05/30/00		VM2900
Styrene	<3ug/kg dw	05/30/00		VM2900
m-Xylene and p-Xylene	<3ug/kg dw	05/30/00		VM2900
o-Xylene	<3ug/kg dw	05/30/00		VM2900
TCL Semivolatiles by EPA Method 8270				
Phenol	<350ug/kg dw	06/01/00		SA2428
bis(2-Chloroethyl)ether	<350ug/kg dw	06/01/00		SA2428
2-Chlorophenol	<350ug/kg dw	06/01/00		SA2428
1,3-Dichlorobenzene	<350ug/kg dw	06/01/00		SA2428
1,4-Dichlorobenzene	<350ug/kg dw	06/01/00		SA2428
1,2-Dichlorobenzene	<350ug/kg dw	06/01/00		SA2428
2-Methylphenol	<350ug/kg dw	06/01/00		SA2428
2,2'-Oxybis(1-Chloropropane)	<350ug/kg dw	06/01/00		SA2428

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL: ___
QC: ___
Lab I.D.: 10170
Sampled by: Client

ID:14000083 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID G25 1700H 05/16/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
4-Methylphenol	<350ug/kg dw	06/01/00		SA2428
n-Nitrosodi-n-propylamine	<350ug/kg dw	06/01/00		SA2428
Hexachloroethane	<350ug/kg dw	06/01/00		SA2428
Nitrobenzene	<350ug/kg dw	06/01/00		SA2428
Isophorone	<350ug/kg dw	06/01/00		SA2428
2-Nitrophenol	<350ug/kg dw	06/01/00		SA2428
2,4-Dimethylphenol	<350ug/kg dw	06/01/00		SA2428
bis(2-Chloroethoxy)methane	<350ug/kg dw	06/01/00		SA2428
2,4-Dichlorophenol	<350ug/kg dw	06/01/00		SA2428
1,2,4-Trichlorobenzene	<350ug/kg dw	06/01/00		SA2428
Naphthalene	<350ug/kg dw	06/01/00		SA2428
4-Chloroaniline	<350ug/kg dw	06/01/00		SA2428
Hexachlorobutadiene	<350ug/kg dw	06/01/00		SA2428
4-Chloro-3-methylphenol	<350ug/kg dw	06/01/00		SA2428
2-Methylnaphthalene	<350ug/kg dw	06/01/00		SA2428
Hexachlorocyclopentadiene	<350ug/kg dw	06/01/00		SA2428
2,4,6-Trichlorophenol	<350ug/kg dw	06/01/00		SA2428
2,4,5-Trichlorophenol	<350ug/kg dw	06/01/00		SA2428
2-Chloronaphthalene	<350ug/kg dw	06/01/00		SA2428
2-Nitroaniline	<3500ug/kg dw	06/01/00		SA2428
Dimethylphthalate	<350ug/kg dw	06/01/00		SA2428
Acenaphthylene	<350ug/kg dw	06/01/00		SA2428
2,6-Dinitrotoluene	<350ug/kg dw	06/01/00		SA2428
3-Nitroaniline	<3500ug/kg dw	06/01/00		SA2428
Acenaphthene	<350ug/kg dw	06/01/00		SA2428
2,4-Dinitrophenol	<3500ug/kg dw	06/01/00		SA2428
4-Nitrophenol	<3500ug/kg dw	06/01/00		SA2428
Dibenzofuran	<350ug/kg dw	06/01/00		SA2428
2,4-Dinitrotoluene	<350ug/kg dw	06/01/00		SA2428
Diethylphthalate	<350ug/kg dw	06/01/00		SA2428
4-Chlorophenylphenylether	<350ug/kg dw	06/01/00		SA2428
Fluorene	<350ug/kg dw	06/01/00		SA2428
4-Nitroaniline	<3500ug/kg dw	06/01/00		SA2428
2-Methyl-4,6-dinitrophenol	<3500ug/kg dw	06/01/00		SA2428
n-Nitrosodiphenylamine	<350ug/kg dw	06/01/00		SA2428
4-Bromophenylphenylether	<350ug/kg dw	06/01/00		SA2428
Hexachlorobenzene	<350ug/kg dw	06/01/00		SA2428
Pentachlorophenol	<700ug/kg dw	06/01/00		SA2428
Phenanthrene	<350ug/kg dw	06/01/00		SA2428
Anthracene	<350ug/kg dw	06/01/00		SA2428
Carbazole	<350ug/kg dw	06/01/00		SA2428
di-n-butylphthalate	<350ug/kg dw	06/01/00		SA2428
Fluoranthene	<350ug/kg dw	06/01/00		SA2428
Pyrene	<350ug/kg dw	06/01/00		SA2428

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL: ____
QC: ____
Lab I.D.: 10170
Sampled by: Client

ID:14000083 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID G25 1700H 05/16/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Butylbenzylphthalate	<350ug/kg dw	06/01/00		SA2428
3,3'-Dichlorobenzidine	<350ug/kg dw	06/01/00		SA2428
Benzo(a)anthracene	<350ug/kg dw	06/01/00		SA2428
Chrysene	<350ug/kg dw	06/01/00		SA2428
bis(2-Ethylhexyl)phthalate	<350ug/kg dw	06/01/00		SA2428
di-n-octylphthalate	<350ug/kg dw	06/01/00		SA2428
Benzo(b)fluoranthene	<350ug/kg dw	06/01/00		SA2428
Benzo(k)fluoranthene	<350ug/kg dw	06/01/00		SA2428
Benzo(a)pyrene	<350ug/kg dw	06/01/00		SA2428
Indeno(1,2,3-cd)pyrene	<350ug/kg dw	06/01/00		SA2428
Dibenzo(a,h)anthracene	<350ug/kg dw	06/01/00		SA2428
Benzo(ghi)perylene	<350ug/kg dw	06/01/00		SA2428
EPA Method 8150				
2,4-D	<3.5ug/kg dw	06/01/00		GA0107
2,4,5-T	<3.5ug/kg dw	06/01/00		GA0107
2,4,5-TP (Silvex)	<3.5ug/kg dw	06/01/00		GA0107
Dinoseb	<3.5ug/kg dw	06/01/00		GA0107
TCL Pesticides/Aroclors by EPA 8080				
BHC (a-isomer)	<1.8ug/kg dw	06/03/00		GA0111
BHC (b-isomer)	<1.8ug/kg dw	06/03/00		GA0111
BHC (d-isomer)	<1.8ug/kg dw	06/03/00		GA0111
BHC (g-isomer)	<1.8ug/kg dw	06/03/00		GA0111
Heptachlor	<1.8ug/kg dw	06/03/00		GA0111
Aldrin	<1.8ug/kg dw	06/03/00		GA0111
Heptachlor Epoxide	<1.8ug/kg dw	06/03/00		GA0111
Endosulfan I	<1.8ug/kg dw	06/03/00		GA0111
Dieldrin	<3.6ug/kg dw	06/03/00		GA0111
4,4'-DDE	<3.6ug/kg dw	06/03/00		GA0111
Endrin	<3.6ug/kg dw	06/03/00		GA0111
Endosulfan II	<3.6ug/kg dw	06/03/00		GA0111
4,4'-DDD	<3.6ug/kg dw	06/03/00		GA0111
Endosulfan Sulfate	<3.6ug/kg dw	06/03/00		GA0111
4,4'-DDT	<3.6ug/kg dw	06/03/00		GA0111
Methoxychlor	<18ug/kg dw	06/03/00		GA0111
Endrin Ketone	<3.6ug/kg dw	06/03/00		GA0111
Endrin Aldehyde	<3.6ug/kg dw	06/03/00		GA0111
alpha-Chlordane	<1.8ug/kg dw	06/03/00		GA0111
gamma-Chlordane	<1.8ug/kg dw	06/03/00		GA0111
Toxaphene	<180ug/kg dw	06/03/00		GA0111
Aroclor 1016	<1.8ug/kg dw	06/03/00		GA0111
Aroclor 1221	<1.8ug/kg dw	06/03/00		GA0111
Aroclor 1232	<1.8ug/kg dw	06/03/00		GA0111

dw = Dry weight

DATE: / /

tate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL: _ _ _ _
QC: _ _ _ _
Lab I.D.: 10170
Sampled by: Client

ID:14000083 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID G25 1700H 05/16/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Aroclor 1242	<1.8ug/kg dw	06/03/00		GA0111
Aroclor 1248	<1.8ug/kg dw	06/03/00		GA0111
Aroclor 1254	<1.8ug/kg dw	06/03/00		GA0111
Aroclor 1260	<1.8ug/kg dw	06/03/00		GA0111

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by: Client

ID:14000081 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID H12 1700H 05/16/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
4-Chlorophenylphenylether	<390ug/kg dw	06/01/00		SA2428
Fluorene	<390ug/kg dw	06/01/00		SA2428
4-Nitroaniline	<3900ug/kg dw	06/01/00		SA2428
2-Methyl-4,6-dinitrophenol	<3900ug/kg dw	06/01/00		SA2428
n-Nitrosodiphenylamine	<390ug/kg dw	06/01/00		SA2428
4-Bromophenylphenylether	<390ug/kg dw	06/01/00		SA2428
Hexachlorobenzene	<390ug/kg dw	06/01/00		SA2428
Pentachlorophenol	<780ug/kg dw	06/01/00		SA2428
Phenanthrene	<390ug/kg dw	06/01/00		SA2428
Anthracene	<390ug/kg dw	06/01/00		SA2428
Carbazole	<390ug/kg dw	06/01/00		SA2428
di-n-butylphthalate	<390ug/kg dw	06/01/00		SA2428
Fluoranthene	<390ug/kg dw	06/01/00		SA2428
Pyrene	<390ug/kg dw	06/01/00		SA2428
Butylbenzylphthalate	<390ug/kg dw	06/01/00		SA2428
3,3'-Dichlorobenzidine	<390ug/kg dw	06/01/00		SA2428
Benzo(a)anthracene	<390ug/kg dw	06/01/00		SA2428
Chrysene	<390ug/kg dw	06/01/00		SA2428
bis(2-Ethylhexyl)phthalate	<390ug/kg dw	06/01/00		SA2428
di-n-octylphthalate	<390ug/kg dw	06/01/00		SA2428
Benzo(b)fluoranthene	<390ug/kg dw	06/01/00		SA2428
Benzo(k)fluoranthene	<390ug/kg dw	06/01/00		SA2428
Benzo(a)pyrene	<390ug/kg dw	06/01/00		SA2428
Indeno(1,2,3-cd)pyrene	<390ug/kg dw	06/01/00		SA2428
Dibenzo(a,h)anthracene	<390ug/kg dw	06/01/00		SA2428
Benzo(ghi)perylene	<390ug/kg dw	06/01/00		SA2428
EPA Method 8150				
2,4-D	7.3ug/kg dw	06/01/00		GA0107
2,4,5-T	<3.9ug/kg dw	06/01/00		GA0107
2,4,5-TP (Silvex)	<3.9ug/kg dw	06/01/00		GA0107
Dinoseb	<3.9ug/kg dw	06/01/00		GA0107
TCL Pesticides/Aroclors by EPA 8080				
BHC (a-isomer)	<2.0ug/kg dw	06/03/00		GA0111
BHC (b-isomer)	<2.0ug/kg dw	06/03/00		GA0111
BHC (d-isomer)	<2.0ug/kg dw	06/03/00		GA0111
BHC (g-isomer)	<2.0ug/kg dw	06/03/00		GA0111
Heptachlor	<2.0ug/kg dw	06/03/00		GA0111
Aldrin	<2.0ug/kg dw	06/03/00		GA0111
Heptachlor Epoxide	<2.0ug/kg dw	06/03/00		GA0111
Endosulfan I	<2.0ug/kg dw	06/03/00		GA0111
Dieldrin	<3.9ug/kg dw	06/03/00		GA0111
4,4'-DDE	<3.9ug/kg dw	06/03/00		GA0111

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL: _ _ _ _
QC:
Lab I.D.: 10170
Sampled by: Client

ID:14000081 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID H12 1700H 05/16/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Endrin	<3.9ug/kg dw	06/03/00		GA0111
Endosulfan II	<3.9ug/kg dw	06/03/00		GA0111
4,4'-DDD	<3.9ug/kg dw	06/03/00		GA0111
Endosulfan Sulfate	<3.9ug/kg dw	06/03/00		GA0111
4,4'-DDT	<3.9ug/kg dw	06/03/00		GA0111
Methoxychlor	<20ug/kg dw	06/03/00		GA0111
Endrin Ketone	<3.9ug/kg dw	06/03/00		GA0111
Endrin Aldehyde	<3.9ug/kg dw	06/03/00		GA0111
alpha-Chlordane	<2.0ug/kg dw	06/03/00		GA0111
gamma-Chlordane	<2.0ug/kg dw	06/03/00		GA0111
Toxaphene	<200ug/kg dw	06/03/00		GA0111
Aroclor 1016	<2.0ug/kg dw	06/03/00		GA0111
Aroclor 1221	<2.0ug/kg dw	06/03/00		GA0111
Aroclor 1232	<2.0ug/kg dw	06/03/00		GA0111
Aroclor 1242	<2.0ug/kg dw	06/03/00		GA0111
Aroclor 1248	<2.0ug/kg dw	06/03/00		GA0111
Aroclor 1254	<2.0ug/kg dw	06/03/00		GA0111
Aroclor 1260	<2.0ug/kg dw	06/03/00		GA0111

ID:14000082 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID D21 1700H 05/16/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Percent Solids	85%	05/19/00		WD0313
Total Cyanide	<1.0mg/kg dw	06/06/00		WD0423
Total Aluminum	5400mg/kg dw	06/09/00		MB2436
Total Antimony	<35mg/kg dw	06/09/00		MB2436
Total Arsenic by furnace method	1.5mg/kg dw	05/30/00		MB2390
Total Barium	<35mg/kg dw	06/09/00		MB2436
Total Beryllium	0.63mg/kg dw	06/09/00		MB2436
Total Cadmium	1.9mg/kg dw	06/09/00		MB2436
Total Calcium	110000mg/kg dw	06/09/00		MB2436
Total Chromium	12mg/kg dw	06/09/00		MB2436
Total Cobalt	41mg/kg dw	06/09/00		MB2436
Total Copper	15mg/kg dw	06/09/00		MB2436
Total Iron	12000mg/kg dw	06/09/00		MB2436
Total Lead	15mg/kg dw	06/09/00		MB2436
Total Magnesium	14000mg/kg dw	06/09/00		MB2436
Total Manganese	360mg/kg dw	06/09/00		MB2436
Total Mercury	<0.3mg/kg dw	05/26/00		MB2384
Total Nickel	23mg/kg dw	06/09/00		MB2436
Total Potassium	1700mg/kg dw	06/12/00		MB2443
Total Selenium by furnace method	0.16mg/kg dw	05/30/00		WD2391
Total Silver	<5.8mg/kg dw	06/09/00		MB2436

dw = Dry weight

DATE: / /

Jpstate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL: _ _ _ _
QC: _ _ _ _
Lab I.D.: 10170
Sampled by: Client

ID:14000082 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID D21 1700H 05/16/00 G

PARAMETERS		RESULTS	DATE ANAL.	KEY	FILE#
Total	Sodium	340mg/kg dw	06/12/00		MB2443
Total	Thallium by furnace method	<0.4mg/kg dw	06/09/00		ME2863
Total	Vanadium	<35mg/kg dw	06/09/00		MB2436
Total	Zinc	36mg/kg dw	06/09/00		MB2436
TCL Volatiles by EPA Method 8260					
	Chloromethane	<4ug/kg dw	05/30/00		VM2900
	Bromomethane	<4ug/kg dw	05/30/00		VM2900
	Vinyl Chloride	<2ug/kg dw	05/30/00		VM2900
	Chloroethane	<4ug/kg dw	05/30/00		VM2900
	Methylene Chloride	12ug/kg dw	05/30/00	44	VM2900
	Acetone	<13ug/kg dw	05/30/00		VM2900
	Carbon Disulfide	<4ug/kg dw	05/30/00		VM2900
	1,1-Dichloroethene	<4ug/kg dw	05/30/00		VM2900
	1,1-Dichloroethane	<4ug/kg dw	05/30/00		VM2900
	trans-1,2-Dichloroethene	<4ug/kg dw	05/30/00		VM2900
	cis-1,2-Dichloroethene	<4ug/kg dw	05/30/00		VM2900
	Chloroform	<4ug/kg dw	05/30/00		VM2900
	1,2-Dichloroethane	<4ug/kg dw	05/30/00		VM2900
	2-Butanone	<13ug/kg dw	05/30/00		VM2900
	1,1,1-Trichloroethane	<4ug/kg dw	05/30/00		VM2900
	Carbon Tetrachloride	<4ug/kg dw	05/30/00		VM2900
	Bromodichloromethane	<4ug/kg dw	05/30/00		VM2900
	1,2-Dichloropropane	<4ug/kg dw	05/30/00		VM2900
	cis-1,3-Dichloropropene	<4ug/kg dw	05/30/00		VM2900
	Trichloroethene	<4ug/kg dw	05/30/00		VM2900
	Dibromochloromethane	<4ug/kg dw	05/30/00		VM2900
	1,1,2-Trichloroethane	<4ug/kg dw	05/30/00		VM2900
	Benzene	<4ug/kg dw	05/30/00		VM2900
	trans-1,3-Dichloropropene	<4ug/kg dw	05/30/00		VM2900
	Bromoform	<4ug/kg dw	05/30/00		VM2900
	4-Methyl-2-pentanone	<13ug/kg dw	05/30/00		VM2900
	2-Hexanone	<13ug/kg dw	05/30/00		VM2900
	Tetrachloroethene	<4ug/kg dw	05/30/00		VM2900
	1,1,2,2-Tetrachloroethane	<4ug/kg dw	05/30/00		VM2900
	Toluene	<4ug/kg dw	05/30/00		VM2900
	Chlorobenzene	<4ug/kg dw	05/30/00		VM2900
	Ethylbenzene	<4ug/kg dw	05/30/00		VM2900
	Styrene	<4ug/kg dw	05/30/00		VM2900
	m-Xylene and p-Xylene	<4ug/kg dw	05/30/00		VM2900
	o-Xylene	<4ug/kg dw	05/30/00		VM2900
TCL Semivolatiles by EPA Method 8270					
	Phenol	<390ug/kg dw	06/01/00		SA2428

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL: ____
QC: ____
Lab I.D.: 10170
Sampled by: Client

ID:15200015 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID A-27 TOPSOIL 0700H 05/30/00 G

	PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
	Percent Solids	71%	06/01/00		WD0453
	Total Cyanide	<1.4mg/kg dw	06/13/00		WD0468
Total	Aluminum	6900mg/kg dw	06/09/00		MB2436
Total	Antimony	<42mg/kg dw	06/09/00		MB2436
Total	Arsenic by furnace method	2.3mg/kg dw	06/09/00		MB2438
Total	Barium	59mg/kg dw	06/09/00		MB2436
Total	Beryllium	<0.70mg/kg dw	06/09/00		MB2436
Total	Cadmium	1.9mg/kg dw	06/09/00		MB2436
Total	Calcium	22000mg/kg dw	06/09/00		MB2436
Total	Chromium	13mg/kg dw	06/09/00		MB2436
Total	Cobalt	39mg/kg dw	06/09/00		MB2436
Total	Copper	15mg/kg dw	06/09/00		MB2436
Total	Iron	12000mg/kg dw	06/09/00		MB2436
Total	Lead	<14mg/kg dw	06/09/00		MB2436
Total	Magnesium	3900mg/kg dw	06/09/00		MB2436
Total	Manganese	340mg/kg dw	06/09/00		MB2436
Total	Mercury	<0.4mg/kg dw	06/06/00		MB2420
Total	Nickel	21mg/kg dw	06/09/00		MB2436
Total	Potassium	1300mg/kg dw	06/12/00		MB2443
Total	Selenium by furnace method	0.59mg/kg dw	06/09/00		MB2439
Total	Silver	<7.0mg/kg dw	06/09/00		MB2436
Total	Sodium	420mg/kg dw	06/12/00		MB2443
Total	Thallium by furnace method	1.8mg/kg dw	06/14/00		ME2870
Total	Vanadium	<42mg/kg dw	06/09/00		MB2436
Total	Zinc	46mg/kg dw	06/09/00		MB2436
	TCL Volatiles by EPA Method 8260				
	Chloromethane	<8ug/kg dw	06/09/00	05	VM2913
	Bromomethane	<8ug/kg dw	06/09/00	05	VM2913
	Vinyl Chloride	<6ug/kg dw	06/09/00	05	VM2913
	Chloroethane	<8ug/kg dw	06/09/00	05	VM2913
	Methylene Chloride	16ug/kg dw	06/09/00	44	VM2913
	Acetone	370ug/kg dw	06/09/00	44	VM2913
	Carbon Disulfide	<8ug/kg dw	06/09/00	05	VM2913
	1,1-Dichloroethene	<8ug/kg dw	06/09/00	05	VM2913
	1,1-Dichloroethane	<8ug/kg dw	06/09/00	05	VM2913
	trans-1,2-Dichloroethene	<8ug/kg dw	06/09/00	05	VM2913
	cis-1,2-Dichloroethene	<8ug/kg dw	06/09/00	05	VM2913
	Chloroform	<8ug/kg dw	06/09/00	05	VM2913
	1,2-Dichloroethane	<8ug/kg dw	06/09/00	05	VM2913
	2-Butanone	<28ug/kg dw	06/09/00	05	VM2913
	1,1,1-Trichloroethane	<8ug/kg dw	06/09/00	05	VM2913
	Carbon Tetrachloride	<8ug/kg dw	06/09/00	05	VM2913
	Bromodichloromethane	<8ug/kg dw	06/09/00	05	VM2913

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL: ___
QC: ___
Lab I.D.: 10170
Sampled by: Client

ID:15200015 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID A-27 TOPSOIL 0700H 05/30/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
1,2-Dichloropropane	<8ug/kg dw	06/09/00	05	VM2913
cis-1,3-Dichloropropene	<8ug/kg dw	06/09/00	05	VM2913
Trichloroethene	<8ug/kg dw	06/09/00	05	VM2913
Dibromochloromethane	<8ug/kg dw	06/09/00	05	VM2913
1,1,2-Trichloroethane	<8ug/kg dw	06/09/00	05	VM2913
Benzene	<8ug/kg dw	06/09/00	05	VM2913
trans-1,3-Dichloropropene	<8ug/kg dw	06/09/00	05	VM2913
Bromoform	<8ug/kg dw	06/09/00	05	VM2913
4-Methyl-2-pentanone	<28ug/kg dw	06/09/00	05	VM2913
2-Hexanone	<28ug/kg dw	06/09/00	05	VM2913
Tetrachloroethene	<8ug/kg dw	06/09/00	05	VM2913
1,1,2,2-Tetrachloroethane	<8ug/kg dw	06/09/00	05	VM2913
Toluene	<8ug/kg dw	06/09/00	05	VM2913
Chlorobenzene	<8ug/kg dw	06/09/00	05	VM2913
Ethylbenzene	<8ug/kg dw	06/09/00	05	VM2913
Styrene	<8ug/kg dw	06/09/00	05	VM2913
m-Xylene and p-Xylene	11ug/kg dw	06/09/00		VM2913
o-Xylene	<8ug/kg dw	06/09/00	05	VM2913
TCL Semivolatiles by EPA Method 8270				
Phenol	<470ug/kg dw	06/07/00		SA2432
bis(2-Chloroethyl)ether	<470ug/kg dw	06/07/00		SA2432
2-Chlorophenol	<470ug/kg dw	06/07/00		SA2432
1,3-Dichlorobenzene	<470ug/kg dw	06/07/00		SA2432
1,4-Dichlorobenzene	<470ug/kg dw	06/07/00		SA2432
1,2-Dichlorobenzene	<470ug/kg dw	06/07/00		SA2432
2-Methylphenol	<470ug/kg dw	06/07/00		SA2432
2,2'-Oxybis(1-Chloropropane)	<470ug/kg dw	06/07/00		SA2432
4-Methylphenol	<470ug/kg dw	06/07/00		SA2432
n-Nitrosodi-n-propylamine	<470ug/kg dw	06/07/00		SA2432
Hexachloroethane	<470ug/kg dw	06/07/00		SA2432
Nitrobenzene	<470ug/kg dw	06/07/00		SA2432
Isophorone	<470ug/kg dw	06/07/00		SA2432
2-Nitrophenol	<470ug/kg dw	06/07/00		SA2432
2,4-Dimethylphenol	<470ug/kg dw	06/07/00		SA2432
bis(2-Chloroethoxy)methane	<470ug/kg dw	06/07/00		SA2432
2,4-Dichlorophenol	<470ug/kg dw	06/07/00		SA2432
1,2,4-Trichlorobenzene	<470ug/kg dw	06/07/00		SA2432
Naphthalene	<470ug/kg dw	06/07/00		SA2432
4-Chloroaniline	<470ug/kg dw	06/07/00		SA2432
Hexachlorobutadiene	<470ug/kg dw	06/07/00		SA2432
4-Chloro-3-methylphenol	<470ug/kg dw	06/07/00		SA2432
2-Methylnaphthalene	<470ug/kg dw	06/07/00		SA2432
Hexachlorocyclopentadiene	<470ug/kg dw	06/07/00		SA2432

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by: Client

ID:15200015 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID A-27 TOPSOIL 0700H 05/30/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
2,4,6-Trichlorophenol	<470ug/kg dw	06/07/00		SA2432
2,4,5-Trichlorophenol	<470ug/kg dw	06/07/00		SA2432
2-Chloronaphthalene	<470ug/kg dw	06/07/00		SA2432
2-Nitroaniline	<4700ug/kg dw	06/07/00		SA2432
Dimethylphthalate	<470ug/kg dw	06/07/00		SA2432
Acenaphthylene	<470ug/kg dw	06/07/00		SA2432
2,6-Dinitrotoluene	<470ug/kg dw	06/07/00		SA2432
3-Nitroaniline	<4700ug/kg dw	06/07/00		SA2432
Acenaphthene	<470ug/kg dw	06/07/00		SA2432
2,4-Dinitrophenol	<4700ug/kg dw	06/07/00		SA2432
4-Nitrophenol	<4700ug/kg dw	06/07/00		SA2432
Dibenzofuran	<470ug/kg dw	06/07/00		SA2432
2,4-Dinitrotoluene	<470ug/kg dw	06/07/00		SA2432
Diethylphthalate	<470ug/kg dw	06/07/00		SA2432
4-Chlorophenylphenylether	<470ug/kg dw	06/07/00		SA2432
Fluorene	<470ug/kg dw	06/07/00		SA2432
4-Nitroaniline	<4700ug/kg dw	06/07/00		SA2432
2-Methyl-4,6-dinitrophenol	<4700ug/kg dw	06/07/00		SA2432
n-Nitrosodiphenylamine	<470ug/kg dw	06/07/00		SA2432
4-Bromophenylphenylether	<470ug/kg dw	06/07/00		SA2432
Hexachlorobenzene	<470ug/kg dw	06/07/00		SA2432
Pentachlorophenol	<940ug/kg dw	06/07/00		SA2432
Phenanthrene	<470ug/kg dw	06/07/00		SA2432
Anthracene	<470ug/kg dw	06/07/00		SA2432
Carbazole	<470ug/kg dw	06/07/00		SA2432
di-n-butylphthalate	<470ug/kg dw	06/07/00		SA2432
Fluoranthene	<470ug/kg dw	06/07/00		SA2432
Pyrene	<470ug/kg dw	06/07/00		SA2432
Butylbenzylphthalate	<470ug/kg dw	06/07/00		SA2432
3,3'-Dichlorobenzidine	<470ug/kg dw	06/07/00		SA2432
Benzo(a)anthracene	<470ug/kg dw	06/07/00		SA2432
Chrysene	<470ug/kg dw	06/07/00		SA2432
bis(2-Ethylhexyl)phthalate	<470ug/kg dw	06/07/00		SA2432
di-n-octylphthalate	<470ug/kg dw	06/07/00		SA2432
Benzo(b)fluoranthene	<470ug/kg dw	06/07/00		SA2432
Benzo(k)fluoranthene	<470ug/kg dw	06/07/00		SA2432
Benzo(a)pyrene	<470ug/kg dw	06/07/00		SA2432
Indeno(1,2,3-cd)pyrene	<470ug/kg dw	06/07/00		SA2432
Dibenzo(a,h)anthracene	<470ug/kg dw	06/07/00		SA2432
Benzo(ghi)perylene	<470ug/kg dw	06/07/00		SA2432
EPA Method 8150				
2,4-D	<4.6ug/kg dw	06/13/00		GA0130
2,4,5-T	<4.6ug/kg dw	06/13/00		GA0130

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by: Client

ID:15200019 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID D-9 TOPSOIL 0700H 05/30/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Bromomethane	<4ug/kg dw	06/06/00		VM2909
Vinyl Chloride	<3ug/kg dw	06/06/00		VM2909
Chloroethane	<4ug/kg dw	06/06/00		VM2909
Methylene Chloride	12ug/kg dw	06/06/00	44	VM2909
Acetone	<13µg/kg dw	06/06/00		VM2909
Carbon Disulfide	<4ug/kg dw	06/06/00		VM2909
1,1-Dichloroethene	<4ug/kg dw	06/06/00		VM2909
1,1-Dichloroethane	<4ug/kg dw	06/06/00		VM2909
trans-1,2-Dichloroethene	<4ug/kg dw	06/06/00		VM2909
cis-1,2-Dichloroethene	<4ug/kg dw	06/06/00		VM2909
Chloroform	<4ug/kg dw	06/06/00		VM2909
1,2-Dichloroethane	<4ug/kg dw	06/06/00		VM2909
2-Butanone	<13ug/kg dw	06/06/00		VM2909
1,1,1-Trichloroethane	<4ug/kg dw	06/06/00		VM2909
Carbon Tetrachloride	<4ug/kg dw	06/06/00		VM2909
Bromodichloromethane	<4ug/kg dw	06/06/00		VM2909
1,2-Dichloropropane	<4ug/kg dw	06/06/00		VM2909
cis-1,3-Dichloropropene	<4ug/kg dw	06/06/00		VM2909
Trichloroethene	<4ug/kg dw	06/06/00		VM2909
Dibromochloromethane	<4ug/kg dw	06/06/00		VM290
1,1,2-Trichloroethane	<4ug/kg dw	06/06/00		VM2909
Benzene	<4ug/kg dw	06/06/00		VM2909
trans-1,3-Dichloropropene	<4ug/kg dw	06/06/00		VM2909
Bromoform	<4ug/kg dw	06/06/00		VM2909
4-Methyl-2-pentanone	<13ug/kg dw	06/06/00		VM2909
2-Hexanone	<13ug/kg dw	06/06/00		VM2909
Tetrachloroethene	<4ug/kg dw	06/06/00		VM2909
1,1,2,2-Tetrachloroethane	<4ug/kg dw	06/06/00		VM2909
Toluene	<4ug/kg dw	06/06/00		VM2909
Chlorobenzene	<4ug/kg dw	06/06/00		VM2909
Ethylbenzene	<4ug/kg dw	06/06/00		VM2909
Styrene	<4ug/kg dw	06/06/00		VM2909
m-Xylene and p-Xylene	<4ug/kg dw	06/06/00		VM2909
o-Xylene	<4ug/kg dw	06/06/00		VM2909

TCL Semivolatiles by EPA Method 8270

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Phenol	<440ug/kg dw	06/07/00		SA2432
bis(2-Chloroethyl)ether	<440ug/kg dw	06/07/00		SA2432
2-Chlorophenol	<440ug/kg dw	06/07/00		SA2432
1,3-Dichlorobenzene	<440ug/kg dw	06/07/00		SA2432
1,4-Dichlorobenzene	<440ug/kg dw	06/07/00		SA2432
1,2-Dichlorobenzene	<440ug/kg dw	06/07/00		SA2432
2-Methylphenol	<440ug/kg dw	06/07/00		SA2432
2,2'-Oxybis(1-Chloropropane)	<440ug/kg dw	06/07/00		SA2432

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL: ____
QC: ____
Lab I.D.: 10170
Sampled by: Client

ID:15200019 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID D-9 TOPSOIL 0700H 05/30/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
4-Methylphenol	<440ug/kg dw	06/07/00		SA2432
n-Nitrosodi-n-propylamine	<440ug/kg dw	06/07/00		SA2432
Hexachloroethane	<440ug/kg dw	06/07/00		SA2432
Nitrobenzene	<440ug/kg dw	06/07/00		SA2432
Isophorone	<440ug/kg dw	06/07/00		SA2432
2-Nitrophenol	<440ug/kg dw	06/07/00		SA2432
2,4-Dimethylphenol	<440ug/kg dw	06/07/00		SA2432
bis(2-Chloroethoxy)methane	<440ug/kg dw	06/07/00		SA2432
2,4-Dichlorophenol	<440ug/kg dw	06/07/00		SA2432
1,2,4-Trichlorobenzene	<440ug/kg dw	06/07/00		SA2432
Naphthalene	<440ug/kg dw	06/07/00		SA2432
4-Chloroaniline	<440ug/kg dw	06/07/00		SA2432
Hexachlorobutadiene	<440ug/kg dw	06/07/00		SA2432
4-Chloro-3-methylphenol	<440ug/kg dw	06/07/00		SA2432
2-Methylnaphthalene	<440ug/kg dw	06/07/00		SA2432
Hexachlorocyclopentadiene	<440ug/kg dw	06/07/00		SA2432
2,4,6-Trichlorophenol	<440ug/kg dw	06/07/00		SA2432
2,4,5-Trichlorophenol	<440ug/kg dw	06/07/00		SA2432
2-Chloronaphthalene	<440ug/kg dw	06/07/00		SA2432
2-Nitroaniline	<4400ug/kg dw	06/07/00		SA2432
Dimethylphthalate	<440ug/kg dw	06/07/00		SA2432
Acenaphthylene	<440ug/kg dw	06/07/00		SA2432
2,6-Dinitrotoluene	<440ug/kg dw	06/07/00		SA2432
3-Nitroaniline	<4400ug/kg dw	06/07/00		SA2432
Acenaphthene	<440ug/kg dw	06/07/00		SA2432
2,4-Dinitrophenol	<4400ug/kg dw	06/07/00		SA2432
4-Nitrophenol	<4400ug/kg dw	06/07/00		SA2432
Dibenzofuran	<440ug/kg dw	06/07/00		SA2432
2,4-Dinitrotoluene	<440ug/kg dw	06/07/00		SA2432
Diethylphthalate	<440ug/kg dw	06/07/00		SA2432
4-Chlorophenylphenylether	<440ug/kg dw	06/07/00		SA2432
Fluorene	<440ug/kg dw	06/07/00		SA2432
4-Nitroaniline	<4400ug/kg dw	06/07/00		SA2432
2-Methyl-4,6-dinitrophenol	<4400ug/kg dw	06/07/00		SA2432
n-Nitrosodiphenylamine	<440ug/kg dw	06/07/00		SA2432
4-Bromophenylphenylether	<440ug/kg dw	06/07/00		SA2432
Hexachlorobenzene	<440ug/kg dw	06/07/00		SA2432
Pentachlorophenol	<880ug/kg dw	06/07/00		SA2432
Phenanthrene	<440ug/kg dw	06/07/00		SA2432
Anthracene	<440ug/kg dw	06/07/00		SA2432
Carbazole	<440ug/kg dw	06/07/00		SA2432
di-n-butylphthalate	<440ug/kg dw	06/07/00		SA2432
Fluoranthene	<440ug/kg dw	06/07/00		SA2432
Pyrene	<440ug/kg dw	06/07/00		SA2432

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc,
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by: Client

ID:15200019 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID D-9 TOPSOIL 0700H 05/30/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Butylbenzylphthalate	<440ug/kg dw	06/07/00		SA2432
3,3'-Dichlorobenzidine	<440ug/kg dw	06/07/00		SA2432
Benzo(a)anthracene	<440ug/kg dw	06/07/00		SA2432
Chrysene	<440ug/kg dw	06/07/00		SA2432
bis(2-Ethylhexyl)phthalate	<440ug/kg dw	06/07/00		SA2432
di-n-octylphthalate	<440ug/kg dw	06/07/00		SA2432
Benzo(b)fluoranthene	<440ug/kg dw	06/07/00		SA2432
Benzo(k)fluoranthene	<440ug/kg dw	06/07/00		SA2432
Benzo(a)pyrene	<440ug/kg dw	06/07/00		SA2432
Indeno(1,2,3-cd)pyrene	<440ug/kg dw	06/07/00		SA2432
Dibenzo(a,h)anthracene	<440ug/kg dw	06/07/00		SA2432
Benzo(ghi)perylene	<440ug/kg dw	06/07/00		SA2432
EPA Method 8150				
2,4-D	<4.4ug/kg dw	06/13/00		GA0130
2,4,5-T	<4.4ug/kg dw	06/13/00		GA0130
2,4,5-TP (Silvex)	<4.4ug/kg dw	06/13/00		GA0130
Dinoseb	<4.4ug/kg dw	06/13/00		GA0130
TCL Pesticides/Aroclors by EPA 8080				
BHC (a-isomer)	<2.3ug/kg dw	06/13/00		GA0129
BHC (b-isomer)	<2.3ug/kg dw	06/13/00		GA0129
BHC (d-isomer)	<2.3ug/kg dw	06/13/00		GA0129
BHC (g-isomer)	<2.3ug/kg dw	06/13/00		GA0129
Heptachlor	<2.3ug/kg dw	06/13/00		GA0129
Aldrin	<2.3ug/kg dw	06/13/00		GA0129
Heptachlor Epoxide	<2.3ug/kg dw	06/13/00		GA0129
Endosulfan I	<2.3ug/kg dw	06/13/00		GA0129
Dieldrin	<4.4ug/kg dw	06/13/00		GA0129
4,4'-DDE	<4.4ug/kg dw	06/13/00		GA0129
Endrin	<4.4ug/kg dw	06/13/00		GA0129
Endosulfan II	<4.4ug/kg dw	06/13/00		GA0129
4,4'-DDD	<4.4ug/kg dw	06/13/00		GA0129
Endosulfan Sulfate	<4.4ug/kg dw	06/13/00		GA0129
4,4'-DDT	<4.4ug/kg dw	06/13/00		GA0129
Methoxychlor	<23ug/kg dw	06/13/00		GA0129
Endrin Ketone	<4.4ug/kg dw	06/13/00		GA0129
Endrin Aldehyde	<4.4ug/kg dw	06/13/00		GA0129
alpha-Chlordane	<2.3ug/kg dw	06/13/00		GA0129
gamma-Chlordane	<2.3ug/kg dw	06/13/00		GA0129
Toxaphene	<225ug/kg dw	06/13/00		GA0129
Aroclor 1016	<2.3ug/kg dw	06/13/00		GA0129
Aroclor 1221	<2.3ug/kg dw	06/13/00		GA0129
Aroclor 1232	<2.3ug/kg dw	06/13/00		GA0129

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL: _ _ _ _
QC: _ _ _ _
Lab I.D.: 10170
Sampled by: Client

ID:15200019 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID D-9 TOPSOIL 0700H 05/30/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Aroclor 1242	<2.3ug/kg dw	06/13/00		GA0129
Aroclor 1248	<2.3ug/kg dw	06/13/00		GA0129
Aroclor 1254	<2.3ug/kg dw	06/13/00		GA0129
Aroclor 1260	<2.3ug/kg dw	06/13/00		GA0129

ID:15200020 Mat:Solid 29-00-0002 MCKENNA LANDFILL WALCH CLAY 1430H 05/30/00 G

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Percent Solids	93%	06/01/00		WD0453
Total Cyanide	<1.1mg/kg dw	06/13/00		WD0468
Total Aluminum	21000mg/kg dw	06/09/00		MB2436
Total Antimony	48mg/kg dw	06/09/00		MB2436
Total Arsenic by furnace method	2.5mg/kg dw	06/09/00		MB2436
Total Barium	190mg/kg dw	06/09/00		MB2436
Total Beryllium	1.1mg/kg dw	06/09/00		MB2436
Total Cadmium	4.3mg/kg dw	06/09/00		MB2436
Total Calcium	58000mg/kg dw	06/09/00		MB2436
Total Chromium	31mg/kg dw	06/09/00		MB2436
Total Cobalt	83mg/kg dw	06/09/00		MB2436
Total Copper	26mg/kg dw	06/09/00		MB2436
Total Iron	26000mg/kg dw	06/09/00		MB2436
Total Lead	<11mg/kg dw	06/09/00		MB2436
Total Magnesium	12000mg/kg dw	06/09/00		MB2436
Total Manganese	400mg/kg dw	06/09/00		MB2436
Total Mercury	<0.3mg/kg dw	06/06/00		MB2420
Total Nickel	43mg/kg dw	06/09/00		MB2436
Total Potassium	3900mg/kg dw	06/12/00		MB2443
Total Selenium by furnace method	<0.2mg/kg dw	06/09/00		MB2439
Total Silver	<5.3mg/kg dw	06/09/00		MB2436
Total Sodium	340mg/kg dw	06/12/00		MB2443
Total Thallium by furnace method	0.65mg/kg dw	06/14/00		MK2870
Total Vanadium	36mg/kg dw	06/09/00		MB2436
Total Zinc	64mg/kg dw	06/09/00		MB2436

TCL Volatiles by EPA Method 8260

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Chloromethane	<3ug/kg dw	06/06/00		VM2909
Bromomethane	<3ug/kg dw	06/06/00		VM2909
Vinyl Chloride	<2ug/kg dw	06/06/00		VM2909
Chloroethane	<3ug/kg dw	06/06/00		VM2909
Methylene Chloride	12ug/kg dw	06/06/00	44	VM2909
Acetone	24ug/kg dw	06/06/00	44	VM2909
Carbon Disulfide	<3ug/kg dw	06/06/00		VM2909
1,1-Dichloroethane	<3ug/kg dw	06/06/00		VM2909

dw = Dry weight

2. BROCKPORT SITE TOPSOIL

Geotechnical Testing Summary

GZA estimates that less than 5,000 cubic yards of topsoil from the Brockport site was used for topsoil construction. Test frequencies are summarized below. Table D15 summarizes the geotechnical laboratory test results.

BROCKPORT SITE TOPSOIL GEOTECHNICAL LAB TESTING SUMMARY

Test Designation	Required Frequency	Number of Tests Done	Estimated Quantity of Fill Placed	Estimated Test Frequency
Natural Moisture Content (ASTM D2216)	Ea. 5,000 Cubic Yards	1	<5,000 Cubic Yards	> Ea. 5,000 Cubic Yards Placed
Grain Size Analysis (ASTM D422)	Ea. 5,000 Cubic Yards	1	<5,000 Cubic Yards	> Ea. 5,000 Cubic Yards Placed
Organic Content (ASTM D2974)	Ea. 5,000 Cubic Yards	1	<5,000 Cubic Yards	> Ea. 5,000 Cubic Yards Placed
pH (ASTM D4972)	Ea. 5,000 Cubic Yards	1	<5,000 Cubic Yards	> Ea. 5,000 Cubic Yards Placed

Chemical Testing Summary

Pre-construction chemical characterization testing was done for the Brockport site topsoil. Chemical characterization testing was required for every 5,000 cubic yards of soil used. Two samples were tested for a test frequency of greater than 1 test per 2,500 cubic yards. The samples were tested for the following parameters.

Parameter	Extraction/Preparation [1]	Analysis [1]
TCL[2] Volatile Organic Compounds	5050	8260 (95-1)
TCL Semi-Volatile Organic Compounds	3540/3550	8270 (95-2)
Pesticides/PCB's	3540/3550	8080
Herbicides	3580	8150
TAL[3] Metals	3050	95-M
Cyanide	----	9012

[1] EPA SW-846.
[2] TCL – Target Compound List.
[3] TAL – Target Analyte List.

GZA reviewed the laboratory test results submitted by CSC's analytical laboratory, Upstate, and tabulated the compounds detected for each sample. A table of the compounds detected for each material type is included herein as Table D16, along with the laboratory data. GZA compared the reported chemical concentrations versus recommended soil cleanup objective values and eastern United States background values shown in the tables.

Based on GZA's review, the chemical characterization test results for this material was acceptable. Therefore, the Brockport site topsoil was considered acceptable for topsoil.

Table D15

SUMMARY OF BULK SAMPLE LABORATORY TESTING
BROCKPORT TOPSOIL

MCKENNA LANDFILL REMEDIAL CLOSURE PROJECT ALBION, NY

SAMPLE NUMBER	NATURAL MOISTURE CONTENT	ORGANIC CONTENT (%)	ASH (%)	% FINER THAN #200 SEIVE	pH in H_2O	pH in 0.01M $CaCl_2$	BORROW SOURCE
09271-2	12.8	1.4	98.6	58	6.8	7.0	Brockport

Table D16

Chemical Characterization Results for Brockport Topsoil Samples
Brockport-1, Brockport-2 Taken From Brockport Source

McKenna Landfill Remedial Closure Project
Albion, New York

Parameter	Recommended Soil Cleanup Objective ppm	Eastern USA Background ppm	Brockport-1 ppm	Brockport-2 ppm
VOC - EPA Method 8260 (ppm)				
Methylene Chloride	0.1	N/A	0.004	N/D
Acetone	0.2	N/A	N/D	N/D
2-Butanone	0.3	N/A	N/D	N/D
Toluene	1.5	N/A	0.009	N/D
SVOC - EPA Method 8270 (ppm)				
No Compounds Detected		N/A	N/D	N/D
HERBICIDES - EPA Method 8150 (ppm)				
2,4 -D	0.5	N/A	N/D	N/D
TCL Pesticides/Aroclors EPA Method 8082 (ppm)				
Endosulfan Sulfate	1	N/A	0.0042	0.0062
Priority Pollutant Metals (ppm)				
Aluminum	SB	33,000	8100	13,000
Antimony	SB	N/A	180	40
Arsenic	7.5 or SB	3-12	4.6	N/D
Barium	300 or SB	15-600	59	98
Beryllium	0.16 or SB	0-1.75	N/D	0.8
Cadmium	1 or SB	0.1-1	2.3	3.2
Calcium	SB	130-35,000	12,000	5,200
Chromium	10 or SB	1.5-40	14	19
Cobalt	30 or SB	2.5-60	32	43
Copper	25 or SB	1-50	11	18
Iron	2000 or SB	2000-550,000	12,000	16,000
Lead	SB	See Note 5	31	N/D
Magnesium	SB	100-5000	2,300	2,200
Manganese	SB	50-5000	350	880
Mercury	0.1	0.001-0.2	0.24	0.17
Nickel	13 or SB	0.5-25	21	27
Potassium	SB	8500-43,000	1700	2300
Selenium	2 or SB	0.1-3.9	0.22	0.25
Silver	SB	N/A	N/D	N/D
Sodium	SB	6000-8000	440	470
Thallium	SB	N/A	N/D	N/D
Vanadium	150 or SB	1-300	N/D	N/D
Zinc	20 or SB	9-50	37	54

Notes:
1. Only compounds detected in one or more samples are presented on this table. Refer to original data sheets for list of all compounds included in analysis.
2. Analytical testing completed by Upstate Laboratories, Inc.
3. Recommended soil cleanup objectives are based on the Division Technical and Administrative Guidance Memorandum (TAGM) 4046 on Determination of Soil Cleanup Objectives and Cleanup Levels in its final form.
4. ND = not detected, NA = not available
5. Background levels for lead vary widely. Average levels in undeveloped, rural areas may range from 4-61 ppm. Average background levels in metropolitan or suburban areas or near highways are much higher and typically range from 200-500 ppm.
6. mg/kg = ppm

DATE: 09/28/01

Upstate Laboratories, Inc. APPROVAL: CJS
Analysis Results QC: PS
Report Number: 26201039 Lab I.D.: 10170
Client I.D.: CIMINELLI SERVICES GROUP CORP. MACKENNA LANDFILL
Sampled by: Client TOP SOIL/BROCKPORT 09/18/01

ULI I.D.: 26201039 Matrix: Soil

	PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
	Percent Solids	81%	09/20/01		WD6375
	Total Cyanide	12mg/kg dw	09/20/01		WD6267
Total	Aluminum	8100mg/kg dw	09/20/01		MB3846
Total	Antimony	180mg/kg dw	09/26/01		MB3862
Total	Arsenic by furnace method	4.6mg/kg dw	09/25/01		MB3857
Total	Barium	59mg/kg dw	09/20/01		MB3846
Total	Beryllium	<0.62mg/kg dw	09/20/01		MB3846
Total	Cadmium	2.3mg/kg dw	09/20/01		MB3846
Total	Calcium	12,000mg/kg dw	09/20/01		MB3846
Total	Chromium	14mg/kg dw	09/20/01		MB3846
Total	Cobalt	32mg/kg dw	09/20/01		MB3846
Total	Copper	11mg/kg dw	09/20/01		MB3846
Total	Iron	12,000mg/kg dw	09/20/01		MB3846
Total	Lead	31mg/kg dw	09/20/01		MB3846
Total	Magnesium	2300mg/kg dw	09/20/01		MB3846
Total	Manganese	350mg/kg dw	09/20/01		MB3846
Total	Mercury	0.24mg/kg dw	09/20/01		MB3847
Total	Nickel	21mg/kg dw	09/20/01		MB3846
Total	Potassium	1700mg/kg dw	09/25/01		MB3858
Total	Selenium by furnace method	0.22mg/kg dw	09/24/01		MB[illegible]5
Total	Silver	<6.2mg/kg dw	09/20/01		MB[illegible]6
Total	Sodium	440mg/kg dw	09/25/01		MB3858
Total	Thallium by furnace method	<0.38mg/kg dw	09/25/01		MB3857
Total	Vanadium	<37mg/kg dw	09/20/01		MB3846
Total	Zinc	37mg/kg dw	09/20/01		MB3846
	TCL Volatiles by EPA Method 8260				
	Chloromethane	<4ug/kg dw	09/24/01		VM3640
	Bromomethane	<4ug/kg dw	09/24/01		VM3640
	Vinyl Chloride	<2ug/kg dw	09/24/01		VM3640
	Chloroethane	<4ug/kg dw	09/24/01		VM3640
	Methylene Chloride	4ug/kg dw	09/24/01	44	VM3640
	Acetone	<12ug/kg dw	09/24/01		VM3640
	Carbon Disulfide	<4ug/kg dw	09/24/01		VM3640
	1,1-Dichloroethene	<4ug/kg dw	09/24/01		VM3640
	1,1-Dichloroethane	<4ug/kg dw	09/24/01		VM3640
	trans-1,2-Dichloroethene	<4ug/kg dw	09/24/01		VM3640
	cis-1,2-Dichloroethene	<4ug/kg dw	09/24/01		VM3640
	Chloroform	<4ug/kg dw	09/24/01		VM3640
	1,2-Dichloroethane	<4ug/kg dw	09/24/01		VM3640

dw = Dry weight

DATE: 09/28/01

Upstate Laboratories, Inc. APPROVAL: CJS
alysis Results QC: PS
port Number: 26201039 Lab I.D.: 10170
Client I.D.: CIMINELLI SERVICES GROUP CORP. MACKENNA LANDFILL
Sampled by: Client TOP SOIL/BROCKPORT 09/18/01

ULI I.D.: 26201039 Matrix: Soil

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
2-Butanone	<12ug/kg dw	09/24/01		VM3640
1,1,1-Trichloroethane	<4ug/kg dw	09/24/01		VM3640
Carbon Tetrachloride	<4ug/kg dw	09/24/01		VM3640
Bromodichloromethane	<4ug/kg dw	09/24/01		VM3640
1,2-Dichloropropane	<4ug/kg dw	09/24/01		VM3640
cis-1,3-Dichloropropene	<4ug/kg dw	09/24/01		VM3640
Trichloroethene	<4ug/kg dw	09/24/01		VM3640
Dibromochloromethane	<4ug/kg dw	09/24/01		VM3640
1,1,2-Trichloroethane	<4ug/kg dw	09/24/01		VM3640
Benzene	<4ug/kg dw	09/24/01		VM3640
trans-1,3-Dichloropropene	<4ug/kg dw	09/24/01		VM3640
Bromoform	<4ug/kg dw	09/24/01		VM3640
4-Methyl-2-pentanone	<12ug/kg dw	09/24/01		VM3640
2-Hexanone	<12ug/kg dw	09/24/01		VM3640
Tetrachloroethene	<4ug/kg dw	09/24/01		VM3640
1,1,2,2-Tetrachloroethane	<4ug/kg dw	09/24/01		VM3640
Toluene	9ug/kg dw	09/24/01		VM3640
Chlorobenzene	<4ug/kg dw	09/24/01		VM3640
Ethylbenzene	<4ug/kg dw	09/24/01		VM3640
Styrene	<4ug/kg dw	09/24/01		VM3640
m,p-xylene	<4ug/kg dw	09/24/01		VM3640
o-Xylene	<4ug/kg dw	09/24/01		VM3640
TCL Semivolatiles by EPA Method 8270				
Phenol	<380ug/kg dw	09/26/01		SA3036
bis(2-Chloroethyl)ether	<380ug/kg dw	09/26/01		SA3036
2-Chlorophenol	<380ug/kg dw	09/26/01		SA3036
1,3-Dichlorobenzene	<380ug/kg dw	09/26/01		SA3036
1,4-Dichlorobenzene	<380ug/kg dw	09/26/01		SA3036
1,2-Dichlorobenzene	<380ug/kg dw	09/26/01		SA3036
2-Methylphenol	<380ug/kg dw	09/26/01		SA3036
2,2'-Oxybis(1-Chloropropane)	<380ug/kg dw	09/26/01		SA3036
4-Methylphenol	<380ug/kg dw	09/26/01		SA3036
n-Nitrosodinpropylamine	<380ug/kg dw	09/26/01		SA3036
Hexachloroethane	<380ug/kg dw	09/26/01		SA3036
Nitrobenzene	<380ug/kg dw	09/26/01		SA3036
Isophorone	<380ug/kg dw	09/26/01		SA3036
2-Nitrophenol	<380ug/kg dw	09/26/01		SA3036
2,4-Dimethylphenol	<380ug/kg dw	09/26/01		SA3036
bis(2-Chloroethoxy)methane	<380ug/kg dw	09/26/01		SA3036

dw = Dry weight

DATE: 09/28/01

Upstate Laboratories, Inc.
Analysis Results
Report Number: 26201039
Client I.D.: CIMINELLI SERVICES GROUP CORP. MACKENNA LANDFILL
Sampled by: Client   TOP SOIL/BROCKPORT 09/18/01

APPROVAL: CJS
QC: PS
Lab I.D.: 10170

ULI I.D.: 26201039   Matrix: Soil

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
2,4-Dichlorophenol	<380ug/kg dw	09/26/01		SA3036
1,2,4-Trichlorobenzene	<380ug/kg dw	09/26/01		SA3036
Naphthalene	<380ug/kg dw	09/26/01		SA3036
4-Chloroaniline	<380ug/kg dw	09/26/01		SA3036
Hexachlorobutadiene	<380ug/kg dw	09/26/01		SA3036
4-Chloro-3-methylphenol	<380ug/kg dw	09/26/01		SA3036
2-Methylnaphthalene	<380ug/kg dw	09/26/01		SA3036
Hexachlorocyclopentadiene	<380ug/kg dw	09/26/01		SA3036
2,4,6-Trichlorophenol	<380ug/kg dw	09/26/01		SA3036
2,4,5-Trichlorophenol	<380ug/kg dw	09/26/01		SA3036
2-Chloronaphthalene	<380ug/kg dw	09/26/01		SA3036
2-Nitroaniline	<3800ug/kg dw	09/26/01		SA3036
Dimethylphthalate	<380ug/kg dw	09/26/01		SA3036
Acenaphthylene	<380ug/kg dw	09/26/01		SA3036
2,6-Dinitrotoluene	<380ug/kg dw	09/26/01		SA3036
3-Nitroaniline	<3800ug/kg dw	09/26/01		SA3036
Acenaphthene	<380ug/kg dw	09/26/01		SA3036
2,4-Dinitrophenol	<3800ug/kg dw	09/26/01		SA3036
4-Nitrophenol	<3800ug/kg dw	09/26/01		SA3036
Dibenzofuran	<380ug/kg dw	09/26/01		SA3036
2,4-Dinitrotoluene	<380ug/kg dw	09/26/01		[illegible]
Diethylphthalate	<380ug/kg dw	09/26/01		SA[illegible]6
4-Chlorophenylphenylether	<380ug/kg dw	09/26/01		SA3036
Fluorene	<380ug/kg dw	09/26/01		SA3036
4-Nitroaniline	<3800ug/kg dw	09/26/01		SA3036
2-Methyl-4,6-dinitrophenol	<3800ug/kg dw	09/26/01		SA3036
n-Nitrosodiphenylamine	<380ug/kg dw	09/26/01		SA3036
4-Bromophenylphenylether	<380ug/kg dw	09/26/01		SA3036
Hexachlorobenzene	<380ug/kg dw	09/26/01		SA3036
Pentachlorophenol	<770ug/kg dw	09/26/01		SA3036
Phenanthrene	<380ug/kg dw	09/26/01		SA3036
Anthracene	<380ug/kg dw	09/26/01		SA3036
Carbazole	<380ug/kg dw	09/26/01		SA3036
di-n-butylphthalate	<380ug/kg dw	09/26/01		SA3036
Fluoranthene	<380ug/kg dw	09/26/01		SA3036
Pyrene	<380ug/kg dw	09/26/01		SA3036
Butylbenzylphthalate	<380ug/kg dw	09/26/01		SA3036
3,3'-Dichlorobenzidine	<380ug/kg dw	09/26/01		SA3036
Benzo(a)anthracene	<380ug/kg dw	09/26/01		SA3036
Chrysene	<380ug/kg dw	09/26/01		SA3036

dw = Dry weight

DATE: 09/28/01

Upstate Laboratories, Inc.
nalysis Results
eport Number: 26201039
Client I.D.: CIMINELLI SERVICES GROUP CORP. MACKENNA LANDFILL
Sampled by: Client

APPROVAL: GAS
QC: PS
Lab I.D.: 10170

TOP SOIL/BROCKPORT 09/18/01

ULI I.D.: 26201039 Matrix: Soil

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
bis(2-Ethylhexyl)phthalate	<380ug/kg dw	09/26/01		SA3036
di-n-octylphthalate	<380ug/kg dw	09/26/01		SA3036
Benzo(b)fluoranthene	<380ug/kg dw	09/26/01		SA3036
Benzo(k)fluoranthene	<380ug/kg dw	09/26/01		SA3036
Benzo(a)pyrene	<380ug/kg dw	09/26/01		SA3036
Indeno(1,2,3-cd)pyrene	<380ug/kg dw	09/26/01		SA3036
Dibenzo(a,h)anthracene	<380ug/kg dw	09/26/01		SA3036
Benzo(ghi)perylene	<380ug/kg dw	09/26/01		SA3036
EPA Method 8150				
2,4-D	<41ug/kg dw	09/25/01		GA0995
2,4,5-T	<41ug/kg dw	09/25/01		GA0995
2,4,5-TP (Silvex)	<41ug/kg dw	09/25/01		GA0995
Dinoseb	<41ug/kg dw	09/25/01		GA0995
TCL Pesticides/Aroclors by EPA 8082				
BHC (a-isomer)	<2.1ug/kg dw	09/24/01		GA0994
BHC (b-isomer)	<2.1ug/kg dw	09/24/01		GA0994
BHC (d-isomer)	<2.1ug/kg dw	09/24/01		GA0994
BHC (g-isomer)	<2.1ug/kg dw	09/24/01		GA0994
Heptachlor	<2.1ug/kg dw	09/24/01		GA0994
Aldrin	<2.1ug/kg dw	09/24/01		GA0994
Heptachlor Epoxide	<2.1ug/kg dw	09/24/01		GA0994
Endosulfan I	<2.1ug/kg dw	09/24/01		GA0994
Dieldrin	<4.1ug/kg dw	09/24/01		GA0994
4,4'-DDE	<4.1ug/kg dw	09/24/01		GA0994
Endrin	<4.1ug/kg dw	09/24/01		GA0994
Endosulfan II	<4.1ug/kg dw	09/24/01		GA0994
4,4'-DDD	<4.1ug/kg dw	09/24/01		GA0994
Endosulfan Sulfate	4.2ug/kg dw	09/24/01		GA0994
4,4'-DDT	<4.1ug/kg dw	09/24/01		GA0994
Methoxychlor	<21ug/kg dw	09/24/01		GA0994
Endrin Ketone	<4.1ug/kg dw	09/24/01		GA0994
Endrin Aldehyde	<4.1ug/kg dw	09/24/01		GA0994
alpha-Chlordane	<2.1ug/kg dw	09/24/01		GA0994
gamma-Chlordane	<2.1ug/kg dw	09/24/01		GA0994
Toxaphene	<210ug/kg dw	09/24/01		GA0994
Aroclor 1016	<2.1ug/kg dw	09/24/01		GA0994
Aroclor 1221	<2.1ug/kg dw	09/24/01		GA0994
Aroclor 1232	<2.1ug/kg dw	09/24/01		GA0994

dw = Dry weight

DATE: 09/28/01

Upstate Laboratories, Inc.
Analysis Results
Report Number: 26201039
Client I.D.: CIMINELLI SERVICES GROUP CORP. MACKENNA LANDFILL
Sampled by: Client

APPROVAL: GJS
QC: PS
Lab I.D.: 10170

TOP SOIL/BROCKPORT 09/18/01

ULI I.D.: 26201039 Matrix: Soil

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Aroclor 1242	<2.1ug/kg dw	09/24/01		GA0994
Aroclor 1248	<2.1ug/kg dw	09/24/01		GA0994
Aroclor 1254	<2.1ug/kg dw	09/24/01		GA0994
Aroclor 1260	<2.1ug/kg dw	09/24/01		GA0994

dw = Dry weight

DATE: 09/28/01

Upstate Laboratories, Inc. APPROVAL: CJS
alysis Results QC: BS
eport Number: 26201039 Lab I.D.: 10170
Client I.D.: CIMINELLI SERVICES GROUP CORP. MACKENNA LANDFILL
Sampled by: Client TOP SOIL/BROCKPORT 09/18/01

ULI I.D.: 26201040 Matrix: Soil

	PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
	Percent Solids	87%	09/20/01		WD6375
	Total Cyanide	<1.3mg/kg dw	09/20/01		WD6267
Total	Aluminum	13,000mg/kg dw	09/20/01		MB3846
Total	Antimony	40mg/kg dw	09/26/01		MB3862
Total	Arsenic by furnace method	<1.2mg/kg dw	09/25/01		MB3857
Total	Barium	98mg/kg dw	09/20/01		MB3846
Total	Beryllium	0.80mg/kg dw	09/20/01		MB3846
Total	Cadmium	3.2mg/kg dw	09/20/01		MB3846
Total	Calcium	5200mg/kg dw	09/20/01		MB3846
Total	Chromium	19mg/kg dw	09/20/01		MB3846
Total	Cobalt	43mg/kg dw	09/20/01		MB3846
Total	Copper	18mg/kg dw	09/20/01		MB3846
Total	Iron	16,000mg/kg dw	09/20/01		MB3846
Total	Lead	<11mg/kg dw	09/20/01		MB3846
Total	Magnesium	2200mg/kg dw	09/20/01		MB3846
Total	Manganese	880mg/kg dw	09/20/01		MB3846
Total	Mercury	0.17mg/kg dw	09/20/01		MB3847
Total	Nickel	27mg/kg dw	09/20/01		MB3846
Total	Potassium	2300mg/kg dw	09/25/01		MB3858
Total	Selenium by furnace method	0.25mg/kg dw	09/24/01		MB3855
Total	Silver	<5.7mg/kg dw	09/20/01		MB3846
Total	Sodium	470mg/kg dw	09/25/01		MB3858
Total	Thallium by furnace method	<0.35mg/kg dw	09/25/01		MB3857
Total	Vanadium	<34mg/kg dw	09/20/01		MB3846
Total	Zinc	54mg/kg dw	09/20/01		MB3846
	TCL Volatiles by EPA Method 8260				
	Chloromethane	<3ug/kg dw	09/24/01		VM3640
	Bromomethane	<3ug/kg dw	09/24/01		VM3640
	Vinyl Chloride	<2ug/kg dw	09/24/01		VM3640
	Chloroethane	<3ug/kg dw	09/24/01		VM3640
	Methylene Chloride	<3ug/kg dw	09/24/01		VM3640
	Acetone	<11ug/kg dw	09/24/01		VM3640
	Carbon Disulfide	<3ug/kg dw	09/24/01		VM3640
	1,1-Dichloroethene	<3ug/kg dw	09/24/01		VM3640
	1,1-Dichloroethane	<3ug/kg dw	09/24/01		VM3640
	trans-1,2-Dichloroethene	<3ug/kg dw	09/24/01		VM3640
	cis-1,2-Dichloroethene	<3ug/kg dw	09/24/01		VM3640
	Chloroform	<3ug/kg dw	09/24/01		VM3640
	1,2-Dichloroethane	<3ug/kg dw	09/24/01		VM3640

dw = Dry weight

DATE: 09/28/01

Upstate Laboratories, Inc.
Analysis Results
Report Number: 26201039
Client I.D.: CIMINELLI SERVICES GROUP CORP. MACKENNA LANDFILL
Sampled by: Client   TOP SOIL/BROCKPORT 09/18/01

APPROVAL: CJS
QC: PS
Lab I.D.: 10170

ULI I.D.: 26201040   Matrix: Soil

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
2-Butanone	<11ug/kg dw	09/24/01		VM3640
1,1,1-Trichloroethane	<3ug/kg dw	09/24/01		VM3640
Carbon Tetrachloride	<3ug/kg dw	09/24/01		VM3640
Bromodichloromethane	<3ug/kg dw	09/24/01		VM3640
1,2-Dichloropropane	<3ug/kg dw	09/24/01		VM3640
cis-1,3-Dichloropropene	<3ug/kg dw	09/24/01		VM3640
Trichloroethene	<3ug/kg dw	09/24/01		VM3640
Dibromochloromethane	<3ug/kg dw	09/24/01		VM3640
1,1,2-Trichloroethane	<3ug/kg dw	09/24/01		VM3640
Benzene	<3ug/kg dw	09/24/01		VM3640
trans-1,3-Dichloropropene	<3ug/kg dw	09/24/01		VM3640
Bromoform	<3ug/kg dw	09/24/01		VM3640
4-Methyl-2-pentanone	<11ug/kg dw	09/24/01		VM3640
2-Hexanone	<11ug/kg dw	09/24/01		VM3640
Tetrachloroethene	<3ug/kg dw	09/24/01		VM3640
1,1,2,2-Tetrachloroethane	<3ug/kg dw	09/24/01		VM3640
Toluene	<3ug/kg dw	09/24/01		VM3640
Chlorobenzene	<3ug/kg dw	09/24/01		VM3640
Ethylbenzene	<3ug/kg dw	09/24/01		VM3640
Styrene	<3ug/kg dw	09/24/01		VM[illegible]
m,p-xylene	<3ug/kg dw	09/24/01		VM[illegible]
o-Xylene	<3ug/kg dw	09/24/01		VM3640

TCL Semivolatiles by EPA Method 8270

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Phenol	<380ug/kg dw	09/26/01		SA3036
bis(2-Chloroethyl)ether	<380ug/kg dw	09/26/01		SA3036
2-Chlorophenol	<380ug/kg dw	09/26/01		SA3036
1,3-Dichlorobenzene	<380ug/kg dw	09/26/01		SA3036
1,4-Dichlorobenzene	<380ug/kg dw	09/26/01		SA3036
1,2-Dichlorobenzene	<380ug/kg dw	09/26/01		SA3036
2-Methylphenol	<380ug/kg dw	09/26/01		SA3036
2,2'-Oxybis(1-Chloropropane)	<380ug/kg dw	09/26/01		SA3036
4-Methylphenol	<380ug/kg dw	09/26/01		SA3036
n-Nitrosodinpropylamine	<380ug/kg dw	09/26/01		SA3036
Hexachloroethane	<380ug/kg dw	09/26/01		SA3036
Nitrobenzene	<380ug/kg dw	09/26/01		SA3036
Isophorone	<380ug/kg dw	09/26/01		SA3036
2-Nitrophenol	<380ug/kg dw	09/26/01		SA3036
2,4-Dimethylphenol	<380ug/kg dw	09/26/01		SA3036
bis(2-Chloroethoxy)methane	<380ug/kg dw	09/26/01		SA3036

dw = Dry weight

DATE: 09/28/01

Upstate Laboratories, Inc.
alysis Results
port Number: 26201039
Client I.D.: CIMINELLI SERVICES GROUP CORP. MACKENNA LANDFILL
Sampled by: Client

APPROVAL: GS
QC: PS GS
Lab I.D. 10170
TOP SOIL/BROCKPORT 09/18/01

ULI I.D.: 26201040 Matrix: Soil

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
2,4-Dichlorophenol	<380ug/kg dw	09/26/01		SA3036
1,2,4-Trichlorobenzene	<380ug/kg dw	09/26/01		SA3036
Naphthalene	<380ug/kg dw	09/26/01		SA3036
4-Chloroaniline	<380ug/kg dw	09/26/01		SA3036
Hexachlorobutadiene	<380ug/kg dw	09/26/01		SA3036
4-Chloro-3-methylphenol	<380ug/kg dw	09/26/01		SA3036
2-Methylnaphthalene	<380ug/kg dw	09/26/01		SA3036
Hexachlorocyclopentadiene	<380ug/kg dw	09/26/01		SA3036
2,4,6-Trichlorophenol	<380ug/kg dw	09/26/01		SA3036
2,4,5-Trichlorophenol	<380ug/kg dw	09/26/01		SA3036
2-Chloronaphthalene	<380ug/kg dw	09/26/01		SA3036
2-Nitroaniline	<3800ug/kg dw	09/26/01		SA3036
Dimethylphthalate	<380ug/kg dw	09/26/01		SA3036
Acenaphthylene	<380ug/kg dw	09/26/01		SA3036
2,6-Dinitrotoluene	<380ug/kg dw	09/26/01		SA3036
3-Nitroaniline	<3800ug/kg dw	09/26/01		SA3036
Acenaphthene	<380ug/kg dw	09/26/01		SA3036
2,4-Dinitrophenol	<3800ug/kg dw	09/26/01		SA3036
4-Nitrophenol	<3800ug/kg dw	09/26/01		SA3036
Dibenzofuran	<380ug/kg dw	09/26/01		SA3036
2,4-Dinitrotoluene	<380ug/kg dw	09/26/01		SA3036
Diethylphthalate	<380ug/kg dw	09/26/01		SA3036
4-Chlorophenylphenylether	<380ug/kg dw	09/26/01		SA3036
Fluorene	<380ug/kg dw	09/26/01		SA3036
4-Nitroaniline	<3800ug/kg dw	09/26/01		SA3036
2-Methyl-4,6-dinitrophenol	<3800ug/kg dw	09/26/01		SA3036
n-Nitrosodiphenylamine	<380ug/kg dw	09/26/01		SA3036
4-Bromophenylphenylether	<380ug/kg dw	09/26/01		SA3036
Hexachlorobenzene	<380ug/kg dw	09/26/01		SA3036
Pentachlorophenol	<770ug/kg dw	09/26/01		SA3036
Phenanthrene	<380ug/kg dw	09/26/01		SA3036
Anthracene	<380ug/kg dw	09/26/01		SA3036
Carbazole	<380ug/kg dw	09/26/01		SA3036
di-n-butylphthalate	<380ug/kg dw	09/26/01		SA3036
Fluoranthene	<380ug/kg dw	09/26/01		SA3036
Pyrene	<380ug/kg dw	09/26/01		SA3036
Butylbenzylphthalate	<380ug/kg dw	09/26/01		SA3036
3,3'-Dichlorobenzidine	<380ug/kg dw	09/26/01		SA3036
Benzo(a)anthracene	<380ug/kg dw	09/26/01		SA3036
Chrysene	<380ug/kg dw	09/26/01		SA3036

dw = Dry weight

DATE: 09/28/01

Upstate Laboratories, Inc.
Analysis Results
Report Number: 26201039
Client I.D.: CIMINELLI SERVICES GROUP CORP. MACKENNA LANDFILL
Sampled by: Client   TOP SOIL/BROCKPORT 09/18/01

APPROVAL: CJS
QC: PS
Lab I.D.: 10170

ULI I.D.: 26201040   Matrix: Soil

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
bis(2-Ethylhexyl)phthalate	<380ug/kg dw	09/26/01		SA3036
di-n-octylphthalate	<380ug/kg dw	09/26/01		SA3036
Benzo(b)fluoranthene	<380ug/kg dw	09/26/01		SA3036
Benzo(k)fluoranthene	<380ug/kg dw	09/26/01		SA3036
Benzo(a)pyrene	<380ug/kg dw	09/26/01		SA3036
Indeno(1,2,3-cd)pyrene	<380ug/kg dw	09/26/01		SA3036
Dibenzo(a,h)anthracene	<380ug/kg dw	09/26/01		SA3036
Benzo(ghi)perylene	<380ug/kg dw	09/26/01		SA3036
EPA Method 8150				
2,4-D	<38ug/kg dw	09/25/01		GA0995
2,4,5-T	<38ug/kg dw	09/25/01		GA0995
2,4,5-TP (Silvex)	<38ug/kg dw	09/25/01		GA0995
Dinoseb	<38ug/kg dw	09/25/01		GA0995
TCL Pesticides/Aroclors by EPA 8082				
BHC (a-isomer)	<2.0ug/kg dw	09/24/01		GA0994
BHC (b-isomer)	<2.0ug/kg dw	09/24/01		GA[illegible]4
BHC (d-isomer)	<2.0ug/kg dw	09/24/01		G[illegible]4
BHC (g-isomer)	<2.0ug/kg dw	09/24/01		GA0994
Heptachlor	<2.0ug/kg dw	09/24/01		GA0994
Aldrin	<2.0ug/kg dw	09/24/01		GA0994
Heptachlor Epoxide	<2.0ug/kg dw	09/24/01		GA0994
Endosulfan I	<2.0ug/kg dw	09/24/01		GA0994
Dieldrin	<3.8ug/kg dw	09/24/01		GA0994
4,4'-DDE	<3.8ug/kg dw	09/24/01		GA0994
Endrin	<3.8ug/kg dw	09/24/01		GA0994
Endosulfan II	<3.8ug/kg dw	09/24/01		GA0994
4,4'-DDD	<3.8ug/kg dw	09/24/01		GA0994
Endosulfan Sulfate	6.2ug/kg dw	09/24/01		GA0994
4,4'-DDT	<3.8ug/kg dw	09/24/01		GA0994
Methoxychlor	<20ug/kg dw	09/24/01		GA0994
Endrin Ketone	<3.8ug/kg dw	09/24/01		GA0994
Endrin Aldehyde	<3.8ug/kg dw	09/24/01		GA0994
alpha-Chlordane	<2.0ug/kg dw	09/24/01		GA0994
gamma-Chlordane	<2.0ug/kg dw	09/24/01		GA0994
Toxaphene	<200ug/kg dw	09/24/01		GA0994
Aroclor 1016	<2.0ug/kg dw	09/24/01		GA0994
Aroclor 1221	<2.0ug/kg dw	09/24/01		GA0994
Aroclor 1232	<2.0ug/kg dw	09/24/01		GA0994

dw = Dry weight

DATE: 09/28/01

Upstate Laboratories, Inc.
alysis Results
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Client I.D.: CIMINELLI SERVICES GROUP CORP. MACKENNA LANDFILL
Sampled by: Client

APPROVAL: CJS
QC: PS
Lab I.D.: 10170

TOP SOIL/BROCKPORT 09/18/01

ULI I.D.: 26201040   Matrix: Soil

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Aroclor 1242	<2.0ug/kg dw	09/24/01		GA0994
Aroclor 1248	<2.0ug/kg dw	09/24/01		GA0994
Aroclor 1254	<2.0ug/kg dw	09/24/01		GA0994
Aroclor 1260	<2.0ug/kg dw	09/24/01		GA0994

dw = Dry weight

3. NEW GUINEA ROAD

Geotechnical Testing Summary

GZA estimates that less than 5,000 cubic yards of the New Guinea Road topsoil was used for topsoil construction. Test frequencies are summarized below. Table D17 summarizes the geotechnical laboratory test results.

NEW GUINEA ROAD TOPSOIL GEOTECHNICAL LAB TESTING SUMMARY

Test Designation	**Required Frequency**	**Number of Tests Done**	**Estimated Quantity of Fill Placed**	**Estimated Test Frequency**
Natural Moisture Content (ASTM D2216)	Ea. 5,000 Cubic Yards	4	<5,000 Cubic Yards	> Ea. 1,250 Cubic Yards Placed
Grain Size Analysis (ASTM D422)	Ea. 5,000 Cubic Yards	4	<5,000 Cubic Yards	> Ea. 1,250 Cubic Yards Placed
Organic Content (ASTM D2974)	Ea. 5,000 Cubic Yards	4	<5,000 Cubic Yards	> Ea. 1,250 Cubic Yards Placed
pH (ASTM D4972)	Ea. 5,000 Cubic Yards	4	<5,000 Cubic Yards	> Ea. 1,250 Cubic Yards Placed

Chemical Testing Summary

Pre-construction chemical characterization testing was done for the New Guinea Road topsoil. Chemical characterization testing was required for every 5,000 cubic yards of soil used. One sample was tested for a test frequency of greater than 1 test per 5,000 cubic yards. The samples were tested for the following parameters.

Parameter	Extraction/Preparation (1)	Analysis (1)
TCL[2] Volatile Organic Compounds	5050	8260 (95-1)
TCL Semi-Volatile Organic Compounds	3540/3550	8270 (95-2)
Pesticides/PCB's	3540/3550	8080
Herbicides	3580	8150
TAL[3] Metals	3050	95-M
Cyanide	----	9012

[1] EPA SW-846.
[2] TCL – Target Compound List.
[3] TAL – Target Analyte List.

The chemical analysis of the New Guinea Road topsoil source was recently received (following placement of the topsoil at the McKenna Landfill). GZA reviewed the laboratory test results submitted by CSC's analytical laboratory, Upstate, and tabulated the compounds detected for each sample. A table of the compounds detected for each material type is included herein as Table D18, along with the laboratory data. We compared the reported chemical concentrations versus recommended soil cleanup objective values and eastern United States background values shown in the tables.

The data shows that a pesticide, Dieldrin, was detected at 0.18 parts per million (ppm), exceeding the TAGM 4046 recommended soil cleanup objective value of 0.044 ppm. Dieldrin has historically been used in farming as a pesticide from the 1950's until about 1970. The New Guinea Road source is a currently operating onion farm.

GZA reviewed the April 1993 Agency for Toxic Substances and Disease Registry, Public Health Statement for Aldrin and Dieldrin, which states the following concerning dieldrin:

> "Dieldrin in soil or water breaks down slowly. Dieldrin sticks to soil very strongly and may stay there unchanged for many years. Water does not wash dieldrin off of soil easily. Dieldrin does not dissolve in water very well; thus, you can find very little dieldrin in water. Most dieldrin in the environment attaches to soil."

Table D17

SUMMARY OF BULK SAMPLE LABORATORY TESTING
NEW GUINEA RD. TOPSOIL

MCKENNA LANDFILL REMEDIAL CLOSURE PROJECT ALBION, NY

SAMPLE NUMBER	NATURAL MOISTURE CONTENT	ORGANIC CONTENT (%)	ASH (%)	% FINER THAN #200 SEIVE	pH in H_2O	pH in 0.01M $CaCl_2$	BORROW SOURCE
10161-1	31.7	11.1	88.9	37	7.1	7.1	New Guinea Rd.
11071-1		8.4	91.6	36	7.0	7.1	New Guinea Rd.
11151-1		9.0	91.0	25	7.0	7.1	New Guinea Rd.
11191-1		9.0	91.0	35	7.0	7.1	New Guinea Rd.

Table D18

Chemical Characterization Results for New Guinea Rd. Topsoil Samples
New Guinea Rd.-1 Taken From New Guinea Rd. Source

McKenna Landfill Remedial Closure Project
Albion, New York

Parameter	Recommended Soil Cleanup Objective ppm	Eastern USA Background ppm	New Guinea Rd. - 1 ppm
VOC - EPA Method 8260 (ppm)			
Methylene Chloride	0.1	N/A	ND
Acetone	0.2	N/A	ND
2-Butanone	0.3	N/A	ND
Toluene	1.5	N/A	ND
SVOC - EPA Method 8270 (ppm)			
No Compounds Detected		N/A	ND
HERBICIDES - EPA Method 8150 (ppm)			
2,4 -D	0.5	N/A	ND
TCL Pesticides/Aroclors EPA Method 8082 (ppm)			
4,4' - DDE	2.1	N/A	0.078
Dieldrin	0.044	N/A	0.18
4,4' - DDD	2.9	N/A	0.19
4,4' - DDT	2.1	N/A	0.21
Priority Pollutant Metals (ppm)			
Aluminum	SB	33,000	6,300
Antimony	SB	N/A	ND
Arsenic	7.5 or SB	3-12	2.4
Barium	300 or SB	15-600	ND
Beryllium	0.16 or SB	0-1.75	ND
Cadmium	1 or SB	0.1-1	2
Calcium	SB	130-35,000	16,000
Chromium	10 or SB	1.5-40	12
Cobalt	30 or SB	2.5-60	33
Copper	25 or SB	1-50	41
Iron	2000 or SB	2000-550,000	9,600
Lead	SB	See Note 5	ND
Magnesium	SB	100-5000	3,600
Manganese	SB	50-5000	320
Mercury	0.1	0.001-0.2	ND
Nickel	13 or SB	0.5-25	19
Potassium	SB	8500-43,000	1100
Selenium	2 or SB	0.1-3.9	0.9
Silver	SB	N/A	ND
Sodium	SB	6000-8000	600
Thallium	SB	N/A	ND
Vanadium	150 or SB	1-300	ND
Zinc	20 or SB	9-50	190

Notes:

1. Only compounds detected in one or more samples are presented on this table. Refer to original data sheets for list of all compounds included in analysis.
2. Analytical testing completed by Upstate Laboratories, Inc.
3. Recommended soil cleanup objectives are based on the Division Technical and Administrative Guidance Memorandum (TAGM) 4046 on Determination of Soil Cleanup Objectives and Cleanup Levels in its final form.
4. ND = not detected, NA = not available
5. Background levels for lead vary widely. Average levels in undeveloped, rural areas may range from 4-61 ppm. Average background levels in metropolitan or suburban areas or near highways are much higher and typically range from 200-500 ppm.
6. mg/kg = ppm

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 28501042
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:_ _ _ _
QC:_
Lab I.D.: 10170
Sampled by: Client

ID:28501042 Mat:Soil MCKENNA LF 29-00- 0002 WARCO TOP SOIL 1000H 10/09/01 C

	PARAMETERS	RESULTS	TIME	DATE ANAL.	KEY	KEY	FILE#
	Percent Solids	73%		10/16/01			WD6662
	Total Cyanide	<1.3mg/kg dw		10/23/01			WD6716
Total	Aluminum	6100mg/kg dw		10/21/01			MB3923
Total	Antimony	<41mg/kg dw		10/21/01			MB3923
Total	Arsenic by furnace method	2.4mg/kg dw		10/22/01			MB3930
Total	Beryllium	<0.68mg/kg dw		10/21/01			MB3923
Total	Cadmium	2.0mg/kg dw		10/21/01			MB3923
Total	Calcium	16,000mg/kg dw		10/21/01			MB3923
Total	Chromium	12mg/kg dw		10/21/01			MB3923
Total	Cobalt	33mg/kg dw		10/21/01			MB3923
Total	Copper	41mg/kg dw		10/21/01			MB3923
Total	Iron	9600mg/kg dw		10/21/01			MB3923
Total	Lead	<14mg/kg dw		10/21/01			MB3923
Total	Magnesium	3600mg/kg dw		10/21/01			MB3923
Total	Manganese	320mg/kg dw		10/21/01			MB3923
Total	Mercury	<0.21mg/kg dw		10/16/01			MB3909
Total	Nickel	19mg/kg dw		10/21/01			MB3923
Total	Potassium	1100mg/kg dw		10/21/01			MB3924
Total	Selenium by furnace method	0.90mg/kg dw		10/24/01			MB3935
Total	Silver	<6.8mg/kg dw		10/21/01			MB3923
Total	Sodium	600mg/kg dw		10/21/01			MB3924
Total	Thallium by furnace method	<0.003mg/kg dw		10/22/01			MB3930
Total	Vanadium	<41mg/kg dw		10/21/01			MB3923
Total	Zinc	190mg/kg dw		10/21/01			MB3923

TCL Volatiles by EPA Method 8260

	PARAMETERS	RESULTS	TIME	DATE ANAL.	KEY	KEY	FILE#
	Chloromethane	<4ug/kg dw		10/22/01			VM3682
	Bromomethane	<4ug/kg dw		10/22/01			VM3682
	Vinyl Chloride	<3ug/kg dw		10/22/01			VM3682
	Chloroethane	<4ug/kg dw		10/22/01			VM3682
	Methylene Chloride	<4ug/kg dw		10/22/01			VM3682
	Acetone	<14ug/kg dw		10/22/01			VM3682
	Carbon Disulfide	<4ug/kg dw		10/22/01			VM3682
	1,1-Dichloroethene	<4ug/kg dw		10/22/01			VM3682
	1,1-Dichloroethane	<4ug/kg dw		10/22/01			VM3682
	trans-1,2-Dichloroethene	<4ug/kg dw		10/22/01			VM3682
	cis-1,2-Dichloroethene	<4ug/kg dw		10/22/01			VM3682
	Chloroform	<4ug/kg dw		10/22/01			VM3682
	1,2-Dichloroethane	<4ug/kg dw		10/22/01			VM3682
	2-Butanone	<14ug/kg dw		10/22/01			VM3682
	1,1,1-Trichloroethane	<4ug/kg dw		10/22/01			VM3682
	Carbon Tetrachloride	<4ug/kg dw		10/22/01			VM3682
	Bromodichloromethane	<4ug/kg dw		10/22/01			VM3682
	1,2-Dichloropropane	<4ug/kg dw		10/22/01			VM3682

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 28501042
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by: Client

ID:28501042 Mat:Soil MCKENNA LF 29-00- 0002 WARCO TOP SOIL 1000H 10/09/01 C
(New Guinea Rd.)

PARAMETERS	RESULTS	TIME	DATE ANAL.	KEY	KEY	FILE#
2,4,5-Trichlorophenol	<460ug/kg dw		10/25/01			SA3069
2-Chloronaphthalene	<460ug/kg dw		10/25/01			SA3069
2-Nitroaniline	<4600ug/kg dw		10/25/01			SA3069
Dimethylphthalate	<460ug/kg dw		10/25/01			SA3069
Acenaphthylene	<460ug/kg dw		10/25/01			SA3069
2,6-Dinitrotoluene	<460ug/kg dw		10/25/01			SA3069
3-Nitroaniline	<4600ug/kg dw		10/25/01			SA3069
Acenaphthene	<460ug/kg dw		10/25/01			SA3069
2,4-Dinitrophenol	<4600ug/kg dw		10/25/01			SA3069
4-Nitrophenol	<4600ug/kg dw		10/25/01			SA3069
Dibenzofuran	<460ug/kg dw		10/25/01			SA3069
2,4-Dinitrotoluene	<460ug/kg dw		10/25/01			SA3069
Diethylphthalate	<460ug/kg dw		10/25/01			SA3069
4-Chlorophenylphenylether	<460ug/kg dw		10/25/01			SA3069
Fluorene	<460ug/kg dw		10/25/01			SA3069
4-Nitroaniline	<4600ug/kg dw		10/25/01			SA3069
2-Methyl-4,6-dinitrophenol	<4600ug/kg dw		10/25/01			SA3069
n-Nitrosodiphenylamine	<460ug/kg dw		10/25/01			SA3069
4-Bromophenylphenylether	<460ug/kg dw		10/25/01			SA3069
Hexachlorobenzene	<460ug/kg dw		10/25/01			SA3069
Pentachlorophenol	<910ug/kg dw		10/25/01			SA3069
Phenanthrene	<460ug/kg dw		10/25/01			SA3069
Anthracene	<460ug/kg dw		10/25/01			SA3069
Carbazole	<460ug/kg dw		10/25/01			SA3069
di-n-butylphthalate	<460ug/kg dw		10/25/01			SA3069
Fluoranthene	<460ug/kg dw		10/25/01			SA3069
Pyrene	<460ug/kg dw		10/25/01			SA3069
Butylbenzylphthalate	<460ug/kg dw		10/25/01			SA3069
3,3'-Dichlorobenzidine	<460ug/kg dw		10/25/01			SA3069
Benzo(a)anthracene	<460ug/kg dw		10/25/01			SA3069
Chrysene	<460ug/kg dw		10/25/01			SA3069
bis(2-Ethylhexyl)phthalate	<460ug/kg dw		10/25/01			SA3069
di-n-octylphthalate	<460ug/kg dw		10/25/01			SA3069
Benzo(b)fluoranthene	<460ug/kg dw		10/25/01			SA3069
Benzo(k)fluoranthene	<460ug/kg dw		10/25/01			SA3069
Benzo(a)pyrene	<460ug/kg dw		10/25/01			SA3069
Indeno(1,2,3-cd)pyrene	<460ug/kg dw		10/25/01			SA3069
Dibenzo(a,h)anthracene	<460ug/kg dw		10/25/01			SA3069
Benzo(ghi)perylene	<460ug/kg dw		10/25/01			SA3069
EPA Method 8150						
2,4-D	<45ug/kg dw		10/20/01			GA1050
2,4,5-T	<45ug/kg dw		10/20/01			GA1050
2,4,5-TP (Silvex)	<45ug/kg dw		10/20/01			GA1050

dw = Dry weight

4. KENYON ROAD TOPSOIL

Geotechnical Testing Summary

GZA estimates that less than 5,000 cubic yards of the Kenyon Road topsoil was used for topsoil construction. Test frequencies are summarized below. Table D19 summarizes the geotechnical laboratory test results.

KENYON ROAD TOPSOIL GEOTECHNICAL LAB TESTING SUMMARY

Test Designation	Required Frequency	Number of Tests Done	Estimated Quantity of Fill Placed	Estimated Test Frequency
Natural Moisture Content (ASTM D2216)	Ea. 5,000 Cubic Yards	1	<5,000 Cubic Yards	> Ea. 5,000 Cubic Yards Placed
Grain Size Analysis (ASTM D422)	Ea. 5,000 Cubic Yards	1	<5,000 Cubic Yards	> Ea. 5,000 Cubic Yards Placed
Organic Content (ASTM D2974)	Ea. 5,000 Cubic Yards	1	<5,000 Cubic Yards	> Ea. 5,000 Cubic Yards Placed
pH (ASTM D4972)	Ea. 5,000 Cubic Yards	1	<5,000 Cubic Yards	> Ea. 5,000 Cubic Yards Placed

Table D18A

Chemical Characterization Results for New Guinea Rd. Topsoil
Sample No. New Guinea Rd.-2 Taken From Composite Sample of New Guinea Rd.
Topsoil Placed on McKenna Landfill

McKenna Landfill Remedial Closure Project
Albion, New York

Parameter	Recommended Soil Cleanup Objective ppm	Eastern USA Background ppm	New Guinea Rd. - 2 ppm
TCL Pesticides/Aroclors EPA Method 8082 (ppm)			
4,4' - DDE	2.1	N/A	0.314
Dieldrin	0.044	N/A	0.042
4,4' - DDD	2.9	N/A	0.333
4,4' - DDT	2.1	N/A	0.045

Notes:
1. Only compounds detected in one or more samples are presented on this table. Refer to original data sheets for list of all compounds included in analysis.
2. Analytical testing completed by Paradigm Environmental Services, Inc.
3. Recommended soil cleanup objectives are based on the Division Technical and Administrative Guidance Memorandum (TAGM) 4046 on Determination of Soil Cleanup Objectives and Cleanup Levels in its final form.
4. ND = not detected, NA = not available
5. ppm = parts per million

PARADIGM
Environmental
Services, Inc.
179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716- 647-3311

Polychlorinated Biphenyls Laboratory Analysis Report For Soil/Sludge/Oil

Client:	GZA GeoEnvironmental	**Lab Project No.:**	02-0131
		Lab Sample No.:	1075
Client Job Site:	McKenna Landfill Remedial Closure Project	**Sample Type:**	Soil
Client Job No.:	55024		
		Date Sampled:	01/03/02
Field Location:	New Guinea Rd.	**Date Received:**	01/07/02
Field ID No:	N/A	**Date Analyzed:**	01/09/02

Polychlorinated Biphenyl	Result (mg/Kg)	Reporting Limit (mg/Kg)
PCB 1016	ND	0.69
PCB 1221	ND	0.69
PCB 1232	ND	0.69
PCB 1242	ND	0.69
PCB 1248	ND	0.69
PCB 1254	ND	0.69
PCB 1260	ND	0.69

Analytical Method: EPA 8082 ELAP ID No.: 10958

Comments: ND denotes Not Detected.

Approved By: ______________________
Laboratory Director

File ID: 020131P1.XLS

PARADIGM
Environmental
Services, Inc.
179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716- 647-3311

Chlorinated Hydrocarbon Pesticides in Soil/Solid Waste

Client:	GZA GeoEnvironmental	**Lab Project No:**	02-0131
		Lab Sample No:	1075
Client Job Site:	McKenna Landfill Remedial Closure Project	**Sample Type:**	Soil
Client Job No:	55024	**Date Sampled:**	1/3/02
Field Location:	New Guinea Rd.	**Date Received:**	1/7/02
Field ID No:	N/A	**Date Analyzed:**	1/10/02

Parameter		Result (ug/Kg)
alpha-BHC	ND<	4.1
gamma-BHC	ND<	4.1
beta-BHC	ND<	4.1
Heptachlor	ND<	4.1
delta-BHC	ND<	4.1
Aldrin	ND<	4.1
Heptachlor Epoxide	ND<	4.1
Chlordane	ND<	41
Endosulfan I	ND<	4.1
4,4'-DDE		31.4
Dieldrin		41.9
Endrin	ND<	4.1
Endosulfan II	ND<	4.1
4,4'-DDD		33.3
Methoxychlor	ND<	4.1
4,4'-DDT		44.8
Endrin Aldehyde	ND<	4.1
Endosulfan Sulfate	ND<	4.1
Toxaphene	ND<	204

Analytical Method: EPA 8081 ELAP ID: 10958

Comments: ND denotes not detected

Approved By: ______________________
Laboratory Director

File ID: 020131P2.XLS

Chemical Testing Summary

Pre-construction chemical characterization testing was done for the Kenyon Road topsoil. Chemical characterization testing was required for every 5,000 cubic yards of soil used. One sample was tested for a test frequency of greater than 1 test per 5,000 cubic yards. The samples were tested for the following parameters.

Parameter	Extraction/Preparation (1)	Analysis (1)
TCL(2) Volatile Organic Compounds	5050	8260 (95-1)
TCL Semi-Volatile Organic Compounds	3540/3550	8270 (95-2)
Pesticides/PCB's	3540/3550	8080
Herbicides	3580	8150
TAL(3) Metals	3050	95-M
Cyanide	----	9012

[1] EPA SW-846.
[2] TCL – Target Compound List.
[3] TAL – Target Analyte List.

GZA reviewed the laboratory test results submitted by CSC's analytical laboratory, Upstate, and tabulated the compounds detected for each sample. A table of the compounds detected for each material type is included herein as Table D20, along with the laboratory data. GZA compared the reported chemical concentrations versus recommended soil cleanup objective values and eastern United States background values shown in the tables.

Based on GZA's review, the chemical characterization test results for this material was acceptable. Therefore, the Kenyon Road topsoil was considered acceptable for topsoil.

Table D19

SUMMARY OF BULK SAMPLE LABORATORY TESTING
KENYON RD. TOPSOIL

MCKENNA LANDFILL REMEDIAL CLOSURE PROJECT ALBION, NY

SAMPLE NUMBER	NATURAL MOISTURE CONTENT	ORGANIC CONTENT (%)	ASH (%)	% FINER THAN #200 SEIVE	pH in H_2O	pH in 0.01M $CaCl_2$	BORROW SOURCE
12111-1	18.8	3.4	96.6	44	7.4	7.5	Kenyon Rd.

Table D20

Chemical Characterization Results for Kenyon Rd. Topsoil Samples
Kenyon-1 Taken From Kenyon Rd. Source

McKenna Landfill Remedial Closure Project
Albion, New York

Parameter	Recommended Soil Cleanup Objective ppm	Eastern USA Background ppm	Kenyon-1 ppm
VOC - EPA Method 8260 (ppm)			
Methylene Chloride	0.1	N/A	N/D
Acetone	0.2	N/A	N/D
2-Butanone	0.3	N/A	N/D
Toluene	1.5	N/A	N/D
SVOC - EPA Method 8270 (ppm)			
No Compounds Detected		N/A	N/D
HERBICIDES - EPA Method 8150 (ppm)			
2,4 -D	0.5	N/A	N/D
TCL Pesticides/Aroclors EPA Method 8082 (ppm)			
4,4' - DDE	2.1	N/A	0.078
Priority Pollutant Metals (ppm)			
Aluminum	SB	33,000	11,000
Antimony	SB	N/A	38
Arsenic	7.5 or SB	3-12	5.1
Barium	300 or SB	15-600	83
Beryllium	0.16 or SB	0-1.75	N/D
Cadmium	1 or SB	0.1-1	2.3
Calcium	SB	130-35,000	9,500
Chromium	10 or SB	1.5-40	16
Cobalt	30 or SB	2.5-60	46
Copper	25 or SB	1-50	12
Iron	2000 or SB	2000-550,000	14,000
Lead	SB	See Note 5	23
Magnesium	SB	100-5000	3,300
Manganese	SB	50-5000	410
Mercury	0.1	0.001-0.2	N/D
Nickel	13 or SB	0.5-25	18
Potassium	SB	8500-43,000	1300
Selenium	2 or SB	0.1-3.9	1.2
Silver	SB	N/A	N/D
Sodium	SB	6000-8000	340
Thallium	SB	N/A	N/D
Vanadium	150 or SB	1-300	N/D
Zinc	20 or SB	9-50	81

Notes:

1. Only compounds detected in one or more samples are presented on this table. Refer to original data sheets for list of all compounds included in analysis.
2. Analytical testing completed by Upstate Laboratories, Inc.
3. Recommended soil cleanup objectives are based on the Division Technical and Administrative Guidance Memorandum (TAGM) 4046 on Determination of Soil Cleanup Objectives and Cleanup Levels in its final form.
4. ND = not detected, NA = not available
5. Background levels for lead vary widely. Average levels in undeveloped, rural areas may range from 4-61 ppm. Average background levels in metropolitan or suburban areas or near highways are much higher and typically range from 200-500 ppm.
6. mg/kg = ppm

SOIL-BENTONITE BARRIER WALL BORROW MATERIAL

The soil-bentonite barrier wall was required to have in-place permeability less than 1 x 10^{-7} cm/sec. Undisturbed tube samples were required to be tested for every 200 cubic yards of soil-bentonity mix. Slightly less than 2,000 cubic yards of soil-bentonite mix was placed for the barrier construction. Ten (10) tube samples were collected following barrier wall construction. The permeability test results for the undisturbed tube samples were measured to be less than 1 x 10^{-7} cm/sec meeting the project permeability criteria.

Borrow material for the construction of the soil-bentonite barrier wall for the McKenna Landfill Remedial Closure Project was obtained from the Barre Stone Products borrow pit located in Barre, New York. Pre-construction and laboratory testing consisted of natural moisture content (ASTM D2216), grain size analysis (ASTM D422), Atterberg limits (ASTM D4318) and chemical characterization testing. Included herein are the test results by GZA and CSC's laboratories for pre-construction and post-construction testing of the barrier wall. Based on the laboratory test results, GZA considered the Barre Stone borrow source acceptable for use as soil-bentonite barrier wall borrow material and that the barrier wall was constructed according to the project specifications. Table D21 summarizes GZA's geotechnical test results.

Chemical characterization analyses were done on the Barre Stone borrow material for the following parameters.

Parameter	**Extraction/Preparation** (1)	**Analysis** (1)
TCL(2) Volatile Organic Compounds	5050	8260 (95-1)
TCL Semi-Volatile Organic Compounds	3540/3550	8270 (95-2)
Pesticides/PCB's	3540/3550	8080
Herbicides	3580	8150
TAL(3) Metals	3050	95-M
Cyanide	----	9012

1 EPA SW-846.
2 TCL – Target Compound List.
3 TAL – Target Analyte List.

GZA reviewed the laboratory test results submitted by CSC's analytical laboratory, Upstate, and tabulated the compounds detected for each sample. A table of the compounds detected for each material type is included herein as Table D22, along with the laboratory data. GZA compared the reported chemical concentrations versus recommended soil cleanup objective values and eastern United States background values shown in the tables.

Based on GZA's review, the chemical characterization test results for this material was acceptable. Therefore, the Barre Stone borrow material was considered acceptable for soil-bentonite barrier wall construction.

Table D21

SUMMARY OF BULK SAMPLE LABORATORY TESTING
BARRE STONE PRODUCTS SLURRY WALL BORROW SOIL

WASTE MANAGEMENT OF NEW YORK
MCKENNA LANDFILL REMEDIAL CLOSURE PROJECT

SAMPLE NUMBER	MATERIAL TYPE	NATURAL MOISTURE CONTENT (%)	ATTERBERG LIMITS			GRADATION		MODIFIED PROCTOR		RECONSTITUTED PERMEABILITY			
			LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PLASTICITY INDEX	% FINER THAN #200 SEIVE	% FINER THAN 2 MICRONS	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE CONTENT (%)	PERMEABILITY (CM/SEC)	CONFINING PRESSURE (PSF)	TEST DRY DENSITY (PCF)	TEST MOISTURE CONTENT (%)
06070-1	Slurry Wall Borrow Soil	15.7	18	15	3	72	16						
06070-2	Slurry Wall Borrow Soil	15.2	18	15	3	74	15						

Table D22

Chemical Characterization Results for Sample
of Soil Proposed for Soil-Bentonite Barrier Wall
from the Barre Stone Quarry

McKenna Landfill Remedial Closure Project
Albion, New York

Parameter	Recommended Soil Cleanup Objective ppm	Eastern USA Background ppm	Soil-Bentonite Wall Barre Source ppm
VOC - EPA Method 8260 (ppm)			
Methylene Chloride	0.1	N/A	0.007
Acetone	0.2	N/A	N/D
2-Butanone	0.3	N/A	N/D
SVOC - EPA Method 8270 (ppm)			
No Compounds Detected		N/A	N/D
HERBICIDES - EPA Method 8150 (ppm)			
2,4 -D	0.5	N/A	N/D
TCL Pesticides/Aroclors EPA Method 8080 (ppm)			
4,4' - DDE	2.1	N/A	N/D
Priority Pollutant Metals (ppm)			
Aluminum	SB	33,000	5700
Antimony	SB	N/A	N/D
Arsenic	7.5 or SB	3-12	0.68
Barium	300 or SB	15-600	42
Beryllium	0.16 or SB	0-1.75	N/D
Cadmium	1 or SB	0.1-1	1.5
Calcium	SB	130-35,000	19,000
Chromium	10 or SB	1.5-40	9.6
Cobalt	30 or SB	2.5-60	22
Copper	25 or SB	1-50	9
Iron	2000 or SB	2000-550,000	6,700
Lead	SB	See Note 5	N/D
Magnesium	SB	100-5000	6,400
Manganese	SB	50-5000	160
Mercury	0.1	0.001-0.2	N/D
Nickel	13 or SB	0.5-25	15
Potassium	SB	8500-43,000	850
Selenium	2 or SB	0.1-3.9	0.2
Silver	SB	N/A	N/D
Sodium	SB	6000-8000	310
Vanadium	150 or SB	1-300	N/D
Zinc	20 or SB	9-50	59

Notes:
1. Only compounds detected in one or more samples are presented on this table. Refer to original data sheets for list of all compounds included in analysis.
2. Analytical testing completed by Upstate Laboratories, Inc.
3. Recommended soil cleanup objectives are based on the Division Technical and Administrative Guidance Memorandum (TAGM) 4046 on Determination of Soil Cleanup Objectives and Cleanup Levels in its final form.
4. ND = not detected, NA = not available
5. Background levels for lead vary widely. Average levels in undeveloped, rural areas may range from 4-61 ppm. Average background levels in metropolitan or suburban areas or near highways are much higher and typically range from 200-500 ppm.
6. mg/kg = ppm

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL: _ _ _ _
QC: _ _ _ Lab I.D.: 10170
Sampled by: Client

ID:14000079 Mat:Soil 29-00-0002 MCKENNA LANDFILL BORROW MATERIALS FOR 1700H 05/16/00 G
SLURRY WALL

	PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
	Percent Solids	90%	05/19/00		WD0313
	Total Cyanide	<1.0mg/kg dw	06/06/00		WD0423
Total	Aluminum	5700mg/kg dw	06/09/00		MB2436
Total	Antimony	<33mg/kg dw	06/09/00		MB2436
Total	Arsenic by furnace method	0.68mg/kg dw	05/30/00		MB2390
Total	Barium	42mg/kg dw	06/09/00		MB2436
Total	Beryllium	<0.55mg/kg dw	06/09/00		MB2436
Total	Cadmium	1.5mg/kg dw	06/09/00		MB2436
Total	Calcium	19000mg/kg dw	06/09/00		MB2436
Total	Chromium	9.6mg/kg dw	06/09/00		MB2436
Total	Cobalt	22mg/kg dw	06/09/00		MB2436
Total	Copper	9.0mg/kg dw	06/09/00		MB2436
Total	Iron	6700mg/kg dw	06/09/00		MB2436
Total	Lead	<11mg/kg dw	06/09/00		MB2436
Total	Magnesium	6400mg/kg dw	06/09/00		MB2436
Total	Manganese	160mg/kg dw	06/09/00		MB2436
Total	Mercury	<0.3mg/kg dw	05/26/00		MB2384
Total	Nickel	15mg/kg dw	06/09/00		MB2436
Total	Potassium	850mg/kg dw	06/12/00		MB2443
Total	Selenium by furnace method	0.20mg/kg dw	05/30/00		WD2391
Total	Silver	<5.5mg/kg dw	06/09/00		MB2436
Total	Sodium	310mg/kg dw	06/12/00		MB2443
Total	Thallium by furnace method	<0.4mg/kg dw	06/09/00		ME2863
Total	Vanadium	<33mg/kg dw	06/09/00		MB2436
Total	Zinc	59mg/kg dw	06/09/00		MB2436

TCL Volatiles by EPA Method 8260

	PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
	Chloromethane	<3ug/kg dw	05/30/00		VM2900
	Bromomethane	<3ug/kg dw	05/30/00		VM2900
	Vinyl Chloride	<2ug/kg dw	05/30/00		VM2900
	Chloroethane	<3ug/kg dw	05/30/00		VM2900
	Methylene Chloride	7ug/kg dw	05/30/00	44	VM2900
	Acetone	<11ug/kg dw	05/30/00		VM2900
	Carbon Disulfide	<3ug/kg dw	05/30/00		VM2900
	1,1-Dichloroethene	<3ug/kg dw	05/30/00		VM2900
	1,1-Dichloroethane	<3ug/kg dw	05/30/00		VM2900
	trans-1,2-Dichloroethene	<3ug/kg dw	05/30/00		VM2900
	cis-1,2-Dichloroethene	<3ug/kg dw	05/30/00		VM2900
	Chloroform	<3ug/kg dw	05/30/00		VM2900
	1,2-Dichloroethane	<3ug/kg dw	05/30/00		VM2900
	2-Butanone	<11ug/kg dw	05/30/00		VM2900
	1,1,1-Trichloroethane	<3ug/kg dw	05/30/00		VM2900
	Carbon Tetrachloride	<3ug/kg dw	05/30/00		VM2900
	Bromodichloromethane	<3ug/kg dw	05/30/00		VM2900

dw = Dry weight

DATE: / /

Upstate Laboratories, Inc.
Analysis Results
Report Number: 14000079
Client I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL: ____
QC: ____
Lab I.D.: 10170
Sampled by: Client

ID:14000079 Mat:Soil 29-00-0002 MCKENNA LANDFILL BORROW MATERIALS FOR 1700H 05/16/00 G
SLURRY WALL

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
1,2-Dichloropropane	<3ug/kg dw	05/30/00		VM2900
cis-1,3-Dichloropropene	<3ug/kg dw	05/30/00		VM2900
Trichloroethene	<3ug/kg dw	05/30/00		VM2900
Dibromochloromethane	<3ug/kg dw	05/30/00		VM2900
1,1,2-Trichloroethane	<3ug/kg dw	05/30/00		VM2900
Benzene	<3ug/kg dw	05/30/00		VM2900
trans-1,3-Dichloropropene	<3ug/kg dw	05/30/00		VM2900
Bromoform	<3ug/kg dw	05/30/00		VM2900
4-Methyl-2-pentanone	<11ug/kg dw	05/30/00		VM2900
2-Hexanone	<11ug/kg dw	05/30/00		VM2900
Tetrachloroethene	<3ug/kg dw	05/30/00		VM2900
1,1,2,2-Tetrachloroethane	<3ug/kg dw	05/30/00		VM2900
Toluene	<3ug/kg dw	05/30/00		VM2900
Chlorobenzene	<3ug/kg dw	05/30/00		VM2900
Ethylbenzene	<3ug/kg dw	05/30/00		VM2900
Styrene	<3ug/kg dw	05/30/00		VM2900
m-Xylene and p-Xylene	<3ug/kg dw	05/30/00		VM2900
o-Xylene	<3ug/kg dw	05/30/00		VM2900
TCL Semivolatiles by EPA Method 8270				
Phenol	<370ug/kg dw	06/01/00		SA2428
bis(2-Chloroethyl)ether	<370ug/kg dw	06/01/00		SA2428
2-Chlorophenol	<370ug/kg dw	06/01/00		SA2428
1,3-Dichlorobenzene	<370ug/kg dw	06/01/00		SA2428
1,4-Dichlorobenzene	<370ug/kg dw	06/01/00		SA2428
1,2-Dichlorobenzene	<370ug/kg dw	06/01/00		SA2428
2-Methylphenol	<370ug/kg dw	06/01/00		SA2428
2,2'-Oxybis(1-Chloropropane)	<370ug/kg dw	06/01/00		SA2428
4-Methylphenol	<370ug/kg dw	06/01/00		SA2428
n-Nitrosodi-n-propylamine	<370ug/kg dw	06/01/00		SA2428
Hexachloroethane	<370ug/kg dw	06/01/00		SA2428
Nitrobenzene	<370ug/kg dw	06/01/00		SA2428
Isophorone	<370ug/kg dw	06/01/00		SA2428
2-Nitrophenol	<370ug/kg dw	06/01/00		SA2428
2,4-Dimethylphenol	<370ug/kg dw	06/01/00		SA2428
bis(2-Chloroethoxy)methane	<370ug/kg dw	06/01/00		SA2428
2,4-Dichlorophenol	<370ug/kg dw	06/01/00		SA2428
1,2,4-Trichlorobenzene	<370ug/kg dw	06/01/00		SA2428
Naphthalene	<370ug/kg dw	06/01/00		SA2428
4-Chloroaniline	<370ug/kg dw	06/01/00		SA2428
Hexachlorobutadiene	<370ug/kg dw	06/01/00		SA2428
4-Chloro-3-methylphenol	<370ug/kg dw	06/01/00		SA2428
2-Methylnaphthalene	<370ug/kg dw	06/01/00		SA2428
Hexachlorocyclopentadiene	<370ug/kg dw	06/01/00		SA2428

dw = Dry weight

ATE: / /

pstate Laboratories, Inc.
nalysis Results
eport Number: 14000079
lient I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL:
QC:
Lab I.D.: 10170
Sampled by: Client

ID:14000079 Mat:Soil 29-00-0007 MCKENNA LANDFILL BORROW MATERIALS FOR 1700H 05/16/00 G
SLURRY WALL

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
2,4,6-Trichlorophenol	<370ug/kg dw	06/01/00		SA2428
2,4,5-Trichlorophenol	<370ug/kg dw	06/01/00		SA2428
2-Chloronaphthalene	<370ug/kg dw	06/01/00		SA2428
2-Nitroaniline	<3700ug/kg dw	06/01/00		SA2428
Dimethylphthalate	<370ug/kg dw	06/01/00		SA2428
Acenaphthylene	<370ug/kg dw	06/01/00		SA2428
2,6-Dinitrotoluene	<370ug/kg dw	06/01/00		SA2428
3-Nitroaniline	<3700ug/kg dw	06/01/00		SA2428
Acenaphthene	<370ug/kg dw	06/01/00		SA2428
2,4-Dinitrophenol	<3700ug/kg dw	06/01/00		SA2428
4-Nitrophenol	<3700ug/kg dw	06/01/00		SA2428
Dibenzofuran	<370ug/kg dw	06/01/00		SA2428
2,4-Dinitrotoluene	<370ug/kg dw	06/01/00		SA2428
Diethylphthalate	<370ug/kg dw	06/01/00		SA2428
4-Chlorophenylphenylether	<370ug/kg dw	06/01/00		SA2428
Fluorene	<370ug/kg dw	06/01/00		SA2428
4-Nitroaniline	<3700ug/kg dw	06/01/00		SA2428
2-Methyl-4,6-dinitrophenol	<3700ug/kg dw	06/01/00		SA2428
n-Nitrosodiphenylamine	<370ug/kg dw	06/01/00		SA2428
4-Bromophenylphenylether	<370ug/kg dw	06/01/00		SA2428
Hexachlorobenzene	<370ug/kg dw	06/01/00		SA2428
Pentachlorophenol	<740ug/kg dw	06/01/00		SA2428
Phenanthrene	<370ug/kg dw	06/01/00		SA2428
Anthracene	<370ug/kg dw	06/01/00		SA2428
Carbazole	<370ug/kg dw	06/01/00		SA2428
di-n-butylphthalate	<370ug/kg dw	06/01/00		SA2428
Fluoranthene	<370ug/kg dw	06/01/00		SA2428
Pyrene	<370ug/kg dw	06/01/00		SA2428
Butylbenzylphthalate	<370ug/kg dw	06/01/00		SA2428
3,3'-Dichlorobenzidine	<370ug/kg dw	06/01/00		SA2428
Benzo(a)anthracene	<370ug/kg dw	06/01/00		SA2428
Chrysene	<370ug/kg dw	06/01/00		SA2428
bis(2-Ethylhexyl)phthalate	<370ug/kg dw	06/01/00		SA2428
di-n-octylphthalate	<370ug/kg dw	06/01/00		SA2428
Benzo(b)fluoranthene	<370ug/kg dw	06/01/00		SA2428
Benzo(k)fluoranthene	<370ug/kg dw	06/01/00		SA2428
Benzo(a)pyrene	<370ug/kg dw	06/01/00		SA2428
Indeno(1,2,3-cd)pyrene	<370ug/kg dw	06/01/00		SA2428
Dibenzo(a,h)anthracene	<370ug/kg dw	06/01/00		SA2428
Benzo(ghi)perylene	<370ug/kg dw	06/01/00		SA2428
EPA Method 8150				
2,4-D	<3.6ug/kg dw	06/01/00		GA0107
2,4,5-T	<3.6ug/kg dw	06/01/00		GA0107

dw = Dry weight

TE: / /

state Laboratories, Inc.
alysis Results
port Number: 14000079
ient I.D.: CIMINELLI SERVICES GROUP CORP.

APPROVAL: _ _ _ _
QC: _ _ _ _
Lab I.D.: 10170
Sampled by: Client

):14000079 Mat:Soil 29-00-0002 MCKENNA LANDFILL BORROW MATERIALS FOR 1700H 05/16/00 G
SLURRY WALL

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
2,4,5-TP (Silvex)	<3.6ug/kg dw	06/01/00		GA0107
Dinoseb	<3.6ug/kg dw	06/01/00		GA0107
TCL Pesticides/Aroclors by EPA 8080				
BHC (a-isomer)	<1.9ug/kg dw	06/02/00		GA0111
BHC (b-isomer)	<1.9ug/kg dw	06/02/00		GA0111
BHC (d-isomer)	<1.9ug/kg dw	06/02/00		GA0111
BHC (g-isomer)	<1.9ug/kg dw	06/02/00		GA0111
Heptachlor	<1.9ug/kg dw	06/02/00		GA0111
Aldrin	<1.9ug/kg dw	06/02/00		GA0111
Heptachlor Epoxide	<1.9ug/kg dw	06/02/00		GA0111
Endosulfan I	<1.9ug/kg dw	06/02/00		GA0111
Dieldrin	<3.7ug/kg dw	06/02/00		GA0111
4,4'-DDE	<3.7ug/kg dw	06/02/00		GA0111
Endrin	<3.7ug/kg dw	06/02/00		GA0111
Endosulfan II	<3.7ug/kg dw	06/02/00		GA0111
4,4'-DDD	<3.7ug/kg dw	06/02/00		GA0111
Endosulfan Sulfate	<3.7ug/kg dw	06/02/00		GA0111
4,4'-DDT	<3.7ug/kg dw	06/02/00		GA0111
Methoxychlor	<19ug/kg dw	06/02/00		GA0111
Endrin Ketone	<3.7ug/kg dw	06/02/00		GA0111
Endrin Aldehyde	<3.7ug/kg dw	06/02/00		GA0111
alpha-Chlordane	<1.9ug/kg dw	06/02/00		GA0111
gamma-Chlordane	<1.9ug/kg dw	06/02/00		GA0111
Toxaphene	<189ug/kg dw	06/02/00		GA0111
Aroclor 1016	<1.9ug/kg dw	06/02/00		GA0111
Aroclor 1221	<1.9ug/kg dw	06/02/00		GA0111
Aroclor 1232	<1.9ug/kg dw	06/02/00		GA0111
Aroclor 1242	<1.9ug/kg dw	06/02/00		GA0111
Aroclor 1248	<1.9ug/kg dw	06/02/00		GA0111
Aroclor 1254	<1.9ug/kg dw	06/02/00		GA0111
Aroclor 1260	<1.9ug/kg dw	06/02/00		GA0111

ID:14000080 Mat:Soil 29-00-0002 MCKENNA LANDFILL GRID H2 1700H 05/16/00 G

	PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
	Percent Solids	91%	05/19/00		WD0313
	Total Cyanide	<1.1mg/kg dw	06/06/00		WD0423
Total	Aluminum	5900mg/kg dw	06/09/00		MB2436
Total	Antimony	<33mg/kg dw	06/09/00		MB2436
Total	Arsenic by furnace method	2.1mg/kg dw	05/30/00		MB2390
Total	Barium	51mg/kg dw	06/09/00		MB2436
Total	Beryllium	<0.54mg/kg dw	06/09/00		MB2436

dw = Dry weight

INQUIP ASSOCIATES, INC.

GEOTECHNICAL CONTRACTOR

SLURRY WALLS
SEEPAGE BARRIERS
FLEXIBLE LINERS
GROUTING

je.kp/0084

November 27, 2000
McLean Office

Ciminelli Services Corp.
170 Cooper Avenue, Suite 112
Tonawanda, NY 14150-6680

Attn: Mr. Thomas C. Andrews

RE: McKenna Landfill
Albion, NY

Dear Mr. Andrews:

Please find attached the results of the compatibility testing for the soil bentonite backfill. If I can provide additional information please contact me at 703-442-0143.

Best regards,

James C. Edwards
Vice President of Operations

WESTERN REGION P.O. Box 2182 • Santa Barbara, CA 93120 • (805)687-2007 • FAX (805)682-0396
EASTERN REGION P.O. Box 6277 • McLean, VA 22106 • (703)442-0143 • FAX (703)442-0188

JLT J&L TESTING COMPANY, INC.

GEOTECHNICAL AND GEOSYNTHETICS MATERIALS TESTING AND RESEARCH

November 7, 2000
2KS2551-02

Inquip Associates, Inc.
P.O. Box 6277
McLean, VA 22106

RECEIVED
NOV 14 2000

Attn: Jim Edwards

RE: EPA 9100 COMPATIBILITY RESULTS
McKENNA LANDFILL PROJECT

Dear Mr. Edwards:

J&L Testing Company, Inc. (JLT) is pleased to submit the compatibility test results of S-B Mix No. 1 for the above referenced project. Testing was performed in accordance with ASTM D-5084 (EPA 9100) and subject to JLT's internal QA/QC and data validation procedures.

We appreciate the opportunity to provide our services and look forward to working with you again. Should you have any questions, comments or require additional information, please call. Thank you.

Sincerely,

J&L TESTING COMPANY, INC.

John Boschuk, Jr., P.E., REP
Technical Consultant

Enclosures
JB/rdo
\wp9\letter\415

SUMMARY OF FLEX WALL COMPATIBILITY TEST RESULTS

ASTM D-5084 (Method A) : EPA 9100

JLT

Client	:	Inquip Associates	Date	:	09-20-00
Project Location	:	McKenna Landfill Project	Job No.	:	2KS2551-02
Sample Number	:	S-B Mix No. 1	Tested By	:	MLB/DL
Description	:	Imported Borrow	Checked By	:	JB
Permeant Fluid	:	Leachate			
			Spec. Gravity	:	2.62 Assumed

Physical Property Data

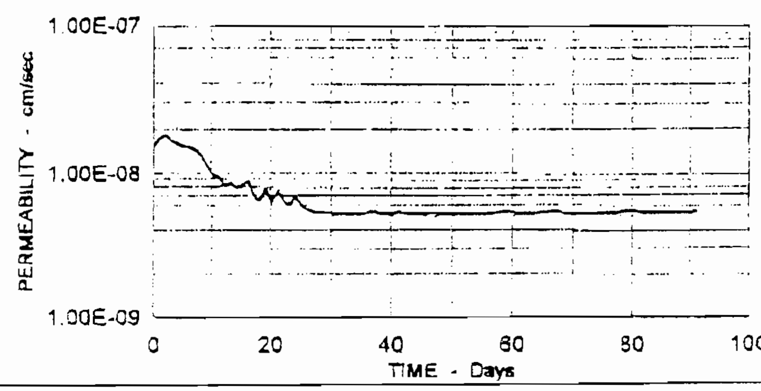
Initial Height (in)	:	1.51	Final Height (in)	:	1.51
Initial Diameter (in)	:	2.80	Final Diameter (in)	:	2.75
Initial Wet Weight (g)	:	320.10	Final Wet Weight (g)	:	299.20
Wet Density (pcf)	:	131.04	Wet Density (pcf)	:	126.98
Moisture Content %	:	17.90	Moisture Content %	:	21.78
Dry Density (pcf)	:	111.14	Dry Density (pcf)	:	104.27
Initial Void Ratio	:	0.4710	Final Void Ratio	:	0.5680
Saturation , %	:	99.6	Saturation , %	:	100.5

Test Parameters

Fluid	:	Leachate	**Effective**		
Cell Pressure (psi)	:	60.00	**Confining Pressure (psi)**	:	10
Head Water (psi)	:	50.70	Gradient	:	25.59
Tail Water (psi)	:	49.30			

Permeability Input Data

Flow, Q	(cc)	:	0.45
Length, L	(in)	:	1.51
Area, A	(sqin)	:	5.94
Head, h	**(psi)**	**:**	**1.40**
Time, t	(min)	:	1389.00
Temp, T	(Deg C)	:	21.0



Computed Permeability

PERMEABILITY, K = 5.49E-09 (cm/sec) at **20 Degrees C**
AT 91 DAYS

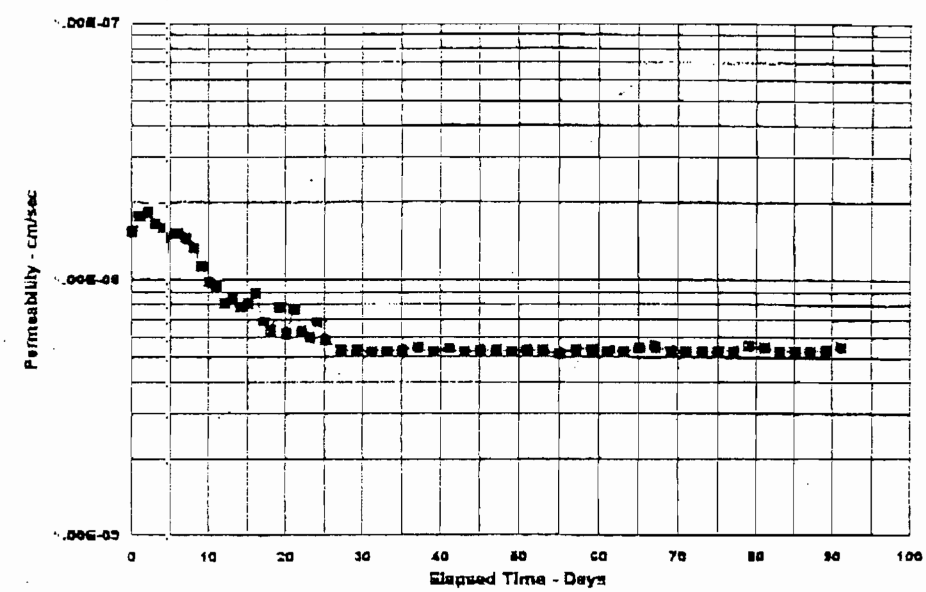
COMPATIBILITY TEST RESULTS

McKenna Landfill Project

1% Bentonite by Dry Weight Conditioned with 40 sec Slurry to Achieve a 6-Inch Slump

Date	Elps'd Time Days	Compt'd Permeability	Inflow cc	Inflow Pore Vol	
06/20/00	0	1.54E-08	0.00	0.0%	< Pond Water
06/21/00	1	1.77E-08	0.50	1.0%	< Transfer to Leachate
06/22/00	2	1.83E-08	1.80	3.3%	< First Full Day with Leachate
06/23/00	3	1.65E-08	3.00	6.2%	
06/24/00	4	1.59E-08	4.50	9.2%	
06/25/00	5	1.51E-08	5.25	10.8%	
06/26/00	6	1.51E-08	5.85	12.0%	
06/27/00	7	1.45E-08	7.30	15.0%	
06/28/00	8	1.33E-08	8.30	17.0%	
06/29/00	9	1.13E-08	9.30	19.1%	
06/30/00	10	9.78E-09	10.00	20.5%	
07/01/00	11	9.48E-09	10.90	22.3%	
07/02/00	12	8.11E-09	11.60	23.8%	
07/03/00	13	8.64E-09	12.30	25.2%	
07/04/00	14	7.94E-09	13.00	26.7%	
07/05/00	15	8.21E-09	13.70	28.1%	
07/06/00	16	8.80E-09	14.50	29.7%	
07/07/00	17	6.90E-09	15.10	31.0%	
07/08/00	18	6.41E-09	15.90	32.6%	
07/09/00	19	7.90E-09	16.60	34.0%	
07/10/00	20	6.20E-09	17.00	34.9%	
07/11/00	21	7.69E-09	17.80	36.5%	
07/12/00	22	6.36E-09	18.30	37.5%	
07/13/00	23	6.00E-09	18.85	38.7%	
07/14/00	24	6.93E-09	19.40	39.8%	
07/15/00	25	5.90E-09	20.00	41.0%	
07/17/00	27	5.37E-09	20.80	42.6%	
07/19/00	29	5.34E-09	22.40	45.9%	
07/21/00	31	5.30E-09	23.30	47.8%	
07/23/00	33	5.28E-09	24.20	49.6%	
07/25/00	35	5.33E-09	25.10	51.5%	
07/27/00	37	5.44E-09	26.00	53.3%	
07/29/00	39	5.22E-09	27.00	55.4%	
07/31/00	41	5.42E-09	27.90	57.2%	
08/02/00	43	5.26E-09	28.70	58.8%	
08/04/00	45	5.31E-09	29.60	60.7%	
08/06/00	47	5.36E-09	30.50	62.5%	
08/08/00	49	5.27E-09	31.30	64.2%	
08/10/00	51	5.33E-09	32.20	66.0%	
08/12/00	53	5.32E-09	33.10	67.8%	
08/14/00	55	5.21E-09	34.20	70.1%	
08/16/00	57	5.37E-09	35.10	72.0%	
08/18/00	59	5.39E-09	36.00	73.8%	
08/20/00	61	5.30E-09	36.90	75.7%	
08/22/00	63	5.29E-09	37.80	77.5%	
08/24/00	65	5.44E-09	38.90	79.8%	
08/26/00	67	5.49E-09	40.10	82.2%	
08/28/00	69	5.33E-09	40.50	83.0%	
08/30/00	71	5.29E-09	41.40	84.9%	
09/01/00	73	5.24E-09	42.50	87.1%	
09/03/00	75	5.30E-09	43.40	89.0%	
09/05/00	77	5.33E-09	44.30	90.8%	
09/07/00	79	5.55E-09	45.55	93.4%	
09/09/00	81	5.44E-09	46.65	95.7%	
09/11/00	83	5.31E-09	47.65	97.7%	
09/13/00	85	5.29E-09	48.55	99.5%	
09/15/00	87	5.30E-09	49.45	101.4%	
09/17/00	89	5.34E-09	50.35	103.2%	
09/19/00	91	5.49E-09	51.45	105.5%	
09/21/00	93				
09/23/00	95				
09/25/00	97				
09/27/00	99				
09/29/00	101				

Initial Perm. with Pond Water = 1.54E-08 cm/sec
Initial Sample Height = 1.51 inches
Computed Pore Volume = 48.77 cc
Pore Fluid = Leachate



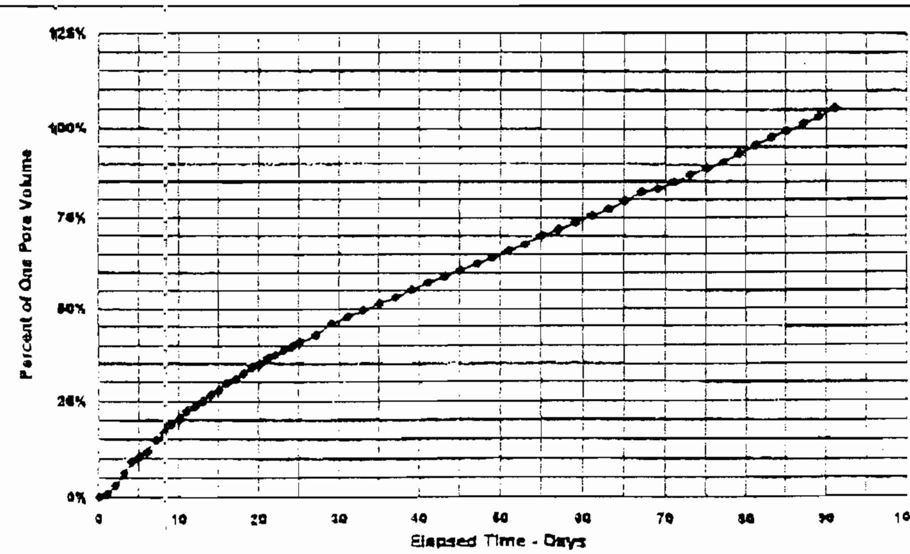


FIGURE 1

INQUIP
Associates, Inc.

Daily Construction Report
Soil Bentonite Slurry Wall

PROJECT: McKenna

GENERAL CONTRACTOR: Inquip Associates Inc.

Date: 7-21-00

Report No.: 1

Bentonite Slurry Test Results: (P)ond, (D)ischarge and (T)rench at "X" feet

Test Number	Time	Location	Marsh Funnel	Density	Filtrate Loss	Depth	Notes
1	3:00	P	40	65	13	0	Backfill
2	4:30	T	40	66	22	6'	
							Backfill Previous
							Backfill Today
							Backfill Todate

Excavation Data					Backfill		Square Footage		
Station	Platform Elevation	Depth of Trench		Elevation at Bottom	Station	Depth	Sq. Ft	Total Sq. Ft	Prev Days Total Sq. Ft
35+79		0							
35+67		6							
35+57		11							
35+47		16							
37		16							
27		16							
17		15.5							
07		15							
35+00		15							
34+90		15							
34+80		15							

Contractors Verification: The above report is complete and correct and all materials and equipment used and work performed during this reporting period are in compliance with the contract plans and specifications except as noted above.

Submitted By: [signature]

Distribution Gen. Contractor ( ); Engineer ( ); Q.C. ( ); Inquip Site Office ( ); Inquip Regional Office CA ( ) or VA ( )

Signed by ____________ Signed by ____________

INQUIP
Associates, Inc.

Daily Construction Report
Soil Bentonite Slurry Wall

PROJECT: Mckenna Landfill

GENERAL CONTRACTOR: Inquip Associates Inc.

Date: July 22-00

Report No.:

Bentonite Slurry Test Results: (P)ond, (D)ischarge and (T)rench at "X" feet

Test Number	Time	Location	Marsh Funnel	Density	Filtrate Loss	Depth	Notes
							Backfill
1	8:45	35+40	43	73	15.2	7'	
2	11:35	34+85	42	72	15.6	10'	[illegible] at 123 lbs.
3	11:45	P	40	65	13	10	
4	4:05	P	41	65	13.5	10	

Backfill Previous

Backfill Today

Backfill Todate

Excavation Data: Station	Platform Elevation	Depth of Trench	Elevation at Bottom	Backfill: Station	Depth	Square Footage: Sq. Ft	Total Sq. Ft	Prev Days Total Sq. Ft
34+70		16		35+47	0	112		
60		16		35+40	0	160		
50		15.5		30	0	160		
40		15		20	0	160		
30		16		10	0	150		
20		14		35+00	0	150		
10		14		34+90	1.5			
00		13.5		80	3			
33+90		14.5		70	4.5			
80		13.5		60	6			
70		14		50	7			
60		13.5		40	9			
50		13.5		30	10			
				20	11			
				10	12			
34+97		15		34+00	13.5	Toe		
				33+90	14.5			
				80	13.5			
				70	14			
				60	13.5			
				50	13.5			

Contractors Verification: The above report is complete and correct and all materials and equipment used and work performed during this reporting period are in compliance with the contract plans and specifications except as noted above.

Submitted By: [signature]

Distribution Gen. Contractor ( ); Engineer ( ); Q.C. ( ); Inquip Site Office ( ); Inquip Regional Office CA ( ) or VA ( )

Signed by ____________ Signed by ____________

INQUIP Associates, Inc.

Daily Construction Report
Soil Bentonite Slurry Wall

PROJECT: Mckenna Landfill

GENERAL CONTRACTOR: Inquip Associates Inc.

Date: 7-24-00

Report No.: 3

Bentonite Slurry Test Results: (P)ond, (D)ischarge and (T)rench at "X" feet

Test Number	Time	Location	Marsh Funnel	Density	Filtrate Loss	Depth	Notes
1	8:45	34+25	49		16	10'	Backfill
2	9:30	33+30	50		15.9	11'	4 1/2" at 123.7 pcf 34+70
3	10:15	P	40		19.8	D	
4	2:40	32+70	46		14.1	11'	
5	3:00	P	41.5		13.6	D	

Backfill Previous

Backfill Today

Backfill Todate

Excavation Data: Station	Platform Elevation	Depth of Trench	Elevation at Bottom	Backfill: Station	Depth	Square Footage: Sq. Ft	Total Sq. Ft	Prev Days Total Sq. Ft
33+40		14		35+00	0			
30		14		33+50	0			
20		14.5		40	1			
10		14.5		30	2			
33+00		15		20	2.5			
32+90		15		10	3			
80		15		33+00	4			
70		15		32+90	5			
60		15		80	7			
50		15		70	9			
40		15		60	9.5			
30		14		50	10			
20		14		40	11			
10		14.5		30	12			
32+00		14.5		20	12.5			
31+90		15		10	13			
80		15		32+00	13.5	← Toe		
70		13		31+90	15			
60		14.5		80				
50		14.5		70				
				60				
				50				

Contractors Verification: The above report is complete and correct and all materials and equipment used and work performed during this reporting period are in compliance with the contract plans and specifications except as noted above.

Submitted By: [signature]

Distribution Gen. Contractor ( ); Engineer ( ); Q.C. ( ); Inquip Site Office ( ); Inquip Regional Office CA ( ) or VA ( )

Signed by ____________________ Signed by ____________________

Quality Inspection Services, Inc.

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Visit Us At: www.qisi.com *E-Mail:* buffalo@qisi.com

Soil Bentonite
Field Test Work Sheet

PROJECT: McKenna Landfill DATE: 7-24-00
CLIENT: Inquip, Inc WORK ORDER #: BW000724
CONTRACTOR: Inquip, Inc PROJECT #: BT-00-062

Test No.	Time Sampled	Location		Temp (°F)	Marsh Funnel	Gel Strength	Filtrate Loss	pH	Sand %	Density	Comments
		Sta.	Depth								
1	8:15 AM	34+25		70.0	49.0	—	16.0	9	—	78.9	
2	9:30 AM	33+30		72.0	50.0	—	15.9	9	—	83.5	
3	10:15 AM	POND		66.0	40.0	—	19.8	9	—	65.1	
4	2:40 PM	32+70		73.5	46.0	—	14.1	9	—	75.8	
5	3:00 PM	POND		78.5	41.5	—	13.6	9	—	65.2	

Gradation Sample:			Slump Test:		Backfill Slope:				
No.	Location	Time	Sta.	Slump	Sta.	Depth	Sta.	Depth	Comments
1			34+70	4 1/2					UW = 123.7 PCF

Submitted By: Brian J Wozniak Date: 7-24-00

AWS

Sustaining Member

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For Job Satisfaction - Think Quality

INQUIP Associates, Inc.

Daily Construction Report
Soil Bentonite Slurry Wall

PROJECT: Mckenna Landfill

GENERAL CONTRACTOR: Inquip Associates Inc.

Date: 7-25-00

Report No.: 4

Bentonite Slurry Test Results: (P)ond, (D)ischarge and (T)rench at "X" feet

Test Number	Time	Location	Marsh Funnel	Density	Filtrate Loss	Depth	Notes
							Backfill
1	9:15	32+00	48	78.6	15.7	10'	1 9:15 33+90 4½" @ 123.9
2	10:20	P	46	65.5	16.5	D	2 11:00 33+20 4⅝" @ 123.2
3	10:55	31+30	49.5	79.6	17.1	12'	
4	1:05	P	40.0	65.1	13.2	D	
5	3:30	30+60	45.5	79.4	16.3	12'	
							Backfill Previous
							Backfill Today
							Backfill Todate

Excavation Data				Backfill		Square Footage		
Station	Platform Elevation	Depth of Trench	Elevation at Bottom	Station	Depth	Sq. Ft	Total Sq. Ft	Prev Days Total Sq. Ft
31+40		16		33+50	0			
30		15		~~[illegible]~~				
20		15		32+20	0			
10		15		10	1.5			
31+00		16.5		+00	2			
30+90		16		31+90	3			
80		15.5		80	3.5			
70		15		70	4			
60		15		60	5.5			
50		16		50	7			
40		15		40	8			
30		15		30	9.5			
20		15		20	10			
				10	10.5			
				31+00	11			
				30+90	11.5			
				80	13			
				70	13.5	– [illegible]		
				60	15			

Contractors Verification: The above report is complete and correct and all materials and equipment used and work performed during this reporting period are in compliance with the contract plans and specifications except as noted above.

Submitted By: [signature]

Distribution Gen. Contractor ( ); Engineer ( ); Q.C. ( ); Inquip Site Office ( ); Inquip Regional Office CA ( ) or VA ( )

Signed by ______________________ Signed by ______________________

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Soil Bentonite
Field Test Work Sheet

PROJECT: Mc Kenna Landfill DATE: 7-25-00
CLIENT: Inquip, Inc WORK ORDER #: BC2000224
CONTRACTOR: Inquip, Inc PROJECT #: BT-00-062

Test No.	Time Sampled	Location Sta.	Location Depth	Temp (°F)	Marsh Funnel	Gel Strength	Filtrate Loss	pH	Sand %	Density	Comments
1	9:15 Am	32+00		77.0	48.0	–	15.7	8	–	78.6	
2	10:20 Am	Pond		105.3	40.0	–	16.5	9	–	65.5	
3	10:55 Am	31+30		75.5	49.5	–	17.1	8	–	79.6	
4	1:05 Pm	Pond		119.2	40.0	–	13.2	9	–	65.1	
5	3:30 Pm	30+60		78.8	45.5	–	16.3	8	–	79.4	

Gradation Sample:			Slump Test:		Backfill Slope:				
No.	Location	Time	Sta.	Slump	Sta.	Depth	Sta.	Depth	Comments
1		9:15 Am	33+90	4 1/2					UW = 123.9 PCF
2		11:00 Am	33+20	4 5/8					UW = 123.2 PCF

Submitted By: Brian J. Wagner Date: 7-25-00

AWS

Sustaining Member

INQUIP Associates, Inc.

Daily Construction Report
Soil Bentonite Slurry Wall

PROJECT: McKeanna LandFill

GENERAL CONTRACTOR: Inquip Associates Inc.

Date: July 26 - 2000

Report No.: 5

Bentonite Slurry Test Results: (P)ond, (D)ischarge and (T)rench at "X" feet

Test Number	Time	Location	Marsh Funnel	Density	Filtrate Loss	Depth	Notes
							Backfill
1	7:55	P	42.5	65.3	16.4		
2	1040	29+90	53	80.5	16.4	11'	1 8:30 32+50 4¼" @ 123.5
3	2:25	P	43	65.4	15.1		2 12:00 31+90 4¼" 123.6

Backfill Previous

Backfill Today

Backfill Todate

Excavation Data: Station	Platform Elevation	Depth of Trench	Elevation at Bottom	Backfill: Station	Depth	Square Footage: Sq. Ft	Total Sq. Ft	Prev Days Total Sq. Ft
30+10		15.5		32+20	0			
00		16		31+10	0			
29+90		16		00	1.5			
80		15.5		30+90	3.5			
70		14.5		80	6			
60		14		70	7			
50		14.5		60	8.5			
40		14		50	10			
30		14		40	11			
20		14		30	11.5			
10		13.5		20	12			
29+00		14		10	12			
				30+00	13			
				29+90	14			
				80	15	— Toe		
				70	14.5			

Contractors Verification: The above report is complete and correct and all materials and equipment used and work performed during this reporting period are in compliance with the contract plans and specifications except as noted above.

Submitted By: Bill [signature]

Distribution Gen. Contractor ( ); Engineer ( ); Q.C. ( ); Inquip Site Office ( ); Inquip Regional Office CA ( ) or VA ( )

Signed by ______________________ Signed by ______________________

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Soil Bentonite
Field Test Work Sheet

PROJECT: McKENNA LANDFILL DATE: 7-26-00
CLIENT: INQUIP, INC WORK ORDER #: BW000724
CONTRACTOR: INQUIP, INC PROJECT #: BT-00-062

Test No.	Time Sampled	Location Sta.	Location Depth	Temp (°F)	Marsh Funnel	Gel Strength	Filtrate Loss	pH	Sand %	Density	Comments
1	7:55 AM	POND		72.2	42.5	—	16.4	9	—	65.3	
2	10:40 AM	29+90		78.1	53.0	—	16.4	8	—	80.5	
3	2:25 PM	POND		81.6	43.0	—	15.1	9	—	65.4	

Gradation Sample:			Slump Test:		Backfill Slope:				
No.	Location	Time	Sta.	Slump	Sta.	Depth	Sta.	Depth	Comments
1	8:30 AM →		32+50	4 1/4					UW = 123.5 PCF
2		12:00 P	31+80	4 1/4					UW = 123.6 PCF

Submitted By: Brian [illegible] Date: 7-26-00

AWS

Sustaining Member

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For Job Satisfaction - Think Quality

INQUIP
Associates, Inc.

Daily Construction Report
Soil Bentonite Slurry Wall

PROJECT: Mckenna Landfill

GENERAL CONTRACTOR: Inquip Associates Inc.

Date: 7-27-00

Report No.: 6

Bentonite Slurry Test Results: (P)ond, (D)ischarge and (T)rench at "X" feet

Test Number	Time	Location	Marsh Funnel	Density	Filtrate Loss	Depth	Notes
1	9:00	29+0	56	81	16.3	13'	Backfill
2	1:00	28+50	56	82	16.4	13	31+20 9.5" @ 123. Perm
3	1:30	P	40	65.5	15.2	D	30+50 9.5" @ 123

Backfill Previous

Backfill Today

Backfill Todate

Excavation Data: Station	Platform Elevation	Depth of Trench	Elevation at Bottom	Backfill: Station	Depth	Square Footage: Sq. Ft	Total Sq. Ft	Prev Days Total Sq. Ft
28+90		14		31+10	0			
80		14		29+70	0			
70		14		60	1			
60		14.5		50	2			
50		14		40	3			
40		14		30	5			
30		14		20	6.5			
20		14		10	7.5			
10		14		00	9			
00		13.5		28+90	11			
27+90		13.5		80	13.5			
				70	13.5	← To		
				60	14			
				50	14			
				40	14			
				30	14			
				20	14			
				10	14			
				00	13.5			
				27+90	13.5			

Contractors Verification: The above report is complete and correct and all materials and equipment used and work performed during this reporting period are in compliance with the contract plans and specifications except as noted above.

Submitted By: [signature]

Distribution Gen. Contractor ( ); Engineer ( ); Q.C. ( ); Inquip Site Office ( ); Inquip Regional Office CA ( ) or VA ( )

Signed by ______________________ Signed by ______________________

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Soil Bentonite Field Test Work Sheet

PROJECT: McKENNA LANDFILL
CLIENT: INQUIP ASSOC., INC.
CONTRACTOR: INQUIP ASSOC., INC.

DATE: 7-27-00
WORK ORDER #: KJD000727
PROJECT #: BT-00-062

Test No.	Time Sampled	Location Sta.	Location Depth	Temp. (°F)	Marsh Funnel	Gel Strength	Filtrate Loss	pH	Sand %	Density	Comments
1	9:00	29+00		73°	56	—	16.2	8.0	—	81.0	
2	1:00	28+50		73°	56		16.4	8.0		82.0	
3	1:30	POND		83°	40	—	15.2	9.0	—	65.5	Bentonite content sample

Gradation Sample: No.	Location	Time	Slump Test: Sta.	Slump	Backfill Slope: Sta.	Depth	Sta.	Depth	Comments
			31+20	4.5					u.w. = 123.0 (perm sample Inquip)
			30+50	4.5					u.w. = 123.0

Submitted By: Kevin J. Dawes

Date: 7-27-00

AWS
Sustaining Member

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INQUIP
Associates, Inc.

Daily Construction Report
Soil Bentonite Slurry Wall

PROJECT: Mckenna Landfill

GENERAL CONTRACTOR: Inquip Associates Inc.

Date: 7-28-00

Report No.: 7

Bentonite Slurry Test Results: (P)ond, (D)ischarge and (T)rench at "X" feet

Test Number	Time	Location	Marsh Funnel	Density	Filtrate Loss	Depth	Notes
1	900	28+00	55	81.5		12'	Backfill
2	1100	27+50	56	82		12'	29+80 4 1/4 @ 122.5 Perm 8
3	1240	P	41	66		D	29+10 4.5 @ 122.5
4	100	27+00	56	82		12'	
5	145	P	40	65.5		D	
							Backfill Previous
							Backfill Today
							Backfill Todate

Excavation Data: Station	Platform Elevation	Depth of Trench		Elevation at Bottom	Backfill: Station	Depth	Square Footage: Sq. Ft	Total Sq. Ft	Prev Days Total Sq. Ft
27+80		14.5			29+70	0			
70		15			28+00	0			
60		15			27+90	1			
50		14.5			80	1.5			
40		14			70	2.5			
30		14			60	3			
20		14			50	4.5			
10		14.5			40	6.5			
00		14.5			30	7			
26+90		14.5			20	9			
80		14			10	10.5			
70		14			00	11.5			
60		14			26+90	13.5	Th		
50		13.5			80	14			
					70	14			
		~~2000~~			60	14			
					50	13.5			

Contractors Verification: The above report is complete and correct and all materials and equipment used and work performed during this reporting period are in compliance with the contract plans and specifications except as noted above.

Submitted By: [signature]

Distribution Gen. Contractor ( ); Engineer ( ); Q.C. ( ); Inquip Site Office ( ); Inquip Regional Office CA ( ) or VA ( )

Signed by ______________________ Signed by ______________________

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Soil Bentonite Field Test Work Sheet

PROJECT: McKENNA LANDFILL DATE: 7-28-00
CLIENT: INQUIP ASSOC., INC. WORK ORDER #: KJDE000727
CONTRACTOR: INQUIP ASSOC., INC. PROJECT #: BT-00-062

Test No.	Time Sampled	Location Sta.	Location Depth	Temp (°F)	Marsh Funnel	Gel Strength	Filtrate Loss	pH	Sand %	Density	Comments
1	9:00	28+0		73	55	—	16.4	8.0	—	81.5	
2	11:00	27+50		73	56	—	16.2	8.0	—	82.0	
3	12:40	POND		78	41	—	15.0	9.0	—	66.0	Bentonite content sample
4	1:00	27+0		73	56	—	16.2	8.0	—	82.0	
5	1:45	POND		78	40	—	15.2	9.0	—	65.5	Bentonite content

Gradation Sample: No.	Location	Time	Slump Test: Sta.	Slump	Backfill Slope: Sta.	Depth	Sta.	Depth	Comments
			29+80	4.25					U.W. = 122.5 pcf (perm sample)
			29+10	4.5					U.W. = 122.5 pcf

Submitted By: Kevin J Dormer Date: 7-28-00

AWS
Sustaining Member

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INQUIP Associates, Inc.

Daily Construction Report
Soil Bentonite Slurry Wall

PROJECT: Mckenna Land Fill

GENERAL CONTRACTOR: Inquip Associates Inc.

Date: 7-29-00

Report No.:

Bentonite Slurry Test Results: (P)ond, (D)ischarge and (T)rench at "X" feet

Test Number	Time	Location	Marsh Funnel	Density	Filtrate Loss	Depth	Notes			
1	930	P	43.5	65	16.6	D	Backfill			
2	1000	26+50	54	82.2	16.3	12'	28+40	4 3/8	122.5	Sample
3	1100	26+00	55+5	80.2	15.6	12'	27+70	4 1/4	122.6	
4	1240	P	43	65	16.6	D	27+00	4 1/4	122.6	sample
5	115	25+50	58	83	16.1	12'	26+30	4 1/4	122.5	

Backfill Previous

Backfill Today

Backfill Todate

Excavation Data					Backfill		Square Footage		
Station	Platform Elevation	Depth of Trench		Elevation at Bottom	Station	Depth	Sq. Ft	Total Sq. Ft	Prev Days Total Sq. Ft
26+40		14			28+00	0			
30		14			26+20	0			
20		13.5			10	1			
10		12.5			00	2			
00		12.5			25 90	3			
25+90		13			25 80	4.5			
80		13			70	6			
70		12.5			60	8			
60		12.5			50	9			
50		13			40	10.5			
40		14			30	11			
30		14.5			25+20	13	Tue		
20		14			10	13			
10		13							
~~[illegible]~~									

Contractors Verification: The above report is complete and correct and all materials and equipment used and work performed during this reporting period are in compliance with the contract plans and specifications except as noted above.

Submitted By: [signature]

Distribution Gen. Contractor ( ); Engineer ( ); Q.C. ( ); Inquip Site Office ( ); Inquip Regional Office CA ( ) or YA ( )

Signed by ______________________ Signed by ______________________

Quality Inspection Services, Inc.

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Soil Bentonite
Field Test Work Sheet

PROJECT: McKenna Landfill
DATE: 7-29-00
CLIENT: Inquip, Inc
WORK ORDER #: BW000729
CONTRACTOR: Inquip, Inc
PROJECT #: BT-00-062

Test No.	Time Sampled	Location Sta.	Location Depth	Temp (°F)	Marsh Funnel	Gel Strength	Filtrate Loss	pH	Sand %	Density	Comments
1	9:30 AM	POND		78.0	43.5	—	16.6	9	—	65.1	BENTONITE CONTENT SAMPLE
2	10:00 AM	26+50		74.8	54.0	—	16.3	8	—	82.2	
3	11:00 AM	26+00		74.9	54.5	—	15.6	8	—	80.3	
4	12:40 PM	POND		78.2	43.0	—	16.6	9	—	65.0	B.C. SAMPLE
5	1:45 PM	25+50		75.2	58.0	—	16.1	8	—	83.0	

Gradation Sample: No.	Location	Time	Slump Test: Sta.	Slump	Backfill Slope: Sta.	Depth	Sta.	Depth	Comments
			28+40	4 3/8					UW = 122.5 PCF (PEAN SAMPLE)
			27+70	4 1/4					UW = 122.6 PCF
			27+10	4 1/4					UW = 122.6 PCF (PEAN SAMPLE)
			26+30	4 1/4					UW = 122.5 PCF

Submitted By: [signature]

Date: 7-29-00

AWS
Sustaining Member

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For Job Satisfaction - Think Quality

Jun 26 00 02:00p INQUIP ASSOC INC 863 428 9317 p.2

INQUIP Associates, Inc.

Daily Construction Report
Soil Bentonite Slurry Wall

PROJECT: McKenna Landfill

GENERAL CONTRACTOR: Inquip Associates Inc.

Date: 7-30

Report No.:

Bentonite Slurry Test Results: (P)ond, (D)ischarge and (T)rench at "X" feet

Test Number	Time	Location	Marsh Funnel	Density	Filtrate Loss	Depth	Notes
1	900	P	41	65	16.8	D	Backfill
2	930	25+20	58	83	16.4	12'	25+60 4¼ @ 122 Perm
3	1100	24+50	57	82.5	16.2	12'	24+90 4½ @ 122.5
4	115	24+00	61	83	16.4	12'	
5	135	P	40	65	16.8	D	

Backfill Previous

Backfill Today

Backfill Todate

Excavation Data: Station	Platform Elevation	Depth of Trench		Elevation at Bottom	Backfill: Station	Depth	Square Footage: Sq. Ft	Total Sq. Ft	Prev Days Total Sq. Ft
25+00		14.5			26+20	0			
2490		14			24+30	0			
80		14			20	1			
70		14			10	2.5			
60		14			00	4			
50		13.5			23+90	6			
40		14.5			80	8			
30 20		14.5 14			70	9.5			
10		14			60	11			
2400		14			50	12			
23+90		14			40	13	Toe		
80		14.5			30	14			
70		14.5							
60		14.5							
50		14.5							
40		14							
30		14							

Contractors Verification: The above report is complete and correct and all materials and equipment used and work performed during this reporting period are in compliance with the contract plans and specifications except as noted above.

Submitted By: [signature]

Distribution Gen. Contractor ( ); Engineer ( ); Q.C. ( ); Inquip Site Office ( ); Inquip Regional Office CA ( ) or VA ( )

Signed by ______________ Signed by ______________

QIS

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Soil Bentonite
Field Test Work Sheet

PROJECT: McKENNA LANDFILL DATE: 7-31-00
CLIENT: INQUIP Assoc., Inc WORK ORDER #: KJD000731
CONTRACTOR: INQUIP Assoc., Inc. PROJECT #: BT-00-062

Test No.	Time Sampled	Location Sta.	Location Depth	Temp. (°F)	Marsh Funnel	Gel Strength	Filtrate Loss	pH	Sand %	Density	Comments
1	9:00	POND		77	41	–	16.8	9.0	–	65.0	Bentonite content
2	9:30	25+00		73	58	–	16.4	8.0	–	83.0	
3	11:00	24+50		73	57	–	16.2	8.0	–	82.5	
4	1:15	24+00		73	61	–	16.4	8.0	–	83.0	
5	1:35	POND		79	40	–	16.8	9.3	–	65.0	Bentonite content

Gradation Sample: Slump Test: Backfill Slope:

No.	Location	Time	Sta.	Slump	Sta.	Depth	Sta.	Depth	Comments
			25+60	4.25					U.W. = 122.0pcf (PERM SAMPLE
			24+90	4.25					U.W. = 122.5pcf

FAX 589-4054

To BRIAN

Submitted By: [signature] Date: 7-31-00

AWS
Sustaining Member

INQUIP Associates, Inc.

Daily Construction Report
Soil Bentonite Slurry Wall

PROJECT: Mckenna Land Fill

GENERAL CONTRACTOR: Inquip Associates Inc.

Date: 8-1-00

Report No.:

Bentonite Slurry Test Results: (P)ond, (D)ischarge and (T)rench at "X" feet

Test Number	Time	Location	Marsh Funnel	Density	Filtrate Loss	Depth	Notes
1	800	P	40	65.3	15.2		Backfill
2	840	2350	43	72.2	14.1		1 24+25 4 3/8 @ 122.6
3	920	2300	45	74.3	14.9		2 23+50 4 1/2 @ 122.1
4	1240	2250	49.	70.4	16.5		3 22+80 4 3/8 @ 122.5
5	115	P	41.5	65.1	18		

Backfill Previous

Backfill Today

Backfill Todate

Excavation Data: Station	Platform Elevation	Depth of Trench	Elevation at Bottom	Backfill: Station	Depth	Square Footage: Sq. Ft	Total Sq. Ft	Prev Days Total Sq. Ft
23+20	14.5			24+30	0			
10	14			23+30	0			
00	13			20	1			
22+90	13.5			10	1.5			
80	13.5			00	2			
70	14			22+90	3.5			
60	14			80	4			
50	14			70	6			
40	14			60	7			
30	14			50	8.5			
20	14			40	9.5			
22+10	13.5			30	11			
				20	13			
				10	13.5			
	166							

Contractors Verification: The above report is complete and correct and all materials and equipment used and work performed during this reporting period are in compliance with the contract plans and specifications except as noted above.

Submitted By: Bill [signature]

Distribution Gen. Contractor ( ); Engineer ( ); Q.C. ( ); Inquip Site Office ( ); Inquip Regional Office CA ( ) or VA ( )

Signed by ______________________ Signed by ______________________

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Soil Bentonite
Field Test Work Sheet

PROJECT: McKenna Landfill DATE: ~~[illegible]~~ 8-1-00
CLIENT: Inquip, Inc WORK ORDER #: BL000801
CONTRACTOR: Inquip, Inc PROJECT #: BT-00-062

Test No.	Time Sampled	Location		Temp (°F)	Marsh Funnel	Gel Strength	Filtrate Loss	pH	Sand %	Density	Comments
		Sta.	Depth								
1	8:00 AM	POND		72.7	40.0	—	15.8	9	—	65.3	Bentonite content sample
2	8:40 AM	23+50		77.9	43.0	—	14.1	8	—	72.2	
3	9:20 AM	23+00		78.2	45.0	—	14.9	8	—	74.3	
4	12:40 PM	22+50		78.8	49.0	—	16.5	8	—	78.4	
5	1:15 PM	POND		82.8	40.5	—	18.0	9	—	65.1	B.C. Sample

Gradation Sample:			Slump Test:		Backfill Slope:				
No.	Location	Time	Sta.	Slump	Sta.	Depth	Sta.	Depth	Comments
1			24+20	4 3/8					UW: 122.6 PCF (Open San[illegible])
2			23+50	4 1/4					UW: 122.4 PCF
3			22+80	4 3/8					UW: 122.5 PCF (O.S.)

Submitted By: [signature] Date: 8-1-00

AWS
Sustaining Member

INQUIP
Associates, Inc.

Daily Construction Report
Soil Bentonite Slurry Wall

PROJECT: McKenna Landfill

GENERAL CONTRACTOR: Inquip Associates Inc.

Date: 8-2-00

Report No.:

Bentonite Slurry Test Results: (P)ond, (D)ischarge and (T)rench at "X" feet

Test Number	Time	Location	Marsh Funnel	Density	Filtrate Loss	Depth	Notes
1	815	P	40	65.2	16.4		Backfill
2	1000	22+25	50	79.6	17.3	12'	1 22+40 4 1/4 @ 122.4
3	1200	2200	52	81.1	17.9	12'	2 22+10 4 1/4 @ 122.5
4	100	P	40	65.3	16.6		

Backfill Previous

Backfill Today

Backfill Todate

Excavation Data: Station	Platform Elevation	Depth of Trench	Elevation at Bottom	Backfill: Station	Depth	Square Footage: Sq. Ft	Total Sq. Ft	Prev Days Total Sq. Ft
22+50		13		23+35	0			
21+90		13		22+20	0			
80		13		10	1			
70		14		00	2			
60		14		21+90	3.5			
50		15		80	4.5			
40		15		70	6			
30		14.5		60	7.5			
20		14.5		50	9			
				40	11			
				30	13	720		
				20	14.5			

Contractors Verification: The above report is complete and correct and all materials and equipment used and work performed during this reporting period are in compliance with the contract plans and specifications except as noted above.

Submitted By: [signature]

Distribution Gen. Contractor ( ); Engineer ( ); Q.C. ( ); Inquip Site Office ( ); Inquip Regional Office CA ( ) or VA ( )

Signed by ____________________ Signed by ____________________

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Soil Bentonite
Field Test Work Sheet

PROJECT: McKENNA LANDFILL DATE: 8-2-00
CLIENT: INQUIP, INC WORK ORDER #: BW000801
CONTRACTOR: INQUIP, INC PROJECT #: BT-00-062

Test No.	Time Sampled	Location		Temp (°F)	Marsh Funnel	Gel Strength	Filtrate Loss	pH	Sand %	Density	Comments
		Sta.	Depth								
1	8:15AM	POND		72.9	40.0	—	16.4	9	—	65.2	BENTONITE CONTENT SAMPLE
2	10:00AM	22+25		78.0	50.0	—	17.3	8	—	79.6	
3	12:00PM	22+00		78.3	52.0	—	17.9	8	—	81.1	
4	1:00PM	POND		74.0	40.0	—	16.6	9	—	65.3	B.C. SAMPLE

Gradation Sample:			Slump Test:		Backfill Slope:				
No.	Location	Time	Sta.	Slump	Sta.	Depth	Sta.	Depth	Comments
1			22+40	4 1/4					UW = 122.4 PCF
2			22+10	4 1/4					UW = 122.5 PCF

Submitted By: [signature] Date: 8-2-00

AWS
Sustaining Member

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For Job Satisfaction - Think Quality

INQUIP Associates, Inc.

Daily Construction Report
Soil Bentonite Slurry Wall

PROJECT: McKenna Landfill

GENERAL CONTRACTOR: Inquip Associates Inc.

Date: 8-3-00

Report No.:

Bentonite Slurry Test Results: (P)ond, (D)ischarge and (T)rench at "X" feet

Test Number	Time	Location	Marsh Funnel	Density	Filtrate Loss	Depth	Notes
1	830	P	40	65.4	17	D	Backfill
2	10 30	20+50	60	85.9	16.6	12'	1 21+80 4 3/8 @ 122.6
3	12 20	P	40	65	16.9	D	2 21+40 4 1/4 @ 122.3 perm
4	1 30	21+00	59	83.3	17.1	12	

Backfill Previous

Backfill Today

Backfill Todate

Excavation Data						Backfill		Square Footage		
Station	Platform Elevation	Depth of Trench			Elevation at Bottom	Station	Depth	Sq. Ft	Total Sq. Ft	Prev Days Total Sq. Ft
21+10		14.5				22+20	0			
00		14.5				21+40	0			
20+90		13.5				30	1			
80		13.5				20	2			
70		14.5				10	3.5			
60		14.5				00	5			
50		15				20+90	7.5			
40		14.5				80	9			
						70	10			
						60	11			
						50	12.5	← T		
		1145				40	14.5			

Contractors Verification: The above report is complete and correct and all materials and equipment used and work performed during this reporting period are in compliance with the contract plans and specifications except as noted above.

Submitted By: Bill [signature]

Distribution Gen. Contractor ( ); Engineer ( ); Q.C. ( ); Inquip Site Office ( ); Inquip Regional Office CA ( ) or VA ( )

Signed by ______________________ Signed by ______________________

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Soil Bentonite
Field Test Work Sheet

PROJECT: McKenna Landfill
CLIENT: Inquip, Inc
CONTRACTOR: Inquip, Inc

DATE: 8-3-00
WORK ORDER #: BL000801
PROJECT #: BT-00-062

Test No.	Time Sampled	Location Sta.	Location Depth	Temp (°F)	Marsh Funnel	Gel Strength	Filtrate Loss	pH	Sand %	Density	Comments
1	8:30 AM	POND		73.2	40.0	—	17.0	9	—	65.4	BENTONITE CONTENT SAMPLE
2	10:30 AM	21+50		69.9	60.0	—	16.6	8	—	85.9	
3	12:20 PM	POND		71.5	40.0	—	16.9	9	—	65.0	B.C. SAMPLE
4	1:30PM	21+00		70.2	59.0	—	17.1	8	—	83.3	

Gradation Sample: No.	Location	Time	Slump Test: Sta.	Slump	Backfill Slope: Sta.	Depth	Sta.	Depth	Comments
1			21+80	4 3/4					UW: 122.6 PCF
2			21+40	4 1/4					UW: 122.3 PCF

PERM SAMPLE

Submitted By: Brian Wagner (signature)

Date: 8-3-00

AWS Sustaining Member

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For Job Satisfaction - Think Quality

INQUIP Associates, Inc.

Daily Construction Report
Soil Bentonite Slurry Wall

PROJECT: Mckenna LandFill

GENERAL CONTRACTOR Inquip Associates Inc.

Date: 8-4

Report No.:

Bentonite Slurry Test Results: (P)ond, (D)ischarge and (T)rench at "X" feet

Test Number	Time	Location	Marsh Funnel	Density	Filtrate Loss	Depth	Notes
1	930	20+50	48.5	77.1	13.9	12	Backfill
2	1030	P	40	65.1	16.8	D	21+00 4.3/3 C 122.5
3	100	20+20	49	78.3	14.2	12'	20+70 4 3/4 C 122.3 pcf
4	130	P	44.5	65	16.5	D	
5	320	19+50	48	78.1	15	12'.	

Backfill Previous

Backfill Today

Backfill Todate

Excavation Data: Station	Platform Elevation	Depth of Trench			Elevation at Bottom	Backfill: Station	Depth	Square Footage: Sq. Ft	Total Sq. Ft	Prev Days Total Sq. Ft
20+30		14				21+40	0			
20		14				20+30	0			
10		14				20	1			
20+00		14				10	2			
19+90		14.5				00	3.5			
80		14.5				19+90	4.5			
70		14				80	6			
60		14				70	7.5			
50		14				60	9			
40		14				50	11			
30		14				40	13			
19+25		15				30	14			
						25	15.			
	1625									

Contractor's Verification: The above report is complete and correct and all materials and equipment used and work performed during this reporting period are in compliance with the contract plans and specifications except as noted above.

Submitted By: [signature]

Distribution Gen. Contractor ( ); Engineer ( ); Q.C. ( ); Inquip Site Office ( ); Inquip Regional Office CA ( ) or YA ( )

Signed by ______________ Signed by ______________

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Soil Bentonite
Field Test Work Sheet

PROJECT: McKenna Landfill DATE: 8-4-00
CLIENT: Inquip, Inc WORK ORDER #: BL2000801
CONTRACTOR: Inquip, Inc PROJECT #: BT-00-062

Test No.	Time Sampled	Location Sta.	Location Depth	Temp (°F)	Marsh Funnel	Gel Strength	Filtrate Loss	pH	Sand %	Density	Comments
1	9:30 AM	20+50		65.9	48.5	—	13.9	8	—	77.1	
2	10:30 AM	POND		75.1	40.0	—	16.8	9	—	65.1	BENTONITE CONTENT SAMPLE
3	1:00 PM	20+00		68.1	49.0	—	14.2	8	—	78.3	
4	1:30 PM	POND		73.0	41.5	—		9	—	65.0	B.C. SAMPLE
5	3:20 PM	19+50		69.2	48.0	—	15.0	8	—	78.1	

Gradation Sample: No.	Location	Time	Slump Test: Sta.	Slump	Backfill Slope: Sta.	Depth	Sta.	Depth	Comments
1			21+00	4 3/8					UW = 122.5 PCF
2			20+70	4 3/8					UW = 122.3 PCF

Submitted By: [signature] Date: 8-4-00

Sustaining Member

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For Job Satisfaction - Think Quality

INQUIP Associates, Inc.

Daily Construction Report
Soil Bentonite Slurry Wall

PROJECT: Mckenna Landfill

GENERAL CONTRACTOR: Inquip Associates Inc.

Date: 8-5-00

Report No.:

Bentonite Slurry Test Results: (P)ond, (D)ischarge and (T)rench at "X" feet

Test Number	Time	Location	Marsh Funnel	Density	Filtrate Loss	Depth	Notes
1	830	P	40	65	16.8	D	Backfill
2	850	1900	53	76.5	16.4	12	2010 4.25 @ 122.5 (perm)
3	1120	18150	54	76	16.5	12'	19+30 4.25 @ 123
4	12:40	P	40		16.6	D	
5	2:00	1300	53	76.5	16.6	12	

Backfill Previous

Backfill Today

Backfill Todate

Excavation Data: Station	Platform Elevation	Depth of Trench	Elevation at Bottom	Backfill: Station	Depth	Square Footage: Sq. Ft	Total Sq. Ft	Prev Days Total Sq. Ft
19+20		16		20130	0			
10		16.5		19+20	0			
00		17		10	1			
18,90		15.5		00	1.5			
80		15		18+90	2.5			
70		14.5		80	3			
60		14		70	4			
50		13.5		60	5.5			
40		12		50	7			
30		12		40	8			
20		11		30	8.5			
10		11		20	9.5			
19+00		11		10	10.5			
17+90		10.5		00	11	7		
80		10		17+90	10.5			
70		10		80	10			
60		10		70	10			
55		9		60	10			
				50	9			

Contractors Verification: The above report is complete and correct and all materials and equipment used and work performed during this reporting period are in compliance with the contract plans and specifications except as noted above.

Submitted By: [signature]

Distribution Gen. Contractor ( ); Engineer ( ); Q.C. ( ); Inquip Site Office ( ); Inquip Regional Office CA ( ) or VA ( )

Signed by ______________________ Signed by ______________________

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Soil Bentonite
Field Test Work Sheet

PROJECT: McKenna Landfill DATE: 8-6-00
CLIENT: Inquip, Inc WORK ORDER #: BW000806
CONTRACTOR: Inquip, Inc PROJECT #: BT-00-062

Test No.	Time Sampled	Location Sta.	Location Depth	Temp (°F)	Marsh Funnel	Gel Strength	Filtrate Loss	pH	Sand %	Density	Comments
1	9:45 Am	17+60		66.2	48.5	—	14.2	8	—	78.5	

Gradation Sample: No.	Location	Time	Slump Test: Sta.	Slump	Backfill Slope: Sta.	Depth	Sta.	Depth	Comments	
			17+60	4 1/4					UW = 122.4 PCF	Perm Sample
			17+90	4 1/4					UW = 122.5 PCF	
			17+56	4 1/4					UW = 122.5 PCF	Perm Sample [End of Trench

Submitted By: [signature] Date: 8-6-00

AWS
Sustaining Member

SUMMARY OF FLEX WALL PERMEABILITY TEST RESULTS

ASTM D-5084 (Method A)

AUG

GZA-BUFFALO

JLT

COMPLIANCE TUBE SAMPLES

Client :	Inquip Associates	Date :	08-28-00
Project Location :	McKenna Landfill Project	Job No. :	2KS2590-07
Sample Number :	SW-1 Station 35+00	Tested By :	MLB/DL
Description :	Elev 505 to 503	Checked By :	JB
Permeant Fluid :	De-Aired Water		
Recovery :	2 feet	Spec. Gravity :	2.65 Assumed

Physical Property Data

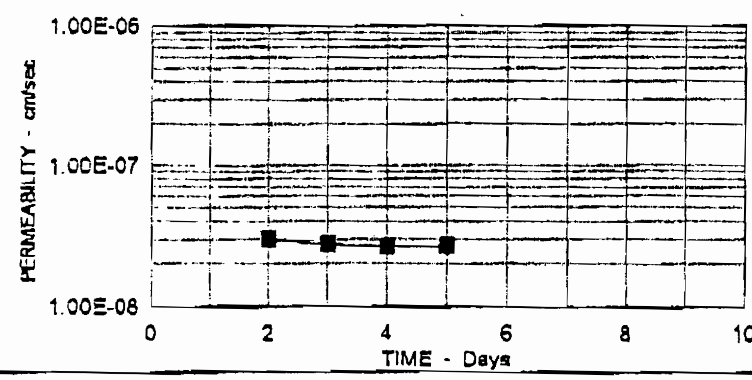
Initial Height (in) :	3.90	Final Height (in) :	3.61
Initial Diameter (in) :	2.80	Final Diameter (in) :	2.78
Initial Wet Weight (g) :	789.60	Final Wet Weight (g) :	761.40
Wet Density (pcf) :	125.15	Wet Density (pcf) :	132.26
Moisture Content % :	22.57	Moisture Content % :	18.18
Dry Density (pcf) :	102.10	Dry Density (pcf) :	111.91
Initial Void Ratio :	0.6195	Final Void Ratio :	0.4776
Saturation , % :	96.5	Saturation , % :	100.9

Test Parameters

Fluid :	De-Aired Water	Effective	
Cell Pressure (psi) :	60.00	Confining Pressure (psi) :	10
Head Water (psi) :	51.80	Gradient :	27.52
Tail Water (psi) :	48.20		

Permeability Input Data

Flow, Q (cc) :	2.50
Length, L (in) :	3.61
Area, A (sqin) :	6.07
Head, h (psi) :	3.60
Time, t (min) :	1428.00
Temp, T (Deg C) :	21.0



Computed Permeability

PERMEABILITY, K = 2.70E-08 (cm/sec) at 20 Degrees C
AT 5 DAYS

SUMMARY OF FLEX WALL PERMEABILITY TEST RESULTS
ASTM D-5084 (Method A)

JLT

COMPLIANCE TUBE SAMPLES

Client	: Inquip Associates	Date	: 08-28-00
Project Location	: McKenna Landfill Project	Job No.	: 2KS2590-07
Sample Number	: SW-2 Station 33+25	Tested By	: MLB/DL
Description	: Elev 503 to 501	Checked By	: JB
Permeant Fluid	: De-Aired Water		
Recovery	: 1.5 feet	Spec. Gravity	: 2.65 Assumed

Physical Property Data

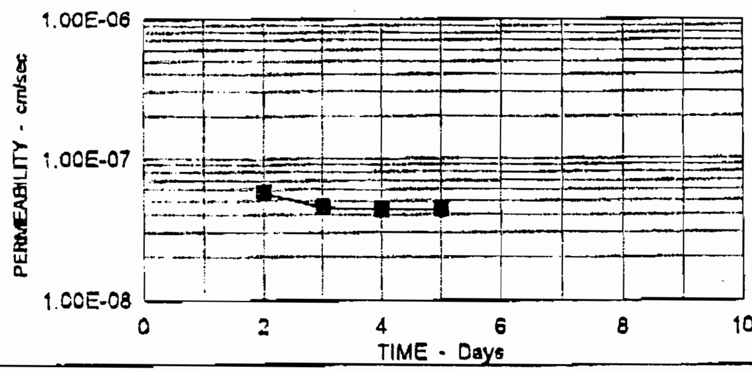
Initial Height (in)	3.83	Final Height (in)	3.68
Initial Diameter (in)	2.80	Final Diameter (in)	2.77
Initial Wet Weight (g)	808.80	Final Wet Weight (g)	779.30
Wet Density (pcf)	130.54	Wet Density (pcf)	133.75
Moisture Content %	19.25	Moisture Content %	16.91
Dry Density (pcf)	109.46	Dry Density (pcf)	114.41
Initial Void Ratio	0.5106	Final Void Ratio	0.4454
Saturation , %	99.9	Saturation , %	100.6

Test Parameters

Fluid	: De-Aired Water	Effective	
Cell Pressure (psi)	: 60.00	Confining Pressure (psi)	: 10
Head Water (psi)	: 51.70	Gradient	: 25.50
Tail Water (psi)	: 48.30		

Permeability Input Data

Flow, Q	(cc)	: 3.70
Length, L	(in)	: 3.68
Area, A	(sqin)	: 6.03
Head, h	(psi)	: 3.40
Time, t	(min)	: 1423.00
Temp, T	(Deg C)	: 21.0



Computed Permeability

PERMEABILITY, K = 4.35E-08 (cm/sec) at 20 Degrees C
AT 5 DAYS

SUMMARY OF FLEX WALL PERMEABILITY TEST RESULTS

ASTM D-5084 (Method A)

COMPLIANCE TUBE SAMPLES

JLT

Client	:	Inquip Associates	Date	:	08-28-00
Project Location	:	McKenna Landfill Project	Job No.	:	2KS2590-07
Sample Number	:	SW-3 Station 31+50	Tested By	:	MLB/DL
Description	:	Elev 504 to 502	Checked By	:	JB
Permeant Fluid	:	De-Aired Water			
Recovery	:	2 feet	Spec. Gravity	:	2.65 Assumed

Physical Property Data

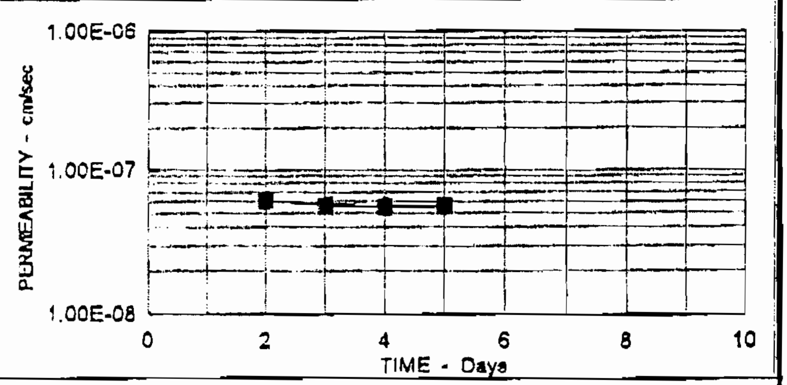
Initial Height (in)	:	4.25	Final Height (in)	:	4.10
Initial Diameter (in)	:	2.80	Final Diameter (in)	:	2.79
Initial Wet Weight (g)	:	901.20	Final Wet Weight (g)	:	878.60
Wet Density (pcf)	:	131.07	Wet Density (pcf)	:	133.41
Moisture Content %	:	20.24	Moisture Content %	:	17.09
Dry Density (pcf)	:	109.01	Dry Density (pcf)	:	113.94
Initial Void Ratio	:	0.5169	Final Void Ratio	:	0.4513
Saturation , %	:	103.8	Saturation , %	:	100.4

Test Parameters

Fluid	:	De-Aired Water	Effective		
Cell Pressure (psi)	:	60.00	Confining Pressure (psi)	:	10
Head Water (psi)	:	51.90	Gradient	:	25.58
Tail Water (psi)	:	48.10			

Permeability Input Data

Flow, Q	(cc)	:	4.90
Length, L	(in)	:	4.10
Area, A	(sqin)	:	6.11
Head, h	(psi)	:	3.80
Time, t	(min)	:	1420.00
Temp, T	(Deg C)	:	21.0



Computed Permeability

PERMEABILITY, K = 5.68E-08 (cm/sec) at 20 Degrees C
AT 5 DAYS

SUMMARY OF FLEX WALL PERMEABILITY TEST RESULTS
ASTM D-5084 (Method A)

JLT

COMPLIANCE TUBE SAMPLES

Client	:	Inquip Associates	Date	:	08-28-00
Project Location	:	McKenna Landfill Project	Job No.	:	2KS2590-07
Sample Number	:	SW-4 Station 29+75	Tested By	:	MLB/DL
Description	:	Elev 504 to 502	Checked By	:	JB
Permeant Fluid	:	De-Aired Water			
Recovery	:	2 feet	Spec. Gravity	:	2.65 Assumed

Physical Property Data

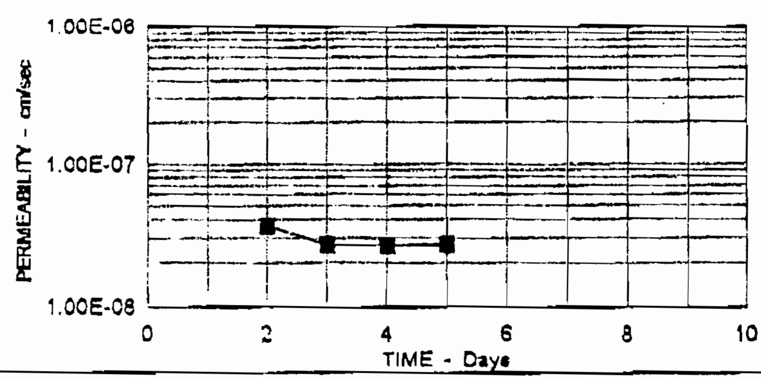
Initial Height (in)	:	4.15	Final Height (in)	:	4.03
Initial Diameter (in)	:	2.82	Final Diameter (in)	:	2.76
Initial Wet Weight (g)	:	863.10	Final Wet Weight (g)	:	827.00
Wet Density (pcf)	:	126.74	Wet Density (pcf)	:	130.55
Moisture Content %	:	24.60	Moisture Content %	:	19.39
Dry Density (pcf)	:	101.72	Dry Density (pcf)	:	109.35
Initial Void Ratio	:	0.6257	Final Void Ratio	:	0.5122
Saturation , %	:	104.2	Saturation , %	:	100.3

Test Parameters

Fluid	:	De-Aired Water	Effective		
Cell Pressure (psi)	:	60.00	Confining Pressure (psi)	:	10
Head Water (psi)	:	51.90	Gradient	:	26.02
Tail Water (psi)	:	48.10			

Permeability Input Data

Flow, Q	(cc)	:	2.30
Length, L	(in)	:	4.03
Area, A	(sqin)	:	5.98
Head, h	(psi)	:	3.80
Time, t	(min)	:	1411.00
Temp, T	(Deg C)	:	21.0



Computed Permeability

PERMEABILITY, K = 2.69E-08 (cm/sec) at 20 Degrees C
AT 5 DAYS

SUMMARY OF FLEX WALL PERMEABILITY TEST RESULTS
ASTM D-5084 (Method A)

JLT

COMPLIANCE TUBE SAMPLES

Client	: Inquip Associates	Date	: 08-28-00
Project Location	: McKenna Landfill Project	Job No.	: 2KS2590-07
Sample Number	: SW-5 Station 28+00	Tested By	: MLB/DL
Description	: Elev 503 to 501	Checked By	: JB
Permeant Fluid	: De-Aired Water		
Recovery	: 2 feet	Spec. Gravity	: 2.65 Assumed

Physical Property Data

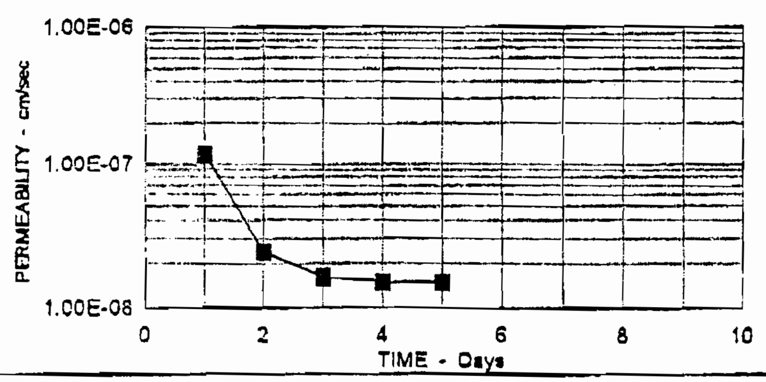
Initial Height (in)	4.20	Final Height (in)	4.04
Initial Diameter (in)	2.80	Final Diameter (in)	2.78
Initial Wet Weight (g)	874.00	Final Wet Weight (g)	857.20
Wet Density (pcf)	128.63	Wet Density (pcf)	133.05
Moisture Content %	19.63	Moisture Content %	17.33
Dry Density (pcf)	107.52	Dry Density (pcf)	113.40
Initial Void Ratio	0.5379	Final Void Ratio	0.4582
Saturation , %	96.7	Saturation , %	100.2

Test Parameters

Fluid	De-Aired Water	Effective	
Cell Pressure (psi)	60.00	Confining Pressure (psi)	10
Head Water (psi)	51.90	Gradient	25.96
Tail Water (psi)	48.10		

Permeability Input Data

Flow, Q	(cc)	1.30
Length, L	(in)	4.04
Area, A	(sqin)	6.07
Head, h	(psi)	3.80
Time, t	(min)	1415.00
Temp, T	(Deg C)	21.0



Computed Permeability

PERMEABILITY, K = 1.50E-08 (cm/sec) at **20 Degrees C**
AT 5 DAYS

SUMMARY OF FLEX WALL PERMEABILITY TEST RESULTS
ASTM D-5084 (Method A)

JLT

COMPLIANCE TUBE SAMPLES

Client	:	Inquip Associates	Date	:	08-28-00
Project Location	:	McKenna Landfill Project	Job No.	:	2KS2590-07
Sample Number	:	SW-6 Station 26+25	Tested By	:	MLB/DL
Description	:	Elev 509 to 507	Checked By	:	JB
Permeant Fluid	:	De-Aired Water			
Recovery	:	1.5 feet	Spec. Gravity	:	2.65 Assumed

Physical Property Data

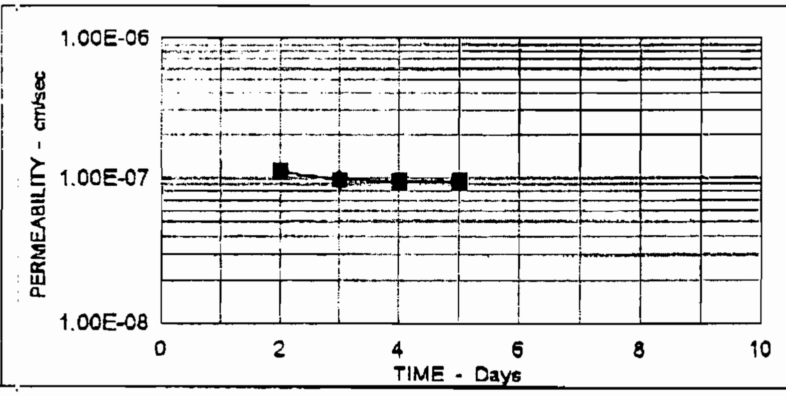
Initial Height (in)	:	4.07	Final Height (in)	:	3.92
Initial Diameter (in)	:	2.80	Final Diameter (in)	:	2.75
Initial Wet Weight (g)	:	844.40	Final Wet Weight (g)	:	815.80
Wet Density (pcf)	:	128.24	Wet Density (pcf)	:	133.36
Moisture Content %	:	21.11	Moisture Content %	:	16.98
Dry Density (pcf)	:	105.89	Dry Density (pcf)	:	114.00
Initial Void Ratio	:	0.5616	Final Void Ratio	:	0.4505
Saturation , %	:	99.6	Saturation , %	:	99.9

Test Parameters

Fluid	:	De-Aired Water	Effective		
Cell Pressure (psi)	:	60.00	Confining Pressure (psi)	:	10
Head Water (psi)	:	51.80	Gradient	:	25.35
Tail Water (psi)	:	48.20			

Permeability Input Data

Flow, Q	(cc)	:	7.30
Length, L	(in)	:	3.92
Area, A	(sqin)	:	5.94
Head, h	(psi)	:	3.60
Time, t	(min)	:	1313.00
Temp, T	(Deg C)	:	21.0



Computed Permeability

PERMEABILITY, K = 9.50E-08 (cm/sec) at **20 Degrees C**
AT 5 DAYS

SUMMARY OF FLEX WALL PERMEABILITY TEST RESULTS

ASTM D-5084 (Method A)

JLT

COMPLIANCE TUBE SAMPLES

Client	: Inquip Associates		Date	:	08-28-00
Project Location	: McKenna Landfill Project		Job No.	:	2KS2590-07
Sample Number	: SW-7 Station 24+50		Tested By	:	MLB/DL
Description	: Elev 505 to 503		Checked By	:	JB
Permeant Fluid	: De-Aired Water				
Recovery	: 2 feet		Spec. Gravity	:	2.65 Assumed

Physical Property Data

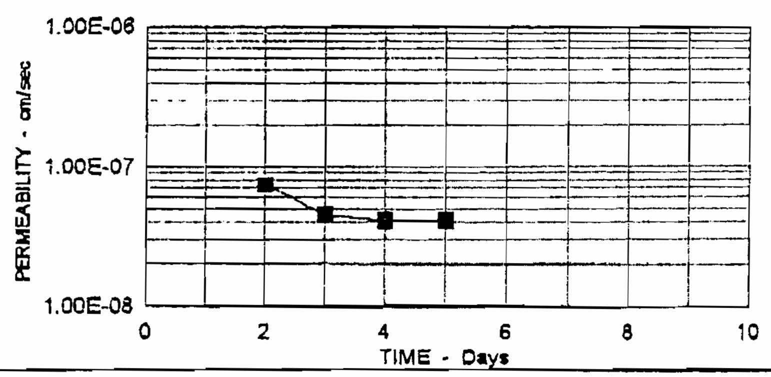
Initial Height (in)	:	4.19	Final Height (in)	:	4.01
Initial Diameter (in)	:	2.82	Final Diameter (in)	:	2.74
Initial Wet Weight (g)	:	885.50	Final Wet Weight (g)	:	838.50
Wet Density (pcf)	:	128.79	Wet Density (pcf)	:	134.98
Moisture Content %	:	22.48	Moisture Content %	:	15.95
Dry Density (pcf)	:	105.15	Dry Density (pcf)	:	116.41
Initial Void Ratio	:	0.5726	Final Void Ratio	:	0.4205
Saturation , %	:	104.0	Saturation , %	:	100.5

Test Parameters

Fluid	:	De-Aired Water	**Effective**		
Cell Pressure (psi)	:	60.00	**Confining Pressure (psi)**	:	10
Head Water (psi)	:	51.90	Gradient	:	26.15
Tail Water (psi)	:	48.10			

Permeability Input Data

Flow, Q	(cc)	:	3.60
Length, L	(in)	:	4.01
Area, A	(sqin)	:	5.90
Head, h	**(psi)**	:	**3.80**
Time, t	(min)	:	1460.00
Temp, T	(Deg C)	:	21.0



Computed Permeability

PERMEABILITY, K = **4.11E-08** (cm/sec) at **20 Degrees C**
AT 5 DAYS

SUMMARY OF FLEX WALL PERMEABILITY TEST RESULTS
ASTM D-5084 (Method A)

JLT

COMPLIANCE TUBE SAMPLES

Client	: Inquip Associates		Date	:	08-28-00
Project Location	: McKenna Landfill Project		Job No.	:	2KS2590-07
Sample Number	: SW-8 Station 22+75		Tested By	:	MLB/DL
Description	: Elev 503 to 501		Checked By	:	JB
Permeant Fluid	: De-Aired Water				
Recovery	: 2 feet		Spec. Gravity	:	2.65 Assumed

Physical Property Data

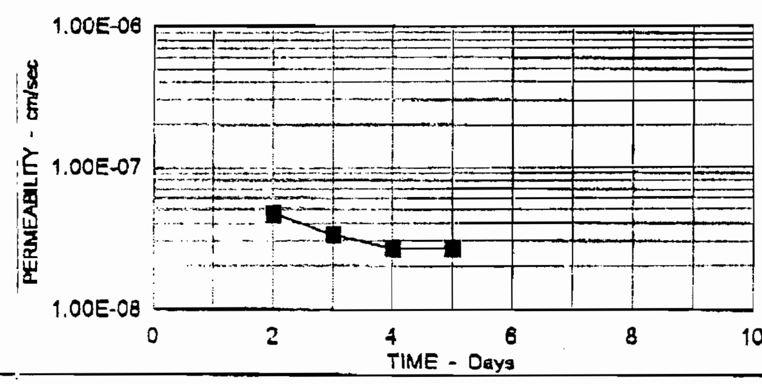
Initial Height (in)	:	4.28	Final Height (in)	:	4.07
Initial Diameter (in)	:	2.82	Final Diameter (in)	:	2.76
Initial Wet Weight (g)	:	895.30	Final Wet Weight (g)	:	843.90
Wet Density (pcf)	:	127.48	Wet Density (pcf)	:	131.91
Moisture Content %	:	23.27	Moisture Content %	:	18.04
Dry Density (pcf)	:	103.41	Dry Density (pcf)	:	111.75
Initial Void Ratio	:	0.5990	Final Void Ratio	:	0.4797
Saturation , %	:	102.9	Saturation , %	:	99.7

Test Parameters

Fluid	:	De-Aired Water	**Effective**		
Cell Pressure (psi)	:	60.00	**Confining Pressure (psi)**	:	10
Head Water (psi)	:	51.90	Gradient	:	25.77
Tail Water (psi)	:	48.10			

Permeability Input Data

Flow, Q	(cc)	:	2.30
Length, L	(in)	:	4.07
Area, A	(sqin)	:	5.98
Head, h	**(psi)**	**:**	**3.80**
Time, t	(min)	:	1457.00
Temp, T	(Deg C)	:	21.0



Computed Permeability

PERMEABILITY, K = 2.64E-08 (cm/sec) at **20 Degrees C**
AT 5 DAYS

SUMMARY OF FLEX WALL PERMEABILITY TEST RESULTS
ASTM D-5084 (Method A)

JLT

COMPLIANCE TUBE SAMPLES

Client	:	Inquip Associates	Date	:	08-28-00
Project Location	:	McKenna Landfill Project	Job No.	:	2KS2590-07
Sample Number	:	SW-9 Station 20+75	Tested By	:	MLB/DL
Description	:	Elev 508 to 506	Checked By	:	JB
Permeant Fluid	:	De-Aired Water			
Recovery	:	0.9 feet	Spec. Gravity	:	2.65 Assumed

Physical Property Data

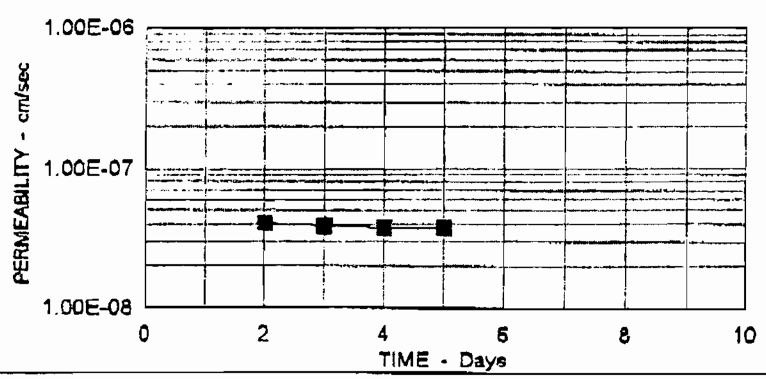
Initial Height (in)	:	3.95	Final Height (in)	:	3.64
Initial Diameter (in)	:	2.80	Final Diameter (in)	:	2.75
Initial Wet Weight (g)	:	793.00	Final Wet Weight (g)	:	751.40
Wet Density (pcf)	:	124.10	Wet Density (pcf)	:	132.28
Moisture Content %	:	25.73	Moisture Content %	:	17.89
Dry Density (pcf)	:	98.70	Dry Density (pcf)	:	112.21
Initial Void Ratio	:	0.6754	Final Void Ratio	:	0.4737
Saturation , %	:	101.0	Saturation , %	:	100.1

Test Parameters

Fluid	:	De-Aired Water	**Effective**		
Cell Pressure (psi)	:	60.00	**Confining Pressure (psi)**	:	10
Head Water (psi)	:	51.80	Gradient	:	27.30
Tail Water (psi)	:	48.20			

Permeability Input Data

Flow, Q	(cc)	:	3.40
Length, L	(in)	:	3.64
Area, A	(sqin)	:	5.94
Head, h	**(psi)**	**:**	**3.60**
Time, t	(min)	:	1441.00
Temp, T	(Deg C)	:	21.0



Computed Permeability

PERMEABILITY, K = 3.75E-08 (cm/sec) at **20 Degrees C**
AT 5 DAYS

SUMMARY OF FLEX WALL PERMEABILITY TEST RESULTS

ASTM D-5084 (Method A)

JLT

COMPLIANCE TUBE SAMPLES

Client	:	Inquip Associates	Date	:	08-28-00
Project Location	:	McKenna Landfill Project	Job No.	:	2KS2590-07
Sample Number	:	SW-10 Station 18+75	Tested By	:	MLB/DL
Description	:	Elev 511 to 509	Checked By	:	JB
Permeant Fluid	:	De-Aired Water			
Recovery	:	1.5 feet	Spec. Gravity	:	2.65 Assumed

Physical Property Data

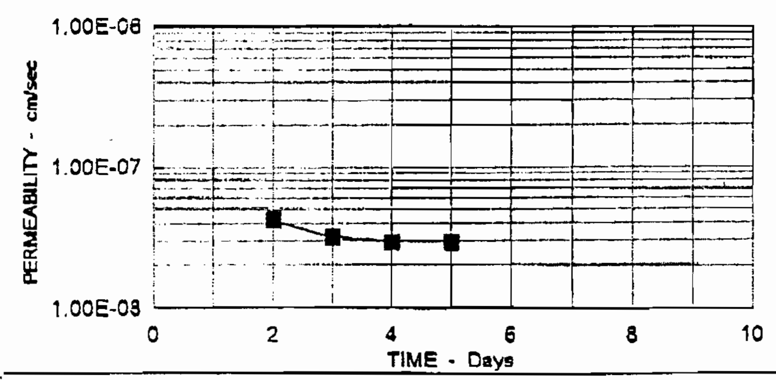
Initial Height (in)	:	3.95	Final Height (in)	:	3.81
Initial Diameter (in)	:	2.82	Final Diameter (in)	:	2.78
Initial Wet Weight (g)	:	840.00	Final Wet Weight (g)	:	807.30
Wet Density (pcf)	:	129.59	Wet Density (pcf)	:	132.87
Moisture Content %	:	22.10	Moisture Content %	:	17.33
Dry Density (pcf)	:	106.14	Dry Density (pcf)	:	113.24
Initial Void Ratio	:	0.5580	Final Void Ratio	:	0.4602
Saturation , %	:	105.0	Saturation , %	:	99.8

Test Parameters

Fluid		:	De-Aired Water	Effective		
Cell Pressure	(psi)	:	60.00	Confining Pressure (psi)	:	10
Head Water	(psi)	:	51.80	Gradient	:	26.08
Tail Water	(psi)	:	48.20			

Permeability Input Data

Flow, Q	(cc)	:	2.60
Length, L	(in)	:	3.81
Area, A	(sqin)	:	6.07
Head, h	**(psi)**	**:**	**3.60**
Time, t	(min)	:	1442.00
Temp, T	(Deg C)	:	21.0



Computed Permeability

PERMEABILITY, K = **2.93E-08** (cm/sec) at **20 Degrees C**
AT 5 DAYS

GEOCOMPOSITE

The geocomposite leachate collection/gas venting layer is a heat bonded needle punched, non-woven, stable fiber polypropylene geotextile bonded to each side of a POLY-NET® high density polyethylene (HDPE) geonet core. The geocomposite is manufactured by Serrot International, Inc. (Serrot) Style TN3002/651. Certificates of compliance and quality control data provided by Serrot is included herein.

Also included are interface friction test results demonstrating that the following interfaces have a friction angle exceeding the required minimum of 27 degrees:

- Geocomposite vs. 60 mil LLDPE Textured Geomembrane; and
- Geocomposite vs. On-site Cover Soil

Serrot International, Inc.

09/13/2000

Tex-Net™ Certificate of Analysis

Customer: WMI of NY - Albion

Project Name: McKenna Landfill

Project Number: 3176

Number of Rolls Shipped: 10

Product Code: SH3NTD1450651P

Bill of Lading: 150500

I certify, the Tex-Net™ for the above identified shipment was manufactured using first quality Poly-Net™ geonet and a non-woven geotextile. The Poly-Net™ meets all of Serrot International, Inc.'s specifications for geonet. The geotextile has been certified by the manufacturer to meet all of their specifications for non-woven geotextiles.

TEX-NET

Thickness was measured according to ASTM D 5199, SII modified. Ply adhesion strength was measured according to ASTM D 413 (F 904), SII modified. Percent adhesion was determined by visual inspection. Mass per unit area was determined according to ASTM D 5261. Transmissivity was determined according to ASTM D 4716, SII modified. Transmissivity is measured in the machine direction between two steel plates one hour after application of the confining pressure.

POLY-NET

Thickness was measured according to ASTM D 5199. Tensiles were determined according to ASTM D 5035, SII modified. Mass per unit area was determined according to ASTM D 5261. Carbon black content was determined according to ASTM D 4218. Density was determined according to ASTM D 1505. Transmissivity was determined according to ASTM D 4716, SII modified. Transmissivity is measured in the machine direction between two steel plates one hour after application of the confining pressure. The standard transmissivity testing parameters for Poly-Net™ are: PN2000 - 2,000 psf/1.0 gradient, PN3000 - 15,000 psf/1.0 gradient, PN3000CN - 4,000 psf/1.0 gradient, and PN 5000 - 15,000 psf/1.0 gradient.

Jane Allen

Jane Allen
Quality Control Manager

9-13-00
Date

Serrot International, Inc. 320 Innovation Way - Wellford, SC - 29385

Serrot International, Inc.

09/13/2000

Resin Certificate of Analysis

Customer: WMI of NY - Albion

Resin Type: HDPE

Project Name: McKenna Landfill

Bills of Lading: 150500

Project Number: 3176

I certify, the polyethylene geomembrane for the above identified shipment meets or exceeds Serrot International, Inc.'s specifications. Testing was performed on each resin blend.

Melt flow index was determined according to ASTM D 1238. Density was determined according to ASTM D 1505. Where appropriate, carbon black was determined according to ASTM D 4218. The average test results are listed below.

RESIN PROPERTIES

Blend Number	Melt Flow Index (g/10 min)	Density (g/cm^3)	Carbon Black Cont. (%)
4164	0.300	0.948	
4169	0.169	0.949	
4216	0.297	0.948	

Jane Allen
Quality Control Manager

9-13-00
Date

This Certification of Analysis shall not be reproduced except in full, without the written approval of the laboratory.

errot International, Inc. 320 Innovation Way - Wellford, SC - 29385

Serrot International, Inc.

09/13/2000

Tex-Net™ Testing Results

Bill of Lading: 150500

Roll Number	GeoTextile Numbers Top	GeoTextile Numbers Bottom	Ply Adhesion (ppi) Top	Ply Adhesion (ppi) Bot.	Percent Adhesion Top	Percent Adhesion Bot.	Thickness (inches)	Mass Per Unit Area (lbs/ft^2)	Avg Net Thickness (inches)	MD Net Tensile (ppi)	Base Net Mass Per Unit Area (lbs/ft^2)	Net Carbon Black (%)	Net Density (g/cm^3)	TexNet Trans ($m^2/sec \times 10^{-3}$)
4017681-4164	B858180A	B858297A	1.6	1.5	97	98	0.3104	0.2987	0.2270	49.5	0.1873	2.61	0.951	0.384
4017691-4164	B858330A	B858193A	1.6	1.5	96	97	0.3104	0.2965	0.2270	49.5	0.1873	2.47	0.951	0.299
4017694-4164	B858320A	B858279A	2.4	1.6	96	97	0.3172	0.2965	0.2287	45.9	0.1812	2.42	0.950	0.299
4017695-4164	B858320A	B858279A	2.4	1.6	96	96	0.3127	0.2965	0.2287	45.9	0.1812	2.42	0.950	0.299
4017705-4164	B858182A	B858255A	2.3	2.0	95	95	0.3103	0.2927	0.2287	45.9	0.1812	2.42	0.950	0.299
4017707-4164	B858179A	B858310A	2.3	2.0	95	95	0.3103	0.2927	0.2287	45.9	0.1812	2.42	0.950	0.299
4017802-4169	858183A	858216A	1.8	1.5	93	93	0.2785	0.2859	0.2235	52.1	0.1884	2.73	0.965	0.287
4017804-4169	858183A	858216A	1.8	1.5	93	93	0.2883	0.2859	0.2283	52.1	0.1884	2.86	0.965	0.287
4024610-4216	6127747A	6127738A	3.0	3.3	97	97	0.3355	0.3185	0.2441	70.6	0.2177	2.53	0.960	0.436
4024618-4216	6127752A	6127001A	3.0	3.3	97	97	0.3355	0.3185	0.2441	69.7	0.2177	2.50	0.960	0.436

Jane Allen

Jane Allen
Quality Control Manager

9-13-00

Date

Serrot International, Inc. 320 Innovation Way - Wellford, SC - 29385

SERROT INTERNATIONAL, INC.

Customer: WMI of NY-Albion
Project: McKenna Landfill
Project Number: 3176
Bill of Ladings: 1911

#10051

Material Type: TN3002/651

We hereby certify that the Tex-Net for the above identified shipment was manufactured using first quality Poly-Net and Synthetic Industries non-woven geotextile. The Poly-Net meets all of Serrot International, Inc. specifications for geonet. The geotextile has been certified by Synthetic Industries to meet all of their specifications for non-woven geotextiles.

TEX- NET
Thickness was measured according to ASTM D 5199. Ply Adhesion strength was measured according to ASTM D 413 (F 904), NSC modified. Percent Adhesion was determined by visual inspection. Mass per unit area was determined according to ASTM D 5261.

POLY-NET
Thickness was measured according to ASTM D 5199. Tensiles were determined according to ASTM D 5035. Mass per unit area was determined according to ASTM D 5261. Carbon Black Content was determined according to ASTM D 4218. Density was determined according to ASTM D 1505. Transmissivity was determined according to ASTM D 4716. Transmissivity is measured between two steel plates one hour after application of the confining pressure in the machine direction. Transmissivity testing uses a gradient of one and the following confining pressures: PN3000 / 15,000 psf – PN3000CN / 4,000 psf – PN2000 / 2,000 psf.

A database listing of all test values follows.

SERROT INTERNATIONAL, INC.

Jane Allen

Jane Allen
Quality Control Manager

6-16-00
Date

Serrot International, Inc.

06/16/2000

Resin Certificate of Analysis

Customer: WMI of NY - Albion

Resin Type: HDPE

Project Name: McKenna Landfill

Bills of Lading: 1911

Project Number: 3176

I certify, the polyethylene geomembrane for the above identified shipment meets or exceeds Serrot International, Inc.'s specifications. Testing was performed on each resin blend.

Melt flow index was determined according to ASTM D 1238. Density was determined according to ASTM D 1505. Where appropriate, carbon black was determined according to ASTM D 4218. The average test results are listed below.

RESIN PROPERTIES

Blend Number	Melt Flow Index (g/10 min)	Density (g/cm^3)	Carbon Black Cont. (%)
4164	0.300	0.948	

Jane Allen
Jane Allen
Quality Control Manager

6-16-00
Date

Serrot International, Inc. 320 Innovation Way - Wellford, SC - 29385

Serrot International, Inc.

06/16/2000

Tex-Net™ Testing Results

Bill of Lading: 1911

Roll Number	GeoTextile Numbers Top	GeoTextile Numbers Bottom	Ply Adhesion (ppi) Top	Ply Adhesion (ppi) Bot.	Percent Adhesion Top	Percent Adhesion Bot.	Thickness (inches)	Mass Per Unit Area (lbs/ft²)	Avg Net Thickness (inches)	MD Net Tensile (ppi)	Base Net Mass Per Unit Area (lbs/ft²)	Net Carbon Black (%)	Net Density (g/cm³)	TexNet Trans (m²/sec x 10-³)
4017689-4164	B858330A	B858193A	1.6	1.5	96	97	0.3104	0.2965	0.2270	49.5	0.1873	2.47	0.951	0.299
4017690-4164	B858330A	B858193A	1.6	1.5	96	97	0.3104	0.2965	0.2270	49.5	0.1873	2.47	0.951	0.299
4017696-4164	B858320A	B858279A	2.4	1.6	96	96	0.3127	0.2965	0.2287	45.9	0.1812	2.42	0.950	0.299
4017697-4164	B858192A	B858279A	2.4	1.6	96	96	0.3127	0.2965	0.2287	45.9	0.1812	2.42	0.950	0.299
4017698-4164	B858192A	B858262A	2.4	1.6	96	96	0.3127	0.2965	0.2287	45.9	0.1812	2.42	0.950	0.299
4017699-4164	B858192A	B858262A	2.4	1.6	96	96	0.3127	0.2965	0.2287	45.9	0.1812	2.42	0.950	0.299
4017701-4164	B858192A	B858262A	2.4	1.6	96	96	0.3127	0.2965	0.2287	45.9	0.1812	2.42	0.950	0.299
4017703-4164	B858182A	B858255A	2.3	2.0	95	95	0.3103	0.2927	0.2287	45.9	0.1812	2.42	0.950	0.299
4017704-4164	B858182A	B858255A	2.3	2.0	95	95	0.3103	0.2927	0.2287	45.9	0.1812	2.42	0.950	0.299
4017706-4164	B858182A	B858255A	2.3	2.0	95	95	0.3103	0.2927	0.2287	45.9	0.1812	2.42	0.950	0.299
4017708-4164	B858179A	B858310A	2.3	2.0	95	95	0.3103	0.2927	0.2289 *	50.9 *	0.1865 *	2.55 *	0.950 *	0.299
4017709-4164	B858179A	B858310A	2.3	2.0	95	95	0.3103	0.2927	0.2289	50.9	0.1865	2.51	0.949	0.299
4017710-4164	B858179A	B858310A	2.3 *	2.1 *	95 *	95 *	0.3103 *	0.2927 *	0.2289	50.9	0.1865	2.51	0.949	0.299 *
4017711-4164	858179A	858498A	1.9	2.1	95	95	0.2857	0.2893	0.2289	50.9	0.1865	2.51	0.949	0.272
4017712-4164	858238A	858498A	1.9	2.1	95	95	0.2857	0.2893	0.2289	50.9	0.1865	2.51	0.949	0.272
4017713-4164	858238A	858498A	1.9	2.1	95	95	0.2857	0.2893	0.2289	50.9	0.1865	2.51	0.949	0.272
4017714-4164	858238A	858498A	1.9	2.1	95	95	0.2857	0.2893	0.2289	50.9	0.1865	2.51	0.949	0.272
4017715-4164	858238A	858498A	1.9	2.1	95	95	0.2857	0.2893	0.2289	50.9	0.1865	2.51	0.949	0.272

NOTE: An astrisk indicates the test was performed on that roll.

Jane Allen

Jane Allen
Quality Control Manager

6-16-00
Date

Serrot International, Inc. 320 Innovation Way - Wellford, SC - 29385

Serrot International, Inc.

09/11/2000

Tex-Net™ Certificate of Analysis

Customer:	WMI of NY - Albion	Number of Rolls Shipped:	3
Project Name:	McKenna Landfill	Product Code:	SH3NTD1450651P
Project Number:	3176	Bill of Lading:	150465

I certify, the Tex-Net™ for the above identified shipment was manufactured using first quality Poly-Net™ geonet and a non-woven geotextile. The Poly-Net™ meets all of Serrot International, Inc.'s specifications for geonet. The geotextile has been certified by the manufacturer to meet all of their specifications for non-woven geotextiles.

TEX-NET

Thickness was measured according to ASTM D 5199, SII modified. Ply adhesion strength was measured according to ASTM D 413 (F 904), SII modified. Percent adhesion was determined by visual inspection. Mass per unit area was determined according to ASTM D 5261. Transmissivity was determined according to ASTM D 4716, SII modified. Transmissivity is measured in the machine direction between two steel plates one hour after application of the confining pressure.

POLY-NET

Thickness was measured according to ASTM D 5199. Tensiles were determined according to ASTM D 5035, SII modified. Mass per unit area was determined according to ASTM D 5261. Carbon black content was determined according to ASTM D 4218. Density was determined according to ASTM D 1505. Transmissivity was determined according to ASTM D 4716, SII modified. Transmissivity is measured in the machine direction between two steel plates one hour after application of the confining pressure. The standard transmissivity testing parameters for Poly-Net™ are: PN2000 - 2,000 psf/1.0 gradient, PN3000 - 15,000 psf/1.0 gradient, PN3000CN - 4,000 psf/1.0 gradient, and PN 5000 - 15,000 psf/1.0 gradient.

Jane Allen

Jane Allen
Quality Control Manager

9-12-00
Date

Serrot International, Inc. 320 Innovation Way - Wellford, SC - 29385

Serrot International, Inc.

09/11/2000

Resin Certificate of Analysis

Customer: WMI of NY - Albion

Resin Type: HDPE

Project Name: McKenna Landfill

Bills of Lading: 150465

Project Number: 3176

I certify, the polyethylene geomembrane for the above identified shipment meets or exceeds Serrot International, Inc.'s specifications. Testing was performed on each resin blend.

Melt flow index was determined according to ASTM D 1238. Density was determined according to ASTM D 1505. Where appropriate, carbon black was determined according to ASTM D 4218. The average test results are listed below.

RESIN PROPERTIES

Blend Number	Melt Flow Index (g/10 min)	Density (g/cm^3)	Carbon Black Cont. (%)
4164	0.300	0.948	
4169	0.169	0.949	

Jane Allen
Quality Control Manager

9-12-00
Date

This Certification of Analysis shall not be reproduced except in full, without the written approval of the laboratory.

Serrot International, Inc. 320 Innovation Way - Wellford, SC - 29385

Serrot International, Inc.

09/11/2000

Tex-Net™ Testing Results

Bill of Lading: 150465

Roll Number	GeoTextile Numbers Top	GeoTextile Numbers Bottom	Ply Adhesion (ppl) Top	Ply Adhesion (ppl) Bot.	Percent Adhesion Top	Percent Adhesion Bot.	Thickness (inches)	Mass Per Unit Area (lbs/ft^2)	Avg Net Thickness (inches)	MD Net Tensile (ppi)	Base Net Mass Per Unit Area (lbs/ft^2)	Net Carbon Black (%)	Net Density (g/cm^3)	TexNet Trans ($m^2/sec \times 10^{-3}$)
4017692-4164	B858320A	B858279A	1.6	1.5	96	97	0.3104	0.2965	0.2323	52.0	0.1880	2.47	0.951	0.299
4017798-4169	858214A	858151A	1.8	1.5	93	93	0.2785	0.2859	0.2235	52.1	0.1884	2.73	0.965	0.287
4017807-4169	858168A	858499A	4.4	1.5	93	93	0.2875	0.2859	0.2233	52.1	0.1884	2.86	0.965	0.287

Jane Allen

Jane Allen
Quality Control Manager

9-12-00
Date

Serrot International, Inc.   320 Innovation Way - Wellford, SC - 29385

SERROT INTERNATIONAL, INC.

Customer: WMI of NY - Albion
Project: McKenna Landfill
Project Number: 3176 #10057
Bill of Ladings: 1888 & 1890

Material Type: TN3002/651

We hereby certify that the Tex-Net for the above identified shipment was manufactured using first quality Poly-Net geonet and Synthetic Industries non –woven geotextile. The Poly-Net meets all of Serrot International, Inc. specifications for geonet. The geotextile has been certified by Synthetic Industries to meet all of their specifications for non woven geotextiles.

TEX- NET
Thickness was measured according to ASTM D 5199. Ply Adhesion strength was measured according to ASTM D 413 (F 904), NSC modified. Percent Adhesion was determined by visual inspection. Mass per unit area was determined according to ASTM D 5261.

POLY-NET
Thickness was measured according to ASTM D 5199. Tensiles were determined according to ASTM D 5035. Mass per unit area was determined according to ASTM D 5261. Carbon Black Content was determined according to ASTM D 4218. Density was determined according to ASTM D 1505. Transmissivity was determined according to ASTM D 4716. Transmissivity is measured between two steel plates one hour after application of the confining pressure in the machine direction. Transmissivity testing uses a gradient of one and the following confining pressures: PN3000 / 15,000 psf – PN3000CN / 4,000 psf – PN2000 / 2,000 psf.

A database listing of all test values follows.

SERROT INTERNATIONAL, INC.

Jane Allen
Jane Allen
Quality Control Manager

6-13-00
Date

Serrot International, Inc.

06/13/2000

Geomembrane Certificate of Analysis

Customer: WMI of NY - Albion

Resin Type: HDPE

Project Name: McKenna Landfill

Bills of Lading: 1888

Project Number: 3176

I certify, the polyethylene geomembrane for the above identified shipment meets or exceeds Serrot International, Inc.'s specifications. Testing was performed on each resin blend.

Melt flow index was determined according to ASTM D 1238. Density was determined according to ASTM D 1505. Where appropriate, carbon black was determined according to ASTM D 4218. The average test results are listed below.

RESIN PROPERTIES

Blend Number	Melt Flow Index (g/10 min)	Density (g/cm^3)	Carbon Black Cont. (%)
4169	0.169	0.949	

Jane Allen

Jane Allen
Quality Control Manager

6-13-00
Date

This Certification of Analysis shall not be reproduced except in full, without the written approval of the laboratory.
Serrot International, Inc. 1255 Monmouth Blvd. - Galesburg, IL - 61401

Serrot International, Inc.

06/13/2000

Tex-Net™ Testing Results

Bill of Lading: 1888

Roll Number	GeoTextile Numbers Top	GeoTextile Numbers Bottom	Ply Adhesion (ppi) Top	Ply Adhesion (ppi) Bot.	Percent Adhesion Top	Percent Adhesion Bot.	Thickness (inches)	Mass Per Unit Area (lbs/ft²)	Avg Net Thickness (inches)	MD Net Tensile (ppi)	Base Net Mass Per Unit Area (lbs/ft²)	Net Carbon Black (%)	Net Density (g/cm³)	TexNet Trans (m²/sec x 10⁻³)
4017775-4169	858257A	858187A	1.7	1.8	96	92	0.2859	0.2842	0.2233	64.2	0.1949	2.70	0.965	0.452
4017776-4169	858178A	858187A	1.7	1.8	96	92	0.2859	0.2842	0.2233	64.2	0.1949	2.70	0.965	0.452
4017777-4169	858178A	858187A	1.7	1.8	96	92	0.2859	0.2842	0.2233	64.2	0.1949	2.70	0.965	0.452
4017778-4169	858178A	858284A	1.7	1.8	96	92	0.2859	0.2842	0.2233	64.2	0.1949	2.70	0.965	0.452
4017779-4169	858178A	858284A	1.7	1.8	96	92	0.2859	0.2842	0.2233	64.2	0.1949	2.70	0.965	0.452
4017780-4169	858178A	858284A	1.7	1.8	96	92	0.2859	0.2842	0.2282 *	65.4 *	0.1953 *	2.76 *	0.965 *	0.452
4017781-4169	858149A	858284A	1.7 *	1.8 *	96 *	92 *	0.2859 *	0.2842 *	0.2241	64.3	0.1939	2.76	0.965	0.452
4017782-4169	858149A	858177A	1.7	1.8	96	92	0.2859	0.2842	0.2241	64.3	0.1939	2.76	0.965	0.452
4017783-4169	858149A	858177A	1.7	1.8	96	92	0.2859	0.2842	0.2241	64.3	0.1939	2.76	0.965	0.452
4017784-4169	858149A	858177A	1.7	1.8	96	92	0.2859	0.2842	0.2241	64.3	0.1939	2.76	0.965	0.452
4017785-4169	858149A	858177A	1.7	1.8	96	92	0.2859	0.2842	0.2241	64.3	0.1939	2.76	0.965	0.452
4017786-4169	858191A	858177A	1.7	1.8	96	92	0.2859	0.2842	0.2241	64.3	0.1939	2.76	0.965	0.452
4017787-4169	858134A	858174A	1.7	1.8	96	92	0.2859	0.2842	0.2241	64.3	0.1939	2.76	0.965	0.452
4017789-4169	858134A	858174A	3.7 *	3.0 *	97 *	96 *	0.2979 *	0.2945 *	0.2235	59.5	0.1939	2.73	0.965	0.452 *
4017790-4169	858134A	858174A	1.8	3.0	97	96	0.2949	0.2945	0.2235	59.5	0.1939	2.73	0.965	0.287
4017791-4169	858173A	858185A	1.8	3.0	97	96	0.2949	0.2945	0.2235	59.5	0.1939	2.73	0.965	0.287
4017793-4169	858173A	858185A	1.8	3.0	97	96	0.2949	0.2945	0.2235	59.5	0.1939	2.73	0.965	0.287
4017794-4169	858173A	858185A	1.8	3.0	97	96	0.2949	0.2945	0.2235	59.5	0.1939	2.73	0.965	0.287

NOTE: An astrisk indicates the test was performed on that roll.

Jane Allen

Jane Allen
Quality Control Manager

6-13-00
Date

Serrot International, Inc. 1255 Monmouth Blvd. - Galesburg, IL - 61401

Serrot International, Inc.

06/13/2000

Tex-Net™ Testing Results

Bill of Lading: 1888

Roll Number	GeoTextile Numbers Top	GeoTextile Numbers Bottom	Ply Adhesion (ppi) Top	Ply Adhesion (ppi) Bot.	Percent Adhesion Top	Percent Adhesion Bot.	Thickness (inches)	Mass Per Unit Area (lbs/ft²)	Avg Net Thickness (inches)	MD Net Tensile (ppi)	Base Net Mass Per Unit Area (lbs/ft²)	Net Carbon Black (%)	Net Density (g/cm³)	TexNet Trans (m²/sec x 10-³)
4017795-4169	858173A	858151A	1.8	3.0	97	96	0.2949	0.2945	0.2235	59.5	0.1939	2.73	0.965	0.287
4017796-4169	858214A	858151A	1.8	3.0	97	96	0.2949	0.2945	0.2235 *	59.5 *	0.1948 *	2.73 *	0.965 *	0.287
4017799-4169	858214A	858151A	1.8	1.5	93	93	0.2785	0.2859	0.2235	52.1	0.1884	2.73	0.965	0.287
4017800-4169	858183A	858216A	1.8	1.5	93	93	0.2785	0.2859	0.2235	52.1	0.1884	2.73	0.965	0.287
4017801-4169	858183A	858216A	1.8	1.5	93	93	0.2785	0.2859	0.2235	52.1	0.1884	2.73	0.965	0.287
4017803-4169	858183A	858216A	1.8	1.5	93	93	0.2785	0.2859	0.2235	52.1	0.1884	2.73	0.965	0.287

NOTE: An astrisk indicates the test was performed on that roll.

Jane Allen

Jane Allen
Quality Control Manager

6-13-00
Date

Serrot International, Inc.

06/13/2000

Geomembrane Certificate of Analysis

Customer: WMI of NY - Albion

Resin Type: HDPE

Project Name: McKenna Landfill

Bills of Lading: 1890

Project Number: 3176

I certify, the polyethylene geomembrane for the above identified shipment meets or exceeds Serrot International, Inc.'s specifications. Testing was performed on each resin blend.

Melt flow index was determined according to ASTM D 1238. Density was determined according to ASTM D 1505. Where appropriate, carbon black was determined according to ASTM D 4218. The average test results are listed below.

RESIN PROPERTIES

Blend Number	Melt Flow Index (g/10 min)	Density (g/cm^3)	Carbon Black Cont. (%)
4169	0.169	0.949	
4164	0.300	0.948	

Jane Allen

Jane Allen
Quality Control Manager

6-13-00

Date

This Certification of Analysis shall not be reproduced except in full, without the written approval of the laboratory.

Serrot International, Inc. 1255 Monmouth Blvd. - Galesburg, IL - 61401

Serrot International, Inc.

06/13/2000

Tex-Net™ Testing Results

Bill of Lading: 1890

Roll Number	GeoTextile Numbers Top	GeoTextile Numbers Bottom	Ply Adhesion (ppi) Top	Ply Adhesion (ppi) Bot.	Percent Adhesion Top	Percent Adhesion Bot.	Thickness (inches)	Mass Per Unit Area (lbs/ft²)	Avg Net Thickness (inches)	MD Net Tensile (ppi)	Base Net Mass Per Unit Area (lbs/ft²)	Net Carbon Black (%)	Net Density (g/cm³)	TexNet Trans (m²/sec x 10-³)
4017716-4164	858261A	858498A	1.9	2.1	95	95	0.2857	0.2893	0.2326 *	52.0 *	0.1878 *	2.51 *	0.949 *	0.272
4017717-4164	858261A	858243A	1.9	2.1	95	95	0.2857	0.2893	0.2326	50.9	0.1878	2.51	0.949	0.272
4017718-4164	858261A	858243A	1.9 *	3.1 *	97 *	96 *	0.2857 *	0.2893 *	0.2326	50.9	0.1878	2.51	0.949	0.272
4017719-4164	858261A	858243A	1.7	2.2	97	96	0.2857	0.2893	0.2326	50.9	0.1878	2.51	0.949	0.272
4017720-4164	858181A	858243A	1.7	2.2	97	96	0.2857	0.2893	0.2326	50.9	0.1878	2.51	0.949	0.272
4017721-4164	858181A	858284A	1.7	2.2	97	96	0.2857	0.2893	0.2326	50.9	0.1878	2.51	0.949	0.272
4017722-4164	858181A	858284A	1.7	2.2	97	96	0.2857	0.2893	0.2326	50.9	0.1878	2.51	0.949	0.272
4017723-4164	858181A	858284A	1.7 *	2.2 *	98 *	97 *	0.3029	0.3051	0.2326	50.9	0.1878	2.51	0.949	0.272 *
4017765-4164	858181A	858486A	3.4 *	1.5 *	96 *	92 *	0.3257 *	0.3021 *	0.2222	64.2	0.1949	2.45	0.965	0.732 *
4017766-4164	858406A	858486A	3.0	1.5	96	92	0.3053	0.3021	0.2222	64.2	0.1949	2.45	0.965	0.452
4017767-4164	858406A	858486A	3.0	1.5	96	92	0.3053	0.3021	0.2222	64.2	0.1949	2.45	0.965	0.452
4017768-4164	858406A	858148A	3.0	1.5	96	92	0.3053	0.3021	0.2222	64.2	0.1949	2.45	0.965	0.452
4017770-4164	858406A	858148A	3.0	1.5	96	92	0.3053	0.3021	0.2222	64.2	0.1949	2.45	0.965	0.452
4017771-4164	858257A	858148A	3.0	1.5	96	92	0.3053	0.3021	0.2222	64.2	0.1949	2.45	0.965	0.452
4017772-4169	858257A	858148A	3.0	1.5	96	92	0.3053	0.3021	0.2233 *	64.2 *	0.1949 *	2.70 *	0.965 *	0.452
4017773-4169	858257A	858187A	3.0 *	4.5 *	97 *	97 *	0.3053 *	0.3044 *	0.2233	64.2	0.1949	2.70	0.965	0.452
4017774-4169	858257A	858187A	1.7	1.8	96	92	0.2859	0.2842	0.2233	64.2	0.1949	2.70	0.965	0.452
4017788-4169	858134A	858174A	1.7	1.8	96	92	0.2859	0.2842	0.2241 *	64.3 *	0.1939 *	2.84 *	0.965 *	0.452

NOTE: An astrisk indicates the test was performed on that roll.

Jane Allen

Jane Allen
Quality Control Manager

6-13-00
Date

Serrot International, Inc. 1255 Monmouth Blvd. - Galesburg, IL - 61401

Serrot International, Inc.

06/13/2000

Tex-Net™ Testing Results

Bill of Lading: 1890

Roll Number	GeoTextile Numbers Top	GeoTextile Numbers Bottom	Ply Adhesion (ppl) Top	Ply Adhesion (ppl) Bot.	Percent Adhesion Top	Percent Adhesion Bot.	Thickness (inches)	Mass Per Unit Area (lbs/ft²)	Avg Net Thickness (inches)	MD Net Tensile (ppl)	Base Net Mass Per Unit Area (lbs/ft²)	Net Carbon Black (%)	Net Density (g/cm³)	TexNet Trans (m²/sec x 10-³)
4017792-4169	858173A	858185A	1.8	3.0	97	96	0.2949	0.2945	0.2235	59.5	0.1939	2.73	0.965	0.287
4017797-4169	858214A	858151A	1.8 *	3.3 *	97 *	97 *	0.2949 *	0.2998 *	0.2235	52.1	0.1884	2.73	0.965	0.287
4017808-4169	858168A	858499A	4.4	1.5	93	93	0.2859	0.2859	0.2233	52.1	0.1884	2.86	0.965	0.287
4017809-4169	858168A	858499A	4.4	1.5	93	93	0.2859	0.2859	0.2233	52.1	0.1884	2.86	0.965	0.287
4017810-4169	858168A	858215A	4.4	1.5	93	93	0.2859	0.2859	0.2233	52.1	0.1884	2.86	0.965	0.287
4017811-4169	858168A	858215A	4.4 *	2.5 *	95 *	95 *	0.2859 *	0.3064 *	0.2233 *	56.4 *	0.1906 *	2.91 *	0.965 *	0.287 *

NOTE: An astrisk indicates the test was performed on that roll.

Jane Allen

Jane Allen
Quality Control Manager

6-13-00

Date

Serrot International, Inc. 1255 Monmouth Blvd. - Galesburg, IL - 61401

TRI/ENVIRONMENTAL, INC.
A Texas Research International Company

TEST RESULTS

INTERFACE FRICTION TEST RESULTS

(LOG #: E2128-24-09)

9063 Bee Caves Road • Austin, TX 78733-6201 • (512) 263-2101 • FAX (512) 263-2558

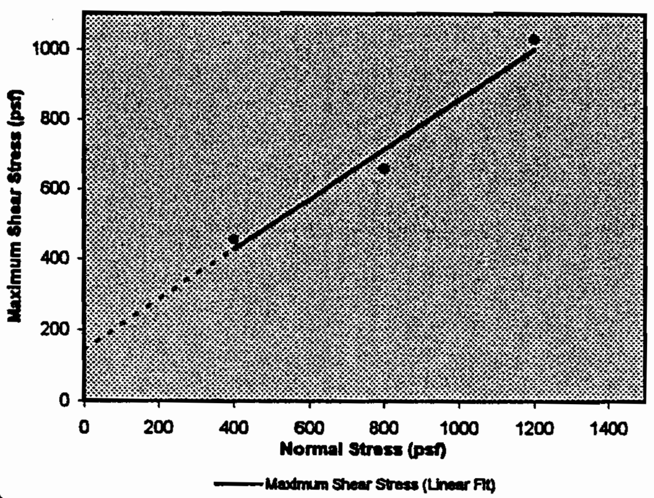
TRI/ENVIRONMENTAL, INC.
A Texas Research International Company

INTERFACE FRICTION TEST REPORT

Client: **Serrot**
Project: McKenna Landfill
Test Date: 08/16-08/17/00

TRI Log#: E2128-24-09
Test Method: ASTM D 5321

Tested Interface: Double-Sided Geocomposite vs. 60 mil LLDPE Textured Geomembrane



Upper Box: Double-Sided Geocomposite

Lower Box: 60 mil textured LLDPE Geomembrane

Interface Conditioning: Interface soaked and loading applied for a minimum of 12 hours prior to shear

Box Dimension: 12"x12"x4"

Test Condition: Wet

Shearing Rate: 0.04 inches/minute

Trial Number	1	2	3
Bearing Slide Resistance (lbs)	10	13	16
Normal Stress (psf)	400	800	1200
Maximum Shear Stress (psf)	466	673	1045
Corrected Shear Stress (psf)	456	660	1029
Secant Angle (degrees)	48.8	39.5	40.6

RESULTS: Maximum Friction Angle and Y-intercept

Regression Friction Angle (degrees): **35.6**
Y-intercept or Regression Adhesion (psf): **142**

Regression Line: Y= 0.717 * X + 142
Regression Coefficient (r squared): 0.973

ABS 11-21-00
Quality Review/Date

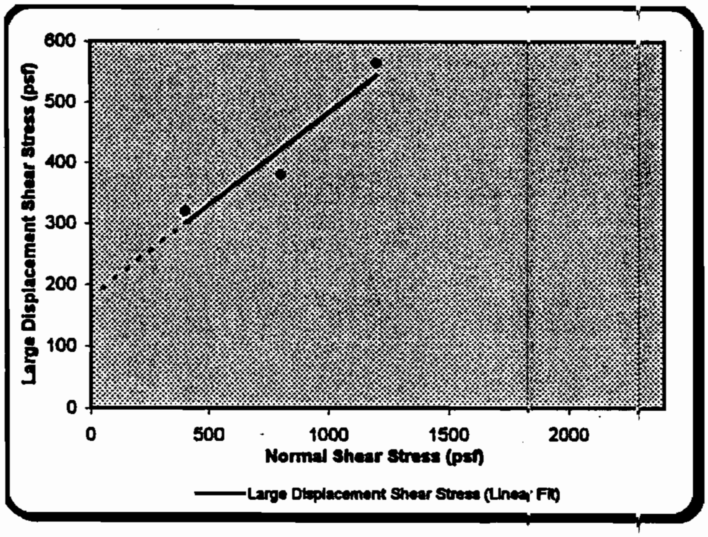
TRI/ENVIRONMENTAL, INC.
A Texas Research International Company

INTERFACE FRICTION TEST REPORT

Client: Serrot
Project: McKenna Landfill
Test Date: 08/16-08/17/00

TRI Log#: E2128-24-09
Test Method: ASTM D 5321

Tested Interface: Double-Sided Geocomposite vs. 60 mil LLDPE Textured Geomembrane



Upper Box: Double-Sided Geocomposite

Lower Box: 60 mil textured LLDPE Geomembrane

Interface Conditioning: Interface soaked and loading applied for a minimum of 12 hours prior to shear

Box Dimension: 12"x12"x4"

Test Condition: Wet

Shearing Rate: 0.04 inches/minute

Trial Number	1	2	3
Bearing Slide Resistance (lbs)	10	13	16
Normal Stress (psf)	400	800	1200
Large Displacment Shear Stress (psf)	363	393	581
Corrected Shear Stress (psf)	321	380	565
Secant Angle (degrees)	38.7	25.4	25.2

RESULTS: Large Displacement Friction Angle and Y-Intercept at 3.6-in. of Displacement

Regression Friction Angle (degrees): **17.0**
Y-intercept or Regression Adhesion (psf): **178**

Regression Line: Y= 0.305 * X + 178
Regression Coefficient (r squared): 0.919

MES 10-31-00
Quality Review/Date

9063 Bee Caves Road □ Austin, TX 78733-6201 □ (512) 263-2101 □ (512) 263-2558 □ 1-800-880-TEST

GZA GeoEnvironmental of New York
Engineers and Scientists

Page No. 1/1

Project	McKenna Landfill Closure	File No.	55024
Location	Albion NY	Date 12-14-01	By BAK
Subject	Stability Analysis of	Checked	By
Based on	Proposed Borrow	Revised	By

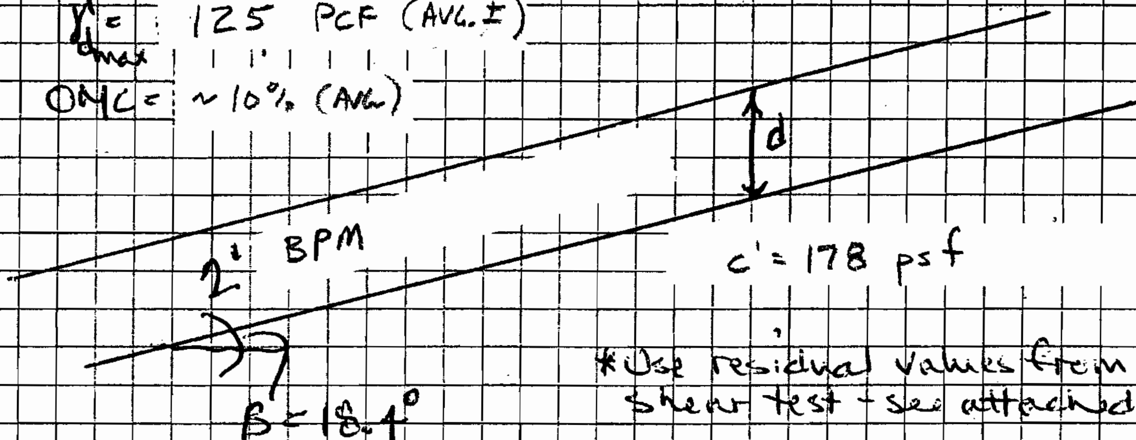
DOUBLE-SIDED GEOCOMPOSITE VS. 60-MIL TEXTURED LLDPE

Infinite Slope Stability Analysis

$$\text{Factor of Safety} = \frac{c' + d\gamma' \cos^2\beta \tan\phi}{d\gamma' \sin\beta \cos\beta} \quad (1)$$

$\gamma_{d\,max}$ = 125 PCF (AVG. ±)

OMC = ~10% (AVG.)



c' = 178 psf

*Use residual values from direct shear test - see attached data sheets

Assume placed @ 90% of maximum dry density and @ moisture

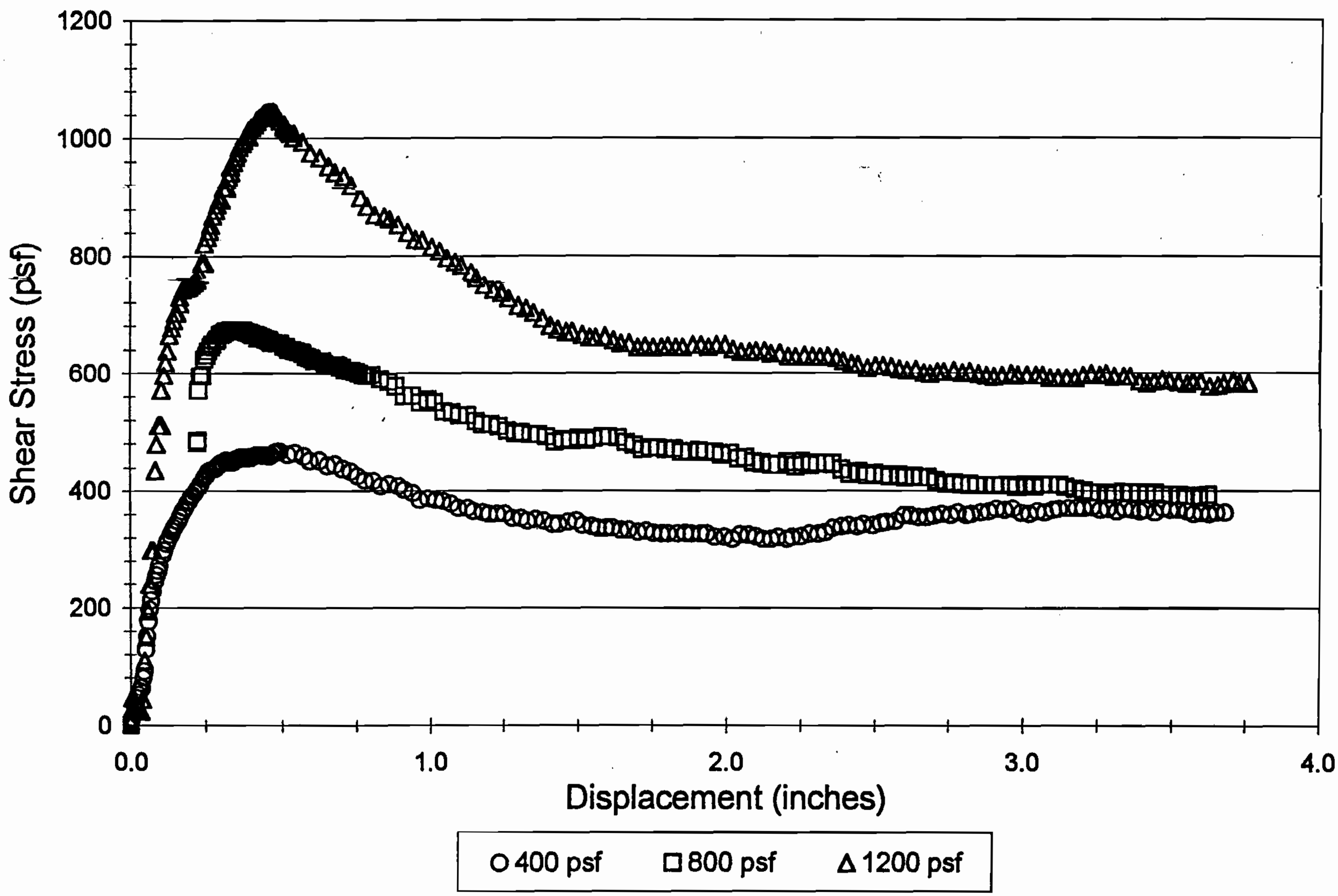
∴ γ' = 125(.9)(1.10) = 123.8

$$\text{Factor of Safety (F)} = \frac{178\,\frac{lbs}{ft^2} + 2'\left(123.8\,\frac{lbs}{ft^3}\right)\cos^2(18.4°)\tan(17°)}{2'\left(123.8\,\frac{lbs}{ft^3}\right)\sin(18.4°)\cos(18.4°)}$$

$$= \frac{246\ lbs/ft^2}{74} = 3.3 > 1.5 \text{ OK}$$

(1) Reference: Course notes "Seepage, Slopes and Embankments" CEE 530, Department of Civil and Environmental Engineering, University of Wisconsin-Madison, Tuncer B. Edil, Ph 1986.

SERROT INTERFACE FRICTION TEST
Double-Sided Geocomposite vs. 60 mil Textured LLDPE Geomembrane



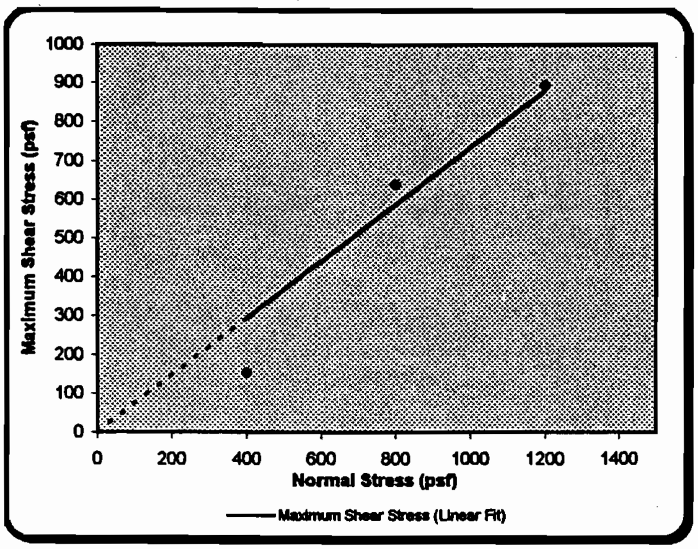
TRI/ENVIRONMENTAL, INC.
A Texas Research International Company

INTERFACE FRICTION TEST REPORT

Client: **Serrot**
Project: McKenna Landfill
Test Date: 09/06-09/08/00

TRI Log#: E2128-24-09
Test Method: ASTM D 5321

Tested Interface: Subgrade Soil vs. Double-Sided Geocomposite



Upper Box: Subgrade soil compacted to 111.6 pcf at 12.5 % moisture content (90 % maximum dry density at + 2 % Opt. Moisture Content as determined by a modified Proctor test).

Lower Box: Double-Sided Geocomposite

Interface Conditioning: Interface soaked and loading applied for a minimum of 12 hours prior to shear

Box Dimension: 12"x12"x4"

Test Condition: Wet

Shearing Rate: 0.04 inches/minute

Trial Number	1	2	3
Bearing Slide Resistance (lbs)	10	13	16
Normal Stress (psf)	400	800	1200
Maximum Shear Stress (psf)	164	652	909
Corrected Shear Stress (psf)	154	639	893
Secant Angle (degrees)	21.1	38.6	36.7

RESULTS: Maximum Friction Angle and Y-intercept

Regression Friction Angle (degrees):		**36.3**		
Y-intercept or Regression Adhesion (psf):		**0**		
Regression Line:	Y=	0.734	* X +	0
Regression Coefficient (r squared):		0.939		

MEP 10-31-00
Quality Review/Date

Note: The regression line includes the origin.

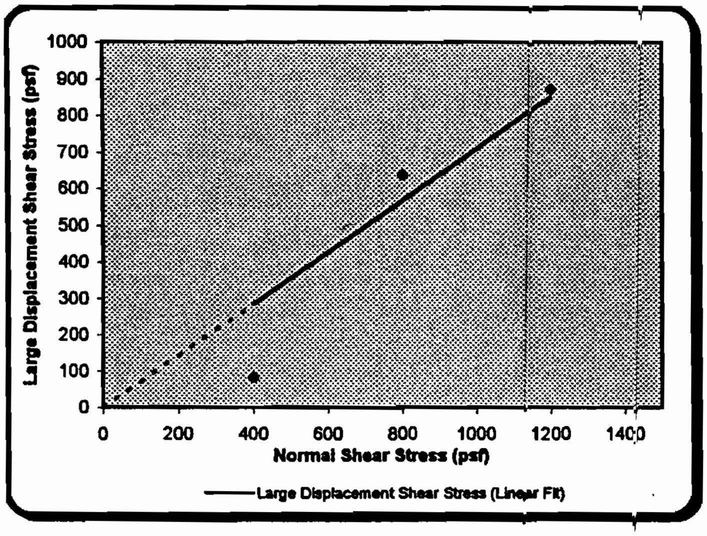
9063 Bee Caves Road □ Austin, TX 78733-6201 □ (512) 263-2101 □ (512) 263-2558 □ 1-800-880-TEST

TRI/ENVIRONMENTAL, INC.
A Texas Research International Company

INTERFACE FRICTION TEST REPORT

Client:	**Serrot**	TRI Log#:	E2128-24-09
Project:	McKenna Landfill	Test Method:	ASTM D 5321
Test Date:	09/06-09/08/00		

Tested Interface: Subgrade Soil vs. Double-Sided Geocomposite



Upper Box: Subgrade soil compacted to 111.6 pcf at 12.5 % moisture content (90 % maximum dry density at + 2 % Opt. Moisture Content as determined by a modified Proctor test).

Lower Box: Double-Sided Geocomposite

Interface Conditioning: Interface soaked and loading applied for a minimum of 12 hours prior to shear

Box Dimension: 12"x12"x4"

Test Condition: Wet

Shearing Rate: 0.04 inches/minute

Trial Number	1	2	3
Bearing Slide Resistance (lbs)	10	13	16
Normal Stress (psf)	400	800	1200
Large Displacment Shear Stress (psf)	93	651	889
Corrected Shear Stress (psf)	83	638	873
Secant Angle (degrees)	11.7	38.6	36.0

RESULTS: Large Displacement Friction Angle and Y-Intercept at 3.2-in. of Displacement

Regression Friction Angle (degrees): **35.4**

Y-intercept or Regression Adhesion (psf): **0**

Regression Line: Y= 0.711 * X + 0

Regression Coefficient (r squared): 0.874

MGF 10-21-00
Quality Review/Date

Note: The regression line includes the origin.

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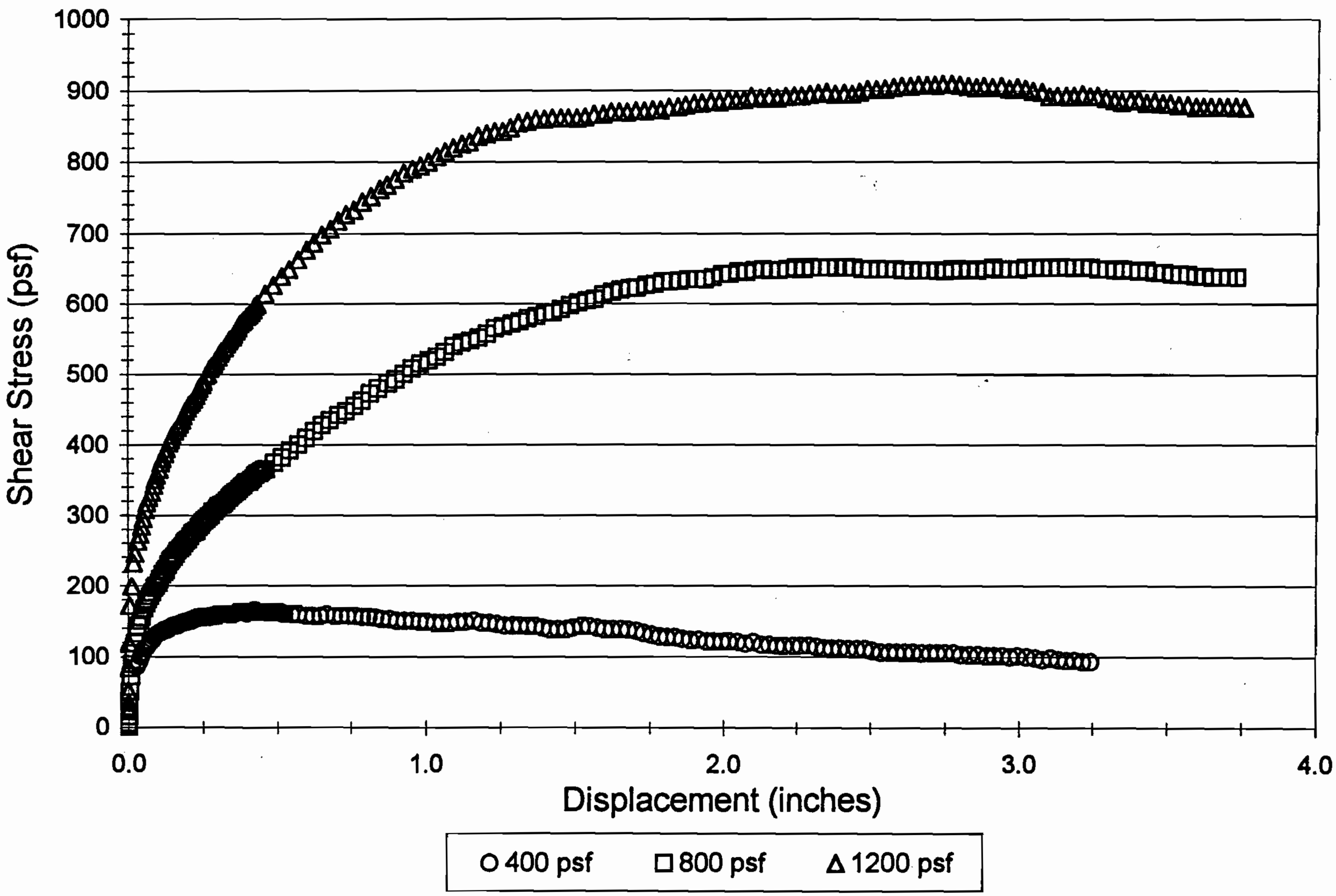
TRI/ENVIRONMENTAL, INC.
A Texas Research International Company

SERROT INTERFACE FRICTION TEST
Subgrade Soil vs. Double-Sided Geocomposite



GEOTEXTILE

Geotextile Type I is a non-woven polypropylene needle punched fabric separating the drainage stone and gas venting stone from underlying subgrades and adjacent or overlying soils. The geotextile was manufactured by Synthetic Industries, Inc. (SI) Style 651.

Geotextile Type II is a non-woven polypropylene needle punched fabric, manufactured by SI Style 1291, separating the following:

- The geomembrane from the underlying subgrades where the geocomposite leachate collection/gas venting layer does not underlie the geomembrane.

- The geomembrane from the overlying barrier protection layer.

Certificates of compliance and quality control data provided by SI and Serrot is included herein.

Also included are interface friction test results demonstrating that the following interfaces have a friction angle exceeding the required minimum of 27 degrees:

- Geotextile Type II vs. 60 mil LLDPE Textured Geomembrane;
- Geotextile Type II vs. Low Permeability Barrier Soil;
- Geotextile Type II vs. Barre Stone Barrier Protection Material; and
- Geotextile Type II vs. Brockport Site Barrier Protection Material.

SYNTHETIC INDUSTRIES

Geosynthetic Products Division

9/22/2000

Serrot International Inc PA
Connie Turner
167 Anderson Rd
Cranberry Twp PA 16066

BOL 80068038 PO 144610D
Ref: Job 10057 Order 00003176 NY Albion Mc Kenna LF

This is to certify that Product GEOTEX 651 , a nonwoven polypropylene geotextile produced by Synthetic Industries, will meet the following certifiable minimum average values when tested in accordance with the proper ASTM test methods. A minimum average roll value is calculated as the mean minus two standard deviations, yielding a 97.5 percent confidence level. This geotextile has been continuously inspected for the presence of needles and none were detected.

Physical Property	Test Method	MARV		SI Unit	
Mass Per Unit Area	ASTM D-5261	6.0	oz/yd2	(203.4)	g/m2
Thickness	ASTM D-5199	80	mils	(2.032)	mm
Tensile Strength	ASTM D-4632	170	lbs	(756.5)	N
Elongation	ASTM D-4632	50	%	50	%
Trapezoidal Tear	ASTM D-4533	70	lbs	(311.5)	N
Mullen Burst	ASTM D-3786	330	psi	(2275.0	kPa
Puncture Strength	ASTM D-4833	110	lbs	(489.5)	N
A.O.S.	ASTM D-4751	70	Sieve	0.212	mm
Permittivity	ASTM D-4491	1.30	sec-1	1.30	sec-1
Permeability	ASTM D-4491	0.24	cm/sec	0.24	cm/sec
Water Flow Rate	ASTM D-4491	110	gpm/ft2	(4481.917	lpm/m2
UV Resistance	ASTM D-4355	70	%	70	%

Strength Retained after 500 hours exposure in Xenon Arc Weatherometer

Sincerely

Patti Weaver

Patti Weaver
Technical Manager
Geosynthetic Products Division

Seller makes no warranty express or implied concerning the product furnished hereunder other than at the time of delivery it shall be of the quality and specification stated herein. ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE IS EXPRESSLY EXCLUDED, AND TO THE EXTENT THAT IF IT IS CONTRARY TO THE FOREGOING SENTENCE ANY IMPLIED WARRANTY OF MERCHANTABILITY IS EXPRESSLY EXCLUDED. Any recommendations made by the Seller concerning uses or applications of said product are believed reliable and Seller makes no warranty of results to be obtained. If the product does not meet Synthetic Industries current published specifications, and the Customer gives notice to Synthetic Industries before installing the product, then Synthetic Industries will replace the product without charge or refund the purchase price. This Data Sheet supersedes all previous Data Sheets for this style and is subject to change without notice. The effective date for this product data is 1/8/2000

Synthetic Industries, Inc.
4019 Industry Drive • Chattanooga, Tennessee • 37416 • USA
Telephone • 423 ...

Synthetic Industries
Individual Roll Data
Bill of Lading: 80068038

PoNumber:
ShipDate: 9/19/2000
CustomerNumber:

Roll Number	Style	Mass	Thickness	Tensile		Elongation		Trap Tear		Burst	Puncture
				MD	CD	MD	CD	MD	CD		
		Osy	mils	lbs	lbs	%	%	lbs	lbs	psi	lbs
		D5261	D5199	D4632	D4632	D4632	D4632	D4533	D4533	D3786	D4833
6091850A	1291	13.8	152	477	512	77	86	164	188	803	241
6091890A	1291	14.5	168	407	497	69	81	165	220	900	251
6092040A	1291	13.0	144	362	432	66	72	176	202	780	241
6128110A	1291	13.5	159	430	466	81	70	190	256	780	239
5196260A	651	7.1	90	182	253	74	79	96	138	369	127
5197710A	651	7.2	101	194	202	70	69	108	137	370	123
5197800A	651	6.7	93	187	243	68	73	99	117	351	113

Patti Weaver

SYNTHETIC INDUSTRIES

Geosynthetic Products Division

11/3/2000

Serrot International Inc PA
Connie Turner
167 Anderson Rd
Cranberry Twp PA 16066

BOL 80076402 PO 15636OD
Ref: JOB 10057 ORDER 00003176 WMI OF NY ALBION MC KENNA LF

This is to certify that Product GEOTEX 651, a nonwoven polypropylene geotextile produced by Synthetic Industries, will meet the following certifiable minimum average values when tested in accordance with the proper ASTM test methods. A minimum average roll value is calculated as the mean minus two standard deviations, yielding a 97.5 percent confidence level. This geotextile has been continuously inspected for the presence of needles and none were detected.

Physical Property	Test Method	MARV		SI Unit	
Mass Per Unit Area	ASTM D-5261	6.0	oz/yd2	(203.4)	g/m2
Thickness	ASTM D-5199	80	mils	(2.032)	mm
Tensile Strength	ASTM D-4632	170	lbs	(756.5)	N
Elongation	ASTM D-4632	50	%	50	%
Trapezoidal Tear	ASTM D-4533	70	lbs	(311.5)	N
Mullen Burst	ASTM D-3786	330	psi	(2275.0	kPa
Puncture Strength	ASTM D-4833	110	lbs	(489.5)	N
A.O.S.	ASTM D-4751	70	Sieve	0.212	mm
Permittivity	ASTM D-4491	1.30	sec-1	1.30	sec-1
Permeability	ASTM D-4491	0.24	cm/sec	0.24	cm/sec
Water Flow Rate	ASTM D-4491	110	gpm/ft2	(4481.917	lpm/m2
UV Resistance	ASTM D-4355	70	%	70	%

Strength Retained after 500 hours exposure in Xenon Arc Weatherometer

Sincerely

Patti Weaver

Patti Weaver
Technical Manager
Geosynthetic Products Division

RECEIVED
NOV - 9 2000
SERROT INT'L, INC.
NORTHEAST DIVISION

Synthetic Industries, Inc.
4019 Industry Drive • Chattanooga, Tennessee • 37416 • USA
Telephone • 423-899-0444 • Fax • 423-899-7619 • 1-800-621-0444

11/8/2000

Synthetic Industries

Individual Roll Data

Bill of Lading 80076402

Roll #	Style	Batch	Weight	Thick	Tensile		Elongation		T.Tear		Burst	Punct
					MD	XMD	MD	XMD	MD	XMD		
			Osy	mils	lbs	lbs	%	%	lbs	lbs	psi	lbs
			D5261	D5199	D4632	D4632	D4632	D4632	D4533	D4533	D3786	D4833
1157870A	651	11457	6.8	92	195	245	75	85	103	142	409	119
1157920A	651	11457	6.3	85	168	215	73	84	89	121	330	110
B830760A	651	80218	7.6	102	221	254	75	65	105	132	411	152
B832550A	651	80225	6.6	86	191	205	67	72	104	103	360	118

Patti Weaver

Synthetic Industries' current standard manufacturing quality control (MQC) testing frequency for GEOTEX nonwoven geotextiles is one (1) test per 90,000 sf (8,360 sm) for index properties (mass per unit area, thickness, grab tensile and elongation, trapezoidal tear, mullen burst and puncture resistance) for styles heavier than 601 and one (1) test per 162,000 sf (15,000 sm) for index properties for style 601 and lighter. Although we strive to test our nonwoven geotextiles for apparent opening size (AOS) and Permittivity/permeability/water flow rate approximately once every 540,000 sf (50,160 sm), the actual frequency of testing for performance properties will vary depending upon production schedules, product availability, customer requirements, job specifications or other agreements arranged with Synthetic Industries prior to the time of purchase. If additional testing is needed to meet higher frequencies required by the project specifications, it is the purchaser's responsibility to notify Synthetic Industries and ask for assistance in calculating the costs for the additional tests.

Once rolls of nonwoven geotextiles are produced, inspected and the test results from the frequency stated above indicates that materials produced during the production run meets our published minimum average roll values, approved rolls are shipped for storage until an order requires the material to be shipped. Since rolls are loaded at the warehouse independent of production sequence test results listed above may include data from rolls which were not shipped. However, the data provided is from the same production run as the rolls actually shipped on this bill of lading.

SYNTHETIC INDUSTRIES

Geosynthetic Products Division

6/28/2000

Serrot International Inc
Connie Turner
167 Anderson Rd
Cranberry Twp PA 16066
BOL 80050471 PO 112250D
Ref: WMI OF NY ALBION-MC KENNA #10051

This is to certify that Product GEOTEX 1291, a nonwoven polypropylene geotextile produced by Synthetic Industries, will meet the following certifiable minimum average values when tested in accordance with the proper ASTM test methods. A minimum average roll value is calculated as the mean minus two standard deviations, yielding a 97.5 percent confidence level. This geotextile has been continuously inspected for the presence of needles and none were detected.

Physical Property	Test Method	MARV		SI Unit	
Mass Per Unit Area	ASTM D-5261	12.0	oz/yd2	(406.8)	g/m2
Thickness	ASTM D-5199	115	mils	(2.921)	mm
Tensile Strength	ASTM D-4632	320	lbs	(1424)	N
Elongation	ASTM D-4632	50	%	50	%
Trapezoidal Tear	ASTM D-4533	125	lbs	(556.25)	N
Mullen Burst	ASTM D-3786	620	psi	(4274.2	kPa
Puncture Strength	ASTM D-4833	210	lbs	(934.5)	N
A.O.S.	ASTM D-4751	100	Sieve	0.15	mm
Permittivity	ASTM D-4491	0.8	sec-1	0.8	sec-1
Permeability	ASTM D-4491	0.29	cm/sec	0.29	cm/sec
Water Flow Rate	ASTM D-4491	60	gpm/ft2	(2444.682	lpm/m2
UV Resistance	ASTM D-4355	70	%	70	%

Strength Retained after 500 hours exposure in Xenon Arc Weatherometer

Sincerely

Warren Sickler
Senior Technical Manager
Geosynthetic Products Division

Synthetic Industries, Inc.
4019 Industry Drive • Chattanooga, Tennessee • 37416 • USA
Telephone • 423-899-0444 • Fax • 423-899-7619 • 1-800-621-0444

SYNTHETIC INDUSTRIES

Geosynthetic Products Division

6/23/2000

Serrot International Inc
Connie Turner
167 Anderson Rd
Cranberry Twp PA 16066
BOL 80049355 PO 112250D
Ref: WMI of NY Albion-MC Kenna

This is to certify that Product GEOTEX 1291 , a nonwoven polypropylene geotextile produced by Synthetic Industries, will meet the following certifiable minimum average values when tested in accordance with the proper ASTM test methods. A minimum average roll value is calculated as the mean minus two standard deviations, yielding a 97.5 percent confidence level. This geotextile has been continuously inspected for the presence of needles and none were detected.

Physical Property	Test Method	MARV		SI Unit	
Mass Per Unit Area	ASTM D-5261	12.0	oz/yd2	(406.8)	g/m2
Thickness	ASTM D-5199	115	mils	(2.921)	mm
Tensile Strength	ASTM D-4632	320	lbs	(1424)	N
Elongation	ASTM D-4632	50	%	50	%
Trapezoidal Tear	ASTM D-4533	125	lbs	(556.25)	N
Mullen Burst	ASTM D-3786	620	psi	(4274.2	kPa
Puncture Strength	ASTM D-4833	210	lbs	(934.5)	N
A.O.S.	ASTM D-4751	100	Sieve	0.15	mm
Permittivity	ASTM D-4491	0.8	sec-1	0.8	sec-1
Permeability	ASTM D-4491	0.29	cm/sec	0.29	cm/sec
Water Flow Rate	ASTM D-4491	60	gpm/ft2	(2444.682	lpm/m2
UV Resistance	ASTM D-4355	70	%	70	%

Strength Retained after 500 hours exposure in Xenon Arc Weatherometer

Sincerely

Warren Sickler
Senior Technical Manager
Geosynthetic Products Division

Seller makes no warranty express or implied concerning the product furnished hereunder other than at the time of delivery it shall be of the quality and specification stated herein. ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE IS EXPRESSLY EXCLUDED AND TO THE EXTENT THAT IF IT IS CONTRARY TO THE FOREGOING SENTENCE ANY IMPLIED WARRANTY OF MERCHANTABILITY IS EXPRESSLY EXCLUDED. Any recommendations made by the Seller concerning uses or applications of said product are believed reliable and Seller makes no warranty of results to be obtained. If the product does not meet Synthetic Industries current published specifications, and the Customer gives notice to Synthetic Industries before installing the product, then Synthetic Industries will replace the product without charge or refund the purchase price. This Data Sheet supersedes all previous Data Sheets for this style and is subject to change without notice. The effective date for this product data is 3/29/2000

Synthetic Industries, Inc.
4019 Industry Drive • Chattanooga, Tennessee • 37416 • USA
Telephone • 423-899-0444 • Fax • 423-899-7619 • 1-800-621-0444

Synthetic Industries

Individual Roll Data
Bill of Lading 80049355

Roll #	Style	Batch	Weight	Thick	Tensile		Elongation		T.Tear		Burst	Punct
					MD	XMD	MD	XMD	MD	XMD		
			Osy	mils	lbs	lbs	%	%	lbs	lbs	psi	lbs
			D5261	D5199	D4632	D4632	D4632	D4632	D4533	D4533	D3786	D4833
6101270A	1291	60539	13.4	148	445	463	71	81	208	215	733	229
6101610A	1291	60541	13.6	146	439	481	75	70	222	217	823	235
6101630A	1291	60541	14.2	155	468	484	82	77	180	256	793	256

Synthetic Industries' current standard manufacturing quality control (MQC) testing frequency for GEOTEX nonwoven geotextiles is one (1) test per 90,000 sf (8,360 sm) for index properties (mass per unit area, thickness, grab tensile and elongation, trapezoidal tear, mullen burst and puncture resistance) for styles heavier than 601 and one (1) test per 162,000 sf (15,000 sm) for index properties for style 601 and lighter. Although we strive to test our nonwoven geotextiles for apparent opening size (AOS) and Permittivity/permeability/water flow rate approximately once every 540,000 sf (50,160 sm), the actual frequency of testing for performance properties will vary depending upon production schedules, product availability, customer requirements, job specifications or other agreements arranged with Synthetic Industries prior to the time of purchase. If additional testing is needed to meet higher frequencies required by the project specifications, it is the purchaser's responsibility to notify Synthetic Industries and ask for assistance in calculating the costs for the additional tests.

Once rolls of nonwoven geotextiles are produced, inspected and the test results from the frequency stated above indicates that materials produced during the production run meets our published minimum average roll values, approved rolls are shipped for storage until an order requires the material to be shipped. Since rolls are loaded at the warehouse independent of production sequence test results listed above may include data from rolls which were not shipped. However, the data provided is from the same production run as the rolls actually shipped on this bill of lading.

SYNTHETIC INDUSTRIES

Geosynthetic Products Division

6/23/2000

Serrot International Inc
Connie Turner
167 Anderson Rd
Cranberry Twp PA 16066

BOL 80048106 PO 11225OD

Ref: WMI of NY Albion-MC Kenna

This is to certify that Product GEOTEX 1291 , a nonwoven polypropylene geotextile produced by Synthetic Industries, will meet the following certifiable minimum average values when tested in accordance with the proper ASTM test methods. A minimum average roll value is calculated as the mean minus two standard deviations, yielding a 97.5 percent confidence level. This geotextile has been continuously inspected for the presence of needles and none were detected.

Physical Property	Test Method	MARV		SI Unit	
Mass Per Unit Area	ASTM D-5261	12.0	oz/yd2	(406.8)	g/m2
Thickness	ASTM D-5199	115	mils	(2.921)	mm
Tensile Strength	ASTM D-4632	320	lbs	(1424)	N
Elongation	ASTM D-4632	50	%	50	%
Trapezoidal Tear	ASTM D-4533	125	lbs	(556.25)	N
Mullen Burst	ASTM D-3786	620	psi	(4274.2	kPa
Puncture Strength	ASTM D-4833	210	lbs	(934.5)	N
A.O.S.	ASTM D-4751	100	Sieve	0.15	mm
Permittivity	ASTM D-4491	0.8	sec-1	0.8	sec-1
Permeability	ASTM D-4491	0.29	cm/sec	0.29	cm/sec
Water Flow Rate	ASTM D-4491	60	gpm/ft2	(2444.682	lpm/m2
UV Resistance	ASTM D-4355	70	%	70	%

Strength Retained after 500 hours exposure in Xenon Arc Weatherometer

Sincerely

Warren Sickler
Senior Technical Manager
Geosynthetic Products Division

Seller makes no warranty express or implied concerning the product furnished hereunder other than at the time of delivery it shall be of the quality and specification stated herein. ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE IS EXPRESSLY EXCLUDED AND TO THE EXTENT THAT IF IT IS CONTRARY TO THE FOREGOING SENTENCE ANY IMPLIED WARRANTY OF MERCHANTABILITY IS EXPRESSLY EXCLUDED. Any recommendations made by the Seller concerning uses or applications of said product are believed reliable and Seller makes no warranty of results to be obtained. If the product does not meet Synthetic Industries current published specifications, and the Customer gives notice to Synthetic Industries before installing the product, then Synthetic Industries will replace the product without charge or refund the purchase price. This Data Sheet supersedes all previous Data Sheets for this style and is subject to change without notice. The effective date for this product data is 3/29/2000

Synthetic Industries, Inc.

4019 Industry Drive • Chattanooga, Tennessee • 37416 • USA

PoNumber: 11225OD
ShipDate: 6/14/2000
CustomerNumber: 15564

Synthetic Industries
Individual Roll Data
Bill of Lading: 80048106

Roll Number	Style	Mass	Thickness	Tensile		Elongation		Trap Tear		Puncture	Burst
				MD	CD	MD	CD	MD	CD		
		Osy	mils	lbs	lbs	%	%	lbs	lbs	lbs	psi
		D5261	D5199	D4632	D4632	D4632	D4632	D4533	D4533	D4833	D3786
6101310A	1291	12.1	122	404	384	75	76	190	222	212	719
6101370A	1291	13.5	155	434	481	79	85	185	246	214	680
6101400A	1291	12.4	143	380	432	83	88	154	221	216	644
6101415A	1291	12.8	146	419	486	90	87	191	219	221	761
6101430A	1291	13.3	152	484	486	88	83	171	218	244	763
6101445A	1291	12.1	134	341	456	75	79	166	192	211	

SYNTHETIC INDUSTRIES

Geosynthetic Products Division

6/23/2000

Serrot International Inc
Connie Turner
167 Anderson Rd
Cranberry Twp PA 16066

BOL 80049055 PO 11225OD

Ref: WMI of NY Ablion-MC Kenna

This is to certify that Product GEOTEX 1291 , a nonwoven polypropylene geotextile produced by Synthetic Industries, will meet the following certifiable minimum average values when tested in accordance with the proper ASTM test methods. A minimum average roll value is calculated as the mean minus two standard deviations, yielding a 97.5 percent confidence level. This geotextile has been continuously inspected for the presence of needles and none were detected.

Physical Property	Test Method	MARV		SI Unit	
Mass Per Unit Area	ASTM D-5261	12.0	oz/yd2	(406.8)	g/m2
Thickness	ASTM D-5199	115	mils	(2.921)	mm
Tensile Strength	ASTM D-4632	320	lbs	(1424)	N
Elongation	ASTM D-4632	50	%	50	%
Trapezoidal Tear	ASTM D-4533	125	lbs	(556.25)	N
Mullen Burst	ASTM D-3786	620	psi	(4274.2	kPa
Puncture Strength	ASTM D-4833	210	lbs	(934.5)	N
A.O.S.	ASTM D-4751	100	Sieve	0.15	mm
Permittivity	ASTM D-4491	0.8	sec-1	0.8	sec-1
Permeability	ASTM D-4491	0.29	cm/sec	0.29	cm/sec
Water Flow Rate	ASTM D-4491	60	gpm/ft2	(2444.682	lpm/m2
UV Resistance	ASTM D-4355	70	%	70	%

Strength Retained after 500 hours exposure in Xenon Arc Weatherometer

Sincerely

Warren Sickler
Senior Technical Manager
Geosynthetic Products Division

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Synthetic Industries, Inc.
4019 Industry Drive • Chattanooga, Tennessee • 37416 • USA
Telephone • 423-899-0444 • Fax • 423-899-7619 • 1-800-621-0444

Synthetic Industries
Individual Roll Data
Bill of Lading: 80049055

PoNumber: 11225OD
ShipDate: 6/15/2000
CustomerNumber: 15564

Roll Number	Style	Mass	Thickness	Tensile		Elongation		Trap Tear		Puncture	Burst
				MD	CD	MD	CD	MD	CD		
		Osy	mils	lbs	lbs	%	%	lbs	lbs	lbs	psi
		D5261	D5199	D4632	D4632	D4632	D4632	D4533	D4533	D4833	D3786
6101610A	1291	13.6	146	439	481	75	70	222	217	235	823
6101640A	1291	13.4	142	405	486	78	75	183	232	239	773

SYNTHETIC INDUSTRIES

Geosynthetic Products Division

6/28/2000

Serrot International Inc
Connie Turner
167 Anderson Rd
Cranberry Twp PA 16066

BOL 80050857 PO 11225OD

Ref: WMI OF NY ALBION-MC KENNA

This is to certify that Product GEOTEX 1291 , a nonwoven polypropylene geotextile produced by Synthetic Industries, will meet the following certifiable minimum average values when tested in accordance with the proper ASTM test methods. A minimum average roll value is calculated as the mean minus two standard deviations, yielding a 97.5 percent confidence level. This geotextile has been continuously inspected for the presence of needles and none were detected.

Physical Property	Test Method	MARV		SI Unit	
Mass Per Unit Area	ASTM D-5261	12.0	oz/yd2	(406.8)	g/m2
Thickness	ASTM D-5199	115	mils	(2.921)	mm
Tensile Strength	ASTM D-4632	320	lbs	(1424)	N
Elongation	ASTM D-4632	50	%	50	%
Trapezoidal Tear	ASTM D-4533	125	lbs	(556.25)	N
Mullen Burst	ASTM D-3786	620	psi	(4274.2	kPa
Puncture Strength	ASTM D-4833	210	lbs	(934.5)	N
A.O.S.	ASTM D-4751	100	Sieve	0.15	mm
Permittivity	ASTM D-4491	0.8	sec-1	0.8	sec-1
Permeability	ASTM D-4491	0.29	cm/sec	0.29	cm/sec
Water Flow Rate	ASTM D-4491	60	gpm/ft2	(2444.682	lpm/m2
UV Resistance	ASTM D-4355	70	%	70	%

Strength Retained after 500 hours exposure in Xenon Arc Weatherometer

Sincerely

Warren Sickler
Senior Technical Manager
Geosynthetic Products Division

Synthetic Industries, Inc.
4019 Industry Drive • Chattanooga, Tennessee • 37416 • USA
Telephone • 423-899-0444 • Fax • 423-899-7619 • 1-800-621-0444

Synthetic Industries
Individual Roll Data
Bill of Lading: 80050857

PoNumber: 11225OD
ShipDate: 6/23/2000
CustomerNumber: 15564

Roll Number	Style	Mass	Thickness	Tensile		Elongation		Trap Tear		Puncture	Burst
				MD	CD	MD	CD	MD	CD		
		Osy	mils	lbs	lbs	%	%	lbs	lbs	lbs	psi
		D5261	D5199	D4632	D4632	D4632	D4632	D4533	D4533	D4833	D3786
6101550A	1291	12.6	137	399	445	82	72	192	228	214	690
6101630A	1291	14.2	155	468	484	82	77	180	256	256	793
6101650A	1291	13.5	139	384	443	79	73	158	228	232	727
6101659A	1291	13.0	145	419	443	82	74	155	208	239	764

16

SYNTHETIC INDUSTRIES

Geosynthetic Products Division

6/28/2000

Serrot International Inc
Connie Turner
167 Anderson Rd
Cranberry Twp PA 16066

BOL 80050912 PO 11225OD

Ref: WMI OF NY ALBION-MC KENNA

This is to certify that Product GEOTEX 1291 , a nonwoven polypropylene geotextile produced by Synthetic Industries, will meet the following certifiable minimum average values when tested in accordance with the proper ASTM test methods. A minimum average roll value is calculated as the mean minus two standard deviations, yielding a 97.5 percent confidence level. This geotextile has been continuously inspected for the presence of needles and none were detected.

Physical Property	**Test Method**	**MARV**		**SI Unit**	
Mass Per Unit Area	ASTM D-5261	12.0	oz/yd2	(406.8)	g/m2
Thickness	ASTM D-5199	115	mils	(2.921)	mm
Tensile Strength	ASTM D-4632	320	lbs	(1424)	N
Elongation	ASTM D-4632	50	%	50	%
Trapezoidal Tear	ASTM D-4533	125	lbs	(556.25)	N
Mullen Burst	ASTM D-3786	620	psi	(4274.2	kPa
Puncture Strength	ASTM D-4833	210	lbs	(934.5)	N
A.O.S.	ASTM D-4751	100	Sieve	0.15	mm
Permittivity	ASTM D-4491	0.8	sec-1	0.8	sec-1
Permeability	ASTM D-4491	0.29	cm/sec	0.29	cm/sec
Water Flow Rate	ASTM D-4491	60	gpm/ft2	(2444.682	lpm/m2
UV Resistance	ASTM D-4355	70	%	70	%

Strength Retained after 500 hours exposure in Xenon Arc Weatherometer

Sincerely

Warren Sickler
Senior Technical Manager
Geosynthetic Products Division

Synthetic Industries, Inc.
4019 Industry Drive • Chattanooga, Tennessee • 37416 • USA

Synthetic Industries
Individual Roll Data
Bill of Lading: 80050912

PoNumber: 11225OD
ShipDate: 6/23/2000
CustomerNumber: 15564

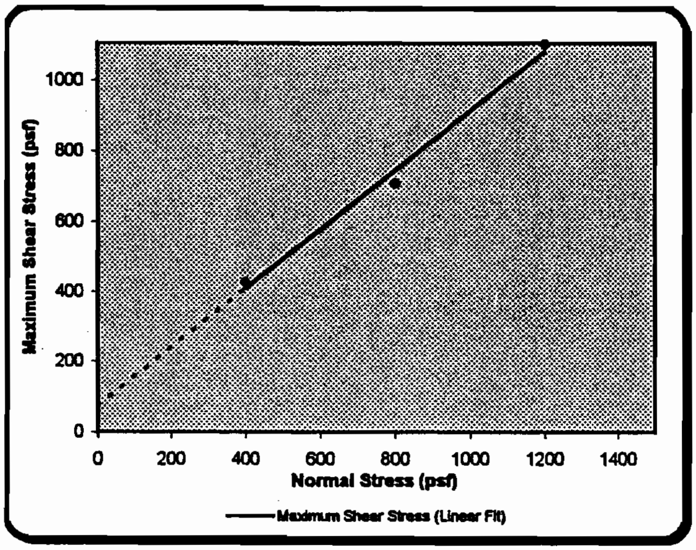
Roll Number	Style	Mass	Thickness	Tensile		Elongation		Trap Tear		Puncture	Burst
				MD	CD	MD	CD	MD	CD		
		Osy	mils	lbs	lbs	%	%	lbs	lbs	lbs	psi
		D5261	D5199	D4632	D4632	D4632	D4632	D4533	D4533	D4833	D3786
6101560A	1291	12.9	142	441	440	79	71	163	213	241	785
6101579A	1291	13.3	146	404	465	83	70	159	249	232	717
6101590A	1291	14.0	152	456	474	87	74	170	234	235	797

TRI/ENVIRONMENTAL, INC.
A Texas Research International Company

INTERFACE FRICTION TEST REPORT

Client:	**Serrot**	TRI Log#:	E2128-24-09
Project:	McKenna Landfill	Test Method:	ASTM D 5321
Test Date:	08/16-08/17/00		

Tested Interface: 12 oz. Non-Woven Geotextile vs. 60 mil LLDPE Textured Geomembrane



Upper Box:	Synthetic Industries 12 oz. Non-woven Geotextile
Lower Box:	60 mil textured LLDPE Geomembrane
Interface Conditioning:	Interface soaked and loading applied for a minimum of 12 hours prior to shear
Box Dimension:	12"x12"x4"
Test Condition:	Wet
Shearing Rate:	0.04 inches/minute

Trial Number	1	2	3
Bearing Slide Resistance (lbs)	10	13	16
Normal Stress (psf)	400	800	1200
Maximum Shear Stress (psf)	438	723	1118
Corrected Shear Stress (psf)	428	710	1102
Secant Angle (degrees)	46.9	41.6	42.6

RESULTS: Maximum Friction Angle and Y-intercept

Regression Friction Angle (degrees):		**40.1**		
Y-intercept or Regression Adhesion (psf):		**73**		
Regression Line:	Y=	0.843	*X +	73
Regression Coefficient (r squared):		0.991		

MEF 10-31-00
Quality Review/Date

The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

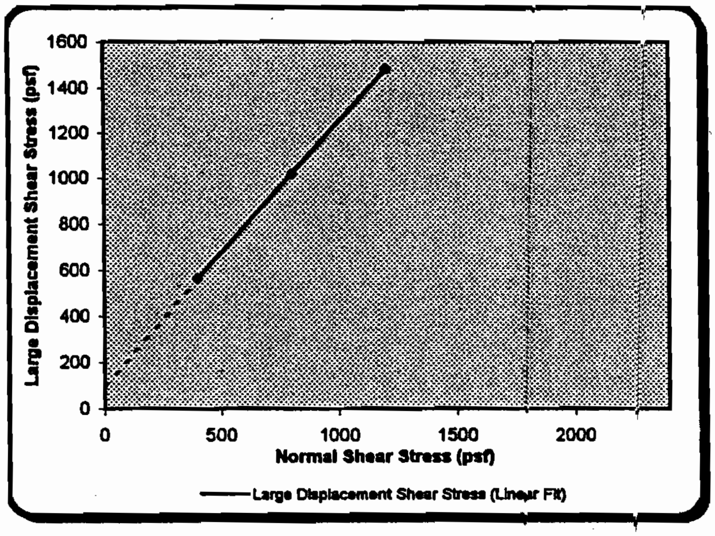
TRI/ENVIRONMENTAL, INC.
A Texas Research International Company

INTERFACE FRICTION TEST REPORT

Client: Serrot
Project: McKenna Landfill
Test Date: 08/16-08/17/00

TRI Log#: E2128-24-09
Test Method: ASTM D 5321

Tested Interface: 12 oz. Non-Woven Geotextile vs. 60 mil LLDPE Textured Geomembrane



Upper Box: Synthetic Industries 12 oz. Non-woven Geotextile

Lower Box: 60 mil textured LLDPE Geomembrane

Interface Conditioning: Interface soaked and loading applied for a minimum of 12 hours prior to shear

Box Dimension: 12"x12"x4"

Test Condition: Wet

Shearing Rate: 0.04 inches/minute

Trial Number	1	2	3
Bearing Slide Resistance (lbs)	10	13	16
Normal Stress (psf)	400	800	1200
Large Displacment Shear Stress (psf)	576	1031	1499
Corrected Shear Stress (psf)	566	1018	1483
Secant Angle (degrees)	54.8	51.8	51.0

RESULTS: Large Displacement Friction Angle and Y-intercept at 3.8-in. of Displacement

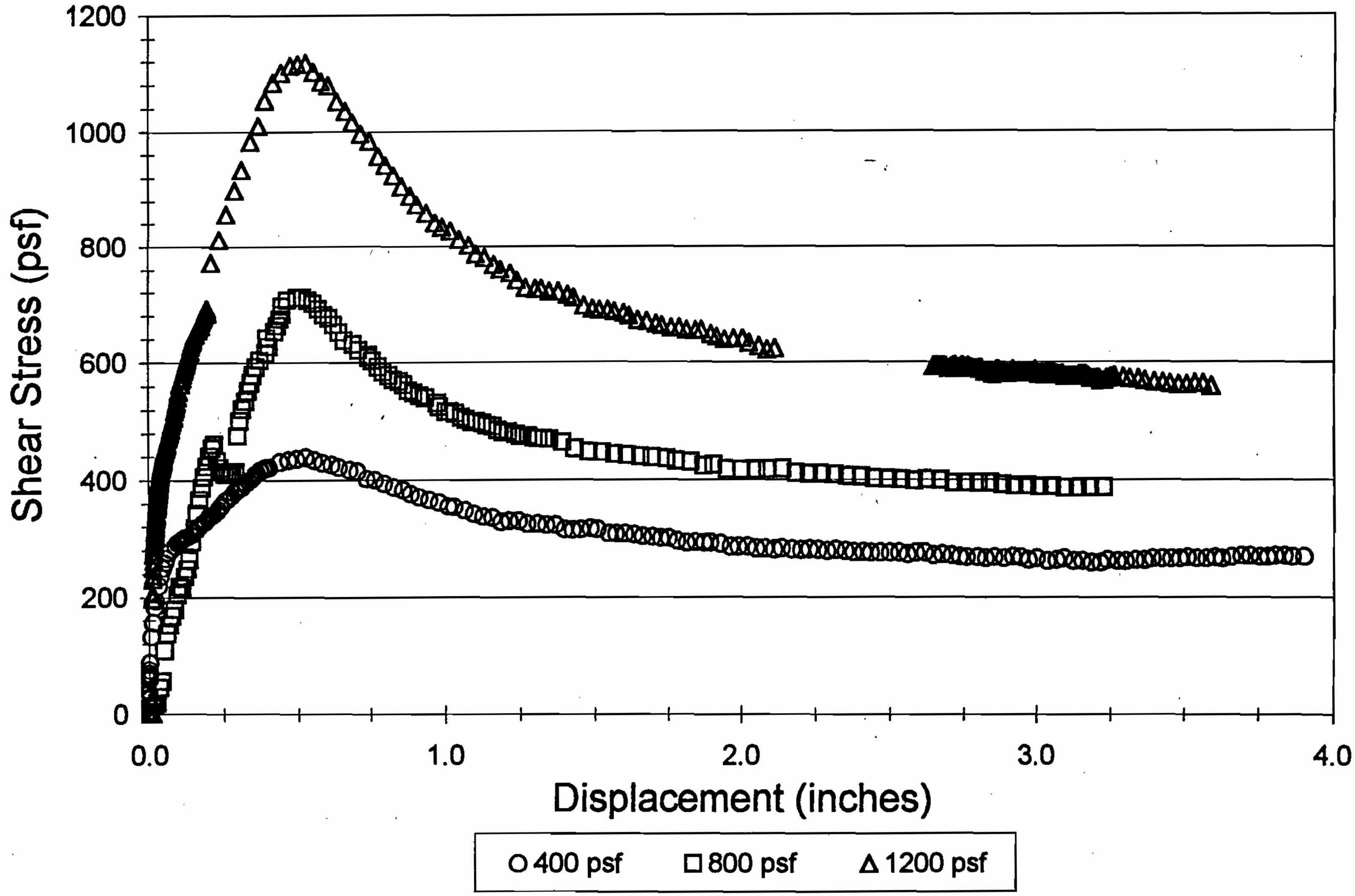
Regression Friction Angle (degrees):		**48.9**		
Y-intercept or Regression Adhesion (psf):		**105**		
Regression Line:	Y=	1.147	* X +	105
Regression Coefficient (r squared):		1.000		

MES 10-21-00
Quality Review/Date

The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

TRI/ENVIRONMENTAL, INC.
A Texas Research International Company

SERROT INTERFACE FRICTION TEST
12 oz. Non-Woven Geotextile vs. 60 mil Textured LLDPE Geomembrane



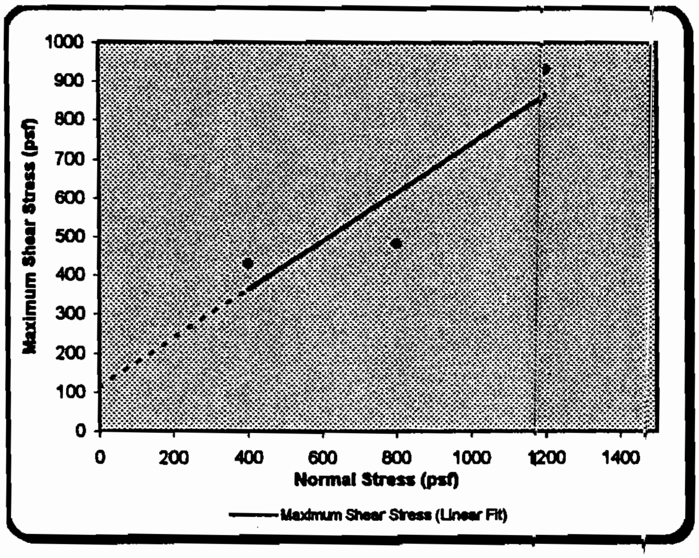
9063 Bee Caves Road □ Austin, TX 78733-6201 □ (512) 263-2101 □ FAX (512) 263-2558 □ 1-800-880-TEST

TRI/ENVIRONMENTAL, INC.
A Texas Research International Company

INTERFACE FRICTION TEST REPORT

Client:	**Serrot**	TRI Log#:	E2128-24-09
Project:	McKenna Landfill	Test Method:	ASTM D 5321
Test Date:	08/17-09/1/00		

Tested Interface: Low Perm Barrier Soil vs. 12 oz. Non-Woven Geotextile



Upper Box: Low Perm Barrier Soil compacted to 99.5 pcf at 20.5 % moisture content (90 % maximum dry density at + 2 % Opt. Moisture Content as determined by a modified Proctor test).

Lower Box: Synthetic Industries 12 oz. Geotextile

Interface Conditioning: Interface soaked and loading applied for a minimum of 12 hours prior to shear

Box Dimension: 12"x12"x4"

Test Condition: Wet

Shearing Rate: 0.04 inches/minute

Trial Number	1	2	3
Bearing Slide Resistance (lbs)	10	13	16
Normal Stress (psf)	400	800	1200
Maximum Shear Stress (psf)	439	496	947
Corrected Shear Stress (psf)	429	483	931
Secant Angle (degrees)	47.0	31.1	37.8

RESULTS: Maximum Friction Angle and Y-intercept

Regression Friction Angle (degrees):		**32.1**		
Y-intercept or Regression Adhesion (psf):		**112**		
Regression Line:	Y=	0.628	*X +	112
Regression Coefficient (r squared):		0.830		

MKS 10-31-00
Quality Review/Date

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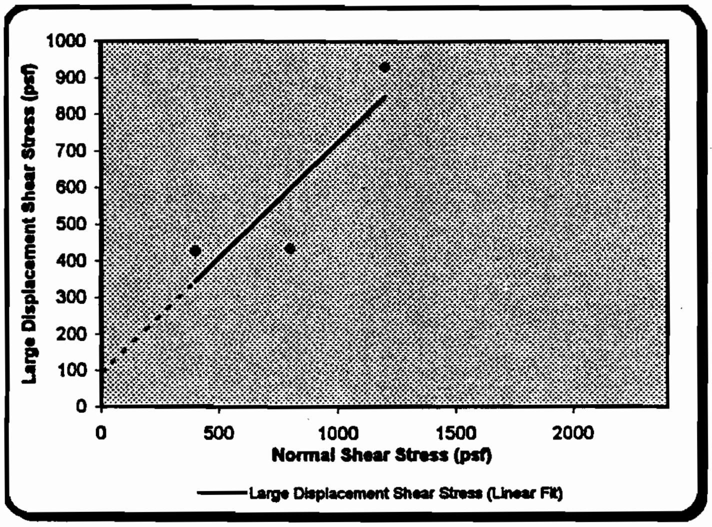
TRI/ENVIRONMENTAL, INC.
A Texas Research International Company

INTERFACE FRICTION TEST REPORT

Client:	**Serrot**	TRI Log#:	E2128-24-09
Project:	McKenna Landfill	Test Method:	ASTM D 5321
Test Date:	08/17-09/1/00		

Tested Interface: Low Perm Barrier Soil vs. 12 oz. Non-Woven Geotextile



Upper Box: Low Perm Barrier Soil compacted to 99.5 pcf a 20.5 % moisture content (90 % maximum dry density at + 2 % Opt. Moisture Content as determined by a modified Proctor test).

Lower Box: Synthetic Industries 12 oz. Geotextile

Interface Conditioning: Interface soaked and loading applied for a minimum of 12 hours prior to shear

Box Dimension: 12"x12"x4"

Test Condition: Wet

Shearing Rate: 0.04 inches/minute

Trial Number	1	2	3
Bearing Slide Resistance (lbs)	10	13	16
Normal Stress (psf)	400	800	1200
Large Displacment Shear Stress (psf)	437	447	947
Corrected Shear Stress (psf)	427	434	931
Secant Angle (degrees)	46.9	28.5	37.8

RESULTS: Large Displacement Friction Angle and Y-intercept at 3.6-in. of Displacement

Regression Friction Angle (degrees):		**32.2**		
Y-intercept or Regression Adhesion (psf):		**93**		
Regression Line:	Y=	0.630	* X +	93
Regression Coefficient (r squared):		0.761		

MEP 10-31-00
Quality Review/Date

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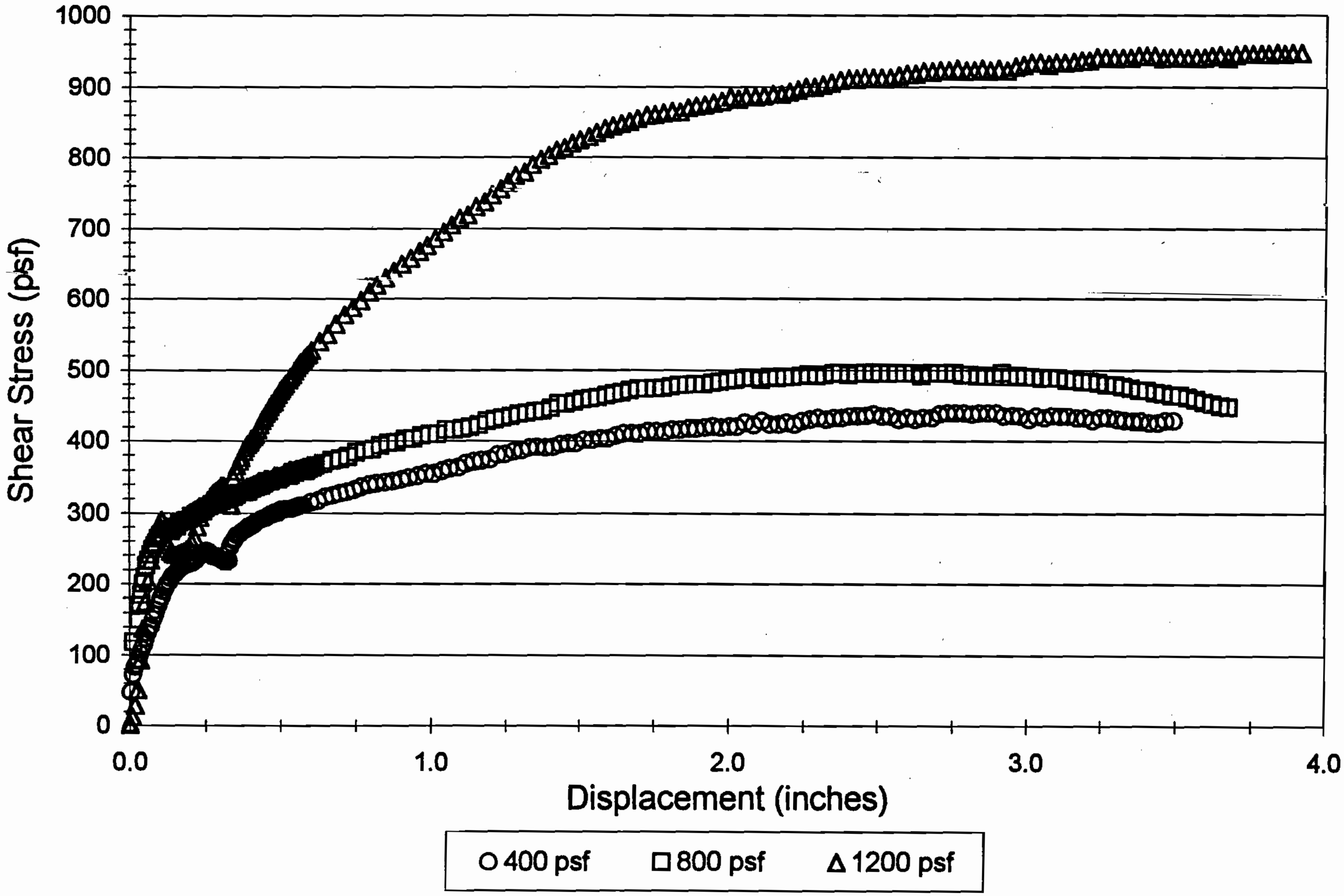
9063 Bee Caves Road □ Austin, TX 78733-6201 □ (512) 263-2101 □ (512) 263-2558 □ 1-800-880-TEST

TRI/ENVIRONMENTAL, INC.
A Texas Research International Company

SERROT INTERFACE FRICTION TEST
Low Perm Barrier Soil vs. 12 oz. Non-Woven Geotextile

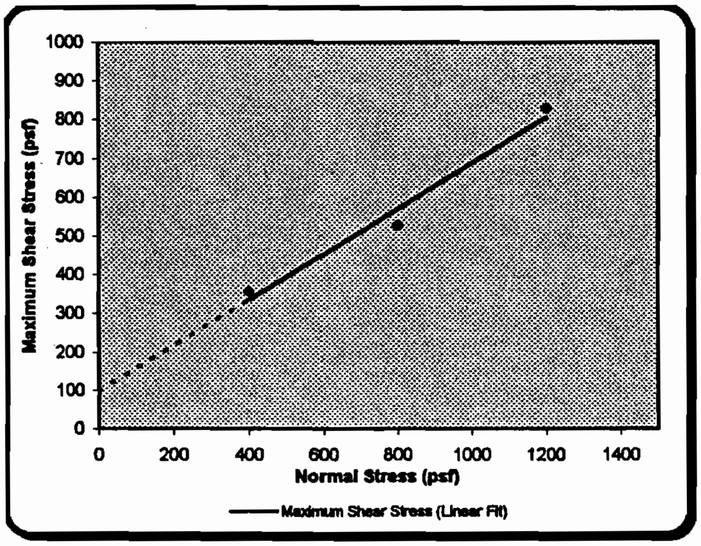


TRI/ENVIRONMENTAL, INC.
A Texas Research International Company

INTERFACE FRICTION TEST REPORT

Client:	**Serrot**	TRI Log#:	E2128-24-09
Project:	McKenna Landfill	Test Method:	ASTM D 5321
Test Date:	09/5-09/6/00		

Tested Interface: Barrier Protection Layer Soil vs. 12 oz. Non-Woven Geotextile
(BARRE STONE)



Upper Box:	Barrier Protection soil compacted to 109.8 pcf a 15 % moisture content (90 % maximum dry density at + 2 % Opt. Moisture Content as determined by a modified Proctor test).
Lower Box:	Synthetic Industries 12 oz. Geotextile
Interface Conditioning:	Interface soaked and loading applied for a minimum of 12 hours prior to shear
Box Dimension:	12"x12"x4"
Test Condition:	Wet
Shearing Rate:	0.04 inches/minute

Trial Number	1	2	3
Bearing Slide Resistance (lbs)	10	13	16
Normal Stress (psf)	400	800	1200
Maximum Shear Stress (psf)	366	540	845
Corrected Shear Stress (psf)	356	527	829
Secant Angle (degrees)	41.7	33.4	34.6

RESULTS: Maximum Friction Angle and Y-intercept

Regression Friction Angle (degrees): **30.6**
Y-Intercept or Regression Adhesion (psf): **98**

Regression Line: Y= 0.592 * X + 98
Regression Coefficient (r squared): 0.975

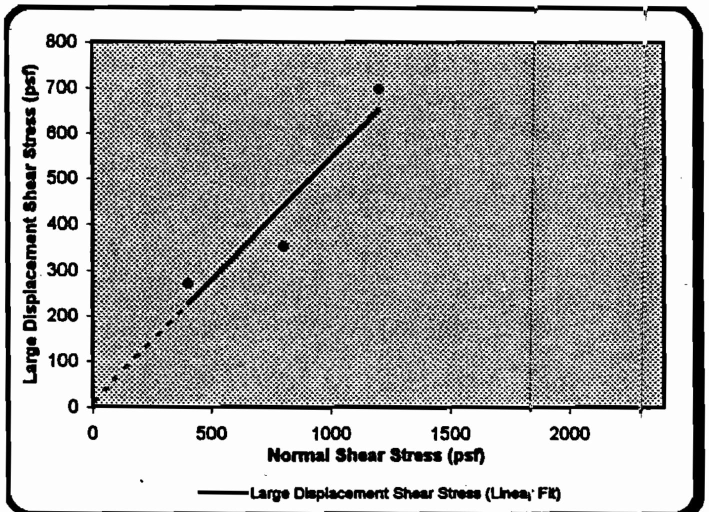
MCY 10-31-00
Quality Review/Date

TRI/ENVIRONMENTAL, INC.
A Texas Research International Company

INTERFACE FRICTION TEST REPORT

Client:	Serrot	TRI Log#:	E2128-24-09
Project:	McKenna Landfill	Test Method:	ASTM D 5321
Test Date:	09/5-09/6/00		

Tested Interface: Barrier Protection Layer Soil vs. 12 oz. Non-Woven Geotextile
(BARRE STONE)



Upper Box: Barrier Protection soil compacted to 109.8 pcf 15 % moisture content (90 % maximum dry density at + 2 % Opt. Moisture Content as determined by a modified Proctor test).

Lower Box: Synthetic Industries 12 oz. Geotextile

Interface Conditioning: Interface soaked and loading applied for a minimum of 12 hours prior to shear

Box Dimension: 12"x12"x4"

Test Condition: Wet

Shearing Rate: 0.04 inches/minute

Trial Number	1	2	3
Bearing Slide Resistance (lbs)	10	13	16
Normal Stress (psf)	400	800	1200
Large Displacment Shear Stress (psf)	282	365	714
Corrected Shear Stress (psf)	272	352	698
Secant Angle (degrees)	34.2	23.8	30.2

RESULTS: Large Displacement Friction Angle and Y-intercept at 3.6-in. of Displacement

Regression Friction Angle (degrees): 28.0

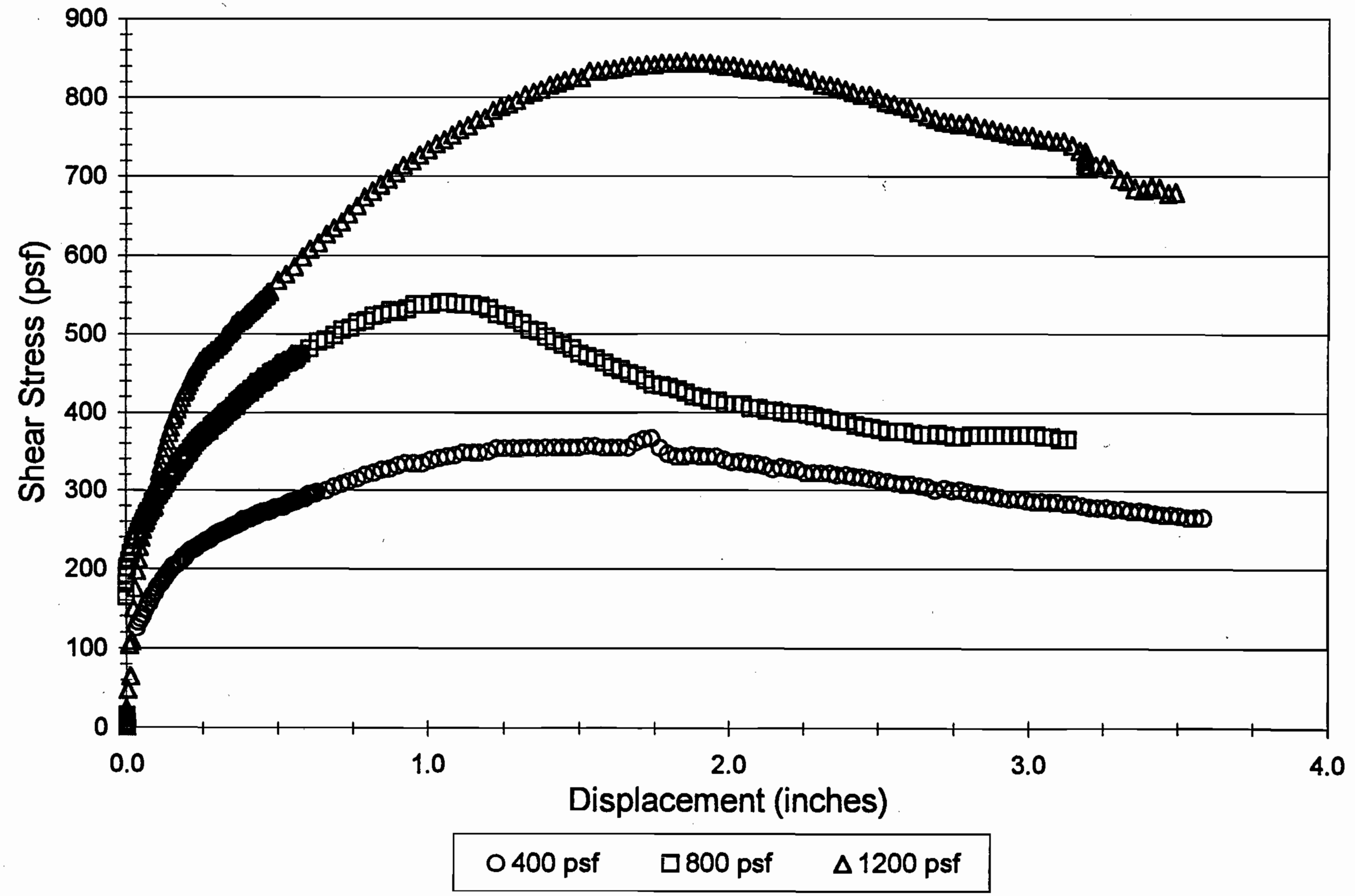
Y-intercept or Regression Adhesion (psf): 15

Regression Line: Y= 0.533 * X + 15

Regression Coefficient (r squared): 0.885

MCS 10-31-00
Quality Review/Date

SERROT INTERFACE FRICTION TEST
Barrier Protection Layer Soil vs. 12 oz. Non-Woven Geotextile



9063 Bee Caves Road □ Austin, TX 78733-6201 □ (512) 263-2101 □ FAX (512) 263-2558 □ 1-800-880-TEST

FAX COVER

JLT

938 South Central Avenue
Canonsburg, Pa. 15317
Tel: 724-746-4441
Fax: 724-745-4261

To: Al Hopkins

Company : Glynn Geotechnical Engineering

Fax Number : 1-716-625-6983

From : John Boschuk, Jr.

J & L Testing Company, Inc.

Fax Number : 1-724-745-4261

Subject : McKenna Landfill Test Results

Pages including cover page: 4

Date : 7/21/01

Time : 2:04:36 PM

MESSAGE

Al,

Attached are the results for the McKenna Landfill Project
Interface Shear of Barrier Protection Soil vs 12 oz/sy Geotextile

Thanks, (BROCKPORT SITE)

Jack Boschuk

Visit our Web Site at "www.jandltesting.com"

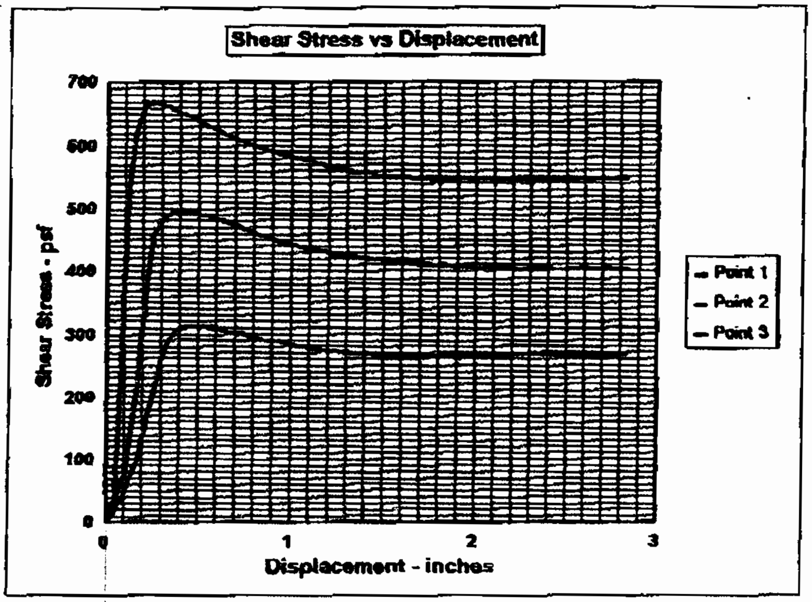
INTERFACE SHEAR TEST RESULTS

ASTM D-5321

JLT

Client: Glynn Geotechnical Engineering
Project: McKenna Landfill Project
Material Description: Compacted Silty Clay vs Geotextile

Date: 7/21/01
Project No.: 01S2702-01
Perf'd By: DL
Chk'd By: JB



Top Box : Compacted Silty Clay
"Barrier Protection Material"

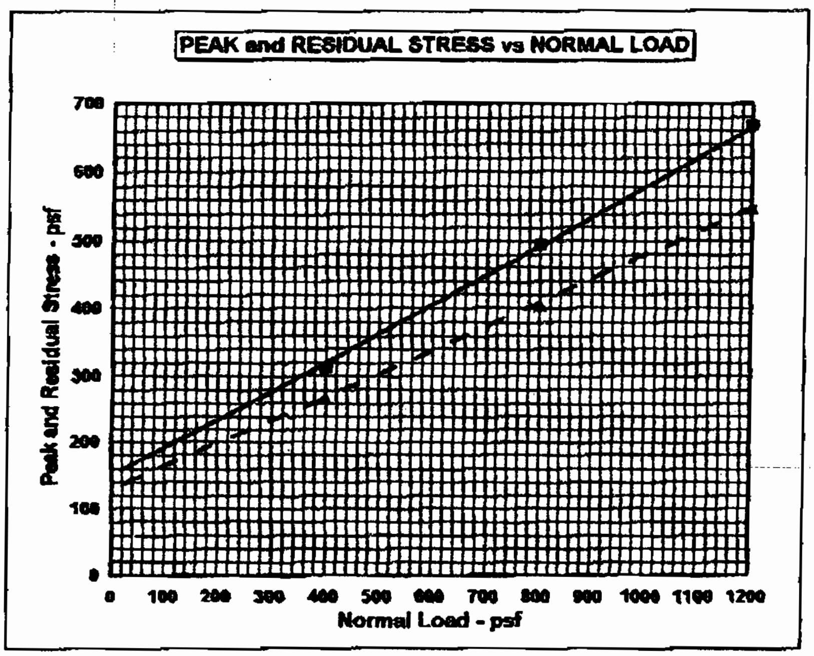
Bottom Box : 12 oz/sy Geotextile - MD
No Roll ID information
Tested as provided

Other information:

Interface Soil Properties	Density	Moisture
Compacted as Specified	pcf	%
on Lab Assignment Sheet	120.9	7.5

CURVE DATA

Point	Normal Load psf	Peak Strength psf	Residual Strength psf
1	400	313	267
2	800	496	405
3	1,200	668	548
4			
5			
6			



Displacement Rate: 0.04 in/min
Saturation (inundation): Yes
Equilibrium Time: (soaking) Overnight

STRENGTH PROPERTIES

		Peak	Residual
Adhesion	psf	136	127
Friction	Degrees	23.9	19.4

Comments:

FIGURE Clay vs Geotextile

Client: Glynn Geotechnical Engineering
Project: McKenna Landfill Project
Material Description: Compacted Silty Clay
vs
Geotextile

Date: 7/21/01
Project No.: 01S2702-01
Perf'd By: DL
Chk'd By: JB

UPPER GRAPH

Displacement inches	Point 1 Load lbs	Point 2 Load lbs	Point 3 Load lbs	Point 4 Load lbs	Point 5 Load lbs
0.000	0	0	0		
0.008	1	2	4		
0.016	2	4	16		
0.025	6	12	22		
0.033	11	21	29		
0.041	17	29	33		
0.049	21	35	37		
0.057	25	40	99		
0.066	30	48	156		
0.074	34	54	224		
0.082	36	62	288		
0.090	42	69	347		
0.098	46	73	411		
0.106	50	81	471		
0.115	57	104	508		
0.123	69	131	546		
0.139	77	156	578		
0.156	88	180	620		
0.172	101	234	636		
0.188	130	288	649		
0.205	149	341	663		
0.221	169	386	665		
0.238	182	424	667		
0.254	210	461	668		
0.270	229	466	668		
0.287	249	475	667		
0.303	266	480	666		
0.319	276	486	664		
0.336	287	490	662		
0.352	295	492	660		
0.369	304	494	657		
0.393	309	495	656		
0.418	311	495	652		
0.442	312	494	649		
0.467	313	493	645		
0.491	313	493	640		
0.516	312	491	636		
0.541	312	490	632		
0.565	311	486	630		
0.590	311	485	627		
0.614	309	483	624		
0.639	305	481	620		
0.663	304	477	616		
0.688	303	475	613		
0.713	301	474	610		
0.737	302	470	608		
0.762	299	467	605		
0.786	296	464	602		
0.811	295	461	600		
0.835	294	458	596		
0.860	292	456	595		
0.885	291	453	593		
0.909	290	451	591		
0.934	290	446	588		
0.958	287	445	586		

LOWER GRAPH

Pn	Peak	Residual
400	313	267
800	495	405
1200	668	548

Engineering Properties

	Peak	Residual
S2	668	548
P2	1,200	1,200
S1	313	267
P1	400	400
Slope, m	0.44375	0.35125
Cohesion	135.5	126.5
Phi, degrees	23.9292548	19.3538251

FIGURE Clay vs Geotextile
Replicate 1
Page 1

0.983	284	444	585		
1.007	283	443	582		
1.040	281	440	580		
1.073	280	437	579		
1.106	279	435	575		
1.138	277	434	572		
1.171	276	431	570		
1.204	274	430	568		
1.237	273	427	565		
1.269	272	426	564		
1.302	272	425	561		
1.335	271	424	559		
1.368	271	423	558		
1.401	270	421	557		
1.433	269	419	556		
1.466	268	419	552		
1.499	268	418	552		
1.532	267	416	551		
1.564	266	415	551		
1.597	266	414	550		
1.630	264	415	550		
1.663	265	412	549		
1.695	265	411	549		
1.736	264	410	549		
1.777	265	409	547		
1.818	266	410	548		
1.859	265	409	547		
1.900	267	408	548		
1.941	266	408	549		
1.982	266	407	548		
2.023	267	406	549		
2.064	267	407	548		
2.105	267	406	548		
2.146	268	407	548		
2.187	267	406	549		
2.228	267	405	547		
2.269	268	405	548		
2.310	268	406	548		
2.351	269	405	547		
2.392	268	405	548		
2.432	267	404	548		
2.473	267	404	548		
2.514	266	405	547		
2.555	266	405	548		
2.596	267	406	548		
2.637	266	405	547		
2.678	267	405	548		
2.719	267	406	549		
2.760	266	405	548		
2.801	267	405	548		
2.842	267	405	548		

FIGURE Clay vs Geotextile
Replicate 1
Page 2

GZA GeoEnvironmental of New York
Engineers and Scientists

Page No. 1/1

Project: McKenna Landfill Closure | File No. 55024

Location: Albion NY | Date: 7/23/01 | By: E.Hanna

Subject: Stability Analysis of Proposed Borrow | Checked | By

Based on | Revised | By

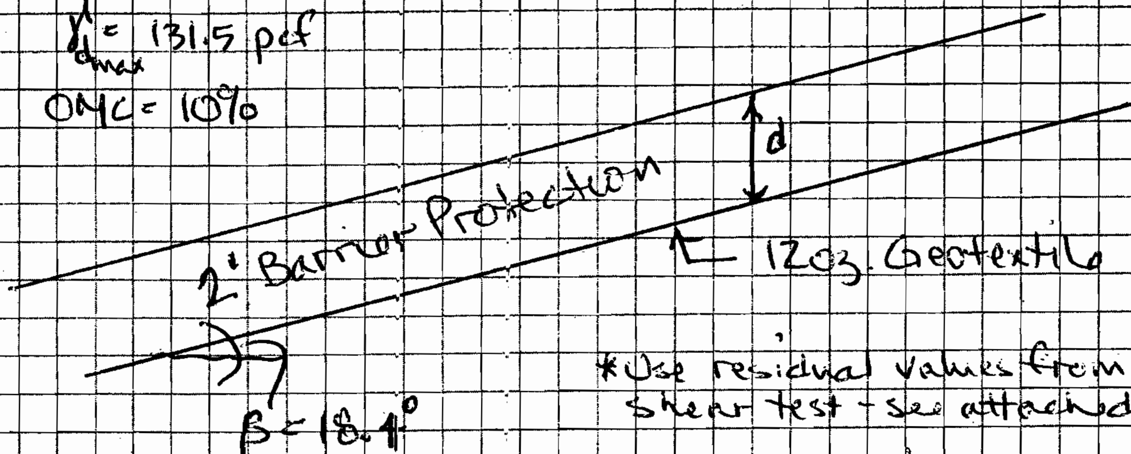
BROCKPORT BARRIER PROTECTION MATERIAL VS. 12 OZ. GEOTEXTILE

Infinite Slope Stability Analysis

$$\text{Factor of Safety} = \frac{c' + d\gamma' \cos^2\beta \tan\phi}{d\gamma' \sin\beta \cos\beta} \quad (1)$$

$\gamma_{d\,max} = 131.5$ pcf

OMC = 10%



*Use residual values from direct shear test - see attached data sheets

Assume placed @ 90% of maximum dry density and @ 8% moisture

$\therefore \gamma' = (131.5\text{ pcf})(.90)(1.08) = 128\text{ pcf}$

$$\text{Factor of Safety (F)} = \frac{\left(127\frac{lbs}{ft^2}\right) + (2\text{ ft})\left(128\frac{lbs}{ft^3}\right)\cos^2(18.4)\tan(19.4)}{(2\text{ ft})\left(128\frac{lbs}{ft^3}\right)\sin(18.4)\cos(18.4)}$$

$$= \frac{208\ lbs/ft^2}{77\ lbs/ft^2} = \underline{\underline{2.7}}$$

✓ OK

(1) Reference: Course notes "Seepage, Slopes and Embankments" CEE 530, Department of Civil and Environmental Engineering, University of Wisconsin - Madison, Tuncer B. Edil, Ph. 1986.

LLDPE LINER

The 60-mil thick LLDPE geomembrane used for the final cover system construction of the Remedial Closure Project was a textured geomembrane manufactured by Serrot. The resin used for the manufacture of the geomembrane was produced by Chevron, U.S. Chemicals.

Pre-construction testing of the LLDPE liner material was done by Serrot. The test data indicates the liner material meets project requirements.

The pre-construction submittal information included herein includes:

- documentation demonstrating that the field crew foreman has at least 50 acres of previous landfill or comparable geosynthetic systems;
- quality control data from the resin producer demonstrating the physical properties of the material by lot number;
- documentation that shows correlation between the resin lot number and the respective liner rolls;
- pre-construction testing of the LLDPE liner material by Serrot; and

SERROT
CORPORATION
GEOMEMBRANE LINING SYSTEMS

125 Cassia Way
Henderson, NV 89014
(702) 566-8600
(800) 237-1777
FAX (702) 566-4601
www.SERROT.com

SALES OFFICES:

ATLANTA
271 Highway 74 North
Suite #4
Peachtree City, GA 30269
(770) 631-4247
(800) 843-6313
FAX: (770) 631-4194
E-Mail: thompsonjr@serrot.com

LOS ANGELES
5401 Argosy Drive
Huntington Beach, CA 92648
(714) 895-3010
(800) 624-2437
FAX (714) 895-0903
E-Mail: perezg@serrot.com

PHILADELPHIA
303 Paxson Avenue
Mercerville, NJ 08619
(609) 584-0788
FAX (609) 584-0751
E-Mail: blondis@serrot.com

HAMBURG
Postfach 2546
D-21316 Lüneburg, Germany
011-49-4131-733051
FAX 011-49-4131-733053

PROJECT SUPERINTENDENT

Rafael Herrera Angel

Rafael Herrera Angel has 8 years of experience in geosynthetic linings installation. He is responsible for supervising men and equipment for the installation and seaming of a variety of synthetic liners and components. He has assisted in all aspects of lining system installation and has had in-house training and hands on experience that has met all the criteria required to be rated as a Serrot Welder, QC Technician, and Installer. He has also supervised the installation of a number of complex, specialty applications. Serrot Superintendent rating requires a minimum of five million square feet of installation experience He is also qualified to assist in the training of geomembrane Welders, QC Technicians, and Installers.

Linings installed and seamed include: Textured and/or smooth HDPE, LLDPE, and PFR liners.

Component materials include: Geosynthetic clay liner, geonet, geotextile, and geocomposite.

Project applications include: Heap leach pad liners, process ponds, waste containment cells, landfill caps and closures, secondary containment systems, tailings dam impoundments, and methane barriers.

Serrot International, Inc.

09/13/2000

Geomembrane Certificate of Analysis

Customer: WMI of NY - Albion

Project Name: McKenna Landfill

Project Number: 3176 # 10057

Number of Rolls Shipped: 1

Nominal Thickness: 60 mil

Bills of Lading: 150500

I certify the polyethylene geomembrane for the above identified shipment meets or exceeds Serrot International, Inc.'s specifications, listed below. Testing was performed at the given frequencies.

The raw polymeric material is first quality polyethylene resin.

A database listing of all test values follows.

GEOMEMBRANE SPECIFICATIONS

Property	Test Method	Minimum Specification	Frequency
Avg Thickness	ASTM D 5994	57 mils	at least every Every Roll
Stress at Break	ASTM D 638	90 ppi	at least every 50,000 ft²
Strain at Break	ASTM D 638	250 %	at least every 50,000 ft²
Carbon Black Dispersion	ASTM D 5596	1 or 2 Category	at least every 50,000 ft²
Carbon Black Content	ASTM D 4218	2.0 - 3.0 %	at least every 50,000 ft²
Density	ASTM D 1505	.939 g/cm³	at least every Resin Batch
Dimensional Stability 100°C	ASTM D 1204	± 1.5 % (Maximum)	at least every Resin Batch
Puncture Resistance - ASTM	ASTM D 4833	102 lbs	at least every 50,000 ft ²
Tear Resistance	ASTM D 1004	45 lbs	at least every 50,000 ft ²

RECEIVED
SEP 19 2000

Jane Allen

Jane Allen
Quality Control Manager

9-13-2000
Date

SERROT INTERNATIONAL, INC

Resin Certificate of Analysis

Customer: WMI of NY - Albion
Project Name: McKenna Landfill
Project Number: 3176
Resin Type: LLDPE
Bill of Ladings: 150500

We hereby certify that the polyethylene resin for the above identified shipment meets or exceeds Serrot International, Inc.'s specifications. Testing was performed on each resin blend.

Melt Flow Index was determined according to ASTM D 1238. Density was determined according to ASTM D 1505. Where appropriate, carbon black was determined according to ASTM D 4218. The average test results are listed below.

RESIN PROPERTIES

Blend Number	Melt Flow Index (g/10 min)	Density (g/cm)	Carbon Black Content (%)
4147	0.310	0.916	

Janie Simpson
Quality Control Manager

9-13-00
Date

Serrot International, Inc. 320 Innovation Way Wellford, SC 29385

Serrot International, Inc.

09/13/2000

Bills of Lading 150500

Geomembrane Testing Results

	Avg Thickness	MD Stress at Break	TD Stress at Break	MD Strain at Break	TD Strain at Break	Carbon Dispersion	Carbon Content 4218	Density	MD 100° Dim Stab	TD 100° Dim Stab	Puncture ASTM	MD Tear Resistanc e	TD Tear Resistanc e
4105702-4147	65	178	210	559	629	1	2.50	0.929	0.0	0.0	109	52	50

Jane Allen

Jane Allen
Quality Control Manager

9-13-00
Date

Serrot International, Inc. 320 Innovation Way - Wellford, SC - 29385

Serrot International, Inc.

09/11/2000

Geomembrane Certificate of Analysis

Customer: WMI of NY - Albion

Project Name: McKenna Landfill

Project Number: 3176

Number of Rolls Shipped: 11

Nominal Thickness: 60 mil

Bills of Lading: 150482

I certify the polyethylene geomembrane for the above identified shipment meets or exceeds Serrot International, Inc.'s specifications, listed below. Testing was performed at the given frequencies.

The raw polymeric material is first quality polyethylene resin.

A database listing of all test values follows.

GEOMEMBRANE SPECIFICATIONS

Property	Test Method	Minimum Specification	Frequency
Avg Thickness	ASTM D 5994	57 mils	at least every Every Roll
Stress at Break	ASTM D 638	90 ppi	at least every 50,000 ft²
Strain at Break	ASTM D 638	250 %	at least every 50,000 ft²
Carbon Black Dispersion	ASTM D 5596	1 or 2 Category	at least every 50,000 ft²
Carbon Black Content	ASTM D 4218	2.0 - 3.0 %	at least every 50,000 ft²
Density	ASTM D 1505	.939 g/cm³	at least every Resin Batch
Dimensional Stability 100°C	ASTM D 1204	± 1.5 % (Maximum)	at least every Resin Batch
Puncture Resistance - ASTM	ASTM D 4833	102 lbs	at least every 50,000 ft ²
Tear Resistance	ASTM D 1004	45 lbs	at least every 50,000 ft ²

Jane Allen

Jane Allen
Quality Control Manager

9-12-00
Date

This Certification of Analysis shall not be reproduced except in full, without the written approval of the laboratory.

Serrot International, Inc. 320 Innovation Way - Wellford, SC - 29385

Serrot International, Inc.

09/12/2000

Geomembrane Certificate of Analysis

Customer: WMI of NY - Albion

Number of Rolls Shipped: 11

Project Name: McKenna Landfill

Nominal Thickness: 60 mil

Project Number: 3176

Bills of Lading: 150482

I certify the polyethylene geomembrane for the above identified shipment meets or exceeds Serrot International, Inc.'s specifications, listed below. Testing was performed at the given frequencies.

The raw polymeric material is first quality polyethylene resin.

A database listing of all test values follows.

GEOMEMBRANE SPECIFICATIONS

Property	Test Method	Minimum Specification	Frequency
Avg Thickness	ASTM D 5994	57 mils	at least every Every Roll
Stress at Break	ASTM D 638	90 ppi	at least every 50,000 ft^2
Strain at Break	ASTM D 638	250 %	at least every 50,000 ft^2
Carbon Black Dispersion	ASTM D 5596	1 or 2 Category	at least every 50,000 ft^2
Carbon Black Content	ASTM D 4218	2.0 - 3.0 %	at least every 50,000 ft^2
Density	ASTM D 1505	.939 g/cm^3	at least every Resin Batch
Dimensional Stability 100°C	ASTM D 1204	± 1.5 % (Maximum)	at least every Resin Batch
Puncture Resistance - ASTM	ASTM D 4833	102 lbs	at least every 50,000 ft^2
Tear Resistance	ASTM D 1004	45 lbs	at least every 50,000 ft^2

Jane Allen

Jane Allen
Quality Control Manager

9-12-00

Date

SERROT INTERNATIONAL, INC

Resin Certificate of Analysis

Customer: WMI of NY - Albion
Project Name: McKenna Landfill
Project Number: 3176
Resin Type: LLDPE
Bill of Ladings: 150482

We hereby certify that the polyethylene resin for the above identified shipment meets or exceeds Serrot International, Inc.'s specifications. Testing was performed on each resin blend.

Melt Flow Index was determined according to ASTM D 1238. Density was determined according to ASTM D 1505. Where appropriate, carbon black was determined according to ASTM D 4218. The average test results are listed below.

RESIN PROPERTIES

Blend Number	Melt Flow Index (g/10 min)	Density (g/cm)	Carbon Black Content (%)
4147	0.310	0.916	
4208	0.375	0.916	

Jane Allen
Jane Allen
Quality Control Manager

9-12-00
Date

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Serrot International, Inc. 320 Innovation Way Wellford, SC 29385

Serrot International, Inc.

09/12/2000

Bills of Lading 150482

Geomembrane Testing Results

	Avg Thickness	MD Stress at Break	TD Stress at Break	MD Strain at Break	TD Strain at Break	Carbon Dispersion	Carbon Content 4218	Density	MD 100° Dim Stab	TD 100° Dim Stab	Puncture ASTM	MD Tear Resistance	TD Tear Resistance
4105707-4147	66	191	177	583	578	1	2.50	0.929	0.0	0.0	109	48	50
4105708-4147	61	191	175	583	558	1	2.50	0.929	0.0	0.0	109	48	50
4105709-4147	67	191	175	583	558	1	2.50	0.929	0.0	0.0	109	48	50
4105710-4147	64	210	175	638	559	2	2.67	0.930	-0.2	0.4	114	48	50
4105711-4147	64	182	175	603	559	1	2.67	0.930	-0.2	0.4	113	48	49
4105712-4147	63	182	175	603	559	1	2.67	0.930	-0.2	0.4	113	48	49
4105713-4147	67	182	175	603	559	1	2.67	0.930	-0.2	0.4	113	48	49
4105714-4147	67	182	180	603	580	1	2.68	0.930	-0.2	0.4	113	49	49
4105733-4208	65	193	169	576	550	1	2.50	0.929	0.0	0.0	119	50	47
4105734-4208	67	193	169	576	550	1	2.50	0.929	0.0	0.0	119	50	47
4105742-4208	65	194	178	598	572	1	2.65	0.931	0.0	0.0	118	49	50

Jane Allen

Jane Allen
Quality Control Manager

9-12-00
Date

Serrot International, Inc. 320 Innovation Way - Wellford, SC - 29385

Serrot International, Inc.

09/11/2000

Bills of Lading 150482

Geomembrane Testing Results

	Avg Thickness	MD Stress at Break	TD Stress at Break	MD Strain at Break	TD Strain at Break	Carbon Dispersion	Carbon Content 4218	Density	MD 100° Dim Stab	TD 100° Dim Stab	Puncture ASTM	MD Tear Resistance	TD Tear Resistance
4105719-4147	63	212	169	643	540	1	2.65	0.929	-0.2	0.4	119	50	48
4105720-4147	65	210	169	624	540	1	2.42	0.929	-0.2	0.4	119	49	48
4105721-4208	63	210	169	624	540	1	2.42	0.929	-0.2	0.4	119	49	48
4105726-4208	64	184	177	601	555	1	2.42	0.929	0.0	0.0	115	49	50
4105730-4208	65	184	177	576	555	1	2.50	0.929	0.0	0.0	115	50	47
4105731-4208	70	193	189	576	577	1	2.50	0.929	0.0	0.0	123	50	47
4105732-4208	66	192	169	576	550	1	2.50	0.929	0.0	0.0	119	50	47
4105735-4208	63	199	169	592	550	1	2.54	0.931	0.0	0.0	119	54	51
4105736-4208	68	194	169	592	550	1	2.54	0.931	0.0	0.0	118	49	50
4105737-4208	68	194	169	592	550	1	2.54	0.931	0.0	0.0	118	49	50
4105741-4208	70	194	178	598	572	1	2.65	0.931	0.0	0.0	118	49	50

Jane Allen
Jane Allen
Quality Control Manager

9-12-00
Date

Serrot International, Inc. 320 Innovation Way - Wellford, SC - 29385

Serrot International, Inc.

09/11/2000

Geomembrane Certificate of Analysis

Customer: WMI of NY - Albion

Project Name: McKenna Landfill

Project Number: 3176

Number of Rolls Shipped: 11

Nominal Thickness: 60 mil

Bills of Lading: 150483

I certify the polyethylene geomembrane for the above identified shipment meets or exceeds Serrot International, Inc.'s specifications, listed below. Testing was performed at the given frequencies.

The raw polymeric material is first quality polyethylene resin.

A database listing of all test values follows.

GEOMEMBRANE SPECIFICATIONS

Property	Test Method	Minimum Specification	Frequency
Avg Thickness	ASTM D 5994	57 mils	at least every Every Roll
Stress at Break	ASTM D 638	90 ppi	at least every 50,000 ft²
Strain at Break	ASTM D 638	250 %	at least every 50,000 ft²
Carbon Black Dispersion	ASTM D 5596	1 or 2 Category	at least every 50,000 ft²
Carbon Black Content	ASTM D 4218	2.0 - 3.0 %	at least every 50,000 ft²
Density	ASTM D 1505	.939 g/cm³	at least every Resin Batch
Dimensional Stability 100°C	ASTM D 1204	± 1.5 % (Maximum)	at least every Resin Batch
Puncture Resistance - ASTM	ASTM D 4833	102 lbs	at least every 50,000 ft ²
Tear Resistance	ASTM D 1004	45 lbs	at least every 50,000 ft ²

Jane Allen
Jane Allen
Quality Control Manager

9-12-00
Date

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Serrot International, Inc. 320 Innovation Way - Wellford, SC - 29385

SERROT INTERNATIONAL, INC

Resin Certificate of Analysis

Customer: WMI of NY - Albion
Project Name: McKenna Landfill
Project Number: 3176
Resin Type: LLDPE
Bill of Ladings: 150483

We hereby certify that the polyethylene resin for the above identified shipment meets or exceeds Serrot International, Inc.'s specifications. Testing was performed on each resin blend.

Melt Flow Index was determined according to ASTM D 1238. Density was determined according to ASTM D 1505. Where appropriate, carbon black was determined according to ASTM D 4218. The average test results are listed below.

RESIN PROPERTIES

Blend Number	Melt Flow Index (g/10 min)	Density (g/cm)	Carbon Black Content (%)
4147	0.310	0.916	
4208	0.375	0.916	

Jane Allen
Quality Control Manager

9-12-00
Date

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Serrot International, Inc.

09/11/2000

Bills of Lading 150483

Geomembrane Testing Results

	Avg Thickness	MD Stress at Break	TD Stress at Break	MD Strain at Break	TD Strain at Break	Carbon Dispersion	Carbon Content 4218	Density	MD 100° Dim Stab	TD 100° Dim Stab	Puncture ASTM	MD Tear Resistance	TD Tear Resistance
4105715-4147	62	182	169	603	540	1	2.65	0.929	-0.2	0.4	113	49	48
4105716-4147	63	182	169	603	540	1	2.65	0.929	-0.2	0.4	113	49	48
4105718-4147	64	182	169	603	540	1	2.65	0.929	-0.2	0.4	113	49	48
4105727-4208	67	184	177	601	555	1	2.65	0.929	0.0	0.0	115	51	51
4105728-4208	66	184	177	576	555	1	2.50	0.929	0.0	0.0	115	50	47
4105729-4208	67	184	177	576	555	1	2.50	0.929	0.0	0.0	115	50	47
4105738-4208	66	194	169	592	550	1	2.54	0.931	0.0	0.0	118	49	50
4105739-4208	68	194	178	598	572	1	2.65	0.931	0.0	0.0	118	49	50
4105740-4208	65	194	178	598	572	1	2.65	0.931	0.0	0.0	118	49	50
4105745-4208	77	178	175	568	572	1	2.56	0.931	0.0	0.0	121	50	48
4105746-4208	74	178	175	568	553	1	2.56	0.931	0.0	0.0	118	50	48

Jane Allen
Jane Allen
Quality Control Manager

9-12-00
Date

Serrot International, Inc. 320 Innovation Way - Wellford, SC - 29385

Serrot International, Inc.

09/11/2000

Geomembrane Certificate of Analysis

Customer: WMI of NY - Albion

Project Name: McKenna Landfill

Project Number: 3176

Number of Rolls Shipped: 11

Nominal Thickness: 60 mil

Bills of Lading: 150480

I certify the polyethylene geomembrane for the above identified shipment meets or exceeds Serrot International, Inc.'s specifications, listed below. Testing was performed at the given frequencies.

The raw polymeric material is first quality polyethylene resin.

A database listing of all test values follows.

GEOMEMBRANE SPECIFICATIONS

Property	Test Method	Minimum Specification	Frequency
Avg Thickness	ASTM D 5994	57 mils	at least every Every Roll
Stress at Break	ASTM D 638	90 ppi	at least every 50,000 ft^2
Strain at Break	ASTM D 638	250 %	at least every 50,000 ft^2
Carbon Black Dispersion	ASTM D 5596	1 or 2 Category	at least every 50,000 ft^2
Carbon Black Content	ASTM D 4218	2.0 - 3.0 %	at least every 50,000 ft^2
Density	ASTM D 1505	.939 g/cm^3	at least every Resin Batch
Dimensional Stability 100°C	ASTM D 1204	± 1.5 % (Maximum)	at least every Resin Batch
Puncture Resistance - ASTM	ASTM D 4833	102 lbs	at least every 50,000 ft^2
Tear Resistance	ASTM D 1004	45 lbs	at least every 50,000 ft^2

Jane Allen

Jane Allen
Quality Control Manager

9-12-00
Date

This Certification of Analysis shall not be reproduced except in full, without the written approval of the laboratory.

Serrot International, Inc. 320 Innovation Way - Wellford, SC - 29385

SERROT INTERNATIONAL, INC

Resin Certificate of Analysis

Customer: WMI of NY - Albion
Project Name: McKenna Landfill
Project Number: 3176
Resin Type: LLDPE
Bill of Ladings: 150480

We hereby certify that the polyethylene resin for the above identified shipment meets or exceeds Serrot International, Inc.'s specifications. Testing was performed on each resin blend.

Melt Flow Index was determined according to ASTM D 1238. Density was determined according to ASTM D 1505. Where appropriate, carbon black was determined according to ASTM D 4218. The average test results are listed below.

RESIN PROPERTIES

Blend Number	Melt Flow Index (g/10 min)	Density (g/cm)	Carbon Black Content (%)
4208	0.375	0.916	
4218	0.350	0.919	

Jane Allen
Quality Control Manager

9-12-00
Date

Serrot International, Inc.

09/11/2000

Bills of Lading 150480

Geomembrane Testing Results

	Avg Thickness	MD Stress at Break	TD Stress at Break	MD Strain at Break	TD Strain at Break	Carbon Dispersion	Carbon Content 4218	Density	MD 100° Dim Stab	TD 100° Dim Stab	Puncture ASTM	MD Tear Resistance	TD Tear Resistance
4105747-4208	67	178	175	568	553	1	2.56	0.931	0.0	0.0	118	50	48
4105800-4218	73	209	176	659	559	1	2.55	0.935	0.0	0.0	117	46	49
4105801-4218	64	196	159	582	522	1	2.50	0.935	0.0	0.0	117	46	49
4105809-4218	64	198	186	588	577	1	2.46	0.935	0.0	0.0	123	50	50
4105821-4218	67	198	169	596	540	2	2.48	0.931	0.0	0.0	119	53	51
4105822-4218	63	179	162	562	506	1	2.48	0.931	0.0	0.0	118	51	48
4105823-4218	72	179	162	562	506	1	2.48	0.931	0.0	0.0	118	51	48
4105824-4218	70	179	162	562	506	1	2.48	0.931	0.0	0.0	118	51	48
4105825-4218	61	179	162	562	506	1	2.51	0.931	0.0	0.0	118	51	48
4105826-4218	67	179	162	562	506	1	2.51	0.931	0.0	0.0	118	51	48
4105827-4218	64	179	162	562	506	1	2.51	0.931	0.0	0.0	118	51	48

Jane Allen

Jane Allen
Quality Control Manager

9-12-00

Date

Serrot International, Inc. 320 Innovation Way - Wellford, SC - 29385

Serrot International, Inc.

09/11/2000

Geomembrane Certificate of Analysis

Customer: WMI of NY - Albion

Number of Rolls Shipped: 8

Project Name: McKenna Landfill

Nominal Thickness: 60 mil

Project Number: 3176

Bills of Lading: 150465

I certify the polyethylene geomembrane for the above identified shipment meets or exceeds Serrot International, Inc.'s specifications, listed below. Testing was performed at the given frequencies.

The raw polymeric material is first quality polyethylene resin.

A database listing of all test values follows.

GEOMEMBRANE SPECIFICATIONS

Property	Test Method	Minimum Specification	Frequency
Avg Thickness	ASTM D 5994	57 mils	at least every Every Roll
Stress at Break	ASTM D 638	90 ppi	at least every 50,000 ft²
Strain at Break	ASTM D 638	250 %	at least every 50,000 ft²
Carbon Black Dispersion	ASTM D 5596	1 or 2 Category	at least every 50,000 ft²
Carbon Black Content	ASTM D 4218	2.0 - 3.0 %	at least every 50,000 ft²
Density	ASTM D 1505	.939 g/cm³	at least every Resin Batch
Dimensional Stability 100°C	ASTM D 1204	± 1.5 % (Maximum)	at least every Resin Batch
Puncture Resistance - ASTM	ASTM D 4833	102 lbs	at least every 50,000 ft ²
Tear Resistance	ASTM D 1004	45 lbs	at least every 50,000 ft ²

Jane Allen

Jane Allen
Quality Control Manager

9-12-00

Date

Serrot International, Inc. 320 Innovation Way - Wellford, SC - 29385

SERROT INTERNATIONAL, INC

Resin Certificate of Analysis

Customer: WMI of NY- Albion
Project Name: McKenna Landfill
Project Number: 3176
Resin Type: LLDPE
Bill of Ladings: 150465

We hereby certify that the polyethylene resin for the above identified shipment meets or exceeds Serrot International, Inc.'s specifications. Testing was performed on each resin blend.

Melt Flow Index was determined according to ASTM D 1238. Density was determined according to ASTM D 1505. Where appropriate, carbon black was determined according to ASTM D 4218. The average test results are listed below.

RESIN PROPERTIES

Blend Number	Melt Flow Index (g/10 min)	Density (g/cm)	Carbon Black Content (%)
4218	0.350	0.919	
4219	0.371	0.918	

Jane Allen
Quality Control Manager

9-12-00
Date

Serrot International, Inc.

09/11/2000

Bills of Lading 150465

Geomembrane Testing Results

	Avg Thickness	MD Stress at Break	TD Stress at Break	MD Strain at Break	TD Strain at Break	Carbon Dispersion	Carbon Content 4218	Density	MD 100° Dim Stab	TD 100° Dim Stab	Puncture ASTM	MD Tear Resistance	TD Tear Resistance
4105828-4218	65	179	162	562	506	1	2.51	0.931	0.0	0.0	118	51	48
4105829-4218	64	190	180	571	571	1	2.60	0.931	0.0	0.0	121	51	50
4105830-4218	64	190	162	571	493	1	2.48	0.931	0.0	0.0	121	51	50
4105831-4218	67	190	162	571	493	1	2.48	0.931	0.0	0.0	121	51	50
4105832-4218	66	190	162	571	493	1	2.48	0.931	0.0	0.0	121	51	50
4105833-4218	64	193	162	572	493	1	2.48	0.931	0.0	0.0	125	53	50
4105834-4218	68	193	160	572	487	1	2.48	0.931	0.0	0.0	125	53	49
4105835-4219	68	196	160	572	487	1	2.48	0.931	0.0	0.0	127	53	49

Jane Allen

Jane Allen
Quality Control Manager

9-12-00
Date

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Serrot International, Inc. 320 Innovation Way - Wellford, SC - 29385

Serrot International, Inc.

09/11/2000

Geomembrane Certificate of Analysis

Customer: WMI of NY - Albion

Project Name: McKenna Landfill

Project Number: 3176

Number of Rolls Shipped: 11

Nominal Thickness: 60 mil

Bills of Lading: 150459

I certify the polyethylene geomembrane for the above identified shipment meets or exceeds Serrot International, Inc.'s specifications, listed below. Testing was performed at the given frequencies.

The raw polymeric material is first quality polyethylene resin.

A database listing of all test values follows.

GEOMEMBRANE SPECIFICATIONS

Property	Test Method	Minimum Specification	Frequency
Avg Thickness	ASTM D 5994	57 mils	at least every Every Roll
Stress at Break	ASTM D 638	90 ppi	at least every 50,000 ft²
Strain at Break	ASTM D 638	250 %	at least every 50,000 ft²
Carbon Black Dispersion	ASTM D 5596	1 or 2 Category	at least every 50,000 ft²
Carbon Black Content	ASTM D 4218	2.0 - 3.0 %	at least every 50,000 ft²
Density	ASTM D 1505	.939 g/cm³	at least every Resin Batch
Dimensional Stability 100°C	ASTM D 1204	± 1.5 % (Maximum)	at least every Resin Batch
Puncture Resistance - ASTM	ASTM D 4833	102 lbs	at least every 50,000 ft²
Tear Resistance	ASTM D 1004	45 lbs	at least every 50,000 ft²

Jane Allen

Jane Allen
Quality Control Manager

9-12-'00
Date

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Serrot International, Inc. 320 Innovation Way - Wellford, SC - 29385

SERROT INTERNATIONAL, INC

Resin Certificate of Analysis

Customer: WMI of NY- Albion
Project Name: McKenna Landfill
Project Number: 3176
Resin Type: LLDPE
Bill of Ladings: 150459

We hereby certify that the polyethylene resin for the above identified shipment meets or exceeds Serrot International, Inc.'s specifications. Testing was performed on each resin blend.

Melt Flow Index was determined according to ASTM D 1238. Density was determined according to ASTM D 1505. Where appropriate, carbon black was determined according to ASTM D 4218. The average test results are listed below.

RESIN PROPERTIES

Blend Number	Melt Flow Index (g/10 min)	Density (g/cm)	Carbon Black Content (%)
4208	0.375	0.916	
4218	0.350	0.919	

Jane Allen
Jane Allen
Quality Control Manager

9-12-00
Date

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Serrot International, Inc. 320 Innovation Way Wellford, SC 29385

Serrot International, Inc.

09/11/2000

Bills of Lading 150459

Geomembrane Testing Results

	Avg Thickness	MD Stress at Break	TD Stress at Break	MD Strain at Break	TD Strain at Break	Carbon Dispersion	Carbon Content 4218	Density	MD 100° Dim Stab	TD 100° Dim Stab	Puncture ASTM	MD Tear Resistance	TD Tear Resistance
4105765-4208	64	210	179	633	561	1	2.58	0.931	0.0	0.0	118	51	48
4105767-4208	70	210	174	612	557	1	2.52	0.931	0.0	0.0	118	48	48
4105768-4208	72	210	174	612	557	1	2.52	0.931	0.0	0.0	118	48	48
4105769-4208	64	202	174	612	557	1	2.52	0.931	0.0	0.0	120	48	51
4105770-4208	70	193	155	612	494	1	2.49	0.931	0.0	0.0	117	47	47
4105772-4208	70	193	155	612	494	1	2.49	0.931	0.0	0.0	117	47	47
4105773-4208	68	193	155	614	494	1	2.49	0.931	0.0	0.0	117	47	47
4105775-4208	65	191	155	594	494	1	2.49	0.931	0.0	0.0	117	47	47
4105810-4218	73	164	179	489	571	1	2.46	0.935	0.0	0.0	118	49	50
4105811-4218	75	164	179	489	571	1	2.46	0.935	0.0	0.0	118	49	50
4105812-4218	64	164	179	489	571	1	2.46	0.935	0.0	0.0	118	49	50

Jane Allen

Jane Allen
Quality Control Manager

9-12-00
Date

Serrot International, Inc. 320 Innovation Way - Wellford, SC - 29385

Serrot International, Inc.

09/08/2000

Geomembrane Certificate of Analysis

Customer: WMI of NY - Albion

Project Name: McKenna Landfill

Project Number: 3176

Number of Rolls Shipped: 11

Nominal Thickness: 60 mil

Bills of Lading: 150457

I certify the polyethylene geomembrane for the above identified shipment meets or exceeds Serrot International, Inc.'s specifications, listed below. Testing was performed at the given frequencies.

The raw polymeric material is first quality polyethylene resin.

A database listing of all test values follows.

GEOMEMBRANE SPECIFICATIONS

Property	Test Method	Minimum Specification	Frequency
Avg Thickness	ASTM D 5994	57 mils	at least every Every Roll
Stress at Break	ASTM D 638	90 ppi	at least every 50,000 ft²
Strain at Break	ASTM D 638	250 %	at least every 50,000 ft²
Carbon Black Dispersion	ASTM D 5596	1 or 2 Category	at least every 50,000 ft²
Carbon Black Content	ASTM D 4218	2.0 - 3.0 %	at least every 50,000 ft²
Density	ASTM D 1505	.939 g/cm³	at least every Resin Batch
Dimensional Stability 100°C	ASTM D 1204	± 1.5 % (Maximum)	at least every Resin Batch
Puncture Resistance - ASTM	ASTM D 4833	102 lbs	at least every 50,000 ft ²
Tear Resistance	ASTM D 1004	45 lbs	at least every 50,000 ft ²

Jane Allen
Jane Allen
Quality Control Manager

9-08-00
Date

Serrot International, Inc. 320 Innovation Way - Wellford, SC - 29385

SERROT INTERNATIONAL, INC

Resin Certificate of Analysis

Customer: WMI of NY- Albion
Project Name: McKenna Landfill
Project Number: 3176
Resin Type: LLDPE
Bill of Ladings: 150457

We hereby certify that the polyethylene resin for the above identified shipment meets or exceeds Serrot International, Inc.'s specifications. Testing was performed on each resin blend.

Melt Flow Index was determined according to ASTM D 1238. Density was determined according to ASTM D 1505. Where appropriate, carbon black was determined according to ASTM D 4218. The average test results are listed below.

RESIN PROPERTIES

Blend Number	Melt Flow Index (g/10 min)	Density (g/cm)	Carbon Black Content (%)
4218	0.350	0.919	

Jane Allen
Quality Control Manager

9-08-00
Date

Serrot International, Inc.

09/08/2000

Bills of Lading 150457

Geomembrane Testing Results

	Avg Thickness	MD Stress at Break	TD Stress at Break	MD Strain at Break	TD Strain at Break	Carbon Dispersion	Carbon Content 4218	Density	MD 100° Dim Stab	TD 100° Dim Stab	Puncture ASTM	MD Tear Resistanc e	TD Tear Resistanc e
4105805-4218	63	196	159	582	522	1	2.50	0.935	0.0	0.0	119	49	51
4105806-4218	67	196	159	582	522	1	2.46	0.935	0.0	0.0	119	49	50
4105807-4218	64	196	159	582	522	1	2.46	0.935	0.0	0.0	119	49	50
4105808-4218	64	196	159	582	522	1	2.46	0.935	0.0	0.0	119	49	50
4105813-4218	64	164	179	489	571	1	2.51	0.935	0.0	0.0	118	49	50
4105814-4218	70	164	179	489	571	1	2.47	0.931	0.0	0.0	116	49	49
4105815-4218	64	164	179	489	571	1	2.47	0.931	0.0	0.0	116	49	49
4105816-4218	65	164	179	489	571	1	2.47	0.931	0.0	0.0	116	49	49
4105817-4218	66	191	185	583	582	1	2.47	0.931	0.0	0.0	116	50	49
4105819-4218	66	191	169	583	540	1	2.47	0.931	0.0	0.0	116	50	49
4105820-4218	64	191	169	583	540	1	2.47	0.931	0.0	0.0	116	50	49

Jane Allen

Jane Allen
Quality Control Manager

9-08-00

Date

Serrot International, Inc. 320 Innovation Way - Wellford, SC - 29385

Serrot International, Inc.

09/08/2000

Geomembrane Certificate of Analysis

Customer:	WMI of NY - Albion	Number of Rolls Shipped:	11
Project Name:	McKenna Landfill	Nominal Thickness:	60 mil
Project Number:	3176	Bills of Lading:	150458

I certify the polyethylene geomembrane for the above identified shipment meets or exceeds Serrot International, Inc.'s specifications, listed below. Testing was performed at the given frequencies.

The raw polymeric material is first quality polyethylene resin.

A database listing of all test values follows.

GEOMEMBRANE SPECIFICATIONS

Property	Test Method	Minimum Specification	Frequency
Avg Thickness	ASTM D 5994	57 mils	at least every Every Roll
Stress at Break	ASTM D 638	90 ppi	at least every 50,000 ft²
Strain at Break	ASTM D 638	250 %	at least every 50,000 ft²
Carbon Black Dispersion	ASTM D 5596	1 or 2 Category	at least every 50,000 ft²
Carbon Black Content	ASTM D 4218	2.0 - 3.0 %	at least every 50,000 ft²
Density	ASTM D 1505	.939 g/cm³	at least every Resin Batch
Dimensional Stability 100°C	ASTM D 1204	± 1.5 % (Maximum)	at least every Resin Batch
Puncture Resistance - ASTM	ASTM D 4833	102 lbs	at least every 50,000 ft²
Tear Resistance	ASTM D 1004	45 lbs	at least every 50,000 ft²

Jane Allen

Jane Allen
Quality Control Manager

9-08-00
Date

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Serrot International, Inc. 320 Innovation Way - Wellford, SC - 29385

SERROT INTERNATIONAL, INC

Resin Certificate of Analysis

Customer: WMI of NY- Albion
Project Name: McKenna Landfill
Project Number: 3176
Resin Type: LLDPE
Bill of Ladings: 150458

We hereby certify that the polyethylene resin for the above identified shipment meets or exceeds Serrot International, Inc.'s specifications. Testing was performed on each resin blend.

Melt Flow Index was determined according to ASTM D 1238. Density was determined according to ASTM D 1505. Where appropriate, carbon black was determined according to ASTM D 4218. The average test results are listed below.

RESIN PROPERTIES

Blend Number	Melt Flow Index (g/10 min)	Density (g/cm)	Carbon Black Content (%)
4208	0.375	0.916	
4218	0.350	0.919	

Jane Allen
Quality Control Manager

9-07-00
Date

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Serrot International, Inc. 320 Innovation Way Wellford, SC 29385

Serrot International, Inc.

09/08/2000

Bills of Lading 150458

Geomembrane Testing Results

	Avg Thickness	MD Stress at Break	TD Stress at Break	MD Strain at Break	TD Strain at Break	Carbon Dispersion	Carbon Content 4218	Density	MD 100° Dim Stab	TD 100° Dim Stab	Puncture ASTM	MD Tear Resistance	TD Tear Resistance
4105766-4208	67	210	179	633	561	1	2.58	0.931	0.0	0.0	118	51	48
4105771-4208	69	193	155	612	494	1	2.49	0.931	0.0	0.0	117	47	47
4105776-4208	63	191	177	594	583	1	2.63	0.931	0.0	0.0	116	47	48
4105787-4218	71	231	186	673	569	1	2.56	0.930	0.0	0.0	120	53	49
4105789-4218	65	193	171	603	550	1	2.46	0.928	0.0	0.0	120	51	48
4105790-4218	63	193	171	603	550	1	2.46	0.928	0.0	0.0	120	51	48
4105791-4218	67	193	171	603	550	1	2.46	0.928	0.0	0.0	120	51	48
4105793-4218	67	193	171	603	550	1	2.46	0.928	0.0	0.0	120	51	48
4105794-4218	65	193	171	603	550	1	2.46	0.928	0.0	0.0	120	51	48
4105799-4218	64	193	171	603	550	1	2.46	0.928	0.0	0.0	117	46	48
4105818-4218	68	191	169	583	540	1	2.47	0.931	0.0	0.0	116	50	49

Jane Allen
Jane Allen
Quality Control Manager

9-08-00
Date

Serrot International, Inc. 320 Innovation Way - Wellford, SC - 29385

GAS VENT PIPES

The pipes used for the gas vent system are 6-inch diameter schedule 80 poly-vinyl chloride (PVC) slotted gas collection pipes located within the gas venting trenches and 6-inch diameter schedule PVC solid gas venting standpies installed to allow gases within the landfill to escape to the atmosphere. The gas vent pipe was manufactured by Buffalo Well Products. Manufacturer's literature is included herein.

BUFFALO WELL PRODUCTS

10440 Main Street
Clarence, New York 1403
(716) 759-2022
Fax: (716) 759-7823

May 30,2000

Ciminelli Services Corp.
2760 Kenmore Avenue, Suite 200
Tonawanda, New York 14150

SUBMITTAL

Buffalo Well products, Inc.(**BWP**) has been Slotting and threading PVC pipe for use in the environmental drilling industry for the past several years. **BWP's** PVC is made of Type 1, Grade1 Polyvinyl Chloride. as specified in ASTM D1784. This material meets or exceeds ASTM Standard D2665 and D1785.

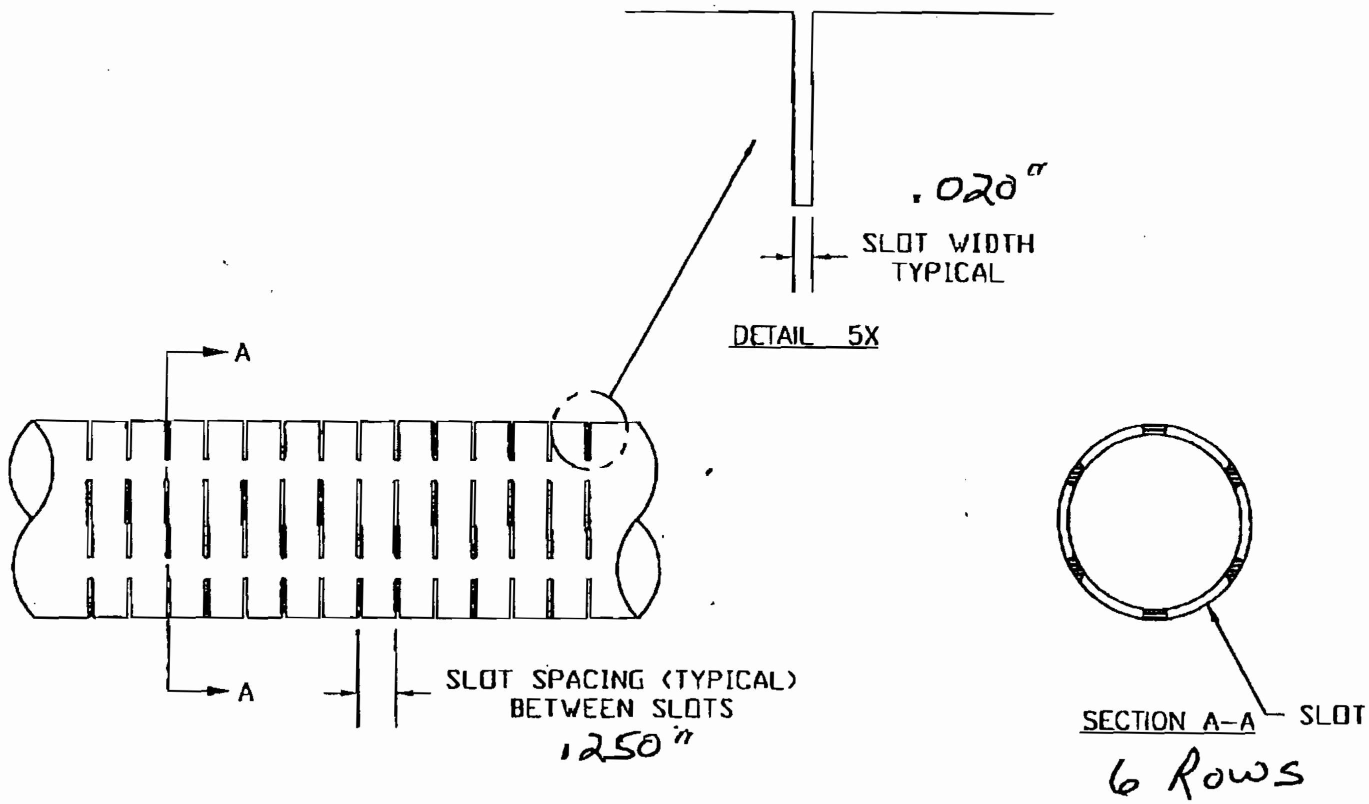
The slotting configuration of 6 inch Sch 80 PVC with .020 inch slots will be 6 rows of slots spaced .25" apart which will have an open area of approximately 6.5" square inches per foot.

The 6 inch Sch 80 is designed to handle 280 psi at 73 degrees.

Sincerely yours,
Buffalo Well Products, Inc.

Paul W. Barron

Paul W. Barron
President



SLOT SPECIFICATIONS

NOMINAL PIPE SIZE: 6 inch

SCHEDULE: 80

NOMINAL O.D.: 6.625" I.D.: 5.761"

NOMINAL WALL THICKNESS: .432"

SLOT WIDTH: .020"

SPACING BETWEEN SLOTS: .250"

NUMBER OF ROWS: 6

ENDS: Belled End

BUFFALO WELL PRODUCTS

MANUFACTURER'S PRODUCT SPECIFICATION

Schedule 40 & 80 PVC Industrial Pipe

ESLON THERMOPLASTICS

Scope:

This specification sheet covers the manufacturer's requirements for PVC Schedule 40 and Schedule 80 IPS pressure pipe. This pipe meets or exceeds the industry standards set forth by the American Society for Testing and Materials and NSF International, Standards 14/61.

All pipe and raw materials are manufactured in the USA.

PVC Materials:

Rigid PVC (polyvinyl chloride) used in the extrusion of Schedule 40 and 80 pipe is of Type I, Grade 1 compound as stated in ASTM D-1784. Raw material used in extrusion shall contain the specified amounts of color pigment, stabilizers, and other additives approved by NSF International.

Dimensions:

Physical dimensions and tolerances of PVC Schedule 40 and 80 pipe meet the requirements of ASTM standard specification D-1785. Socket dimensions of belled end pipe meet the requirements of ASTM D-2672 or F-480.

Marking:

PVC Schedule 40 and 80 pipe is marked as prescribed in ASTM D-1785 to indicate the manufacturer's name or trademark, material designation code, the nominal pipe size, the Schedule size with the pressure rating in PSI for water at 73°F, the ASTM designation number D-1785, and the NSF seal for potable water.

Sample Specification:

All PVC Schedule 40 and 80 pipe shall conform to ASTM D-1785. Schedule 40 fittings shall conform to ASTM D-2466, Schedule 80 **socket** fittings to ASTM D-2467 and ASTM D-2464 for **threaded** Schedule 80 fittings. Belled end pipe socket dimensions shall conform to ASTM D-2672 or F-480. Both pipe and fittings shall be the product of one manufacturer, as manufactured by Eslon Thermoplastics (or approved equal), Charlotte, North Carolina, USA, 1-800-578-7681.

ASTM MEMBER   IAPD MEMBER   NSF

MANUFACTURER'S PRODUCT SPECIFICATION

ESLON THERMOPLASTICS

Schedule 80 PVC Fittings

Scope:

This specification sheet covers the manufacturer's requirements for PVC Schedule 80 pipe fittings. These fittings meet or exceed the standards set by the American Society for Testing and Materials and NSF International, Standards 14/61.

All fittings and raw materials are manufactured in the USA.

PVC Materials:

Rigid PVC (polyvinyl chloride) used in the manufacture of Schedule 80 fittings is of Type I, Grade 1 compound as stated in ASTM D-1784. Raw material used in molding shall contain the specified amounts of color pigment, stabilizers, and other additives approved by NSF International.

Dimensions:

Physical dimensions and tolerances of PVC Schedule 80 IPS fittings meet the requirements of ASTM standard specification D-2467 for socket-type fittings and ASTM D-2464 for threaded fittings. Threaded fittings have Taper Pipe Threads in accordance with ANSI/ASME B1.20.1.

Marking:

PVC Schedule 80 fittings are marked as prescribed in ASTM D-2464 and D-2467 to indicate the manufacturer's name or trademark, material designation, the NSF mark, size of fitting, and ASTM designation D-2464 (threaded) or D-2467 (socket).

Sample Specification:

All Schedule 80 **socket** fittings shall conform to ASTM D-2467 and ASTM D-2464 for **threaded** fittings. Both pipe and fittings shall be the product of one manufacturer, as manufactured by Eslon Thermoplastics (or approved equal), Charlotte, North Carolina, USA, 1-800-578-7681.

ASTM MEMBER

MEMBER IAPD INTERNATIONAL ASSOCIATION OF PLASTICS DISTRIBUTORS

NSF

8

PRODUCT SPECIFICATION
PVC FABRICATED FITTINGS

1.0 SCOPE:
This specification covers requirements for Polyvinyl Chloride (PVC) Schedule 40 and Schedule 80 fabricated fittings.

2.0 MATERIALS:
Fittings are to be manufactured from PVC material which meets or exceeds the requirements of Type I, Grade I compound as stated in ASTM D-1784. All pipe used in fabrication must be PVC pressure pipe as stated in ASTM D-1785 and be NSF approved for potable water.

3.0 FABRICATION:
Pressure fittings are to be Butt Fusion welded using New Plastic Welding model 8-14 Butt Fusion welding equipment. Fabricated pressure fittings which are manufactured using a fillet weld technique must be overwrapped with fiberglass reinforced polyester (FRP).

All non-reducing concentric couplings, one-step reducer concentric couplings and long sweep elbows are to be manufactured from pipe using a single piece construction method.

All sockets to have internal triple taper for interference fit.

4.0 MANUFACTURER:
All fabricated fittings to be manufactured by New Plastic Fittings, Inc.

PRODUCT SPECIFICATION
CPVC FABRICATED FITTINGS

1.0 SCOPE:
This specification covers requirements for Chlorinated Polyvinyl Chloride (CPVC) Schedule 40, and Schedule 80 fabricated fittings.

2.0 MATERIALS:
Fittings are to be manufactured from CPVC material which meets or exceeds the requirements of Type IV Grade I compound as stated in ASTM D-1784. All pipe used in fabrication must be CPVC pressure pipe as stated in ASTM F-441 and be NSF approved for potable water.

3.0 FABRICATION:
Pressure fittings are to be Butt Fusion welded using New Plastic Welding model 8-14 Butt Fusion welding equipment or by the fillet weld technique. All CPVC pressure fittings except couplings must be overwrapped with fiberglass reinforced polyester (FRP).

All non-reducing concentric couplings, one-step reducer concentric couplings and long sweep elbows are to be manufactured from pipe using a single piece construction method.

All sockets to have internal triple taper for interference fit.

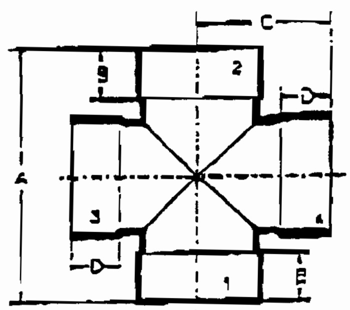
4.0 MANUFACTURER:
All fabricated fittings to be manufactured by New Plastic Fittings, Inc.

FABRICATED PVC & CPVC SCHEDULE 80 CROSS

FOR DRAINAGE AND PRESSURE APPLICATIONS

PART NUMBERS

NOM SIZE	DIMENSIONS AND WEIGHTS A	B	C	D	LBS	PVC DWV AND LOW PRESS	PSI at 73 F	PVC PRESSURE	PSI at 73 F	CPVC DWV	PSI at 73 F	CPVC PRESSURE	PSI at 73 F
5	16"	3 1/4"	8"	3 1/4"	9	S805QCRL	130	S805QCRP	250	N.A.		N.A.	
5x4	17 3/4	3 1/4	9	2 1/2	9	S805FCRD	DWV	S805FCRF	250	N.A.		N.A.	
6	17 3/4	3 1/2	8 3/4	3 1/2	11	S806QCRL	130	S806QCRP	250	C806QCRD	DWV	C806QCRF	250
6x4	18 1/2	3 1/2	9 1/2	2 1/2	12	S806FCRD	DWV	S806FCRF	250	C806FCRD	DWV	C806FCRF	250
8	21 1/2	4 1/2	10 3/4	4 1/2	25	S808QCRL	DWV	S808QCRP	200	C808QCRD	DWV	C808QCRF	200
8x6	22 5/8	4 1/2	11 3/8	3 1/2	24	S808HCRD	DWV	S808HCRF	200	C808HCRD	DWV	C808HCRF	200
8x4	20 1/2	4 1/2	10 1/2	2 1/2	19	S808FCRD	DWV	S808FCRF	200	C808FCRD	DWV	C808FCRF	200
10	27 1/4	5 1/4	13 1/2	5 1/4	43	S810QCRL	130	S810QCRP	200	C810QCRD	DWV	C810QCRF	200
10x8	28 1/2	5 1/4	13 3/8	4 1/2	40	S810ICRD	DWV	S810ICRF	200	C810ICRD	DWV	C810ICRF	200
10x6	26 1/4	5 1/4	12 1/2	3 1/2	34	S810HCRD	DWV	S810HCRF	200	C810HCRD	DWV	C810HCRF	200
10x4	23 1/4	5 1/4	11 1/2	2 1/2	27	S810FCRD	DWV	S810FCRF	200	C810FCRD	DWV	C810FCRF	200
12	35	6	17 1/2	6	65	S812QCRL	130	S812QCRF	200	C812QCRD	DWV	C812QCRF	200
12x10	31 1/4	6	15 3/4	5 1/4	64	S812JCRD	DWV	S812JCRF	200	C812JCRD	DWV	C812JCRF	200
12x8	29 1/2	6	14 3/8	4 1/2	54	S812ICRD	DWV	S812ICRF	200	C812ICRD	DWV	C812ICRF	200
12x6	27 1/4	6	13 3/8	3 1/2	46	S812HCRD	DWV	S812HCRF	200	C812HCRD	DWV	C812HCRF	200
12x4	25 1/4	6	12 1/2	2 1/2	39	S812FCRD	DWV	S812FCRF	200	C812FCRD	DWV	C812FCRF	200
14	37	6 1/2	18 1/2	6 1/2	84	S814QCRD	DWV	S814QCRF	200				
14x12	34 1/4	6 1/2	17 3/8	6	88	S814KCRD	DWV	S814KCRF	200				
14x10	32 1/4	6 1/2	16 3/8	5 1/4	76	S814JCRD	DWV	S814JCRF	200				
14x8	30 1/4	6 1/2	15	4 1/2	64	S814ICRD	DWV	S814ICRF	200				
14x6	28 1/8	6 1/2	16	3 1/2	54	S814HCRD	DWV	S814HCRF	200				
14x4	26	6 1/2	13 1/8	2 1/2	47	S814FCRD	DWV	S814FCRF	200				
16	40	6 1/2	20	6 1/2	118	S816QCRD	DWV	S816QCRF	200				
16x14	36	6 1/2	18 3/4	6 1/2	116	S816LCRD	DWV	S816LCRF	200				
16x12	34 3/4	6 1/2	18 3/8	6	105	S816KCRD	DWV	S816KCRF	200				
16x10	30 5/8	6 1/2	17 1/2	5 1/4	91	S816JCRD	DWV	S816JCRF	200				
16x8	30 5/8	6 1/2	16	4 1/2	79	S816ICRD	DWV	S816ICRF	200				
16x6	28 5/8	6 1/2	15	3 1/2	69	S816HCRD	DWV	S816HCRF	200				
16x4	26 1/2	6 1/2	14 1/8	2 1/2	62	S816FCRD	DWV	S816FCRF	200				



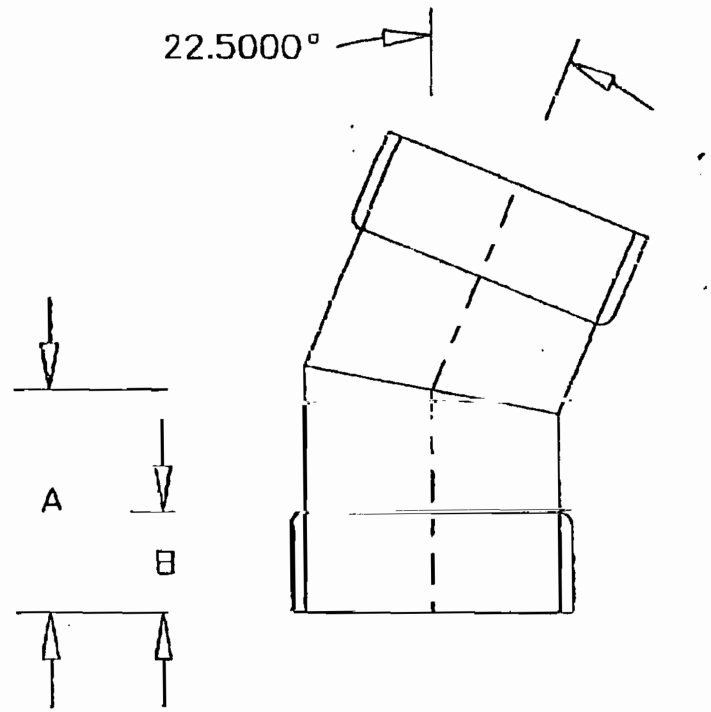
Other sizes materials and configurations are available; please consult factory for specials and additional information.

New Plastic Fittings' fabricated sockets have an internal triple taper to assure proper fit and solvent cement joining. Internal taper aids in the successful joining of pipe with tolerance variations within ASTM D1785.

All dimensions in inches. Tolerances: length dimensions +/- 1/4" angle dimensions +/- 2°. Dimensions are subject to change without notice.

ATTENTION: PLEASE FAX BACK APPROVAL

PVC SCHEDULE 80 22.5o ELBOW



size	A	B
4"	8"	2.5"
6"	9.25"	3.5"
8"	10.5"	4.5"
10"	12.5"	5.25"
12"	13.75"	6"
14"	14.5"	6.5"
16"	15.25"	6.5"

NEW PLASTIC FITTINGS
PHONE 800-373-2068 FAX 630-739-2727

TOLERANCE: +/- .250" +/-2° SCALE: DRAWN BY:

DRWG: CUSTOMER: DATE:

LEACHATE COLLECTION PIPE

The pipe used for the leachate collection system was a perforated 6-inch or 8-inch diameter, SDR 17, high density polyethylene (HDPE) collection pipe and solid 6-inch or 8-inch, SDR 17, HDPE collection pipe. The leachate collection pipe was manufactured by Lee Supply Company, Inc. The pipe perforations are ½-inch diameter and are double row, 120 degrees apart with the perforations 6 inches on center. Manufacturer's literature is included herein.

DRISCOPIPE®

1000 series Data Sheet

PHILLIPS 66

Customer Benefits

High quality Driscopipe® 1000 is manufactured from extra high molecular weight, high density PE 3408 polyethylene pipe grade resin.

This black, weather-resistant pipe exhibits.....

- **Outstanding Chemical & Corrosion Resistance**
- **High Environmental Stress Crack Resistance**
- **Excellent Flow Characteristics**
- **Toughness & Ductility**
- **Flexibility & Ease of Installation**
- **Non-Toxic**
- **Abrasion Endurance**
- **Fatigue Endurance**
- **Reliability**
- **Available Sizes: 1" through 54"**

Suggested Industries and Applications

- Acid / caustic lines
- Agriculture
- Aquaculture
- Brine
- Cement Plants
- Coal Slurry/ Coal Prep
- De-watering
- Dredging/ Sand/ Gravel
- Dual containment
- Fertilizer
- Fly ash lines
- Golf courses
- Hard Rock Disposal
- Hazardous Wastes
- High purity processes
- Ice Rinks
- Industrial
- Inorganic Chemicals
- Irrigation
- Leachate collection
- Marinas
- Metal (Cu, Al, Fe, etc.)
- Mining
- Organic Chemicals
- Petrochemicals
- Pulp/ Paper/ Wood
- River crossings
- Salt Mines
- Sludge piping
- Snow Melting/ Making
- Storage tank piping
- Sugar Mills
- Swimming Pools
- SX acid mining
- Tailings Slurry
- Temporary pipelines
- Utility/ process piping

.....and many others

Specification Data

The resin, pipe, & fittings comply with these accepted (and other) industry standards . . . . . .

ASTM F-714 (Pipe)

ASTM D-3261 (Fittings)

Cell Classification
ASTM D3350- 345444C

PPI - PE3408 Designation

Factory Mutual (by size per order)

Typical Physical Properties* of Driscopipe® 1000 (PE 3408) Polyethylene Pipe Resin

Property		Test Method	Unit	Value
Material Designation		PPI / ASTM	———	PE 3408
Material Classification		ASTM D-3350	———	Type III; PE34
Cell Classification		ASTM D-3350	———	345444C
Density	(3)	ASTM D-1505	gms/cm³	0.955
Melt Flow	(4)	ASTM D-1238(2.16/190)	gms/10 min.	0.11 ♦
Flex Modulus	(5)	ASTM D-790	psi	135,000
Tensile Strength	(4)	ASTM D-638	psi	3,200
ESCR	(4)	ASTM D-1693	F_0, Hours	>5,000**
HDB @ 73°F	(4)	ASTM D-2837	psi	1,600
U-V Stabilizer	(C)	ASTM D-1603	% C	> 2
Hardness		ASTM D-2240	Shore D	65
Tensile Strength @ Yield (Type IV Specimen)		ASTM D-638 (2"/min.)	psi	3,200
Elongation at Yield		ASTM D-638	%, minimum	8
Tensile Strength @ Break (Type IV Specimen)		ASTM D-638	psi	5,000
Elongation at Break		ASTM D-638	%, minimum	750
Modulus of Elasticity (Young's Modulus)		ASTM D-638	psi	130,000
ESCR (Cond A,B, C: Mold. Slab)		ASTM D-1693	F_0, Hours	>5,000
(Compressed Ring - pipe)		ASTM F-1248	F_0, Hours	>3,500
Impact Strength (IZOD) (.125" Thick)		ASTM D-256 (Method A)	in-lb/in. notch	42
Linear Thermal Expansion Coeff.		ASTM D-696	in/ in/ °F	1.2×10^{-4}
Thermal Conductivity		ASTM D-177	BTU-in/ft²/ hrs/°F	2.7
Brittleness Temperature		ASTM D 746	°F	< -130
Vicat Softening Temperature		ASTM D 1525	°F	257
Heat Fusion Condition			psi @ °F	75 @ 400°

* This list of typical physical properties is intended for basic characterization of the material and does not represent specific determinations or specifications. The Physical properties values reported herein were determined on compression molded specimens prepared in accordance with Procedure C of ASTM D-1928 and may differ from specimens taken from the pipe.

♦ Average Melt Index value with a standard deviation of 0.01

** Tests were discontinued because of no failures and no indication of stress crack initiation

Distributed By:
LEE SUPPLY CO., INC.
P.O. BOX 35
305 FIRST & LINCOLN AVE.
CHARLEROI PA 15022

PPI PLASTICS PIPE INSTITUTE

ISO 9001 CERTIFIED

To secure product information or leave a message for a sales engineer or technical service representative :
Phone: 1-800-527-0662
Fax: 1-972-669-5959

Effective: 5-16-97

PHILLIPS 66 **Phillips Driscopipe**
A DIVISION OF PHILLIPS PETROLEUM COMPANY

DRISCOPIPE **1000 Series**

Sizes & Dimensions

3/4" (1.050 OD)

SDR 11	160 psi	0.12 lbs./ft.	0.860 ID	.095 wall

1" (1.315 OD)

SDR 11	160 psi	0.19 lbs./ft.	1.075 ID	.120 wall

1-1/4" (1.660 OD)

SDR 11	160 psi	0.31 lbs./ft.	1.358 ID	.151 wall

1-1/2" (1.900 OD)

SDR 11	160 psi	0.41 lbs./ft.	1.554 ID	.173 wall

2" (2.375 OD)

SDR 7	267 psi	0.94 lbs/ft	1.697 ID	.339 wall
SDR 9	200 psi	0.76	1.847	.264
SDR 11 ●	**160 psi**	**0.64**	**1.943**	**.216**
SDR 13.5	128 psi	0.53	2.023	.176
SDR 15.5	110 psi	0.47	2.069	.153
SDR 17	100 psi	0.43	2.095	.140

3" (3.500 OD)

SDR 7	267 psi	2.05 lbs/ft.	2.500 ID	.500 wall
SDR 9	200 psi	1.66	2.722	.389
SDR 11 ●	**160 psi**	**1.39**	**2.864**	**.318**
SDR 13.5	128 psi	1.15	2.982	.259
SDR 15.5	110 psi	1.02	3.048	.226
SDR 17 ●	**100 psi**	**0.93**	**3.088**	**.206**
SDR 19	89 psi	0.84	3.132	.184
SDR 21	80 psi	0.77	3.166	.167
SDR 26	64 psi	0.62	3.230	.135
SDR 32.5	51 psi	0.50	3.284	.108

4" (4.500 OD)

SDR 7	267 psi	3.39 lbs/ft.	3.214 ID	.643 wall
SDR 9	200 psi	2.74	3.500	.500
SDR 11 ●	**160 psi**	**2.29**	**3.682**	**.409**
SDR 13.5	128 psi	1.90	3.834	.333
SDR 15.5 ●	**110 psi**	**1.68**	**3.920**	**.290**
SDR 17 ●	**100 psi**	**1.54**	**3.970**	**.265**
SDR 19	89 psi	1.39	4.026	.237
SDR 21	80 psi	1.26	4.072	.214
SDR 26 ●	**64 psi**	**1.03**	**4.154**	**.173**
SDR 32.5	51 psi	0.83	4.224	.138

5-3/8" (5.375 OD)

SDR 17	100 psi	2.20 lbs./ft.	4.743 ID	.316 wall
SDR 21	80 psi	1.80	4.863	.256
SDR 26	64 psi	1.47	4.961	.207
SDR 32.5	51 psi	1.18	5.045	.165

5" (5.563 OD)

SDR 7	267 psi	5.17 lbs/ft.	3.973 ID	.795 wall
SDR 9	200 psi	4.18	4.327	.618
SDR 11	160 psi	3.51	4.551	.506
SDR 13.5	128 psi	2.91	4.739	.412
SDR 15.5	110 psi	2.57	4.845	.359
SDR 17	100 psi	2.35	4.909	.327
SDR 19	89 psi	2.12	4.977	.293
SDR 21	80 psi	1.93	5.033	.265
SDR 26	64 psi	1.57	5.135	.214
SDR 32.5	51 psi	1.27	5.221	.171

6" (6.625 OD)

SDR 7	267 psi	7.33 lbs/ft.	4.733 ID	.946 wall
SDR 9	200 psi	5.93	5.153	.736
SDR 11 ●	**160 psi**	**4.97**	**5.421**	**.602**
SDR 13.5	128 psi	4.13	5.643	.491
SDR 15.5	110 psi	3.63	5.771	.427
SDR 17 ●	**100 psi**	**3.34**	**5.845**	**.390**
SDR 19	89 psi	3.01	5.927	.349
SDR 21 ●	**80 psi**	**2.73**	**5.995**	**.315**
SDR 26 ●	**64 psi**	**2.23**	**6.115**	**.255**
SDR 32.5 ●	**51 psi**	**1.80**	**6.217**	**.204**

7" (7.125 OD)

SDR 7	267 psi	8.49 lbs./ft.	5.089 ID	1.018 wall
SDR 9	200 psi	6.86	5.541	.792
SDR 11	160 psi	5.75	5.829	.648
SDR 13.5	128 psi	4.78	6.069	.528
SDR 15.5	110 psi	4.21	6.205	.460
SDR 17	100 psi	3.86	6.287	.419
SDR 19	89 psi	3.48	6.375	.375
SDR 21	80 psi	3.16	6.445	.340
SDR 26 ●	**64 psi**	**2.58**	**6.577**	**.274**
SDR 32.5	51 psi	2.08	6.685	.220

8" (8.625 OD)

SDR 7	267 psi	12.43 lbs.ft.	6.161 ID	1.232 wall
SDR 9	200 psi	10.05	6.709	.958
SDR 11 ●	**160 psi**	**8.42**	**7.057**	**.784**
SDR 13.5	128 psi	7.00	7.347	.639
SDR 15.5	110 psi	6.16	7.513	.556
SDR 17 ●	**100 psi**	**5.65**	**7.611**	**.507**
SDR 19	89 psi	5.10	7.717	.454
SDR 21 ●	**80 psi**	**4.64**	**7.803**	**.411**
SDR 26 ●	**64 psi**	**3.79**	**7.961**	**.332**
SDR 32.5 ●	**51 psi**	**3.05**	**8.095**	**.265**

10" (10.750 OD)

SDR 7	267 psi	19.32 lbs./ft.	7.678 ID	1.536 wall
SDR 9	200 psi	15.61	8.362	1.194
SDR 11 ●	**160 psi**	**13.09**	**8.796**	**.977**
SDR 13.5	128 psi	10.87	9.158	.796
SDR 15.5	110 psi	9.58	9.362	.694
SDR 17 ●	**100 psi**	**8.78**	**9.486**	**.632**
SDR 19	89 psi	7.92	9.618	.566
SDR 21 ●	**80 psi**	**7.21**	**9.726**	**.512**
SDR 26 ●	**64 psi**	**5.87**	**9.924**	**.413**
SDR 32.5 ●	**51 psi**	**4.75**	**10.088**	**.331**

12" (12.750 OD)

SDR 7	267 psi	27.16 lbs./ft.	9.108 ID	1.821 wall
SDR 9	200 psi	21.97	9.916	1.417
SDR 11 ●	**160 psi**	**18.41**	**10.432**	**1.159**
SDR 13.5	128 psi	15.29	10.862	.944
SDR 15.5 ●	**110 psi**	**13.48**	**11.104**	**.823**
SDR 17 ●	**100 psi**	**12.36**	**11.250**	**.750**
SDR 19	89 psi	11.14	11.408	.671
SDR 21 ●	**80 psi**	**10.13**	**11.536**	**.607**
SDR 26 ●	**64 psi**	**8.26**	**11.770**	**.490**
SDR 32.5 ●	**51 psi**	**6.67**	**11.966**	**.392**

13" (13.386 OD)

SDR 7	267 psi	29.24 lbs./ft.	9.562 ID	1.912 wall
SDR 9	200 psi	23.62	10.412	1.487
SDR 11	160 psi	20.30	10.952	1.217
SDR 13.5	128 psi	16.87	11.402	.992
SDR 15.5	110 psi	14.85	11.658	.864
SDR 17	100 psi	13.62	11.812	.787
SDR 19	89 psi	12.28	11.976	.705
SDR 21	80 psi	11.16	12.112	.637
SDR 26	64 psi	9.12	12.356	.515
SDR 32.5	51 psi	7.36	12.562	.412

14.000 OD

SDR 7	267 psi	32.76 lbs./ft.	10.00 ID	2.000 wall
SDR 9	200 psi	26.50	10.888	1.556
SDR 11 ●	**160 psi**	**22.20**	**11.454**	**1.273**
SDR 13.5	128 psi	18.44	11.926	1.037
SDR 15.5	110 psi	16.24	12.194	.903
SDR 17 ●	**100 psi**	**14.91**	**12.352**	**.824**
SDR 19	89 psi	13.43	12.526	.737
SDR 21	80 psi	12.22	12.666	.667
SDR 26 ●	**64 psi**	**9.96**	**12.924**	**.538**
SDR 32.5	51 psi	8.05	13.138	.431

16.000 OD

SDR 9	200 psi	34.60 lbs./ft.	12.444 ID	1.778 wall
SDR 11 ●	**160 psi**	**29.00**	**13.090**	**1.455**
SDR 13.5	129 psi	24.09	13.630	1.185
SDR 15.5	110 psi	21.21	13.936	1.032
SDR 17 ●	**100 psi**	**19.46**	**14.118**	**.941**
SDR 19	89 psi	17.54	14.316	.842
SDR 21 ●	**80 psi**	**15.96**	**14.476**	**.762**
SDR 26 ●	**64 psi**	**13.01**	**14.770**	**.615**
SDR 32.5	51 psi	10.50	15.016	.492

18.000 OD

SDR 9	200 psi	43.79 lbs./ft.	14.000 ID	2.000 wall
SDR 11 ●	**160 psi**	**36.69**	**14.728**	**1.636**
SDR 13.5	128 psi	30.48	15.334	1.333
SDR 15.5 ●	**110 psi**	**26.84**	**15.678**	**1.161**
SDR 17 ●	**100 psi**	**24.64**	**15.882**	**1.059**
SDR 19	89 psi	22.19	16.106	.947
SDR 21	80 psi	20.19	16.286	.857
SDR 26 ●	**64 psi**	**16.47**	**16.616**	**.692**
SDR 32.5	51 psi	13.30	16.892	.554

20.000 OD

SDR 9	200 psi	54.05 lbs./ft.	15.556 ID	2.222 wall
SDR 11 ●	**160 psi**	**45.30**	**16.364**	**1.818**
SDR 13.5	128 psi	37.63	17.038	1.481
SDR 15.5	110 psi	33.14	17.420	1.290
SDR 17 ●	**100 psi**	**30.41**	**17.648**	**1.176**
SDR 19	89 psi	27.42	17.894	1.053
SDR 21	80 psi	24.93	18.096	.952
SDR 26 ●	**64 psi**	**20.34**	**18.462**	**.769**
SDR 32.5 ●	**51 psi**	**16.41**	**18.770**	**.615**

21.500 OD

SDR 9	200 psi	62.47 lbs./ft.	16.722 ID	2.389 wall
SDR 11	160 psi	52.37	17.590	1.955
SDR 13.5	128 psi	43.51	18.314	1.593
SDR 15.5	110 psi	38.30	18.726	1.387
SDR 17	100 psi	35.16	18.970	1.265
SDR 19	89 psi	31.68	19.236	1.132
SDR 21	80 psi	28.82	19.452	1.024
SDR 26	64 psi	23.51	19.846	.92[illegible]
SDR 32.5	51 psi	18.98	20.176	.[illegible]62

22.000 OD

SDR 9	200 psi	65.40 lbs./ft.	17.112 ID	2.444 wall
SDR 11 ●	**160 psi**	**54.82**	**18.000**	**2.000**
SDR 13.5	128 psi	45.56	18.740	1.630
SDR 15.5	110 psi	40.10	19.162	1.419
SDR 17	100 psi	36.80	19.412	1.294
SDR 19	89 psi	33.16	19.684	1.158
SDR 21	80 psi	30.18	19.904	1.048
SDR 26 ●	**64 psi**	**24.61**	**20.308**	**.846**
SDR 32.5 ●	**51 psi**	**19.86**	**20.646**	**.677**

24.000 OD

SDR 9	200 psi	77.85 lbs./ft.	18.666 ID	2.667 wall
SDR 11 ●	**160 psi**	**65.24**	**19.636**	**2.182**
SDR 13.5	128 psi	54.21	20.444	1.778
SDR 15.5	110 psi	47.72	20.904	1.548
SDR 17 ●	**100 psi**	**43.81**	**21.176**	**1.412**
SDR 19	89 psi	39.46	21.474	1.263
SDR 21 ●	**80 psi**	**35.91**	**21.714**	**1.143**
SDR 26 ●	**64 psi**	**29.30**	**22.154**	**.923**
SDR 32.5 ●	**51 psi**	**23.62**	**22.524**	**.738**

26.000 OD

SDR 11	160 psi	76.57 lbs./ft.	21.272 ID	2.364 wall
SDR 13.5	128 psi	63.62	22.148	1.926
SDR 15.5	110 psi	56.00	22.646	1.677
SDR 17	100 psi	51.39	22.942	1.529
SDR 19	89 psi	46.30	23.264	1.368
SDR 21	80 psi	42.14	23.524	1.238
SDR 26	64 psi	34.39	24.000	1.000
SDR 32.5 ●	**51 psi**	**27.74**	**24.400**	**.800**

28.000 OD

SDR 11	160 psi	88.78 lbs./ft.	22.910 ID	2.545 wall
SDR 13.5	128 psi	73.78	23.852	2.074
SDR 15.5	110 psi	64.95	24.388	1.806
SDR 17 ●	**100 psi**	**58.62**	**24.706**	**1.647**
SDR 19	89 psi	53.73	25.052	1.474
SDR 21	80 psi	48.86	25.334	1.333
SDR 26	64 psi	39.88	25.846	1.077
SDR 32.5 ●	**51 psi**	**32.19**	**26.274**	**.862**

30.000 OD

SDR 11	160 psi	101.92 lbs./ft.	24.546 ID	2.727 wall
SDR 13.5	128 psi	84.69	25.556	2.222
SDR 15.5	110 psi	74.56	26.130	1.935
SDR 17	100 psi	68.45	26.470	1.765
SDR 19	89 psi	61.67	26.842	1.579
SDR 21 ●	**80 psi**	**56.12**	**27.142**	**1.429**
SDR 26	64 psi	45.78	27.692	1.154
SDR 32.5 ●	**51 psi**	**36.93**	**28.154**	**.923**

800 mm (31.496 OD)

SDR 13.5	128 psi	93.35 lbs./ft.	26.830 ID	2.333 wall
SDR 15.5	110 psi	82.20	27.432	2.032
SDR 17	100 psi	75.45	27.790	1.853
SDR 19	89 psi	67.98	28.180	1.658
SDR 21	80 psi	61.85	28.496	1.500
SDR 26	64 psi	50.44	29.074	1.211
SDR 32.5	51 psi	40.71	29.558	.969

32.000 OD

SDR 13.5	128 psi	96.35 lbs./ft.	27.260 ID	2.370 wall
SDR 15.5	110 psi	84.87	27.870	2.065
SDR 17	100 psi	77.86	28.236	1.882
SDR 19	89 psi	70.15	28.632	1.684
SDR 21	80 psi	63.84	28.952	1.524
SDR 26	64 psi	52.10	29.538	1.231
SDR 32.5 ●	**51 psi**	**42.04**	**30.030**	**.985**

34.000 OD

SDR 13.5	128 psi	108.81 lbs./ft.	28.962 ID	2.519 wall
SDR 15.5	110 psi	95.81	29.612	2.194
SDR 17	100 psi	87.91	30.000	2.000
SDR 19	89 psi	79.17	30.422	1.789
SDR 21	80 psi	72.06	30.762	1.619
SDR 26	64 psi	58.81	31.384	1.308
SDR 32.5	51 psi	47.43	31.908	1.046

36.000 OD

SDR 13.5	128 psi	121.98 lbs./ft.	30.666 ID	2.667 wall
SDR 15.5	110 psi	107.41	31.354	2.323
SDR 17	100 psi	98.57	31.764	2.118
SDR 19	89 psi	88.81	32.210	1.895
SDR 21 ●	**80 psi**	**80.78**	**32.572**	**1.714**
SDR 26 ●	**64 psi**	**65.94**	**33.230**	**1.385**
SDR 32.5 ●	**51 psi**	**53.20**	**33.784**	**1.108**

● denotes standard sizes

1000/6400 series

Molded and Fabricated Fittings

Sizes and Dimensions

Effective: 11-1-94

PHILLIPS 66

DRISCOPIPE

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90 DEGREE ELBOWS

NOMINAL SIZE		Type **	psi 73°	Dimensions, inches A	B	C	E	R	WT. LBS.
3/4"	SDR 11	molded	160	1.8	3.2	3.8	---	1.4	.1
1	SDR 11	molded	160	1.8	3.2	3.8	---	1.4	.1
1-1/4	SDR 11	molded	160	1.8	3.2	3.8	---	1.4	1
1-1/2	SDR 11	molded	160	1.8	3.2	3.8	---	1.4	1
2"	SDR 9.3 11	molded	190 160	2.9	4.5	5.7	---	2.0	1
	SDR 7 11	fabbed	200 120	3.0	10.2	11.4	1.5	8.7	1 1
3"	SDR 9.3 11 17	molded	190 160 100	3.0	5.1	6.9	---	2.5	2
	SDR 7 11 17	fabbed	200 120 75	3.0	10.8	12.5	1.5	9.3	3 2 2
4"	SDR 9.3 11 17	molded	190 160 100	3.0	5.8	8.0	---	3.0	3
	SDR 7 11 17	fabbed	200 120 100	5.0	16.8	19.1	2.5	14.2	8 6 5
5"	SDR 11	fabbed	120	5.0	17.9	20.7	2.5	16.0	8
6"	SDR 9.3 11 17	molded	190 160 100	3.0	7.0	10.8	---	4.4	9
	SDR 7 11 17	fabbed	200 120 75	6.0	21.4	24.7	3.0	18.3	21 14 10
8"	SDR 11	molded	160	6.0	12.0	16.5	---	6.0	25
	SDR 7 11 17 26	fabbed	200 120 75 48	6.0	22.4	26.7	3.0	19.4	37 23 17 12
10"	SDR 11	molded	160	6.0	13.3	18.6	---	7.3	41
	SDR 7 11 17 26	fabbed	200 120 75 48	6.0	23.5	28.8	3.0	20.4	61 41 28 19
12"	SDR 11	molded	160	7.5	15.8	22.3	---	8.3	70
	SDR 7 11 17 26	fabbed	200 120 75 48	8.0	30.5	36.8	4.0	26.5	111 75 51 34
14"	SDR 7 11 17 26	fabbed	200 120 75 48	8.0	31.0	38.0	4.0	27.1	137 93 62 42
16"	SDR 7 11 17 26	fabbed	200 120 75 48	10.0	38.1	46.1	5.0	33.1	219 148 99 66

NOMINAL SIZE		Type **	psi 73°	Dimensions, inches A	B	C	E	R	WT. LBS
18.000	SDR 11 17 26	fab'd	120 75 48	10.0	39.1	48.1	5.0	34.1	192 129 86
20.000	SDR 11 17 26	fab'd	120 75 48	11.0	43.2	53.2	5.5	37.7	261 175 117
21.500	SDR 11 17 26	fab'd	120 75 48	11.0	44.0	54.7	5.5	38.4	307 206 138
22.000	SDR 11 17 26	fab'd	120 75 48	11.0	44.2	55.2	5.5	38.7	323 216 145
24.000	SDR 11 17 26	fab'd	120 75 48	11.0	45.2	57.2	5.5	39.7	393 263 176
26,000	SDR 11	fab'd	120	10.0	43.1	56.1	5.0	38.1	440
28.000	SDR 11 17 26	fab'd	120 75 48	10.0	44.1	58.1	5.0	39.0	521 350 234
30.000	SDR 17 26	fab'd	75 48	10.0	45.1	60.1	5.0	40.1	410 274
800mm 31.496	SDR 17 26	fab'd	75 48	10.0	45.9	61.6	5.0	40.9	460 307
32.000	SDR 17 26	fab'd	75 48	10.0	46.1	62.1	5.0	41.1	477 319
36.000	SDR 17 26	fab'd	75 48	10.0	48.1	66.1	5.0	43.1	629 421
1000mm 39.370	SDR 26 32.5	fab'd	48 38	10.0	49.9	69.7	5.0	44.9	521 420
42.000	SDR 17 26	fab'd	75 48	10.0	51.1	72.1	5.0	46.1	908 607
1200mm 47.244	SDR 26	fab'd	48	10.0	54.1	78.1	5.0	49.1	803
54.000	SDR 26	fab'd	48	16.5	76.7	103.7	8.3	68.5	

** Fabbed Ells are not fully pressure rated, see "Technical Considerations".

See drawings on page 1A

Contact your Driscopipe representative for possible delivery and availability of sizes not listed.

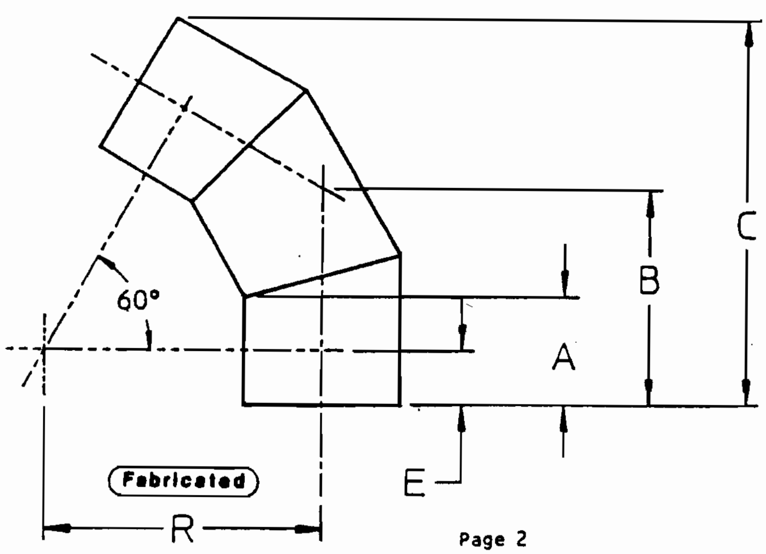
60 DEGREE ELBOWS

NOMINAL SIZE		Type **	psi 73°	Dimensions, inches A	B	C	E	R	Wt. lbs.
2"	SDR 7 11	fab'd	200 120	3.0	5.4	9.2	1.5	6.8	1 .5
3"	SDR 7 11 17	fab'd	200 120 75	3.0	5.7	10.1	1.5	7.4	2 1 1
4"	SDR 7 11 17	fab'd	200 120 75	5.0	9.2	15.7	2.5	11.6	5 3 2
5"	SDR 11	fab'd	120	5.0	9.5	16.7	2.5	12.1	5
6"	SDR 7 11 17	fab'd	200 120 75	6.0	5.7	19.9	3.0	14.5	13 9 6
8"	SDR 7 11 17 26	fab'd	200 120 75 48	6.0	12.0	21.7	3.0	15.5	23 16 11 7
10"	SDR 7 11 17 26	fab'd	200 120 75 48	6.0	12.6	23.5	3.0	16.6	38 26 17 12
12"	SDR 7 11 17 26	fab'd	200 120 75 48	8.0	16.3	30.0	4.0	21.3	68 40 31 21
14"	SDR 7 11 17 26	fab'd	200 120 75 48	8.0	16.7	31.1	4.0	22.0	84 57 38 26
16"	SDR 7 11 17 26	fab'd	200 120 75 48	10.0	20.4	37.5	5.0	26.9	135 91 61 41
18"	SDR 11 17 26	fab'd	120 75 48	10.0	21.0	39.3	5.0	27.7	118 80 53

Contact your DRISCOPIPE representative for possible delivery and availability of sizes not listed.

NOMINAL SIZE		Type **	psi 73°	Dimensions, inches A	B	C	E	R	WT. LBS
20.000	SDR 11 17 26	fab'd	120 75 48	11.0	23.1	43.4	5.5	30.5	161 108 73
21.500	SDR 11 17 26	fab'd	120 75 48	11.0	23.6	44.7	5.5	31.3	190 127 85
22.000	SDR 11 17 26	fab'd	120 75 48	11.0	23.7	45.1	5.5	31.5	200 134 90
24.000	SDR 11 17 26	fab'd	120 75 48	11.0	24.3	46.8	5.5	32.5	243 163 109
26.000	SDR 11	fab'd	120	10.0	23.3	46.2	5.0	31.7	274
28.000	SDR 11 17 26	fab'd	120 75 48	10.0	23.9	47.9	5.0	32.7	325 218 146
30.000	SDR 17 26	fab'd	75 48	10.0	24.4	49.6	5.0	33.7	256 171
800mm 31.496	SDR 17 26	fab'd	75 48	10.0	24.9	50.9	5.0	34.4	287 192
32.000	SDR 17 26	fab'd	75 48	10.0	25.0	51.4	5.0	34.7	298 199
36.000	SDR 17 26	fab'd	75 48	10.0	26.2	54.8	5.0	36.7	394 264
1000mm 39.370	SDR 26 32.5	fab'd	48 38	10.0	27.2	57.9	5.0	38.4	328 264
42.000	SDR 17 26	fab'd	75 48	10.0	27.9	60.0	5.0	39.7	572 382
1200mm 47.244	SDR 26	fab'd	48	10.0	29.5	64.8	5.0	42.4	511

** FAB'D Ells are not fully pressure rated, see TECHNICAL CONSIDERATIONS".



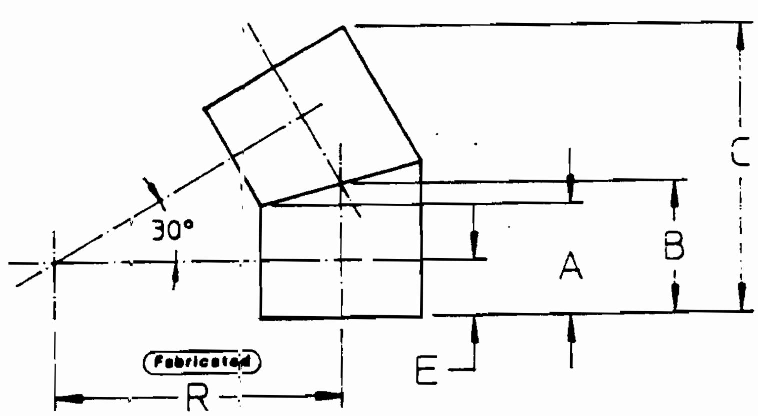
30 DEGREE ELBOWS

NOMINAL SIZE		Type **	psi 73°	Dimensions, inches A	B	C	E	R	WT. LBS
2"	SDR 7 11	fab'd	200 120	3.0	3.3	6.8	1.5	6.8	5 5
3"	SDR 7 11 17	fab'd	200 120 75	3.0	3.5	7.4	1.5	7.4	1 1 .5
4"	SDR 7 11 17	fab'd	200 120 75	5.0	5.6	11.6	2.5	11.6	3 2 2
5"	SDR 11	fab'd	120	5.0	5.8	12.1	2.5	12.1	3
6"	SDR 7 11 17	fab'd	200 120 75	6.0	6.9	14.5	3.0	14.5	8 5 4
8"	SDR 7 11 17 26	fab'd	200 120 75 48	6.0	7.1	15.5	3.0	15.5	13 9 6 4
10"	SDR 7 11 17 26	fab'd	200 120 75 48	6.0	7.4	16.6	3.0	16.6	19 13 9 6
12"	SDR 7 11 17 26	fab'd	200 120 75 48	8.0	9.7	21.3	4.0	21.3	36 24 16 11
14"	SDR 7 11 17 26	fab'd	200 120 75 48	8.0	9.9	22.0	4.0	22.0	43 29 20 13
16"	SDR 7 11 17 26	fab'd	200 120 75 48	10.0	12.1	26.7	5.0	26.7	70 48 32 22
18"	SDR 11 17 26	fab'd	120 75 48	10.0	12.4	27.7	5.0	27.7	60 40 27

Contact your DRISCOPIPE representative for delivery and availability of sizes not listed.

** FAB'D Ells are not fully pressure rated, see "TECHNICAL CONSIDERSTIONS"

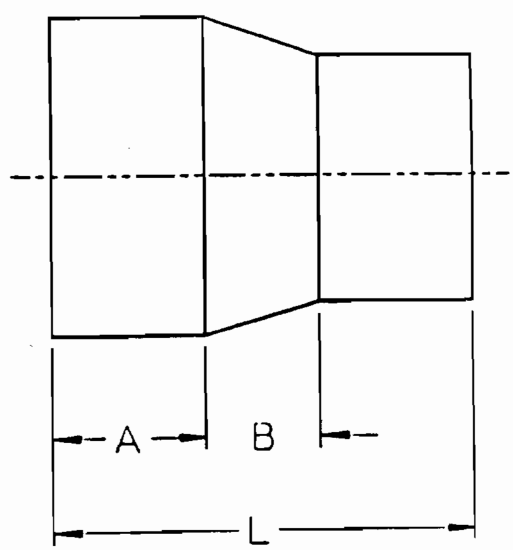
NOMINAL SIZE		Type **	psi 73°	Dimensions, inches A	B	C	E	R	WT. LBS
20.000	SDR 11 17 26	fab'd	120 75 48	11.0	13.7	30.5	5.5	30.5	81 55 37
21.500	SDR 11 17 26	fab'd	120 75 48	11.0	13.9	31.3	5.5	31.3	94 63 42
22.000	SDR 11 17 26	fab'd	120 75 48	11.0	14.0	31.5	5.5	31.5	98 66 44
24.000	SDR 11 17 26	fab'd	120 75 48	11.0	14.2	32.5	5.5	32.5	117 79 53
26.000	SDR 11	fab'd	120	10.0	13.5	31.7	5.0	31.7	125
28.000	SDR 11 17 26	fab'd	120 75 48	10.0	13.8	32.7	5.0	32.7	145 97 65
30.000	SDR 17 26	fab'd	75 48	10.0	14.0	33.7	5.0	33.7	111 75
800mm 31.496	SDR 17 26	fab'd	75 48	10.0	14.2	34.4	5.0	34.4	123 82
32.000	SDR 17 26	fab'd	75 48	10.0	14.3	34.7	5.0	34.7	127 85
36.000	SDR 17 26	fab'd	75 48	10.0	14.8	36.7	5.0	36.7	160 107
1000mm 39.370	SDR 26 32.5	fab'd	48 38	10.0	15.3	38.4	5.0	38.4	128 103
42.000	SDR 17 26	fab'd	75 48	10.0	15.6	39.7	5.0	39.7	218 146
1200mm 47.244	SDR 26	fab'd	48	10.0	16.4	42.4	5.0	42.1	184



REDUCERS

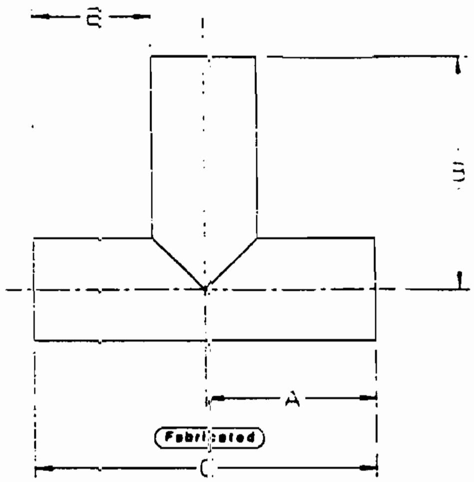
NOMINAL SIZE		Type **	psi 73°	Dimensions, inches A	B	L	WT. LBS
1 x 3/4	SDR 9.3	Molded	190	1.5	0.5	4.5	.3
1-1/4 x 1	SDR 11	Molded	160	2.5	1.0	4.5	.3
1-1/2 x 1	SDR 11	Molded	160	2.5	1.0	6.0	.3
2 x 1-1/4	SDR 11	Molded	160	2.0	0.6	4.8	.5
2 x 1-1/2	SDR 11	Molded	160	2.5	1.0	6.0	.5
3x2	SDR 9.3 11	Molded	190 160	3.0	2.9	8.9	.5
4x2	SDR 9.3 11	Molded	190 160	3.0	5.5	11.5	1
4x3	SDR 9.3 11 17	Molded	190 160 100	3.0	2.6	8.6	1
6x4	SDR 7 s	fab'd	267	3.5	4.0	11.0	7
	SDR 9.3 11 17	Molded	190 160 100	3.5	2.3	7.5	3
6x5	SDR 11	fab'd	160	3.5	4.0	11.0	5
8x6	SDR 7s	fab'd	267	4.0	4.0	12.0	15
	SDR 11 17	Molded	160 100	4.0	3.0	12.0	9 7
	SDR 26	fab'd	64	4.0	4.0	13.0	6
10x8	SDR 7 11 17 26	fab'd	267 160 100 64	6.0	4.0	16.0	22 15 10 7
12x8	SDR 11s 17s	fab'd	160 100	6.0	4.0	16.0	25 17
12x10	SDR 7 11 17 26	fab'd	267 160 100 64	6.0	4.0	16.0	32 22 15 10
14x12	SDR 7s 11 17 26	fab'd	267 160 100 64	7.0	4.0	18.0	40 27 19 13
16x14	SDR 7s 11 17 26	fab'd	267 160 100 64	7.0	4.0	18.0	57 39 29 18
18x16	SDR 7.3s 11 17 26	fab'd	254 160 100 64	7.0	4.0	18.0	93 50 33 22
20x18	SDR 11 17 26	fab'd	160 100 64	7.0	4.0	18.0	62 42 28

NOMINAL SIZE		Type **	psi 73°	Dimensions, inches A	B	L	WT. LBS
21.5 x 20	SDR 11 17 26	fab'd	160 100 64	8.0	4.0	20.0	81 54 36
22 x 20	SDR 11 17 26	fab'd	160 100 64	8.0	4.0	20.0	83 56 38
24 x 21.5	SDR 11 17 26	fab'd	160 100 64	9.0	4.0	22.0	108 72 48
24 x 22	SDR 11 17 26	fab'd	160 100 64	9.0	4.0	22.0	109 73 49
26 x 24	SDR 11 15.5 32.5	fab'd	160 110 51	9.0	4.0	22.0	129 94 47
28 x 24	SDR 11 17 26	fab'd	160 100 64	9.0	4.0	22.0	142 95 64
800mm x28 (31.496)	SDR 17 26	fab'd	100 64	9.0	4.0	22.0	124 83
800mm x30 (31.496)	SDR 17 26	fab'd	100 64	9.0	4.0	22.0	130 87
32 x 28	SDR 17 26	fab'd	100 64	9.0	4.0	22.0	126 84
32 x 30	SDR 17 26	fab'd	100 64	9.0	4.0	22.0	132 89
36x800mm (31.496)	SDR 17 26	fab'd	100 64	9.0	4.0	22.0	159 107
36 x 32	SDR 17 26	fab'd	100 64	9.0	4.0	22.0	161 108



Contact your DRISCOPIPE representative for delivery or availability of other sizes.

(s) denotes a stub end reducer w/pups.



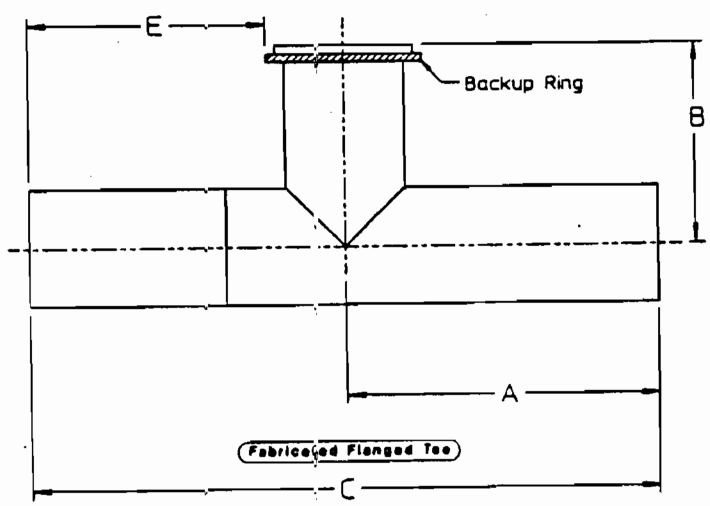
T E E S with Flanges

Flanged Outlets

N O M I N A L S I Z E	Type **	psi 73°	Dimensions, inches A	B	C	E	WT. LBS
26.000 SDR 11	fab'd	120	74.0	48.0	148.0	56.9	1226
28.000 SDR 11 / 17	fab'd	120 / 75	74.0	48.0	148.0	55.8	1424 / 1001
30.000 SDR 17	fab'd	75	74.0	48.0	148.0	54.6	1147
800mm SDR 17 (31.496)	fab'd	75	74.0	48.0	148.0	53.1	1270
32.000 SDR 17	fab'd	75	74.0	48.0	148.0	53.1	1450
36.000 SDR 17	fab'd	75	78.0	48.0	156.0	55.0	1634
1000mm SDR 21 (39.370)	fab'd	48	65.0	48.0	130.0	39.6	1437
42.000 SDR 21	fab'd	48	65.0	48.0	130.0	38.5	1396
1200mm SDR 21 (47.244)	fab'd	48	65.0	48.0	130.0	35.3	1731

Contact your Driscopipe representative for delivery and availability of sizes not listed.

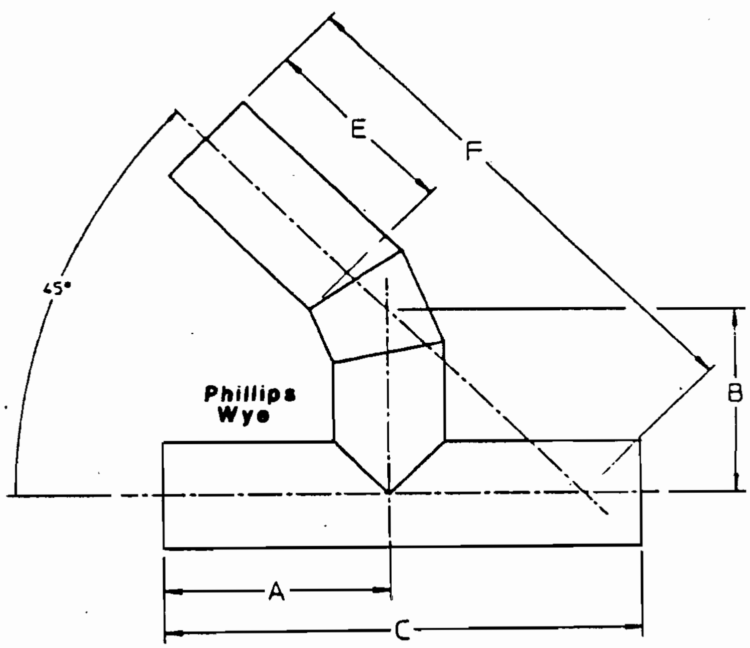
** FAB'D Tees not fully pressure rated, see "TECHNICAL CONSIDERATIONS".



45 DEGREE WYES

Nominal Size		psi 73°	Type	A	B	C	E	F	WT. LBS
2"	SDR 7	200	TrueLat ▮	18.5	na	25.0	14.6	17.5	2
3"	SDR 11	120	TrueLat ▮	17.3	na	25.0	14.5	18.7	5
	SDR 7 11	200 120	Phillips	11.0	8.0	18.0	11.8	25.5	7 5
4"	SDR 11	120	TrueLat ▮	19.5	na	26.5	14.1	19.5	9
	SDR 7 11	200 120	Phillips	14.0	7.7	22.0	12.3	30.1	12 8
6"	SDR 11	120	TrueLat ▮	27.6	na	35.5	19.9	27.9	26
	SDR 7 11	200 120	Phillips	16.0	7.9	24.8	12.8	28.8	28 19
8"	SDR 11	120	TrueLat ▮	30.4	na	40.2	20.0	30.4	49
	SDR 7 11 17	200 120 75	Phillips	18.0	15.2	31.0	15.8	41.7	63 43 29
10"	SDR 11	120	TrueLat ▮	33.0	na	43.2	20.0	35.0	81
	SDR 7 11 17	200 120 75	Phillips	21.0	17.1	35.0	15.3	44.7	105 71 48
12"	SDR 11	120	TrueLat ▮	35.4	na	46.0	20.0	35.4	122
	SDR 7 11 17	200 120 75	Phillips	22.0	20.2	36.8	17.5	52.3	163 111 74
14"	SDR 11	120	TrueLat ▮	39.1	na	50.0	22.0	38.9	161
	SDR 7 11 17	200 120 75	Phillips	23.0	19.4	41.0	24.5	57.8	222 150 101
16"	SDR 7 11 17	200 120 75	Phillips	24.0	19.4	43.0	24.3	58.5	295 200 134
18"	SDR 11 17	120 75	Phillips	25.0	31.1	46.0	23.8	76.9	298 200
20"	SDR 11 17	120 75	Phillips	26.0	35.1	47.0	23.5	83.2	385 258

	Nominal Size		psi 73°	Type	A	B	C	E	F	WT. LBS
	21.5	SDR 11 17	120 75	Phillips	27.0	35.4	49.0	23.3	83.8	452 303
	22"	SDR 11 17	120 75	Phillips	27.0	35.5	49.0	23.3	84.0	473 317
	24"	SDR 11 17	120 75	Phillips	28.0	35.1	51.0	22.8	83.0	564 378
Flanged	26"	SDR 11	120	Phillips	74.0	47.8	148.0	na	92.4	1372
Flanged	28"	SDR 11 17	120 75	Phillips	74.0	50.2	148.0	na	96.2	1598 1109
Flanged	30"	SDR 17	75	Phillips	74.0	50.6	148.0	na	97.2	1275
Flanged	800mm (31.496)	SDR 17	75	Phillips	74.0	51.7	148.0	na	98.9	1418
Flanged	32"	SDR 17	75	Phillips	74.0	52.1	148.0	na	100.0	1460
Flanged	36"	SDR 17	75	Phillips	78.0	55.4	156.0	na	105.3	1914



Contact your DRISCOPIPE representative for delivery and/or availability of other items.

45° Wyes are de-rated, see TECHNICAL CONSIDERATIONS.

Reducing wyes may be available on special quotes.

See drawing of ▮ True Laterals ▮ on page 9

STRAIGHT REDUCING TEES

Effective: 11-1-94

8" outlet

NOMINAL SIZE		SDR	psi 73°	Dimensions, in. A	B	C	WT. LBS	UPS
10x8	SDR	11 17	120 75	14	16	28	38	no
12x8	SDR	11 17	120 75	14	16	28	50	no
24x8	SDR	11 17	120 75	25	25	50	273	no
32x8	SDR	17	75	25	26	50	324	no
36x8	SDR	17	75	25	28	50	408	no

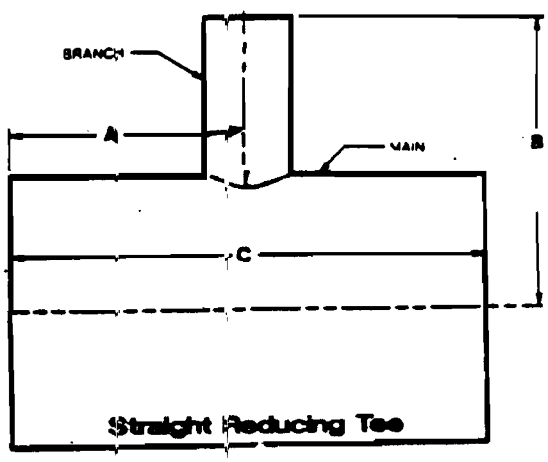
10" outlet

NOMINAL SIZE		SDR	psi 73°	A	B	C	WT. LBS	UPS
12x10	SDR	11 17	120 75	14	16	28	55	no
14x10	SDR	11 17	120 75	15	17	30	67	no
16x10	SDR	11 17	120 75	16	18	32	90	no
18x10	SDR	11 17	120 75	19	21	38	126	no
24x10	SDR	11 17	120 75	25	25	50	278	no

12" outlet

NOMINAL SIZE		SDR	psi 73°	A	B	C	WT. LBS	UPS
14x12	SDR	11 17	120 75	15	17	30	72	no
16x12	SDR	11 17	120 75	16	18	32	95	no
18x12	SDR	11 17	120 75	19	21	38	131	no
24x12	SDR	11 17	120 75	25	25	50	283	no
36x12	SDR	17	75	25	28	50	418	no

Contact your Driscopipe representative for delivery and/or availability of other sizes.



Straight Reducing Tee

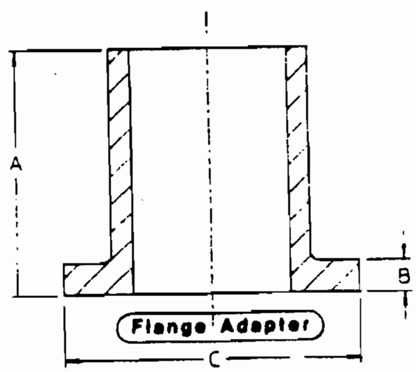
Flange Connectors

NOMINAL SIZE		Type	psi 73°	A	B	C	WT. LBS
1"	SDR 9.3 11	Molded	190 160	4.0	0.2	2.4	.5
1-1/4	SDR 9.3 11	Molded	190 160	4.0	0.3 0.2	2.8	.5
1-1/2	SDR 9.3 11	Molded	190 160	4.0	0.3 0.2	3.1	.5
2"	SDR 7 11	Molded	267 160	6.0	0.4	4.0	1
3"	SDR 7 11 17	Molded	267 160 100	6.0	0.6	5.0	2
4"	SDR 7 11 17	Molded	267 160 100	6.0	0.8	6.6	3
6"	SDR 7 11 17 26	Molded	267 160 100 64	8.0	1.2 0.8	8.5	8 7
8"	SDR 7 11 17 26	Molded	267 160 100 64	9.0	1.6 0.8	10.6	11 10
10"	SDR 7 11 17 26	Molded	267 160 100 64	9.0	1.9 1.3 0.9 0.8	12.8	19 18 17 17
12"	SDR 7 11 17 26	Molded	267 160 100 64	10.8	2.3 1.5 1.0 0.8	15.0	25 24 23 22
14"	SDR 7 11 17	Molded	267 160 100	11.0	2.6 1.7 1.1	17.5	55 40 38
16"	SDR 7 11 17 26	Molded	267 160 100 64	12.0	3.0 1.9 1.2 0.8	20.0	80 60 45 43
18"	SDR 7 11 17 26	Molded	267 160 100 64	12.0	3.3 2.1 1.4 1.0	21.1	95 68 55 50
20"	SDR 11 17 26	Molded	160 100 64	12.0	2.3 1.5 1.0	23.5	66 64 62

NOMINAL SIZE		TYPE **	PSI 73°	A	B	C	WT. LBS
21.500	SDR 11 17 26	Molded	160 100 64	12.0	2.4 1.6 1.0	25.6	68 66 64
22.000	SDR 11 17 26	Molded	160 100 64	12.0	2.5 1.6 1.1	25.6	67 65 63
24.000	SDR 9 17 32.5	Molded	200 100 51	14.0	3.5 1.8 1.0	27.9	113 65 35
26.000	SDR 32.5	E/M	51	14.0	1.2	30.0	35
28.000	SDR 15.5 32.5	E/M	110 51	14.0	2.7 1.3	32.3	94 46
30.000	SDR 11 21 32.5	E/M	160 80 51	14.0	4.1 2.2 1.4	34.3	148 80 53
32.000	SDR 21 32.5	E/M	80 51	14.0	2.3 1.5	36.5	92 61
36.000	SDR 17 21 26 32.5	E/M	100 80 64 51	14.0	3.2 2.6 2.1 1.7	40.8	143 117 95 79
42.000	SDR 26 32.5	E/M	64 51	14.0	2.4 1.9	47.5	132 107
1200mm 47.244	SDR 21 26 32.5	E/M	80 64 51	14.0	3.4 2.7 2.2	54.0	220 170 144
54.000	SDR 26 32.5	E/M	64 51	14.0	3.1 2.5	60.5	231 186

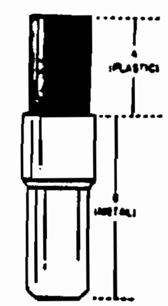
** E/M denotes Extruded/Machined

If used with butterfly valves, check with their mfg. for space/clearance requirements.



Weld-End Transition Fittings

Nominal SIZE		psi 73°	TYPE	Dimen., inch A	Dimen., inch B	WT. Lbs.
2"	SDR 7 11	267 160	Weld-end	12	14.3	7 6
3"	SDR 7 11	267 160	Weld-end	12	15.5	15 14
4"	SDR 7 11	267 160	Weld-end	12	15.4	24 23
6"	SDR 11	160	Weld-end	18	18.2	52

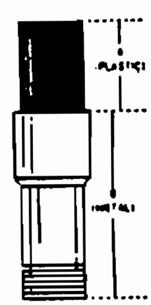


WELD END

w/external epoxy coating

Threaded Transition Fittings

Nominal SIZE		psi 73°	TYPE	Dimen., inch A	Dimen., inch B	WT. Lbs.
1-1/4	SDR 11	160	Threaded	12	6.0	3
2"	SDR 7 11	267 160	Threaded	12	6.2	5 4
3"	SDR 7 11	267 160	Threaded	12	7.0	11 10
4"	SDR 7 11	267 160	Threaded	12	7.8	18 17
6"	SDR 11	160	Threaded	18	12.1	42



THREADED END

w/internal coating

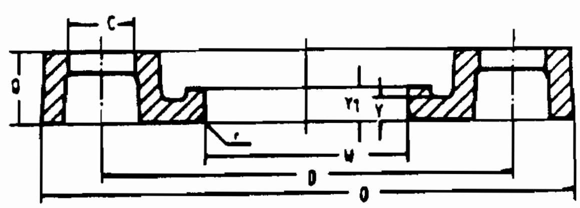
Contact your DRISCOPIPE Representative for delivery or availability of other sizes.

Ductile Iron Back-Up Rings

(dimensions are in inches)

Nominal Pipe Size (inches)	O Nominal Outside Dia.of Ring	Q Minimum Thickness of ring	W Minimum Diameter of Bore	Y / Y_1 Nomimal Length thru Hub	n Num.of bolt holes	C Min.Dia. of bolt holes	D Dia.of bolt circle	Approx. Weight (lbs.)
2	6.00	0.75	2.63	0.23	4	0.750	4.75	2.4
3	7.50	0.94	3.75	0.25	4	0.750	6.00	3.9
4	9.00	0.94	4.75	0.25	8	0.750	7.50	5.2
5	10.00	0.94	5.81	0.27	8	0.875	8.50	6.4
6	11.00	1.00	6.88	0.28	8	0.875	9.50	7.3
8	13.50	1.12	8.88	0.32	8	0.875	11.75	11.1
10	16.00	1.19	11.00	0.49	12	1.000	14.25	18.7
12	19.00	1.25	13.13	0.63	12	1.000	17.00	27.3
14	21.00	1.38	14.38	0.70	12	1.125	18.75	30.3
16	23.50	1.44	16.38	0.70	16	1.125	21.25	36.6
18	25.00	1.56	18.38	0.75	16	1.250	22.75	46.0
20	27.50	1.69	20.38	0.88	20	1.250	25.00	58.0
21.5/22.0	29.50	1.79	21.88	0.75	20	1.375	27.25	66.0
24	32.00	1.75	24.38	1.00	20	1.375	29.50	75.0
28	36.50	1.88	28.38	1.00	28	1.375	34.00	86.0
32 (800mm)	41.75	1.88	32.12	1.00	28	1.625	38.50	118.0
36	46.00	1.88	36.38	1.00	32	1.625	42.75	140.0
40(1000mm)	53.00	1.88	40.00	1.50	36	1.625	49.50	185.0
42	53.00	1.88	42.38	1.10	36	1.625	49.50	172.0
48(1200mm)	59.50	1.88	48.00	1.35	44	1.625	56.00	205.0

Convoluted back-up rings, 150 lb. conform to the vital dimensions of ANSI B16.5 such as outside diameter, bolt circle, bolt hole number & size.



The rings will mate with the following flanges:

- Forged steel flanges, Class 150, per ANSI B16.5
- Plate steel flanges, 150 lb. per AWWA C207
- Cast iron flanges, 125 lb. per ANSI B16.1

Ductile Iron Material: ASTM 536-80, Grade range from 60/40/18 to 65/45/12

Finish: Zinc chromate primer

The term "convoluted" refers to the cross-sectional shape of the ring. The shape allows the usage of less material which affects its original cost as well as shipping & handling cost.

Earlier style back-up rings are available upon request.

DRISCOPIPE

Technical Considerations

Pressure Rating

All molded fittings and reducers, flange adapters, stub ends, branch saddles, branch saddle reducing tees, and transition fittings are fully pressure rated to match the pipe SDR pressure rating to which they are made. The shape of fabricated fittings are substantially different than the shape of straight pipe. As a result, stresses imposed on fabricated fittings are higher than those imposed on pipe. Therefore, it is recommended that the pressure rating of fabricated ells, wyes and tees be re-rated to approximately 75% of the pressure rating of the pipe used to fabricate the fitting. If the full pressure rating of the pipe is required, *Phillips Driscopipe* recommends using a heavier wall fitting (25%) where available. As an alternate measure, when properly designed concrete encasement or other external reinforcement is used on ells, wyes and tees, the pressure rating can be increased to the working pressure of the pipe from which it is fabricated. Specific recommendations for concrete encasement are shown in the *Driscopipe® Systems Installation* brochure.

Installation Precautions

Driscopipe® fabricated tees, elbows and wyes are made by butt fusing or sidewall fusing together special cut segments of Driscopipe® pipe to obtain the desired fitting. The configuration of these fittingss, and the fact that they are fabricated rather than molded, requires that certain precautions be taken when installing them into a piping system.

The installation procedures should provide the least possible amount of lifting and moving of the assembled pipe and fabricated fittings. If it becomes necessary to pull the assembly along side the ditch to properly position it, the fabricated fitting should never be used as the point of attachment for the pulling.

The fusion joining of a fabricated tee and wye into a system becomes complicated because of the third side. It is not too difficult to keep strain off the fitting when fusing pipe to the running side of the tee and lifting and lowering this much of the assembly into position in a ditch. It is when sufficient pipe is added to the third (branch) side to permit the laying of pipe in this direction, that the assembly becomes very difficult to handle. Final handling and positioning of these assemblies requires extra handling equipment and additional precautions to prevent damage to the fabricated fitting.

Recommended Alternate Method: The need for extra equipment and much of the possibility of damage can be eliminated by altering the method of installing the fabricated tee and wye to include the use of a flanged connection on the branch side. This will allow final positioning to take place before the branch side is connected. There will be some instances where it will prove very advantageous from an installation viewpoint to use flanged connections on two sides of a tee or wye and also one side of the elbow. This allows the pipe to be laid from either direction, pushed or pulled into tight locations, rolled into the ditch, and generally handled much easier and faster...before the final connection is made at the tee,wye, or elbow. From the standpoint of economy, speed and ease of installation, and eliminate the occurrence of excessive installation stresses of fabricated fittings, it is recommended that flanged connections always be used on the branch side of tees and wyes and on one end of elbows for larger diameter pipes.

- Driscopipe® 1000/6400 Molded fittings are made from the same resin as the Driscopipe® 1000 & 6400 series pipe.

Molded fittings do not form exact true angles. Due to stresses in the material during the molding and cooling cycles, and the post machining operations required on some of these fittings, angles can deviate approximately 2-3 degrees from true.

- Driscopipe® Fabricated fittings are manufactured from Driscopipe® 1000 & 6400 piping systems. Fabricated ells, wyes and tees are made by butt fusing together mitre cut segments of pipe to obtain the desired shape.

Fabricated elbows: Due to the nature of polyethylene and the mitered fusion process, the tolerance is generally plus or minus one degree per segment. The broad tolerance typically causes no installation problems due to the flexibility of polyethylene.

- Driscopipe® special fittings are custom designed for your specific application through your Phillips Driscopipe, Inc. representative.

IMPROVED PIPING IPP PRODUCTS, INC.

INVOLUTED BACK-UP FLANGES

BACK-UP FLANGES

DUCTILE IRON, 150 LBS

IPP STANDARD

BUPP-DI-150

MATERIAL: ASTM A536-84

1.SCOPE

This pamphlet describes convoluted back-up flanges, 150 lb., in ductile iron ASTM A536, grade 65/45/12. These back-up flanges are used in conjuction with thermoplastic injection molded or fabricated stub ends which are heat-fusion bonded via special heat-fusion machines to the pipe during shop or field fabrication.

2. DESCRIPTION

2.1 Generic Description

Convoluted back-up flanges conform to the vital dimensions of ANSI B16.5 such as outside diameter, bolt circle, bolt hole number and size. However, a range of inside diameters (see Table 1) is offered to suit the preference of the user or installer relative to fusion-bead clearance or fit-up with pipe of metric or special dimensioning.

Flanges are being offered in various finishes to be specified by user.

Physical properties shall be as specified hereafter.

2.2.1 Ductile Iron

1. Material: ASTM 536, Grade 65/45/12
2. Finish: As-cast with flash removed from all edges and bolt holes to the specified dimensions.
3. Marking: Manufacturer's Trademark, size, bolt-hole template, material and type of flange.

2.1.2 Optional Finish

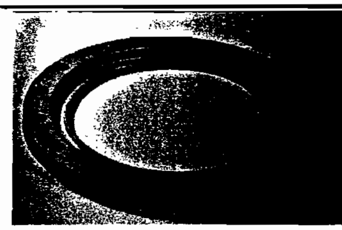
Convoluted back-up flanges are available in the following finishes:
1. Zinc chromate primer
2. Hot-dipped galavanized (ASTM 213)
3. Epoxy coated

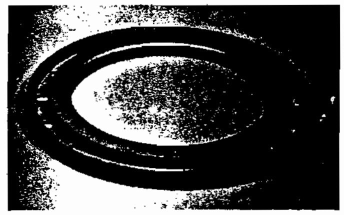
2.2. Purchase Order Description

Requisition should contain the following information:
1. Quantity
2. NPS size
3. Flange Order Number (See Table 1)
4. Finish
5. Unit cost

3. SUPPLIERS

IPP's convoluted back-up flanges are stocked in various



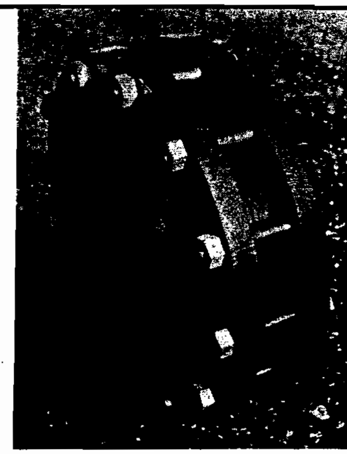


Top picture views the front side of IPP's 16" convoluted back-up flange. This side receives the bolt heads or hex nuts.

The bottom picture shows the reverse side of IPP's flange. A wide landing area contacts the rear shoulder of the plastic stub end or hub adapter in order to keep bearing stress values to a minimum. Notice the transition radius at the ring bore. It eliminates digging into the stub end radius and thus avoids generating unwanted stress raisers. This precaution cannot be achieved with flame cut bores of plate steel flanges which have sharp edges.

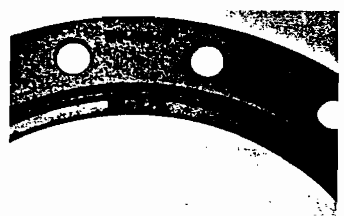
MATING

Flanges as reflected in Table 1 will mate with the following flanges:
1. Forged steel flanges, Class 150, per ANSI B16.5.
2. Plate steel flanges, 150 lb., per AWWA C207.
3. Cast iron flanges, 125 lb., per ANSI B16.1.



The right hand picture shows an assembled 14" joint. Not only is this joint better looking, but it is safer than thin plate steel rings.

Convoluted rings eliminate the need for bolt re-tightening due to their capability of storing elastic energy. This fact is especially desirable in systems running at elevated system temperature due to ambient or process conditions, since all thermoplastic piping materials possess high thermal expansion coefficients.



All flanges are identified as to manufacturer, type of material, size and rating.

Warranty:

IPP guarantees each IPP Flange manufactured by it to be free from defects in material and workmanship under normal use and service within limitations recommended by it.
If any IPP Flange is believed to be defective, and if on examination IPP finds to its satisfaction that such flange is in fact defective, it will repair or replace such flange at its option without cost.
IPP shall not be liable for any consequential damages resulting from any defect in material or workmanship.

Table 1 BACK-UP FLANGES

		O	Q	W	Y/Y$_1$	n	C	D	r		
Nominal Pipe Size (Inch)	Flange Order Number	Outside Dia. of Flange	Minimum Thickness of Flange	Minimum Dia. of Bore	Length Through Hub	Number of Bolt Holes	Minimum Dia. of Bolt Holes	Diameter of Bolt Circle	Inside Corner Radius	Approx. Weight (Lbs)	Non-Shock Operating Pressure (PSIG)
For sizes 1/2" through 1-1/2" use IPP Standard Lap Joint Flanges designed to ANSI (B16.5)											
2"	BUPP 02"A	6.00	0.75	3.00	0.23	4	0.75	4.75	0.13	2.5	275
2"	BUPP 02"B	6.00	0.75	2.63	0.23	4	0.75	4.75	0.13	2.5	275
2"	BUPP 02"C	6.00	0.75	2.46	0.37	4	0.75	4.75	0.31	2.5	275
3"	BUPP 03"A	7.50	0.94	4.00	0.25	4	0.75	6.00	0.13	3.8	275
3"	BUPP 03"B	7.50	0.94	3.75	0.25	4	0.75	6.00	0.13	3.8	275
3"	BUPP 03"C	7.50	0.94	3.60	0.50	4	0.75	6.00	0.38	3.8	275
3"	BUPP 03"D	7.50	0.94	3.53	0.50	4	0.75	6.00	0.38	3.8	275
4"	BUPP 04"B	9.00	0.94	4.75	0.25	8	0.75	7.50	0.13	5.3	275
4"	BUPP 04"C	9.00	0.94	4.60	0.50	8	0.75	7.50	0.44	5.3	275
4"	BUPP 04"D	9.00	0.94	4.50	0.50	8	0.75	7.50	0.44	5.3	275
5"	BUPP 05"B	10.00	0.94	5.81	0.27	8	0.88	8.50	0.13	6.4	275
5"	BUPP 05"C	10.00	0.94	5.69	0.50	8	0.88	8.50	0.44	6.4	275
6"	BUPP 06"B	11.00	1.00	6.88	0.28	8	0.88	9.50	0.13	7.3	275
6"	BUPP 06"C	11.00	1.00	6.75	0.56	8	0.88	9.50	0.50	7.3	275
6"	BUPP 06"D	11.00	1.00	6.66	0.56	8	0.88	9.50	0.50	7.3	275
8"	BUPP 08"B	13.50	1.12	8.88	0.30	8	0.88	11.75	0.13	11.1	275
8"	BUPP 08"C	13.50	1.12	8.75	0.56	8	0.88	11.75	0.50	11.1	275
8"	BUPP 08"D	13.50	1.12	8.66	0.56	8	0.88	11.75	0.50	11.1	275
10"	BUPP 10"A	16.00	1.19	10.31	0.60	12	1.00	14.25	0.30	18.0	275
10"	BUPP 10"B	16.00	1.19	11.00	0.60	12	1.00	14.25	0.38	16.8	275
10"	BUPP 10"C	16.00	1.19	10.92	0.60	12	1.00	14.25	0.50	16.8	275
12"	BUPP 12"B	19.00	1.25	13.13	0.34	12	1.00	17.00	0.31	22.6	275
12"	BUPP 12"C	19.00	1.25	12.92	0.65	12	1.00	17.00	0.50	22.6	275
14"	BUPP 14"B	21.00	1.38	14.38	0.65	12	1.13	18.75	0.40	28.0	250
14"	BUPP 14"C	21.00	1.38	14.18	0.65	12	1.13	18.75	0.50	28.5	250
16"	BUPP 16"B	23.50	1.44	16.38	0.80	16	1.13	21.25	0.40	36.6	250
16"	BUPP 16"C	23.50	1.44	16.19	0.80	16	1.13	21.25	0.50	36.6	250
18"	BUPP 18"B	25.00	1.56	18.38	0.88	16	1.25	22.75	0.38	41.0	250
18"	BUPP 18"C	25.00	1.56	18.20	0.88	16	1.25	22.75	0.50	41.0	250
20"	BUPP 20"B	27.50	1.69	20.38	0.88	20	1.25	25.00	0.31	53.4	200
22"	BUPP 22"A	32.00	1.88	22.67	1.00	20	1.38	29.50	0.24	79.0	200
22"	BUPP 22"B	29.50	1.81	22.22	0.90	20	1.38	27.25	0.50	63.0	200
24"	BUPP 24"A	32.00	1.88	25.43	0.50	20	1.38	29.50	0.23	72.6	200
24"	BUPP 24"B	32.00	1.88	24.38	0.90	20	1.38	29.50	0.44	74.0	200
24"	BUPP 24"C	32.00	1.88	24.25	0.90	20	1.38	29.50	0.50	76.0	200
26"	BUPP 26"B	34.25	2.00	26.38	1.00	24	1.38	31.75	0.25	85.8	150
28"	BUPP 28"A	38.75	2.06	28.58	1.45	28	1.38	36.00	0.23	141.1	150
28"	BUPP 28"B	36.50	2.06	28.38	1.00	28	1.38	34.00	0.50	103.0	150
30"	BUPP 30"A	38.75	2.06	32.32	0.49	28	1.38	36.00	0.25	91.5	150
30"	BUPP 30"B	38.75	2.06	30.38	1.00	28	1.38	36.00	0.25	102.00	150
32"	BUPP 32"B	41.75	2.06	32.38	1.00	28	1.63	38.50	0.50	118.00	120
36"	BUPP 36"B	46.00	2.06	36.38	1.00	32	1.63	42.75	0.50	141.9	120
40"	BUPP 40"A	53.00	2.00	40.00	1.50	36	1.63	49.50	0.50	219.4	100
42"	BUPP 42"B	53.00	2.00	42.38	1.10	36	1.63	49.50	0.50	190.7	100
48"	BUPP 48"B	59.50	2.00	48.50	1.35	44	1.63	56.00	0.25	250.2	80
55"	BUPP 55"A	66.25	3.50	55.75	1.70	44	1.38	62.75	0.50	410.0	60
63"	BUPP 63"A	80.00	4.50	64.00	2.25	52	1.38	76.00	0.50	760.0	60

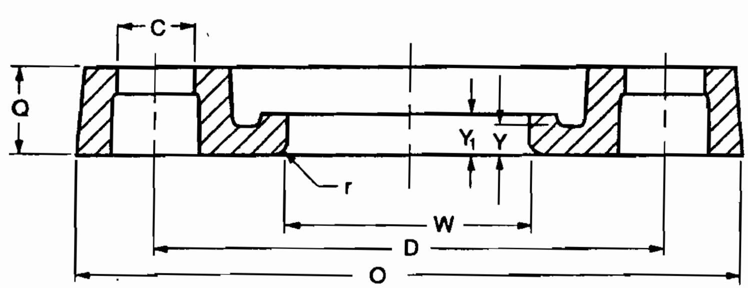
3/93

PRODUCT FINISHES:

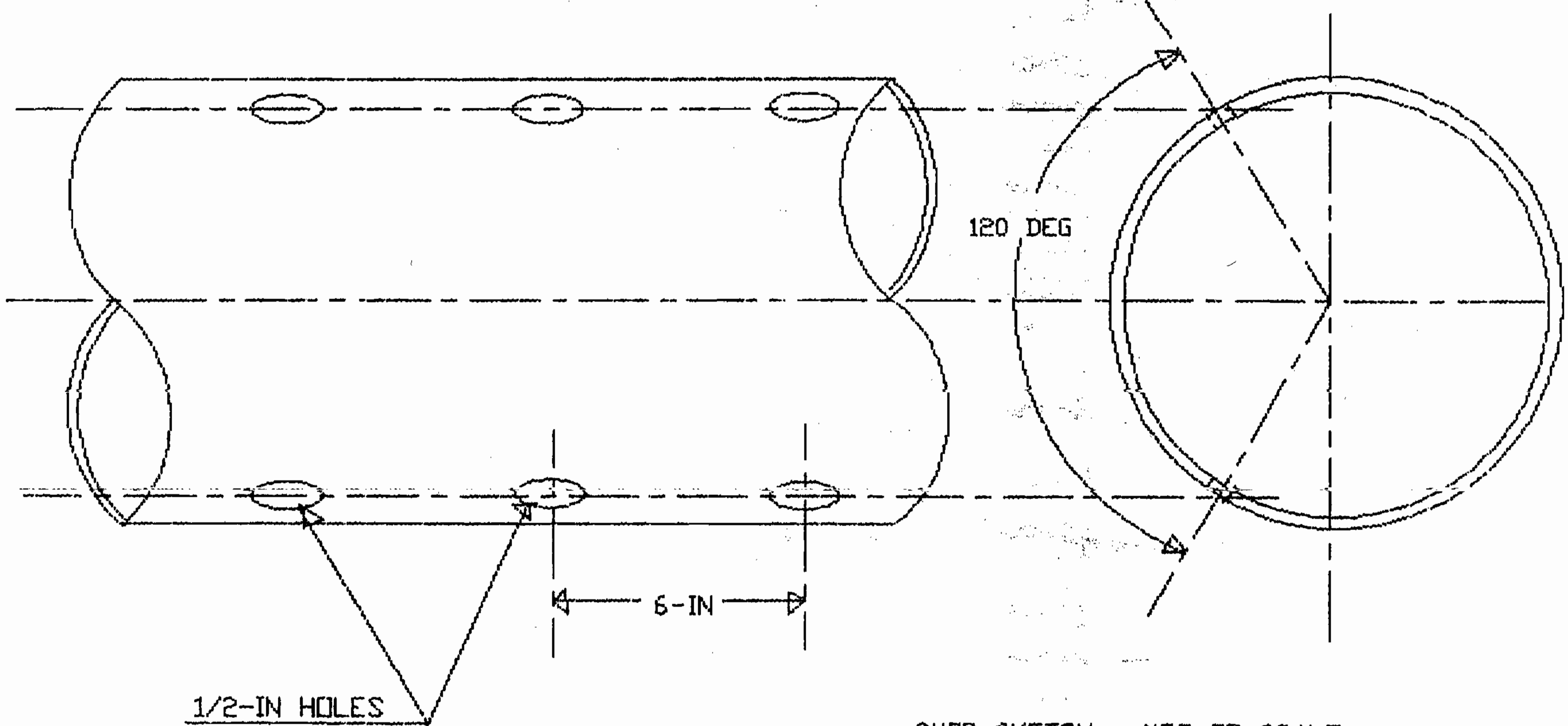
In Stock:
- Red Oxide Primer

On Inquiry:
- Hot-dipped Galvanized
- Epoxy Coated and others

PHYSICAL PROPERTIES	ASTM A536-84
Tensile Strength	65,000 psi
Yield Strength	45,000 psi
Elongation in 2"	12%



BACK-UP FLANGE, DUCTILE IRON CONVOLUTED TYPE



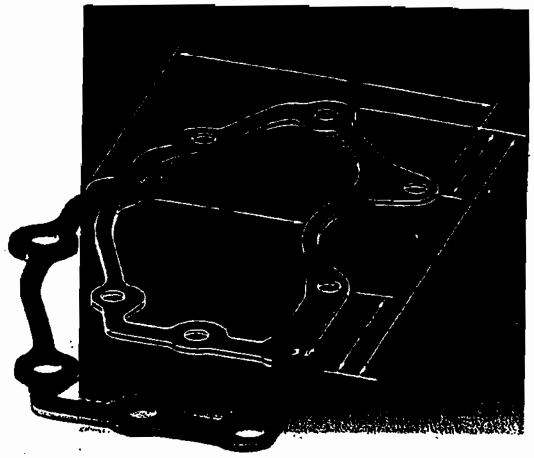
SHOP SKETCH - NOT TO SCALE

PERFORATION PATTERN:	2 ROWS 120 DEGREES APART 6-IN CENTERS 1/2-IN HOLES NON STAGGERED	LEE SUPPLY COMPANY INC FIRST & LINCOLN AVE CHARLEROI, PA 15022 DRAWING NUMBER 2612012

C:\SKETCH8\PERFPATM 2612.PLT

BILTRITE Neoprene Sheet

Oil and Ozone Resistant Chloroprene Sheet – Black



Styles 10 & 15 Smooth Finish – Style 12 Matte Finish

Chloroprene rubber is unique in its range of properties affecting oil, ozone, oxidation, and sunlight resistance. Performance in any given application is influenced by, among other things, the formulation and physical properties designed into the specific compound. Neoprene offerings, in our case our styles 10, 12, and 15, are distinguished by the ASTM specification, the effect of which is reflected in the physical properties.

Style 10 – Commercial

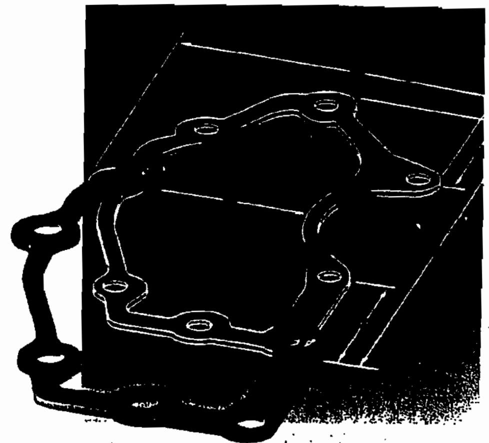
A smooth finish commercial blended neoprene compound adaptable to extreme weather conditions since it resists rotting, checking and cracking due to ozone exposure. Has low temperature flexibility and is oil resistant. Designed to meet ASTM specifications for 1 BC Material.

Physical Properties

10	1/16 thru 1	36 & 48	40	800	350	–20°F to +170°F	1/8-2.5	Smooth	ASTM D-2000 SAE J200, IBC 408 MIL R-3065, SC 408
10	1/16 thru 2	36 & 48	50	800	300	–20°F to +170°F	1/8-2.6	Smooth	ASTM D-2000 SAE J200, IBC 508 MIL R-3065, SC 508
10	1/32 thru 2 1/16, 1/8, 1/4	36 & 48 72	60	900	300	–20°F to +170°F	1/8-2.7	Smooth	ASTM D-2000 SAE J200, IBC 609 MIL R-3065, SC 609
10	1/16 thru 2	36 & 48	70	1000	200	–20°F to +170°F	1/8-2.7	Smooth	ASTM D-2000 SAE J200, IBC 710 MIL R-3065, SC 710
10	1/16 thru 2	36 & 48	80	1000	100	–20°F to +170°F	1/8-2.9	Smooth	ASTM D-2000 SAE J-200, IBC 810 MIL R-3065, SC 810

Style 12 – Matte Finish

A commercial blended neoprene sheet with a matte finish on one side. It is free of talc and release solutions which make it excellent for applications that involve the use of pressure sensitive adhesives.



Physical Properties

12	1/16 thru 1/4	36	50	800	300	-20°F to +170°F	1/8-2.6	Smooth	ASTM D-2000 SAE J200, IBC 508 MIL R-3065, SC 508
12	1/16 thru 1/4	36, 72	60	900	300	-20°F to +170°F	1/8-2.7	Smooth	ASTM D-2000 SAE J200, IBC 609 MIL R-3065, SC 6[illegible]
12	1/16 thru 1/4	36	70	1000	200	-20°F to +170°F	1/8-2.7	Smooth	ASTM D-2000 SAE J200, IBC 710 MIL R-3065, SC 710
12	1/16 thru 1/4	36	80	1000	100	-20°F to +170°F	1/8-2.9	Smooth	ASTM D-2000 SAE J200, IBC 810 MIL R-3065, SC 810

Style 15 – 50% Base Polymer

(50% Base) is a premium grade product that has very good oil resistant characteristics. The 50% neoprene base polymer formula resists ozone and is highly recommended for hot and cold applications. See chart for specific physical properties.

Physical Properties

15	1/16 thru 1	36 & 48	50	1000	300	-40°F to +180°F	1/8-2.6	Smooth	ASTM D-2000 IBC 510 MIL R-3065, SC 510
15	1/16 thru 1	36 & 48	60	1000	300	-40°F to +180°F	1/8-2.7	Smooth	ASTM D-2000 IBC 610 MIL R-3065, SC 610
15	1/16 thru 1	36 & 48	70	1000	200	-40°F to +180°F	1/8-2.7	Smooth	ASTM D-2000 IBC 710 MIL R-3065, SC 710

Serrot International, Inc.

Certificate Of Acceptance Of Subgrade Surface

PROJECT NAME: McKenna LF. PROJECT #: 10057 CERT. # 1

LOCATION: ALBION NY OWNER: ______

The undersigned, a representative of Serrot International, Inc., have viewed the subgrade surface described below and found it to be an acceptable surface upon which to install geomembrane.

This certification is based solely on observations of the surface of the subgrade. No subterranean inspections or tests have been performed by Serrot International, Inc. and Serrot International, Inc. makes no representations or warranties regarding conditions which may exist below the surface of the subgrade. Serrot International, Inc. accepts no responsibility for conformance of the subgrade to this project's specifications nor does Serrot International, Inc. accept responsibility for protecting or maintaining the condition of the subgrade after this acceptance.

Area Being Accepted (Describe Fully):

60 Mil. LLDPE Liner

SQUARE FOOTAGE: 70,455 ft

SERROT INTERNATIONAL, INC. REPRESENTATIVE:

SIGNATURE: Rafael Herrera

PRINT NAME: Rafael Herrera

PRINT TITLE: superintendent

DATE: 9-14-00 TIME: 6:00 PM.

OWNER'S REPRESENTATIVE:

SIGNATURE: Brian W. Smith

PRINT NAME: BRIAN W. SMITH

PRINT TITLE: ENGINEERING TECH

DATE: 9-14-00

Serrot International, Inc.

Certificate Of Acceptance Of Subgrade Surface

PROJECT NAME: McKenna LF PROJECT #: 10057 CERT. # 2

LOCATION: ALBION N.Y OWNER: ____________

The undersigned, a representative of Serrot International, Inc., have viewed the subgrade surface described below and found it to be an acceptable surface upon which to install geomembrane.

This certification is based solely on observations of the surface of the subgrade. No subterranean inspections or tests have been performed by Serrot International, Inc. and Serrot International, Inc. makes no representations or warranties regarding conditions which may exist below the surface of the subgrade. Serrot International, Inc. accepts no responsibility for conformance of the subgrade to this project's specifications nor does Serrot International, Inc. accept responsibility for protecting or maintaining the condition of the subgrade after this acceptance.

Area Being Accepted (Describe Fully):

60 Mil. LLDPE Liner

SQUARE FOOTAGE: 95,610 ft²

SERROT INTERNATIONAL, INC. REPRESENTATIVE:

SIGNATURE: Rafael Herrera

PRINT NAME: Rafael Herrera

PRINT TITLE: superintendent

DATE: 9-18-00 TIME: 7:00 PM

OWNER'S REPRESENTATIVE:

SIGNATURE: Brian W. Smith

PRINT NAME: BRIAN W. SMITH

PRINT TITLE: ENGINEERING TECH.

DATE: 9-18-00

Serrot International, Inc.

Certificate Of Acceptance Of Subgrade Surface

PROJECT NAME: McKenna LF. PROJECT #: 10057 CERT. # 3

LOCATION: ALBION N.Y. OWNER: ______

The undersigned, a representative of Serrot International, Inc., have viewed the subgrade surface described below and found it to be an acceptable surface upon which to install geomembrane.

This certification is based solely on observations of the surface of the subgrade. No subterranean inspections or tests have been performed by Serrot International, Inc. and Serrot International, Inc. makes no representations or warranties regarding conditions which may exist below the surface of the subgrade. Serrot International, Inc. accepts no responsibility for conformance of the subgrade to this project's specifications nor does Serrot International, Inc. accept responsibility for protecting or maintaining the condition of the subgrade after this acceptance.

Area Being Accepted (Describe Fully):

60 Mil. LLDPE Liner

SQUARE FOOTAGE: 53,843 #1

SERROT INTERNATIONAL, INC. REPRESENTATIVE:

SIGNATURE: Rafael Herrera

PRINT NAME: Rafael Herrera

PRINT TITLE: Superintendent

DATE: 9-19-00 TIME: 6:00 PM.

OWNER'S REPRESENTATIVE:

SIGNATURE: Brian W. Smith

PRINT NAME: BRIAN W. SMITH

PRINT TITLE: ENGINEERING TECH.

DATE: 9-19-00

Serrot International, Inc.

Certificate Of Acceptance Of Subgrade Surface

PROJECT NAME: McKena LF. PROJECT #: 10057 CERT. # 4

LOCATION: ALBION N.Y. OWNER:

The undersigned, a representative of Serrot International, Inc., have viewed the subgrade surface described below and found it to be an acceptable surface upon which to install geomembrane.

This certification is based solely on observations of the surface of the subgrade. No subterranean inspections or tests have been performed by Serrot International, Inc. and Serrot International, Inc. makes no representations or warranties regarding conditions which may exist below the surface of the subgrade. Serrot International, Inc. accepts no responsibility for conformance of the subgrade to this project's specifications nor does Serrot International, Inc. accept responsibility for protecting or maintaining the condition of the subgrade after this acceptance.

Area Being Accepted (Describe Fully):

60. Mil. LLDPE Liner

SQUARE FOOTAGE: 46.299 ft

SERROT INTERNATIONAL, INC. REPRESENTATIVE:

SIGNATURE: Rafael Herrera

PRINT NAME: Rafael Herrera

PRINT TITLE: Supervisor

DATE: 9-26-00 TIME: 6:00 PM

OWNER'S REPRESENTATIVE:

SIGNATURE: Brian W. Smith

PRINT NAME: BRIAN W. SMITH

PRINT TITLE: ENGINEERING TECH.

DATE: 9-26-00

Rpt. Pg. 8/8

Serrot International, Inc.

Certificate Of Acceptance Of Subgrade Surface

PROJECT NAME: McKenna LF. PROJECT #: 10057 CERT. # 5

LOCATION: ALBION N.Y. OWNER: ______

The undersigned, a representative of Serrot International, Inc., have viewed the subgrade surface described below and found it to be an acceptable surface upon which to install geomembrane.

This certification is based solely on observations of the surface of the subgrade. No subterranean inspections or tests have been performed by Serrot International, Inc. and Serrot International, Inc. makes no representations or warranties regarding conditions which may exist below the surface of the subgrade. Serrot International, Inc. accepts no responsibility for conformance of the subgrade to this project's specifications nor does Serrot International, Inc. accept responsibility for protecting or maintaining the condition of the subgrade after this acceptance.

Area Being Accepted (Describe Fully):

60 Mil. LLDPE. Liner

North West Corner

SQUARE FOOTAGE: 59,580 ft

SERROT INTERNATIONAL, INC. REPRESENTATIVE:

SIGNATURE: Rafael Herrera

PRINT NAME: Rafael Herrera.

PRINT TITLE: ______

DATE: 11-2-00 TIME: 5:30 PM.

OWNER'S REPRESENTATIVE:

SIGNATURE: Brian W. Smith

PRINT NAME: BRIAN W. SMITH

PRINT TITLE: ENGINEERING TECH. (GZA)

DATE: ~~11-3~~ 11-2-00

Pg. 7/7

Serrot International, Inc.

Certificate Of Acceptance Of Subgrade Surface

PROJECT NAME: McKenna LF. PROJECT #: 10057 CERT. # 6

LOCATION: ALBION N.Y. OWNER: ____

The undersigned, a representative of Serrot International, Inc., have viewed the subgrade surface described below and found it to be an acceptable surface upon which to install geomembrane.

This certification is based solely on observations of the surface of the subgrade. No subterranean inspections or tests have been performed by Serrot International, Inc. and Serrot International, Inc. makes no representations or warranties regarding conditions which may exist below the surface of the subgrade. Serrot International, Inc. accepts no responsibility for conformance of the subgrade to this project's specifications nor does Serrot International, Inc. accept responsibility for protecting or maintaining the condition of the subgrade after this acceptance.

Area Being Accepted (Describe Fully):

60 Mil. LLDPE. Liner

North/west corner

SQUARE FOOTAGE: 23,525 ft

SERROT INTERNATIONAL, INC. REPRESENTATIVE:

SIGNATURE: Rafael Herrera

PRINT NAME: Rafael Herrera.

PRINT TITLE: Supervisor

DATE: 11-3-00 TIME: 5:30 PM

OWNER'S REPRESENTATIVE:

SIGNATURE: Brian W. Smith

PRINT NAME: BRIAN W. SMITH

PRINT TITLE: ENGINEERING TECH. (GZA)

DATE: ~~6-7-00~~ 11-6-00

Serrot International, Inc.

Pg. 10/10

Certificate Of Acceptance Of Subgrade Surface

PROJECT NAME: McKenna LF. PROJECT #: 10057 CERT. # 7

LOCATION: ALBION NY OWNER: Waste MGMT.

The undersigned, a representative of Serrot International, Inc., have viewed the subgrade surface described below and found it to be an acceptable surface upon which to install geomembrane.

This certification is based solely on observations of the surface of the subgrade. No subterranean inspections or tests have been performed by Serrot International, Inc. and Serrot International, Inc. makes no representations or warranties regarding conditions which may exist below the surface of the subgrade. Serrot International, Inc. accepts no responsibility for conformance of the subgrade to this project's specifications nor does Serrot International, Inc. accept responsibility for protecting or maintaining the condition of the subgrade after this acceptance.

Area Being Accepted (Describe Fully):

60 Mil LLDPE Liner
North site

SQUARE FOOTAGE: 68,815 ft

SERROT INTERNATIONAL, INC. REPRESENTATIVE:

SIGNATURE: Rafael Herrera
PRINT NAME: Rafael Herrera
PRINT TITLE: Superintendent
DATE: 11-6-00 TIME: 6:00 PM

OWNER'S REPRESENTATIVE:

SIGNATURE: Brian W. Smith
PRINT NAME: BRIAN W. SMITH
PRINT TITLE: ENGINEERING TECH.
DATE: 11-15-00

Serrot International, Inc.

Certificate Of Acceptance Of Subgrade Surface

PROJECT NAME: McKenna LF. PROJECT #: 10051 CERT. # 8

LOCATION: ALBION N.Y. OWNER: Waste MGMT.

The undersigned, a representative of Serrot International, Inc., have viewed the subgrade surface described below and found it to be an acceptable surface upon which to install geomembrane.

This certification is based solely on observations of the surface of the subgrade. No subterranean inspections or tests have been performed by Serrot International, Inc. and Serrot International, Inc. makes no representations or warranties regarding conditions which may exist below the surface of the subgrade. Serrot International, Inc. accepts no responsibility for conformance of the subgrade to this project's specifications nor does Serrot International, Inc. accept responsibility for protecting or maintaining the condition of the subgrade after this acceptance.

Area Being Accepted (Describe Fully):

60 Mil. LLDPE Liner

North site

SQUARE FOOTAGE: 49,560 ft²

SERROT INTERNATIONAL, INC. REPRESENTATIVE:

SIGNATURE: Rafael Herrera

PRINT NAME: Rafael Herrera

PRINT TITLE: Superintendent

DATE: 11-8-00 TIME: 5:00 PM

OWNER'S REPRESENTATIVE:

SIGNATURE: Brian W. Smith

PRINT NAME: BRIAN W. SMITH

PRINT TITLE: ENGINEERING TECH.

DATE: 11-15-00

Serrot International, Inc.

Certificate Of Acceptance Of Subgrade Surface

PROJECT NAME: McKenna LF. PROJECT #: 10057 CERT. # 9

LOCATION: ALBION N.Y. OWNER: Waste MGMT.

The undersigned, a representative of Serrot International, Inc., have viewed the subgrade surface described below and found it to be an acceptable surface upon which to install geomembrane.

This certification is based solely on observations of the surface of the subgrade. No subterranean inspections or tests have been performed by Serrot International, Inc. and Serrot International, Inc. makes no representations or warranties regarding conditions which may exist below the surface of the subgrade. Serrot International, Inc. accepts no responsibility for conformance of the subgrade to this project's specifications nor does Serrot International, Inc. accept responsibility for protecting or maintaining the condition of the subgrade after this acceptance.

Area Being Accepted (Describe Fully):

60 Mil. LLDPE Liner
North site

SQUARE FOOTAGE: 84,778 ft

SERROT INTERNATIONAL, INC. REPRESENTATIVE:

SIGNATURE: Rafael Herrera

PRINT NAME: Rafael Herrera

PRINT TITLE: Superintendent

DATE: 11-12-00 TIME: 5:00 PM

OWNER'S REPRESENTATIVE:

SIGNATURE: Brian W. Smith

PRINT NAME: BRIAN W. SMITH

PRINT TITLE: ENGINEERING TECH.

DATE: 11-15-00

Serrot International, Inc.

Certificate Of Acceptance Of Subgrade Surface

PROJECT NAME: McKenna LF PROJECT #: 10057 CERT. # 18

LOCATION: Albion N.Y. OWNER: Waste MGMT.

The undersigned, a representative of Serrot International, Inc., have viewed the subgrade surface described below and found it to be an acceptable surface upon which to install geomembrane.

This certification is based solely on observations of the surface of the subgrade. No subterranean inspections or tests have been performed by Serrot International, Inc. and Serrot International, Inc. makes no representations or warranties regarding conditions which may exist below the surface of the subgrade. Serrot International, Inc. accepts no responsibility for conformance of the subgrade to this project's specifications nor does Serrot International, Inc. accept responsibility for protecting or maintaining the condition of the subgrade after this acceptance.

Area Being Accepted (Describe Fully):

60 Mil. LLDPE Liner

North site

SQUARE FOOTAGE: 44,206 ft

SERROT INTERNATIONAL, INC. REPRESENTATIVE:

SIGNATURE: Rafael Herrera

PRINT NAME: Rafael Herrera

PRINT TITLE: Superintendent

DATE: 11-13-00 TIME: 5:00 PM

OWNER'S REPRESENTATIVE:

SIGNATURE: Brian W. Smith

PRINT NAME: BRIAN W. SMITH

PRINT TITLE: ENGINEERING TECH.

DATE: 11-15-00

Pg- 7/7

Serrot International, Inc.

Certificate Of Acceptance Of Subgrade Surface

PROJECT NAME: McKenna LF. PROJECT #: 10057 CERT. # 11

LOCATION: Albion N.Y. OWNER: Waste MGMT.

The undersigned, a representative of Serrot International, Inc., have viewed the subgrade surface described below and found it to be an acceptable surface upon which to install geomembrane.

This certification is based solely on observations of the surface of the subgrade. No subterranean inspections or tests have been performed by Serrot International, Inc. and Serrot International, Inc. makes no representations or warranties regarding conditions which may exist below the surface of the subgrade. Serrot International, Inc. accepts no responsibility for conformance of the subgrade to this project's specifications nor does Serrot International, Inc. accept responsibility for protecting or maintaining the condition of the subgrade after this acceptance.

Area Being Accepted (Describe Fully):

60 Mil. HDPE Liner
North side slope

SQUARE FOOTAGE: 42,228 ft

SERROT INTERNATIONAL, INC. REPRESENTATIVE:

SIGNATURE: Rafael Herrera

PRINT NAME: Rafael Herrera

PRINT TITLE: superintendent.

DATE: 11-18-00 TIME: 5:00 PM.

OWNER'S REPRESENTATIVE:

SIGNATURE: Brian W. Smith

PRINT NAME: BRIAN W. SMITH

PRINT TITLE: ENGINEERING TECH.

DATE: 12-1-00

Serrot International, Inc.

Certificate Of Acceptance Of Subgrade Surface

PROJECT NAME: McKenna LF PROJECT #: 10057 CERT. # 12

LOCATION: Albion N.Y. OWNER: Waste MGMT.

The undersigned, a representative of Serrot International, Inc., have viewed the subgrade surface described below and found it to be an acceptable surface upon which to install geomembrane.

This certification is based solely on observations of the surface of the subgrade. No subterranean inspections or tests have been performed by Serrot International, Inc. and Serrot International, Inc. makes no representations or warranties regarding conditions which may exist below the surface of the subgrade. Serrot International, Inc. accepts no responsibility for conformance of the subgrade to this project's specifications nor does Serrot International, Inc. accept responsibility for protecting or maintaining the condition of the subgrade after this acceptance.

Area Being Accepted (Describe Fully):

60 Mil. LLDPE Liner
North side slope

SQUARE FOOTAGE: 100,000 ft

SERROT INTERNATIONAL, INC. REPRESENTATIVE:

SIGNATURE: Rafael Herrera
PRINT NAME: Rafael Herrera
PRINT TITLE: Superintendent
DATE: 11-25-00 TIME: 6:08 PM

OWNER'S REPRESENTATIVE:

SIGNATURE: Brian W. Smith
PRINT NAME: BRIAN W. SMITH
PRINT TITLE: ENGINEERING TECH.
DATE: 12-1-00

Pg. 8/8

Serrot International, Inc.

Certificate Of Acceptance Of Subgrade Surface

PROJECT NAME: McKenna C.F. PROJECT #: 1205? CERT. #: 13

LOCATION: Albion N.Y. OWNER: Waste MGMT.

The undersigned, a representative of Serrot International, Inc., have viewed the subgrade surface described below and found it to be an acceptable surface upon which to install geomembrane.

This certification is based solely on observations of the surface of the subgrade. No subterranean inspections or tests have been performed by Serrot International, Inc. and Serrot International, Inc. makes no representations or warranties regarding conditions which may exist below the surface of the subgrade. Serrot International, Inc. accepts no responsibility for conformance of the subgrade to this project's specifications nor does Serrot International, Inc. accept responsibility for protecting or maintaining the condition of the subgrade after this acceptance.

Area Being Accepted (Describe Fully):

60 Mil. LLDPE Texture Liner

EAST Corner

SQUARE FOOTAGE: 44,900 ft

SERROT INTERNATIONAL, INC. REPRESENTATIVE:

SIGNATURE: Rafael Herrera

PRINT NAME: Rafael Herrera

PRINT TITLE: Superintendent

DATE: 11-29-02 TIME: 5:00 PM

OWNER'S REPRESENTATIVE:

SIGNATURE: Brian W. Smith

PRINT NAME: BRIAN W. SMITH

PRINT TITLE: ENGINEERING TECH.

DATE: 12-5-02

Pg. 7/7

Serrot International, Inc.

Certificate Of Acceptance Of Subgrade Surface

PROJECT NAME: McKenna CE PROJECT #: 16057 CERT. # 14

LOCATION: Ogbun N.Y. OWNER: Waste Mgmt.

The undersigned, a representative of Serrot International, Inc., have viewed the subgrade surface described below and found it to be an acceptable surface upon which to install geomembrane.

This certification is based solely on observations of the surface of the subgrade. No subterranean inspections or tests have been performed by Serrot International, Inc. and Serrot International, Inc. makes no representations or warranties regarding conditions which may exist below the surface of the subgrade. Serrot International, Inc. accepts no responsibility for conformance of the subgrade to this project's specifications nor does Serrot International, Inc. accept responsibility for protecting or maintaining the condition of the subgrade after this acceptance.

Area Being Accepted (Describe Fully):

60 Mil HDPE Texture Liner

East Corner

SQUARE FOOTAGE: 30,000 ft

SERROT INTERNATIONAL, INC. REPRESENTATIVE:

SIGNATURE: Rafael Herrera

PRINT NAME: Rafael Herrera

PRINT TITLE: Superintendent

DATE: 11-31-00 TIME: 5:00 PM

OWNER'S REPRESENTATIVE:

SIGNATURE: Brian W. Smith

PRINT NAME: Brian W. Smith

PRINT TITLE: Engineering Tech.

DATE: 12-5-00

GEOMEMB[illegible] LY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

DATE: 9-14-00
GEOMEMBRANE REC[illegible] SHEET 1 OF 2
REPORT PG ____ OF ____

WEATHER DATA			DEPLOYMENT RECORD									
TIME	AIR TEMP (°F)	WIND SPEED (MPH)	TIME	PANEL NO.	ROLL NO.	PANEL DIMENSIONS (FT) WIDTH	PANEL DIMENSIONS (FT) LENGTH	TIME	PANEL NO.	ROLL NO.	PANEL DIMENSIONS (FT) WIDTH	PANEL DIMENSIONS (FT) LENGTH
0800	65	8	0815	P-1	5770	22.5	216	1435	10A	5807	22.5	15
			0840	P-2	5770	22.5	195	1440	8A	5807	22.5	10
			0900	P-3	5820	22.5	220	1445	2A	5807	22.5	25
			0930	P-4	5820	22.5	220					
			1000	P-5	5769	22.5	222					
			1020	P-6	5769	22.5	224					
			1050	P-7	5773	22.5	225					
			1100	P-8	5773	22.5	217					
			1130	P-9	5810	22.5	230					
			1150	P-10	5810	22.5	218					
			1310	P-11	5811	22.5	236					
			1340	P-12	5811	22.5	208					
			1400	P-13	5807	22.5	240					
			1430	P-12A	5807	22.5	30					

TRIAL SEAMING RECORD

SAMPLE NO.	TIME	WELDER I.D. OPERATOR I.D.	WELDER I.D. MACHINE I.D.	MACHINE SETTINGS TEMP. (°C)	FUSION SEAMER SPEED (FT./MIN.)	EXTRUSION SEAMER PRE-HEAT (°C)	FIELD TEST RESULTS PEEL (LBS)	FIELD TEST RESULTS SHEAR (LBS)	PASS/FAIL; REMARKS
S-1	0835	1416	1206	750	10		135/139 132/136 135/133	138, 142, 133	PASS
S-2	1308	1416	1206	750	10		116/110 109/113 114/121	116, 118, 120	PASS
S-3	1430	193	SWW 765	420	10		122/118 119/113 114/111	122, 126, 125	PASS

REMARKS: * SWW = SEROT WEDGE WELDER
APPROX. 1515 STOP DEPLOYING GEO-MEM. & CONT. W/GEO TEX II
~70,000 ft² COV. FOR DAY

GZA GEOENVIRONMENTAL OF NEW YORK

236
215
22

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

DATE: 9-14-00
GEOMEMBRANE RECORD SHEET 2 OF 2
REPORT PAGE ____ OF ____

PRODUCTION SEAMING RECORD

			WELDER I.D.		MACHINE SETTINGS			SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE:		EXTRUSION PREVIOUS CUMULATIVE:			NON-DESTRUCTIVE TESTING FUSION TEST PRESSURES (PSI)			TEST TIMES		EXTRUSION	DATE	
	SEAM NO./ PATCH NO.	START TIME	OPERATOR	MACHINE	TEMP. (°C)	FUSION SPEED (FT./MIN)	EXTRUSION PRE-HEAT (°C)	CURRENT SEAM	CUMUL. LENGTH	CURRENT SEAM	CUMUL. LENGTH	DESTRUCTIVE SAMPLE	START	STOP	DROP	START	STOP	VACUUM TEST PASS/FAIL	(IF OTHER THAN ORIGINAL)	REMARKS
A	S-1/2	0850	1416	1206	750	10		200	200			DS-1	35	35	—	1445	1450		9-15-00	DS-1 6' SOUTH OF N. END S-1/2
B	S-2/3	0915	1416	1206	750	10		195	395				35	35	—	1515	1520		9-15-00	
C	S-3/4	0930	1416	1206	750	10		220	615			DS-2	35	35	—	1514	1520		9-15-00	DS-2 115' N. OF S. END S-3/4
D	S-4/5	1010	1416	1206	750	10		220	835				35	35	—	1532	1537		9-15-00	
E	S-5/6	1040	1416	1206	750	10		222	1057			DS-3	35	35	—	1537	1542		9-15-00	DS-3 57' N. OF S. END S-5/6
F	S-6/7	1100	1416	1206	750	10		214	1271				35	35	—	1223	1228		9-16-00	
G	S-7/8	1130	1416	1206	750	10		215	1486			DS-4	35	35	—	1233	1238		9-16-00	DS-4 15' S. OF N. END S-7/8
H	S-8/9	1150	1416	1206	750	10		227	1713				35	35	—	1300	1305		9-16-00	
I	S-9/10	1345	1416	1206	750	10		220	1933				35	35	—	1302	1307		9-16-00	
J	S-10/11	1415	1416	1206	750	10		224	2157			DS-5	35	35	—	1330	1335		9-16-00	DS-5 60'S OF N. END S-10/11
K																				
L	S-8/6A	1535	1044	SWW 165	420	10		22	22			DS-6	35	35	—	1235	1240		9-16-00	DS-6 10' S. OF N. END (CENTER)
M	S-10/10A	1430	1044	SWW 165	420	10		22	44				35	35	—	1315	1320		9-16-00	
N	S-2/2A	1530	1044	SWW 165	420	10		22	66				35	34	1	1442	1447		9-15-00	
O	S-11/12	1450	1416	1206	750	10		208	2365				35	35	—	1454	1459		9-16-00	
P	~~S-12/13~~	~~1520~~	~~1416~~	~~1206~~	~~750~~	~~10~~		~~208~~	~~2573~~			~~DS-7~~	~~35~~	~~35~~	~~—~~	~~1120~~	~~1125~~		~~9-16-00~~	~~DS-7 75' N OF S. END S-12/13~~
Q	S-12/12A	1450	1044	SWW 165	420	10		22	88				35	35	—	1355	1400		9-16-00	
R	S-11/12A	1540	1416	1206	750	10		30	2603				35	35	—	1353	1358		9-16-00	
S	S-12A/13	1600	1416	1206	750	10		33	2636				38	38	—	1410	1415		9-16-00	
T	S9/10A	1615	1416	210			240			10	10							PASS	9-19-00	
U	S-10A/11	1620	1416	1206	750	10		16	2652				32	32	—	1345	1350		9-16-00	
V	S-7/8A	1640	1416	210			240			4	14							PASS	9-19-00	
W	S-8A/9	1650	1416	210			240			7	21	DS-8						PASS	9-19-00	DS-8 @ MID-SEAM
X	S-1/2A	1700	1416	1206	750	10		25	2677				30	30	—	1425	1430		9-15-00	
Y	S-2A/3	1710	1416	1206	750	10		28	2705				35	35	—	1449	1454		9-15-00	
Z																				
AA																				
BB																				
CC																				
DD																				
EE																				
FF																				
GG																				

REMARKS: * SWW 165 = SERROT WEDGE WELDER FOR TEXTURED SEAM

GZA GEOENVIRONMENTAL OF NEW YORK

WMNY

GEOMEMB Y RECORD

WASTE MANAGE . NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

GEOMEMBRANE REC

TE: 9-15-00
.T 1 OF 1
REPORT PG ____ OF ____

WEATHER DATA			DEPLOYMENT RECORD										
						PANEL DIMENSIONS (FT)					PANEL DIMENSIONS (FT)	
TIME	AIR TEMP (°F)	WIND SPEED (MPH)	TIME	PANEL NO.	ROLL NO.	WIDTH	LENGTH	TIME	PANEL NO.	ROLL NO.	WIDTH	LENGTH

TRIAL SEAMING RECORD

SAMPLE NO.	TIME	WELDER I.D.		MACHINE SETTINGS			FIELD TEST RESULTS		
		OPERATOR I.D.	MACHINE I.D.	TEMP. (°C)	FUSION SEAMER SPEED (FT./MIN.)	EXTRUSION SEAMER PRE-HEAT (°C)	PEEL (LBS)	SHEAR (LBS)	PASS/FAIL; REMARKS
S-1	1405	193	238	240		240	115/ 109/ 103/	118, 118, 125	PASS - NO WELDING
									DONE TODAY DUE TO
									RAIN.

REMARKS: ____________________

GZA GEOENVIRONMENTAL OF NEW YORK

DATE: 9-16-00
GEOMEMBRANE RECORD SHEET 1 OF 2
REPORT PG ____ OF ____

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

WEATHER DATA			DEPLOYMENT RECORD									
						PANEL DIMENSIONS (FT)					PANEL DIMENSIONS (FT)	
TIME	AIR TEMP (°F)	WIND SPEED (MPH)	TIME	PANEL NO.	ROLL NO.	WIDTH	LENGTH	TIME	PANEL NO.	ROLL NO.	WIDTH	LENGTH
1200	45	~5										

(5-5)

TRIAL SEAMING RECORD									
		WELDER I.D.			MACHINE SETTINGS		FIELD TEST RESULTS		
					FUSION SEAMER	EXTRUSION SEAMER			
SAMPLE NO.	TIME	OPERATOR I.D.	MACHINE I.D.	TEMP. (°C)	SPEED (FT./MIN.)	PRE-HEAT (°C)	PEEL (LBS)	SHEAR (LBS)	PASS/FAIL; REMARKS
S-1	1200	193	210	240			104 107 109	130/130/131	PASS

REMARKS: ____

GZA GEOENVIRONMENTAL OF NEW YORK

GEOMEMBR... ..Y RECORD

WASTE MANAGEMEN... OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

PRODUCTION SEAMING RECORD

	SEAM NO./ PATCH NO.	START TIME	WELDER I.D. OPERATOR	WELDER I.D. MACHINE	MACHINE SETTINGS TEMP. (°C)	MACHINE SETTINGS FUSION SPEED (FT./MIN)	MACHINE SETTINGS EXTRUSION PRE-HEAT (°C)	SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE: CURRENT SEAM	SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE: CUMUL. LENGTH	SEAM LENGTH (FT.) EXTRUSION PREVIOUS CUMULATIVE: CURRENT SEAM	SEAM LENGTH (FT.) EXTRUSION PREVIOUS CUMULATIVE: CUMUL. LENGTH	DESTRUCTIVE SAMPLE	NON-DESTRUCTIVE TESTING FUSION TEST PRESSURES (PSI) START	NON-DESTRUCTIVE TESTING FUSION TEST PRESSURES (PSI) STOP	NON-DESTRUCTIVE TESTING FUSION TEST PRESSURES (PSI) DROP	NON-DESTRUCTIVE TESTING FUSION TEST TIMES START	NON-DESTRUCTIVE TESTING FUSION TEST TIMES STOP	EXTRUSION VACUUM TEST PASS/FAIL	DATE (IF OTHER THAN ORIGINAL)	REMARKS
A	1A	1140	AL-193	210			240											PASS	9.19.00	1'x2', S-1/2/2A, DS-1
B	1B	1230	AL-193	210			240											PASS	9.19.00	3'x2', S-2/2A/3
C	1C		AL-193	210			240											PASS	9-19-00	5'x2', S-3/4, DS-2
D	1D		AL-193	210			240											PASS	9.19.00	1'x1', MID P-3, 25' N. OF S. EDGE
E	1E		AL-193	210			240											PASS	9.19.00	1'x1', MID P-3, 18' N. OF S. EDGE
F	1F		AL-193	210			240											PASS	9.19.00	1'x1', MID P-3, 12' N. OF S. EDGE
G	1G		AL-193	210			240											PASS	9.19.00	3'x2', MID. P-3, 2' N. OF S. EDGE
H	1H		AL-193	210			240											PASS	9.19.00	4'x2', S-5/6, DS-3
I	1J		AL-193	210			240											PASS	9.19.00	1'x1', S-6/7, SOUTH ANCHOR TRENCH
J	1K		AL-193	210			240											PASS	9.19.00	1'x1', S-7/8, " " "
K	1L		AL-193	210			240											PASS	9.20.00	1'x1', S-8/9, " " "
L	1M		AL-193	210			240											PASS	9.20.00	1'x1', MID, P-9, 2' N. OF SOUTH EDGE
M	1N		AL-193	210			240											PASS	9.20.00	2'x1', S-8/9, 12' N. OF SOUTH EDGE
N	1P		AL-193	210			240											PASS	9.20.00	1'x1', P-11, 6' N. OF SOUTH EDGE
O	1Q		AL-193	210			240											PASS	9.19.00	1'x1', S-6/7, N. EDGE OF SEAM
P	1R		AL-193	210			240											PASS	9.19.00	5'x2', S-7/8, DS-4
Q	1S		AL-193	210			240											PASS	9-19-00	2'x2', S-7/8/8A
R	1T		AL-193	210			240											PASS	9-19-00	5'x2', S-8/8A, DS-6
S	1U		AL-193	210			240											PASS	9-19-00	2'x2', S-8/8A/9
T	1V		AL-193	210			240											PASS	9.20.00	1'x1', S-9/10A, MID-SEAM
U	1W		AL-193	210			240											PASS	9.20.00	2'x2', S-9/10/10A
V	1X		AL-193	210			240											PASS	9.20.00	3'x2', S-10/10A/11
W	1Y		AL-193	210			240											PASS	9.20.00	5'x2', S-10/11, DS-5
X	1Z		AL-193	210			240											PASS	9.20.00	3'x2', S-10/11, 60'± N. OF SOUTH EDGE
Y	2A		AL-193	210			240											PASS	9.20.00	5'x2', S-12/13, DS-7
Z	2B		AL-193	210			240											PASS	9.20.00	3'x2', S-12/13, 25' N. OF 2A
AA	2C		AL-193	210			240											PASS	9.20.00	2'x2', S-11/12/12A
BB	2D		AL-193	210			240											PASS	9.20.00	3'x2', S-12/12A/13
CC																				
DD																				
EE																				
FF																				
GG																				

REMARKS:

GZA GEOENVIRONMENTAL OF NEW YORK

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

DATE: 9-18-00
GEOMEMBRANE RECORD SHEET 1 OF 2
REPORT PG ____ OF ____

WEATHER DATA			DEPLOYMENT RECORD									
						PANEL DIMENSIONS (FT)					PANEL DIMENSIONS (FT)	
TIME	AIR TEMP (°F)	WIND SPEED (MPH)	TIME	PANEL NO.	ROLL NO.	WIDTH	LENGTH	TIME	PANEL NO.	ROLL NO.	WIDTH	LENGTH
0815	55	5	0815	14	5726	22.5	240	1345	25	5714	22.5	218
			0830	15	5726	22.5	203	1410	26	5809	22.5	216
			0900	16	5825	22.5	235	1430	27	5809	22.5	214
			0920	17	5825	22.5	203	1500	28	5827	22.5	212
			0830	15A	5807	22.5	35	1530	29	5827	22.5	210
			0920	17A	5807	22.5	30	1610	30	5800	22.5	210
			0940	18	5711	22.5	230	1700	31	5800	22.5	208
			1000	19A	5807	22.5	18					
			1000	19	5711	22.5	212					
			1040	20	5710	22.5	228					
			1115	21	5710	22.5	226					
			1150	22	5734	22.5	224					
			1200	23	5734	22.5	222					
			1310	24	5714	22.5	220					

TRIAL SEAMING RECORD

		WELDER I.D.		MACHINE SETTINGS			FIELD TEST RESULTS		
					FUSION SEAMER	EXTRUSION SEAMER			
SAMPLE NO.	TIME	OPERATOR I.D.	MACHINE I.D.	TEMP. (°C)	SPEED (FT./MIN.)	PRE-HEAT (°C)	PEEL (LBS)	SHEAR (LBS)	PASS/FAIL; REMARKS
S-1	0800	1416	1206	750	60		136/138 129/132 134/131	139, 137, 148	P
S-2	0800	193	[illegible]	420	4	4.0	122/125 125/120 122/124	130, 131, 130	P
S-3	1340	1416	1206	750	10		118/116 117/116 120/118	128, 124, 122	P
* S-4	1510	1416	6055	750	[illegible]		101/103 [illegible] 112/119	110, 110, 110	P
* S-5	1700	193	1206	750	10		114/111 117/118 115/117	119/120/119	P

REMARKS: * MACH. #1206 REPLACED W/ MACHINE # 6055
* MACH. #1206 IS FIXED

GZA GEOENVIRONMENTAL OF NEW YORK

0922 15/16 236
16/17 235

2705' - GW 1206
88' - SWW 165
21' - 210

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

9-18-00

GEOMEMBRANE RECORD SHEET 2 OF 2

REPORT PAGE ___ OF ___

PRODUCTION SEAMING RECORD

	SEAM NO./ PATCH NO.	START TIME	WELDER I.D. OPERATOR	WELDER I.D. MACHINE	MACHINE SETTINGS TEMP. (°C)	FUSION SPEED (FT./MIN)	EXTRUSION PRE-HEAT (°C)		SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE: CURRENT SEAM	CUMUL. LENGTH	EXTRUSION PREVIOUS CUMULATIVE: CURRENT SEAM	CUMUL. LENGTH	DESTRUCTIVE SAMPLE		NON-DESTRUCTIVE TESTING FUSION TEST PRESSURES (PSI) START	STOP	DROP	TEST TIMES START	STOP	EXTRUSION VACUUM TEST PASS/FAIL	DATE (IF OTHER THAN ORIGINAL)		REMARKS
A	S-13/14	0830	1416	1206	750	10		A	240	2945				A	32	30	2	1500	1505			A	
B	S-15/15A	0845	193	165	420	4		B	22	110				B	35	35	0	1505	1510			B	
C	S-14/15A	0855	1416	1206	750	10		C	35	2980				C	32	32	0	1505	1510			C	
D	S-14/15	0857	1416	1206	750	10		D	203	3183			DS-9	D	32	32	0	1505	1510			D	DS-9 ~57' S of N. END S-14/15
E	S-15A/16	0925	1416	1206	750	10		E	35	3218				E	35	34	1	1531	1536			E	
F	S-17/17A	0935	193	165	420	4		F	22	132				F	34	34	0	1605	1610			F	
G	S-16/17A	0950	1416	1206	750	10		G	30	3248				G	32	32	0	1615	1650			G	
H	S16/17	0953	1416	1206	750	10		H	205	3453				H	35	35	0	1543	1548			H	
I	S17A/18	1020	1416	1206	750	10		I	30	3483				I	35	35	0	1745	1750			I	
J	S17/18	1025	1416	1206	750	10		J	204	3687			DS-10	J	35	34	1	1700	1705			J	DS-10 ~53' S. of N END S-17/18
K	S19/19A	1030	193	165	420	4		K	22	154				K	37	37	0	1703	1708			K	
L	S18/19A	1040	1416	1206	750	10		L	18	3705				L	33	32	1	1700	1705			L	
M	S18/19	1040	1416	1206	750	10		M	205	3910				M	36	36	0	1705	1712			M	
N	S19A/20	1125	1416	1206	750	10		N	18	3928				N	35	35	0	1730	1735			N	
O	S19/20	1125	1416	1206	750	10		O	205	4133			DS-11	O	35	35	0	1743	1748			O	DS-11 ~90' S. of N. END S-19/20
P	S20/21	1150	1416	1206	750	10		P	230	4363				P	33	33	0	0850	0855		9-19-00	P	
Q	S21/22	1345	1416	1206	750	10		Q	226	4589			DS-12	Q	30	30	0	0855	0900		9-19-00	Q	DS-12 ~90' N. of S. END S21/22
R	S22/23	1410	1416	1206	750	10		R	224	4813				R	34	34	0	1055	1100		9-19-00	R	
S	S23/24	1430	1416	1206	750	10		S	222	5035			DS-13	S	35	35	0	1040	1045		9-19-00	S	DS-13 ~35' N. of S. END S23/24
T	S24/25	1535	1416	6055	750	10		T	220	220			DS-14	T	33	33	0	0930	0935		9-19-00	T	DS 14 ~10' N. of S. END S24/25 (START OF NEW MACHINE)
U	S-25/26	1555	1416	6055	750	10		U	218	438				U	35	35	0	1120	1125		9-19-00	U	
V	S26/27	1620	1416	6055	750	10		V	216	654			DS-15	V	32	30	2	1110	1115		9-19-00	V	DS-15 ~62' N. of S. END S26/27
W	S27/28	1640	1416	6055	750	10		W	214	868				W	35	35	0	1150	1155		9-19-00	W	
X	S28/29	1705	1416	6055	750	10		X	212	1080			DS-16	X	35	35	0	0905	0910		9-20-00	X	DS-16 ~80' S. of N. END S28/29
Y	S29/30	1735	193	1206	750	10		Y	210	5245				Y	33	32	1	1330	1335		9-19-00	Y	
Z	S30/31	1705	193	1206	750	10		Z	208	5453				Z	34	34	0	1335	1340		9-19-00	Z	
AA								AA						AA								AA	
BB								BB						BB								BB	
CC								CC						CC								CC	
DD								DD						DD								DD	
EE								EE						EE								EE	
FF								FF						FF								FF	
GG								GG						GG								GG	

REMARKS: MACHINE 1206 WAS REPLACED @ S 23/24 w/ MACHINE 6055

GZA GEOENVIRONMENTAL OF NEW YORK

DATE: 9-19-00
GEOMEMBRANE RECORD SHEET 1 OF 3
REPORT PG ____ OF ____

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

WEATHER DATA			DEPLOYMENT RECORD									
						PANEL DIMENSIONS (FT)					PANEL DIMENSIONS (FT)	
TIME	AIR TEMP (°F)	WIND SPEED (MPH)	TIME	PANEL NO.	ROLL NO.	WIDTH	LENGTH	TIME	PANEL NO.	ROLL NO.	WIDTH	LENGTH
1130	80	~7	0930	32	5826	22.5	208					
			1000	33	5826		206					
			1030	34	5824		204					
			1115	35	5824		204					
			1140	36	5801		204					
			1350	37	5801		132					
			1355	37A	5822		70					
			1400	38	5822		202					
			1420	39	5822		170					
				40	5732		200					
				41	5732		196					
			1600	42	5712		194					
			1420	39A	5824		30					

TRIAL SEAMING RECORD

		WELDER I.D.		MACHINE SETTINGS			FIELD TEST RESULTS		
					FUSION ~~WEDGE~~	EXTRUSION ~~WEDGE~~			
SAMPLE NO.	TIME	OPERATOR I.D.	MACHINE I.D.	TEMP. (°C)	SPEED (FT./MIN.)	PRE-HEAT (°C)	PEEL (LBS)	SHEAR (LBS)	PASS/FAIL; REMARKS
S-1	0800	193	210			240	100 101 99	121, 120, 125	PASS
S-2	1030	193	6055	750	10		111/112 114/111 113/114	121, 124, 119	PASS
S-3	1305	193	6059	750	10		103/106 106/122 111/110	113, 118, 120	PASS

REMARKS: ____

GZA GEOENVIRONMENTAL OF NEW YORK

GEOMEMBR[illegible] LY RECORD

WASTE MANAGEMEN[illegible] OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

9.19.00

GEOMEMBRANE RECORD [illegible] 2 OF 3

REPORT PAGE ____ OF ____

PRODUCTION SEAMING RECORD

			Welder I.D.		Machine Settings			Seam Length (ft.) Fusion Previous Cumulative:		Extrusion Previous Cumulative:			Non-Destructive Testing Fusion Test Pressures (PSI)			Test Times		Extrusion	Date	
	Seam No./ Patch No.	Start Time	Operator	Machine	Temp. (°C)	Fusion Speed (ft./min)	Extrusion Pre-Heat (°C)	Current Seam	Cumul. Length	Current Seam	Cumul. Length	Destructive Sample	Start	Stop	Drop	Start	Stop	Vacuum Test Pass/Fail	(If other than original)	Remarks
A	2E	0815	AL193	210			240											PASS	9.22.00	(1x1) S13/14 S. END
B	2F		AL193	210			240											PASS	9.22.00	(2x1) S14/15 S. END
C	2G		AL193	210			240											PASS	9.22.00	(1x1) S14/15 15' N. of S. END
D	2H	0930	AL193	210			240											PASS	9.22.00	(2x1) S14/15 ~30' N. of S. END
E	2J		AL193	210			240											PASS	9.22.00	(2x1) S14/15 ~70' N. of S. END
F	2K		AL193	210			240											PASS	9.22.00	(1x1) S15/16 S. END
G	2L		AL193	210			240											PASS	9.22.00	(1x1) S16/17 S. END
H	2M	0950	AL193	210			240											PASS	9.22.00	(2x1) S17/18 S. END
I	2N		AL193	210			240											PASS	9.22.00	(4x2) DS-9
J	2P	1010	AL193	210			240											PASS	9.22.00	(2x1) S14/15/15A
K	2Q		AL193	210			240											PASS	9.22.00	(2x1) S15/16/15A
L	2R		AL193	210			240											PASS	9.22.00	(2x1) S16/17/17A
M	2S	1030	AL193	210			240											PASS	9.22.00	(2x1) S17/18/17A
N	2T	1040	AL193	210			240											PASS	9.22.00	(4x2) DS-8

REMARKS:

GZA GEOENVIRONMENTAL OF NEW YORK

1206: 5453'
6055: 1080'
SWW 165: 154'

210: 21'

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

DATE: 9-19-00
GEOMEMBRANE RECORD SHEET 3 OF 3
REPORT PAGE ____ OF ____

PRODUCTION SEAMING RECORD

	SEAM NO./ PATCH NO.	START TIME	WELDER I.D. OPERATOR	WELDER I.D. MACHINE	MACHINE SETTINGS TEMP. (°C)	MACHINE SETTINGS FUSION SPEED (FT./MIN)	MACHINE SETTINGS EXTRUSION PRE-HEAT (°C)	SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE: CURRENT SEAM	FUSION CUMUL. LENGTH	EXTRUSION PREVIOUS CUMULATIVE: CURRENT SEAM	EXTRUSION CUMUL. LENGTH	DESTRUCTIVE SAMPLE	NON-DESTRUCTIVE TESTING FUSION TEST PRESSURES (PSI) START	STOP	DROP	TEST TIMES START	STOP	EXTRUSION VACUUM TEST PASS/FAIL	DATE (IF OTHER THAN ORIGINAL)	REMARKS
A	5-31/32	1050	193	6055	750	10		208	1288				36	36	0	0942	0947		9-20-00	
B	5 32/33	1110	193	6055	750	10		206	1494				35	35	0	0950	0955		9-20-00	
C	33/34	1135	193	6055	750	10		204	1698			DS-17	34	34	0	1035	1040		9-20-00	~10' S. of N. End S-33/34
D	34/35	1140	193	6055	750	10		204	1802				35	35	0	1000	1005		9-20-00	
E	35/36	1150	193	6055	750	10		202	2004			DS-18	33	32	1	1340	1345		9-20-00	~5' S. of N. End S-35/36
F	36/37A	1405	193	6055	750	10		70	2074				35	35	0	1110	1115		9-20-00	
G	36/37	1405	193	6055	750	10		132	2206				35	35	0	1115	1120		9-20-00	
H	37/38	1450	193	6055	750	10		200	2406				32	32	0	1420	1425		9-20-00	
I	37A/38	1450	193	6055	750	10		70	2476				35	35	0	1720	1725		9-20-00	
J	38/39	1520	193	6055	750	10		170	2646			DS-19	34	34	0	1445	1450		9-20-00	54' S. of N. End S-38/39
K	39/40	1543	193	6055	750	10		168	2814				35	35	0	1730	1735		9-20-00	
L	40/41	1615	193	6055	750	10		198	3012			DS-20	36	36	0	1540	1545		9-20-00	~12' S. of N. End S-40/41
M	41/42	1650	193	6055	750	10		194	3206				35	35	0	1615	1620		9-20-00	
N	38/39A	1520	193	6055	750	10		30	3236				34	34	0	1445	1450		9-20-00	
O	39A/40	1543	193	6055	750	10		30	3266				33	33	0	1450	1455		9-20-00	
P																				
Q																				
R																				
S																				
T																				
U																				
V																				
W																				
X																				
Y																				
Z																				
AA																				
BB																				
CC																				
DD																				
EE																				
FF																				
GG																				

REMARKS: SEAMS @ 37/37A & 39/39A WERE NOT DONE TODAY.

GZA GEOENVIRONMENTAL OF NEW YORK

GEOMEMBR Y RECORD

WASTE MANAGE NEW YORK, LLC
McKENNA LANDFILL RE AL CLOSURE PROJECT
ALBION, NEW YORK

WEATHER DATA			DEPLOYMENT RECORD									
						PANEL DIMENSIONS (FT)					PANEL DIMENSIONS (FT)	
TIME	AIR TEMP (°F)	WIND SPEED (MPH)	TIME	PANEL NO.	ROLL NO.	WIDTH	LENGTH	TIME	PANEL NO.	ROLL NO.	WIDTH	LENGTH
1000	80	~9	1030	21A	5824	22.5	~8'					

TRIAL SEAMING RECORD									
		WELDER I.D.		MACHINE SETTINGS			FIELD TEST RESULTS		
					FUSION SEAMER	EXTRUSION SEAMER			
SAMPLE NO.	TIME	OPERATOR I.D.	MACHINE I.D.	TEMP. (°C)	SPEED (FT./MIN.)	PRE-HEAT (°C)	PEEL (LBS)	SHEAR (LBS)	PASS/FAIL; REMARKS
S-1	0750	193	0210			240	120 111 119	120 125 130	PASS
S-2	1310	193	0210			240	106 110 115	120,121,120	PASS

REMARKS: ____________________

GZA GEOENVIRONMENTAL OF NEW YORK

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

DATE: 9-20-00
GEOMEMBRANE RECORD SHEET 2 OF 3
REPORT PAGE ____ OF ____

PRODUCTION SEAMING RECORD

	SEAM NO./ PATCH NO.	START TIME	WELDER I.D. OPERATOR	WELDER I.D. MACHINE	MACHINE SETTINGS TEMP. (°C)	MACHINE SETTINGS FUSION SPEED (FT./MIN)	MACHINE SETTINGS EXTRUSION PRE-HEAT (°C)		SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE: CURRENT SEAM	FUSION CUMUL. LENGTH	EXTRUSION PREVIOUS CUMULATIVE: CURRENT SEAM	EXTRUSION CUMUL. LENGTH	DESTRUCTIVE SAMPLE		NON-DESTRUCTIVE TESTING FUSION TEST PRESSURES (PSI) START	STOP	DROP	TEST TIMES START	STOP	EXTRUSION VACUUM TEST PASS/FAIL	DATE (IF OTHER THAN ORIGINAL)		REMARKS
A	2U	0910	193	210			240	A						A						PASS	3-22-00	A	DS-10 (4X2)
B	2V	0930	193	210			240	B						B						PASS	3-22-00	B	S-18/19/19A (2X1)
C	2W	0940	193	210			240	C						C						PASS	3-22-00	C	S-19/20/19A (2X1)
D	2X	1000	193	210			240	D						D						PASS	3-22-00	D	DS-11 (4X2)
E	2Y	1015	193	210			240	E						E						PASS	3-22-00	E	(15X2) ~75' N. OF S. END S-23/24
F	2Z	1030	193	210			240	F						F						PASS	3-22-00	F	~80' S. OF N. END S-23/24 (1X2)
G	3A	1040	193	210			240	G						G						PASS	3-22-00	G	N. END S-23/24 (1X1)
H	3B	1050	193	210			240	H						H						PASS	3-22-00	H	N. END S-23/24 (1X1)
I	3C	1100	193	210			240	I						I						PASS	3-22-00	I	~100 S. of N. END S-23/24 (1X1)
J	3D	1110	193	210			240	J						J						PASS	3-22-00	J	(3X2) 65' N. OF S. END S-19/20
K	3E	1120	193	210			240	K						K						PASS	3-22-00	K	(2X1) S. END S19/20
L	3F	1130	193	210			240	L						L						PASS	3-22-00	L	(1X1) S. END S21/22
M	3G	1150	193	210			240	M						M						PASS	3-22-00	M	(1X1) S. END S20/21
N	3H	1310	193	210			240	N						N						PASS	3-22-00	N	DS-12
O	3J	1320	193	210			240	O						O						PASS	3-22-00	O	(3X2) ~10' N. OF S. END S-22/23
P	3K	1330	193	210			240	P						P						PASS	3-22-00	P	(1X1) S. END S-22/23
Q	3L	1350	193	210			240	Q						Q						PASS	3-22-00	Q	(5X2) ~30' N. OF S. END S-23/24
R	3M	1410	193	210			240	R						R						PASS	3-22-00	R	(4X2) DS-14
S	3N	1430	193	210			240	S						S						PASS	3-22-00	S	(1X1) S. END S. 24/25
T	3P	1440	193	210			240	T						T						PASS	3-22-00	T	(1X1) S. END S. 25/26
U	3Q	1450	193	210			240	U						U						PASS	3-22-00	U	(1X1) S. END S-25/26
V	3R	1510	193	210			240	V						V						PASS	3-22-00	V	(4X2) 40' N. OF S. END S-25/26
W	3S	1525	193	210			240	W						W						PASS	3-22-00	W	DS-15
X	3T	1535	193	210			240	X						X						PASS	3-22-00	X	(1X1) S. END S-25/26
Y	3U	1550	193	210			240	Y						Y						PASS	3-22-00	Y	(3X1) 40' N. OF S. END S-27/28
Z	3V	1600	193	210			240	Z						Z						PASS	3-22-00	Z	(2X1) 60' N OF S END S-28/29
AA	3W	1610	193	210			240	AA						AA						PASS	3-22-00	AA	(5X2) 80' N OF S. END S-28/29
BB	3X	1620	193	210			240	BB						BB						PASS	3-22-00	BB	DS-16
CC	3Y	1140	193	210			240	CC						CC						PASS	3-22-00	CC	(1X1) 100' S. OF N. END S-23/24
DD	3Z	1150	193	210			240	DD						DD						PASS	3-22-00	DD	(3X2) N. END S-27/28
EE	4A	1330	193	210			240	EE						EE						PASS	3-22-00	EE	(4X2) 20' S. of N. END S-27/28
FF	4B	1400	193	210			240	FF						FF						PASS	3-22-00	FF	(1X1) N. END S. 28/29
GG	4V	1430	193	210			240	GG						GG						PASS	3-22-00	GG	(2X1) N. END S. 25/26
		1440	1044	210			240													PASS	3-22-00		(2X1) N. END S. 28/29

60
30

REMARKS:

GZA GEOENVIRONMENTAL OF NEW YORK

2-20-00

GEOMEMBR... Y RECORD

WASTE MANAGEME... OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

PRODUCTION SEAMING RECORD

	SEAM NO./ PATCH NO.	START TIME	WELDER I.D. OPERATOR	WELDER I.D. MACHINE	MACHINE SETTINGS TEMP. (°C)	MACHINE SETTINGS FUSION SPEED (FT./MIN)	MACHINE SETTINGS EXTRUSION PRE-HEAT (°C)		SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE: CURRENT SEAM	SEAM LENGTH (FT.) FUSION CUMUL. LENGTH	SEAM LENGTH (FT.) EXTRUSION PREVIOUS CUMULATIVE: 210: 21 CURRENT SEAM	SEAM LENGTH (FT.) EXTRUSION CUMUL. LENGTH	DESTRUCTIVE SAMPLE		NON-DESTRUCTIVE TESTING FUSION TEST PRESSURES (PSI) START	STOP	DROP	TEST TIMES START	STOP	EXTRUSION VACUUM TEST PASS/FAIL	DATE (IF OTHER THAN ORIGINAL)		REMARKS
A	21/214	0950	193	210			240	A	22		22	43		A						PASS	3-22-00	A	
B								B						B								B	
C								C						C								C	
D								D						D								D	
E								E						E								E	
F								F						F								F	
G								G						G								G	
H								H						H								H	
I								I						I								I	
J								J						J								J	
K								K						K								K	
L								L						L								L	
M								M						M								M	
N								N						N								N	
O								O						O								O	
P								P						P								P	
Q								Q						Q								Q	
R								R						R								R	
S								S						B								S	
T								T						T								T	
U								U						U								U	
V								V						V								V	
W								W						W								W	
X								X						X								X	
Y								Y						Y								Y	
Z								Z						Z								Z	
AA								AA						AA								AA	
BB								BB						BB								BB	
CC								CC						CC								CC	
DD								DD						DD								DD	
EE								EE						EE								EE	
FF								FF						FF								FF	
GG								GG						GG								GG	

REMARKS: ____________________

DATE: 9·22·00
GEOMEMBRANE RECORD SHEET 1 OF 3
REPORT PG ____ OF ____

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

WEATHER DATA			DEPLOYMENT RECORD									
						PANEL DIMENSIONS (FT)					PANEL DIMENSIONS (FT)	
TIME	AIR TEMP (°F)	WIND SPEED (MPH)	TIME	PANEL NO.	ROLL NO.	WIDTH	LENGTH	TIME	PANEL NO.	ROLL NO.	WIDTH	LENGTH
1300	70	4										

TRIAL SEAMING RECORD									
		WELDER I.D.			MACHINE SETTINGS		FIELD TEST RESULTS		
					FUSION SEAMER	EXTRUSION SEAMER			
SAMPLE NO.	TIME	OPERATOR I.D.	MACHINE I.D.	TEMP. (°C)	SPEED (FT./MIN.)	PRE-HEAT (°C)	PEEL (LBS)	SHEAR (LBS)	PASS/FAIL; REMARKS
	0835	1044	210			240	105, 103, 114	131, 132, 140	
	1315	1044	210			250	108, 109, 104	130, 129, 130	

REMARKS: ____________________

GZA GEOENVIRONMENTAL OF NEW YORK

9.22.00

GEOMEMBRA Y RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

GEOMEMBRANE RECORD SHEET 2 OF 3

REPORT PAGE ____ OF ____

17/18
25/36

PRODUCTION SEAMING RECORD

			WELDER I.D.		MACHINE SETTINGS				SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE:		EXTRUSION PREVIOUS CUMULATIVE:				NON-DESTRUCTIVE TESTING FUSION TEST PRESSURES (PSI)			TEST TIMES		EXTRUSION	DATE		
	SEAM NO./ PATCH NO.	START TIME	OPERATOR	MACHINE	TEMP. (°C)	FUSION SPEED (FT./MIN)	EXTRUSION PRE-HEAT (°C)		CURRENT SEAM	CUMUL. LENGTH	CURRENT SEAM	CUMUL. LENGTH	DESTRUCTIVE SAMPLE		START	STOP	DROP	START	STOP	VACUUM TEST PASS/FAIL	(IF OTHER THAN ORIGINAL)		REMARKS
A	4C	1330	1329	210			240	A						A						PASS		A	(1X1) S. END, S-18/19
B	4D	1340	1329	210			240	B						B						PASS		B	(2X1) 10' N. OF S. END S-28/29
C	4E	1350	1329	210			240	C						C						PASS		C	(1X1) S END S-28/29
D	4F		1329	210			240	D						D						PASS		D	(1X1) S. END S-30/31
E	4G		1329	210			240	E						E						PASS		E	(1X1) S. END S-32/33
F	4H		1329	210			240	F						F						PASS		F	(1X1) S. END S-33/34
G	4J		1329	210			240	G						G						PASS		G	(4X2) 10' N. OF S END S-33/34
H	4K	1550	1329	210			240	H						H						PASS		H	(2X1) 5' N. OF S. END S-35/36
I	4L		1329	210			240	I						I						PASS		I	(1X1) S. END S-36/37
J	4M		1329	210			240	J						J						PASS		J	(5X2) S. END S-37/38
K	4N		1329	210			240	K						K						PASS	9-25-00	K	(1X1) S. END S-38/39
L	4P		1329	210			240	L						L						PASS		L	(1X1) S. END S-39/40
M	4Q	1350	1329	210			240	M						M						PASS	9-25-00	M	DS-17
N	4R	1410	1329	210			240	N						N						PASS	9-25-00	N	(2X2) N. END S-33/34
O	4S		1329	210			240	O						O						PASS	9-25-00	O	DS-18
P	4T		1329	210			240	P						P						PASS	9-25-00	P	(3X1) 50' N. OF S. END S-23/24
Q	4U	0940	1329	210			240	Q						Q						PASS	9-25-00	Q	(1X1) N. END S-17/18
R	4W	1030	1329	210			240	R						R						PASS	9-25-00	R	(2X1) N. END S-29/30
S	4Y	1040	1329	210			240	S						S						PASS	9-25-00	S	(3X2) 100' S. OF N. END S-33/34
T	4Z		1329	210			240	T						T						PASS	9-25-00	T	(10X2) 40' S. OF N END S-35/36
U	5A	1110	1329	210			240	U						U						PASS	9-25-00	U	(5X2) 90' S. OF N END S-31/32
V	5B		1329	210			240	V						V						PASS	9-25-00	V	(1X1) 100' N. OF S END P-35
W	5C		1329	210			240	W						W						PASS	9-25-00	W	(2X1) 100' N. OF S. END S-35/36
X	5D	1410	1329	210			240	X						X						PASS	9-25-00	X	(3X1) 50' N. OF S. END S 36/37
Y	5E		491	210			240	Y						Y						PASS	9-25-00	Y	(3X1) 45' N OF S. END S 37/38
Z	5F		491	210			240	Z						Z						PASS	9-25-00	Z	(3X1) 70' S. OF N. END S 36/37
AA	5G		491	210			240	AA						AA						PASS	9-25-00	AA	(3X2) 20' S. OF N. END S-36/37
BB	5H	1505	491	210			240	BB						BB						PASS	9-25-00	BB	(10X2) 30' S. OF N. END S-37/38
CC	5J		491	210			240	CC						CC						PASS	9-25-00	CC	(5X2) 70' S. OF N. END S-37/37A/38
DD	5K		491	210			240	DD						DD						PASS	9-25-00	DD	DS-19
EE	5L	1650	491	210			240	EE						EE						PASS	9-25-00	EE	(3X2) 25' S. OF N. END S-38/39
FF	5M	1640	491	210			240	FF						FF						PASS	9-25-00	FF	(1X1) N. END S-38/39
GG	5N		491	210			240	GG						GG						PASS	9-25-00	GG	(4X2) 25' S. OF N. END S-39/40

REMARKS: SEE 9-20-00 FOR 4V & 4X
* RE-WELD SMALL PART

GZA GEOENVIRONMENTAL OF NEW YORK

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

DATE: 9-22-00
GEOMEMBRANE RECORD SHEET 3 OF 3
REPORT PAGE ____ OF ____

#210 - 43'

PRODUCTION SEAMING RECORD

			WELDER I.D.		MACHINE SETTINGS			SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE:		EXTRUSION PREVIOUS CUMULATIVE			NON-DESTRUCTIVE TESTING FUSION TEST PRESSURES (PSI)			TEST TIMES		EXTRUSION	DATE	
	SEAM NO./ PATCH NO.	START TIME	OPERATOR	MACHINE	TEMP. (°C)	FUSION SPEED (FT./MIN)	EXTRUSION PRE-HEAT (°C)	CURRENT SEAM	CUMUL. LENGTH	CURRENT SEAM	CUMUL. LENGTH	DESTRUCTIVE SAMPLE	START	STOP	DROP	START	STOP	VACUUM TEST PASS/FAIL	(IF OTHER THAN ORIGINAL)	REMARKS
A	37/37A	1320	491	210			240			22	65							PASS	9-25-00	
B	39/39A	1445	491	210			240			22	87							PASS	9-25-00	
C																				
D																				
E																				
F																				
G																				
H																				
I																				
J																				
K																				
L																				
M																				
N																				
O																				
P																				
Q																				
R																				
S																				
T																				
U																				
V																				
W																				
X																				
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AA																				
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FF																				
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REMARKS:

GZA GEOENVIRONMENTAL OF NEW YORK

GEOMEMBR[...] RECORD

WASTE MANAGE[...] [...]EW YORK, LLC
McKENNA LANDFILL RE[...] CLOSURE PROJECT
ALBION, NEW YORK

WEATHER DATA			DEPLOYMENT RECORD									
						PANEL DIMENSIONS (FT)					PANEL DIMENSIONS (FT)	
TIME	AIR TEMP (°F)	WIND SPEED (MPH)	TIME	PANEL NO.	ROLL NO.	WIDTH	LENGTH	TIME	PANEL NO.	ROLL NO.	WIDTH	LENGTH
1000	55	4										

TRIAL SEAMING RECORD									
		WELDER I.D.		MACHINE SETTINGS			FIELD TEST RESULTS		
					FUSION SEAMER	EXTRUSION SEAMER			
SAMPLE NO.	TIME	OPERATOR I.D.	MACHINE I.D.	TEMP. (°C)	SPEED (FT./MIN.)	PRE-HEAT (°C)	PEEL (LBS)	SHEAR (LBS)	PASS/FAIL; REMARKS
S.1	0850	1329	0210			250	111 126 119	143, 147, 142	PASS

REMARKS: ____________________

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

DATE: 9-25-00
GEOMEMBRANE RECORD SHEET 2 OF 2
REPORT PAGE ____ OF ____

PRODUCTION SEAMING RECORD

	SEAM NO./ PATCH NO.	START TIME	WELDER I.D. OPERATOR	WELDER I.D. MACHINE	MACHINE SETTINGS TEMP. (°C)	MACHINE SETTINGS FUSION SPEED (FT./MIN)	MACHINE SETTINGS EXTRUSION PRE-HEAT (°C)	SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE: CURRENT SEAM	SEAM LENGTH (FT.) FUSION CUMUL. LENGTH	SEAM LENGTH (FT.) EXTRUSION PREVIOUS CUMULATIVE: CURRENT SEAM	SEAM LENGTH (FT.) EXTRUSION CUMUL. LENGTH	DESTRUCTIVE SAMPLE	NON-DESTRUCTIVE TESTING FUSION TEST PRESSURES (PSI) START	STOP	DROP	TEST TIMES START	TEST TIMES STOP	EXTRUSION VACUUM TEST PASS/FAIL	DATE (IF OTHER THAN ORIGINAL)	REMARKS
A	5P	0810	1329	210														PASS		(3x2) MID - S-39/40
B	5Q		1329	210														PASS		(5x2) 75 N OF S. END S-38/39
C	5R	0830	1329	210														PASS		(1x1) S. END S-40/41
D	5S		1329	210														PASS		(4x2) 50' N. OF S. END S-39/40
E	5T		1329	210														PASS		(5x2) DS-20
F	5U	0920	1329	210														PASS		(4x2) 40'S. OF N. END S-40/41
G	5V		1329	210														PASS		(4x2) 50'N. OF S. END S-41/42
H	5W	1110	1329	210														PASS		(1x1) 5'N. OF S. END S.38/39
I	5X	1120	1329	210														PASS		(1x1) 10' N. OF S. END S.38/39
J	5Y	1630	1329	210														PASS		(4x4) GV-17 RISER
K	5Z	1700	1329	210														PASS		(8x8) MH-5
L																				
M																				
N																				
O																				
P																				
Q																				
R																				
S																				
T																				
U																				
V																				
W																				
X																				
Y																				
Z																				
AA																				
BB																				
CC																				
DD																				
EE																				
FF																				
GG																				

REMARKS:

GZA GEOENVIRONMENTAL OF NEW YORK

GEOMEMBR[illegible] Y RECORD

WASTE MANAGE[illegible] EW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

GEOMEMBRANE RECO[illegible]
TE: 9·26·00
1 OF 3
REPORT PG ____ OF ____

WEATHER DATA			DEPLOYMENT RECORD									
TIME	AIR TEMP (°F)	WIND SPEED (MPH)	TIME	PANEL NO.	ROLL NO.	PANEL DIMENSIONS (FT) WIDTH	PANEL DIMENSIONS (FT) LENGTH	TIME	PANEL NO.	ROLL NO.	PANEL DIMENSIONS (FT) WIDTH	PANEL DIMENSIONS (FT) LENGTH
1100	60	3	0840	P-43	5741	22.5	85		P-56	5747	22.5	195
			0855	P-44	5741	22.5	88		P-56A	5742	22.5	20
			0910	P-45	5741	22.5	90		P-57	5742	22.5	215
			0930	P-46	5741	22.5	92		P-54A	5742	22.5	20
			0940	P-47	5741	22.5	94'					
			0950	P-48	5708	22.5	96					
			1000	P-49	5708	22.5	92					
			1030	P-50	5708	22.5	84					
			1100	P-51	5823	22.5	80					
			1130	P-52A	5823	22.5	73					
			1150	P-52	5823	22.5	138					
			1320	P-53	5823	22.5	205					
			1340	P-54	5823	22.5	187					
			1400	P-55	5747	22.5	209					

TRIAL SEAMING RECORD

SAMPLE NO.	TIME	WELDER I.D. OPERATOR I.D.	WELDER I.D. MACHINE I.D.	TEMP. (°C)	MACHINE SETTINGS FUSION SEAMER SPEED (FT./MIN.)	MACHINE SETTINGS EXTRUSION SEAMER PRE-HEAT (°C)	FIELD TEST RESULTS PEEL (LBS)	FIELD TEST RESULTS SHEAR (LBS)	PASS/FAIL; REMARKS
S-1	0840	1416	1206	750	10		139/141 140/137 138/142	147, 161, 157	PASS
S-2	1010	1044	SWW 165	450	4		117/128 119/124 123/128	133, 139, 125	PASS
S-3	1330	1416	1206	750	10		118/120 119/120 118/115	130, 128, 126	PASS
S-4	1530	1329	210			250	118 122 119	138, 133, 129	PASS

REMARKS: ____________________

GZA GEOENVIRONMENTAL OF NEW YORK

1206: 5453
6055: 3266
SWW 165: 154

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

DATE: 9-26-00
GEOMEMBRANE RECORD SHEET 2 OF 3
REPORT PAGE ____ OF ____

PRODUCTION SEAMING RECORD

	SEAM NO./ PATCH NO.	START TIME	WELDER I.D. OPERATOR	WELDER I.D. MACHINE	MACHINE SETTINGS TEMP. (°C)	MACHINE SETTINGS FUSION SPEED (FT./MIN)	MACHINE SETTINGS EXTRUSION PRE-HEAT (°C)		SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE: CURRENT SEAM	FUSION CUMUL. LENGTH	EXTRUSION PREVIOUS CUMULATIVE: CURRENT SEAM	EXTRUSION CUMUL. LENGTH	DESTRUCTIVE SAMPLE		NON-DESTRUCTIVE TESTING FUSION TEST PRESSURES (PSI) START	STOP	DROP	TEST TIMES START	STOP	EXTRUSION VACUUM TEST PASS/FAIL	DATE (IF OTHER THAN ORIGINAL)		REMARKS
A	1/43	0910	1416	1206	750	10		A	85	5538			DS-21	A	30	30	0	1515	1530			A	
B	43/44		1416	1206	750	10		B	88	5626				B	32	32	0	1530	1535			B	
C	44/45		1416	1206	750	10		C	90	5716				C	30	30	0	1535	1540			C	
D	45/46		1416	1206	750	10		D	92	5808				D	31	30	1	1545	1550			D	
E	46/47		1416	1206	750	10		E	94	5902				E	30	30	0	1606	1611			E	
F	47/48		1416	1206	750	10		F	94	5996				F	30	30	0	1620	1625			F	
G	48/49		1416	1206	750	10		G	96	6092			DS-22	G	35	35	0	1645	1650			G	
H	49/50		1416	1206	750	10		H	84	6176				H	35	35	0	1655	1700			H	
I	50/51		1416	1206	750	10		I	80	6256				I	34	34	0	1710	1715			I	
J	52/52A	1120	1044	SWW 165	420	4		J	22	176				J	32	32	0	1540	1545			J	
K	52/43	1320	1044	165	420	4		K	22	198				K	30	30	0	1545	1550			K	
L	52/44		1044	165	420	4		L	22	220				L	30	30	0	1550	1555			L	
M	52/45		1044	165	420	4		M	22	242				M	33	33	0	1555	1600			M	
N	52/46		1044	165	420	4		N	22	264				N	32	32	0	1610	1615			N	
O	52/47		1044	165	420	4		O	22	286				O	30	30	0	1620	1625			O	
P	52/48		1044	165	420	4		P	19	305				P	34	34	0	1625	1630			P	
Q	52A/48A		1044	165	420	4		Q	3	308				Q	30	30	0	1630	1635			Q	
R	52A/49		1044	165	420	4		R	22	330				R	32	32	0	1648	1653			R	
S	52A/50		1044	165	420	4		S	22	352				S	35	34	1	1711	1716			S	
T	52A/51	1400	1044	165	420	4		T	22	374				T	35	34	1	1705	1710			T	
U	52/53		1416	1206	750	10		U	138	6394				U	32	32	0	1805	1810			U	
V	52A/53		1416	1206	750	10		V	73	6467				V	31	30	1	1700	1710			V	
W	53/54		1416	1206	750	10		W	190	6657			DS-23	W	34	34	0	1820	1825			W	
X	54/55	1410	1416	1206	750	10		X	192	6849				X	33	33	0	1750	1755			X	
Y	55/56A*							Y						Y								Y	
Z	55/56	1430	1416	1206	750	10		Z	195	7044			DS-24	Z	35	34	1	0812	0817		9-27-00	Z	
AA	56/57	1450	1416	1206	750	10		AA	196	7240				AA	35	35	0	0816	0821		9-27-00	AA	
BB	56A/57	1515	1416	1206	750	10		BB	20	7260				BB	33	33	0	0833	0838		9-27-00	BB	
CC	56A/56	1520	1044	165	420	4		CC	22	396				CC	35	34	1	0832	0837		9-27-00	CC	
DD	54/54A	1530	1044	165	420	4		DD	22	418				DD	35	34	1	1845	1850			DD	
EE	53/54A		1416	1206	750			EE	20	7280				EE	31	31	0	1840	1845			EE	
FF	55/54A	1600	1416	1206	750	4		FF	20	7300				FF	32	32	0	1850	1855			FF	
GG								GG						GG								GG	

REMARKS: 55/56A NOT WELDED TODAY - SEE REPORT FOR 9/27/00

GZA GEOENVIRONMENTAL OF NEW YORK

165 : 418

GEOMEMBRA[...]Y RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

9-26-00
GEOMEMBRANE RECORD . 3 OF 3
REPORT PAGE ____ OF ____

PRODUCTION SEAMING RECORD

	SEAM NO./ PATCH NO.	START TIME	WELDER I.D. OPERATOR	WELDER I.D. MACHINE	MACHINE SETTINGS TEMP. (°C)	FUSION SPEED (FT./MIN)	EXTRUSION PRE-HEAT (°C)		SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE: CURRENT SEAM	CUMUL. LENGTH	EXTRUSION PREVIOUS CUMULATIVE: CURRENT SEAM	CUMUL. LENGTH	DESTRUCTIVE SAMPLE		NON-DESTRUCTIVE TESTING FUSION TEST PRESSURES (PSI) START	STOP	DROP	TEST TIMES START	STOP	EXTRUSION VACUUM TEST PASS/FAIL	DATE (IF OTHER THAN ORIGINAL)		REMARKS
A	1/52	1610	1044	165	420	4		A	22	440				A	33	33	0	0910	0915			A	
B	1/53		1044	165	420	4		B	22	462				B	34	34	0	0905	0910			B	
C	1/54		1044	165	420	4		C	22	484				C	35	35	0	0858	0905			C	
D	1/55		1044	165	420	4		D	22	506			DS-25	D	34	33	1	0845	0850			D	6' N. of S54A/55/1
E	1/56		1044	165	420	4		E	22	528				E	35	35	0	0839	0844			E	
F	1/57	1640	1044	165	420	4		F	22	550				F	35	35	0	0837	0843			F	
G								G						G								G	
H								H						H								H	
I								I						I								I	
J	6A	1710						J						J						PASS		J	(1x1) S. END S-1/43
K	6B	1720						K						K						PASS		K	(1x1) S. END S-43/44
L	6C	1730						L						L						PASS		L	(1x1) S. END S-44/45
M	6D							M						M						PASS		M	(3x2) S-1/43/52
N	6E							N						N						PASS		N	(5x2) S-1/43 DS-21
O	6F	1740						O						O						PASS		O	(1x1) S-42/43/52
P	6G							P						P						PASS		P	(2x1) S-44/45/52
Q	6H							Q						Q						PASS		Q	(5x4) GV-15
R	6J							R						R						PASS		R	(4x2) S-45/46/52
S	6K	1800						S						S						PASS		S	(2x1) S-46/47/52
T	6L							T						T						PASS		T	(5x2) S-47/48/52
U	6M							U						U						PASS		U	(4x2) S-48/49/52
V	6N	1830						V						V						PASS		V	(4x2) 5'S. OF N. END S-48/49
W								W						W								W	
X								X						X								X	
Y								Y						Y								Y	
Z								Z						Z								Z	
AA								AA						AA								AA	
BB								BB						BB								BB	
CC								CC						CC								CC	
DD								DD						DD								DD	
EE								EE						EE								EE	
FF								FF						FF								FF	
GG								GG						GG								GG	

REMARKS:

GZA GEOENVIRONMENTAL OF NEW YORK

DATE: 9-27-00
GEOMEMBRANE RECORD SHEET 1 OF 2
REPORT PG ____ OF ____

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

WEATHER DATA			DEPLOYMENT RECORD									
						PANEL DIMENSIONS (FT)					PANEL DIMENSIONS (FT)	
TIME	AIR TEMP (°F)	WIND SPEED (MPH)	TIME	PANEL NO.	ROLL NO.	WIDTH	LENGTH	TIME	PANEL NO.	ROLL NO.	WIDTH	LENGTH

TRIAL SEAMING RECORD									
		WELDER I.D.			MACHINE SETTINGS		FIELD TEST RESULTS		
					FUSION SEAMER	EXTRUSION SEAMER			
SAMPLE NO.	TIME	OPERATOR I.D.	MACHINE I.D.	TEMP. (°C)	SPEED (FT./MIN.)	PRE-HEAT (°C)	PEEL (LBS)	SHEAR (LBS)	PASS/FAIL; REMARKS
S-1	0820	1329	0210	250			108, 120, 134	140, 143, 140	PASS
S-2	0830	1636	0238	250			110, 112, 117	141, 139, 138	PASS
S-3	1320	1636	0210	250			119, 117, 112	140, 129, 125	PASS

REMARKS: ______

GZA GEOENVIRONMENTAL OF NEW YORK

GEOMEMBR[illegible]Y RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

9-27-00

GEOMEMBRANE RECORD SHEET 2 OF 2

REPORT PAGE ____ OF ____

PRODUCTION SEAMING RECORD

	SEAM NO./ PATCH NO.	START TIME	WELDER I.D. OPERATOR	WELDER I.D. MACHINE	MACHINE SETTINGS TEMP. (°C)	FUSION SPEED (FT./MIN)	EXTRUSION PRE-HEAT (°C)	SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE: CURRENT SEAM	CUMUL. LENGTH	EXTRUSION PREVIOUS CUMULATIVE: 210-87 CURRENT SEAM	CUMUL. LENGTH	DESTRUCTIVE SAMPLE	NON-DESTRUCTIVE TESTING FUSION TEST PRESSURES (PSI) START	STOP	DROP	TEST TIMES START	STOP	EXTRUSION VACUUM TEST PASS/FAIL	DATE (IF OTHER THAN ORIGINAL)	REMARKS
A	6P	0810	1329	210														PASS		(2x1) 10'S. OF N. END S-45/46
B	6Q	0830	1329	210														PASS		(6x2) S. END S-46/47
C	6R	0845	1329	210														PASS		(2x1) 30'N. OF S. END S-47/48
D	6S	0900	1329	210														PASS		(1x1) S. END S-47/48
E	6T		1329	210														PASS		(3x2) 15' N. OF S. END S-45/46
F	6U	0915	1329	210														PASS		(3x2) S. END S-45/46
G	6V		1329	210														PASS		(2x2) S-49/50/52
H	6W	0930	1329	210														PASS		(2x2) MID 6X-6V
I	6X		1329	210														PASS		(2x2) S-50/51/52
J	6Y	0950	1329	210														PASS		(1x1) S. END S-52/53
K	6Z		1329	210														PASS		(5x2) DS-23 S-53/54
L	7A	1010	1329	210														PASS		(4x2) 75'E. OF W. END S-53/54
M	7B	1020	1329	210														PASS		(2x1) 110'E. OF W. END S-53/54
N	7C	0905	1636	238														PASS		(4x2) S-54/54A/53
O	7D		1636	238														PASS		(2x2) S52/53/1
P	7E		1636	238														PASS		(2x2) S53/54A/1
Q	7F		1636	238														PASS		(8x2) S54A/55/1 (DS-25)
R	7G		1636	238														PASS		(2x2) S55/56/1
S	7H		1636	238														PASS		(3x2) S56/57/1
T	7K		1636	238														PASS		(4x2) S54/54A/55
U	7L		1636	238														PASS		(5x2) S54/55 110'E. OF W. END
V	7M		1636	238														PASS		(2x2) W. END S54/55
W	7N		1636	238														PASS		(2x2) S55/56/56A
X	7P		1636	238														PASS		(2x2) S56/56A/57
Y	56/56A	1040	1636	210						20	107							PASS		
Z	7Q		1329	210														PASS		(1x1) 10' N OF S. END S49/50
AA	7R		1329	210														PASS		(2x1) S52A/52/53
BB	7S		1636	238														PASS		(5x2) DS-24 S55/56
CC	7T		1636	238														PASS		(3x2) 65 W. OF P-1, S56/57
DD	7U	1150	1329	210														PASS		(8x8) MH-8
EE	7J	1440	1329	210														PASS		(8x8) MH-7
FF																				
GG																				

REMARKS:

GZA GEOENVIRONMENTAL OF NEW YORK

DATE: 9-28-00
GEOMEMBRANE RECORD SHEET 1 OF 2
REPORT PG ____ OF ____

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

WEATHER DATA			DEPLOYMENT RECORD								
TIME	AIR TEMP (°F)	WIND SPEED (MPH)	TIME	PANEL NO.	ROLL NO.	TIME	PANEL NO.	ROLL NO.	TIME	PANEL NO.	ROLL NO.

TRIAL SEAMING RECORD									
		WELDER I.D.		MACHINE SETTINGS			FIELD TEST RESULTS		
					FUSION SEAMER	EXTRUSION SEAMER PRE-HEAT			
SAMPLE NO.	TIME	OPERATOR I.D.	MACHINE I.D.	TEMP. (°C)	SPEED (FT./MIN.)	(°C)	PEEL (LBS)	SHEAR (LBS)	PASS/FAIL; REMARKS
S-1	0810	1416	0210	250		—	120 122 123	139,138,137	PASS

REMARKS: EXTRUSION WELD DONE ON RISER PATCHES ONLY TODAY. GV

GZA GEOENVIRONMENTAL OF NEW YORK

9-28-00

GEOMEMBRANE RECORD 2 OF 2

REPORT PAGE ____ OF ____

GEOMEMBRA... Y RECORD

WASTE MANAGEMEN... OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

PRODUCTION SEAMING RECORD

			WELDER I.D.		MACHINE SETTINGS			SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE:		SEAM LENGTH (FT.) EXTRUSION PREVIOUS CUMULATIVE:			NON-DESTRUCTIVE TESTING FUSION TEST PRESSURES (PSI)			TEST TIMES		EXTRUSION	DATE	
	SEAM NO./ PATCH NO.	START TIME	OPERATOR	MACHINE	TEMP. (°C)	FUSION SPEED (FT./MIN)	EXTRUSION PRE-HEAT (°C)	CURRENT SEAM	CUMUL. LENGTH	CURRENT SEAM	CUMUL. LENGTH	DESTRUCTIVE SAMPLE	START	STOP	DROP	START	STOP	VACUUM TEST PASS/FAIL	(IF OTHER THAN ORIGINAL)	REMARKS
A	7V	0930					250											Pass		~(5x5) GV-16
B	7W	1000					250											Pass		~(5x5) GV-20 See Note 1
C	7X	0900					250											Pass		~(8x8) MH-6
D																				
E																				
F																				
G																				
H																				
I																				
J																				
K																				
L																				
M																				
N																				
O																				
P																				
Q																				
R																				
S																				
T																				
U																				
V																				
W																				
X																				
Y																				
Z																				
AA																				
BB																				
CC																				
DD																				
EE																				
FF																				
GG																				

REMARKS: PATCH 7W COVERED OVER PATCH 4C

GZA GEOENVIRONMENTAL OF NEW YORK

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

DATE: 11-2-00
GEOMEMBRANE RECORD SHEET 1 OF 2
REPORT PAGE ____ OF ____

PRODUCTION SEAMING RECORD

			Welder I.D.		Machine Settings			Seam Length (Ft.) Fusion Previous Cumulative		Seam Length (Ft.) Extrusion Previous Cumulative			Non-Destructive Testing, Fusion: Test Pressures (PSI)			Fusion: Test Times		Extrusion	Date	
	Seam No./ Patch No.	Start Time	Operator	Machine	Temp. (°C)	Fusion Speed (Ft./Min)	Extrusion Pre-Heat (°C)	Current Seam	Cumul. Length	Current Seam	Cumul. Length	Destructive Sample	Start	Stop	Drop	Start	Stop	Vacuum Test Pass/Fail	(If Other Than Original)	Remarks
A	557/58	1025	193	1653	750	6	—	200	200											DS-26 10' E. of W. End
B	58/59	1020	1416	16055	750	6	—	250	250				38	37	1	1515	1520			DS-27 10' E. of W. End
C	59/60	1110	193	1653	750	6		250	450				40	39	1	1510	1515			
D	60/61	1115	1416	16055	750	6		255	505				39	38	1	1521	1527			DS-28 10'E of W. End
E	61/62	1145	193	1653	750	6		250	700				38	37	1	1526	1531			DS-29 50'E of W. End
F	62/63	1145	1416	16055	750	6		225	730				40	39	1	1140	1145		11-4-00	
G	63/64	1330	193	1653	750	6		190	890				40	39	1	0810	0815		11-4-00	
H	64/65	1350	1416	16055	750	6		170	900				40	39	1	1004	1009		11-4-00	
I	65/66	1430	1416	16055	750	6		135	1035				40	39	1	0850	0855		11-4-00	DS-30 35' W. of E. End
J	66/67A	1420	193	1653	750	6		25	915				40	39	1	0955	1000		11-4-00	
K	66/67	1420	193	1653	750	6		80	995				40	39	1	1617	1622		11-4-00	
L	67A/68	1415	193	1653	750	6		25	1020				40	39	1	0955	1000		11-4-00	DS-31 20' W. of E. End
M	67/68	1445	193	1653	750	6		40	1060				40	39	1	0937	0942		11-4-00	
N	68/69	1450	1416	16055	750	6		40	1075				40	39	1	0945	0950		11-4-00	
O																				
P																				
Q																				
R																				
S																				
T																				
U																				
V																				
W																				
X																				
Y																				
Z																				
AA																				
BB																				
CC																				
DD																				
EE																				
FF																				
GG																				

REMARKS: ______

GZA GEOENVIRONMENTAL OF NEW YORK

GEOMEME[illegible] ILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

DATE: 11-[illegible]
GEOMEMBRANE RECORD SHEET 2 OF 2
REPORT PG ____ OF ____

WEATHER DATA			DEPLOYMENT RECORD								
TIME	AIR TEMP (°F)	WIND SPEED (MPH)	TIME	PANEL NO.	ROLL NO.	TIME	PANEL NO.	ROLL NO.	TIME	PANEL NO.	ROLL NO.
0900	50	~3-5	0915	P-58	5821	1600	P-70	5730			
				P-59	5710	1630	P-71	5718			
				P-60	5715	1650	P-72	5739			
			1030	P-61	5729	1610	P-70A	5730			
				P-62	5746						
			1130	P-63	5746						
				P64	5716						
				P65	5821						
			1400	P66	5715						
				P67	5715						
			1420	P67A	5821						
				P68	5729						
				P69	5729						
			1500	69A	5729						

TRIAL SEAMING RECORD

SAMPLE NO.	TIME	WELDER I.D. OPERATOR I.D.	MACHINE I.D.	MACHINE SETTINGS TEMP. (°C)	FUSION SEAMER SPEED (FT./MIN.)	EXTRUSION SEAMER PRE-HEAT (°C)	FIELD TEST RESULTS PEEL (LBS)	SHEAR (LBS)	PASS/FAIL; REMARKS
	0945	193	1653	750	6		128/132 126/129 128/130	140, 141, 131	PASS
	0945	1416	16055	750	6		117/125 128/122 127/129	129, 132, 126	PASS
	1320	193	1653	750	6		127/124 125/124 126/125	129, 135, 131	PASS
	1310	1416	16055	750	6		128/125 128/124 119/122	137, 139, 141	PASS

SH - 72 psi
PE - 60 psi

REMARKS:

GZA GEOENVIRONMENTAL OF NEW YORK

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

DATE: 11-3-00
GEOMEMBRANE RECORD SHEET 1 OF 3
REPORT PG ____ OF ____

WEATHER DATA			DEPLOYMENT RECORD								
TIME	AIR TEMP (°F)	WIND SPEED (MPH)	TIME	PANEL NO.	ROLL NO.	TIME	PANEL NO.	ROLL NO.	TIME	PANEL NO.	ROLL NO.
0900	~50	~2-5	0900	P-73	5739						
			0915	P-74	5728						
			0950	P-75	5728						
			1330	P-76	5728						
			1350	P-77	5729						
			1410	P-78	5740						
			1430	P-79	5728						
			1440	P-79A	5729						
			1515	P-80	5729						
			1520	P74A	5821						
			1520	P77A	5716						

TRIAL SEAMING RECORD

SAMPLE NO.	TIME	WELDER I.D.: OPERATOR I.D.	WELDER I.D.: MACHINE I.D.	MACHINE SETTINGS: TEMP. (°C)	FUSION SEAMER: SPEED (FT./MIN.)	EXTRUSION SEAMER: PRE-HEAT (°C)	FIELD TEST RESULTS: PEEL (LBS)	SHEAR (LBS)	PASS/FAIL; REMARKS
S-1	0830	1416	16055	750	6	---	117/121 125/120 126/123		140, 138, 137
S-2	0840	193	1653	750	6		128/130 124/128 133/131		150, 148, 147
S-3	1330	193	1653	750	6		127/126 134/125 127/136		144, 147, 145
S-4	1346	1416	16055	750	6		128/129 130/136 124/142		132, 144, 149
S-5	1525	193	SW 188	750	3		120/122 118/122 123/134		138, 147, 143
S-6	1535	1329	0238	240	7		134, 129, 119		133, 139, 135

REMARKS: RAIN IN MORNING

GZA GEOENVIRONMENTAL OF NEW YORK

16055: 1075 / 1990
1653: 1060 / 1402

GEOMEMBRANE [illegible]LY RECORD

WASTE MANAGEMENT [illegible] NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

GEOMEMBRANE RECORD 11-3-00
2 OF 3
REPORT PAGE ___ OF ___

PRODUCTION SEAMING RECORD

	SEAM NO./ PATCH NO.	START TIME	WELDER I.D. OPERATOR	WELDER I.D. MACHINE	MACHINE SETTINGS TEMP. (°C)	MACHINE SETTINGS FUSION SPEED (FT./MIN)	MACHINE SETTINGS EXTRUSION PRE-HEAT (°C)		SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE: CURRENT SEAM	FUSION CUMUL. LENGTH	EXTRUSION PREVIOUS CUMULATIVE: CURRENT SEAM	EXTRUSION CUMUL. LENGTH	DESTRUCTIVE SAMPLE		NON-DESTRUCTIVE TESTING FUSION TEST PRESSURES (PSI) START	STOP	DROP	TEST TIMES START	TEST TIMES STOP	EXTRUSION VACUUM TEST PASS/FAIL	DATE (IF OTHER THAN ORIGINAL)		REMARKS
A	70A/71	0850	193	16055	750	6		A	110	1185				A	40	39	1	1625	1630			A	
B	70A/72	0910	1416	16055	750	6		B	95	1400				B	40	38	2	1602	1607			B	
C	72/73	1350	193	1653	750	6		C	195	1255				C	40	40	0	0745	0750		11-4-00	C	
D	73/74	1400	1416	16055	750	6		D	140	1660				D	40	39	1	0825	0830		11-4-00	D	
E	70/71	0900	193	16055	750	6		E	120	1305	6			E	38	37	1	1625	1630		11-4-00	E	
F	70/72	0920	1416	16055	750	6		F	120	1520	4			F	35	35	0	1602	1607		11-4-00	F	DS-32 20' N. OF S. END
G	74/75	1430	193	1653	750	6		G	120	1400				G	40	40	0	0848	0853		11-4-00	G	
H	75/76	1435	1416	16055	750	6		H	115	1800				H	40	39	1	0905	0910		11-4-00	H	
I	76/77	1500	1416	16055	750	6		I	80	1880				I	40	39	1	0916	0921		11-4-00	I	
J	77/78	1515	1416	16055	750	6		J	60	1940				J	40	38	2	0935	0940		11-4-00	J	
K	78/79	1535	1416	16055	750	6		K	25	1965				K	40	39	1	0948	0953		11-4-00	K	
L	79/79A	1535	1416	16055	750	6		L	25	1990				L	40	39	1	0938	0943		11-4-00	L	
M	71/58	1535	193	165	750	3		M	22	22				M	35	35	0	1650	1655			M	DS-33 E. END P-58 (MID)
N	71/59		193	165	750	3		N	22	44				N	35	35	0	1650	1655			N	
O	71/60		193	165	750	3		O	22	66				O	35	35	0	1655	1700			O	
P	71/61		193	165	750	3		P	22	88				P	35	34	1	1655	1700			P	
Q	61/70	1550	193	165	750	3		Q	13	101				Q	40	39	1	0804	0809		11-4-00	Q	
R	62/70		193	165	750	3		R	24	125				R	40	39	1	0805	0810		11-4-00	R	
S	62/72		193	165	750	3		S	18	143				S	40	40	0	0806	0811		11-4-00	S	
T	63/72		193	165	750	3		T	20	163				T	40	39	1	0807	0812		11-4-00	T	
U	63/73	1600	193	165	750	3		U	25	188				U	40	39	1	0808	0813		11-4-00	U	
V	64/73		193	165	750	3		V	15	203				V	40	39	1	0826	0831		11-4-00	V	
W	64/74		193	165	750	3		W	25	228				W	40	39	1	0847	0852		11-4-00	W	
X	65/74		193	165	750	3		X	8	236				X	40	39	1	0847	0852		11-4-00	X	
Y	65/75		193	165	750	3		Y	30	264				Y	40	39	1	0855	0855		11-4-00	Y	
Z	66/75		193	165	750	3		Z	1	265				Z	40	40	0	0850	0855		11-4-00	Z	
AA	66/76	1620	193	165	750	3		AA	32	297				AA	40	40	0	0917	0922		11-4-00	AA	
BB	66/77		193	165	750	3		BB	1	298				BB	40	39	1	1617	1622			BB	
CC	67/77		193	165	750	3		CC	30	328				CC	40	39	1	0938	0943		11-4-00	CC	
DD	67/78		193	165	750	3		DD	6	334				DD	40	39	1	0945	0950		11-4-00	DD	
EE	68/78		193	165	750	3		EE	26	360				EE	40	39	1	0938	0943		11-4-00	EE	
FF	68/79A		193	165	750	3		FF	10	370				FF	40	39	1	0945	0950		11-4-00	FF	
GG	69/79A	1640	193	165	750	3		GG	12	382				GG	40	39	1	0946	0951		11-4-00	GG	

REMARKS: P-77A & 80 LONG & CROSS SEAMS NOT WELDED, P-74A [illegible] NOT [illegible] YET
P-70A

GZA GEOENVIRONMENTAL OF NEW YORK

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

DATE: 11-3-00
GEOMEMBRANE RECORD SHEET 3 OF 3
REPORT PAGE ____ OF ____

PRODUCTION SEAMING RECORD

			WELDER I.D.		MACHINE SETTINGS				SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE:		SEAM LENGTH (FT.) EXTRUSION PREVIOUS CUMULATIVE:				NON-DESTRUCTIVE TESTING FUSION: TEST PRESSURES (PSI)			FUSION: TEST TIMES		EXTRUSION	DATE		
	SEAM NO./ PATCH NO.	START TIME	OPERATOR	MACHINE	TEMP. (°C)	FUSION SPEED (FT./MIN)	EXTRUSION PRE-HEAT (°C)		CURRENT SEAM	CUMUL. LENGTH	CURRENT SEAM	CUMUL. LENGTH	DESTRUCTIVE SAMPLE		START	STOP	DROP	START	STOP	VACUUM TEST PASS/FAIL	(IF OTHER THAN ORIGINAL)		REMARKS
A	7Y	1505	1329	0238	240			A						A						PASS	11-4-00	A	05-26 10' E. OF W END 557/58 (5x2)
B	7Z	1525	1329	0238	240			B						B						PASS	11-4-00	B	05-27 10' E. OF W END 558/59 (5x2)
C	8A	1540	1329	0238	240			C						C						PASS	11-4-00	C	(2x2) 10' E. OF W. END P-59
D	8B	1600	1329	0238	240			D						D						PASS	11-4-00	D	(5x2) 50' E. OF W. END 559/60
E	8C	1620	1329	0238	240			E						E						PASS	11-4-00	E	(5x2) 15' E. OF W. END 560/61
F								F						F						PASS	11-4-00	F	
G	79/79A	1645	193	165	440	3		G	22	404				G	40	39	1	0947	0952		11-4-00	G	
H								H						H								H	
I								I						I								I	
J								J						J								J	
K								K						K								K	
L								L						L								L	
M								M						M								M	
N								N						N								N	
O								O						O								O	
P								P						P								P	
Q								Q						Q								Q	
R								R						R								R	
S								S						S								S	
T								T						T								T	
U								U						U								U	
V								V						V								V	
W								W						W								W	
X								X						X								X	
Y								Y						Y								Y	
Z								Z						Z								Z	
AA								AA						AA								AA	
BB								BB						BB								BB	
CC								CC						CC								CC	
DD								DD						DD								DD	
EE								EE						EE								EE	
FF								FF						FF								FF	
GG								GG						GG								GG	

REMARKS:

GZA GEOENVIRONMENTAL OF NEW YORK

GEOMEMB... Y RECORD

WASTE MANAGE... NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

WEATHER DATA			DEPLOYMENT RECORD								
TIME	AIR TEMP (°F)	WIND SPEED (MPH)	TIME	PANEL NO.	ROLL NO.	TIME	PANEL NO.	ROLL NO.	TIME	PANEL NO.	ROLL NO.
1400	50	3-5									

TRIAL SEAMING RECORD									
		WELDER I.D.		MACHINE SETTINGS			FIELD TEST RESULTS		
					FUSION SEAMER	EXTRUSION SEAMER			
SAMPLE NO.	TIME	OPERATOR I.D.	MACHINE I.D.	TEMP. (°C)	SPEED (FT./MIN.)	PRE-HEAT (°C)	PEEL (LBS)	SHEAR (LBS)	PASS/FAIL; REMARKS
5-1	1420	1416	0238	240	7		99, 110, 103	125, 130, 131	PASS

REMARKS: PATCH WORK ONLY

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

DATE: 11-4-00
GEOMEMBRANE RECORD SHEET 2 OF 2
REPORT PAGE ____ OF ____

PRODUCTION SEAMING RECORD

			WELDER I.D.		MACHINE SETTINGS			SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE		SEAM LENGTH (FT.) EXTRUSION PREVIOUS CUMULATIVE			NON-DESTRUCTIVE TESTING FUSION TEST PRESSURES (PSI)			TEST TIMES		EXTRUSION	DATE	
	SEAM NO./ PATCH NO.	START TIME	OPERATOR	MACHINE	TEMP. (°C)	FUSION SPEED (FT./MIN)	EXTRUSION PRE-HEAT (°C)	CURRENT SEAM	CUMUL. LENGTH	CURRENT SEAM	CUMUL. LENGTH	DESTRUCTIVE SAMPLE	START	STOP	DROP	START	STOP	VACUUM TEST PASS/FAIL	(IF OTHER THAN ORIGINAL)	REMARKS
A	8C	1430	1416	0238	240													PASS		
B	8D		1416	0238	240													PASS		(5x2) DS-33 - E END P58
C	8E		1416	0238	240													PASS		(1x2) S-71, 58, 59
D	8F		1416	0238	240													PASS		(4x2) 6' W. OF END S58, 59
E	8G	1445	1416	0238	240													PASS		(2x2) S-71, 59, 60
F	8H		1416	0238	240													PASS		(2x2) S-71, 60, 61
G	8J		1416	0238	240													PASS		(2x2) S-71, 61, 70
H	8K	1505	1416	0238	240													PASS		(2x2) S-70, 61, 62
I	8L		1416	0238	240													PASS		(2x2) S-70, 72, 62
J	8M		1416	0238	240													PASS		(3x2) S-62, 63, 72
K	8N		1416	0238	240													PASS		(2x2) S-72, 73, 63
L	8P		1416	0238	240													PASS		(3x2) S-73, 63, 64
M	8Q		1416	0238	240													PASS		(2x2) S-73, 74, 64
N	8R		1416	0238	240													PASS		(1x1) 5' N. OF P. 8Q
O	8S	1540	1416	0238	240													PASS		(4x2) S-74, 64, 65
P	8T		1416	0238	240													PASS		(5x5) GV-1
Q	8U		1416	0238	240													PASS		(3x2) S-74, 75, 65
R	8V		1416	0238	240													PASS		(3x2) 12' N OF P. 8U
S	8W		1416	0238	240													PASS		(5x2) S-75, 76, 65, 66
T	8X		1416	0238	240													PASS		(5x2) DS-30 S-65/66
U	8Y		1416	0238	240													PASS		(2x2) E. END P.66
V	8Z		1416	0238	240													PASS		(2x2) 4' N. OF 8Y
W	9A	1610	1416	0238	240													PASS		(4x2) S-76, 77, 66, 67
X	9B		1416	0238	240													PASS		(1x1) 3' S. OF P. 9A
Y	9C		1416	0238	240													PASS		(3x2) 80' S. OF N. END S75/76
Z	9D		1416	0238	240													PASS		(3x2) S-77, 78, 67
AA	9E		1416	0238	240													PASS		(2x2) S-78, 67, 68
BB	9F		1416	0238	240													PASS		(2x2) S-78, 79, 68
CC	9G		1416	0238	240													PASS		(2x2) S-79A, 68, 69
DD	9H		1416	0238	240													PASS		(3x2) S-78, 79A, 79
EE	9J	1650	1416	0238	240													PASS		(2x2) W. END P.59
FF																				
GG																				

REMARKS:

GEOMEM[illegible] [illegible]AILY RECORD

WASTE MAN[illegible] OF NEW YORK, LLC
McKENNA LANDFILL [illegible]EDIAL CLOSURE PROJECT
ALBION, NEW YORK

GEOMEMBRANE [illegible] DATE 11·6·00
[illegible]ET 1 OF 3
REPORT PG ____ OF ____

WEATHER DATA			DEPLOYMENT RECORD								
TIME	AIR TEMP (°F)	WIND SPEED (MPH)	TIME	PANEL NO.	ROLL NO.	TIME	PANEL NO.	ROLL NO.	TIME	PANEL NO.	ROLL NO.
0900	40	2-3	0840	81	5740						
				82	5738						
				83	5738						
				83A	5707						
				84	5733						
			1005	85	5733						
				85A	5707						
				86	5745						
				87	5745						
			1140	87A	5727						
			1320	88							
				89	5719						
			1460	89A	5727						

TRIAL SEAMING RECORD									
		WELDER I.D.		MACHINE SETTINGS			FIELD TEST RESULTS		
SAMPLE NO.	TIME	OPERATOR I.D.	MACHINE I.D.	TEMP. (°C)	FUSION SEAMER SPEED (FT./MIN.)	EXTRUSION SEAMER PRE-HEAT (°C)	PEEL (LBS)	SHEAR (LBS)	PASS/FAIL; REMARKS
S-1	0835	193	1653	750	6		125/129 139/138 135/138	151, 147, 149	
S-2	0835	1416	16055	750	6		141/147 141/139 139/144	161, 160, 165	
S-3	1320	193	1653	750	6		138/132 150/131 133/144	160, 152, 154	
S-4	1325	1416	16055	750	6		135/127 129/139 129/142	150, 145, 149	
S-5	1445	1329	238	240	7		138 125 142	140, 155, 159	
S-6	1500	193	165	440	3		136/129 126/132 133/130	139, 146, 149	

REMARKS: ____________________

GZA GEOENVIRONMENTAL OF NEW YORK

16055: 1990 / 2980
1653; 1400 / 3,020

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

DATE: 11-6-00
GEOMEMBRANE RECORD SHEET 2 OF 3
REPORT PAGE ____ OF ____

PRODUCTION SEAMING RECORD

	SEAM NO./ PATCH NO.	START TIME	WELDER I.D. OPERATOR	WELDER I.D. MACHINE	MACHINE SETTINGS TEMP. (°C)	FUSION SPEED (FT./MIN)	EXTRUSION PRE-HEAT (°C)		SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE: CURRENT SEAM	CUMUL. LENGTH	EXTRUSION PREVIOUS CUMULATIVE: CURRENT SEAM	CUMUL. LENGTH	DESTRUCTIVE SAMPLE		NON-DESTRUCTIVE TESTING FUSION TEST PRESSURES (PSI) START	STOP	DROP	TEST TIMES START	STOP	EXTRUSION VACUUM TEST PASS/FAIL	DATE (IF OTHER THAN ORIGINAL)		REMARKS
A	71/81	0950	193	1653	750	6		A	325	1725				A	32	32	0	1500	1505			A	
B	81/82	0945	1416	16055	750	6		B	325	2015				B	30	30	0	1514	1519			B	DS-34 15' N. OF S. END
C	82/83A	1100	1416	16055	750	6		C	210	2225				C	30	30	0	1524	1529			C	
D	82/83	1120	1416	16055	750	6		D	115	2340				D	30	30	0	1524	1529			D	
E	83A/84	1100	193	1653	750	6		E	210	1935				E	30	30	0	1527	1532			E	
F	83/84	1120	193	1653	750	6		F	115	2050				F	30	30	0	1527	1532			F	DS-35 50' N. OF S. END
G	84/85A	1140	1416	16055	750	6		G	210	2550				G	32	31	1	1600	1605			G	
H	84/85	1150	1416	16055	750	6		H	115	2665				H	33	32	1	1600	1605			H	
I	85A/86	1145	193	1653	750	6		I	210	2260				I	30	29	1	1605	1610			I	
J	85/86	1205	193	1653	750	6		J	115	2375				J	35	33	2	1605	1610			J	
K	86/87A	1350	193	1653	750	6		K	210	2585				K	30	30	0	1648	1653			K	DS-36 85' N. of S. END
L	86/87	1410	193	1653	750	6		L	115	2690				L	31	30	1	1645	1650			L	
M	87A/88	1410	1416	16055	750	6		M	210	2875				M	33	33	0	1650	1655			M	
N	87/88	1430	1416	16055	750	6		N	115	2980				N	35	34	1	1650	1655			N	
O	88/89A	1455	193	1653	750	6		O	205	2895				O	35	34	1	1355	1400		11-9-00	O	
P	88/89	1510	193	1653	750	6		P	125	3020				P	34	34	0	1345	1350		11-9-00	P	DS-37 20' N. OF S. END
Q	74/74A	1700	1416	0238	250	7		Q	22					Q						PASS		Q	
R	74A/75	1710	1416	0238	250	7		R	15					R						PASS		R	
S	74A/73	1720	1416	0238	250	7		S	15					S						PASS		S	
T	9K	1450	1416	0238	250	7		T						T						PASS		T	(1x1) W. END S. 64/65
U	9L	1500	1416	0238	250	7		U						U						PASS		U	(3x2) W. END S. 65/66
V	9M	1510	1416	0238	250	7		V						V						PASS		V	(3x2) S-67, 67A, 68
W	9N	1525	1416	0238	250	7		W						W						PASS		W	(3x2) S. 66, 67, 67A
X	9P	1535	1416	0238	250	7		X						X						PASS		X	(1x1) W. END S68, 69
Y	9Q	1545	1416	0238	250	7		Y						Y						PASS		Y	(5x2) DS-51 N. END S67A/68
Z	9R	1555	1416	0238	250	7		Z						Z						PASS	11-7-00	Z	(5x2) S79, 79A, 69, 80
AA	69/80	1610	1416	0238	250	7		AA			15	15		AA						PASS	11-7-00	AA	
BB	9S	1618	1416	0238	250	7		BB						BB						PASS	11-7-00	BB	(1x1) N. END S78, 79
CC	9T	1625	1416	0238	250	7		CC						CC						PASS	11-7-00	CC	(2x2) S77, 77A, 78
DD	9U	1630	1416	0238	250	7		DD						DD						PASS	11-7-00	DD	(1x1) S76, 77, 77A
EE	77/77A	1635	1416	0238	250	7		EE			22	37		EE						PASS	11-7-00	EE	
FF	9V	1650	1416	0238	250	7		FF						FF						PASS	11-7-00	FF	(2x1) N. END S75/76
GG	70/70A		1416	0238	250	7		GG						GG						PASS	11-7-00	GG	

REMARKS:

GZA GEOENVIRONMENTAL OF NEW YORK

SWW 165' : 404/668

GEOMEMBR[ANE DAI]LY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

11-6-00

PRODUCTION SEAMING RECORD

	SEAM NO./ PATCH NO.	START TIME	WELDER I.D. OPERATOR	WELDER I.D. MACHINE	MACHINE SETTINGS TEMP. (°C)	MACHINE SETTINGS FUSION SPEED (FT./MIN)	MACHINE SETTINGS EXTRUSION PRE-HEAT (°C)	SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE: CURRENT SEAM	FUSION CUMUL. LENGTH	EXTRUSION PREVIOUS CUMULATIVE: CURRENT SEAM	EXTRUSION CUMUL. LENGTH	DESTRUCTIVE SAMPLE	NON-DESTRUCTIVE TESTING FUSION TEST PRESSURES (PSI) START	STOP	DROP	TEST TIMES START	STOP	EXTRUSION VACUUM TEST PASS/FAIL	DATE (IF OTHER THAN ORIGINAL)	REMARKS
A	89/12A	1625	193	165	440			22	426				35	34	1	1034	1039	PASS		
B	88/11		193	165	440			22	448				35	34	1	1034	1039	PASS		
C	87/10A		193	165	440			22	470				40	38	2	1008	1013	PASS		
D	86/9		193	165	440			22	492				40	38	2	1008	1013	PASS		
E	85/8A		193	165	440			22	514				40	40	0	1006	1011	PASS		
F	84/7		193	165	440			22	536				35	34	1	1028	1033	PASS		DS-38 S 84/85/7/8
G	83/6	1655	193	165	440			22	558				35	34	1	1028	1033	PASS		
H	82/5		193	165	440			22	580				35	35	0	1030	1035	PASS		
I	81/4		193	165	440			22	602				40	38	2	0927	0932	PASS		
J	71/3		193	165	440			22	624				40	38	2	0927	0932	PASS		
K	58/2		193	165	440			22	646				40	38	2	0927	0932	PASS		
L	58/1	1720	193	165	440			22	668				40	38	2	0927	0932	PASS		
M																				
N																				
O	77A/76	1640	1416	0238	250	7				15	52							PASS	11-7-00	
P	77A/78	1645	1416	0238	250	7				15	67							PASS	11-7-00	
Q	77/77A	1650	1416	0238	250	7				22	89							PASS	11-7-00	
R																				
S																				
T																				
U																				
V																				
W																				
X																				
Y																				
Z																				
AA																				
BB																				
CC																				
DD																				
EE																				
FF																				
GG																				

REMARKS: TIE. IN OF NEW PANELS TO OLD @ TOP ANCHOR TRENCH. (A-L)

DATE 11-7-00
GEOMEMBRANE RECORD SHEET 1 OF 3
REPORT PG ____ OF ____

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

1230

WEATHER DATA			DEPLOYMENT RECORD								
TIME	AIR TEMP (°F)	WIND SPEED (MPH)	TIME	PANEL NO.	ROLL NO.	TIME	PANEL NO.	ROLL NO.	TIME	PANEL NO.	ROLL NO.
0900	40	3-5									

TRIAL SEAMING RECORD									
		WELDER I.D.		MACHINE SETTINGS			FIELD TEST RESULTS		
					FUSION SEAMER	EXTRUSION SEAMER			
SAMPLE NO.	TIME	OPERATOR I.D.	MACHINE I.D.	TEMP (°C)	SPEED (FT./MIN.)	PRE-HEAT (°C)	PEEL (LBS)	SHEAR (LBS)	PASS/FAIL; REMARKS
S-1	0810	1416	0238	250	7		132, 150, 143	153, 162, 160	PASS
S-2	1320	1416	0238	250	6		118, 122, 129	134, 130, 131	PASS

REMARKS: ____________________

GZA GEOENVIRONMENTAL OF NEW YORK

11-7-00

GEOMEMBRANE RECORD SHEET 2 OF 3

REPORT PAGE ____ OF ____

GEOMEMBR LY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

PRODUCTION SEAMING RECORD

	SEAM NO./ PATCH NO.	START TIME	WELDER I.D. OPERATOR	WELDER I.D. MACHINE	MACHINE SETTINGS TEMP. (°C)	MACHINE SETTINGS FUSION SPEED (FT./MIN)	MACHINE SETTINGS EXTRUSION PRE-HEAT (°C)		SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE: CURRENT SEAM	SEAM LENGTH (FT.) FUSION CUMUL. LENGTH	SEAM LENGTH (FT.) EXTRUSION PREVIOUS CUMULATIVE: CURRENT SEAM	SEAM LENGTH (FT.) EXTRUSION CUMUL. LENGTH	DESTRUCTIVE SAMPLE		NON-DESTRUCTIVE TESTING FUSION TEST PRESSURES (PSI) START	TEST PRESSURES (PSI) STOP	TEST PRESSURES (PSI) DROP	TEST TIMES START	TEST TIMES STOP	EXTRUSION VACUUM TEST PASS/FAIL	DATE (IF OTHER THAN ORIGINAL)		REMARKS
A	9W	0820	1416	0238	250	7		A						A						PASS		A	(17x3) N. END P-73
B	9X	0840	1416	0238	250	7		B						B						PASS		B	(3x2) 60'S OF N END S 70/72
C	9Y	0855	1416	0238	250	7		C						C						PASS		C	(3x2) S-70/70A/72
D	9Z	0910	1416	0238	250	7		D						D						PASS		D	(3x2) S-70/70A/71
E	10A	0920	1416	0238	250	7		E						E						PASS		E	(5x2) DS-22 10' N. OF S END — S 70/72
F	10B	0930	1416	0238	250	7		F						F						PASS		F	(3x2) 130'S. OF N END S81/82
G	10C		1416	0238	250	7		G						G						PASS		G	(3x2) 45' S OF N END S81/82
H	10D		1416	0238	250	7		H						H						PASS		H	(1x1) N. END P-70
I	10E	1000	1416	0238	250	7		I						I						PASS		I	(1x1) N. END P-71
J	10F		1416	0238	250	7		J						J						PASS		J	(1x1) N END S81/71
K	10G		1416	[illegible]	250	7		K						K						PASS		K	(2x1) N END S81/82
L	10H	1030	1416	0238	250	7		L						L						PASS		L	(2x1) N END S82/83
M	10J		1416	0238	250	7		M						M						PASS		M	(1x1) N END S 83/84
N	10K		1416	0238	250	7		N						N						PASS		N	(1x1) N END S84/85
O	10L		1416	0238	250	7		O						O						PASS		O	(2x1) N END S85/86
P	10M	1100	1416	0238	250	7		P						P						PASS		P	(1x1) N END S86/87A
Q	10N		1416	0238	250	7		Q						Q						PASS		Q	(4x4) 10'S OF N END - P87A — CLEANOUT RISER
R	10P	1115	1416	0238	250	7		R						R						PASS		R	(2x1) N. END P-86 (MID)
S	10Q	1120	1416	0238	250	7		S						S						PASS		S	(2x1) N. END P-86 (MID)
T	10R	1130	1416	0238	250	7		T						T						PASS		T	(2x) N. END S87A/88
U	10S	1145	1416	0238	250	7		U						U						PASS		U	(5x2) 150'S. OF N. END S88/89
V	10T	1155	1416	0238	250	7		V						V						PASS		V	(5x2) DS-36 160'S. OF N END S87/86
W	10U	1310	1416	0238	250	7		W						W						PASS		W	(5x2) 95'S. OF N. END S85/84
X	10V	1325	1416	0238	250	7		X						X						PASS		X	(3x2) S89/89A/88
Y	10W	1340	1416	0238	250	7		Y						Y						PASS		Y	(3x2) S87/87A/88
Z	10X	1350	1416	0238	250	7		Z						Z						PASS	10-14-00	Z	(4x2) S87/87A/86
AA	10Y		1416	0238	250	7		AA						AA						PASS	10-14-00	AA	(3x2) S85/85A/86
BB	10Z		1416	0238	250	7		BB						BB						PASS	10-14-00	BB	(3x2) S85/85A/84
CC	11A	1400	1416	0238	250	7		CC						CC						PASS	10-14-00	CC	(3x2) S83/83A/84
DD	11B		1416	0238	250	7		DD						DD						PASS	10-14-00	DD	(3x2) S83/83A/82
EE	11C		1416	0238	250	7		EE						EE						PASS	10-14-00	EE	(5x2) DS-35 55' N OF S S83/84
FF	11D		1416	0238	250	7		FF						FF						PASS	10-14-00	FF	(4x2) 55' S OF N END S86/87A
GG	11E	1510	1416	0238	250	7		GG						GG						PASS	10-14-00	GG	(3x2) 65'S. OF N END S89A/88

REMARKS:

0233: 89

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

DATE: 11-7-00
GEOMEMBRANE RECORD SHEET 3 OF 3
REPORT PAGE ____ OF ____

PRODUCTION SEAMING RECORD

Row	SEAM NO./ PATCH NO.	START TIME	WELDER I.D. OPERATOR	WELDER I.D. MACHINE	MACHINE SETTINGS TEMP. (°C)	FUSION SPEED (FT./MIN)	EXTRUSION PRE-HEAT (°C)	SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE: CURRENT SEAM	FUSION CUMUL. LENGTH	EXTRUSION PREVIOUS CUMULATIVE: CURRENT SEAM	EXTRUSION CUMUL. LENGTH	DESTRUCTIVE SAMPLE	NON-DESTRUCTIVE TESTING FUSION TEST PRESSURES (PSI) START	STOP	DROP	TEST TIMES START	STOP	EXTRUSION VACUUM TEST PASS/FAIL	DATE (IF OTHER THAN ORIGINAL)	REMARKS
A	11F	1520	1416	0238	250	7												PASS	11-14-00	(5x2) DS-37 25 N of S S88/89
B	11G	1530	1416	0238	250	7												PASS	11-14-00	(3x2) S END S88/89
C	11H		1416	0238	250	7												PASS	11-14-00	(3x2) S END P38 (MID)
D	11J		1416	0238	250	7												PASS	11-14-00	(3x2) S END S87/88
E	11K		1416	0238	250	7												PASS	11-14-00	(3x2) S END S86/87
F	11L		1416	0238	250	7												PASS	11-14-00	(5x4) GV-7
G	11M	1600	1416	0238	250	7												PASS	11-14-00	(11x2) DS-38 S END S85/86
H	11N		1416	0238	250	7												PASS	11-14-00	(4x2) S END S84/85
J	11P		1416	0238	250	7												PASS	11-14-00	(4x2) S END S83/84
J	11Q		1416	0238	250	7												PASS	11-14-00	(3x2) S END S82/83
K	11R		1416	0238	250	7												PASS	11-14-00	(10x2) S END S81/82
L	11S	1630	1416	0238	250	7												PASS	11-14-00	(5x2) 20' N of S END S81/82
M	11T	1640	1416	0238	250	7												PASS	11-14-00	(5x4) GV-6
N	11U		1416	0238	250	7												PASS	11-14-00	(2x2) S END S71/81
O	11V		1416	0238	250	7												PASS	11-14-00	(2x2) S END S59/71
P	11W		1416	0238	250	7												PASS	11-14-00	(2x1) S END S59/1/2A
Q	11X	1702	1416	0238	250	7												PASS	11-14-00	(4x2) S57/59/1
R																				
S																				
T																				
U	83/83A		1416	0238						22	111							PASS	11-14-00	
V	85/85A		1416	0238						22	133							PASS	11-14-00	
W	87/87A		1416	0238						22	155							PASS	11-14-00	
X	89/89A		1416	0238						22	177							PASS	11-14-00	
Y																				
Z																				
AA																				
BB																				
CC																				
DD																				
EE																				
FF																				
GG																				

REMARKS:

GZA GEOENVIRONMENTAL OF NEW YORK

GEOMEM ILY RECORD

WASTE MANAGE OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

GEOMEMBRANE RE

DATE 11-8-00
ET 1 OF 2
REPORT PG ____ OF ____

WEATHER DATA			DEPLOYMENT RECORD								
TIME	AIR TEMP (°F)	WIND SPEED (MPH)	TIME	PANEL NO.	ROLL NO.	TIME	PANEL NO.	ROLL NO.	TIME	PANEL NO.	ROLL NO.
1000	60	2-3	1050	P-90	5817						
				P-91	5817						
				P-91A	5812						
			1150	P-92	5719						
				P-92A	5812						
				P-92B	5740						
				93	5736						
				94	5712						
				94A	5736						
			1440	95	5768						
				96	5730						
				96A	5768						
				96B	5719						

TRIAL SEAMING RECORD

SAMPLE NO.	TIME	WELDER I.D. OPERATOR I.D.	WELDER I.D. MACHINE I.D.	MACHINE SETTINGS TEMP. (°C)	FUSION SEAMER SPEED (FT./MIN.)	EXTRUSION SEAMER PRE-HEAT (°C)	FIELD TEST RESULTS PEEL (LBS)	SHEAR (LBS)	PASS/FAIL; REMARKS
S-1		193	1653	750	6		124/121 126/123 123/120	145,140,142	PASS
S-2		163	SWW65	440	4		114/131 124/126 116/126	133,130,136	PASS
S-3		1416	16055	750	6		120/123 121/122 127/124	144,145,144	PASS

REMARKS: ____

GZA GEOENVIRONMENTAL OF NEW YORK

16055: 2980
1653: 3020
SWW 165: 668

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

DATE: 11-8-00
GEOMEMBRANE RECORD SHEET 2 OF 2
REPORT PAGE ____ OF ____

PRODUCTION SEAMING RECORD

	SEAM NO./ PATCH NO.	START TIME	WELDER I.D. OPERATOR	WELDER I.D. MACHINE	MACHINE SETTINGS TEMP. (°C)	FUSION SPEED (FT./MIN)	EXTRUSION PRE-HEAT (°C)		SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE: CURRENT SEAM	FUSION CUMUL. LENGTH	EXTRUSION PREVIOUS CUMULATIVE: CURRENT SEAM	EXTRUSION CUMUL. LENGTH	DESTRUCTIVE SAMPLE		NON-DESTRUCTIVE TESTING FUSION TEST PRESSURES (PSI) START	STOP	DROP	TEST TIMES START	STOP	EXTRUSION VACUUM TEST PASS/FAIL	DATE (IF OTHER THAN ORIGINAL)		REMARKS
A	89A/90	1140	193	1653	750	6		A	205	3225				A	35	35	0	1315	1320	Pass	11-9-00	A	
B	89/90	1155	193	1653	750	6		B	125	3350				B	35	35	0	1352	1357	Pass	11-9-00	B	
C	90/91A	1405	193	1653	750	6		C	190	3540				C	33	33	0	1410	1415	PASS	11-9-00	C	DS-39 40' N. OF S. END
D	90/91	1415	193	1653	750	6		D	135	3675				D	34	33	1	1415	1420	Pass	11-9-00	D	
E	91A/92A	1425	1416	16055	750	6		E	190	3170				E	35	35	0	1425	1430	Pass	11-9-00	E	DS-40 20' S. OF N. END
F	91/92A		1416	16055	750	6		F	55	3225				F	35	34	1	1323	1327	Pass	11-9-00	F	
G	91/92B		1416	16055	750	6		G	60	3285				G	35	34	1	1305	1309	Pass	11-9-00	G	
H	91/92		1416	16055	750	6		H	15	3300				H	35	35	0	1420	1425	Pass	11-9-00	H	
I	92A/93	1550	193	1653	750	6		I	250	3925				I	35	34	1	1404	1409	PASS	11-9-00	I	
J	92B/93		193	1653	750	6		J	60	3985				J	35	35	0	1420	1425	Pass	11-9-00	J	
K	92/93		193	1653	750	6		K	15	4000				K	33	32	1	1410	1415	Pass	11-9-00	K	DS-41 S. END.
L	93/94A	1530	1416	16055	750	6		L	110	3410				L	35	34	1	1400	1405	Pass	11-9-00	L	
M	93/94		1416	16055	750	6		M	215	3625				M	35	34	1	1325	1330	Pass	11-9-00	M	DS-42 125' N. OF S. END
N	94A/95	1600	1416	16055	750	6		N	110	*				N	35	34	1	1352	1357	PASS	11-11-00	N	
O	94/95		1416	16055	750	6		O	210					O	35	34	1	1328	132	PASS	11-11-00	O	DS-53 30' N. OF S. END
P								P						P								P	
Q								Q						Q								Q	
R	91/91A	1310	163	165	440	4		R	22	690				R	35	34	1	1322	1327	PASS	11-9-00	R	
S	92A/92B	1325	163	165	440	4		S	22	712				S	35	34	1	1404	1409	PASS	11-9-00	S	
T	92/92B	1340	163	165	440	4		T	22	734				T	35	34	1	1424	1429	PASS	11-9-00	T	
U	94/94A	1430	163	165	440	4		U	22	756				U	35	34	1	1351	1356	PASS	11-9-00	U	
V	96/96B	1540	163	165	440	4		V	22	778				V	35	34	1	1145	1150	PASS	11-11-00	V	
W	96/96A		163	165	440	4		W	22	800				W	35	34	1	1358	1403	PASS	11-11-00	W	
X								X						X								X	
Y								Y						Y								Y	
Z								Z						Z								Z	
AA								AA						AA								AA	
BB								BB						BB								BB	
CC								CC						CC								CC	
DD								DD						DD								DD	
EE								EE						EE								EE	
FF								FF						FF								FF	
GG								GG						GG								GG	

REMARKS: * S 94A/95 & 94/95 WERE NOT COUNTED ORIGINALLY IN CUMUL. LENGTH SO DS-53 WAS ADDED TO ACCOUNT FOR GAP (3625' IS CARRIED OVER)

GZA GEOENVIRONMENTAL OF NEW YORK

GEOMEMB LY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

WEATHER DATA			DEPLOYMENT RECORD								
TIME	AIR TEMP (°F)	WIND SPEED (MPH)	TIME	PANEL NO.	ROLL NO.	TIME	PANEL NO.	ROLL NO.	TIME	PANEL NO.	ROLL NO.
0900	~50	3-5									

TRIAL SEAMING RECORD

SAMPLE NO.	TIME	WELDER I.D.: OPERATOR I.D.	WELDER I.D.: MACHINE I.D.	MACHINE SETTINGS: TEMP. (°C)	MACHINE SETTINGS: FUSION SEAMER SPEED (FT./MIN.)	MACHINE SETTINGS: EXTRUSION SEAMER PRE-HEAT (°C)	FIELD TEST RESULTS: PEEL (LBS)	FIELD TEST RESULTS: SHEAR (LBS)	PASS/FAIL; REMARKS
	1300	193	1653	750	6		122/121, 122/117, 125/120	148, 147, 151	Pass

REMARKS: Rain in Morning & later Afternoon

DATE: 11-9-00

GEOMEMBRANE RECORD SHEET 2 OF 2

REPORT PAGE ____ OF ____

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

PRODUCTION SEAMING RECORD

			WELDER I.D.		MACHINE SETTINGS			SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE:		SEAM LENGTH (FT.) EXTRUSION PREVIOUS CUMULATIVE:			NON-DESTRUCTIVE TESTING FUSION TEST PRESSURES (PSI)			TEST TIMES		EXTRUSION	DATE	
	SEAM NO./ PATCH NO.	START TIME	OPERATOR	MACHINE	TEMP. (°C)	FUSION SPEED (FT./MIN)	EXTRUSION PRE-HEAT (°C)	CURRENT SEAM	CUMUL. LENGTH	CURRENT SEAM	CUMUL. LENGTH	DESTRUCTIVE SAMPLE	START	STOP	DROP	START	STOP	VACUUM TEST PASS/FAIL	(IF OTHER THAN ORIGINAL)	REMARKS
A	95/96A	1350	193	1653	750	6		110					35	34	1	1353	1358		11-11-00	
B	95/96		193	1653	750	6		210					34	33	2	1355	1400		11-11-00	
C	95/96B		193	1653	750	6		10					33	33	0	1410	1415		11-11-00	
D																				
E																				
F																				
G																				
H																				
I																				
J																				
K																				
L																				
M																				
N																				
O																				
P																				
Q																				
R																				
S																				
T																				
U																				
V																				
W																				
X																				
Y																				
Z																				
AA																				
BB																				
CC																				
DD																				
EE																				
FF																				
GG																				

REMARKS:

GZA GEOENVIRONMENTAL OF NEW YORK

GEOMEM ILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

ATE: 11-12-02
GEOMEMBRANE RECORD SHEET 1 OF 3
REPORT PG ____ OF ____

WEATHER DATA			DEPLOYMENT RECORD								
TIME	AIR TEMP (°F)	WIND SPEED (MPH)	TIME	PANEL NO.	ROLL NO.	TIME	PANEL NO.	ROLL NO.	TIME	PANEL NO.	ROLL NO.
			0815	97	5808	1320	105	5828			
				98	5767		105A	5814			
				98A	5808		106	5828			
				99	5819	1405	107	5830			
			0910	99A	5767						
				100	5819						
				101	5765						
				102	5739						
				102A	5765						
				102B	5718						
			1018	102C	5712						
				103	5815						
				104A	5815						
			1120	104	5814						

TRIAL SEAMING RECORD

SAMPLE NO.	TIME	WELDER I.D.		MACHINE SETTINGS			FIELD TEST RESULTS		
		OPERATOR I.D.	MACHINE I.D.	TEMP. (°C)	FUSION SEAMER SPEED (FT./MIN.)	EXTRUSION SEAMER PRE-HEAT (°C)	PEEL (LBS)	SHEAR (LBS)	PASS/FAIL; REMARKS
	1315	193	1653	750	6		143/137 137/139 131/143	170, 164, 167	PASS
	1320	1416	16055	750	6		140/145, 155/190, 144/141	167, 170, 168	PASS
	1325	163	165	440	3		147/146 131/141, 139/137	180, 177, 181	PASS
	[illegible]	193	1653	750	6		147/143 150/148, 151/146	167, 169, 172	PASS
	0805	163	165	440	3		132/136 134/136, 136/129	166, 169, 165	PASS
	0825	1416	16055	750	6		142/138 137/139, 141/141	163, 166, 167	PASS

REMARKS: ______________________

GZA GEOENVIRONMENTAL OF NEW YORK

1677 ...
16055: 3625
165 : 800

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

DATE: 11-12-00
GEOMEMBRANE RECORD SHEET 2 OF 3
REPORT PAGE ____ OF ____

PRODUCTION SEAMING RECORD

	Seam No./Patch No.	Start Time	Welder I.D. Operator	Welder I.D. Machine	Machine Settings Temp. (°C)	Fusion Speed (ft./min)	Extrusion Pre-Heat (°C)	Seam Length (ft.) Fusion Previous Cumulative: Current Seam	Fusion Cumul. Length	Extrusion Previous Cumulative: Current Seam	Extrusion Cumul. Length	Destructive Sample	Non-Destructive Testing Fusion Test Pressures (PSI) Start	Stop	Drop	Test Times Start	Stop	Extrusion Vacuum Test Pass/Fail	Date (If other than original)	Remarks
A	96/97	0900	193	1653	750	6		200	4320				40	39	1	1339	1344	PASS	11-13-00	DS-54 30' S. of N. End
B	97/98A	0910	1416	16055				110	3735				41	39	2	1345	1350	PASS	11-13-00	
C	97/98		1416	16055				210	3945				40	37	1	1346	1351	PASS	11-13-00	
D	98A/99A	1015	193	1653				110	4430				40	39	1	1605	1610	PASS	11-13-00	
E	98/99A		193	1653				110	4540				38	38	0	1605	1610	PASS	11-13-00	DS-43 40' N. of S. End
F	98/99		193	1653				100	4640				40	39	1	1404	1409	PASS	11-13-00	
G	99A/100	1020	1416	16055				230	4175				40	39	1	1607	1617	PASS	11-13-00	DS-44 55' S of N. End
H	99/100		1416	16055				90	4265				40	39	1	1409	1414	PASS	11-13-00	
I	100/101	1110	193	1653				315	4955				42	41	1	1416	1421	PASS	11-13-00	
J	101/102A	1115	1416	16055				115	4390				40	39	1	1538	1543	PASS	11-13-00	
K	101/102B		1416	16055				135	4515				38	37	1	1526	1531	PASS	11-13-00	DS-45 ?' N of S. End
L	101/102C		1416	16055				30	4545	✕			38	37	1	1516	1521	PASS	11-13-00	
M	102A/103	1400	193	1653				120	5075				42	41	1	1533	1538	PASS	11-13-00	
N	102B/103		193	1653				135	5210				38	37	1	1525	1535	PASS	11-14	DS-46 25' S. of N. End
O	102C/103		193	1653				35	5245	✕			40	40	0	1515	1522	PASS	11-13-00	
P	103/104A	1345	1416	16055				115	4690				40	39	1	1117	1122	PASS	11-13-00	
Q	103/104		1416	16055				200	4890				40	39	1	[illegible]	[illegible]	PASS	11-13-00	
R	93/102A	0845	163	165	440	3		22	822				35	35	0	1615	1620	PASS	11-13-00	
S	99/99B		163	165				22	844				40	39	1	1606	1611	PASS	11-13-00	
T	102A/102B	1050	163	165				22	866				35	35	0	1536	1541	PASS	11-13-00	
U	102B/102C		163	165				22	888				40	40	0	1536	1542	PASS	11-13-00	
V	104/104A	1145	163	165				22	910				40	39	1	1115	1120	PASS	11-14-00	
W	105/105A	1345	163	165				22	932				40	38	2	1055	1100	PASS	11-14-00	
X	102/102C	1115	163	165				22	954				39	39	0	1517	1522	PASS	11-13-00	
Y	104A/105A	1450	193	1653				120	5395				40	39	1	1115	1120	PASS	11-14-00	
Z	104/105A	1450	193	1653				130	5525				40	38	2	1050	1100	PASS	11-14	
AA	104/105	1450	193	1653				80	5605				40	40	0	1620	1625	PASS	11-13-00	
BB	105A/106	1440	1416	16055				250	5140				39	38	1	1050	1055	PASS	11-14	DS-47 25' S of N. End
CC	105/106	1440	1416	16055				80	5220				40	39	1	1626	1631	PASS	11-13-00	
DD	106/107	1530	1416	16055				330	5550				42	41	1	1310	1315	PASS	11-14-00	DS-48 135' N. of S. End
EE													40	38	2	1517	1522	PASS	11-13-00	
FF	96A/97	0900	193	1653				110	4110				40	39	1	1558	1603	PASS	11-13-00	
GG	96B/97		193	1653				10	4120				38	38	0	1351	1356	PASS	11-13-00	

REMARKS: S 95/96A – 96 – 96B WAS NOT COUNTED IN CUMUL. LENGTH SO DS-54 WAS ADDED TO ACCOUNT FOR GAP.
* SEE PG 2 OF 3

GZA GEOENVIRONMENTAL OF NEW YORK

165: 932/1152

GEOMEM[illegible] [illegible]AILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

DATE: 11-12-00
GEOMEMBRANE RECORD SHEET 3 OF 3
REPORT PAGE ____ OF ____

PRODUCTION SEAMING RECORD

			WELDER I.D.		MACHINE SETTINGS			SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE:		EXTRUSION PREVIOUS CUMULATIVE:			NON-DESTRUCTIVE TESTING FUSION TEST PRESSURES (PSI)			TEST TIMES		EXTRUSION	DATE	
	SEAM NO./ PATCH NO.	START TIME	OPERATOR	MACHINE	TEMP. (°C)	FUSION SPEED (FT./MIN)	EXTRUSION PRE-HEAT (°C)	CURRENT SEAM	CUMUL. LENGTH	CURRENT SEAM	CUMUL. LENGTH	DESTRUCTIVE SAMPLE	START	STOP	DROP	START	STOP	VACUUM TEST PASS/FAIL	(IF OTHER THAN ORIGINAL)	REMARKS
A	106/29	1550	163	165	440	3		22	954				35	35	0	1625	1630	Pass	11-13-00	*
B	105/28		163	165	440	3		22	976				40	39	1	1620	1625	PASS	11-13-00	*
C	104/27		163	165	440	3		22	998				38	37	1	1440	1445	PASS	11-13-00	*
D	103/26		163	165	440	3		22	1020				40	40	0	1440	1445	PASS	11-13-00	DS-49 *
E	102/25		163	165	440	3		22	1042				40	39	1	1435	1440	PASS	11-13-00	*
F	101/24	1610	163	165	440	3		22	1064				37	37	0	1420	1425	PASS	11-13-00	*
G	100/23		163	165	440	3		22	1086				40	38	2	1415	1420	PASS	11-13-00	*
H	99/22		163	165	440	3		22	1108				40	40	0	1345	1350	PASS	11-13-00	*
I	98/21		163	165	440	3		22	1130				35	35	0	1340	1345	PASS	11-13-00	*
J	97/20	1630	163	165	440	3		22	1152				35	34	1	1331	[illegible]	PASS	11-13-00	*
K																				
L																				
M																				
N																				
O	101/102		146	16055	750	6		20	4575				40	39	1	1419	1424	PASS	11-13-00	*
P	102/103		193	1653	750	6		30	5275				40	38	2	1439	1445	Pass	11-13-00	*
Q																				
R																				
S																				
T																				
U																				
V																				
W																				
X																				
Y																				
Z																				
AA																				
BB																				
CC																				
DD																				
EE																				
FF																				
GG																				

REMARKS: *TIE-IN TO PREVIOUSLY DEPLOYED LINER @ TOP [illegible].

GZA GEOENVIRONMENTAL OF NEW YORK

DATE: 11-13-00
GEOMEMBRANE RECORD SHEET 1 OF 3
REPORT PG ____ OF ____

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

WEATHER DATA			DEPLOYMENT RECORD								
TIME	AIR TEMP (°F)	WIND SPEED (MPH)	TIME	PANEL NO.	ROLL NO.	TIME	PANEL NO.	ROLL NO.	TIME	PANEL NO.	ROLL NO.
0900	~45	3-5	0820	108	5833						
				108A	5830						
			0855	109	5832						
				109A	5833						
				109B	5828						
				110	5832						
				111	5818						
				111A	5832						
				112	5771						
				112A	5818						
			1050	113	5771						

TRIAL SEAMING RECORD

SAMPLE NO.	TIME	WELDER I.D. OPERATOR I.D.	WELDER I.D. MACHINE I.D.	MACHINE SETTINGS TEMP. (°C)	MACHINE SETTINGS ~~FUSION SEAMER~~ SPEED (FT./MIN.)	EXTRUSION ~~SEAMER~~ PRE-HEAT (°C)	FIELD TEST RESULTS PEEL (LBS)	FIELD TEST RESULTS SHEAR (LBS)	PASS/FAIL; REMARKS
	0745	163	165	440	3		141/146 151/142 148/142	155,160,165	Pass
	0810	193	1653	750	6		150/153 154/163 163/155	165,168,170	PASS
	0815	1416	16055	750	6		140/151 148/151 152/155	164,168,167	PASS
	1339	1416	0238	270	6		140, 141, 138	147,151,133	PASS

REMARKS: ____

GZA GEOENVIRONMENTAL OF NEW YORK

1653 : 5605
16055 : 5550
165 : 954

GEOMEMBRA[...]Y RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

11·13·00
GEOMEMBRANE RECORD SHEET 2 OF 3
REPORT PAGE ___ OF ___

PRODUCTION SEAMING RECORD

			WELDER I.D.		MACHINE SETTINGS			SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE:		EXTRUSION PREVIOUS CUMULATIVE:			NON-DESTRUCTIVE TESTING FUSION TEST PRESSURES (PSI)			TEST TIMES		EXTRUSION	DATE	
	SEAM NO./ PATCH NO.	START TIME	OPERATOR	MACHINE	TEMP. (°C)	FUSION SPEED (FT./MIN)	EXTRUSION PRE-HEAT (°C)	CURRENT SEAM	CUMUL. LENGTH	CURRENT SEAM	CUMUL. LENGTH	DESTRUCTIVE SAMPLE	START	STOP	DROP	START	STOP	VACUUM TEST PASS/FAIL	(IF OTHER THAN ORIGINAL)	REMARKS
A	107/108A	0910	193	1653	750	6		120	5725				40	39	1	1130	1135		11-14	
B	107/108		193	1653	750	6		210	5935				40	39	1	1650	1655		11-14-00	DS-50 110' N. OF S. END
C	108A/109A	0920	1416	16055	750	6		120	5670				40	40	0	1132	1137		11-14-00	
D	108/109A		1416	16055	750	6		135	5805				37	37	0	0935	0940		11-14-00	
E	108/109B		1416	16055	750	6		40	5845				40	39	1	0915	0920		11-14-00	
F	108/109		1416	16055	750	6		30	5875				40	39	1	1325	1330		11-14-00	
G	109A/110	1020	193	1653	750	6		260	6195				40	38	2	0931	0936			
H	109B/110		193	1653	750	6		40	6235				39	39	0	0910	0915			
I	109/110		193	1653	750	6		30	6265				40	38	2	0900	0905		11-14-00	
J	110/111A	1010	1416	16055	750	6		100	5975				40	39	1	1145	1150			DS-51 60' S OF N. END
K	110/111		1416	16055	750	6		225	6200				38	38	0	0955	1000			
L	111A/112A	1105	193	1653	750	6		100	6365				40	40	0	1335	1340			DS-55 75' S OF W. END
M	111/112A		193	1653	750	6		145	6510				40	39	1	1030	1035			
N	111/112		193	1653	750	6		80	6590				39	38	1	0920	0930			
O	112A/113	1115	1416	16055	750	6		240	6440				40	38	2	1025	1030			DS-52 25' N. OF S. END
P	112/113		1416	16055	750	6		80	6520				40	39	1	1000	1005			
Q																				
R	108/108A	0850	163	165	440	3		22	976				40	39	1	1131	1136			
S	109A/109B	0930	163	165	440	3		22	998				40	39	1	0920	0925			
T	109B/109	0940	163	165	440	3		22	1020				35	35	0	1005	1010			DS-56 (W. END) S(109/109B) 109
U	111/111A	1025	163	165	440	3		22	1042				40	40	0	1135	1140			
V	112/112A	1050	163	165	440	3		22	1064				40	38	2	1035	1040			
W																				
X																				
Y	113/36	1145	163	165	440	3		22	1086				39	39	0	1000	1005		11-14-00	
Z	112/35		163	165	440	3		22	1108				40	38	2	0955	1000		11-14-00	
AA	111/34		163	165	440	3		22	1130				35	35	0	0956	1001		11-14-00	
BB	110/33	1155	163	165	440	3		22	1152				36	35	1	1652	1657		11-14-00	
CC	109/32		163	165	440	3		22	1174				39	39	0	1650	1655		11-14-00	
DD	108/31		163	165	440	3		22	1196				38	37	1	1650	1655		11-14-00	
EE	107/30	1210	163	165	440	3		22	1218				40	39	1	1644	1649		11-14-00	
FF																				
GG																				

REMARKS:

GZA GEOENVIRONMENTAL OF NEW YORK

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

DATE 11-13-00
GEOMEMBRANE RECORD SHEET 3 OF 3
REPORT PAGE ____ OF ____

PRODUCTION SEAMING RECORD

	SEAM NO./ PATCH NO.	START TIME	WELDER I.D. OPERATOR	WELDER I.D. MACHINE	MACHINE SETTINGS TEMP. (°C)	MACHINE SETTINGS FUSION SPEED (FT./MIN)	MACHINE SETTINGS EXTRUSION PRE-HEAT (°C)	SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE: CURRENT SEAM	FUSION CUMUL. LENGTH	EXTRUSION PREVIOUS CUMULATIVE: CURRENT SEAM	EXTRUSION CUMUL. LENGTH	DESTRUCTIVE SAMPLE	NON-DESTRUCTIVE TESTING FUSION TEST PRESSURES (PSI) START	STOP	DROP	TEST TIMES START	STOP	EXTRUSION VACUUM TEST PASS/FAIL	DATE (IF OTHER THAN ORIGINAL)	REMARKS
A	11Y		1416	0238	250	7												PASS	11-14-00	(6x6) WET WELL #1
B	11Z	1420	1416	0238	250	7												PASS	11-14-00	(4x2) S-89/90/12/13
C	12A		1416	0238	250	7												PASS	11-14-00	(3x2) S-90/91/13/14
D	12B		1416	0238	250	7												PASS	11-14-00	(3x2) S-91/92/14/15
E	12C		1416	0238	250	7												PASS	11-14-00	(5x2) S 92/93/15/16
F	12D		1416	0238	250	7												PASS	11-14-00	(6x2) S92/93/P12C
G	12E		1416	0238	250	7												PASS	11-14-00	(5x4) GV-8
H	12F	1525	1416	0238	250	7												PASS	11-14-00	(3x2) S93/94/16/17
I	12G		1416	0238	250	7												PASS	11-14-00	(2x2) S92/92B/91
J	12H		1416	0238	250	7												PASS	11-14-00	(3x2) S92A/92B/91
K	12J		1416	0238	250	7												PASS	11-14-00	(2x2) S92A/92B/93
L	12K	1610	1416	0238	250	7												PASS	11-14-00	(2x2) S91/91A/92
M	12L		1416	0238	250	7												PASS	11-14-00	(2x2) S91/91A/90
N	12M		1416	0238	250	7												PASS	11-14-00	(4x2) S89/89A/90
O	12N		1416	0238	250	7												PASS	11-14-00	(3x2) 5'N OF 12M S89A/90
P	12P		1416	0238	250	7												PASS	11-14-00	(4x2) 50' N OF S END S89/90
Q	12Q		1416	0238	250	7												PASS	11-14-00	(6x4) GV-2
R	12R		1416	0238	250	7												PASS	11-14-00	(5x2) DS-39 S90/91A
S	12S		1416	0238	250	7												PASS	11-14-00	(5x2) DS-40 S91A/92
T																				
U																				
V																				
W																				
X																				
Y																				
Z																				
AA																				
BB																				
CC																				
DD																				
EE																				
FF																				
GG																				

REMARKS:

GZA GEOENVIRONMENTAL OF NEW YORK

DATE: 11-14-00
GEOMEMBRANE RECORD SHEET 1 OF 2
REPORT PG 4 OF 7

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

WEATHER DATA			DEPLOYMENT RECORD								
TIME	AIR TEMP (°F)	WIND SPEED (MPH)	TIME	PANEL NO.	ROLL NO.	TIME	PANEL NO.	ROLL NO.	TIME	PANEL NO.	ROLL NO.
0900	38	5-6									

TRIAL SEAMING RECORD

SAMPLE NO.	TIME	WELDER I.D. OPERATOR I.D.	MACHINE I.D.	MACHINE SETTINGS TEMP. (°C)	FUSION SEAMER SPEED (FT./MIN.)	EXTRUSION SEAMER PRE-HEAT (°C)	FIELD TEST RESULTS PEEL (LBS)	SHEAR (LBS)	PASS/FAIL; REMARKS
5-1	1330	1416	0238	240			131, 147, 154	167, 165, 160	Pass
5-2	1340	193	0210	240			130, 121, 129	167, 169, 170	PASS

REMARKS:

DATE: 11-14-00

GEOMEMBRANE RECORD SHEET 2 OF 2

REPORT PAGE 5 OF 7

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

PRODUCTION SEAMING RECORD

	SEAM NO./ PATCH NO.	START TIME	WELDER I.D. OPERATOR	WELDER I.D. MACHINE	MACHINE SETTINGS TEMP. (°C)	MACHINE SETTINGS FUSION SPEED (FT./MIN)	MACHINE SETTINGS EXTRUSION PRE-HEAT (°C)		SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE: CURRENT SEAM	SEAM LENGTH (FT.) FUSION CUMUL. LENGTH	SEAM LENGTH (FT.) EXTRUSION PREVIOUS CUMULATIVE: CURRENT SEAM	SEAM LENGTH (FT.) EXTRUSION CUMUL. LENGTH	DESTRUCTIVE SAMPLE		NON-DESTRUCTIVE TESTING FUSION TEST PRESSURES (PSI) START	FUSION TEST PRESSURES (PSI) STOP	FUSION TEST PRESSURES (PSI) DROP	FUSION TEST TIMES START	FUSION TEST TIMES STOP	EXTRUSION VACUUM TEST PASS/FAIL	DATE (IF OTHER THAN ORIGINAL)		REMARKS
A	12T		1416	0238	250			A						A						PASS		A	(5x2) 512/113/35/36
B	12U		1416	0238	250			B						B						PASS		B	(4x2) S11/112/34/35
C	12V		1416	0238	250			C						C						PASS		C	(4x2) S111/110/33/34
D	12W		1416	0238	250			D						D						PASS		D	(4x2) S110/109/32/33
E	12X		1416	0238	250			E						E						PASS		E	(3x2) S109/108/31/32
F	12Y		1416	0238	250			F						F						PASS		F	(4x2) S108/107/30/31
G	12Z		1416	0238	250			G						G						PASS		G	(5x2) S107/106/29/30
H	13A		1416	0238	250			H						H						PASS		H	(4x2) S106/105/28/29
I	13B		1416	0238	250			I						I						PASS		I	(4x2) S105/104/27/28
J	13C		1416	0238	250			J						J						PASS		J	(4x2) S104/103/26/27
K	13D		1416	0238	250			K						K						PASS		K	(10x2) DS-49 [illegible] *
L	13E		193	0210	250			L						L						PASS		L	(7x2) S-94/95/[illegible]
M	13F		193	0210	250			M						M						PASS		M	(4x2) [illegible]/96B/18/19
N	13G		193	0210	250			N						N						PASS		N	(2x2) 596/96B/95
O								O						O								O	
P								P						P								P	
Q								Q						Q								Q	
R								R						R								R	
S								S						S								S	
T								T						T								T	
U								U						U								U	
V								V						V								V	
W								W						W								W	
X								X						X								X	
Y								Y						Y								Y	
Z								Z						Z								Z	
AA								AA						AA								AA	
BB								BB						BB								BB	
CC								CC						CC								CC	
DD								DD						DD								DD	
EE								EE						EE								EE	
FF								FF						FF								FF	
GG								GG						GG								GG	

REMARKS:

Report No: 00-129 11-14-00

DATE 7-00

GEOMEMBRANE RECORD SHEET 2 OF 3

REPORT PAGE ~~8~~ OF ~~X~~ 6 of 7

GEOMEMBRANE D[illegible] [illegible]CORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

PRODUCTION SEAMING RECORD

	SEAM NO./ PATCH NO.	START TIME	WELDER I.D. OPERATOR	WELDER I.D. MACHINE	MACHINE SETTINGS TEMP. (°C)	MACHINE SETTINGS FUSION SPEED (FT./MIN)	MACHINE SETTINGS EXTRUSION PRE-HEAT (°C)	SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE CURRENT SEAM	SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE CUMUL. LENGTH	SEAM LENGTH (FT.) EXTRUSION PREVIOUS CUMULATIVE CURRENT SEAM	SEAM LENGTH (FT.) EXTRUSION PREVIOUS CUMULATIVE CUMUL. LENGTH	DESTRUCTIVE SAMPLE	NON-DESTRUCTIVE TESTING FUSION TEST PRESSURES (PSI) START	STOP	DROP	TEST TIMES START	STOP	EXTRUSION VACUUM TEST PASS/FAIL	DATE (IF OTHER THAN ORIGINAL)	REMARKS
A	9W	0820	1416	0238	250	7												PASS		(17x3) N. END P-73
B	9X	0840	1416	0238	250	7												PASS		(3x2) 60'S OF N END S-70/72
C	9Y	0855	1416	0238	250	7												PASS		(3x2) S-70/70A/72
D	9Z	0910	1416	0238	250	7												PASS		(3x2) S-70/70A/71
E	10A	0920	1416	0238	250	7												PASS		(5x2) DS-22 10' N. OF S END — S 70/72
F	10B	0930	1416	0238	250	7												PASS		(3x2) 130' S. OF N END S81/82
G	10C		1416	0238	250	7												PASS		(3x2) 45' S OF N END S81/82
H	10D		1416	0238	250	7												PASS		(1x1) N. END P-70
I	10E	1000	1416	0238	250	7												PASS		(1x1) N. END P-71
J	10F		1416	0238	250	7												PASS		(1x1) N END S81/71
K	10G		1416	0238	250	7												PASS		(2x1) N END S81/82
L	10H	1030	1416	0238	250	7												PASS		(2x1) N END S82/83
M	10J		1416	0238	250	7												PASS		(1x1) N END S 83/84
N	10K		1416	0238	250	7												PASS		(1x1) N END S84/86
O	10L		1416	0238	250	7												PASS		(2x1) N END S85/86
P	10M	1100	1416	0238	250	7												PASS		(1x1) N END S86/87A
Q	10N		1416	0238	250	7												PASS		(4x4) 10'S OF N END - P.87A — CLEANOUT RISER
R	10P	1115	1416	0238	250	7												PASS		(2x1) N. END P-86 (MID)
S	10Q	1120	1416	0238	250	7												PASS		(2x1) N. END P-86 (MID)
T	10R	1130	1416	0238	250	7												PASS		(2x) N. END S87A/88
U	10S	1145	1416	0238	250	7												PASS		(5x2) 150' S. OF N. END S88/89
V	10T	1155	1416	0238	250	7												PASS		(5x2) DS-36 160' S. OF N END S87/86
W	10U	1310	1416	0238	250	7												PASS		(5x2) 95' S. OF N. END S85/84
X	10V	1325	1416	0238	250	7												PASS		(3x2) S89/89A/88
Y	10W	1340	1416	0238	250	7												PASS		(3x2) S87/87A/88
Z	10X	1350	1416	0238	250	7												PASS	10-14-00	(4x2) S87/87A/86
AA	10Y		1416	0238	250	7												PASS	10-14-00	(3x2) S85/85A/86
BB	10Z		1416	0238	250	7												PASS	10-14-00	(3x2) S85/85A/84
CC	11A	1400	1416	0238	250	7												PASS	10-14-00	(3x2) S83/83A/84
DD	11B		1416	0238	250	7												PASS	10-14-00	(3x2) S83/83A/82
EE	11C		1416	0238	250	7												PASS	10-14-00	(5x2) DS-35 55' N OF S S83/84
FF	11D		1416	0238	250	7												PASS	10-14-00	(4x2) 55' S OF N END S86/87A
GG	11E	1510	1416	0238	250	7												PASS	10-14-00	(3x2) 65' S. OF N END S89A/88

REMARKS:

GZA GEOENVIRONMENTAL OF NEW YORK

0233: 89

DATE: 11-7-00

GEOMEMBRANE RECORD SHEET 3 OF 3

REPORT PAGE ~~X~~ OF ~~X~~ 7 of 7

Report No: 00-129 11-14-00

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

PRODUCTION SEAMING RECORD

	SEAM NO./ PATCH NO.	START TIME	WELDER I.D. OPERATOR	WELDER I.D. MACHINE	MACHINE SETTINGS TEMP. (°C)	MACHINE SETTINGS FUSION SPEED (FT./MIN)	MACHINE SETTINGS EXTRUSION PRE-HEAT (°C)	SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE: CURRENT SEAM	FUSION CUMUL. LENGTH	EXTRUSION PREVIOUS CUMULATIVE: CURRENT SEAM	EXTRUSION CUMUL. LENGTH	DESTRUCTIVE SAMPLE	NON-DESTRUCTIVE TESTING FUSION TEST PRESSURES (PSI) START	STOP	DROP	TEST TIMES START	STOP	EXTRUSION VACUUM TEST PASS/FAIL	DATE (IF OTHER THAN ORIGINAL)	REMARKS
A	11F	1520	1416	0238	250	7												PASS	11-14-00	(5x2) DS-37 25 N of S S 38/39
B	11G	1530	1416	0238	250	7												PASS	11-14-00	(3x2) S END S38/39
C	11H		1416	0238	250	7												PASS	11-14-00	(3x2) S END P38 (MID)
D	11J		1416	0238	250	7												PASS	11-14-00	(3x2) S END S37/38
E	11K		1416	0238	250	7												PASS	11-14-00	(3x2) S END S36/37
F	11L		1416	0238	250	7												PASS	11-14-00	(5x4) GV-7
G	11M	1600	1416	0238	250	7												PASS	11-14-00	(11x2) DS-38 S END S35/36
H	11N		1416	0238	250	7												PASS	11-14-00	(4x2) S END S34/35
I	11P		1416	0238	250	7												PASS	11-14-00	(4x2) S END S33/34
J	11Q		1416	0238	250	7												PASS	11-14-00	(3x2) S END S32/33
K	11R		1416	0238	250	7												PASS	11-14-00	(10x2) S END S31/32
L	11S	1630	1416	0238	250	7												PASS	11-14-00	(5x2) 20' N OF S END S31/32
M	11T	1640	1416	0238	250	7												PASS	11-14-00	(5x4) GV-6
N	11U		1416	0238	250	7												PASS	11-14-00	(2x2) S END S71/31
O	11V		1416	0238	250	7												PASS	11-14-00	(2x2) S END S[illegible]/71
P	11W		1416	0238	250	7												PASS	11-14-00	(2x2) S END S58/1/2A
Q	11X	1700	1416	0238	250	7												PASS	11-14-00	(4x2) S57/58/1
R																				
S																				
T																				
U	33/33A		1416	0238						22	111							PASS	11-14-00	
V	35/35A		1416	0238						22	133							PASS	11-14-00	
W	37/37A		1416	0238						22	155							PASS	11-14-00	
X	39/39A		1416	0238						22	177							PASS	11-14-00	
Y																				
Z																				
AA																				
BB																				
CC																				
DD																				
EE																				
FF																				
GG																				

REMARKS:

GZA GEOENVIRONMENTAL OF NEW YORK

DATE: 11-15-00
GEOMEMBRANE RECORD SHEET 1 OF 3
REPORT PG ____ OF ____

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

WEATHER DATA			DEPLOYMENT RECORD								
TIME	AIR TEMP (°F)	WIND SPEED (MPH)	TIME	PANEL NO.	ROLL NO.	TIME	PANEL NO.	ROLL NO.	TIME	PANEL NO.	ROLL NO.
1000	35	7~9									

TRIAL SEAMING RECORD									
		WELDER I.D.		MACHINE SETTINGS			FIELD TEST RESULTS		
					FUSION SEAMER	EXTRUSION SEAMER			
SAMPLE NO.	TIME	OPERATOR I.D.	MACHINE I.D.	TEMP. (°C)	SPEED (FT./MIN.)	PRE-HEAT (°C)	PEEL (LBS)	SHEAR (LBS)	PASS/FAIL; REMARKS
S-1	1250	193	0210	250			124, 135, 145	156, 151, 155	Pass
S-2	1315	1416	0238	250			133, 135, 146	146, 160, 155	PASS

REMARKS: ______

GZA GEOENVIRONMENTAL OF NEW YORK

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

DATE 11-15-00
GEOMEMBRANE RECORD SHEET 2 OF 3
REPORT PAGE ____ OF ____

PRODUCTION SEAMING RECORD

	SEAM NO./ PATCH NO.	START TIME	WELDER I.D. OPERATOR	WELDER I.D. MACHINE	MACHINE SETTINGS TEMP. (°C)	FUSION SPEED (FT./MIN)	EXTRUSION PRE-HEAT (°C)	SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE: CURRENT SEAM	CUMUL. LENGTH	EXTRUSION PREVIOUS CUMULATIVE: CURRENT SEAM	CUMUL. LENGTH	DESTRUCTIVE SAMPLE	NON-DESTRUCTIVE TESTING FUSION TEST PRESSURES (PSI) START	STOP	DROP	TEST TIMES START	STOP	EXTRUSION VACUUM TEST PASS/FAIL	DATE (IF OTHER THAN ORIGINAL)	REMARKS	
A																					
B	13H		1416	0238	250															(4x2) 97/98/20/21 DS-53	*
C	13J		1416	0238	250															(4x2) 98/99/21/22	
D	13K		1416	0238	250															(4x2) 99/100/22/23	
E	13L		1416	0238	250															(4x2) 100/101/23/24	
F	13M		1416	0238	250															(4x2) 101/102/24/25	
G	13N		1416	0238	250															(2x2) 3' N. OF 13M	
H	13P		1416	0238	250															(2x2) 3' N. OF 13O	
I	13Q		1416	0238	250															(2x2) 96B/96/97	
J	13R		1416	0238	250															(2x1) 102A/102B/101	
K	13S		1416	0238	250															(3x2) 598/98A/99	
L	13T		1416	0238	250															(4x2) 598/98A/97	
M	13U		1416	0238	250															(4x2) 96B/97/19/20	
N	13V		1416	0238	250															(2x2) 96/96A/97	
O	13W		1416	0238	250															(3x2) 96/96A/95	
P	13X		1416	0238	250															(3x2) 94/94A/95	
Q	13Y		1416	0238	250															(3x2) 94/94A/93	
R	13Z		1416	0238	250															(1x1) 96A/97 N. END	
S	14A		1416	0238	250															(1x1) 97/98-A N. END	
T	14B		1416	0238	250															(2x1) 98A/99 N. END	
U	14C		1416	0238	250															(5x2) DS-54	*
V	14D		1416	0238	250															(5x2) DS-43	*
W	14E		1416	0238	250															(3x2) 599/99A/100	
X	14F		193	0210	250															(3x2) 598/99/99A	
Y	14G		1416	0238	250															(5x4) GV-9	
Z	14H		193	0210	250															(4x2) 598/99 W. OF GV-9	
AA	14J		1416	0238	250															(2x2) 102/102C/103	
BB	14K		1416	0210	250															(3x2) 102/102C/101	
CC	14L		193	0210	250															(2x2) 102B/102C/103	
DD	14M		193	0210	250															(2x2) 102B/102C/101	
EE	14N		193	0210	250															(5x2) DS-45	*
FF	14P		193	0210	250															(5x2) DS-46	*
GG																					

REMARKS:

GZA GEOENVIRONMENTAL OF NEW YORK

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

DATE 11-15-00
GEOMEMBRANE RECORD SHEET 3 OF 3
REPORT PAGE ____ OF ____

PRODUCTION SEAMING RECORD

	SEAM NO./ PATCH NO.	START TIME	WELDER I.D. OPERATOR	WELDER I.D. MACHINE	MACHINE SETTINGS TEMP. (°C)	MACHINE SETTINGS FUSION SPEED (FT./MIN)	MACHINE SETTINGS EXTRUSION PRE-HEAT (°C)		SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE: CURRENT SEAM	FUSION CUMUL. LENGTH	EXTRUSION PREVIOUS CUMULATIVE: CURRENT SEAM	EXTRUSION CUMUL. LENGTH	DESTRUCTIVE SAMPLE		NON-DESTRUCTIVE TESTING FUSION TEST PRESSURES (PSI) START	STOP	DROP	TEST TIMES START	STOP	EXTRUSION VACUUM TEST PASS/FAIL	DATE (IF OTHER THAN ORIGINAL)		REMARKS
A	14Q		193	0210	250			A						A						PASS		A	(3x2) S.102B/102A/103
B	14R		193	0210	250			B						B						PASS		B	(3x2) S.104/104A/103
C	14S		193	0210	250			C						C						PASS	11-16-00	C	(1x1) 99A/100 N. END
D	14T		193	0210	250			D						D						PASS	11-16-00	D	(1x1) 100/101 N. END
E	14U		193	0210	250			E						E						PASS		E	(1x1) 101/102A N. END
F	14V		193	0210	250			F						F						PASS	11-16-00	F	(1x1) 102A/103 N. END
G	14W		193	0210	250			G						G						PASS		G	(1x1) 103/104A N. END
H	14X		193	0210	250			H						H						PASS	11-16-00	H	(1x1) 104A/105A N. END
I	14Y		416	0239	250			I						I						PASS	11-16-00	I	(1x1) 105A/106 N. END
J	14Z		193	0210	250			J						J						PASS	11-16-00	J	DS-44
K	15A		193	0210	250			K						K						PASS	11-16-00	K	(5x2) S100/101 50'S. OF N END
L	15B		193	0210	250			L						L						PASS	11-16-00	L	(3x2) 8' SE OF 14S
M	15C		193	0210	250			M						M						PASS	11-16-00	M	DS-47
N	15D		193	0210	250			N						N						PASS	11-16-00	N	(2x2) 104/104A/105
O	15E		193	0210	250			O						O						PASS	11-16-00	O	(2x1) 3'S OF S104/104A MID
P	15F		193	0210	250			P						P						PASS	11-16-00	P	(1x1) 10' S. OF S104/104A MID
Q	15G		193	0210	250			Q						Q						PASS	11-16-00	Q	(1x1) 18'S. OF S104/104A MID
R	15H		192	0210	250			R						R						PASS	11-16-00	R	(5x4) GV-3
S	15J		193	0210	250			S						S						PASS	11-16-00	S	(1x1) S94/95 N END
T	15K		193	0210	250			T						T						PASS	11-16-00	T	(2x1) S93/94 N END
U	15L		193	0210	250			U						U						PASS	11-16-00	U	(4x2) S90/91 (MID)
V	15M		193	0210	250			V						V						PASS	11-16-00	V	(5x2) DS-42
W								W						W								W	
X								X						X								X	
Y								Y						Y								Y	
Z								Z						Z								Z	
AA								AA						AA								AA	
BB								BB						BB								BB	
CC								CC						CC								CC	
DD								DD						DD								DD	
EE								EE						EE								EE	
FF								FF						FF								FF	
GG								GG						GG								GG	

REMARKS: ____________________

GZA GEOENVIRONMENTAL OF NEW YORK

DATE: 11-16-00
GEOMEMBRANE RECORD SHEET 1 OF 2
REPORT PG ____ OF ____

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

WEATHER DATA			DEPLOYMENT RECORD								
TIME	AIR TEMP (°F)	WIND SPEED (MPH)	TIME	PANEL NO.	ROLL NO.	TIME	PANEL NO.	ROLL NO.	TIME	PANEL NO.	ROLL NO.
0900	38	6-8									

TRIAL SEAMING RECORD										
		WELDER I.D.		MACHINE SETTINGS			FIELD TEST RESULTS			
					FUSION SEAMER	EXTRUSION SEAMER				
SAMPLE NO.	TIME	OPERATOR I.D.	MACHINE I.D.	TEMP. (°C)	SPEED (FT./MIN.)	PRE-HEAT (°C)	PEEL (LBS)	SHEAR (LBS)	PASS/FAIL; REMARKS	
~~S-1~~	~~0755~~	~~193~~	~~0340~~	~~240~~	~~6~~		~~156, 146, 149~~	~~153, 156, 160~~	~~PASS~~	
S-2	1330	193	0210	240	6		120, 128, 133	163, 160, 163	PASS	

REMARKS: ____________________

GZA GEOENVIRONMENTAL OF NEW YORK

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

DATE: 11-16-00
GEOMEMBRANE RECORD SHEET 2 OF 2
REPORT PAGE ____ OF ____

PRODUCTION SEAMING RECORD

	SEAM NO./ PATCH NO.	START TIME	WELDER I.D. OPERATOR	WELDER I.D. MACHINE	MACHINE SETTINGS TEMP. (°C)	MACHINE SETTINGS FUSION SPEED (FT./MIN)	MACHINE SETTINGS EXTRUSION PRE-HEAT (°C)		SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE: CURRENT SEAM	FUSION CUMUL. LENGTH	EXTRUSION PREVIOUS CUMULATIVE: CURRENT SEAM	EXTRUSION CUMUL. LENGTH	DESTRUCTIVE SAMPLE		NON-DESTRUCTIVE TESTING FUSION TEST PRESSURES (PSI) START	STOP	DROP	TEST TIMES START	STOP	EXTRUSION VACUUM TEST PASS/FAIL	DATE (IF OTHER THAN ORIGINAL)		REMARKS	
A	15N	0920	193	0210	250			A						A						PASS		A	(2x1) S105/105A/106	
B	15P		193	0210	250			B						B						PASS		B	(2x2) S105/105A/104	
C	15Q		193	0210	250			C						C						PASS		C	(1x1) S105/105A (MID)	
D	15R		193	0210	250			D						D						PASS		D	(5x4) GV-10	
E	15S		193	0210	250			E						E						PASS		E	(1x1) 109A/109B/108	
F	15T		193	0210	250			F						F						PASS		F	(2x1) 109A/109B/110	
G	15U		193	0210	250			G						G						PASS		G	(6x2) DS-56 S109/109B/108	*
H	15V		193	0210	250			H						H						PASS		H	(3x1) S109/109B/110	
I	15W		193	0210	250			I						I						PASS		I	(4x4) GV-11	
J	15X		193	0210	250			J						J						PASS		J	(3x2) S112/112A/111	
K	15Y		193	0210	250			K						K						PASS		K	(3x2) S112/112A/113	
L	15Z		193	0210	250			L						L						PASS		L	(5x2) DS-52 25' N of 15Y	*
M	16A	1315	193	0210	250			M						M						PASS		M	(2x2) S108/109 15'S of N END	
N	16B		193	0210	250			N						N						PASS		N	(2x2) S108/108A/109	
O	16C		193	0210	250			O						O						PASS		O	(2x1) S108/108A/107	
P	16D		193	0210	250			P						P						PASS		P	(5x2) DS-50 S107/108A	*
Q	16E		193	0210	250			Q						Q						PASS		Q	(5x2) S106,107 65' S of N. END	
R	16F		193	0210	250			R						R						PASS		R	(3x1) S108A/108 85'S of N. END	
S	16G	1350	193	0210	250			S						S						PASS		S	(2x1) S111/111A/110	
T	16H		193	0210	250			T						T						PASS		T	(3x1) 15' S of 16G	
U	16J		193	0210	250			U						U						PASS		U	(1x1) 10' S of S111/111A (MID)	
V	16K		193	0210	250			V						V						PASS		V	(1x1) 2' S of S111/111A (MID)	
W	16L		193	0210	250			W						W						PASS		W	(3x1) S111/111A/112	
X	16M		193	0210	250			X						X						PASS		X	(4x2) S111A/112 95'S of N END	
Y	16N		193	0210	250			Y						Y						PASS		Y	(5x2) DS-55 S111A/112	*
Z	16P		193	0210	250			Z						Z						PASS		Z	(1x1) 4' S of 16G	
AA	16Q		193	0210	250			AA						AA						PASS		AA	(5x2) DS-51 110/111A	*
BB	16R		193	0210	250			BB						BB						PASS		BB	(1x1) S110/111A N. END	
CC	16S		193	0210	250			CC						CC						PASS		CC	(1x1) S111A/112A N. END	
DD	16T		193	0210	250			DD						DD						PASS		DD	(1x1) S112A/113 N. END	
EE	16U		193	0210	250			EE						EE						PASS		EE	(5x2) DS-48	
FF	16V		193	0210	250			FF						FF						PASS		FF	(7x7) MH-1	
GG								GG						GG								GG		

REMARKS:

GZA GEOENVIRONMENTAL OF NEW YORK

DATE 11-18-00
GEOMEMBRANE RECORD SHEET 1 OF 2
REPORT PG ____ OF ____

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

WEATHER DATA			DEPLOYMENT RECORD								
TIME	AIR TEMP (°F)	WIND SPEED (MPH)	TIME	PANEL NO.	ROLL NO.	TIME	PANEL NO.	ROLL NO.	TIME	PANEL NO.	ROLL NO.
1000	32	7-10	1340	114	5776						
				115	5709						
				115A	5776						
				116	5709						
				116A	5742						
				117	5790						
			1540	118	5791						
				118A	5790						
				119	5791						
				119A	5790						

SEAM SEAMING RECORD

SAMPLE NO.	TIME	WELDER I.D. OPERATOR I.D.	MACHINE I.D.	MACHINE SETTINGS TEMP. (°C)	FUSION SEAMER SPEED (FT./MIN.)	EXTRUSION SEAMER PRE-HEAT (°C)	FIELD TEST RESULTS PEEL (LBS)	SHEAR (LBS)	PASS/FAIL; REMARKS
	1345	193	1653	750	6		154/137 148/167 147/154	181,177,179	PASS
	1350	1710	1603	750	6		137/[illegible] 133/141 143/144	170,170,177	PASS
	1350	163	165	440	3		146/148 133/135 137/136	170,169,171	PASS

REMARKS:

GZA GEOENVIRONMENTAL OF NEW YORK

1653: 240'
16655: 100'
165: 1218'

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

DATE: 11-18-00
GEOMEMBRANE RECORD SHEET 2 OF 2
REPORT PAGE ____ OF ____

PRODUCTION SEAMING RECORD

	Seam No./Patch No.	Start Time	Welder I.D. Operator	Welder I.D. Machine	Machine Settings Temp. (°C)	Fusion Speed (Ft./Min)	Extrusion Pre-Heat (°C)	Fusion Previous Cumulative: Current Seam	Fusion Cumul. Length	Extrusion Previous Cumulative: Current Seam	Extrusion Cumul. Length	Destructive Sample	Test Pressures (PSI) Start	Stop	Drop	Test Times Start	Stop	Extrusion Vacuum Test Pass/Fail	Date (If Other Than Original)	Remarks
A	113/114	1410	193	1653	750	6		320	560				40	39	1	1530	1535			DS-57' 60' S. OF N. END
B	114/115	1425	1416	16055	750	6		170	270				40	39	1	1535	1540			
C	114/115A				750	6		150	420				38	37	1	1550	1556			
D	115/116	1510	193	1653	750	6		170	730				40	40	0	1540	1545			
E	115A/116				750	6		140	870				39	39	0	1505	1510			
F	115/116A				750	6		10	880				40	39	1	1535	1540			
G	116/117	1510	1416	16055	750	6		310	730				38	38	0	1630	1635			DS-58 80' N. OF S END
H	116A/117				750	6		10	740				40	39	1	0832	0837		11-20-00	
I	117/118	1550	193	1653	750	6		180	1060				40	39	1	0850	0855		11-20-00	DS-59 60' S. OF N. END
J	117/118A				750	6		135	1095				38	37	1	0905	0910		11-27-00	
K	118/119	1600	1416	16055	750	6		180	920				40	39	1	0855	0900		11-20-00	
L	118A/119				750	6		135	1055				38	38	0	0906	0911		11-20-00	DS-60 55' S. OF N. END
M																				
N	114/37A	1550	163	165	440	3		22	1328				40	39	1	0830	0835		11-20-00	
O	115/38		163	165	440	3		22	1340				40	39	1	0845	0850		11-20-00	
P	116/39A		163	165	440	3		22	1362				40	40	0	0835	0840		11-20-00	
Q	117/40		163	165	440	3		22	1384				38	37	1	0830	0840		11-20-00	
R	118/41		163	165	440	3		22	1406				40	40	0	0845	0850		11-20-00	
S	119/42		163	165	440	3		22	1428				39	39	0	0850	0855		11-20-00	
T																				
U																				
V																				
W																				
X	115/115A	1430	163	165	440	3		22	1240				40	40	0	1510	1515			
Y	116/116A	1500	163	165	440	3		22	1262				38	38	0	1543	1548			
Z	118/118A	1520	163	165	440	3		22	1284				40	39	1	0905	0910		11-27-00	
AA	119/119A	1530	163	165	440	3		22	1306				38	38	0	0915	0920		11-27-00	
BB																				
CC																				
DD																				
EE																				
FF																				
GG																				

REMARKS: RESET CUMUL. LENGTH TO 0' @ DS-52 (TOTAL: 6735') FOR MACH: 16055 } DUE TO ODD CUMUL. VALUE
RESET CUMUL. LENGTH TO 0' @ DS-55 (TOTAL: 6665') FOR MACH: 1653 }

GZA GEOENVIRONMENTAL OF NEW YORK

DATE: 11-25-00
GEOMEMBRANE RECORD SHEET 1 OF 2
REPORT PG ____ OF ____

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

WEATHER DATA			DEPLOYMENT RECORD								
TIME	AIR TEMP (°F)	WIND SPEED (MPH)	TIME	PANEL NO.	ROLL NO.	TIME	PANEL NO.	ROLL NO.	TIME	PANEL NO.	ROLL NO.
1000	38	2-3	0830	120	5713		125A	5742			
			0930	121	5731		126A	5742			
			1030	122	5737	1650	127A	5742			
				123	5806						
			1150	124	5816						
			1315	125	5721						
			1400	126	5720						
				127	5805						
			1500	128	5735						
				120A	5742						
				121A	5742						
				122A	5742						
				123A	5742						
				124A	5742						

TRIAL SEAMING RECORD									
		WELDER I.D.		MACHINE SETTINGS			FIELD TEST RESULTS		
SAMPLE NO.	TIME	OPERATOR I.D.	MACHINE I.D.	TEMP. (°C)	FUSION SEAMER SPEED (FT./MIN.)	EXTRUSION SEAMER PRE-HEAT (°C)	PEEL (LBS)	SHEAR (LBS)	PASS/FAIL; REMARKS
	10:00	163	50065	440	3		142/138 138/138 142/137	157/156/160	PASS
	1010	193	1653	750	6		153/159 156/153 154/150	175/172/177	PASS
	13:0[illegible]	193	1653	750	6		144/141 138/149 150/146	169,172,170	PASS
	1325	1416	16055	750	6		158/143 137/137 [illegible]/142	163,163,170	PASS
	1330	163	165	440	3		135/134 142/139 125/127	158,159,160	PASS

21,22,24

17
3

REMARKS: ____________

GZA GEOENVIRONMENTAL OF NEW YORK

1653: 1095
16055: 1055
165: 1406

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

DATE 11-25-00
GEOMEMBRANE RECORD SHEET 2 OF 2
REPORT PAGE ____ OF ____

PRODUCTION SEAMING RECORD

	SEAM NO./ PATCH NO.	START TIME	WELDER I.D. OPERATOR	WELDER I.D. MACHINE	MACHINE SETTINGS TEMP. (°C)	MACHINE SETTINGS FUSION SPEED (FT./MIN)	MACHINE SETTINGS EXTRUSION PRE-HEAT (°C)	SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE: CURRENT SEAM	FUSION CUMUL. LENGTH	EXTRUSION PREVIOUS CUMULATIVE: CURRENT SEAM	EXTRUSION CUMUL. LENGTH	DESTRUCTIVE SAMPLE	NON-DESTRUCTIVE TESTING FUSION TEST PRESSURES (PSI) START	TEST PRESSURES STOP	TEST PRESSURES DROP	TEST TIMES START	TEST TIMES STOP	EXTRUSION VACUUM TEST PASS/FAIL	DATE (IF OTHER THAN ORIGINAL)	REMARKS
A	120/121	1022	193	1653	750	6		460'	1555											DS-61 55' S. OF N. END
B	119/120	1130	193	1653	750	6		303'	1858				39	39	0	141	1416			
C	121/122	1320	193	1653	750	6		460	2330				40	39	1	1454	1500			DS-63 130' S OF N. END
D	122/123	1330	1416	16055	750	6		460	1515				39	39	0	1515	1520			DS-64 15' N. OF S. END
E	119A/20		193	1653	750	6		12'	1870				40	39	1	1410	1415			
F	123/124	1430	193	1653	750	6		460	2790				40	40	0	1532	1537			DS-65 170' N OF S. END
G	124/125	1430	1416	16055	750	6		460	1975				39	39	0	1535	1540			
H	125/126	1530	193	1653	750	6		460	3250				40	40	0	0846	0851		11-27-00	
I	126/127	1535	1416	16055	750	6		460	2435				36	36	0	0850	0855			DS-66 25' S OF N. END
J	127/128		1416	16055	750	6		460	2895											DS-67 65 N. OF S END
K																				
L																				
M																				
N																				
O	42/120	1045	163	165	440	3		20	1628				40	40	0	0910			11-27-00	DS-62 128' S. OF N. END
P	120/120A	1550	163	165	440	3		22	1640				39	38	1				11-27-00	
Q	121/121A	1610	163	165	440	3		22	1662				42	42	0				11-27-00	
R	122/122A		163	165	440	3		22	1684				41	40	1				11-27-00	
S	123/123A	1620	163	165	440	3		22	1706				39	39	0				11-27-00	
T	124/124A	1630	163	165	440	3		22	1728				38	38	0				11-27-00	
U	125/125A	1640	163	165	440	3		22	1750				37	37	0				11-27-00	
V	126/126A	1650	163	165	440	3		22	1772				39	39	0				11-27-00	
W	127/127A	1700	163	165	440	3		22	1794				39	39	0		0930		11-27-00	
X																				
Y																				
Z																				
AA																				
BB																				
CC																				
DD																				
EE																				
FF																				
GG																				

REMARKS:

GZA GEOENVIRONMENTAL OF NEW YORK

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

DATE 11-29-00
GEOMEMBRANE RECORD SHEET 1 OF 4
REPORT PG ____ OF ____

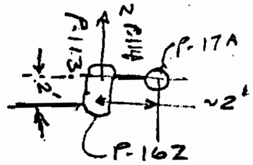
WEATHER DATA			DEPLOYMENT RECORD								
TIME	AIR TEMP (°F)	WIND SPEED (MPH)	TIME	PANEL NO.	ROLL NO.	TIME	PANEL NO.	ROLL NO.	TIME	PANEL NO.	ROLL NO.
1000	36	2-3	1330	129	5813						
				130	5772						
				131	5831						
			1600	132	5775						

TRIAL SEAMING RECORD

SAMPLE NO.	TIME	WELDER I.D.: OPERATOR I.D.	WELDER I.D.: MACHINE I.D.	TEMP. (°C)	MACHINE SETTINGS: FUSION SEAMER SPEED (FT./MIN.)	MACHINE SETTINGS: EXTRUSION SEAMER PRE-HEAT (°C)	FIELD TEST RESULTS: PEEL (LBS)	FIELD TEST RESULTS: SHEAR (LBS)	PASS/FAIL; REMARKS
S-1	0830	173	210	240	6		142, 122, 119	156, 159, 161	Pass
S-2	0840	146	238	240	6		131, 144, 140	154, 155, 158	Pass
S-3	0845	163	101	440	3		154/116, 147/152, 151/148	171, 176, 177	Pass

REMARKS:

GZA GEOENVIRONMENTAL OF NEW YORK



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106/107

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

DATE: 7-29-00
GEOMEMBRANE RECORD SHEET 2 OF 4
REPORT PAGE ____ OF 2

PRODUCTION SEAMING RECORD

	SEAM NO./ PATCH NO.	START TIME	WELDER I.D. OPERATOR	WELDER I.D. MACHINE	MACHINE SETTINGS TEMP. (°C)	MACHINE SETTINGS FUSION SPEED (FT./MIN)	MACHINE SETTINGS EXTRUSION PRE-HEAT (°C)	SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE CURRENT SEAM	FUSION CUMUL. LENGTH	EXTRUSION PREVIOUS CUMULATIVE CURRENT SEAM	EXTRUSION CUMUL. LENGTH	DESTRUCTIVE SAMPLE	NON-DESTRUCTIVE TESTING FUSION TEST PRESSURES (PSI) START	STOP	DROP	TEST TIMES START	STOP	EXTRUSION VACUUM TEST PASS/FAIL	DATE (IF OTHER THAN ORIGINAL)		REMARKS
A	16W	0900	1416	0238	250	6												PASS		A	(1x1) N-END S106/107
B	16X	0920	1416	0238	250	6												PASS		B	(3x2) S-113/114 100' S of N END
C	16Y	0930	1416	0238	250	6												PASS		C	(2x2) S114/115/115A
D	16Z		193	210	250	6												PASS		D	(5x2) S113/114/36
E	17A		193	210	250	6												PASS		E	(1x1) S114/36/37A
F	17B		193	210	250	6												PASS		F	(3x2) S114/115/37A
G	17C		193	210	250	6												PASS		G	(1x1) S115/37A/38
H	17D		193	210	250	6												PASS		H	(5x2) S115/116A/38/39
I	17E		193	210	250	6												PASS		I	(1x1) S116/116A/115
J	17F		193	210	250	6												PASS		J	(1x1) S116/116A/117
K	17G		193	210	250	6												PASS		K	(1x1) S116A/117/39
L	17H		193	210	250	6												PASS		L	(1x1) S117/39/40
M	17J		193	210	250	6												PASS		M	(1x1) S117/118
N	17K		193	210	250	6												PASS		N	(1x1) S118/40/41
O	17L		193	210	250	6												PASS		O	(4x2) S118/119A/41/42
P	17M		193	210	250	6												PASS		P	(2x2) S119/119A/118
Q	17N		193	210	250	6												PASS		Q	(3x2) S119A/42/120
R	17P	1030	193	210	250	6												PASS		R	(1x1) S119/119A/120
S	17Q		1416	238	250	6												PASS		S	(5x2) DS-57
T	17R		1416	238	250	6												PASS		T	(2x2) S-115/115A/116
U	17S		1416	238	250	6												PASS		U	(2x2) S118/118A/117
V	17T		1416	238	250	6												PASS		V	(2x2) S-113/114 N. END
W	17U		1416	238	250	6												PASS		W	(1x1) S-114/115 N. END
X	17V		1416	238	250	6												PASS		X	(1x1) S-115/116 N END
Y	17W		1416	238	250	6												PASS		Y	(1x1) S116/117 N END
Z	17X		1416	238	250	6												PASS		Z	(1x1) S117/118A N END
AA	17Y		1416	238	250	6												PASS		AA	(1x1) S118A-119 N END
BB	17Z		1416	238	250	6												PASS		BB	(5x2) DS-60 S118A/119
CC	18A		1416	238	250	6												PASS		CC	(2x2) S118/118A/119
DD	18B		1416	238	250	6												PASS		DD	(5x2) DS-59
EE	18C		1416	238	250	6												PASS		EE	(5x2) DS-58
FF	18D		1416	238	250	6												PASS		FF	(10x4) SV-4
GG	18E	1120	1416	238	250	6												PASS		GG	(5x2) DS-63

REMARKS:

GZA GEOENVIRONMENTAL OF NEW YORK

238 : 89'

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

DATE 11-29-00
GEOMEMBRANE RECORD SHEET 3 OF 4
REPORT PAGE ____ OF ____

PRODUCTION SEAMING RECORD

	SEAM NO./ PATCH NO.	START TIME	WELDER I.D. OPERATOR	WELDER I.D. MACHINE	MACHINE SETTINGS TEMP. (°C)	MACHINE SETTINGS FUSION SPEED (FT./MIN)	MACHINE SETTINGS EXTRUSION PRE-HEAT (°C)	SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE: CURRENT SEAM	FUSION CUMUL. LENGTH	EXTRUSION PREVIOUS CUMULATIVE: CURRENT SEAM	EXTRUSION CUMUL. LENGTH	DESTRUCTIVE SAMPLE	NON-DESTRUCTIVE TESTING FUSION TEST PRESSURES (PSI) START	STOP	DROP	TEST TIMES START	STOP	EXTRUSION VACUUM TEST PASS/FAIL	DATE (IF OTHER THAN ORIGINAL)	REMARKS
A	18F	1125	1416	238	240	6												PASS		(5x2) DS-61
B	18G		1416	238	240	6												PASS		(3x2) S120/120A/121
C	18H		1416	238	240	6												PASS		(3x2) S120/120A/119
D	18J		1416	238	240	6												PASS		(2x2) S121/121A/120A
E	18K		1416	238	240	6												PASS		(2x2) S119/120A N. END
F	18L		1416	238	240	6												PASS		(3x2) S121/122/121A/122A
G	18M		1416	238	240	6												PASS		(2x2) S122/122A/123
H	18N	1150	1416	238	240	6												PASS		(2x2) S122A/123/123A
I	18P		1416	238	240	6												PASS		(3x3) S123/123A
J	18Q		1416	238	240	6												PASS		(2x2) S124/124A/123
K	18R	1015	193	210	240	6												PASS		(6x4) GV-12
L	18S		193	210	240	6												PASS		(5x2) DS-62
M	18T		193	210	240	6												PASS		(6x4) GV-18
N	18U	1150	193	210	240	6												PASS		(3x2) S42/120 S. END
O	18V	1400	151	238	240	6												PASS		(4x4) P-123A CLEANOUT RISER
P	18W		151	238	240	6												PASS		(10x2) P-123A WEDGE ABV TO S122A/123A
Q	18X		151	238	240	6												PASS		(6x2) S125/126A/124A DS=63
R	18Y		151	238	240	6												PASS		(3x2) S124/124A/125
S	18Z		151	238	240	6												PASS		(4x1) S125/126/125A/126A
T	19A		151	238	240	6												PASS		(3x2) S126/126A/127/127A
U	19B		151	238	240	6												PASS		(5x2) DS-66
V	19C		151	238	240	6												PASS		(2x2) S127/127A -2'W OF 19D
W	19D	1520	151	238	240	6												PASS		(2x2) S127/127A/128
X	19E		151	238	240	6												PASS		(2x2) S127/128 85' N OF TOP GV-LINE
Y	19F		151	238	240	6												PASS		(4x2) S126/127 55' N OF TOP
Z	19G		151	238	240	6												PASS		(2x2) S122/123 40' N OF TOP
AA	19H	1600	151	238	240	6												PASS		(5x4) GV-13
BB	19J		151	238	240	6												PASS		(5x2) 15' S OF 19H
CC	19K		151	238	240	6												PASS		(5x2) DS-65
DD	19L		151	238	240	6												PASS		(2x1) P-122 6' N OF TOP (MID)
EE	19M		151	238	240	6												PASS	12-3-00	(5x2) DS-64
FF																				
GG																				

REMARKS:

GZA GEOENVIRONMENTAL OF NEW YORK

1653: 3250
238: 89'
16055 : 2895
165 : 1794

GEOMEMBRANE RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

PRODUCTION SEAMING RECORD

	SEAM NO./ PATCH NO.	START TIME	WELDER I.D. OPERATOR	WELDER I.D. MACHINE	MACHINE SETTINGS TEMP. (°C)	MACHINE SETTINGS FUSION SPEED (FT./MIN)	MACHINE SETTINGS EXTRUSION PRE-HEAT (°C)	SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE: CURRENT SEAM	FUSION CUMUL. LENGTH	EXTRUSION PREVIOUS CUMULATIVE: CURRENT SEAM	EXTRUSION CUMUL. LENGTH	DESTRUCTIVE SAMPLE	NON-DESTRUCTIVE TESTING FUSION TEST PRESSURES (PSI) START	STOP	DROP	TEST TIMES START	STOP	EXTRUSION VACUUM TEST PASS/FAIL	DATE (IF OTHER THAN ORIGINAL)	REMARKS
A	128/129	1425	193	1653	750	6		460	3710				40	39	1	0855	0900		11-30-00	DS-69 210' N. OF S. END
B	129/130	1525	193	1653	750	6		460	4170				39	39	0	0915	0920			DS-70 170' S. OF N. END
C	130/131	1645	193	1653	750	6		460	4630				40	40	0	0920	0925			DS-71 130' S. OF N. END
D	131/132	1600	1614	16055	750	6		460	3355				40	38	2	0910	0915			
E																				
F																				
G																				
H																				
I																				
J																				
K																				
L																				
M																				
N																				
O	118/119A	0850	1416	238	250			10	99									PASS		
P																				
Q	119/120A	0900	163	165	440	3		40	1834				37	37	0	1015				
R	120A/121	0910	163	165	440	3		8	1842				38	37	1					
S	120A/121A		163	165	440	3		32	1874				35	34	1					
T	121A/122A	0925	163	165	440	3		32	1906				36	34	2					
U	122A/123	0940	163	165	440	3		5	1911				40	39	1					
V	122A/123A		163	165	440	3		27	1938				40	40	0					
W	123A/124	0955	163	165	440	3		5	1943				40	39	1					
X	123A/124A		163	165	440	3		22	1965				39	39	0					
Y	124A/125		163	165	440	3		5	1970				38	38	0		1050			
Z	124A/125A	1015	1416	238	250			17	116									PASS		DS-68 MIDWAY ON SEAM
AA	125A/126A		1416	238	250			10	126									PASS		
BB	126A/127A		1416	238	250			10	136									PASS		
CC	127A/128	1030	1416	165	440	3		10	1980				40	39	1	1100	1105			
DD																				
EE																				
FF																				
GG																				

REMARKS:

GZA GEOENVIRONMENTAL OF NEW YORK

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

DATE 11-30-00
GEOMEMBRANE RECORD SHEET 1 OF 2
REPORT PG ____ OF ____

WEATHER DATA			DEPLOYMENT RECORD								
TIME	AIR TEMP (°F)	WIND SPEED (MPH)	TIME	PANEL NO.	ROLL NO.	TIME	PANEL NO.	ROLL NO.	TIME	PANEL NO.	ROLL NO.
1300	33	5~6	1425	133	5835						
			1510	134	5834						
			1530	135	5829						
			1550	136	5829						
			1610	137	5829						
			1625	138	5829						

TRIAL SEAMING RECORD

SAMPLE NO.	TIME	WELDER I.D.: OPERATOR I.D.	WELDER I.D.: MACHINE I.D.	MACHINE SETTINGS: TEMP. (°C)	MACHINE SETTINGS: FUSION SEAMER SPEED (FT./MIN.)	MACHINE SETTINGS: EXTRUSION SEAMER PRE-HEAT (°C)	FIELD TEST RESULTS: PEEL (LBS)	FIELD TEST RESULTS: SHEAR (LBS)	PASS/FAIL; REMARKS
	1345	1416	1653	750	6		154,154/149,153/153,155	196,185	PASS

REMARKS: ____________________

GZA GEOENVIRONMENTAL OF NEW YORK

1653, 1654
16055; 3355

GEOMEMBRANE D[illegible] ECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

D[illegible] 30-00
GEOMEMBRANE RECORD SHEET 1 OF 2
REPORT PAGE ____ OF ____

PRODUCTION SEAMING RECORD

			Welder I.D.		Machine Settings			Seam Length (ft.) Fusion Previous Cumulative:		Extrusion Previous Cumulative:			Non-Destructive Testing Fusion Test Pressures (PSI)			Test Times		Extrusion	Date	
	Seam No./ Patch No.	Start Time	Operator	Machine	Temp. (°C)	Fusion Speed (FT./MIN)	Extrusion Pre-Heat (°C)	Current Seam	Cumul. Length	Current Seam	Cumul. Length	Destructive Sample	Start	Stop	Drop	Start	Stop	Vacuum Test Pass/Fail	(If other than original)	Remarks
A	132/133	1445	1416	1653	750	6		450	5080				40	39	1	0840	0845			DS-72 80'S. OF N END
B	133/134	1600	1416	1653	750	6		440	5520				39	39	0	0845	0850			DS-73 20'S OF N END
C																				
D																				
E																				
F																				
G																				
H																				
I																				
J																				
K																				
L																				
M																				
N																				
O																				
P																				
Q																				
R																				
S																				
T																				
U																				
V																				
W																				
X																				
Y																				
Z																				
AA																				
BB																				
CC																				
DD																				
EE																				
FF																				
GG																				

REMARKS:

GZA GEOENVIRONMENTAL OF NEW YORK

91'

DATE 12-1-00

GEOMEMBRANE RECORD SHEET 1 OF 4

REPORT PG ____ OF ____

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

WEATHER DATA

TIME	AIR TEMP (°F)	WIND SPEED (MPH)
0900	32	3~5

DEPLOYMENT RECORD

TIME	PANEL NO.	ROLL NO.	* TIME	PANEL NO.	ROLL NO.	TIME	PANEL NO.	ROLL NO.
0815	138A	5784	1155	150	5793			
	139	5787	1320	151	5793			
	140	5787	1340	152	5793			
	141	5787		153	5793			
	142	5766		154	5793			
	142A	5787		155	5793			
	143	57666		156	5794			
1010	144	5766	1415	157	5794			
	145	5799						
	145A	5766						
	146	5799						
1115	147	5799						
	148	5799						
	149	5799						

TRIAL SEAMING RECORD

SAMPLE NO.	TIME	WELDER I.D. OPERATOR I.D.	MACHINE I.D.	TEMP. (°C)	MACHINE SETTINGS FUSION SEAMER SPEED (FT./MIN.)	EXTRUSION SEAMER PRE-HEAT (°C)	FIELD TEST RESULTS PEEL (LBS)	SHEAR (LBS)	PASS/FAIL; REMARKS
S-1	0855	193	1653	750	6		167/127 164/171 155/168	186, 192	PASS
S-2	0850	1416	16055	750	6		163/167 160/181 /156/166	201, 203	PASS
S-3	[illegible]	193	165	440	3		[illegible]	[illegible]	PASS
S-4	1320	1416	16055	750	6		143/163 163/161 165/168	194, 198	PASS
S-5	1325	193	1653	750	6		147/144 149/145 152/158	189, 179	PASS
S-6	1330	193	165	440	3		140/139 149/146 142/146	184, 181	PASS
S-7	1340	193	165	440	3		171/150 170/149 162/147	179, 183	PASS
S-8	1500	151	0238	240			164 151 162	179, 174	PASS

REMARKS: * Roll No. for Panel No. 138A mis-recorded by GZA Field Representative, Actual Roll No is 5787 as Recorded by TVGA.

GZA GEOENVIRONMENTAL OF NEW YORK

16055 : 3355
1653 : 5520
165 : 1980

GEOMEMBRAN / RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

2-1-00

GEOMEMBRANE RECORD SHEET 2 OF 4

REPORT PAGE ____ OF ____

PRODUCTION SEAMING RECORD

	SEAM NO./ PATCH NO.	START TIME	WELDER I.D. OPERATOR	WELDER I.D. MACHINE	MACHINE SETTINGS TEMP. (°C)	MACHINE SETTINGS FUSION SPEED (FT./MIN)	MACHINE SETTINGS EXTRUSION PRE-HEAT (°C)		SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE: CURRENT SEAM	FUSION CUMUL. LENGTH	EXTRUSION PREVIOUS CUMULATIVE: CURRENT SEAM	EXTRUSION CUMUL. LENGTH	DESTRUCTIVE SAMPLE		NON-DESTRUCTIVE TESTING FUSION TEST PRESSURES (PSI) START	STOP	DROP	TEST TIMES START	STOP	EXTRUSION VACUUM TEST PASS/FAIL	DATE (IF OTHER THAN ORIGINAL)		REMARKS
A	135/136	0910	1416	16055	750	6		A	140	3495				A	40	38	2	1107	1112			A	
B	135/141	0945	193	1653	750	6		B	150	5670				B	40	40	0	1105	1110			B	
C	136/137	0955	1416	16055	750	6		C	130	3625				C	40	39	1	1143	1148			C	DS-75 5~10' E. OF W END
D	141/142	1020	193	1653	750	6		D	75	5745				D	39	39	0	1122	1127			D	
E	141/142A		193	1653	750	6		E	75	5820				E	46	40	0	1100	1105			E	
F	137/138A	1025	1416	16055	750	6		F	60	3685				F	39	37	2	1150	1155			F	
G	137/138			16055	750	6		G	50	3735				G	38	38	0	1150	1155			G	
H	138A/139	1100	1416	16055	750	6		H	50	3785				H	38	37	1	1157	1202			H	
I	138/139			16055	750	6		I	40	3825				I	40	40	0	1150	1155			I	
J	139/140	1125	1416	16055	750	6		J	45	3870				J	40	39	1	1155	1200			J	
K	142/143	1045	193	1653	750	6		K	70	5890				K	40	40	0	1125	1130			K	
L	142A/143		193	1653	750	6		L	90	5980				L	39	38	1	1135	1140			L	
M	143/144	1125	193	1653	750	6		M	155	6135				M	38	38	0	1425	1430			M	DS-76 20' E OF W. END
N	144/145	1340	193	1653	750	6		N	110	6245				N	40	39	1	1425	1430			N	
O	144/145A		193	1653	750	6		O	45	6290				O	39	38	1	1430	1435			O	
P	145A/146	1325	1416	16055	750	6		P	50	3920				P	39	39	0	1325	1330			P	
Q	145/146		1416	16055	750	6		Q	105	4025				Q	40	40	0	1334	1339			Q	
R	147/148	1340	1416	16055	750	6		R	55	4080				R	40	39	1	1510	1515			R	
S	148/149	1410	1416	16055	750	6		S	70	4150				S	39	39	0	1515	1519			S	
T	149/150	1425	1416	16055	750	6		T	73	4223				T	40	40	0	1516	1521			T	
U	150/151	1420	193	1653	750	6		U	100	6390				U	40	39	1	1533	1538			U	
V	151/152	1445	193	1653	750	6		V	110	6500				V	36	36	0	1535	1540			V	DS-77 ~5' SE OF NW END
W	152/153	1505	193	1653	750	6		W	85	6585				W	38	38	0	1543	1548			W	
X	153/154	1525	193	1653	750	6		X	55	6640				X	36	35	1	1544	1550			X	
Y								Y						Y								Y	
Z	149A/150	1420	1416	16055	750	6		Z	12	4235				Z	40	40	0	1517	1522		12-03-00	Z	
AA								AA						AA								AA	
BB								BB						BB								BB	
CC	19N	1630	151	238	250			CC						CC						PASS	12-3-00	CC	(5x3) GV-21 (S-121/122-3.CNR)
DD	19P	1650	151	238	250			DD						DD						PASS	12-3-00	DD	(5x5) GV-14
EE								EE						EE								EE	
FF								FF						FF								FF	
GG								GG						GG								GG	

REMARKS: ____________

GZA GEOENVIRONMENTAL OF NEW YORK

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

DATE: 12-1-00
GEOMEMBRANE RECORD SHEET 3 OF 4
REPORT PAGE ____ OF ____

PRODUCTION SEAMING RECORD

	SEAM NO./ PATCH NO.	START TIME	WELDER I.D. OPERATOR	WELDER I.D. MACHINE	MACHINE SETTINGS TEMP. (°C)	MACHINE SETTINGS FUSION SPEED (FT./MIN)	MACHINE SETTINGS EXTRUSION PRE-HEAT (°C)		SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE: CURRENT SEAM	FUSION CUMUL. LENGTH	EXTRUSION PREVIOUS CUMULATIVE: CURRENT SEAM	EXTRUSION CUMUL. LENGTH	DESTRUCTIVE SAMPLE		NON-DESTRUCTIVE TESTING FUSION TEST PRESSURES (PSI) START	STOP	DROP	TEST TIMES START	STOP	EXTRUSION VACUUM TEST PASS/FAIL	DATE (IF OTHER THAN ORIGINAL)		REMARKS
A	133/138A	0910	163	165				A	22	2002				A								A	
B	142/142A	1000	163	165				B	22	2024				B	37	37	0	1123	1128			B	DS-74 ~2-5' S OF N END
C	145/145A		163	165				C	22	2046				C	38	38	0	1430	1445			C	
D	155/147	1425	163	165				D	23	2049				D	40	39	1	1505	1510			D	
E	153/146		163	165				E	23	2072				E	40	40	0	1508	1515			E	
F	147/146		163	165				F	23	2095				F	39	38	1	1507	1512			F	
G	148/146		163	165				G	23	2118				G	37	37	0	1512	1517			G	
H	149/146		163	165				H	23	2141				H	37	36	1	1517	1522			H	
I	150/146		163	165				I	23	2164				I	35	35	0	1525	1530			I	
J	151/146		163	165				J	23	2187				J	40	40	0	1535	1540			J	
K								K						K								K	
L	1[illegible]/140	1230	163	165				L	25	2212				L	40	38	2	1620	1625			L	
M	134/139		163	165				M	25	2237				M	38	37	1					M	
N	138		163	165				N	25	2262				N	39	39	0					N	
O	137		163	165				O	25	2287				O	40	40	0					O	
P	136		163	165				P	25	2312				P	40	39	1					P	
Q	135		163	165				Q	25	2337				Q	40	38	2	1620	1625			Q	
R	141		163	165				R	25	2362				R	40	40	0	1640	1645			R	
S	142A		163	165				S	25	2387				S	39	39	0					S	
T	143		163	165				T	25	2412				T	39	38	1					T	
U	144		163	165				U	25	2437				U	40	40	0	1640	1645			U	
V	145A		163	165				V	25	2462				V	40	40	0	1005	1010		12-03-00	V	
W	134/146		163	165				W	25	2487				W	40	39	1	1000	1005		12-03-00	W	
X	134/151		163	165				X	8	2512				X	39	39	0	1002	1007		12-03-00	X	
Y	134/152		163	165				Y	27	2539				Y	40	39	1	0940	0945		12-03-00	Y	
Z	134/153		163	165				Z	27	2566				Z	40	38	2	0925	0930		12-03-00	Z	
AA	134/154	1645	163	165				AA	27	2593				AA	40	40	0	0950	0955		12-03-00	AA	
BB								BB						BB								BB	
CC								CC						CC								CC	
DD	149/149A	1335	163	165				DD	22	2615				DD	39	39	0	1518	1525			DD	
EE								EE						EE								EE	
FF								FF						FF								FF	
GG								GG						GG								GG	

REMARKS:

GZA GEOENVIRONMENTAL OF NEW YORK

238' 136

GEOMEMBRAN[illegible]Y RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

12-1-50
GEOMEMBRANE RECORD SHEET 4 OF 4
REPORT PAGE ___ OF ___

PRODUCTION SEAMING RECORD

			Welder I.D.		Machine Settings			Seam Length (Ft.) Fusion Previous Cumulative:		Seam Length (Ft.) Extrusion Previous Cumulative:			Non-Destructive Testing Fusion Test Pressures (PSI)			Fusion Test Times		Extrusion	Date	
	Seam No./ Patch No.	Start Time	Operator	Machine	Temp. (°C)	Fusion Speed (Ft./Min)	Extrusion Pre-Heat (°C)	Current Seam	Cumul. Length	Current Seam	Cumul. Length	Destructive Sample	Start	Stop	Drop	Start	Stop	Vacuum Test Pass/Fail	(If Other Than Original)	Remarks
A	156/122	1615	151	238	250					8	144							PASS	12-3-00	
B	156/123		151	238	250					22	166							PASS	12-3-00	
C	156/124		151	238	250					22	188							PASS	12-3-00	
D	156/125		151	238	250					22	210							PASS	12-3-00	
E	156/126		151	238	250					22	232							PASS	12-3-00	
F	157/126		151	238	250					22	254							PASS	12-3-00	
G	157/127		151	238	250					22	276							PASS	12-3-00	
H	157/128		151	238	250					22	298							PASS	12-3-00	
J	157/129		151	238	250					8	306							PASS	12-3-00	
J	156/157	1700	151	238	250					8	314							PASS	12-3-00	
K																				
L																				
M																				
N																				
O																				
P																				
Q																				
R																				
S																				
T																				
U																				
V																				
W																				
X																				
Y																				
Z																				
AA																				
BB																				
CC																				
DD																				
EE																				
FF																				
GG																				

REMARKS:

GZA GEOENVIRONMENTAL OF NEW YORK

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

DATE 12-3-00
GEOMEMBRANE RECORD SHEET 1 OF 3
REPORT PG ____ OF ____

WEATHER DATA			DEPLOYMENT RECORD								
TIME	AIR TEMP (°F)	WIND SPEED (MPH)	TIME	PANEL NO.	ROLL NO.	TIME	PANEL NO.	ROLL NO.	TIME	PANEL NO.	ROLL NO.
1000	31	3-5									

TRIAL SEAMING RECORD									
		WELDER I.D.			MACHINE SETTINGS		FIELD TEST RESULTS		
					FUSION SEAMER	EXTRUSION SEAMER			
SAMPLE NO.	TIME	OPERATOR I.D.	MACHINE I.D.	TEMP. (°C)	SPEED (FT./MIN.)	PRE-HEAT (°C)	PEEL (LBS)	SHEAR (LBS)	PASS/FAIL; REMARKS
	0850	151	238	250			136, 135, 157	182,177	PASS
	0915	193	210	250			169, 160, 154	198,197	PASS
	1315	151	238	250			149, 144, 133	180,177	PASS
	1318	173	210	250			150, 148, 141	[illegible]	Pass

REMARKS: PATCH ONLY

GZA GEOENVIRONMENTAL OF NEW YORK

GEOMEMBRANE RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

1-3-00
GEOMEMBRANE RECORD SHEET 2 OF 3
REPORT PAGE ____ OF ____

PRODUCTION SEAMING RECORD

	SEAM NO./ PATCH NO.	START TIME	WELDER I.D. OPERATOR	WELDER I.D. MACHINE	MACHINE SETTINGS TEMP. (°C)	MACHINE SETTINGS FUSION SPEED (FT./MIN)	MACHINE SETTINGS EXTRUSION PRE-HEAT (°C)	SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE: CURRENT SEAM	SEAM LENGTH (FT.) FUSION CUMUL. LENGTH	SEAM LENGTH (FT.) EXTRUSION PREVIOUS CUMULATIVE: CURRENT SEAM	SEAM LENGTH (FT.) EXTRUSION CUMUL. LENGTH	DESTRUCTIVE SAMPLE	NON-DESTRUCTIVE TESTING FUSION TEST PRESSURES (PSI) START	STOP	DROP	TEST TIMES START	STOP	EXTRUSION VACUUM TEST PASS/FAIL	DATE (IF OTHER THAN ORIGINAL)	REMARKS
A	19Q	0910	193	210	250													PASS		(10x2) N. END P140
B	19R		193	210	250													PASS		(1x1) 138/138A/139
C	19S		193	210	250													PASS		(1x1) 5' E. OF 19R
D	19T		193	210	250													PASS		(1x1) 138/138A/137
E	19U		193	210	250													PASS		(2x1) E. END 138A/139
F	19V		193	210	250													PASS		(1x1) E. END 138A/137
G	19W		193	210	250													PASS		(1x1) E. END 137/136
H	19X	1130	193	210	250													PASS		(1x1) E END 135/141
I	19Y	1310	193	210	250													PASS		(9x9) MH 2
J	19Z		193	210	250													PASS		(3x1) ADJ. TO N. SIDE 19Y S141/142
K	20A		151	238	250													PASS		(5x2) 18' S. OF GV-14 S-130/131
L	20B		151	238	250													PASS		(3x2) S-152/153/134
M	20C		151	238	250													PASS		(4x4) GV-19
N	20D		151	238	250													PASS		(7x2) ADJ TO W. SIDE 20C
O	20E		151	238	250													PASS		(5x2) ADJ TO E SIDE 20C
P	20F		151	238	250													PASS		(2x2) S153/154/134
Q	20G	1405	151	238	250													PASS		(5x2) DS-77
R	20H		151	238	250													PASS		(2x2) S151/152/134
S	20J		151	238	250													PASS		(5x2) S134/146/151
T	20K		151	238	250													PASS		(3x2) S150/151/146
U	20L		151	238	250													PASS		(2x2) S149/150/146
V	20M		151	238	250													PASS		(3x2) S149/149A/150
W	20N		151	238	250													PASS		(3x2) S149/149A/146/148
X	20P		151	238	250													PASS		(2x2) S148/147/146
Y	20Q		151	238	250													PASS		(4x2) S147/148/146
Z	20R	1500	151	238	250													PASS		(9x9) MH3
AA	20S		193	210	250													PASS		(1x1) S142A/142/143
BB	20T		193	210	250													PASS		(5x2) DS-74
CC	20U		193	210	250													PASS		(1x1) S142/142A/141
DD	20V		193	210	250													PASS		(5x3) GV-5
EE	20W		193	210	250													PASS		(3x2) S135/141/134
FF	20X		193	210	250													PASS		(5x2) DS-75
GG	20Y	1550	151	238	250													PASS		(2x1) S145A/146/134

REMARKS:

GZA GEOENVIRONMENTAL OF NEW YORK

DATE: 12-3-00
GEOMEMBRANE RECORD SHEET 3 OF 3
REPORT PAGE ___ OF ___

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

PRODUCTION SEAMING RECORD

	SEAM NO./ PATCH NO.	START TIME	WELDER I.D. OPERATOR	WELDER I.D. MACHINE	MACHINE SETTINGS TEMP. (°C)	MACHINE SETTINGS FUSION SPEED (FT./MIN)	MACHINE SETTINGS EXTRUSION PRE-HEAT (°C)	SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE: CURRENT SEAM	FUSION CUMUL. LENGTH	EXTRUSION PREVIOUS CUMULATIVE: CURRENT SEAM	EXTRUSION CUMUL. LENGTH	DESTRUCTIVE SAMPLE	NON-DESTRUCTIVE TESTING FUSION TEST PRESSURES (PSI) START	STOP	DROP	TEST TIMES START	STOP	EXTRUSION VACUUM TEST PASS/FAIL	DATE (IF OTHER THAN ORIGINAL)	REMARKS
A	202	1605	151	238	250													PASS		(1x2) S144/145A/134
B	21A		151	238	250													PASS		(2x2) S147/148 SE END
C	21B		151	238	250													PASS		(2x2) S148/149 SE END
D	21C		151	238	250													PASS		(2x2) S145/145A/144
E	21D		151	238	250													PASS		(2x2) S145/145A/146
F	21E		151	238	250													PASS		(5x2) DS-76
G	21F		151	238	250													PASS		(30x30x15) MH-4
H	21G	1630	193	210	250													PASS		(5x2) DS-72
I	21H	1640	193	210	250													PASS		(5x2) DS-73
J	21J	1650	193	210	250													PASS		(1x1) S133/134 N END
K	21K		151	238	250													PASS		(3x1) S132/133 S. END
L	21L		151	238	250													PASS		(1x1) S131/132 S. END
M	21M		151	238	250													PASS		(2x2) S129/130 S. END
N	21N		151	238	250													PASS		(3x2) 45' N. of S. END P124 (MID)
O	21P		151	238	250													PASS		(1x1) P.134 8' W OF 202
P	21Q		151	238	250													PASS		(3x2) S132/133 25' N OF TOP GV ℄
Q	21R		151	238	250													PASS		(2x1) P.133 (MID) 40' N OF TOP GV ℄
R	21S	1710	151	238	250													PASS		(2x1) S133/134 40' N. OF TOP GV ℄
S																				
T																				
U																				
V																				
W																				
X																				
Y																				
Z																				
AA																				
BB																				
CC																				
DD																				
EE																				
FF																				
GG																				

REMARKS:

GZA GEOENVIRONMENTAL OF NEW YORK

12.04.00

GEOMEMBRANE RECORD SHEET 1 OF 2

REPORT PG ____ OF ____

GEOMEMBRA[NE] RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

WEATHER DATA			DEPLOYMENT RECORD								
TIME	AIR TEMP (°F)	WIND SPEED (MPH)	TIME	PANEL NO.	ROLL NO.	TIME	PANEL NO.	ROLL NO.	TIME	PANEL NO.	ROLL NO.
0900	34	5-6									

TRIAL SEAMING RECORD									
		WELDER I.D.		MACHINE SETTINGS			FIELD TEST RESULTS		
					FUSION SEAMER	EXTRUSION SEAMER			
SAMPLE NO.	TIME	OPERATOR I.D.	MACHINE I.D.	TEMP. (°C)	SPEED (FT./MIN.)	PRE-HEAT (°C)	PEEL (LBS)	SHEAR (LBS)	PASS/FAIL; REMARKS
5-1	0845	151	238	250			135, 143, 148		181, 177

REMARKS: PATCH ONLY

GZA GEOENVIRONMENTAL OF NEW YORK

238 : 314

GEOMEMBRANE DAILY RECORD

WASTE MANAGEMENT OF NEW YORK, LLC
McKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

DATE 12-04-00
GEOMEMBRANE RECORD SHEET 2 OF 2
REPORT PAGE ____ OF ____

PRODUCTION SEAMING RECORD

	SEAM NO./ PATCH NO.	START TIME	WELDER I.D.		MACHINE SETTINGS				SEAM LENGTH (FT.) FUSION PREVIOUS CUMULATIVE:		EXTRUSION PREVIOUS CUMULATIVE:		DESTRUCTIVE SAMPLE		NON-DESTRUCTIVE TESTING FUSION TEST PRESSURES (PSI)			TEST TIMES		EXTRUSION	DATE		REMARKS
			OPERATOR	MACHINE	TEMP. (°C)	FUSION SPEED (FT./MIN)	EXTRUSION PRE-HEAT (°C)		CURRENT SEAM	CUMUL. LENGTH	CURRENT SEAM	CUMUL. LENGTH			START	STOP	DROP	START	STOP	VACUUM TEST PASS/FAIL	(IF OTHER THAN ORIGINAL)		
A	21T	0930	151	238	250			A						A						PASS		A	(1x1) 5130/131 N. END
B	21U		151	238	250			B						B						PASS		B	(2x1) 5131/132 N. END
C	21V		151	238	250			C						C						PASS		C	(3x1) 5132/133 N. END
D	21W		151	238	250			D						D						PASS		D	(5x2) DS-69
E	21X		151	238	250			E						E						PASS		E	(5x2) DS-70
F	21Y		151	238	250			F						F						PASS		F	(5x2) DS-71
G	21Z	1115	151	238	250			G						G						PASS		G	(5x2) 5130/131 ~150' N of TOP GV℄
H	22A	1310	151	238	250			H						H						PASS		H	(15x15) WW #2
I								I						I								I	
J								J						J								J	
K								K						K								K	
L								L						L								L	
M								M						M								M	
N								N						N								N	
O								O						O								O	
P								P						P								P	
Q								Q						Q								Q	
R								R						R								R	
S								S						S								S	
T								T						T								T	
U								U						U								U	
V	129/129A	0915	151	238	250			V			22	336		V						PASS		V	
W								W						W								W	
X								X						X								X	
Y								Y						Y								Y	
Z								Z						Z								Z	
AA								AA						AA								AA	
BB								BB						BB								BB	
CC								CC						CC								CC	
DD								DD						DD								DD	
EE								EE						EE								EE	
FF								FF						FF								FF	
GG								GG						GG								GG	

REMARKS:

GZA GEOENVIRONMENTAL OF NEW YORK

TRI/ENVIRONMENTAL, INC.
A Texas Research International Company

QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: GZA GEOENVIRONMENTAL (NY)
PROJECT: McKENNA LANDFILL - ALBION, NY
CONTACT: JOHN DANZER OR BART KLETTKE
DATE REC'D: 19-Sept-00

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2144-80-01
DATE TESTED: 19-Sept-00

ASTM D 4437/413/3083 NSF Modified
ANALYST: AR
REVIEW: JAN
REPORT DATE: 19-Sept-00

SAMPLE NUMBER	SPECIMEN NUMBER	PEEL EVALUATION: MAXIMUM TENSION (lb/in)	PEEL EVALUATION: PEEL INCURSION (%)	PEEL EVALUATION: LOCUS OF FAILURE	PEEL EVALUATION: NSF 54 FAILURE MODE	PEEL EVALUATION: PROJECT SPEC. (lb/in)	SHEAR EVALUATION: MAXIMUM TENSION (lb/in)	SHEAR EVALUATION: ELONGATION @ BREAK (%)	SHEAR EVALUATION: NSF 54 FAILURE MODE	SHEAR EVALUATION: PROJECT SPEC. (lb/in)
DS-01	1A	125	<10	SE	FTB	NA	126	> 50	FTB	NA
	2A	125	<10	SE	FTB					
	3A	125	<10	SE	FTB		126	> 50	FTB	
	4A	126	<10	SE	FTB					
	5A	124	<10	SE	FTB		124	> 50	FTB	
	MEAN:	**125**								
	1B	124	<10	SE	FTB		125	> 50	FTB	
	2B	125	<10	SE	FTB					
	3B	126	<10	SE	FTB		125	> 50	FTB	
	4B	127	<10	SE	FTB					
	5B	122	<10	SE	FTB					
	MEAN	**125**				**MEAN:**	**125**			
DS-02	1A	141	<10	SE	FTB	NA	123	> 50	FTB	NA
	2A	128	<10	SE	FTB					
	3A	126	<10	SE	FTB		125	> 50	FTB	
	4A	128	<10	SE	FTB					
	5A	127	<10	SE	FTB		123	> 50	FTB	
	MEAN:	**130**								
	1B	140	<10	SE	FTB		125	> 50	FTB	
	2B	135	<10	SE	FTB					
	3B	136	<10	SE	FTB		123	> 50	FTB	
	4B	137	<10	SE	FTB					
	5B	137	<10	SE	FTB					
	MEAN	**137**				**MEAN:**	**124**			

NA: Not Available

The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

TRI/ENVIRONMENTAL, INC.
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QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: GZA GEOENVIRONMENTAL (NY)
PROJECT: McKENNA LANDFILL - ALBION, NY
CONTACT: JOHN DANZER OR BART KLETTKE
DATE REC'D: 19-Sept-00

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2144-80-01
DATE TESTED: 19-Sept-00

ASTM D 4437/413/3083 NSF Modified
ANALYST: AR
REVIEW: JAN
REPORT DATE: 19-Sept-00

		PEEL EVALUATION					SHEAR EVALUATION			
SAMPLE NUMBER	SPECIMEN NUMBER	MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	MAXIMUM TENSION (lb/in)	ELONGATION @ BREAK (%)	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)
DS-03	1A	135	<10	SE	FTB	NA	122	> 50	FTB	NA
	2A	137	<10	SE	FTB					
	3A	133	<10	SE	FTB		124	> 50	FTB	
	4A	130	<10	SE	FTB					
	5A	130	<10	SE	FTB		123	> 50	FTB	
	MEAN:	133								
	1B	132	<10	SE	FTB		123	> 50	FTB	
	2B	135	<10	SE	FTB					
	3B	133	<10	SE	FTB		123	> 50	FTB	
	4B	135	<10	SE	FTB					
	5B	133	<10	SE	FTB					
	MEAN	**134**				**MEAN:**	**123**			
DS-04	1A	136	<10	SE	FTB	NA	127	> 50	FTB	NA
	2A	139	<10	SE	FTB					
	3A	135	<10	SE	FTB		127	> 50	FTB	
	4A	138	<10	SE	FTB					
	5A	137	<10	SE	FTB		125	> 50	FTB	
	MEAN:	**137**								
	1B	138	<10	SE	FTB		127	> 50	FTB	
	2B	140	<10	SE	FTB					
	3B	129	<10	SE	FTB		127	> 50	FTB	
	4B	139	<10	SE	FTB					
	5B	136	<10	SE	FTB					
	MEAN	**136**				**MEAN:**	**127**			

NA: Not Available

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TRI/ENVIRONMENTAL, INC.
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QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: GZA GEOENVIRONMENTAL (NY)
PROJECT: McKENNA LANDFILL - ALBION, NY
CONTACT: JOHN DANZER OR BART KLETTKE
DATE REC'D: 19-Sept-00

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2144-80-01
DATE TESTED: 19-Sept-00

ASTM D 4437/413/3083 NSF Modified
ANALYST: AR
REVIEW: JAN
REPORT DATE: 19-Sept-00

SAMPLE NUMBER	SPECIMEN NUMBER	PEEL EVALUATION: MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	SHEAR EVALUATION: MAXIMUM TENSION (lb/in)	ELONGATION @ BREAK (%)	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)
DS-05	1A	142	<10	SE	FTB	NA	129	> 50	FTB	NA
	2A	142	<10	SE	FTB					
	3A	143	<10	SE	FTB		125	> 50	FTB	
	4A	147	<10	SE	FTB					
	5A	146	<10	SE	FTB		129	> 50	FTB	
	MEAN:	144								
	1B	140	<10	SE	FTB		124	> 50	FTB	
	2B	142	<10	SE	FTB					
	3B	139	<10	SE	FTB		121	> 50	FTB	
	4B	143	<10	SE	FTB					
	5B	143	<10	SE	FTB					
	MEAN	141				MEAN:	126			
DS-06	1A	125	<10	SE	FTB	NA	117	> 50	FTB	NA
	2A	125	<10	SE	FTB					
	3A	123	<10	SE	FTB		118	> 50	FTB	
	4A	127	<10	SE	FTB					
	5A	123	<10	SE	FTB		118	> 50	FTB	
	MEAN:	125								
	1B	119	<10	SE	FTB		120	> 50	FTB	
	2B	126	<10	SE	FTB					
	3B	124	<10	SE	FTB		120	> 50	FTB	
	4B	131	<10	SE	FTB					
	5B	128	<10	SE	FTB					
	MEAN	126				MEAN:	119			

NA: Not Available

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TRI/ENVIRONMENTAL, INC.
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QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: GZA GEOENVIRONMENTAL (NY)
PROJECT: McKENNA LANDFILL - ALBION, NY
CONTACT: JOHN DANZER OR BART KLETTKE
DATE REC'D: 19-Sept-00

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2144-80-01
DATE TESTED: 19-Sept-00

ASTM D 4437/413/3083 NSF Modified
ANALYST: AR
REVIEW: JAN
REPORT DATE: 19-Sept-00

		PEEL EVALUATION					SHEAR EVALUATION			
SAMPLE NUMBER	SPECIMEN NUMBER	MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	MAXIMUM TENSION (lb/in)	ELONGATION @ BREAK (%)	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)
~~DS 07~~	1A	139	<10	SE	FTB	NA	128	> 50	FTB	NA
	~~2A~~	~~141~~	~~<10~~	~~SE~~	~~FTB~~					
	3A	141	<10	SE	FTB		127	> 50	FTB	
	4A	140	<10	SE	FTB					
	5A	137	<10	SE	FTB		124	> 50	FTB	
	~~MEAN:~~	~~140~~								
	1B	143	<10	SE	FTB		127	> 50	FTB	
	2B	140	<10	SE	FTB					
	3B	141	<10	SE	FTB		123	> 50	FTB	
	4B	143	<10	SE	FTB					
	5B	140	<10	SE	FTB					
	MEAN	**141**				**MEAN:**	**126**			

NA: Not Available

The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

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TRI/ENVIRONMENTAL, INC.
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QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: GZA GEOENVIRONMENTAL (NY)
PROJECT: McKENNA LANDFILL - ALBION, NY
CONTACT: JOHN DANZER OR BART KLETTKE
DATE REC'D: 20-Sept-00

MATERIAL: LLDPE
SEAM TYPE: SINGLE EXTRUSION WELD
TRI LOG #: E2144-81-04
DATE TESTED: 20-Sept-00

ASTM D 4437/413/3083 NSF Modified
ANALYST: MDG
REVIEW: JAN
REPORT DATE: 20-Sept-00

		PEEL EVALUATION					SHEAR EVALUATION			
SAMPLE NUMBER	SPECIMEN NUMBER	MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	MAXIMUM TENSION (lb/in)	ELONGATION @ BREAK (%)	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)
DS-08	1	132	<10	SE	FTB	NA	145	> 50	FTB	NA
	2	119	<10	SE	FTB					
	3	107	<10	SE	FTB		146	> 50	FTB	
	4	114	<10	SE	FTB					
	5	108	<10	SE	FTB		144	> 50	FTB	
	MEAN:	116								
							146	> 50	FTB	
							145	> 50	FTB	
						MEAN:	145			

NA: Not Available

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TRI/ENVIRONMENTAL, INC.
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QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: GZA GEOENVIRONMENTAL (NY)
PROJECT: McKENNA LANDFILL - ALBION, NY
CONTACT: JOHN DANZER OR BART KLETTKE
DATE REC'D: 20-Sept-00

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2144-81-04
DATE TESTED: 20-Sept-00

ASTM D 4437/413/3083 NSF Modified
ANALYST: MDG
REVIEW: JAN
REPORT DATE: 20-Sept-00

SAMPLE NUMBER	SPECIMEN NUMBER	PEEL EVALUATION: MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	SHEAR EVALUATION: MAXIMUM TENSION (lb/in)	ELONGATION @ BREAK (%)	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)
DS-09	1A	128	<10	SE	FTB	NA	135	> 50	FTB	NA
	2A	128	<10	SE	FTB					
	3A	126	<10	SE	FTB		130	> 50	FTB	
	4A	124	<10	SE	FTB					
	5A	127	<10	SE	FTB		128	> 50	FTB	
	MEAN:	**127**								
	1B	128	<10	SE	FTB		115	> 50	FTB	
	2B	125	<10	SE	FTB					
	3B	129	<10	SE	FTB		122	> 50	FTB	
	4B	128	<10	SE	FTB					
	5B	132	<10	SE	FTB					
	MEAN	**128**				**MEAN:**	**126**			
DS-10	1A	137	<10	SE	FTB	NA	144	> 50	FTB	NA
	2A	136	<10	SE	FTB					
	3A	135	<10	SE	FTB		139	> 50	FTB	
	4A	140	<10	SE	FTB					
	5A	138	<10	SE	FTB		147	> 50	FTB	
	MEAN:	**137**								
	1B	139	<10	SE	FTB		136	> 50	FTB	
	2B	140	<10	SE	FTB					
	3B	138	<10	SE	FTB		140	> 50	FTB	
	4B	142	<10	SE	FTB					
	5B	140	<10	SE	FTB					
	MEAN	**140**				**MEAN:**	**141**			

NA: Not Available

The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

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TRI/ENVIRONMENTAL, INC.
A Texas Research International Company

QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: GZA GEOENVIRONMENTAL (NY)
PROJECT: McKENNA LANDFILL - ALBION, NY
CONTACT: JOHN DANZER OR BART KLETTKE
DATE REC'D: 20-Sept-00

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2144-81-04
DATE TESTED: 20-Sept-00

ASTM D 4437/413/3083 NSF Modified
ANALYST: MDG
REVIEW: JAN
REPORT DATE: 20-Sept-00

SAMPLE NUMBER	SPECIMEN NUMBER	PEEL EVALUATION: MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	SHEAR EVALUATION: MAXIMUM TENSION (lb/in)	ELONGATION @ BREAK (%)	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)
DS-11	1A	134	<10	SE	FTB	NA	139	> 50	FTB	NA
	2A	137	<10	SE	FTB					
	3A	134	<10	SE	FTB		138	> 50	FTB	
	4A	135	<10	SE	FTB					
	5A	134	<10	SE	FTB		138	> 50	FTB	
	MEAN:	**135**								
	1B	136	<10	SE	FTB		131	> 50	FTB	
	2B	136	<10	SE	FTB					
	3B	135	<10	SE	FTB		134	> 50	FTB	
	4B	134	<10	SE	FTB					
	5B	133	<10	SE	FTB					
	MEAN	**135**				**MEAN:**	**136**			
DS-12	1A	140	<10	SE	FTB	NA	139	> 50	FTB	NA
	2A	140	<10	SE	FTB					
	3A	139	<10	SE	FTB		138	> 50	FTB	
	4A	141	<10	SE	FTB					
	5A	129	<10	SE	FTB		138	> 50	FTB	
	MEAN:	**138**								
	1B	129	<10	SE	FTB		131	> 50	FTB	
	2B	134	<10	SE	FTB					
	3B	127	<10	SE	FTB		134	> 50	FTB	
	4B	128	<10	SE	FTB					
	5B	127	<10	SE	FTB					
	MEAN	**129**				**MEAN:**	**136**			

NA: Not Available

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TRI/ENVIRONMENTAL, INC.
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QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: GZA GEOENVIRONMENTAL (NY)
PROJECT: McKENNA LANDFILL - ALBION, NY
CONTACT: JOHN DANZER OR BART KLETTKE
DATE REC'D: 20-Sept-00

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2144-81-04
DATE TESTED: 20-Sept-00

ASTM D 4437/413/3083 NSF Modified
ANALYST: MDG
REVIEW: JAW
REPORT DATE: 20-Sept-00

		PEEL EVALUATION					SHEAR EVALUATION			
SAMPLE NUMBER	SPECIMEN NUMBER	MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	MAXIMUM TENSION (lb/in)	ELONGATION @ BREAK (%)	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)
DS-13	1A	120	<10	SE	FTB	NA	135	> 50	FTB	NA
	~~2A~~	~~137~~	~~<10~~	~~SE~~	~~FTB~~					
	3A	125	<10	SE	FTB		124	> 50	FTB	
	4A	134	<10	SE	FTB					
	5A	132	<10	SE	FTB		136	> 50	FTB	
	~~MEAN:~~	~~130~~								
	1B	137	<10	SE	FTB		128	> 50	FTB	
	2B	136	<10	SE	FTB					
	3B	133	<10	SE	FTB		130	> 50	FTB	
	4B	135	<10	SE	FTB					
	5B	133	<10	SE	FTB					
	MEAN	**135**				**MEAN:**	**131**			
DS-14	1A	127	<10	SE	FTB	NA	142	> 50	FTB	NA
	2A	127	<10	SE	FTB					
	3A	121	<10	SE	FTB		139	> 50	FTB	
	4A	127	<10	SE	FTB					
	5A	121	<10	SE	FTB		133	> 50	FTB	
	MEAN:	**125**								
	1B	141	<10	SE	FTB		140	> 50	FTB	
	2B	142	<10	SE	FTB					
	3B	138	<10	SE	FTB		137	> 50	FTB	
	4B	140	<10	SE	FTB					
	5B	139	<10	SE	FTB					
	MEAN	**140**				**MEAN:**	**138**			

NA: Not Available

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TRI/ENVIRONMENTAL, INC.
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QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: GZA GEOENVIRONMENTAL (NY)
PROJECT: McKENNA LANDFILL - ALBION, NY
CONTACT: JOHN DANZER OR BART KLETTKE
DATE REC'D: 20-Sept-00

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2144-81-04
DATE TESTED: 20-Sept-00

ASTM D 4437/413/3083 NSF Modified
ANALYST: MDG
REVIEW: JAN
REPORT DATE: 20-Sept-00

		PEEL EVALUATION					SHEAR EVALUATION			
SAMPLE NUMBER	SPECIMEN NUMBER	MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	MAXIMUM TENSION (lb/in)	ELONGATION @ BREAK (%)	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)
DS-15	1A	141	<10	SE	FTB	NA	145	> 50	FTB	NA
	2A	138	<10	SE	FTB					
	3A	141	<10	SE	FTB		146	> 50	FTB	
	4A	134	<10	SE	FTB					
	5A	136	<10	SE	FTB		147	> 50	FTB	
	MEAN:	**138**								
	1B	137	<10	SE	FTB		149	> 50	FTB	
	2B	134	<10	SE	FTB					
	3B	133	<10	SE	FTB		146	> 50	FTB	
	4B	140	<10	SE	FTB					
	5B	136	<10	SE	FTB					
	MEAN	**136**				**MEAN:**	**147**			

NA: Not Available

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QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: GZA GEOENVIRONMENTAL (NY)
PROJECT: McKENNA LANDFILL - ALBION, NY
CONTACT: JOHN DANZER OR BART KLETTKE
DATE REC'D: 22-Sept-00

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2144-83-02
DATE TESTED: 22-Sept-00

ASTM D 4437/413/3083 NSF Modified
ANALYST: EMB
REVIEW: BRA
REPORT DATE: 22-Sept-00

SAMPLE NUMBER	SPECIMEN NUMBER	PEEL EVALUATION: MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	SHEAR EVALUATION: MAXIMUM TENSION (lb/in)	ELONGATION @ BREAK (%)	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)
DS-16	1A	139	<10	SE	FTB	NA	153	> 50	FTB	NA
	2A	137	<10	SE	FTB					
	3A	133	<10	SE	FTB		152	> 50	FTB	
	4A	135	<10	SE	FTB					
	5A	134	<10	SE	FTB		150	> 50	FTB	
	MEAN:	136								
	1B	137	<10	SE	FTB		150	> 50	FTB	
	2B	138	<10	SE	FTB					
	3B	136	<10	SE	FTB		150	> 50	FTB	
	4B	134	<10	SE	FTB					
	5B	135	<10	SE	FTB					
	MEAN	136				MEAN:	151			
DS-17	1A	132	<10	SE	FTB	NA	144	> 50	FTB	NA
	2A	128	<10	SE	FTB					
	3A	134	<10	SE	FTB		140	> 50	FTB	
	4A	126	<10	SE	FTB					
	5A	129	<10	SE	FTB		140	> 50	FTB	
	MEAN:	130								
	1B	133	<10	SE	FTB		137	> 50	FTB	
	2B	132	<10	SE	FTB					
	3B	133	<10	SE	FTB		137	> 50	FTB	
	4B	130	<10	SE	FTB					
	5B	133	<10	SE	FTB					
	MEAN	132				MEAN:	140			

NA: Not Available

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QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: GZA GEOENVIRONMENTAL (NY)
PROJECT: McKENNA LANDFILL - ALBION, NY
CONTACT: JOHN DANZER OR BART KLETTKE
DATE REC'D: 22-Sept-00

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2144-83-02
DATE TESTED: 22-Sept-00

ASTM D 4437/413/3083 NSF Modified
ANALYST: EMB
REVIEW: SRA
REPORT DATE: 22-Sept-00

SAMPLE NUMBER	SPECIMEN NUMBER	PEEL EVALUATION MAXIMUM TENSION (lb/in)	PEEL EVALUATION PEEL INCURSION (%)	PEEL EVALUATION LOCUS OF FAILURE	PEEL EVALUATION NSF 54 FAILURE MODE	PEEL EVALUATION PROJECT SPEC. (lb/in)	SHEAR EVALUATION MAXIMUM TENSION (lb/in)	SHEAR EVALUATION ELONGATION @ BREAK (%)	SHEAR EVALUATION NSF 54 FAILURE MODE	SHEAR EVALUATION PROJECT SPEC. (lb/in)
DS-18	1A	136	<10	SE	FTB	NA	142	> 50	FTB	NA
	2A	134	<10	SE	FTB					
	3A	134	<10	SE	FTB		143	> 50	FTB	
	4A	133	<10	SE	FTB					
	5A	136	<10	SE	FTB		138	> 50	FTB	
	MEAN:	135								
	1B	131	<10	SE	FTB		139	> 50	FTB	
	2B	130	<10	SE	FTB					
	3B	134	<10	SE	FTB		140	> 50	FTB	
	4B	135	<10	SE	FTB					
	5B	135	<10	SE	FTB					
	MEAN	133				MEAN:	140			

NA: Not Available

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QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: GZA GEOENVIRONMENTAL (NY)
PROJECT: McKENNA LANDFILL - ALBION, NY
CONTACT: JOHN DANZER OR BART KLETTKE
DATE REC'D: 25-Sept-00

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2144-85-02
DATE TESTED: 25-Sept-00

ASTM D 4437/413/3083 NSF Modified
ANALYST: EMB
REVIEW: SRA
REPORT DATE: 25-Sept-00

SAMPLE NUMBER	SPECIMEN NUMBER	PEEL EVALUATION					SHEAR EVALUATION			
		MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	MAXIMUM TENSION (lb/in)	ELONGATION @ BREAK (%)	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)
DS-19	1A	132	<10	SE	FTB	NA	150	> 50	FTB	NA
	2A	136	<10	SE	FTB					
	3A	137	<10	SE	FTB		144	> 50	FTB	
	4A	132	<10	SE	FTB					
	5A	141	<10	SE	FTB		146	> 50	FTB	
	MEAN:	136								
	1B	132	<10	SE	FTB		147	> 50	FTB	
	2B	131	<10	SE	FTB					
	3B	132	<10	SE	FTB		146	> 50	FTB	
	4B	130	<10	SE	FTB					
	5B	137	<10	SE	FTB					
	MEAN	132				MEAN:	147			
DS-20	1A	132	<10	SE	FTB	NA	139	> 50	FTB	NA
	2A	129	<10	SE	FTB					
	3A	130	<10	SE	FTB		136	> 50	FTB	
	4A	132	<10	SE	FTB					
	5A	129	<10	SE	FTB		135	> 50	FTB	
	MEAN:	130								
	1B	132	<10	SE	FTB		134	> 50	FTB	
	2B	126	<10	SE	FTB					
	3B	130	<10	SE	FTB		137	> 50	FTB	
	4B	125	<10	SE	FTB					
	5B	128	<10	SE	FTB					
	MEAN	128				MEAN:	136			

NA: Not Available

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QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: GZA GEOENVIRONMENTAL (NY)
PROJECT: McKENNA LANDFILL - ALBION, NY
CONTACT: JOHN DANZER OR BART KLETTKE
DATE REC'D: 28-Sept-00

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2144-88-08
DATE TESTED: 28-Sept-00

ASTM D 4437/413/3083 NSF Modified
ANALYST: AR
REVIEW: [illegible]
REPORT DATE: 28-Sept-00

		PEEL EVALUATION					SHEAR EVALUATION			
SAMPLE NUMBER	SPECIMEN NUMBER	MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	MAXIMUM TENSION (lb/in)	ELONGATION @ BREAK (%)	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)
DS-21	1A	137	<10	SE	FTB	NA	153	> 50	FTB	NA
	2A	135	<10	SE	FTB					
	3A	138	<10	SE	FTB		155	> 50	FTB	
	4A	133	<10	SE	FTB					
	5A	138	<10	SE	FTB		150	> 50	FTB	
	MEAN:	136								
	1B	137	<10	SE	FTB		155	> 50	FTB	
	2B	136	<10	SE	FTB					
	3B	136	<10	SE	FTB		153	> 50	FTB	
	4B	137	<10	SE	FTB					
	5B	136	<10	SE	FTB					
	MEAN	136				MEAN:	153			
DS-22	1A	136	<10	SE	FTB	NA	147	> 50	FTB	NA
	2A	136	<10	SE	FTB					
	3A	132	<10	SE	FTB		142	> 50	FTB	
	4A	138	<10	SE	FTB					
	5A	132	<10	SE	FTB		144	> 50	FTB	
	MEAN:	135								
	1B	134	<10	SE	FTB		143	> 50	FTB	
	2B	129	<10	SE	FTB					
	3B	128	<10	SE	FTB		141	> 50	FTB	
	4B	135	<10	SE	FTB					
	5B	133	<10	SE	FTB					
	MEAN	132				MEAN:	143			

NA: Not Available

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TRI/ENVIRONMENTAL, INC.
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QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: GZA GEOENVIRONMENTAL (NY)
PROJECT: McKENNA LANDFILL - ALBION, NY
CONTACT: JOHN DANZER OR BART KLETTKE
DATE REC'D: 28-Sept-00

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2144-88-09
DATE TESTED: 28-Sept-00

ASTM D 4437/413/3083 NSF Modified
ANALYST: AR
REVIEW: SR4
REPORT DATE: 28-Sept-00

		PEEL EVALUATION					SHEAR EVALUATION			
SAMPLE NUMBER	SPECIMEN NUMBER	MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	MAXIMUM TENSION (lb/in)	ELONGATION @ BREAK (%)	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)
DS-23	1A	141	<10	SE	FTB	NA	153	> 50	FTB	NA
	2A	143	<10	SE	FTB					
	3A	140	<10	SE	FTB		152	> 50	FTB	
	4A	144	<10	SE	FTB					
	5A	140	<10	SE	FTB		151	> 50	FTB	
	MEAN:	142								
	1B	140	<10	SE	FTB		151	> 50	FTB	
	2B	145	<10	SE	FTB					
	3B	145	<10	SE	FTB		152	> 50	FTB	
	4B	146	<10	SE	FTB					
	5B	140	<10	SE	FTB					
	MEAN	143				MEAN:	152			
DS-24	1A	138	<10	SE	FTB	NA	142	> 50	FTB	NA
	2A	141	<10	SE	FTB					
	3A	135	<10	SE	FTB		141	> 50	FTB	
	4A	141	<10	SE	FTB					
	5A	135	<10	SE	FTB		143	> 50	FTB	
	MEAN:	138								
	1B	131	<10	SE	FTB		141	> 50	FTB	
	2B	132	<10	SE	FTB					
	3B	131	<10	SE	FTB		141	> 50	FTB	
	4B	132	<10	SE	FTB					
	5B	129	<10	SE	FTB					
	MEAN	131				MEAN:	142			

NA: Not Available

TRI/ENVIRONMENTAL, INC.
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QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: GZA GEOENVIRONMENTAL (NY)
PROJECT: McKENNA LANDFILL - ALBION, NY
CONTACT: JOHN DANZER OR BART KLETTKE
DATE REC'D: 28-Sept-00

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2144-88-09
DATE TESTED: 28-Sept-00

ASTM D 4437/413/3083 NSF Modified
ANALYST: AR
REVIEW: SRA
REPORT DATE: 28-Sept-00

SAMPLE NUMBER	SPECIMEN NUMBER	PEEL EVALUATION: MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	SHEAR EVALUATION: MAXIMUM TENSION (lb/in)	ELONGATION @ BREAK (%)	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)
DS-25	1A	131	<10	SE	FTB	NA	143	> 50	FTB	NA
	2A	126	<10	SE	FTB					
	3A	125	<10	SE	FTB		135	> 50	FTB	
	4A	126	<10	SE	FTB					
	5A	125	<10	SE	FTB		138	> 50	FTB	
	MEAN:	127								
	1B	135	<10	SE	FTB		137	> 50	FTB	
	2B	128	<10	SE	FTB					
	3B	124	<10	SE	FTB		139	> 50	FTB	
	4B	135	<10	SE	FTB					
	5B	129	<10	SE	FTB					
	MEAN	130				MEAN:	138			

NA: Not Available

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QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: GZA GEOENVIRONMENTAL (NY)
PROJECT: McKENNA LANDFILL - ALBION, NY
CONTACT: JOHN DANZER OR BART KLETTKE
DATE REC'D: 07-Nov-00

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2148-29-03
DATE TESTED: 07-Nov-00

ASTM D 4437/413/3083 NSF Modified
ANALYST: EMB/MDG
REVIEW: SRA
REPORT DATE: 07-Nov-00

SAMPLE NUMBER	SPECIMEN NUMBER	PEEL EVALUATION					SHEAR EVALUATION			
		MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	MAXIMUM TENSION (lb/in)	ELONGATION @ BREAK (%)	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)
DS-26	1A	122	<10	SE	FTB	NA	122	> 50	FTB	NA
	2A	123	<10	SE	FTB					
	3A	125	<10	SE	FTB		124	> 50	FTB	
	4A	125	<10	SE	FTB					
	5A	126	<10	SE	FTB		122	> 50	FTB	
	MEAN:	124								
	1B	126	<10	SE	FTB		120	> 50	FTB	
	2B	127	<10	SE	FTB					
	3B	124	<10	SE	FTB		124	> 50	FTB	
	4B	122	<10	SE	FTB					
	5B	124	<10	SE	FTB					
	MEAN	**125**				**MEAN:**	**122**			
DS-27	1A	115	<10	SE	FTB	NA	118	> 50	FTB	NA
	2A	117	<10	SE	FTB					
	3A	116	<10	SE	FTB		118	> 50	FTB	
	4A	129	<10	SE	FTB					
	5A	118	<10	SE	FTB		118	> 50	FTB	
	MEAN:	**119**								
	1B	137	<10	SE	FTB		117	> 50	FTB	
	2B	139	<10	SE	FTB					
	3B	138	<10	SE	FTB		119	> 50	FTB	
	4B	135	<10	SE	FTB					
	5B	135	<10	SE	FTB					
	MEAN	**137**				**MEAN:**	**118**			

NA: Not Available

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QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: GZA GEOENVIRONMENTAL (NY)
PROJECT: McKENNA LANDFILL - ALBION, NY
CONTACT: JOHN DANZER OR BART KLETTKE
DATE REC'D: 07-Nov-00

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2148-29-03
DATE TESTED: 07-Nov-00

ASTM D 4437/413/3083 NSF Modified
ANALYST: EMB/MDG
REVIEW: SEA
REPORT DATE: 07-Nov-00

		PEEL EVALUATION					SHEAR EVALUATION			
SAMPLE NUMBER	SPECIMEN NUMBER	MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	MAXIMUM TENSION (lb/in)	ELONGATION @ BREAK (%)	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)
DS-28	1A	133	<10	SE	FTB	NA	121	> 50	FTB	NA
	2A	127	<10	SE	FTB					
	3A	162	<10	SE	FTB		117	> 50	FTB	
	4A	131	<10	SE	FTB					
	5A	132	<10	SE	FTB		117	> 50	FTB	
	MEAN:	**137**								
	1B	125	<10	SE	FTB		122	> 50	FTB	
	2B	131	<10	SE	FTB					
	3B	154	<10	SE	FTB		120	> 50	FTB	
	4B	132	<10	SE	FTB					
	5B	124	<10	SE	FTB					
	MEAN	**133**				**MEAN:**	**119**			
DS-29	1A	124	<10	SE	FTB	NA	112	> 50	FTB	NA
	2A	127	<10	SE	FTB					
	3A	122	<10	SE	FTB		115	> 50	FTB	
	4A	134	<10	SE	FTB					
	5A	127	<10	SE	FTB		113	> 50	FTB	
	MEAN:	**127**								
	1B	129	<10	SE	FTB		116	> 50	FTB	
	2B	129	<10	SE	FTB					
	3B	130	<10	SE	FTB		113	> 50	FTB	
	4B	122	<10	SE	FTB					
	5B	125	<10	SE	FTB					
	MEAN	**127**				**MEAN:**	**114**			

NA: Not Available

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GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

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CONTACT: JOHN DANZER OR BART KLETTKE
DATE REC'D: 07-Nov-00

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2148-29-03
DATE TESTED: 07-Nov-00

ASTM D 4437/413/3083 NSF Modified
ANALYST: EMB/MDG
REVIEW: SRA
REPORT DATE: 07-Nov-00

		PEEL EVALUATION					SHEAR EVALUATION			
SAMPLE NUMBER	SPECIMEN NUMBER	MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	MAXIMUM TENSION (lb/in)	ELONGATION @ BREAK (%)	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)
DS-30	1A	136	<10	SE	FTB	NA	125	> 50	FTB	NA
	2A	138	<10	SE	FTB					
	3A	136	<10	SE	FTB		125	> 50	FTB	
	4A	137	<10	SE	FTB					
	5A	135	<10	SE	FTB		125	> 50	FTB	
	MEAN:	**136**								
	1B	136	<10	SE	FTB		126	> 50	FTB	
	2B	139	<10	SE	FTB					
	3B	134	<10	SE	FTB		125	> 50	FTB	
	4B	139	<10	SE	FTB					
	5B	136	<10	SE	FTB					
	MEAN	**137**				**MEAN:**	**125**			
DS-31	1A	134	<10	SE	FTB	NA	122	> 50	FTB	NA
	2A	135	<10	SE	FTB					
	3A	135	<10	SE	FTB		123	> 50	FTB	
	4A	134	<10	SE	FTB					
	5A	131	<10	SE	FTB		123	> 50	FTB	
	MEAN:	**134**								
	1B	128	<10	SE	FTB		123	> 50	FTB	
	2B	134	<10	SE	FTB					
	3B	132	<10	SE	FTB		123	> 50	FTB	
	4B	137	<10	SE	FTB					
	5B	132	<10	SE	FTB					
	MEAN	**133**				**MEAN:**	**123**			

NA: Not Available

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GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: GZA GEOENVIRONMENTAL (NY)
PROJECT: McKENNA LANDFILL - ALBION, NY
CONTACT: JOHN DANZER OR BART KLETTKE
DATE REC'D: 07-Nov-00

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2148-29-03
DATE TESTED: 07-Nov-00

ASTM D 4437/413/3083 NSF Modified
ANALYST: EMB/MDG
REVIEW: SRA
REPORT DATE: 07-Nov-00

SAMPLE NUMBER	SPECIMEN NUMBER	PEEL EVALUATION: MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	SHEAR EVALUATION: MAXIMUM TENSION (lb/in)	ELONGATION @ BREAK (%)	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)
DS-32	1A	128	<10	SE	FTB	NA	118	> 50	FTB	NA
	2A	132	<10	SE	FTB					
	3A	133	<10	SE	FTB		118	> 50	FTB	
	4A	132	<10	SE	FTB					
	5A	128	<10	SE	FTB		116	> 50	FTB	
	MEAN:	**131**								
	1B	129	<10	SE	FTB		116	> 50	FTB	
	2B	129	<10	SE	FTB					
	3B	128	<10	SE	FTB		117	> 50	FTB	
	4B	129	<10	SE	FTB					
	5B	131	<10	SE	FTB					
	MEAN	**129**				**MEAN:**	**117**			
DS-33	1A	117	<10	SE	FTB	NA	115	> 50	FTB	NA
	2A	125	<10	SE	FTB					
	3A	123	<10	SE	FTB		113	> 50	FTB	
	4A	126	<10	SE	FTB					
	5A	122	<10	SE	FTB		118	> 50	FTB	
	MEAN:	**123**								
	1B	124	<10	SE	FTB		114	> 50	FTB	
	2B	113	<10	SE	FTB					
	3B	124	<10	SE	FTB		112	> 50	FTB	
	4B	121	<10	SE	FTB					
	5B	119	<10	SE	FTB					
	MEAN	**120**				**MEAN:**	**114**			

NA: Not Available

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TRI/ENVIRONMENTAL, INC.
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QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: GZA GEOENVIRONMENTAL (NY)
PROJECT: McKENNA LANDFILL - ALBION, NY
CONTACT: JOHN DANZER OR BART KLETTKE
DATE REC'D: 09-Nov-00

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2148-31-03
DATE TESTED: 09-Nov-00

ASTM D 4437/413/3083 NSF Modified
ANALYST: MDG
REVIEW: SR4
REPORT DATE: 09-Nov-00

		PEEL EVALUATION					SHEAR EVALUATION			
SAMPLE NUMBER	SPECIMEN NUMBER	MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	MAXIMUM TENSION (lb/in)	ELONGATION @ BREAK (%)	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)
DS-34	1A	129	<10	SE	FTB	NA	138	> 50	FTB	NA
	2A	135	<10	SE	FTB					
	3A	135	<10	SE	FTB		144	> 50	FTB	
	4A	135	<10	SE	FTB					
	5A	132	<10	SE	FTB		138	> 50	FTB	
	MEAN:	**133**								
	1B	128	<10	SE	FTB		134	> 50	FTB	
	2B	129	<10	SE	FTB					
	3B	132	<10	SE	FTB		136	> 50	FTB	
	4B	126	<10	SE	FTB					
	5B	125	<10	SE	FTB					
	MEAN	**128**				**MEAN:**	**138**			
DS-35	1A	126	<10	SE	FTB	NA	129	> 50	FTB	NA
	2A	130	<10	SE	FTB					
	3A	126	<10	SE	FTB		122	> 50	FTB	
	4A	124	<10	SE	FTB					
	5A	128	<10	SE	FTB		125	> 50	FTB	
	MEAN:	**127**								
	1B	122	<10	SE	FTB		125	> 50	FTB	
	2B	127	<10	SE	FTB					
	3B	122	<10	SE	FTB		125	> 50	FTB	
	4B	125	<10	SE	FTB					
	5B	125	<10	SE	FTB					
	MEAN	**124**				**MEAN:**	**125**			

NA: Not Available

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ANALYST: MDG
REVIEW: SRA
REPORT DATE: 09-Nov-00

		PEEL EVALUATION					SHEAR EVALUATION			
SAMPLE NUMBER	SPECIMEN NUMBER	MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	MAXIMUM TENSION (lb/in)	ELONGATION @ BREAK (%)	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)
DS-36	1A	125	<10	SE	FTB	NA	138	> 50	FTB	NA
	2A	129	<10	SE	FTB					
	3A	126	<10	SE	FTB		135	> 50	FTB	
	4A	130	<10	SE	FTB					
	5A	121	<10	SE	FTB		138	> 50	FTB	
	MEAN:	**126**								
	1B	133	<10	SE	FTB		135	> 50	FTB	
	2B	117	<10	SE	FTB					
	3B	119	<10	SE	FTB		143	> 50	FTB	
	4B	124	<10	SE	FTB					
	5B	123	<10	SE	FTB					
	MEAN	**123**				**MEAN:**	**138**			
DS-37	1A	134	<10	SE	FTB	NA	145	> 50	FTB	NA
	2A	134	<10	SE	FTB					
	3A	129	<10	SE	FTB		141	> 50	FTB	
	4A	134	<10	SE	FTB					
	5A	132	<10	SE	FTB		141	> 50	FTB	
	MEAN:	**133**								
	1B	131	<10	SE	FTB		142	> 50	FTB	
	2B	132	<10	SE	FTB					
	3B	128	<10	SE	FTB		142	> 50	FTB	
	4B	128	<10	SE	FTB					
	5B	129	<10	SE	FTB					
	MEAN	**130**				**MEAN:**	**142**			

NA: Not Available

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CONTACT: JOHN DANZER OR BART KLETTKE
DATE REC'D: 09-Nov-00

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2148-31-03
DATE TESTED: 09-Nov-00

ASTM D 4437/413/3083 NSF Modified
ANALYST: MDG
REVIEW: SR4
REPORT DATE: 09-Nov-00

		PEEL EVALUATION					SHEAR EVALUATION			
SAMPLE NUMBER	SPECIMEN NUMBER	MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	MAXIMUM TENSION (lb/in)	ELONGATION @ BREAK (%)	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)
DS-38	1A	124	<10	SE	FTB	NA	131	> 50	FTB	NA
	2A	124	<10	SE	FTB					
	3A	120	<10	SE	FTB		135	> 50	FTB	
	4A	125	<10	SE	FTB					
	5A	118	<10	SE	FTB		132	> 50	FTB	
	MEAN:	122								
	1B	120	<10	SE	FTB		140	> 50	FTB	
	2B	121	<10	SE	FTB					
	3B	130	<10	SE	FTB		144	> 50	FTB	
	4B	130	<10	SE	FTB					
	5B	116	<10	SE	FTB					
	MEAN	123				MEAN:	136			

NA: Not Available

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CLIENT: GZA GEOENVIRONMENTAL (NY)
PROJECT: McKENNA LANDFILL - ALBION, NY
CONTACT: JOHN DANZER OR BART KLETTKE
DATE REC'D: 14-Nov-00

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2148-34-09
DATE TESTED: 14-Nov-00

ASTM D 4437/413/3083 NSF Modified
ANALYST: EMB/MB
REVIEW: SR4
REPORT DATE: 14-Nov-00

SAMPLE NUMBER	SPECIMEN NUMBER	PEEL EVALUATION MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	SHEAR EVALUATION MAXIMUM TENSION (lb/in)	ELONGATION @ BREAK (%)	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)
DS-39	1A	139	<10	SE	FTB	NA	153	> 50	FTB	NA
	2A	140	<10	SE	FTB					
	3A	141	<10	SE	FTB		148	> 50	FTB	
	4A	138	<10	SE	FTB					
	5A	139	<10	SE	FTB		150	> 50	FTB	
	MEAN:	139								
	1B	137	<10	SE	FTB		150	> 50	FTB	
	2B	137	<10	SE	FTB					
	3B	137	<10	SE	FTB		147	> 50	FTB	
	4B	135	<10	SE	FTB					
	5B	138	<10	SE	FTB					
	MEAN	137				MEAN:	150			
DS-40	1A	138	<10	SE	FTB	NA	153	> 50	FTB	NA
	2A	141	<10	SE	FTB					
	3A	139	<10	SE	FTB		150	> 50	FTB	
	4A	136	<10	SE	FTB					
	5A	138	<10	SE	FTB		152	> 50	FTB	
	MEAN:	138								
	1B	142	<10	SE	FTB		153	> 50	FTB	
	2B	143	<10	SE	FTB					
	3B	140	<10	SE	FTB		151	> 50	FTB	
	4B	142	<10	SE	FTB					
	5B	143	<10	SE	FTB					
	MEAN	142				MEAN:	152			

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TRI LOG #: E2148-34-09
DATE TESTED: 14-Nov-00

ASTM D 4437/413/3083 NSF Modified
ANALYST: EMB/MB
REVIEW: SR4
REPORT DATE: 14-Nov-00

SAMPLE NUMBER	SPECIMEN NUMBER	PEEL EVALUATION MAXIMUM TENSION (lb/in)	PEEL EVALUATION PEEL INCURSION (%)	PEEL EVALUATION LOCUS OF FAILURE	PEEL EVALUATION NSF 54 FAILURE MODE	PEEL EVALUATION PROJECT SPEC. (lb/in)	SHEAR EVALUATION MAXIMUM TENSION (lb/in)	SHEAR EVALUATION ELONGATION @ BREAK (%)	SHEAR EVALUATION NSF 54 FAILURE MODE	SHEAR EVALUATION PROJECT SPEC. (lb/in)
DS-41	1A	128	<10	SE	FTB	NA	133	> 50	FTB	NA
	2A	134	<10	SE	FTB					
	3A	131	<10	SE	FTB		131	> 50	FTB	
	4A	130	<10	SE	FTB					
	5A	130	<10	SE	FTB		129	> 50	FTB	
	MEAN:	131								
	1B	127	<10	SE	FTB		130	> 50	FTB	
	2B	130	<10	SE	FTB					
	3B	129	<10	SE	FTB		132	> 50	FTB	
	4B	127	<10	SE	FTB					
	5B	127	<10	SE	FTB					
	MEAN	128				MEAN:	131			
DS-42	1A	134	<10	SE	FTB	NA	138	> 50	FTB	NA
	2A	130	<10	SE	FTB					
	3A	128	<10	SE	FTB		134	> 50	FTB	
	4A	132	<10	SE	FTB					
	5A	132	<10	SE	FTB		139	> 50	FTB	
	MEAN:	131								
	1B	137	<10	SE	FTB		134	> 50	FTB	
	2B	137	<10	SE	FTB					
	3B	137	<10	SE	FTB		138	> 50	FTB	
	4B	135	<10	SE	FTB					
	5B	134	<10	SE	FTB					
	MEAN	136				MEAN:	137			

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CLIENT: GZA GEOENVIRONMENTAL (NY)
PROJECT: McKENNA LANDFILL - ALBION, NY
CONTACT: JOHN DANZER OR BART KLETTKE
DATE REC'D: 17-Nov-00

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2148-37-07
DATE TESTED: 17-Nov-00

ASTM D 4437/413/3083 NSF Modified
ANALYST: EMB
REVIEW: JAN
REPORT DATE: 17-Nov-00

		PEEL EVALUATION					SHEAR EVALUATION			
SAMPLE NUMBER	SPECIMEN NUMBER	MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	MAXIMUM TENSION (lb/in)	ELONGATION @ BREAK (%)	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)
DS-43	1A	126	<10	SE	FTB	NA	145	> 50	FTB	NA
	2A	128	<10	SE	FTB					
	3A	126	<10	SE	FTB		144	> 50	FTB	
	4A	134	<10	SE	FTB					
	5A	130	<10	SE	FTB		143	> 50	FTB	
	MEAN:	**129**								
	1B	136	<10	SE	FTB		146	> 50	FTB	
	2B	132	<10	SE	FTB					
	3B	134	<10	SE	FTB		143	> 50	FTB	
	4B	133	<10	SE	FTB					
	5B	132	<10	SE	FTB					
	MEAN	**133**				**MEAN:**	**144**			
DS-44	1A	138	<10	SE	FTB	NA	150	> 50	FTB	NA
	2A	137	<10	SE	FTB					
	3A	138	<10	SE	FTB		149	> 50	FTB	
	4A	139	<10	SE	FTB					
	5A	134	<10	SE	FTB		148	> 50	FTB	
	MEAN:	**137**								
	1B	137	<10	SE	FTB		149	> 50	FTB	
	2B	135	<10	SE	FTB					
	3B	133	<10	SE	FTB		147	> 50	FTB	
	4B	134	<10	SE	FTB					
	5B	131	<10	SE	FTB					
	MEAN	**134**				**MEAN:**	**149**			

NA: Not Available

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CLIENT: GZA GEOENVIRONMENTAL (NY)
PROJECT: McKENNA LANDFILL - ALBION, NY
CONTACT: JOHN DANZER OR BART KLETTKE
DATE REC'D: 17-Nov-00

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2148-37-07
DATE TESTED: 17-Nov-00

ASTM D 4437/413/3083 NSF Modified
ANALYST: EMB
REVIEW: JAW
REPORT DATE: 17-Nov-00

SAMPLE NUMBER	SPECIMEN NUMBER	PEEL EVALUATION: MAXIMUM TENSION (lb/in)	PEEL EVALUATION: PEEL INCURSION (%)	PEEL EVALUATION: LOCUS OF FAILURE	PEEL EVALUATION: NSF 54 FAILURE MODE	PEEL EVALUATION: PROJECT SPEC. (lb/in)	SHEAR EVALUATION: MAXIMUM TENSION (lb/in)	SHEAR EVALUATION: ELONGATION @ BREAK (%)	SHEAR EVALUATION: NSF 54 FAILURE MODE	SHEAR EVALUATION: PROJECT SPEC. (lb/in)
DS-45	1A	131	<10	SE	FTB	NA	143	> 50	FTB	NA
	2A	133	<10	SE	FTB					
	3A	138	<10	SE	FTB		135	> 50	FTB	
	4A	132	<10	SE	FTB					
	5A	131	<10	SE	FTB		138	> 50	FTB	
	MEAN:	**133**								
	1B	130	<10	SE	FTB		138	> 50	FTB	
	2B	135	<10	SE	FTB					
	3B	129	<10	SE	FTB		138	> 50	FTB	
	4B	133	<10	SE	FTB					
	5B	135	<10	SE	FTB					
	MEAN	**132**				**MEAN:**	**138**			
DS-46	1A	133	<10	SE	FTB	NA	155	> 50	FTB	NA
	2A	134	<10	SE	FTB					
	3A	133	<10	SE	FTB		146	> 50	FTB	
	4A	138	<10	SE	FTB					
	5A	134	<10	SE	FTB		143	> 50	FTB	
	MEAN:	**134**								
	1B	134	<10	SE	FTB		144	> 50	FTB	
	2B	138	<10	SE	FTB					
	3B	135	<10	SE	FTB		154	> 50	FTB	
	4B	137	<10	SE	FTB					
	5B	138	<10	SE	FTB					
	MEAN	**136**				**MEAN:**	**148**			

NA: Not Available

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TRI/ENVIRONMENTAL, INC.
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QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: GZA GEOENVIRONMENTAL (NY)
PROJECT: McKENNA LANDFILL - ALBION, NY
CONTACT: JOHN DANZER OR BART KLETTKE
DATE REC'D: 17-Nov-00

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2148-37-07
DATE TESTED: 17-Nov-00

ASTM D 4437/413/3083 NSF Modified
ANALYST: EMB
REVIEW: JAS
REPORT DATE: 17-Nov-00

		PEEL EVALUATION					SHEAR EVALUATION			
SAMPLE NUMBER	SPECIMEN NUMBER	MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	MAXIMUM TENSION (lb/in)	ELONGATION @ BREAK (%)	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)
DS-47	1A	141	<10	SE	FTB	NA	149	> 50	FTB	NA
	2A	144	<10	SE	FTB					
	3A	139	<10	SE	FTB		141	> 50	FTB	
	4A	141	<10	SE	FTB					
	5A	138	<10	SE	FTB		142	> 50	FTB	
	MEAN:	141								
	1B	135	<10	SE	FTB		143	> 50	FTB	
	2B	139	<10	SE	FTB					
	3B	136	<10	SE	FTB		142	> 50	FTB	
	4B	137	<10	SE	FTB					
	5B	135	<10	SE	FTB					
	MEAN	136				MEAN:	143			
DS-48	1A	139	<10	SE	FTB	NA	146	> 50	FTB	NA
	2A	135	<10	SE	FTB					
	3A	135	<10	SE	FTB		143	> 50	FTB	
	4A	137	<10	SE	FTB					
	5A	133	<10	SE	FTB		143	> 50	FTB	
	MEAN:	136								
	1B	140	<10	SE	FTB		143	> 50	FTB	
	2B	140	<10	SE	FTB					
	3B	140	<10	SE	FTB		144	> 50	FTB	
	4B	141	<10	SE	FTB					
	5B	138	<10	SE	FTB					
	MEAN	140				MEAN:	144			

NA: Not Available

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TRI/ENVIRONMENTAL, INC.
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QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: GZA GEOENVIRONMENTAL (NY)
PROJECT: McKENNA LANDFILL - ALBION, NY
CONTACT: JOHN DANZER OR BART KLETTKE
DATE REC'D: 17-Nov-00

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2148-37-07
DATE TESTED: 17-Nov-00

ASTM D 4437/413/3083 NSF Modified
ANALYST: EMB
REVIEW: JAJ
REPORT DATE: 17-Nov-00

SAMPLE NUMBER	SPECIMEN NUMBER	PEEL EVALUATION: MAXIMUM TENSION (lb/in)	PEEL EVALUATION: PEEL INCURSION (%)	PEEL EVALUATION: LOCUS OF FAILURE	PEEL EVALUATION: NSF 54 FAILURE MODE	PEEL EVALUATION: PROJECT SPEC. (lb/in)	SHEAR EVALUATION: MAXIMUM TENSION (lb/in)	SHEAR EVALUATION: ELONGATION @ BREAK (%)	SHEAR EVALUATION: NSF 54 FAILURE MODE	SHEAR EVALUATION: PROJECT SPEC. (lb/in)
DS-49	1A	132	<10	SE	FTB	NA	139	> 50	FTB	NA
	2A	125	<10	SE	FTB					
	3A	124	<10	SE	FTB		138	> 50	FTB	
	4A	130	<10	SE	FTB					
	5A	128	<10	SE	FTB		139	> 50	FTB	
	MEAN:	128								
	1B	131	<10	SE	FTB		135	> 50	FTB	
	2B	139	<10	SE	FTB					
	3B	137	<10	SE	FTB		137	> 50	FTB	
	4B	134	<10	SE	FTB					
	5B	136	<10	SE	FTB					
	MEAN	**135**				**MEAN:**	**138**			
DS-50	1A	137	<10	SE	FTB	NA	142	> 50	FTB	NA
	2A	140	<10	SE	FTB					
	3A	138	<10	SE	FTB		139	> 50	FTB	
	4A	137	<10	SE	FTB					
	5A	139	<10	SE	FTB		138	> 50	FTB	
	MEAN:	**138**								
	1B	131	<10	SE	FTB		138	> 50	FTB	
	2B	133	<10	SE	FTB					
	3B	131	<10	SE	FTB		141	> 50	FTB	
	4B	131	<10	SE	FTB					
	5B	132	<10	SE	FTB					
	MEAN	**132**				**MEAN:**	**140**			

NA: Not Available

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QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: GZA GEOENVIRONMENTAL (NY)	MATERIAL: LLDPE	ASTM D 4437/413/3083 NSF Modified
PROJECT: McKENNA LANDFILL - ALBION, NY	SEAM TYPE: HEAT FUSION WELD	ANALYST: EMB
CONTACT: JOHN DANZER OR BART KLETTKE	TRI LOG #: E2148-37-07	REVIEW: JAN
DATE REC'D: 17-Nov-00	DATE TESTED: 17-Nov-00	REPORT DATE: 17-Nov-00

		PEEL EVALUATION					SHEAR EVALUATION			
SAMPLE NUMBER	SPECIMEN NUMBER	MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	MAXIMUM TENSION (lb/in)	ELONGATION @ BREAK (%)	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)
DS-51	1A	138	<10	SE	FTB	NA	143	> 50	FTB	NA
	2A	139	<10	SE	FTB					
	3A	138	<10	SE	FTB		137	> 50	FTB	
	4A	137	<10	SE	FTB					
	5A	137	<10	SE	FTB		138	> 50	FTB	
	MEAN:	138								
	1B	138	<10	SE	FTB		141	> 50	FTB	
	2B	142	<10	SE	FTB					
	3B	141	<10	SE	FTB		137	> 50	FTB	
	4B	138	<10	SE	FTB					
	5B	138	<10	SE	FTB					
	MEAN	139				MEAN:	139			
DS-52	1A	136	<10	SE	FTB	NA	150	> 50	FTB	NA
	2A	137	<10	SE	FTB					
	3A	131	<10	SE	FTB		144	> 50	FTB	
	4A	136	<10	SE	FTB					
	5A	134	<10	SE	FTB		145	> 50	FTB	
	MEAN:	135								
	1B	146	<10	SE	FTB		142	> 50	FTB	
	2B	144	<10	SE	FTB					
	3B	139	<10	SE	FTB		147	> 50	FTB	
	4B	143	<10	SE	FTB					
	5B	142	<10	SE	FTB					
	MEAN	143				MEAN:	146			

NA: Not Available

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TRI/ENVIRONMENTAL, INC.
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QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: GZA GEOENVIRONMENTAL (NY)
PROJECT: McKENNA LANDFILL - ALBION, NY
CONTACT: JOHN DANZER OR BART KLETTKE
DATE REC'D: 17-Nov-00

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2148-37-07
DATE TESTED: 17-Nov-00

ASTM D 4437/413/3083 NSF Modified
ANALYST: EMB
REVIEW: JAN
REPORT DATE: 17-Nov-00

		PEEL EVALUATION					SHEAR EVALUATION			
SAMPLE NUMBER	SPECIMEN NUMBER	MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	MAXIMUM TENSION (lb/in)	ELONGATION @ BREAK (%)	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)
DS-53	1A	128	<10	SE	FTB	NA	132	> 50	FTB	NA
	2A	134	<10	SE	FTB					
	3A	126	<10	SE	FTB		132	> 50	FTB	
	4A	133	<10	SE	FTB					
	5A	135	<10	SE	FTB		135	> 50	FTB	
	MEAN:	**131**								
	1B	130	<10	SE	FTB		131	> 50	FTB	
	2B	134	<10	SE	FTB					
	3B	136	<10	SE	FTB		133	> 50	FTB	
	4B	135	<10	SE	FTB					
	5B	132	<10	SE	FTB					
	MEAN	**133**				**MEAN:**	**133**			
DS-54	1A	132	<10	SE	FTB	NA	143	> 50	FTB	NA
	2A	127	<10	SE	FTB					
	3A	131	<10	SE	FTB		139	> 50	FTB	
	4A	131	<10	SE	FTB					
	5A	128	<10	SE	FTB		140	> 50	FTB	
	MEAN:	**130**								
	1B	135	<10	SE	FTB		142	> 50	FTB	
	2B	130	<10	SE	FTB					
	3B	128	<10	SE	FTB		141	> 50	FTB	
	4B	130	<10	SE	FTB					
	5B	123	<10	SE	FTB					
	MEAN	**129**				**MEAN:**	**141**			

NA: Not Available

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QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: GZA GEOENVIRONMENTAL (NY)
PROJECT: McKENNA LANDFILL - ALBION, NY
CONTACT: JOHN DANZER OR BART KLETTKE
DATE REC'D: 17-Nov-00

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2148-37-07
DATE TESTED: 17-Nov-00

ASTM D 4437/413/3083 NSF Modified
ANALYST: EMB
REVIEW: JAN
REPORT DATE: 17-Nov-00

		PEEL EVALUATION					SHEAR EVALUATION			
SAMPLE NUMBER	SPECIMEN NUMBER	MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	MAXIMUM TENSION (lb/in)	ELONGATION @ BREAK (%)	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)
DS-55	1A	134	<10	SE	FTB	NA	150	> 50	FTB	NA
	2A	136	<10	SE	FTB					
	3A	134	<10	SE	FTB		142	> 50	FTB	
	4A	136	<10	SE	FTB					
	5A	130	<10	SE	FTB		145	> 50	FTB	
	MEAN:	**134**								
	1B	141	<10	SE	FTB		145	> 50	FTB	
	2B	140	<10	SE	FTB					
	3B	141	<10	SE	FTB		148	> 50	FTB	
	4B	139	<10	SE	FTB					
	5B	137	<10	SE	FTB					
	MEAN	**140**				**MEAN:**	**146**			
DS-56	1A	119	<10	SE	FTB	NA	135	> 50	FTB	NA
	2A	120	<10	SE	FTB					
	3A	122	<10	SE	FTB		136	> 50	FTB	
	4A	120	<10	SE	FTB					
	5A	122	<10	SE	FTB		138	> 50	FTB	
	MEAN:	**121**								
	1B	128	<10	SE	FTB		131	> 50	FTB	
	2B	128	<10	SE	FTB					
	3B	134	<10	SE	FTB		136	> 50	FTB	
	4B	127	<10	SE	FTB					
	5B	127	<10	SE	FTB					
	MEAN	**129**				**MEAN:**	**135**			

NA: Not Available

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QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: GZA GEOENVIRONMENTAL (NY)
PROJECT: McKENNA LANDFILL - ALBION, NY
CONTACT: JOHN DANZER OR BART KLETTKE
DATE REC'D: 01-Dec-00

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2148-45-06
DATE TESTED: 01-Dec-00

ASTM D 4437/413/3083 NSF Modified
ANALYST: EMB
REVIEW: /TES
REPORT DATE: 01-Dec-00

SAMPLE NUMBER	SPECIMEN NUMBER	PEEL EVALUATION: MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	SHEAR EVALUATION: MAXIMUM TENSION (lb/in)	ELONGATION @ BREAK (%)	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)
	1A	129	<10	SE	FTB	NA	140	> 50	FTB	NA
	2A	127	<10	SE	FTB					
	3A	126	<10	SE	FTB		139	> 50	FTB	
	4A	128	<10	SE	FTB					
	5A	128	<10	SE	FTB		137	> 50	FTB	
DS-57	MEAN:	128								
	1B	130	<10	SE	FTB		140	> 50	FTB	
	2B	125	<10	SE	FTB					
	3B	130	<10	SE	FTB		138	> 50	FTB	
	4B	124	<10	SE	FTB					
	5B	129	<10	SE	FTB					
	MEAN	128				MEAN:	139			
	1A	133	<10	SE	FTB	NA	144	> 50	FTB	NA
	2A	130	<10	SE	FTB					
	3A	127	<10	SE	FTB		139	> 50	FTB	
	4A	131	<10	SE	FTB					
	5A	131	<10	SE	FTB		141	> 50	FTB	
DS-58	MEAN:	130								
	1B	139	<10	SE	FTB		139	> 50	FTB	
	2B	132	<10	SE	FTB					
	3B	132	<10	SE	FTB		138	> 50	FTB	
	4B	133	<10	SE	FTB					
	5B	128	<10	SE	FTB					
	MEAN	133				MEAN:	140			

NA: Not Available

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TRI/ENVIRONMENTAL, INC.
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QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: GZA GEOENVIRONMENTAL (NY)
PROJECT: McKENNA LANDFILL - ALBION, NY
CONTACT: JOHN DANZER OR BART KLETTKE
DATE REC'D: 01-Dec-00

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2148-45-06
DATE TESTED: 01-Dec-00

ASTM D 4437/413/3083 NSF Modified
ANALYST: EMB
REVIEW: MtS
REPORT DATE: 01-Dec-00

		PEEL EVALUATION					SHEAR EVALUATION			
SAMPLE NUMBER	SPECIMEN NUMBER	MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	MAXIMUM TENSION (lb/in)	ELONGATION @ BREAK (%)	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)
DS-59	1A	138	<10	SE	FTB	NA	146	> 50	FTB	NA
	2A	138	<10	SE	FTB					
	3A	137	<10	SE	FTB		139	> 50	FTB	
	4A	134	<10	SE	FTB					
	5A	132	<10	SE	FTB		156	> 50	FTB	
	MEAN:	**136**								
	1B	128	<10	SE	FTB		140	> 50	FTB	
	2B	126	<10	SE	FTB					
	3B	127	<10	SE	FTB		148	> 50	FTB	
	4B	124	<10	SE	FTB					
	5B	127	<10	SE	FTB					
	MEAN	**126**				**MEAN:**	**146**			
DS-60	1A	138	<10	SE	FTB	NA	146	> 50	FTB	NA
	2A	137	<10	SE	FTB					
	3A	138	<10	SE	FTB		140	> 50	FTB	
	4A	134	<10	SE	FTB					
	5A	137	<10	SE	FTB		143	> 50	FTB	
	MEAN:	**137**								
	1B	132	<10	SE	FTB		139	> 50	FTB	
	2B	128	<10	SE	FTB					
	3B	130	<10	SE	FTB		138	> 50	FTB	
	4B	132	<10	SE	FTB					
	5B	127	<10	SE	FTB					
	MEAN	**130**				**MEAN:**	**141**			

NA: Not Available

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TRI/ENVIRONMENTAL, INC.
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QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: GZA GEOENVIRONMENTAL (NY)
PROJECT: McKENNA LANDFILL - ALBION, NY
CONTACT: JOHN DANZER OR BART KLETTKE
DATE REC'D: 01-Dec-00

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2148-45-06
DATE TESTED: 01-Dec-00

ASTM D 4437/413/3083 NSF Modified
ANALYST: EMB
REVIEW: MLS
REPORT DATE: 01-Dec-00

		PEEL EVALUATION					SHEAR EVALUATION			
SAMPLE NUMBER	SPECIMEN NUMBER	MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	MAXIMUM TENSION (lb/in)	ELONGATION @ BREAK (%)	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)
DS-61	1A	130	<10	SE	FTB	NA	144	> 50	FTB	NA
	2A	127	<10	SE	FTB					
	3A	130	<10	SE	FTB		139	> 50	FTB	
	4A	130	<10	SE	FTB					
	5A	130	<10	SE	FTB		141	> 50	FTB	
	MEAN:	129								
	1B	130	<10	SE	FTB		140	> 50	FTB	
	2B	126	<10	SE	FTB					
	3B	127	<10	SE	FTB		139	> 50	FTB	
	4B	128	<10	SE	FTB					
	5B	128	<10	SE	FTB					
	MEAN	128				MEAN:	141			
DS-62	1A	126	<10	SE	FTB	NA	137	> 50	FTB	NA
	2A	129	<10	SE	FTB					
	3A	126	<10	SE	FTB		133	> 50	FTB	
	4A	131	<10	SE	FTB					
	5A	123	<10	SE	FTB		135	> 50	FTB	
	MEAN:	127								
	1B	118	<10	SE	FTB		130	> 50	FTB	
	2B	118	<10	SE	FTB					
	3B	116	<10	SE	FTB		132	> 50	FTB	
	4B	116	<10	SE	FTB					
	5B	114	<10	SE	FTB					
	MEAN	116				MEAN:	133			

NA: Not Available

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TRI/ENVIRONMENTAL, INC.
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QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: GZA GEOENVIRONMENTAL (NY)
PROJECT: McKENNA LANDFILL - ALBION, NY
CONTACT: JOHN DANZER OR BART KLETTKE
DATE REC'D: 01-Dec-00

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2148-45-06
DATE TESTED: 01-Dec-00

ASTM D 4437/413/3083 NSF Modified
ANALYST: EMB
REVIEW: MES
REPORT DATE: 01-Dec-00

		PEEL EVALUATION					SHEAR EVALUATION			
SAMPLE NUMBER	SPECIMEN NUMBER	MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	MAXIMUM TENSION (lb/in)	ELONGATION @ BREAK (%)	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)
DS-63	1A	130	<10	SE	FTB	NA	137	> 50	FTB	NA
	2A	126	<10	SE	FTB					
	3A	130	<10	SE	FTB		128	> 50	FTB	
	4A	126	<10	SE	FTB					
	5A	128	<10	SE	FTB		132	> 50	FTB	
	MEAN:	**128**								
	1B	127	<10	SE	FTB		130	> 50	FTB	
	2B	120	<10	SE	FTB					
	3B	123	<10	SE	FTB		138	> 50	FTB	
	4B	123	<10	SE	FTB					
	5B	122	<10	SE	FTB					
	MEAN	**123**				**MEAN:**	**133**			
DS-64	1A	125	<10	SE	FTB	NA	132	> 50	FTB	NA
	2A	130	<10	SE	FTB					
	3A	128	<10	SE	FTB		129	> 50	FTB	
	4A	126	<10	SE	FTB					
	5A	121	<10	SE	FTB		133	> 50	FTB	
	MEAN:	**126**								
	1B	123	<10	SE	FTB		129	> 50	FTB	
	2B	125	<10	SE	FTB					
	3B	128	<10	SE	FTB		132	> 50	FTB	
	4B	124	<10	SE	FTB					
	5B	124	<10	SE	FTB					
	MEAN	**125**				**MEAN:**	**131**			

NA: Not Available

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TRI/ENVIRONMENTAL, INC.
A Texas Research International Company

QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: GZA GEOENVIRONMENTAL (NY)
PROJECT: McKENNA LANDFILL - ALBION, NY
CONTACT: JOHN DANZER OR BART KLETTKE
DATE REC'D: 01-Dec-00

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2148-45-06
DATE TESTED: 01-Dec-00

ASTM D 4437/413/3083 NSF Modified
ANALYST: EMB
REVIEW: [illegible]
REPORT DATE: 01-Dec-00

SAMPLE NUMBER	SPECIMEN NUMBER	PEEL EVALUATION MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	SHEAR EVALUATION MAXIMUM TENSION (lb/in)	ELONGATION @ BREAK (%)	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)
	1A	132	<10	SE	FTB	NA	145	> 50	FTB	NA
	2A	127	<10	SE	FTB					
	3A	130	<10	SE	FTB		143	> 50	FTB	
	4A	126	<10	SE	FTB					
	5A	127	<10	SE	FTB		144	> 50	FTB	
DS-65	**MEAN:**	**128**								
	1B	134	<10	SE	FTB		143	> 50	FTB	
	2B	136	<10	SE	FTB					
	3B	135	<10	SE	FTB		143	> 50	FTB	
	4B	134	<10	SE	FTB					
	5B	133	<10	SE	FTB					
	MEAN	**134**				**MEAN:**	**144**			
	1A	125	<10	SE	FTB	NA	140	> 50	FTB	NA
	2A	127	<10	SE	FTB					
	3A	126	<10	SE	FTB		137	> 50	FTB	
	4A	126	<10	SE	FTB					
	5A	132	<10	SE	FTB		137	> 50	FTB	
DS-66	**MEAN:**	**127**								
	1B	131	<10	SE	FTB		139	> 50	FTB	
	2B	130	<10	SE	FTB					
	3B	130	<10	SE	FTB		137	> 50	FTB	
	4B	128	<10	SE	FTB					
	5B	128	<10	SE	FTB					
	MEAN	**129**				**MEAN:**	**138**			

NA: Not Available

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TRI/ENVIRONMENTAL, INC.
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QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: GZA GEOENVIRONMENTAL (NY)
PROJECT: McKENNA LANDFILL - ALBION, NY
CONTACT: JOHN DANZER OR BART KLETTKE
DATE REC'D: 01-Dec-00

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2148-45-06
DATE TESTED: 01-Dec-00

ASTM D 4437/413/3083 NSF Modified
ANALYST: EMB
REVIEW:
REPORT DATE: 01-Dec-00

SAMPLE NUMBER	SPECIMEN NUMBER	PEEL EVALUATION MAXIMUM TENSION (lb/in)	PEEL EVALUATION PEEL INCURSION (%)	PEEL EVALUATION LOCUS OF FAILURE	PEEL EVALUATION NSF 54 FAILURE MODE	PEEL EVALUATION PROJECT SPEC. (lb/in)	SHEAR EVALUATION MAXIMUM TENSION (lb/in)	SHEAR EVALUATION ELONGATION @ BREAK (%)	SHEAR EVALUATION NSF 54 FAILURE MODE	SHEAR EVALUATION PROJECT SPEC. (lb/in)
DS-67	1A	128	<10	SE	FTB	NA	151	> 50	FTB	NA
	2A	128	<10	SE	FTB					
	3A	125	<10	SE	FTB		135	> 50	FTB	
	4A	127	<10	SE	FTB					
	5A	128	<10	SE	FTB		147	> 50	FTB	
	MEAN:	127								
	1B	131	<10	SE	FTB		140	> 50	FTB	
	2B	128	<10	SE	FTB					
	3B	123	<10	SE	FTB		141	> 50	FTB	
	4B	126	<10	SE	FTB					
	5B	121	<10	SE	FTB					
	MEAN	126				MEAN:	143			

NA: Not Available

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TRI/ENVIRONMENTAL, INC.
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QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: GZA GEOENVIRONMENTAL (NY)
PROJECT: McKENNA LANDFILL - ALBION, NY
CONTACT: JOHN DANZER OR BART KLETTKE
DATE REC'D: 05-Dec-00

MATERIAL: LLDPE
SEAM TYPE: SINGLE EXTRUSION WELD SEAM
TRI LOG #: E2148-47-07
DATE TESTED: 05-Dec-00

ASTM D 4437/413/3083 NSF Modified
ANALYST: EMB
REVIEW: BRA
REPORT DATE: 05-Dec-00

		PEEL EVALUATION					SHEAR EVALUATION			
SAMPLE NUMBER	SPECIMEN NUMBER	MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	MAXIMUM TENSION (lb/in)	ELONGATION @ BREAK (%)	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)
DS-68	1	117	<10	SE	FTB	NA	139	> 50	FTB	NA
	2	115	<10	SE	FTB		139	> 50	FTB	
	3	118	<10	SE	FTB		140	> 50	FTB	
	4	118	<10	SE	FTB		137	> 50	FTB	
	5	125	<10	SE	FTB		143	> 50	FTB	
	MEAN:	119				MEAN:	140			

NA: Not Available

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QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: GZA GEOENVIRONMENTAL (NY)
PROJECT: McKENNA LANDFILL - ALBION, NY
CONTACT: JOHN DANZER OR BART KLETTKE
DATE REC'D: 05-Dec-00

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2148-47-07
DATE TESTED: 05-Dec-00

ASTM D 4437/413/3083 NSF Modified
ANALYST: EMB
REVIEW: SRA
REPORT DATE: 05-Dec-00

		PEEL EVALUATION					SHEAR EVALUATION			
SAMPLE NUMBER	SPECIMEN NUMBER	MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	MAXIMUM TENSION (lb/in)	ELONGATION @ BREAK (%)	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)
DS-69	1A	138	<10	SE	FTB	NA	141	> 50	FTB	NA
	2A	139	<10	SE	FTB					
	3A	136	<10	SE	FTB		147	> 50	FTB	
	4A	138	<10	SE	FTB					
	5A	138	<10	SE	FTB		137	> 50	FTB	
	MEAN:	**138**								
	1B	124	<10	SE	FTB		145	> 50	FTB	
	2B	125	<10	SE	FTB					
	3B	123	<10	SE	FTB		139	> 50	FTB	
	4B	122	<10	SE	FTB					
	5B	121	<10	SE	FTB					
	MEAN	**123**				**MEAN:**	**142**			
DS-70	1A	127	<10	SE	FTB	NA	152	> 50	FTB	NA
	2A	130	<10	SE	FTB					
	3A	129	<10	SE	FTB		151	> 50	FTB	
	4A	131	<10	SE	FTB					
	5A	133	<10	SE	FTB		150	> 50	FTB	
	MEAN:	**130**								
	1B	135	<10	SE	FTB		152	> 50	FTB	
	2B	135	<10	SE	FTB					
	3B	138	<10	SE	FTB		150	> 50	FTB	
	4B	136	<10	SE	FTB					
	5B	135	<10	SE	FTB					
	MEAN	**136**				**MEAN:**	**151**			

NA: Not Available

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TRI/ENVIRONMENTAL, INC.
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QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: GZA GEOENVIRONMENTAL (NY)
PROJECT: McKENNA LANDFILL - ALBION, NY
CONTACT: JOHN DANZER OR BART KLETTKE
DATE REC'D: 05-Dec-00

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2148-47-07
DATE TESTED: 05-Dec-00

ASTM D 4437/413/3083 NSF Modified
ANALYST: EMB
REVIEW: SRA
REPORT DATE: 05-Dec-00

		PEEL EVALUATION					SHEAR EVALUATION			
SAMPLE NUMBER	SPECIMEN NUMBER	MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	MAXIMUM TENSION (lb/in)	ELONGATION @ BREAK (%)	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)
	1A	131	<10	SE	FTB	NA	142	> 50	FTB	NA
	2A	132	<10	SE	FTB					
	3A	137	<10	SE	FTB		144	> 50	FTB	
	4A	136	<10	SE	FTB					
	5A	136	<10	SE	FTB		151	> 50	FTB	
DS-71	MEAN:	134								
	1B	124	<10	SE	FTB		145	> 50	FTB	
	2B	127	<10	SE	FTB					
	3B	127	<10	SE	FTB		138	> 50	FTB	
	4B	128	<10	SE	FTB					
	5B	129	<10	SE	FTB					
	MEAN	127				MEAN:	144			
	1A	125	<10	SE	FTB	NA	149	> 50	FTB	NA
	2A	136	<10	SE	FTB					
	3A	136	<10	SE	FTB		142	> 50	FTB	
	4A	129	<10	SE	FTB					
	5A	136	<10	SE	FTB		141	> 50	FTB	
DS-72	MEAN:	132								
	1B	135	<10	SE	FTB		144	> 50	FTB	
	2B	140	<10	SE	FTB					
	3B	137	<10	SE	FTB		141	> 50	FTB	
	4B	141	<10	SE	FTB					
	5B	138	<10	SE	FTB					
	MEAN	138				MEAN:	143			

NA: Not Available

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TRI/ENVIRONMENTAL, INC.
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QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: GZA GEOENVIRONMENTAL (NY)
PROJECT: McKENNA LANDFILL - ALBION, NY
CONTACT: JOHN DANZER OR BART KLETTKE
DATE REC'D: 05-Dec-00

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2148-47-07
DATE TESTED: 05-Dec-00

ASTM D 4437/413/3083 NSF Modified
ANALYST: EMB
REVIEW:
REPORT DATE: 05-Dec-00

		PEEL EVALUATION					SHEAR EVALUATION			
SAMPLE NUMBER	SPECIMEN NUMBER	MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	MAXIMUM TENSION (lb/in)	ELONGATION @ BREAK (%)	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)
DS-73	1A	134	<10	SE	FTB	NA	145	> 50	FTB	NA
	2A	137	<10	SE	FTB					
	3A	138	<10	SE	FTB		147	> 50	FTB	
	4A	139	<10	SE	FTB					
	5A	138	<10	SE	FTB		145	> 50	FTB	
	MEAN:	137								
	1B	131	<10	SE	FTB		137	> 50	FTB	
	2B	128	<10	SE	FTB					
	3B	127	<10	SE	FTB		150	> 50	FTB	
	4B	131	<10	SE	FTB					
	5B	136	<10	SE	FTB					
	MEAN	131				MEAN:	145			
DS-74	1A	117	<10	SE	FTB	NA	139	> 50	FTB	NA
	2A	122	<10	SE	FTB					
	3A	123	<10	SE	FTB		149	> 50	FTB	
	4A	127	<10	SE	FTB					
	5A	130	<10	SE	FTB		142	> 50	FTB	
	MEAN:	124								
	1B	123	<10	SE	FTB		136	> 50	FTB	
	2B	117	<10	SE	FTB					
	3B	128	<10	SE	FTB		135	> 50	FTB	
	4B	127	<10	SE	FTB					
	5B	119	<10	SE	FTB					
	MEAN	123				MEAN:	140			

NA: Not Available

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QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: GZA GEOENVIRONMENTAL (NY)
PROJECT: McKENNA LANDFILL - ALBION, NY
CONTACT: JOHN DANZER OR BART KLETTKE
DATE REC'D: 05-Dec-00

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2148-47-07
DATE TESTED: 05-Dec-00

ASTM D 4437/413/3083 NSF Modified
ANALYST: EMB
REVIEW: SRA
REPORT DATE: 05-Dec-00

		PEEL EVALUATION					SHEAR EVALUATION			
SAMPLE NUMBER	SPECIMEN NUMBER	MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	MAXIMUM TENSION (lb/in)	ELONGATION @ BREAK (%)	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)
DS-75	1A	133	<10	SE	FTB	NA	151	> 50	FTB	NA
	2A	140	<10	SE	FTB					
	3A	137	<10	SE	FTB		147	> 50	FTB	
	4A	135	<10	SE	FTB					
	5A	136	<10	SE	FTB		146	> 50	FTB	
	MEAN:	136								
	1B	132	<10	SE	FTB		148	> 50	FTB	
	2B	130	<10	SE	FTB					
	3B	135	<10	SE	FTB		146	> 50	FTB	
	4B	135	<10	SE	FTB					
	5B	126	<10	SE	FTB					
	MEAN	132				MEAN:	148			
DS-76	1A	125	<10	SE	FTB	NA	158	> 50	FTB	NA
	2A	128	<10	SE	FTB					
	3A	126	<10	SE	FTB		140	> 50	FTB	
	4A	128	<10	SE	FTB					
	5A	131	<10	SE	FTB		139	> 50	FTB	
	MEAN:	128								
	1B	129	<10	SE	FTB		139	> 50	FTB	
	2B	129	<10	SE	FTB					
	3B	125	<10	SE	FTB		154	> 50	FTB	
	4B	126	<10	SE	FTB					
	5B	127	<10	SE	FTB					
	MEAN	127				MEAN:	146			

NA: Not Available

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TRI/ENVIRONMENTAL, INC.
A Texas Research International Company

QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: GZA GEOENVIRONMENTAL (NY)
PROJECT: McKENNA LANDFILL - ALBION, NY
CONTACT: JOHN DANZER OR BART KLETTKE
DATE REC'D: 05-Dec-00

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2148-47-07
DATE TESTED: 05-Dec-00

ASTM D 4437/413/3083 NSF Modified
ANALYST: EMB
REVIEW: SR4
REPORT DATE: 05-Dec-00

		PEEL EVALUATION					SHEAR EVALUATION			
SAMPLE NUMBER	SPECIMEN NUMBER	MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	MAXIMUM TENSION (lb/in)	ELONGATION @ BREAK (%)	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)
DS-77	1A	133	<10	SE	FTB	NA	139	> 50	FTB	NA
	2A	133	<10	SE	FTB					
	3A	132	<10	SE	FTB		141	> 50	FTB	
	4A	133	<10	SE	FTB					
	5A	130	<10	SE	FTB		142	> 50	FTB	
	MEAN:	**132**								
	1B	134	<10	SE	FTB		142	> 50	FTB	
	2B	132	<10	SE	FTB					
	3B	131	<10	SE	FTB		142	> 50	FTB	
	4B	134	<10	SE	FTB					
	5B	129	<10	SE	FTB					
	MEAN	**132**				**MEAN:**	**141**			

NA: Not Available

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CONSTRUCTION PHOTOGRAPHS

MCKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

STRIPPING OF TOPSOIL FOR EXISTING SOIL RECOVERY

REMOVAL OF COVERSOIL FOR EXISTING SOIL RECOVERY

CONSTRUCTION PHOTOGRAPHS

MCKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

SLURRY MIXING PONDS FOR SOIL-BENTONITE BARRIER WALL

INITIAL EXCAVATION AND INSTALLATION OF SLURRY MIXTURE FOR SOIL-BENTONITE BARRIER WALL

CONSTRUCTION PHOTOGRAPHS

MCKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

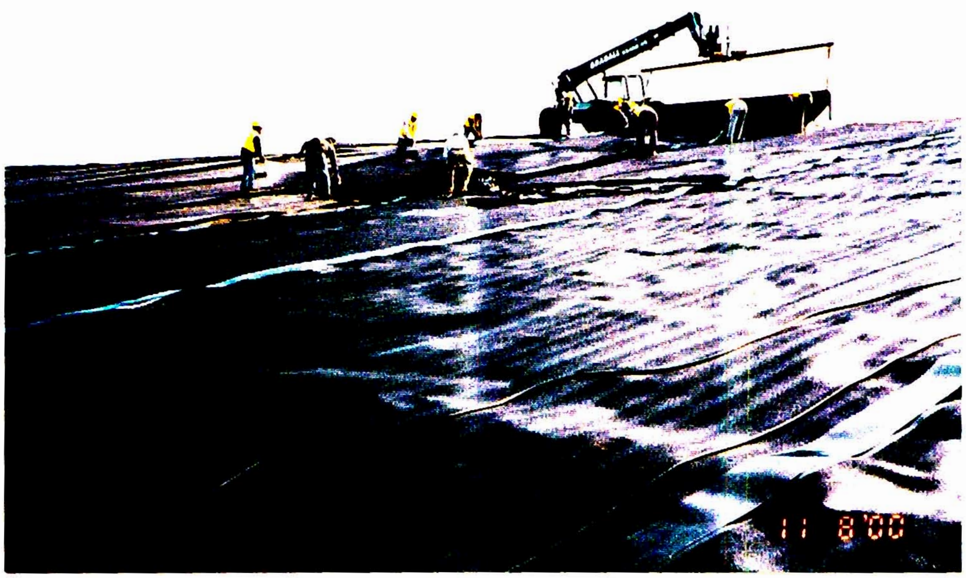
GAS VENT RISER AS PART OF GAS VENTING SYSTEM

WET WELL STRUCTURE PRIOR TO INSTALLATION

CONSTRUCTION PHOTOGRAPHS

MCKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

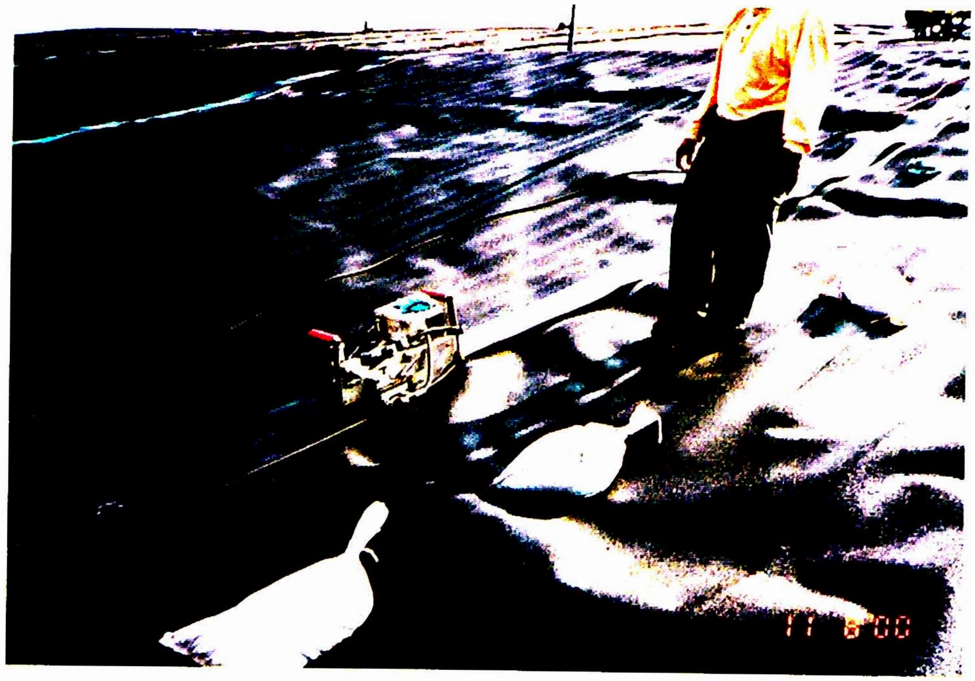
GAS VENTING/LEACHATE COLLECTION SYSTEM GEOCOMPOSITE DEPLOYMENT



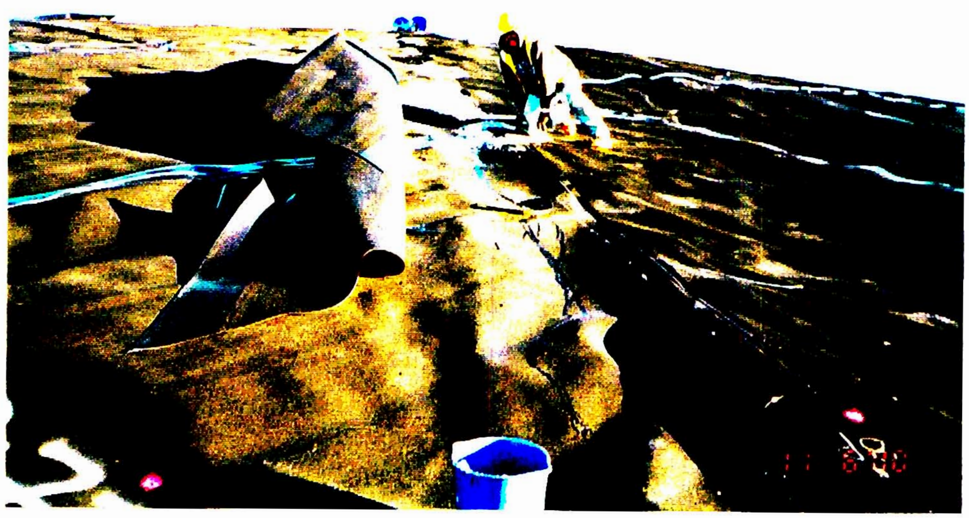
LLDPE GEOMEMBRANE DEPLOYMENT

CONSTRUCTION PHOTOGRAPHS

MCKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK



FUSION WELD OF LLDPE GEOMEMBRANE



VACCUM TEST OF LLDPE GEOMEMBRANE PATCH BY SERROT INTERNATIONAL, INC.

CONSTRUCTION PHOTOGRAPHS

MCKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

DRAINAGE STONE PLACEMENT FOR WEEP DRAIN CONSTRUCTION

BARRIER PROTECTION MATERIAL PLACEMENT

CONSTRUCTION PHOTOGRAPHS

MCKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

LOW PERMEABILITY CLAY PLACEMENT AND COMPACTION

HYDRATING OF THE SUBGRADE PRIOR TO TOPSOIL PLACEMENT

CONSTRUCTION PHOTOGRAPHS

MCKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

TOPSOIL PLACEMENT

TRACKING IN TOPSOIL

CONSTRUCTION PHOTOGRAPHS

MCKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

HYDROSEEDING OF TOPSOIL BELOW THE WEEP DRAIN AND STOCKPILE AREA

DRAINAGE CONTROL STRUCTURE-JUTE MESH WITHIN WEST END DRAINAGE SWALE

CONSTRUCTION PHOTOGRAPHS

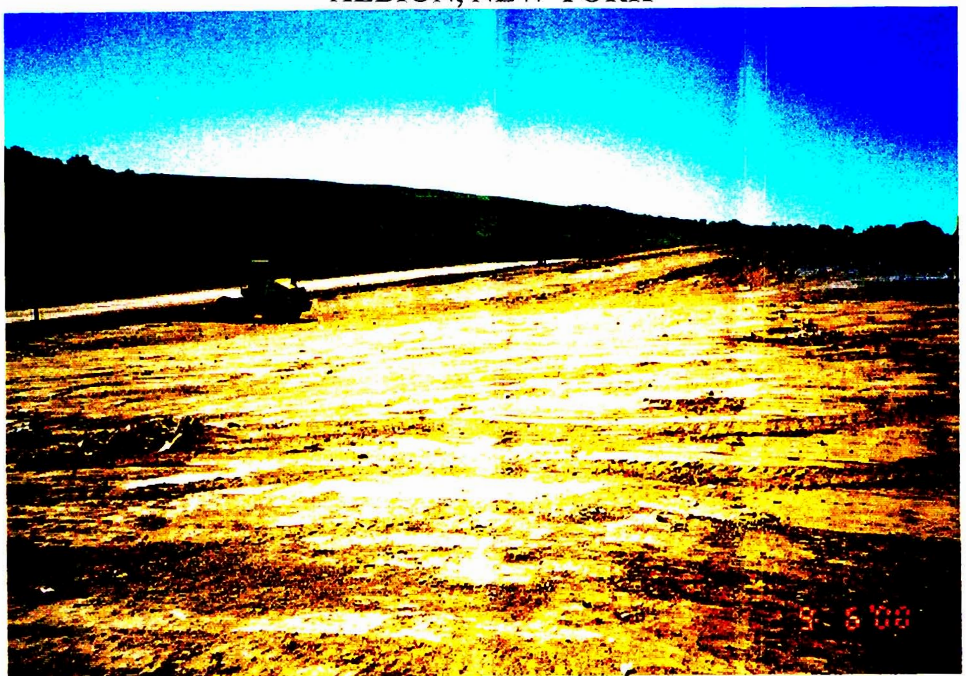
MCKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK

INITIAL CLEARING AND GRUBBING OF LANDFILL VIEW OF SOUTHEAST CORNER OF LANDFILL.

CLEARING AND GRUBBING OF TREES, SHRUBS AND BRUSH ALONG NORTH SIDE OF LANDFILL.

CONSTRUCTION PHOTOGRAPHS

MCKENNA LANDFILL REMEDIAL CLOSURE PROJECT
ALBION, NEW YORK



FINE-GRADING OF SUBGRADE

DECOMMISSIONING OF EXISTING MONITORING WELL PERFORMED BY
SJB DRILLING SERVICES