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City of West Allis
Community Development Authority

Site Grading and Earthwork Summary Report

67th Place Industrial Park
1960 South 67th Place
West Allis, Wisconsin

June 2010

ARCADIS

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Site Grading and Earthwork Summary Report

67th Place Industrial Park
1960 South 67th Place
West Allis, Wisconsin

Prepared for:
City of West Allis
Community Development Authority

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1. Introduction

ARCADIS has prepared this Site Grading and Earthwork Summary Report (Summary Report) for the 67th Place Industrial Park located in West Allis, Milwaukee County, Wisconsin (Site). The Site Grading and Earthwork Project (Project) was bid through the city of West Allis Engineering Department (2009 Project No. 11) in the summer of 2009. The contract was awarded to C.W. Purpero, Inc. (CWP) of Milwaukee, Wisconsin. The work was completed from September 14, 2009 through December 24, 2009.

The objective of the Site grading and earthwork project was to complete portions of the initial Site preparation work necessary for the redevelopment of the brownfield. This work included clearing and grubbing, Site wide grading, construction of a wet detention pond, and supporting structures (e.g. emergency spillway, outfall, and gabion-lined channel), onsite soil reconsolidation, and removal or abandonment of subterranean structures.

The Site is also an active Environmental Restoration Program Site that is managed following the Voluntary Party Liability Exemption process. A Remedial Action Options Report was submitted to the Wisconsin Department of Environment and Natural Resources (WDNR) on March 30, 2009 and was approved on May14, 2009. A component of the remedy included the construction of an interceptor trench to address groundwater seepage from the Site. The interceptor trench was constructed as a component of the earthwork.

Included with this Summary Report are the Operation and Maintenance (O&M) Plans for the wet detention pond and interceptor trench. Also included is the Cap Maintenance Plan and Material Handling Plan, Appendix A. These documents should be proved to the future owner/operator of the Site to ensure compliance with the Site O&M obligations.

2. Background

The following sections present the Site location, description, and background information. The background information was summarized from the previous site investigations.

2.1 Site Location and Description

The Site consists of an approximate 11.6-acre parcel of land located at 1960 South 67th Place, in West Allis, Wisconsin (Figure 2-1). The Site is bounded by the Union Pacific Railroad tracks and Metal Technologies Incorporated (heavy industrial) to the north, Becher Place to the east, West Allis Fire Department and residential housing to the south, and St. Augustine Catholic Church and School and residential housing to the west, see Figure 2-1. The surrounding land use is predominantly residential properties. The Site is located in the southeastern ¼ of U.S. Public Land Survey Section 3, Township 6 North, Range 21 East in Milwaukee County. The Site is currently vacant and zoned as a M1 Manufacturing District.

2.2 Site History

AIRCO (AIRCO Industrial and AIRCO Welding Products) occupied the Site between 1932 and 1984. The Pre-Site Grading and Earthwork Site Plan View is illustrated on Figure C1. AIRCO manufactured carbide gas, which produced lime slurry as a byproduct of its operation. The lime slurry was disposed of in onsite pits or lagoons that covered approximately ±6 acres on the eastern portion and southwest portion of the property. The property formerly included five metal and masonry buildings of varying sizes between approximately 3,600 to 5,500 square feet and two large storage silos located in the central portion of the property. Mr. John Novak purchased the property in 1985. Mr. Novak rented the land out to various businesses including a waste storage and transfer facility, an oil/hazardous waste trucking terminal, and a salvage/junk yard. The city of West Allis Community Development Authority acquired the property in 2006.

2.3 Carbide Gas Production

Calcium carbide is combined with water which results in calcium hydroxide in an aqueous solution (limewater) and acetylene gas. The reaction is $CaC_2 + H_2O \rightarrow Ca(OH)_2 + 2C_2H_2$. Limewater is a clear, saturated water solution of calcium hydroxide. As a saturated solution, the pH of calcium hydroxide is 12.4. The product of acetylene

gas is then combusted by applying flame, and the resulting reaction occurs: $2C_2H_2 + 5O_2 \rightarrow 4CO_2 + 2H_2O$. Some of the carbon dioxide will react with the lime water and precipitate out forming lime slurry, which is a whitish to bluish gray substance known as calcium carbonate. The resulting chemical reaction is $Ca(OH)_2 + CO_2 \rightarrow CaCO_3 + H_2O$. Limestone and chalk share similar chemical composition with lime slurry of $CaCO_3$.

2.4 Summary of Environmental Concerns

This section presents a summary of the environmental impacts that were identified and addressed through the investigation and remediation work conducted at the Site. Additional information can be obtained from the following documents:

- *"Novak Property Phase I Environmental Assessment"* (TEMCO, 2004a).
- *"Preliminary Phase II Environmental Site Assessment, Novak Property"* (TEMCO, 2004B).
- *"Preliminary Subsurface Exploration"* (CGC, 2005).
- *"Site Investigation Report, Lime Pit Site"* (TEMCO, 2006).
- *"Addendum to Site Investigation Report, Lime Pit Site"* (TEMCO, 2009).
- *Supplemental Subsurface Exploration"* (CGC, 2009).
- *Remedial Action Options Report"* (ARCADIS, 2009).

The primary contaminants of concern (COCs) in the soil include polycyclic aromatic hydrocarbons (PAHs), arsenic, and lead. Other COCs include volatile organic compounds (VOCs) identified at one sample location, diesel range organics, gasoline range organics, and polychlorinated biphenyls. The COCs are defined and limited to the Site.

The COCs in groundwater are VOCs, arsenic, pH, and PAHs. Arsenic is the only COC that exceeds the ch. NR 140, Wisconsin Administrative Code Enforcement Standard (ES). The other groups of COCs exceed the ch. NR 140 Preventive Action Limit but are below the ES. The extent of the groundwater contamination is defined and limited to the Site.

Along the east side of the Site, a variable topographic relief of up to 20 feet exists. Groundwater with an elevated pH wept along the hillside and impacted the sidewalk and terrace along West Becher Street. Since the groundwater has an elevated pH, it posed a direct contract threat.

The environmental impacts were successfully addressed through implementation of a remedial action. Components of the remedy were completed as part of this project (e.g. interceptor trench).

3. Site Grading and Earthwork

The Project was the first phase of redevelopment of the Site. The Project was completed in 2009 and was multifaceted to include Site clearing and grubbing, targeted soil excavation, grading, gabion-lined channel installation, interceptor trench installation, wet detention pond installation, and Site restoration. A summary of the work completed included in the subsections that follow.

CWP was subcontracted by the city of West Allis to complete the work presented in this Summary Report. A preconstruction meeting was held on September 9, 2009 to review the health and safety concerns, personal protective equipment, Site access, project schedule, and utility coordination, and project financial reporting requirements per the American Recovery and Reinvestment Act of 2009 and Davis Bacon Related Acts.

Photographs were taken to document the preconstruction condition of the existing fence, Site access drives, and West Becher Place easement and sidewalk. Photographs 1 through 6 document the preconstruction conditions and are included in Appendix B.

On September 16, 2009, North Shore Engineering Inc. of Mequon, Wisconsin established topographic control points for construction verification.

3.1 Health and Safety and Utility Clearance

A Site-specific health and safety plan (HSP) was prepared to address the contaminants of concern and proposed field activities at the Site. The HSP was designed to comply with the applicable requirements of the Occupational Safety and Administration (OSHA) and other application regulations. All Site personnel engaged in intrusive work completed the OSHA 40 Hour Health and Safety training that satisfies OSHA requirements under CFR 1910.120.

Prior to initiating work, C.W. Purpero completed a Site specific health and safety plan and contacted Diggers Hotline to have utilities marked.

3.2 Clearing and Grubbing

Site clearing and grubbing was completed from September 14, 2009 through September 21, 2009. The clearing and grubbing extent can be found on the Site Demolition Plan, Figure C2. T&T Tree Service was contracted through C.W. Purpero to complete the clearing and grubbing. Wood byproducts where loaded in the roll off dumpsters and disposed of by T&T tree service. Additional clearing and grubbing was completed by CWP along the north and south property boundaries. The cleared material was chipped by Badger State Site Preparation, subcontracted by CWP. The remaining wood chips were hauled offsite by CWP. Photographs 7 and 8, as found in Appendix B, were taken to document the clearing and grubbing of the Site.

3.3 Installation of Erosion Control

A Notice of Intent (NOI) was prepared and submitted to Mr. Bryan Hartsooh (WDNR) on August 11, 2009. In accordance with the NOI, temporary erosion controls where installed around the Site perimeter with additional controls placed at known runoff locations. The chain link fence was removed from the northern, southern, and eastern property boundaries per the Site grading and earthwork specifications. Silt fence was installed along the northern, western, and southern perimeters. The construction entrances, located at West Burnham Street and West Rogers Street, where stabilized with nonwoven geotextile and approved crushed aggregate. The storm water manholes located on W. Becher Place were lined with geotextile fabric and goetextile while concrete ditch checks were installed along the eastern perimeter drainage ravines to control Site runoff. Additionally, a hay bale ditch check was installed along the eastern easement boundary located along West Becher Place. Photographs 9 and 10 as found in Appendix B document the Site construction erosion controls.

Site stormwater control inspections where completed after every rainfall event. Material damage and new runoff concerns were immediately addressed by CWP

3.4 Surface Debris Removal

CWP cleared a large amount on miscellaneous surface debris including tires, metal, concrete, trees and shrubs, fencing, railroad ties, and general construction and demolition (C&D) debris. The surface debris was separated into piles including recyclable metal, recyclable concrete, recyclable tires, and C&D debris for removal from the Site. The respective materials were disposed of/recycled at the following locations:

Tires:	Norway Specialized Services, LLC. 8330 Raynor Avenue Franksville, Wisconsin 53185 Telephone: (414) 425-1312
	Veolia Glacier Ridge Landfill N7296 Highway V Horicon, Wisconsin 53032 Telephone: (920) 387-0987
Metal:	Waukesha Iron and Metal 1351 E. Main Street Waukesha, Wisconsin 53186 Telephone: (262) 547-7293
Surface Debris:	City Wide Recycling, LLC 10700 West Brown Deer Road Milwaukee, Wisconsin 53224 Telephone: (414) 355-6500
Concrete:	Stark Asphalt 11710 West Hampton Avenue Milwaukee, Wisconsin 53225 Telephone: (414) 466-7820

Asphalt, concrete slabs, and building foundations removed per specification. Asphalt remnants where pulverized in place per specification. Concrete slabs visible from the surface where removed and stockpiled for recycling. Building foundations where mapped using the Geographic Position System and targeted using an excavator. Per the city of West Allis's recommendation building foundations not located after September 29, 2009 where to be left in place. The detailed removal extent is illustrated on Figure C2. Photographs 11 through 13 found in Appendix B document the surface debris removal. See Table 3-1 for the disposal record.

3.5 Sprinkler Vault and Storm Sewer Removal

The sprinkler vault and storm sewer abandonment where completed in an effort to abandon all known utilities at the Site. The sprinkler vault was drained and abandoned September 28, 2009. Refer to Figure C2 for the locations of the sprinkler vault and associated piping. The water in the sprinkler vault was evacuated by Advanced Waste using a vacuum truck. The non-hazardous liquid waste, 800 gallons, was disposed of at Chemworks, 3801 K.W. McKinley Ave, Milwaukee, Wisconsin, under Profile

1000116-N/A-B-2-CW. A copy of the liquid waste manifest can be found in Appendix C. Once the liquid was removed, the sprinkler vault was abandoned removing the piping and concrete structure and backfilling the area per the specifications. The discharge line from the sprinkler vault was excavated and removed to West Roger's Street entrance where the line terminated in a second vault. This vault was dry. The vault included two isolation valves, both closed, separated by a removed section of piping. The closed valves and removed access pipe confirmed abandonment from city water supply. Upon approval from the city of West Allis the second vault was abandoned. The piping was removed and concrete structure was crushed in place and backfilled to specification requirements.

A hollow masonry block wall was encountered during abandonment of the sprinkler vault discharge pipe. This wall was crushed in place, per specification requirements, to a depth of 5 feet below final grade. Photographs 14 through 17, as found in Appendix B, document the sprinkler vault abandonment and the hollow block masonry wall demolition.

The storm sewer located in the north central area of the Site, as noted on Site Demolition Plan Figure C2, was maintained with proper sediment control throughout the grading activities to allow for Site drainage. Once the Site was brought to finished grade, the storm sewer was excavated and abandoned. The 12" storm sewer was excavated to the Site boundary on December 21, 2009. The pipe terminated above ground surface at the property boundary and no further abandonment measures were necessary. The excavated area was backfilled and compacted per the specifications.

3.6 Site Grading

Site grading was completed at the Site from September 22, 2009 through December 18, 2009. The Post Site Grading and Earthwork Plan is illustrated on Figure C3. The Site grading and earthwork was completed by CWP using an excavator, cat and pan, and bulldozer for excavation of fill material and cat and pan, off-road trucks, and bulldozer for placement of fill material. Placed fill material was compacted using a sheepsfoot and roller compactor. The project grading initiated at the northwest property boundary and progressed east toward the location of the wet detention pond. Fill material was excavated from the Site cut areas and placed as fill starting at the western perimeter. Debris was raked from the placed fill using a bulldozer with attached rake. Raked debris was stockpiled for disposal. After evaluation of the Site materials, it was concluded additional structural fill material was necessary to complete

the building pad area identified as the area north of the West Roger's Street entrance and east to the 726' above mean sea level contour, as illustrated of Figure C3.

Suitable fill material was identified on the southwest property boundary during the excavation of exploratory test holes. The city of West Allis authorized the excavation of a borrow pit along the south and west perimeter. The borrow pit is illustrated on Figure C2. The borrow pit was excavated south of the Roger's Street entrance to the southern property boundary. The excavation was approximately 65 feet north to south and 35 feet east to west. The excavation along the southern property boundary was approximately 85 feet north to south and 280-feet east to west beginning at the eastern property boundary. A total of 11,684 cubic yards of material was removed from the borrow pit, placed, and compacted in the building pad area. Once the borrow pit had been excavated to the extent possible, the pit was backfilled with the raked debris and other unsuitable material from the pond excavation. Fill material was placed using the cat and pans and off-road trucks. A bulldozer was used to distribute the fill evenly and a sheepsfoot was used for compaction as to minimize voids. This area was later covered with berm material and landscaped.

A total of 26,266 cubic yards of fill material was excavated and relocated as fill at the Site. 16,374 cubic yards had to be raked to remove debris before the fill could be compacted as structural fill. A total of 11,684 cubic yards of material was excavated from the borrow pit and placed as structural fill onsite. 4,080 tons of additional structural fill material was used at the Site to complete the building pad area. A summary of excavation and fill quantities can be found in Table 3-2. Photographs 18 through 27, as found in Appendix B, document the Site excavation and grading activities.

CGC, Inc. of West Allis was contracted through ARCADIS to provide geotechnical services for the project. CGC completed geotechnical proctor and percent moisture testing for the fill materials used at the Site. A CGC field technician was onsite from September 22, 2009 through December 21, 2009 as needed to observe all backfill and compaction methods. CWP worked in conjunction the CGC technician to ensure proper backfill and compaction techniques where used for stable post construction conditions. The backfill compaction and percent moisture reading results were documented and conveyed by CGC to CWP and ARCADIS before continuation of backfill activities. CGC's geotechnical report is included in Appendix D.

During Site grading activities 11 monitoring wells where abandoned in accordance with ch. 141 Wis. Adm. Code. Monitoring Wells MW-1, MW-2R, MW-4, MW-5, MW-6, MW-

7R, MW-10, MW-12, MW-13, MW-15, and MW-16 where abandoned. Monitoring well abandonment forms are included in Appendix E.

Dust levels where monitored daily using a Thermo MIE PDR 1000-Data Ram dust monitor. Readings were recorded four times daily with upwind, work area, and downwind readings recorded each time. No exceedances where recorded above the established time weighted average for the Site, 5 milligrams per cubic meter per 8 hour exposure limit.

3.7 Gabion-Lined Channel

The gabion-lined channel was installed at the northeast property corner to control Site runoff during storm events and provide outfall protection for the wet detention pond drainage. The gabion-lined channel installation began October 12, 2009 and was completed December 12, 2009. Figure C8 illustrates the final layout and profile of the gabion-lined channel as installed. The existing concrete structure and drainage piping were removed from the Site. The manhole connection for the existing piping was abandoned in place per specification. The storm manhole rim elevation was lowered to facilitate drainage to the storm sewer and minimize surface runoff. The gabion-lined channel was positioned in the field as to minimize utility interference and constructed per specification. One additional basket was placed at the northeast section of the channel as to tie into the existing Site topography. The northwestern most basket was repositioned and additional riprap stone as placed to facilitate drainage from the railroad easement. Photographs 28 and 29, located in Appendix B, document the gabion-lined channel installation and restored condition.

3.8 Interceptor Trench

The Site groundwater interceptor trench (interceptor trench) was installed along the east property boundary to address the groundwater seepage from the Site to the West Becher Place easement and sidewalk. Prior to the interceptor trench installation, We Energies relocated three guy wire supports to accommodate the installation of the trench. The location of the relocated guy wires and interceptor trench extent is illustrated on Figure C4.

The interceptor trench was installed from November 16 through November 23 by CWP's utility and sewer division. The interceptor trench was installed per the project specification. The perforated trench piping was installed a minimum of 4 feet below ground surface to prevent potential freezing during the winter months. Clean outs

were installed every 150 feet to facilitate interceptor trench maintenance. The retaining wall, located along the eastern property boundary, was perforated with a series of 2 inch diameter weep holes. The interceptor trench was installed directly east of the retaining wall. The trench was routed 5-feet east around existing power poles. See figure C4 for location details. The interceptor trench location and installation details can be on Figures C4 and C6.

All excavated soil was directly loaded into haul trucks and stockpiled onsite. Interceptor trench excavated soils were used in the construction of the southern Site berm.

Minimal groundwater was observed during the construction of the interceptor trench. After completion, groundwater water was observed emanating from the interceptor trench in the storm sewer manhole.

A component of the construction of the interceptor trench included reworking a 3-foot wide area west and adjoining the length of the existing retaining wall. The rework included removal of miscellaneous debris (e.g. solid waste refuse and vegetation), placement of nonwoven geotextile, and restoration to grade with riprap. Topsoil was placed along the eastern perimeter of the interceptor trench and Werner Bros. Landscaping finished the berm with fertilizer, seed, and matting. The interceptor trench operation and maintenance manual can be found in Appendix F. Regularly scheduled maintenance of the interceptor trench is recommended to facilitate the operation of the trench.

Photographs 30 through 32, located in Appendix B, document the interceptor trench installation and completed extent.

3.9 Wet Detention Pond

A wet detention pond was installed at the Site per the Milwaukee Sewage District requirement to institute engineered controls for Site runoff. The wet detention pond is illustrated on Figures C3 and C7 was constructed from November 10 through December 17. The wet detention pond was constructed per project specifications with additional field changes required to address unstable subsurface conditions encountered during the excavation as described below.

During excavation of the wet detention pond, unsuitable structural fill material (primarily lime) was encountered at a depth of 12 feet below the land surface. Test pits were

installed and the unsuitable fill material was found to be more laterally extensive than reported in historical documents. Construction of the clay liner for the wet detention pond could not be preformed because compaction to the specification would not be achieved. CWP, CGC, ARCADIS, and the city of West Allis considered options to address the presence of this unsuitable fill material. The preferred option was to over excavate three feet of unsuitable material, management of the excess by offsite disposal at Veolia or onsite reconsolidation, construct a bridge lift, and complete construction of the wet detention pond per project specification.

Unsuitable structural fill was excavated, loaded in off-road haul trucks, stockpiled onsite until certified special waste trucks where commissioned to haul the excavated material to Veolia Emerald Park Landfill. Unsuitable structural fill was excavated and disposed of on November 17, November 22 through November 24, and December 1. A total of 2,269 tons of unsuitable fill was removed from the Site and disposed of under Veolia Waste Profile Number EPL2009-183. See Appendix G for the lime removal waste manifests.

A bridge lift was designed to address the subsurface stability. CGC provided technical support and design specification for the lift. Tensar BX 1200 Geogrid was placed at the subgrade elevation and which granular material was placed and compacted in 6-12" lifts for a total of 36". Bridge lift construction was monitored continuously by ARCADIS and CGC to identify possible failure areas. If deflection or unsuitable material was identified the area was excavated and backfilled under the supervision of the CGC field technician. Excess material from the excavation of the unsuitable fill material was placed in berms onsite. See Figure C3 for the extent of the berms at the Site.

Once the bridge lift was complete the pond installation continued as outlined in the project specifications. Clay liner material was placed, compacted and tested for moisture and density requirements. Seven permeability test cores where collected from the clay liner extent to verify the integrity of the liner per the project specifications. The measured permeability values ranged from 3.4-7.2 X 10^{-9} centimeter per second (cm/sec), meeting the specified 1.0 x10^{-7} cm/sec or less value.

The pond was finished with riprap, drainage stone, and landscaping per the project specifications. Photographs 33 through 39, in Appendix B, document the wet detention pond installation and final extent. The wet detention pond operation and maintenance plan can be found in Appendix H. Outlined maintenance is recommended to facilitate the normal operation of the wet detention pond.

3.10 Southeast Ditch

The southeast ditch was constructed at the Site to address any additional storm water runoff not collected in the Site wet detention pond. The ditch was constructed by CWP per the project specifications. The ditch was seeded and matted per the project specifications. The southeast ditch extent and final restoration are documented by photograph 39 in Appendix B.

3.11 Soil Berms

Site soils berms were approved by the city of West Allis Community Development Authority to minimize the amount of material that would need to be disposed of at a landfill. The excess unsuitable fill material was generated during the excavation of the pond and subsequent overexcavation for the pond bridge lift construction. The soil material was deemed unsuitable for structural fill by CGC and used to construct berms as illustrated on Figure C3. The berms were compacted and shaped using a bulldozer. The berm extents where approved by the city of West Allis and subsequently seeded and matted per the project specifications using temporary erosion control matting.

3.12 Site Restoration and Installation of Permanent Erosion Controls

Site restoration and permanent erosion controls included the installation of three gravel entrances, installation of permanent and temporary erosion control matting, and the general Site cleanup of access roads and Site perimeter. The gravel entrances where constructed by CWP per the project specifications. Additional granular fill material was required at the West Becher access due to unsuitable subgrade material. The stabilized gravel entrance detail can be found on figure C9.

Topsoil was placed per the project Construction Drawings by CWP. The installation of temporary and permanent erosion control matting and the straw wattles was completed by Werner Brothers Landscaping, subcontracted through CWP. The temporary and permanent erosion control matting extent can be found on Figure C5. The erosion control matting, straw wattles, and Site vegetation where installed per the project specifications. Photographs 40 through 43, located in Appendix B, document the Site restoration and permanent erosion controls.

4. Summary

The Site grading and earthwork project was completed from September 14 through December 24, 2009. The Site work prepared a structural pad for building development while maintaining green space for aesthetic appeal. The wet detention pond, gabion-lined channel, southeast ditch, and interceptor trench were installed to mitigate stormwater and groundwater concerns for the Site. Three access roads where established for Site access including a new access road from West Becher Place onto the property. Site restoration including seeding and matting was also completed.

This summary report provides the back-up documentation and as-built summary of the project. Included with this summary report are O&M plans for the Wet Detention Pond and Interceptor Trench. Also included in this report are the Cap Maintenance Plan and Material Handling Plan. These documents should be provided to future owners/operators to ensure compliance with the requirements outlined in the O&M plans.

Table 3-1. Waste Removal Record, 67th Place Industrial Park, West Allis, Wisconsin.

Load	Container	Vendor	Date Removed	Material
1	20 yd Dumpster	J&O Trucking	9.28.09	Tires with no Rims for Recycling
2	30 yd Dumpster	Waukesha Iron and Metal	11.17.09	Scrap Metal for Recycling
3	30 yd Dumpster	J&O Trucking	9.24.09	Surface Debris
4	30 yd Dumpster	J&O Trucking	9.24.09	Surface Debris
5	20 yd Dumpster	J&O Trucking	9.24.09	Surface Debris
6	30 yd Dumpster	J&O Trucking	9.24.09	Surface Debris
7	20 yd Dumpster	J&O Trucking	9.25.09	Surface Debris
8	30 yd Dumpster	J&O Trucking	9.25.09	Surface Debris
9	Truck	R&W	9.30.09	Concrete for Recycling
10	Truck	R&W	9.30.09	Concrete for Recycling
11	Truck	R&W	9.30.09	Concrete for Recycling
12	Truck	R&W	9.30.09	Concrete for Recycling
13	Truck	R&W	9.30.09	Concrete for Recycling
14	Truck	R&W	9.30.09	Concrete for Recycling
15	Truck	R&W	9.30.09	Concrete for Recycling
16	Truck	R&W	9.30.09	Concrete for Recycling
17	Truck	R&W	9.30.09	Concrete for Recycling
18	Truck	R&W	9.30.09	Concrete for Recycling
19	Truck	R&W	9.30.09	Concrete for Recycling
20	Truck	R&W	9.30.09	Concrete for Recycling
21	Truck	R&W	9.30.09	Concrete for Recycling
22	20 yd Dumpster	Salvage Specialists	10.01.09	Tires with Rims for Recycling
23	Truck	CWP	11.11.09	Concrete for Recycling
24	30 yd Dumpster	J&O Trucking	11.17.09	Surface Debris
25	30 yd Dumpster	J&O Trucking	11.17.09	Surface Debris
26	30 yd Dumpster	J&O Trucking	11.17.09	Lime Debris
27	30 yd Dumpster	J&O Trucking	11.17.09	Surface Debris
28	30 yd Dumpster	Waukesha Iron and Metal	11.25.09	Scrap Metal for Recycling
29	30 yd Dumpster	J&O Trucking	11.24.09	Surface Debris
30	30 yd Dumpster	J&O Trucking	11.25.09	Surface Debris
31	Truck	CWP	12.4.09	Wood Chips
32	Truck	CWP	12.4.09	Wood Chips
33	Truck	CWP	12.4.09	Wood Chips
34	Truck	CWP	12.4.09	Wood Chips
35	30 yd Dumpster	CWP	12.16.09	Surface Debris
36	20 yd Dumpster	J&O Trucking	12.18.09	Surface Debris
37	20 yd Dumpster	J&O Trucking	12.18.09	Concrete for Recycling

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Table 3-2. Summary of Quantities, 67th Place Industrial Park, West Allis, Wisconsin.

	Volume (yd^3)
Site Excavation	26,266
Material Raking	16,374
Borrow Pit	11,684
Fill Placement	43,100
Berm Placement	6,361
Clay Liner Placement	3,700
Special Waste Disposal	2,269 (tons)

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Appendix A

Cap Maintenance Plan and Material Handling Plan

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Cap Maintenance Plan and Material Handling Plan

67th Place Industrial Park
1960 South 67th Place
West Allis, Wisconsin

BRRTS No. 02-41-184802,
06-41-548795, 07-41-262281
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April 2010

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Date:
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Figures

Appendix

Introduction

This Cap Maintenance Plan and Material Handling Plan ("Plan") are applicable to the 67th Place Industrial Park located at 1960 South 67th Place in the city of West Allis, Milwaukee County, Wisconsin ("Site"). Figure 1 is a Site Location Map. Residual soil contamination remains onsite that exceed the direct contact residual contaminant levels (RCLs) for total lead, total arsenic, naphthalene, and other polycyclic aromatic hydrocarbons (PAHs) which resulted from historic spills and releases of petroleum products. Residual groundwater contamination also remains in the same area and consists of PAHs, a few select volatile organic compounds, and pH above the Natural Resources (NR) 140 Wis. adm. code preventive action limit and dissolved arsenic above the NR 140 enforcement standard. In addition, groundwater daylights along the eastern slope of the Site, which has been addressed through the construction of an interceptor trench equipped with a French drain.

A copy of this Plan shall be kept on file in the offices of: (1) the Wisconsin Department of Natural Resources (WDNR), Southeast Region; (2) the owner of the Site, its successors and assigns (hereinafter identified collectively as the "Owner"); (3) the Site manager, if any; and (4) the Site. The Plan shall be made available by the Owner to future developers, contractors, utilities and maintenance personnel, and any other public or private persons or entities authorized to perform underground excavation work at the Site.

Cap Maintenance Plan

The cap elements which are the subject of this Plan are approved engineered barriers which may consist of 2 feet of clean soil (e.g., backfill, topsoil, and seed for landscaping), buildings, and concrete or asphalt pavement over the soils that exceed the direct contact RCLs. In addition, the wet detention pond, interceptor trench, and French drain are considered a component of the long-term remedy for the Site. The Operations and Maintenance Plan for these three engineering controls are included in the Site Grading and Earthwork Summary Report, which is available from the city of West Allis Engineering Department. Figure 2 is a plan view (as-built drawing of the Site as of January 2010). Figure 3 presents the location and extent of the engineered barrier requirements.

The purpose of the Cap Maintenance Plan is to describe the procedures and controls that shall be followed to maintain the function of the engineered barriers. Maintaining the function of the engineered barriers will provide continued protection of human

health and the environment by minimizing potential exposure to the residual contamination.

Required Inspection and Repair Activities

The following activities will be conducted, at a minimum at the frequency specified. WDNR approval is not required to complete the activities.

Annual Cap Inspections

Not less than annually, the Site shall be inspected by the Owner to ensure that the integrity of the engineered barriers is maintained and that no significant fissures or cracks develop in the gravel or concrete caps, which could allow potential exposure to the residual contamination. Disturbances of the engineered barriers or significant fissures or cracks in the gravel or concrete cap shall be noted by the Owner on the "Annual Cap Inspection Form" (Appendix A). All inspection reports shall be maintained on file by the Owner, the Site manager, if any, and at the Site.

Repairs of Engineered Barriers

If, during the annual inspections or other routine inspections of the Site, the engineered barriers are observed to have been disturbed or significant fissures or cracks are observed in the gravel or concrete caps, the Owner shall arrange to have repairs made to such areas, in a manner consistent with this Plan. Such repairs shall be carried out within a reasonable period of time, not to exceed 120 days, subject to weather and seasonal considerations. The Owner shall document the repairs to capped areas on the "Corrective Action Form" (Appendix A). All Corrective Action Forms shall be maintained on file by the Owner, the Property manager, if any, and at the Property. A copy of the completed Corrective Action Form shall be filed with the WDNR.

Replacement of Engineered Barriers

WDNR approval is required prior to replacement of any portion of the engineered barrier. The replaced engineered barrier shall conform to the design requirements provided in this document. Earth work required to replace the engineered barrier shall conform to the requirements given in the Material Handling Plan.

Material Handling Plan

The Material Handling Plan specifies the requirements to be followed when performing earth work, groundwater, or surface water management. These activities are generally associated with construction.

Activities Requiring WDNR Approval

The WDNR must be notified and approval obtained prior to conducting the following activities:

1. **Construction or Installation of Buildings, Structures or Other Improvements.** Buildings, structures or other improvements may be constructed or installed on the Site using footings or other foundations that are placed into the area of residual contamination in the following manner:

   A) The contractor performing the work shall be provided a copy of this Plan by Owner and shall prepare a health and safety plan, appropriate to the work being performed.

   B) Soils that are excavated shall be separated and segregated to the extent practicable so that they may be replaced upon completion of the work. All excavated contaminated soil shall be, at a minimum, placed onto plastic sheeting and covered, or placed into a watertight container such as a covered roll-off box.

   C) Upon completion of the work, previously excavated soil may be backfilled, provided, however, that the backfilled soil maintains the compaction characteristics of the surrounding soil. The soil, as well as any additional clean soil or granular fill material necessary to backfill to grade, shall be backfilled in such a manner as to maintain the original depth of the contaminated soil. The backfill area shall be restored in a manner consistent with the original cap condition. If groundwater is recovered, it shall be managed and disposed of as a contaminated material in accordance with state and federal requirements.

   D) A memorandum or report shall be prepared describing the work performed, identifying the person(s) performing the work and the date of the work, and confirming that the Plan was adhered to in completion

of the work. A copy of the report shall be kept on file by the Owner and the Property manager, if any, and shall be submitted to the WDNR.

2. **Replacement of Engineered Barriers.** If it becomes necessary or desirable to replace the engineered barrier, WDNR approval will be required and the replacement shall be undertaken in the following manner:

   A) The contractor performing the work shall be provided a copy of this Plan by Owner and shall prepare a health and safety plan, appropriate to the work being performed.

   B) Contaminated soil that is excavated shall be separated and segregated to the extent practicable so that they may be replaced upon completion of the work. Any such excavation of contaminated soil shall be conducted in accordance with the health and safety plan. All excavated contaminated soils shall be, at a minimum, placed onto plastic sheeting and covered, or placed into a watertight container such as a covered roll-off box.

   C) Upon completion of the work, previously excavated soil may be backfilled, provided, however, that the backfilled soil maintains the compaction characteristics of the surrounding soil. The soil, as well as any additional clean soil or granular fill material necessary to backfill to grade, shall be backfilled in such a manner as to maintain the original depth of the contaminated soil. The backfill area shall be restored in a manner consistent with the original cap condition. If groundwater is recovered, it shall be managed and disposed of as a contaminated material in accordance with state and federal requirements.

   D) A memorandum report shall be prepared describing the work performed, identifying the person(s) performing the work and the date of the work, and confirming that the Plan was adhered to in completion of the work. A copy of the report shall be kept on file by the Owner, the Property manager, if any, and at the Property, and shall be submitted to the WDNR.

3. **Utility Installations or Repairs.** No utility repairs or installation of new or replacement utilities shall be conducted on the Site until after the utility and any

contractor(s) for the utility have acknowledged receipt of a copy of this Plan. The utility repairs or installation(s) shall be conducted in strict conformance with the standards set forth below with respect to excavations into and/or beneath the engineered barrier, and such excavations are to be undertaken in the following manner:

A) The contractor performing the work shall be provided with a copy of this Plan by Owner and shall prepare a health and safety plan, appropriate to the work being performed.

B) Contaminated soil that is excavated for purposes of utility installation or repair shall be separated and segregated to the extent practicable so that they may be replaced upon completion of the work. All excavated contaminated soil shall be, at a minimum, placed onto plastic sheeting and covered, or placed into a watertight container such as a covered roll-off box.

C) Upon completion of such work, the excavated contaminated soil may be placed back into the excavation, provided, however, that any excavated soil placed back into the excavation shall maintain the compaction characteristics of the surrounding soil. The area of the excavation shall be restored in a manner consistent with the original cap condition.

D) Any excavation of contaminated soil beneath the engineered barriers shall be conducted in accordance with the health and safety plan. Any other soils which have been commingled, mixed or otherwise have come into contact with soils excavated from beneath the engineered barrier shall be properly characterized and managed in accordance with state law with notice to the WDNR. Any groundwater affected by such activities shall be managed in accordance with state law after notice to the WDNR.

E) If the utility installation or construction involves any disturbance of the seals used to seal the entrance of utility lines and the structures on the Site, such seals shall be replaced with new seals of like or superior quality.

F) A memorandum report shall be prepared describing the work performed, identifying the person(s) performing the work and the date of the work, and confirming that the Plan was adhered to in completion of the work. A copy of the report shall be kept on file with the utility, the Owner, the Site manager, if any, and at the Site and shall be filed with the WDNR.

4. **Emergency Repairs to Underground Utilities.** In emergency instances, utility repairs may be made without prior approval from the WDNR. However, the employee/worker notifications, material management procedures, and reporting requirements shall follow those given in Section 3 of the Material Handling Plan.

5. **Offsite Disposal of Excavated Soils.** If it becomes necessary or desirable to dispose of excavated soils from the allowed construction, repair, and installation activities, the excavation and resulting soils shall be managed in accordance with NR 718.13.

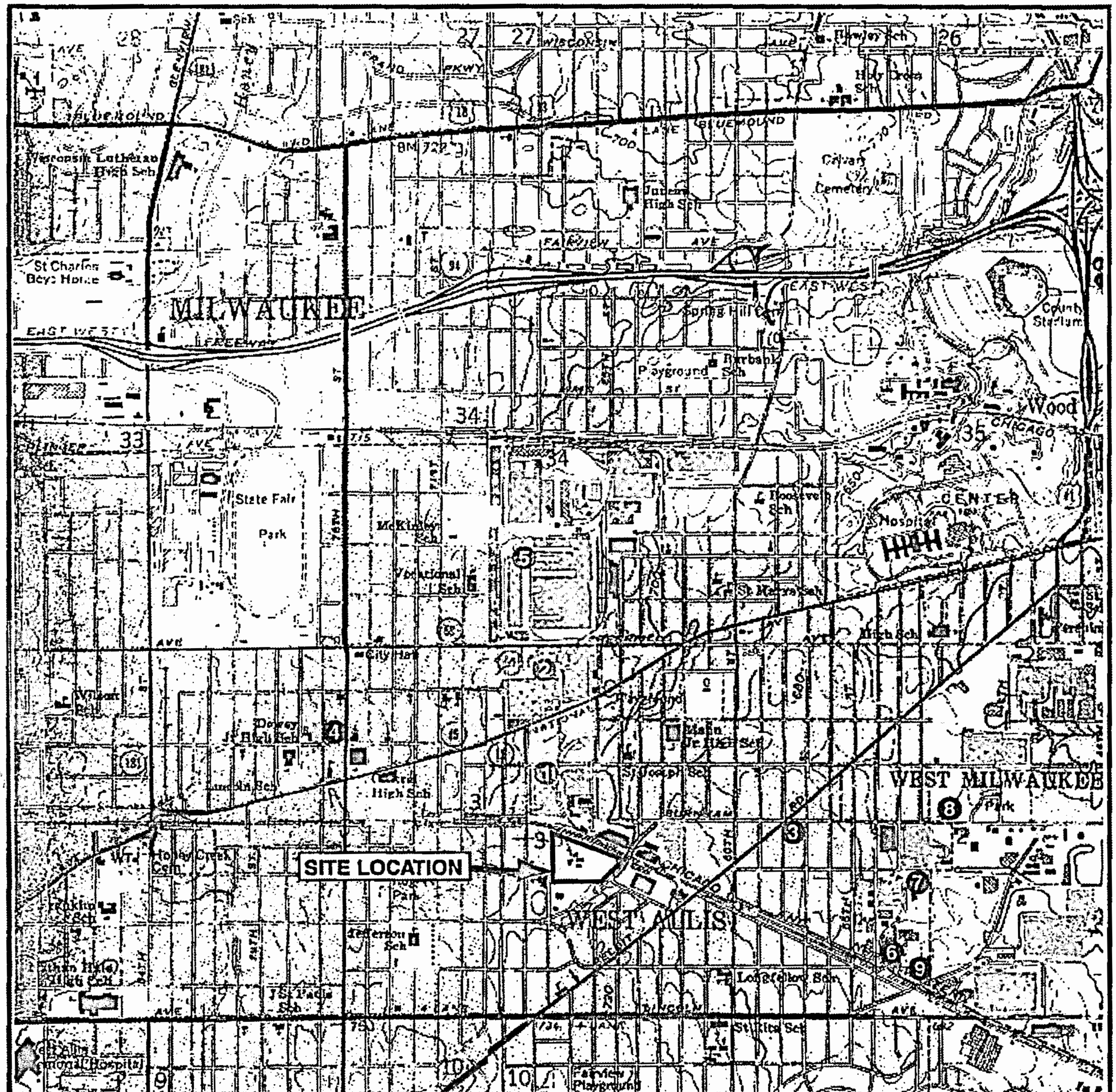
Request for WDNR Approval

The WDNR shall be notified at least five business days prior to completing work activities that require approval. The WDNR Project Manager (at the time of this submittal Mr. Andrew Boettcher) shall be notified by mail or email. Mr. Boettcher's contact information follows:

Mr. Andrew Boettcher
Wisconsin Department of Natural Resources
Southeast Region Office
2300 North Martin Luther King Drive
Milwaukee, Wisconsin 53212
(414) 2638541
Andrew.Boettcher@wisconsin.gov

Request for Deviations

Owner shall not conduct any activities at the Site that are not in compliance with this Plan, unless written approval to do so is obtained from the WDNR.



SOURCE: Composite of USGS 7.5 Minute Topographic Maps, MILWAUKEE (1971) and WAUWATOSA (1994), WISCONSIN Quadrangles

WELL #	ID
1	ML-06/21E/03-0098
2	ML-06/21E/03-0111
3	ML-0621E/02-0114
4	ML-06/21E/04-0297
5	ML-07/21E/34-0022
6	ML-06/21E/02-0064
7	ML-06/21E/02-0370
8	ML-06/21E/02-0099
9	ML-06/21E/02-0225

N

0 1000 2000 4000

SCALE IN FEET

67TH PLACE INDUSTRIAL PARK
1960 SOUTH 67TH PLACE
WEST ALLIS, WISCONSIN

SITE LOCATION MAP

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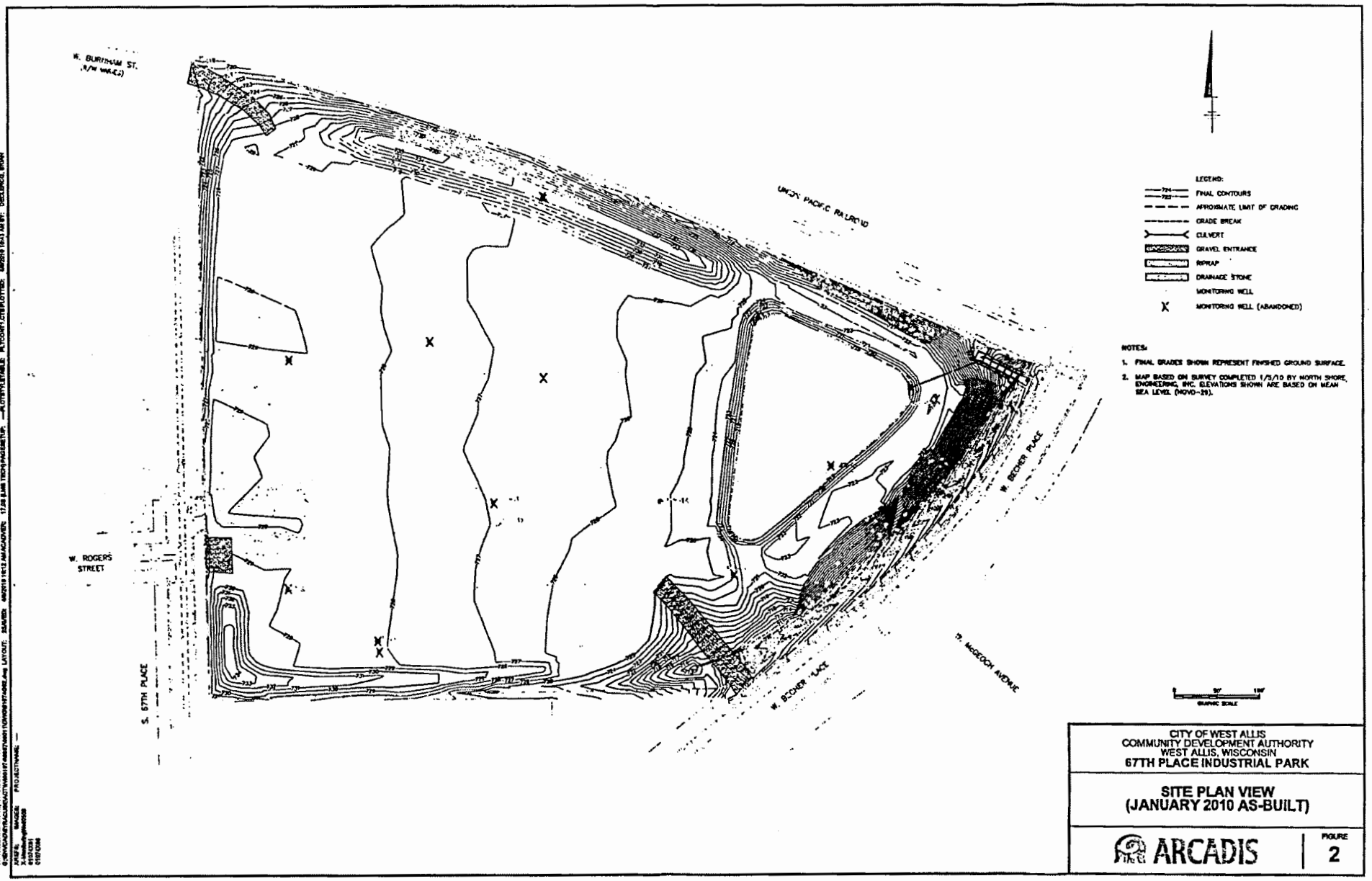
FIGURE 1



CITY OF WEST ALLIS
COMMUNITY DEVELOPMENT AUTHORITY
WEST ALLIS, WISCONSIN
67TH PLACE INDUSTRIAL PARK

SITE PLAN VIEW
(JANUARY 2010 AS-BUILT)

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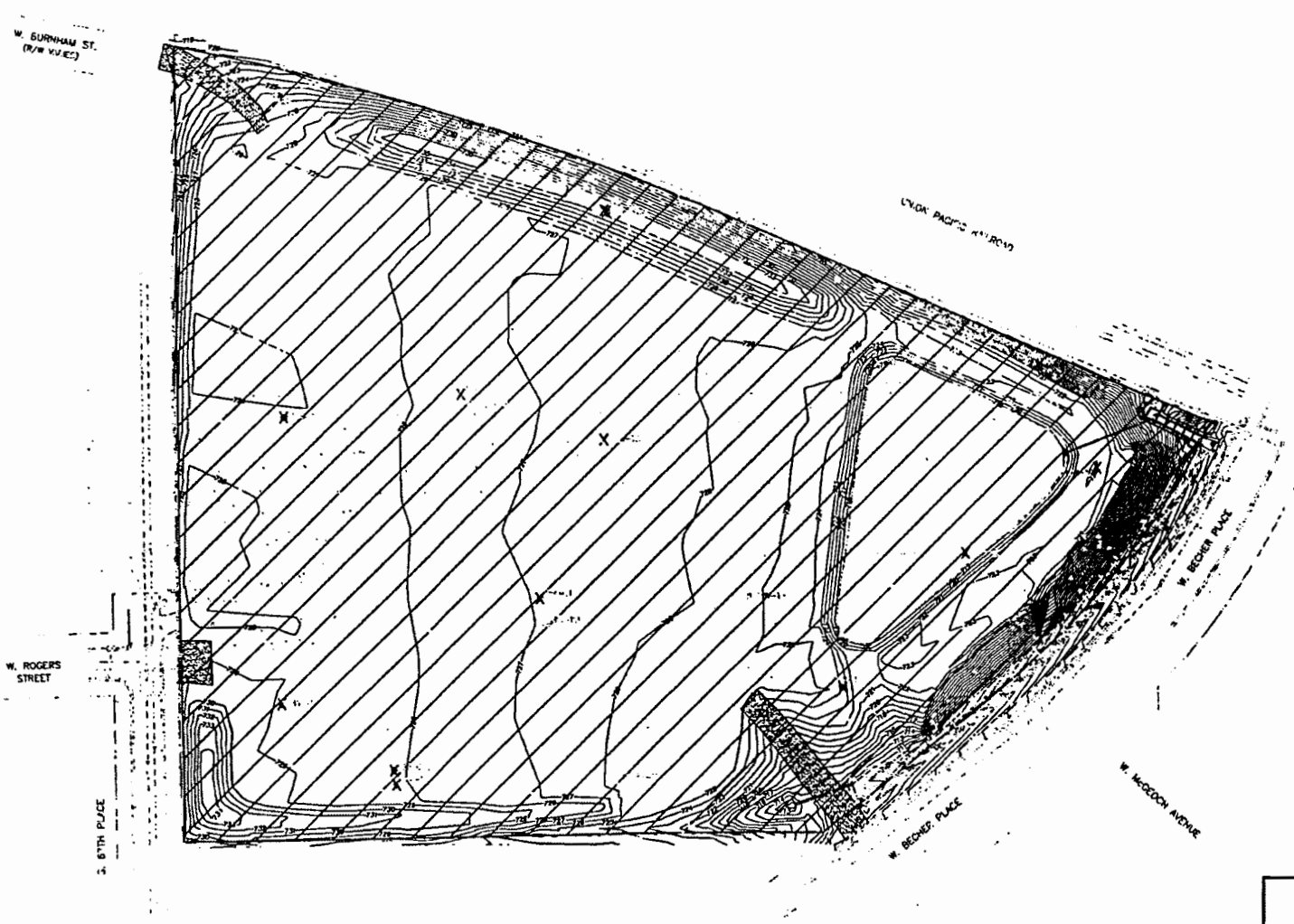
FIGURE
2



CITY OF WEST ALLIS
COMMUNITY DEVELOPMENT AUTHORITY
WEST ALLIS, WISCONSIN
67TH PLACE INDUSTRIAL PARK

EXTENT OF ENGINEERED AND VAPOR BARRIER

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FIGURE 3

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Annual Cap Inspection Form

Name of Inspector: _____

Company: _____

Date: _____

Time: _____

Weather:

Temperature _____ °F sunny ☐ cloudy ☐ windy ☐ rainy ☐ snowy ☐

Ground Conditions: wet ☐ dry ☐ snow ☐

Is this a scheduled inspection? ☐ yes ☐ no

If no, explain: _____

_____

Inspection Results

Cap Condition

- Fissures or Cracking: _____
- Erosion/deterioration: _____
- Ponded water: _____
- Freeze/thaw damage: _____
- Surface disturbances from vehicles or other physical actions: _____
- Animal burrows: _____
- Other: _____

If any of the above conditions were observed, note area and explain. Sketch extent and location of observed damage below:

Vapor Intrusion Engineering Controls Condition

- Soil Gas Piping: _____
- Wind Turbine: _____

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Corrective Action Form

Report Number: _____

Date of Initial Inspection: _____

Name of Inspector: _____

Note: If Corrective Action cannot be completed within 120 days of the Initial Inspection Date, a Corrective Action Plan must be prepared and maintained in the operating record.

Corrective Action Work Order

Type of problem: _____

_____

Required upgrade: _____

_____

Corrective action assigned to: _____ _____
Name Date

Corrective Action Completion Report

Received on: _____ By: _____

Completed on: _____

Comments: _____

_____

By: _____ _____
Name Date

Re-Inspection Report

Observations: _____

_____

Comments: _____

_____

Inspector: _____ _____
Signature Date

Send completed form to the Wisconsin Department of Natural Resources. Maintain maintenance records with the Property Owner, Property manager (if any), and at the Property.

PHOTOGRAPH 1: Pre Site Grading and Earthwork: Burnham entrance looking east.

PHOTOGRAPH 2: Pre Site Grading and Earthwork: Burnham entrance looking southeast.

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PHOTOGRAPH 3: Pre Site Grading and Earthwork: Photo taken from northeast looking south.

PHOTOGRAPH 4: Pre Site Grading and Earthwork: Photo taken from southeast looking north.

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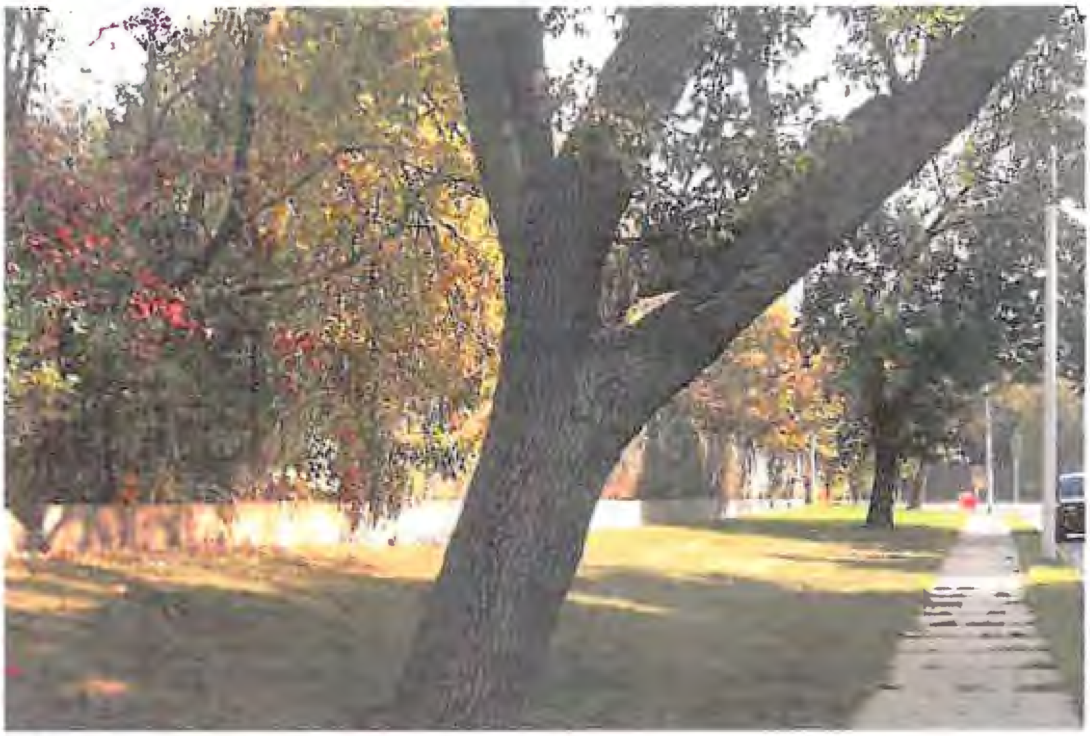

PHOTOGRAPH 5: Pre Site Grading and Earthwork: Photo taken from southeast looking north along West Becher Place.

PHOTOGRAPH 6: Pre Site Grading and Earthwork: Photo taken from south looking north along West Becher Place.

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PHOTOGRAPH 7: Clearing and Grubbing: Stump grinding along western Site perimeter.

PHOTOGRAPH 8: Clearing and Grubbing: Tree removal along West Becher Place.

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PHOTOGRAPH 9: Stormwater Controls: Western perimeter silt fence.

PHOTOGRAPH 10: Stormwater Controls: Gabion-lined channel construction, ditch check located along West Becher Place easement.

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PHOTOGRAPH 11: Surface Debris: Surface debris removal per specifications.

PHOTOGRAPH 12: Surface Debris: Surface debris removal per specifications.

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PHOTOGRAPH 13: Suface Debris: Foundation and concrete slab removal per specifications.

PHOTOGRAPH 14: Sprinkler Vault: Water pumped and disposed of offsite, piping and concrete structure removed per specifications.

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21APR10ENVIRG. .NTRR\LMB
PRESSTEEL\W\1074\LIMEPIT\GRAPHICS\PHOTO_PG_SEVEN.AI

PHOTOGRAPH 15: Sprinkler Vault: Discharge piping removed per specifications.

PHOTOGRAPH 16: Second Sprinkler Vault: Access piping abandoned as shown. Site piping, valve, and concrete structure removed per specifications.

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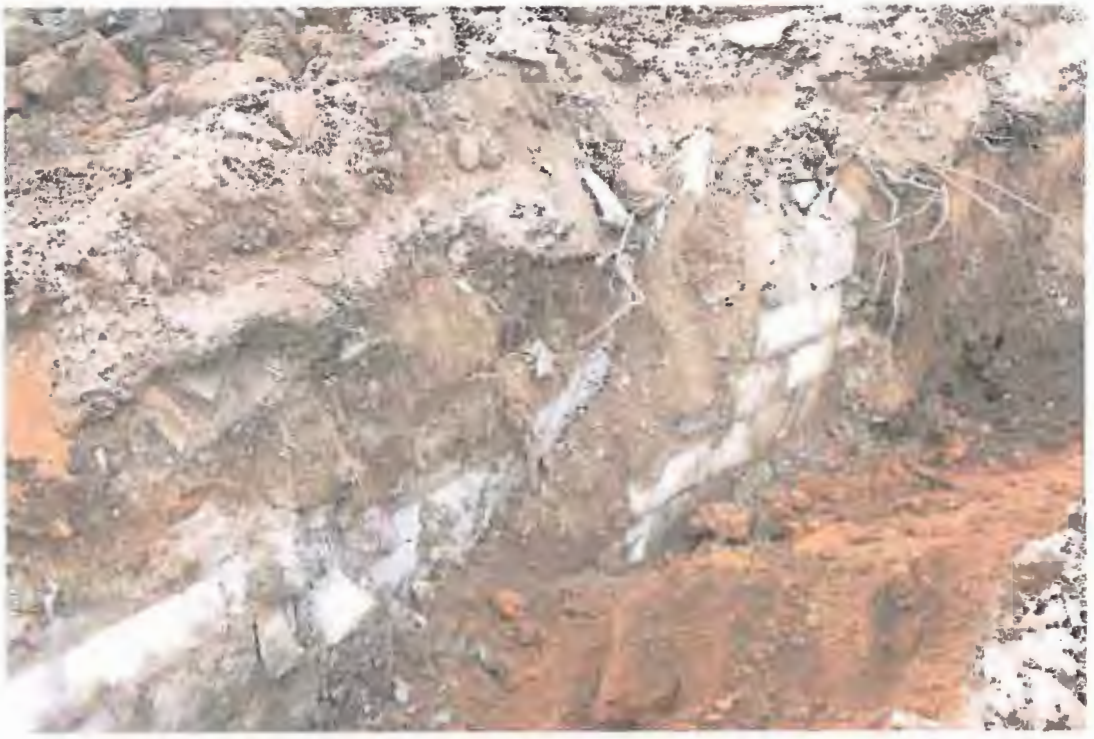

PHOTOGRAPH 17: Sprinkler Vault: Retaining wall exposed during discharge pipe abandonment. Wall crushed in place to five feet below ground surface per specifications.

PHOTOGRAPH 18: Site Grading and Earthwork: Backfill screening/raking.

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PHOTOGRAPH 19: Site Grading and Earthwork: Borrow pit excavation.

PHOTOGRAPH 20: Site Grading and Earthwork: Site backfill and compaction.

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PHOTOGRAPH 21: Site Grading and Earthwork: Site backfill and compaction.

PHOTOGRAPH 22: Site Grading and Earthwork: Final extent of borrow pit excavation.

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PHOTOGRAPH **23:** Site Grading and Earthwork: Wet detention pond excavation.

PHOTOGRAPH 24: Site Grading and Earthwork: Borrow pit backfill.

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PHOTOGRAPH **25**: Site Grading and Earthwork: Wet detention pond excavation.

PHOTOGRAPH **26**: Site Grading and Earthwork: Wet detention pond excavation, original excavation extent.

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PHOTOGRAPH 27: Site Grading and Earthwork: Wet detention pond excavation, over excavation extent for bridge lift subbase.

PHOTOGRAPH 28: Gabion-Lined Channel: Gabion-lined channel installation and restoration, photo taken looking west.

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PHOTOGRAPH 29: Gabion-Lined Channel: Gabion-lined channel complete with slope restoration, photo taken looking east.

PHOTOGRAPH 30: Interceptor Trench Installation: Interceptor trench installation along West Becher Place, photograph taken looking south.

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PHOTOGRAPH 31: Interceptor Trench Installation: Interceptor trench installation and berm construction along West Becher Place, photograph taken looking north.

PHOTOGRAPH 32: Interceptor Trench Installation: Interceptor trench berm construction along West Becher Place, photograph taken looking north.

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PHOTOGRAPH 33: Wet Detention Pond Installation: Pond excavation, bridge lift subgrade, photograph taken looking north.

PHOTOGRAPH 34: Wet Detention Pond Installation: Bridge lift construction, Tensar BX 1200 Geogrid installation.

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PHOTOGRAPH 35: Wet Detention Pond Installation: Bridge lift construction, bridge lift and clay liner installation, photograph taken looking northeast.

PHOTOGRAPH 36: Wet Detention Pond Installation: Clay liner installation, photograph taken looking north.

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PHOTOGRAPH 37: Wet Detention Pond Installation: Topsoil and stone placement, photograph taken looking north.

PHOTOGRAPH 38: Wet Detention Pond Installation: Stone and topsoil completion, photograph taken looking south.

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PHOTOGRAPH 39: Southeast Ditch: Ditch installation and restoration complete, photograph taken looking south.

PHOTOGRAPH 40: Site Restoration: Stabilized gravel entrance, West Becher Place access road, photograph taken looking southeast.

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PHOTOGRAPH 41: Site Restoration: South and southwestern berm, photograph taken looking west.

PHOTOGRAPH 42: Site Restoration: Wet detention pond and northern berm, photograph taken looking northwest.

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PHOTOGRAPH 43: Site Restoration: Wet detention pond, spillway, and southeast ditch, photograph taken looking south.

The Industrial Waste Professionals™

Corporate Office
1136 South 70th Street, Suite N4089 - West Allis, WI 53214
Phone 800-842-9792 Fax: 414-475-4496

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number
2. Page 1 of
3. Emergency Response Phone: 800-842-9792 CHEM-TEL 800-255-3924
4. Waste Tracking Number: AWS 39808

5. Generator's Name and Mailing Address
City West Allis Community Development Authority
1445 S. 66TH STREET
WEST ALLIS, WI 53214 (414) 302-8468
Generator's Phone:

Generator's Site Address (if different than mailing address)
1960 S. 67th St.
West Allis, WI 53214

6. Transporter 1 Company Name: Advanced Waste Carriers, Inc.
U.S. EPA ID Number: WI0000815381

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
Chemworks
3901 W. McKinley Ave
Milwaukee, WI 53208 (414) 342-1852
Facility's Phone:
U.S. EPA ID Number

	9. Waste Shipping Name and Description	10. Containers No.	Type	11. Total Quantity	12. Unit Wt./Vol.	
1	Waste Non-Hazardous Liquid, Non-Regulated Material	001	TT	850	G	
2						
3						
4						

13. Special Handling Instructions and Additional Information
1000116 City West Allis Community Development Authority | Storm Water | 1000116-N/A-B-2-CW
Arrival Time 8:45a
Emergency Response Guide on Board
WWW.advancedwasteservices.com
Departure Time 945a

14 GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.
Generator's Printed/Typed Name: X [illegible]
Signature: X Patrick Schloss
Month 10 Day 1 Year 07

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Andrew Acevedo
Signature:
Month 10 Day 1 Year 07

Transporter 2 Printed/Typed Name
Signature
Month Day Year

17. Discrepancy
17a. Discrepancy Indication Space (3) ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:

17b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

17c. Signature of Alternate Facility (or Generator)
Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a
Printed/Typed Name: Elijah Sanchez
Signature:
Month 10 Day 1 Year 07

GENERATOR — TRANSPORTER — INTL. — DESIGNATED FACILITY

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Appendix D

CGC Geotechnical Summary, 67th Place Industrial Park

CGC, Inc.

Construction • Geotechnical
Consulting Engineering/Testing

May 11, 2010
CM09041

Mr. Ben J. Verburg, P.E., CHMM
ARCADIS U.S., Inc.
126 N. Jefferson Street, Suite 400
Milwaukee, WI 53202

Re: Field Engineering and Testing Services
67th Place Industrial Park
City of West Allis, Wisconsin

Dear Mr. Verburg:

This report presents an overview of our field observations and results of the construction testing program completed at the above-noted site during site grading/development activities completed during the 2009 construction season. Between September 22 and December 21, 2009, representatives of Construction • Geotechnical Consultants, Inc. (CGC) were present on a regular basis to complete the prescribed testing. More specific details regarding CGC's field observations and testing results are presented in the following paragraphs and attachments.

GENERAL

It is our understanding that the 67th Place Industrial Park site at 1960 South 67th Place is being considered for redevelopment of a light industrial-type of facility. This parcel, measuring approximately 11.6 acres, required some clearing/grubbing and demolition to prepare the site to receive fills of variable thickness to establish the planned site grades. Along with site grading activities, various stormwater runoff-related improvements were completed on the parcel, including most notably the construction of a wet pond on the east end of the site.

CGC's scope of services during site development activities included visiting the site on a nearly daily basis during active site grading related activities to provide an indication to the grading contractor and ARCADIS regarding the adequacy of compactive effort being applied to the engineered fills. More specifically, CGC provided the following services:

- Regularly reviewed the condition of exposed subgrades upon completion of topsoil stripping/grubbing activities and prior to fill placement within the designated engineered fill limits;

- Provided direction to the grading contractor regarding the suitability of available materials on the site for use as engineered fill and in the sorting and/or removal of various demolition debris, etc.;

336 S. Curtis Road
West Allis, WI 53214
Telephone: 414/443-2000
FAX: 414/443-2099

- Collected representative samples of the materials deemed suitable for use as fill during the grading operation for laboratory testing purposes. The laboratory testing program included moisture content determinations, laboratory compaction (Proctor) testing and permeability testing of the compacted clay liner materials;

- Performed field density tests on engineered fills placed throughout the site, but predominantly within the northwest quadrant and during placement of the compacted clay liner within the wet pond limits;

- Consulted on, reviewed and observed stabilization procedures implemented to address the wet pond subgrade; and

- Developed this summary report which details the results of the field and laboratory testing program completed during the course of the project.

CHRONOLOGY OF EVENTS

The more notable tasks completed during site development activities are noted below and generally proceeded in accordance with the following time line:

- 9/29/09 - 11/17/09: The mass grading activities required to be completed proceeded during this period, with site grades essentially being completed by the end of November 2009. A total of 19 site visits were made by CGC during this time period specifically for the purpose of reviewing exposed subgrade conditions, checking on the contractor's methods/procedures and to check the adequacy of compaction levels being achieved during general site filling.

- 10/20/09 - 11/7/09: An on-site borrow pit was excavated near the southwest corner of the site during this period. The excavated clayey materials were utilized as engineered fill over the northwest quadrant of the site.

- 11/9/09 - 11/20/09: The borrow pit excavation was backfilled in with non-structural materials that included sorted 6 in. plus demolition debris, and wet/unsuitable soil materials that contained lime spoils mixed with scattered demolition debris. This material was placed in the borrow area to within 3 ft of finished grade. The top 3 ft of the borrow pit was backfilled/capped with non-organic materials including foundry

sand and stockpiled soils that were generally free of demolition debris.

- 11/23/09 - 12/3/09: Wet pond subgrade evaluation was completed during this time period, along with the prescribed undercutting and implementation of stabilization measures to provide a stable subgrade for proceeding with placement of the clay liner materials.

- 12/2/09 - 12/7/09: Previously approved imported clayey soils were placed and compacted in the wet pond as the clay liner. Field density tests were performed on the clayey materials during placement and relatively undisturbed samples were recovered for testing the permeability of the compacted liner materials.

- 12/14/09 - 12/21/09: the storm sewer line located near the northwest corner of the parcel and as shown on Sheet C1 of the project plans was abandoned.

All test locations presented in the attachments for the various tests performed were referenced to a grid coordinate system that was arbitrarily established across the site by CGC for reference purposes. The attached sketch shows this grid system overlain across the site. All test elevations were typically established by hand leveling to the available field control stakes set by the grading contractor during the site work and should be considered approximate.

SUBGRADE OBSERVATIONS

Upon completion of topsoil stripping/grubbing activities, CGC had the opportunity to check the condition of the exposed subgrades prior to proceeding with fill placement. The exposed subgrade conditions typically varied across the site due to the nature of past filling activities completed on the parcel. The overall stability of the subgrades was routinely evaluated by subjecting the exposed subgrades to a thorough proof-roll with a loaded scraper, haul truck or quad-axle haul truck. In addition, a ⅝-in. diameter steel hand probe under full body weight was also used to check the uniformity of the subsoils.

At the onset of site grading, a series of exploratory test pits were excavated across the site to allow the grading contractor to observe the near surface conditions of the site's soil profile and to potentially identify possible sources of readily usable materials to use as engineered fill, in the event the need would arise. The findings from the test pits generally confirmed the soil types/conditions

as revealed from previous explorations performed on the site. A single test pit excavated in the southwest corner of the site revealed a fairly substantial deposit of natural brown lean clay which exhibited moisture contents near its optimum moisture content. This area was later turned into a borrow pit and the clayey spoils were used as engineered fill over the northwest quadrant of the site.

Overall, the exposed subgrades within the northwest quadrant of the site generally appeared relatively stable, with little evidence of instability noted across the majority of the area. Where yielding conditions were observed, isolated undercutting was completed to remove the unsuitable soils and a "bridging" lift of drier clay fill was typically placed to stabilize the area. After proof-rolling the subgrade, planned grades were established following normal fill placement/compaction procedures.

Subgrade conditions were regularly reviewed within the footprint of the wet pond as excavating proceeded to establish the planned subgrade elevation. As anticipated, the exposed subgrade was quite variable and contained pockets/zones of lime at and/or below the targeted pond subgrade. Considerable concrete demolition debris was also encountered as excavating proceeded, which required sorting and/or off-site disposal. To address the unstable condition of the saturated lime deposits, a subgrade stabilization plan was developed which incorporated the utilization of a biaxial geogrid and imported stone materials. Further details regarding the stabilization plan are presented later in this report.

LABORATORY TESTING PROGRAM

Laboratory testing was completed on representative samples of materials being considered for various uses at the site to confirm material property specification compliance with Section 02050 of the project specifications. The testing program included the following:

1. **Topsoil** – Three specimens (1 on-site/2 imported sites) were evaluated for possible use at the site. The test results are summarized in Table A1 of the attached Appendix A.

    a. pH of Soil (ASTM D4972)
    b. Organic Material Content (ASTM D5268)
    c. Lime and/or Fertilizer Requirements

2. **Clay Liner** -- Clay materials from one import source identified as "St. John's on the Lake" were evaluated for use in clay liner construction. The test results are summarized in Table A2 of the attached Appendix A.

   a. P200 Test (ASTM D1140)
   b. Atterberg Limits (ASTM D4318)
   c. Flexible Wall Permeability Test (ASTM D5084)

3. **General Fill** -- During the course of site grading, a series of seven (7) specimens were tested to establish the moisture-density relationship of the soils. The test results are summarized in Table A3 of the attached Appendix A.

   a. Modified Proctor (ASTM D1557)
   b. Visual Soil Classification (ASTM D2487)

Results of the various laboratory tests performed are detailed in Appendix A of this report.

FILL PLACEMENT

A. General Site Filling

Fill materials utilized during site grading generally consisted of a combination of clayey soils, silty sands with variable gravel contents and foundry sand materials which were obtained from on-site stockpiles, cuts in the wet pond area and the borrow pit which was excavated at the southwest corner of the parcel. The pond spoils were typically used as structural fill in the northwest quadrant. These materials were spread over the subgrade, then regularly raked to remove 6 in.+ demolition debris. The debris was then temporarily stockpiled in various locations around the site, awaiting off-site disposal and/or placement within the borrow pit. On-site stockpiled material consisting of black foundry sand was used as engineered fill in the northwest quadrant. Similarly, the clayey materials that were excavated from the borrow pit were placed as engineered fill in the northwest quadrant. Engineered fill materials were typically placed in 6 to 10 in. thick horizontal lifts, leveled with a dozer and then compacted with a sheepsfoot compactor, supplemented by continual dozer and haul truck traffic.

During the mass grading operation, a total of 286 field density tests were performed with a Troxler 3430 series nuclear density gauge to check the adequacy of compaction during the development of the planned subgrade elevations across the parcel. Percent compaction was determined by

comparing the in-place field densities with the maximum density values established on the variable fills in our laboratory per modified Proctor (ASTM D1557) test procedures. Laboratory compaction (Proctor) test results are presented in Appendix A and ranged between 100.5 and 131.5 pcf. Estimated proctor values were also occasionally assigned to individual lifts of fill placed where the soils exhibited variations in sand and/or gravel contents, etc. from the established values.

Results of the field density testing program completed during general site grading are presented in Field Density Test Report No. 1 attached in Appendix B. The field testing program indicated that recorded compaction levels (after retesting) typically ranged between 92 and 100+ percent, typically meeting and/or far exceeding the targeted minimum compaction levels. Per the project specifications, the minimum compaction levels for cohesive and granular fill soils were 90 percent and 95 percent, respectively. In addition to conventional field density testing, the overall stability of the developing subgrade was regularly evaluated by proof-rolling observations to account for the varying texture of the soils available for fill placement.

B. Borrow Pit Backfill/Non-Structural Screening Berms

Upon fully excavating suitable clayey soils for filling, the majority of the borrow pit excavation was backfilled with high moisture granular materials excavated from the wet pond. Stockpiled demolition debris (i.e., 6 in. or larger) that was screened/raked during filling operations and consisted of concrete and rebar, etc. was mixed with the granular soils to produce a well-graded fill. These materials were placed as the initial fill zone at the base of the pit (i.e., at a depth of 29 ft). Subsequent layers of fill placed continued to consist of spoils excavated from the wet pond and a mixture of demolition debris and the saturated lime deposits. These materials were placed to within about 3 ft of finished grades. The final 3 ft of the borrow pit was then filled with 6 in. minus materials consisting of on-site stockpiled non-organic soils and foundry sand materials. Due to relatively high moisture contents and the general variable nature of the fill materials, the backfill was not placed in uniform 10 in. lifts. Rather, the fill was placed in the borrow pit with dozers and/or haul trucks, then leveled with the D6 dozer and compacted in-place by being subjected to continual equipment trafficking.

Non-structural screening berms were constructed along the north and south fence lines. These berms were constructed of excavated wet pond materials that were deemed unsuitable for use as structural fill on the site. No mechanical compaction was applied to the fills within the berms during placement.

C. Wet Pond Subgrade Stabilization

As excavating proceeded to establish the planned subgrade for the wet pond, unstable conditions were regularly observed. The unstable conditions were attributed to the presence of entrapped groundwater and saturated lime deposits. After excavating a series of shallow test pits within the base of the pond to explore the subsoil conditions, a subgrade stabilization plan was developed to address the conditions observed. The first step in this plan was to gain temporary control of the groundwater through the use of sump pumps during the proposed undercut/refill operation. It was recommended that the pond subgrade be undercut to a depth of 36 in. throughout the pond footprint, corresponding to about Elevation 708.5 ft. Following undercutting, the base of the undercut subgrade was reinforced with a Tensar BX1200 biaxial geogrid. The geogrid was installed in general accordance with the manufacturer's recommendations, with a minimum 3 ft overlap provided. A bridging lift comprised of 3 ft of 3-in. dense graded base materials was then placed by end dumping the product over the geogrid and graded with the D6 dozer. The dozer was equipped with GPS elevation control during placement. Once the bridging lift materials were in place to grade, a Dynapac sheepsfoot compactor was used to densify the bridging lift materials. The truck traffic was also fanned out during delivery of the stone to uniformly subject the stone materials to densification during placement. Observations of the bridging lift showed it was performing well under fully-loaded truck traffic, with little to no deflection observed in the stabilized subgrade.

During shaping of the pond sidewalls, some evidence of instability was observed at various locations due to intrusions of the same wet lime deposits. Where unstable conditions were noted via proof-rolling, isolated undercutting was performed and the subgrades were generally re-established with the imported 3-in. dense graded base materials. The sketch attached in Appendix D shows the approximate location of the seven areas requiring stabilization.

D. Wet Pond Liner Placement

Following fine grading and compaction of the bridging lift materials throughout the pad base and sidewalls (where deemed necessary), construction of the 2 ft thick compacted clay liner proceeded. The clay liner materials consisted of imported brown mottled lean clay from the site denoted as "St. John's on the Lake". Results of the physical property tests performed on the clay liner materials are presented in Table A2 in Appendix A.

During placement of the clay liner materials, a total of thirty (30) field density tests were performed to check the adequacy of compaction. All testing was performed with a Troxler 3430 series nuclear density gauge. Percent compaction was determined by comparing the in-place field densities with

the established maximum density value for the imported clay soils, per modified Proctor (ASTM D1557) test methods. The field density tests resulted in a level of compaction ranging between 90 and 100 percent for the compacted clay liner, and between 92 to 97 percent for the pond embankments, exceeding the minimum compaction levels of 90 percent and 92 percent, respectively. Results of the field density tests performed are presented in Field Density Test Report No. 2 attached in Appendix C.

E. Existing Utility Abandonment

On September 28, the discharge line and sprinkler vault located in the southwest quadrant of the site was excavated and removed, running from the sprinkler vault west to the property line. The excavated trench was backfilled with generated on-site spoils. Based on field observations, the backfill was typically comprised of brown lean clay materials which were placed in 10 in. thick lifts within the trench, then leveled and uniformly compacted with a hoe-pak compactor. Due to the confined nature of the trench, conventional field density tests were not performed. Rather, CGC visually observed fill placement and compaction methods and deemed the approach to be acceptable.

In mid-December, the storm sewer pipe located within the northwest corner of the site was also excavated and removed. This trench was filled with generated spoils, with sorting of large pieces of demolition debris taking place. The backfill was initially placed and compacted in 12 in. thick lifts with the backhoe bucket, followed by the Sheepsfoot compactor. Filling took place immediately upon completion of excavation to prevent freezing of the excavated soil spoils due to the inclement weather present. The tightness of the compacted backfill zone was regularly checked with a ⅝-in. diameter steel hand probe under full body weight during fill placement/compaction. In general, the compacted backfill appeared reasonably well compacted, with hand probe penetration depths typically ranging between 2 and 5 in. Due to the variable nature of the spoils generated during this effort, compaction tests were not performed on the backfill. CGC was on-site, however, to visually monitor fill placement/compaction procedures being employed.

CGC, Inc.

* * * * *

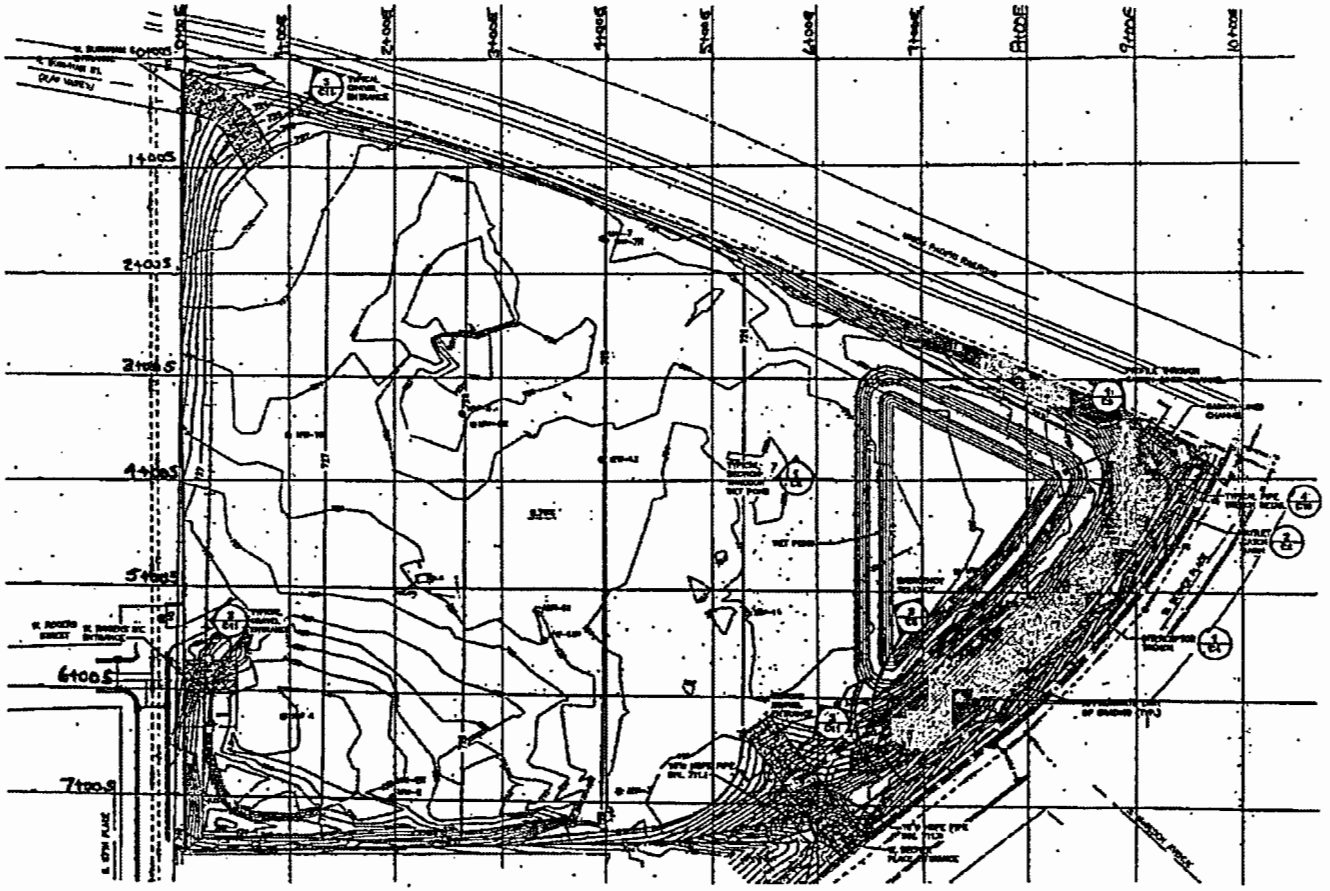
In summary, based on our field observations and results of the field testing program as outlined in the attachments, it is our opinion that general site grading/development proceeded satisfactorily and in general agreement with the intent of the project requirements. It should be recognized, however that this report (and its findings/results) is not intended to be and should not be used as a substitute for a detailed subsurface exploration and foundation subgrade evaluation which is required to determine the soil bearing capacity of the underlying subsoils. Should you have any questions or concerns regarding the information in this report, please give us a call.

Respectfully,

CGC, Inc.

Jeff P. Simkowski, P.E.
Senior Consulting Professional

Encl: Sketch
Appendix A - Results of Laboratory Testing Program
-- Topsoil Analysis/Testing
-- Clay Liner Materials Testing
-- General Fill Test Results
Appendix B - Field Density Test Report No. 1 - General Site Grading
Appendix C - Field Density Test Report No. 2 - Compacted Clay Liner
Appendix D - Sketch - Pond Sidewall Stabilization



N

Note: The gird coordinate system shown was arbitrarily set across the project site to assist CGC in documentation of the field testing program.

Scale: Not to Scale

Drawn: --	Approved: JPS	Date: 5/10/10	CM09041	CGC, Inc.	SKETCH 67th Place Industrial Park City of West Allis, Wisconsin

APPENDIX A

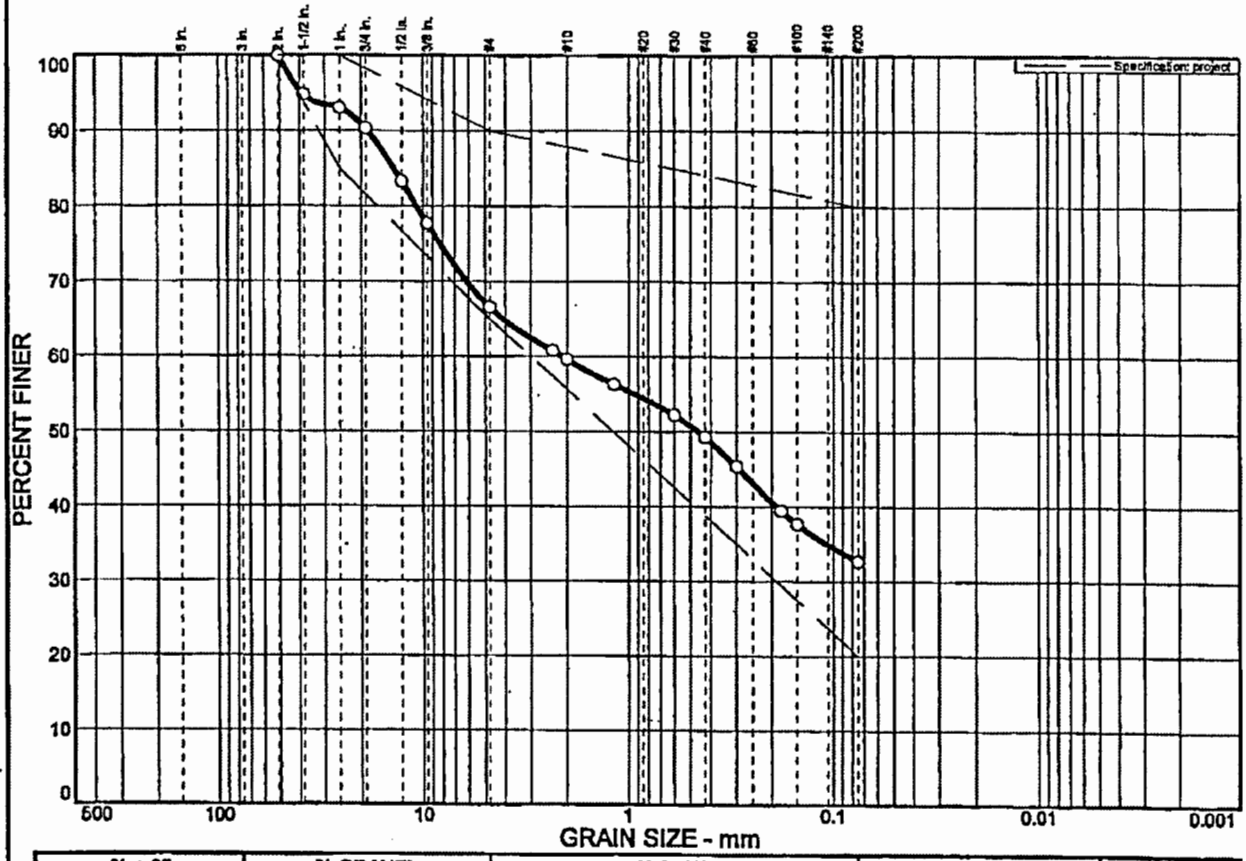
RESULTS OF LABORATORY TESTING PROGRAM

TABLE A1

SUMMARY OF TOPSOIL ANALYSIS/TESTING

Parameter		Test Results			Specification
		Sample A	Sample 1	Sample 2	
pH Determination		8.0	7.8	8.1	6.0-7.5
Organic Content, %		6.2 (ave.)	3.5	3.7	2-20
Gradation - % Passing	Sieve Size				
	2"	100	100	100	100
	1"	93.0	100	100	85-100
	No. 4	66.6	93.4	93.3	65-90
	No. 200	32.7	65.5	55.5	20-80

GRAIN SIZE DISTRIBUTION TEST REPORT



% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
0.0	33.4	33.9	32.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2 in.	100.0	100 - 100	
1.5 in.	94.8		
1 in.	93.0	85 - 100	
.75 in.	90.3		
.5 in.	83.3		
.375 in.	77.7		
#4	66.6	65 - 90	
#8	60.8		
#10	59.6		
#16	56.3		
#30	52.2		
#40	49.3		
#50	45.4		
#80	39.5		
#100	37.7		
#200	32.7	20 - 80	

* project

Soil Description

On-Site Stockpiled Topsoil-Like Materials

Atterberg Limits

PL= – LL= – PI= –

Coefficients

D_{85}= 13.9 D_{60}= 2.11 D_{50}= 0.457

D_{30}= D_{15}= D_{10}=

C_u= C_c=

Classification

USCS= SM AASHTO= A-2-4(0)

Remarks

Tested By: TMB Input By: MLB

Checked By: JPS Approved By: JPS

Sample No.: A **Source of Sample:** On-Site Stockpile **Date:** 10/5/09

Location: **Elev./Depth:**

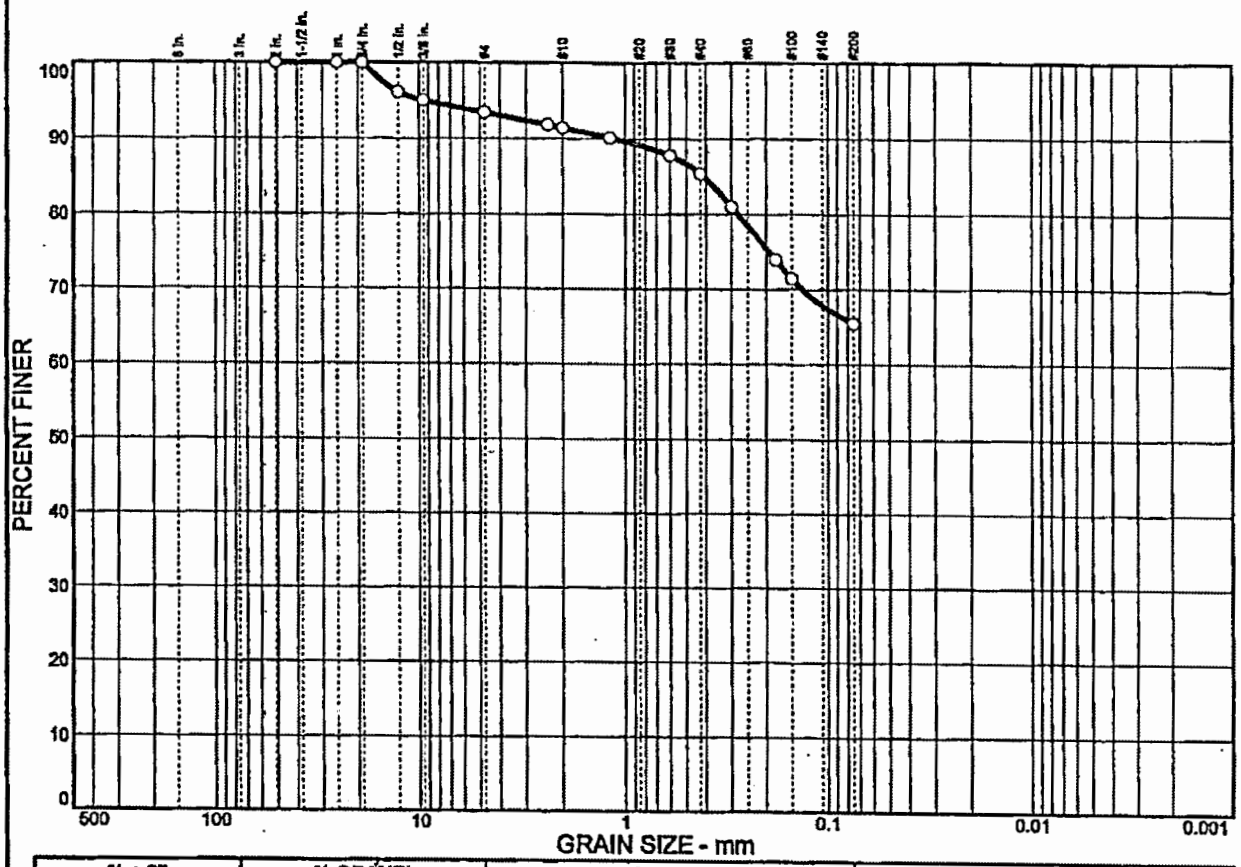
CGC, Inc.

Client: ARCADIS

Project: 67th Place Industrial Park
West Allis, Wisconsin

Project No: CM09041

GRAIN SIZE DISTRIBUTION TEST REPORT



% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
0.0	6.6	27.9	65.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2 in.	100.0	100.0 - 100.0	
1 in.	100.0	85.0 - 100.0	
.75 in.	100.0		
.5 in.	96.1		
.375 in.	95.0		
#4	93.4	65 - 90	X
#8	91.8		
#10	91.4		
#16	90.1		
#30	87.8		
#40	85.4		
#50	81.0		
#80	73.9		
#100	71.4		
#200	65.5	20.0 - 80.0	

* Topsoil

Soil Description

Imported Topsoil Materials

Atterberg Limits

PL= – LL= – PI= –

Coefficients

D_{85}= 0.409 D_{60}= D_{50}=

D_{30}= D_{15}= D_{10}=

C_u= C_c=

Classification

USCS= ML AASHTO= A-4(0)

Remarks

Tested By: TMB Input By: MLB

Checked By: JPS Approved By: JPS

Sample No.: 1 **Source of Sample:** Del Sievert Trucking, Inc. **Date:** 11/25/09

Location: **Elev./Depth:**

CGC, Inc.

Client: C.W. Purpero, Inc.

Project: 67th Place Industrial Park
West Allis, Wisconsin

Project No: CM09006-4

Report Number: F09334-4008
Account Number: 96670

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3505 Conestoga Drive • Fort Wayne, Indiana 46808-4413 • Phone 260-483-4759 • Fax 260-483-5274
www.algreatlakes.com • lab@algreatlakes.com

QUALITY ANALYSES FOR INFORMED DECISIONS

REPORT PRINTED 12/3/2009

To: CGC, INC.
336 S. CURTIS ROAD
WEST ALLIS, WI 53214-1015

For: CM09006-4

SOIL TEST REPORT

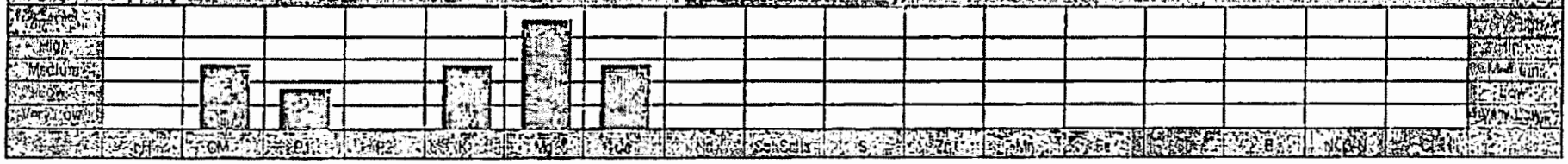
Date Received: 11/27/2009 Date Reported: 12/03/2009 Sample Number: 1 Lab Number: 22190 Page: 1

Soil Test Results

Organic Matter %	Phosphorus Bray P1 ppm	Phosphorus Bray P2 ppm	Potassium K ppm	Magnesium Mg ppm	Calcium Ca ppm	Sodium Na ppm	Soil pH	Buffer	CEC meq/100g	K %	Mg %	Ca %	H %	Na %
3.5	12		96	635	2900		7.8		20.0	1.2	26.4	72.4		

Sulfur S ppm	Zinc Zn ppm	Manganese Mn ppm	Iron Fe ppm	Copper Cu ppm	Boron B ppm	Soluble Salts mmho/cm	Nitrate NO3-N ppm	Ammonium NH4-N ppm	Bicarbonate ppm	Chloride Cl ppm		

Graphic Summary



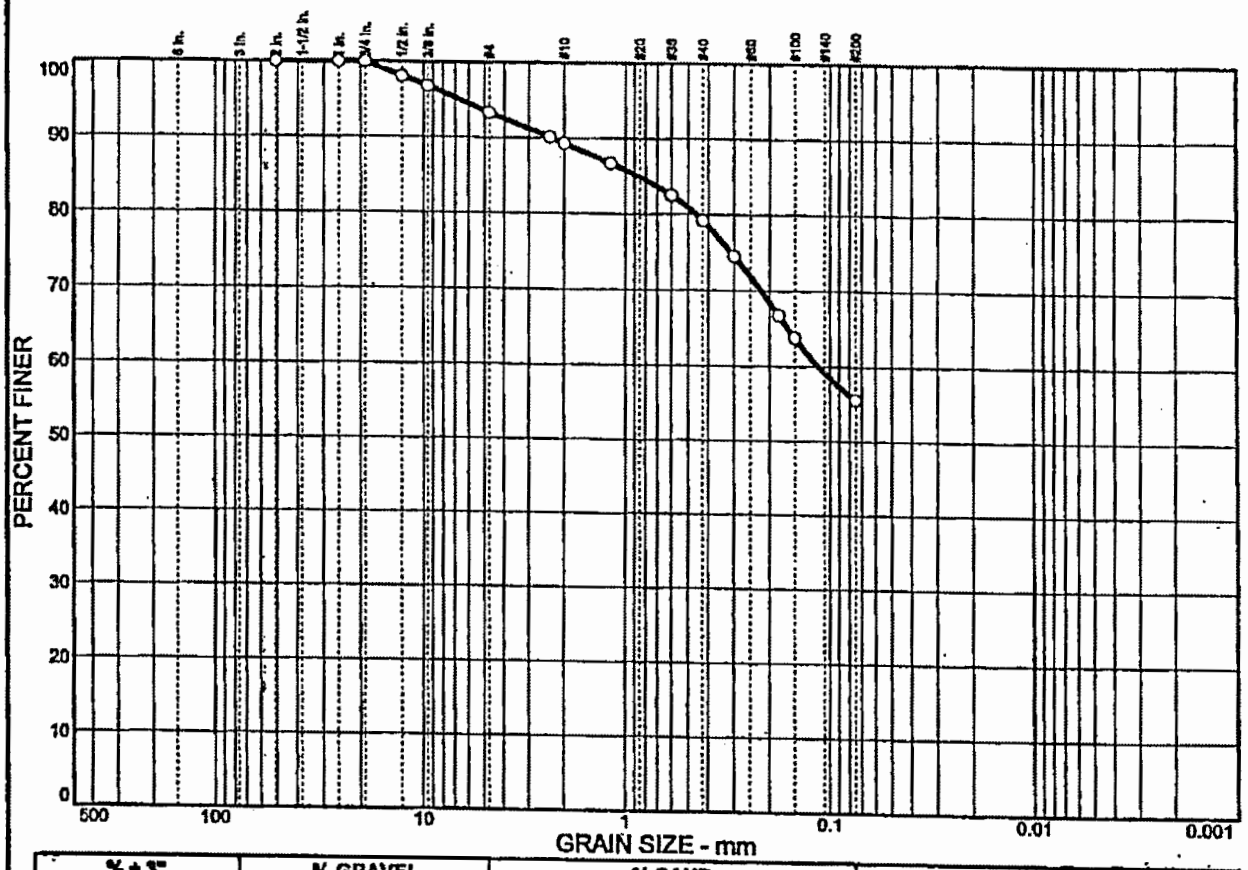
Soil Fertility Recommendations - Pounds per 1,000 Square Feet

Program	Lime	Nitrogen N	Phosphate P2O5	Potash K2O	Magnesium Mg	Sulfur S	Zinc Zn	Manganese	Iron Fe	Copper Cu	Boron B
Lawn - Establishment	0	2	5	2	0						
Lawn - Maintenance	0	4	4	1	0						

A&L-GLAWN

Sample 1: LAWN - Split the recommended amount into 3-4 applications during a growing season.
Sample 1: LAWN SEEDING - Apply and incorporate the recommended amount before seeding.
Sample 1: Samples analyzed using NCR-13 soil test methods, which are NOT acceptable for Wisconsin ATCP-50 Nutrient Management Plans.

GRAIN SIZE DISTRIBUTION TEST REPORT



% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
0.0	6.7	37.8	55.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2 in.	100.0	100.0 - 100.0	
1 in.	100.0	85.0 - 100.0	
.75 in.	100.0		
.5 in.	98.1		
.375 in.	96.8		
#4	93.3	65.0 - 90.0	X
#8	90.1		
#10	89.3		
#16	86.7		
#30	82.5		
#40	79.2		
#50	74.5		
#80	66.8		
#100	63.8		
#200	55.5	20.0 - 80.0	

* Topsoil

Soil Description

Stockpiled Topsoil Materials

Atterberg Limits

PL= – LL= – PI= –

Coefficients

D_{85}= 0.865 D_{60}= 0.114 D_{50}=

D_{30}= D_{15}= D_{10}=

C_u= C_c=

Classification

USCS= ML AASHTO= A-4(0)

Remarks

Tested By: TMB Input By: MLB

Checked By: JPS Approved By: JPS

Sample No.: 2 **Source of Sample:** Stockpile at CWP Yard **Date:** 12/3/09

Location: **Elev./Depth:**

CGC, Inc.

Client: C.W. Purpero, Inc.

Project: 67th Place Industrial Park
West Allis, Wisconsin

Project No: CM09006-5

Report Number: F09341-0060
Account Number: 96670

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QUALITY ANALYSES FOR INFORMED DECISIONS

To: CGC, INC.
336 S. CURTIS ROAD
WEST ALLIS, WI 53214-1015

For: CM09006-5

SOIL TEST REPORT

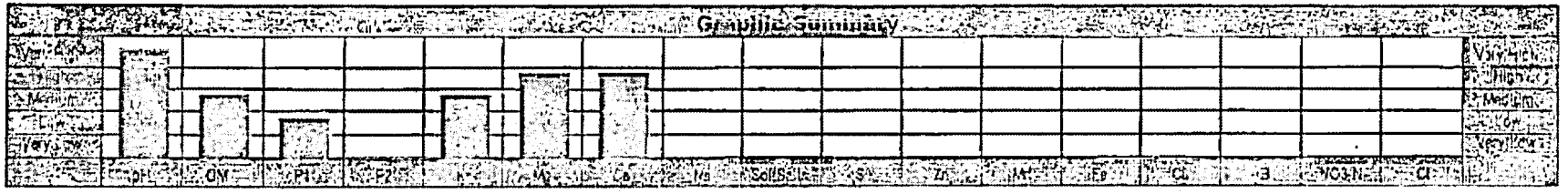
Date Received: 12/07/2009 **Date Reported:** 12/09/2009 **Sample Number:** 1 **Lab Number:** 52039 **Page:** 1

Soil Test Results

Organic Matter %	Phosphorus Bray P1 ppm P	Phosphorus Bray P2 ppm P	Potassium K ppm	Magnesium Mg ppm	Calcium Ca ppm	Sodium Na ppm	pH Soil pH	pH Buffer pH	Meq/100	% K	% Mg	% Ca	%	%
3.7	14		101	540	3250		8.1		21.0	1.2	21.4	77.3		

Sulfur S ppm	Zinc Zn ppm	Manganese Mn ppm	Iron Fe ppm	Copper Cu ppm	Boron B ppm	Soluble Salt Mmhos/cm	Nitrate NO3-N ppm	Ammonium NH4-N ppm	Bicarbonate P B ppm	Chloride Cl ppm	

Graphic Summary



Soil Fertility Recommendations - Pounds per 1,000 Square Feet

Intended Use	Previous Crop	Lime	Nitrogen N	Phosphate P2O5	Potash K2O	Magnesium Mg	Sulfur S	Zinc Zn	Manganese Mn	Iron Fe	Copper Cu	Boron B
Lawn - Maintenance		0	4	4	4	0						
Lawn - Establishment		0	2	5	5	0						

A&L-GLAWN

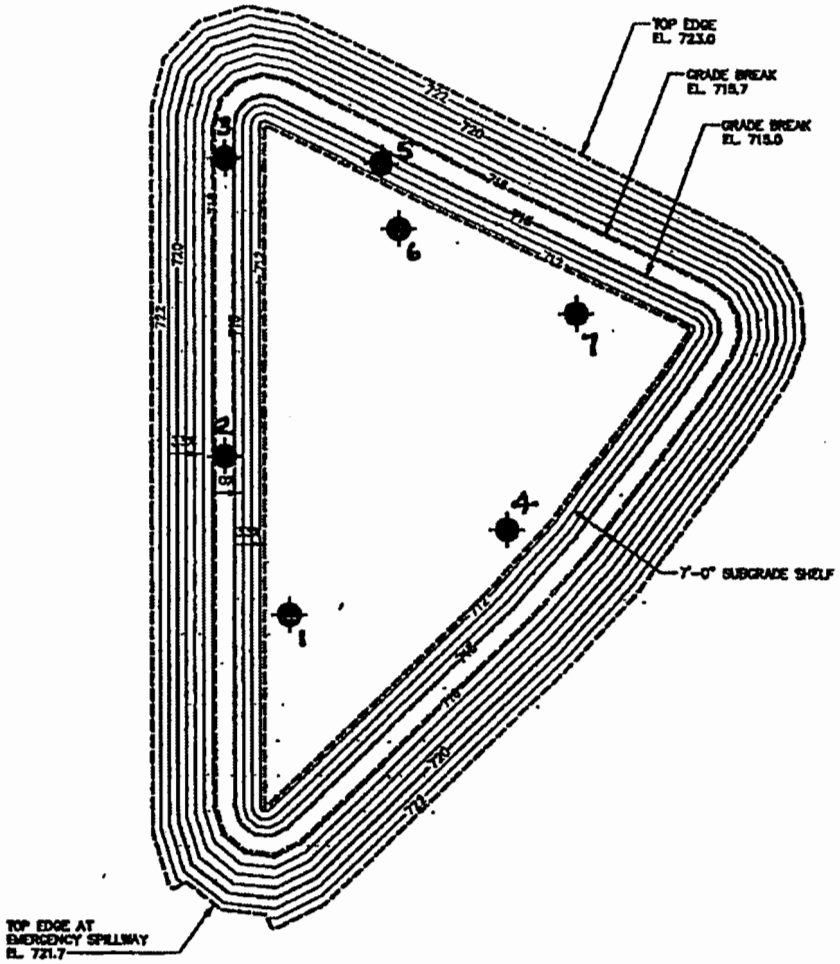
Sample 1: LAWN - Split the recommended amount into 3-4 applications during a growing season.
Sample 1: LAWN - The soil pH is high (alkaline soil) and may cause chlorosis (yellowing) of the grass. Apply an iron-containing fertilizer 2 to 3 times per year to improve color.
Sample 1: LAWN SEEDING - Apply and incorporate the recommended amount before seeding.
Sample 1: Samples analyzed using NCR-13 soil test methods, which are NOT acceptable for Wisconsin ATCP-50 Nutrient Management Plans.

TABLE A2

SUMMARY OF CLAY LINER MATERIALS TESTING

Parameter	Test Results	Specification
Liquid Limit, %	38	≥25
Plasticity Index, %	20	≥12
P200 Content, %	68.6	≥50
Recompacted In-Place Permeability, cm/sec	$3.4\text{-}7.2 \times 10^{-9}$	$\leq 1 \times 10^{-7}$

Note: The attached sketch shows the approximate locations where relatively undisturbed specimens of the in-place compacted clay liner materials were collected for flexible wall permeability testing purposes, per ASTM D5084 procedures.



COMPACTED CLAY LINER
SUBGRADE ELEVATIONS
(BOTTOM OF CLAY)

N

Legend

Denotes Approximate Location and Number of Permeability Specimen Collected

Scale: Not to Scale

DWN: --	APP'D: JPS	Date: 1/6/10	CM09006-5	CGC, Inc.	SKETCH 67th Place Industrial Park City of West Allis, Wisconsin

RMT, Inc.

Falling Head Permeability Test (ASTM D5084)

QC: JPH

QA: JPH

Project Name:	C.W. Purpero, Inc. : 67th Place Industrial Park	Cell #:	4
Project #:	CM09006-5	USCS Description:	N/A
Sample Name:	Sample #1, 4+90S, 6+70E	USCS Classification:	N/A
Visual Descript:	Lean clay	Average Kv =	3.4E-09 cm/sec

		Initial Values	Final Values			
Sample Type:	Undisturbed					
Sample Dia. (in)		2.87	2.87	Permeant:	Water	
Sample Ht. (in)		2.30	2.30	Permeant Specific Gravity:	1.00	
Tare & Wet (g)		527.20	791.20	Sample Specific Gravity:	2.72	Est.
Tare & Dry (g)		448.71	712.20	Confining Pressure (psi):	100.0	
Tare (g)		0.00	263.49	Burette Diameter (in):	0.250	
Sample Wt. (g)		527.20	527.71	Burette Zero (cm):	100.0	
Moisture (%)		17.5	17.6			
Wet Density (pcf)		135.0	135.1			
Dry Density (pcf)		114.9	114.9	Max. Effect. Stress (psi):	7.5	
Saturation (%)		99.7	100.3	Min. Effect. Stress (psi):	4.2	
				Ave. Effect. Stress (psi):	5.0	

	Date			Time		Run	Temp	Pressure (psi)			Cham.		Bot.		Top	How	Kv ***	Ave.*
	Yr.	Mo.	Day	Hr.	Min.	Time	C***	Bot	Top	Cham	Dif.	Bot	Dif.	Top	Dif.	Dif.%	cm/sec	0,1
1	2009	12	15	15	32.00		0.0	95	95	50.10		13.15		42.00				
2	2009	12	15	16	20.00	2880	19.0	95	95	50.30	0.20	13.25	0.10	41.90	0.10	0.0	5.5E-08	
3	2009	12	16	5	55.00		0.0	95	95	53.70		13.60		42.45				
4	2009	12	16	7	50.00		0.0	95	95	53.60		14.25		43.05				
5	2009	12	16	10	2.00	7920	21.0	95	95	55.10	1.50	14.15	-0.10	42.90	0.15	-500.0	4.7E-09	
6	2009	12	16	11	59.00	7020	19.0	95	95	53.90	-1.20	14.05	-0.10	42.75	0.15	-500.0	5.6E-09	
7	2009	12	16	13	19.00		0.0	95	95	55.35		1.35		98.90				
8	2009	12	16	16	0.00	9660	19.0	95	95	54.70	-0.65	1.50	0.15	98.25	0.65	-62.5	1.9E-08	
9	2009	12	17	7	36.00	56160	19.0	95	95	56.30	1.60	2.10	0.60	97.75	0.50	9.1	4.6E-09	
10	2009	12	17	9	42.00	7560	19.0	95	95	56.90	0.60	2.20	0.10	97.75	0.00	100.0	3.1E-09	
11	2009	12	17	11	40.00	7080	19.0	95	95	56.90	0.00	2.30	0.10	97.70	0.05	33.3	5.0E-09	
12	2009	12	17	13	40.00	7200	19.0	95	95	57.10	0.20	2.40	0.10	97.60	0.10	0.0	6.6E-09	
13	2009	12	17	15	40.00	7200	19.0	95	95	57.40	0.30	2.50	0.10	97.50	0.10	0.0	6.6E-09	
14	2009	12	18	7	34.00	57240	19.0	95	95	58.30	0.90	3.10	0.60	97.05	0.45	14.3	4.4E-09	
15	2009	12	18	9	34.00	7200	19.0	95	95	58.60	0.30	3.20	0.10	96.95	0.10	0.0	6.7E-09	
16	2009	12	18	11	34.00	7200	19.0	95	95	58.60	0.00	3.30	0.10	96.85	0.10	0.0	6.7E-09	
17	2009	12	18	13	34.00	7200	20.0	95	95	58.90	0.30	3.40	0.10	96.80	0.05	33.3	4.9E-09	
18	2009	12	18	16	2.00	8880	20.0	95	95	58.90	0.00	3.50	0.10	96.70	0.10	0.0	5.4E-09	
19	2009	12	21	6	6.00	223440	19.0	95	95	61.90	3.00	5.85	2.35	94.70	2.00	8.0	4.9E-09	
20	2009	12	21	8	13.00	7620	19.0	95	95	61.80	-0.10	5.90	0.05	94.60	0.10	-33.3	5.0E-09	
21	2009	12	21	10	13.00	7200	19.0	95	95	62.10	0.30	5.95	0.05	94.55	0.05	0.0	3.6E-09	
22	2009	12	21	10	32.00		0.0	95	93	62.25		6.05		94.45				
23	2009	12	21	12	34.00	7320	19.0	95	93	62.05	-0.20	6.15	0.10	94.25	0.20	-33.3	4.1E-09	
24	2009	12	21	16	9.00	12900	19.0	95	93	62.50	0.45	6.40	0.25	94.05	0.20	11.1	3.5E-09	
25	2009	12	22	6	12.00	50580	19.0	95	93	63.20	0.70	7.40	1.00	93.00	1.05	-2.4	4.1E-09	
26	2009	12	22	8	17.00	7500	19.0	95	93	63.30	0.10	7.55	0.15	92.80	0.20	-14.9	4.7E-09	

**A zero in this column starts a series of measurements.

*Average Kv for those rows with a 1 in the Ave. column.

(Termination determined by stable Kv and low flow differential.)

***Kv adjusted for temperature.

RMT, Inc.

Falling Head Permeability Test (ASTM D5084)

QC: JPH

QA: JPH

Project Name: C.W. Purpero, Inc. : 67th Place Industrial Park

Project #: CM09006-5

Sample Name: Sample #1, 4+90S, 6+70E

Visual Descript: Lean clay

Cell #: 4

USCS Description: N/A

USCS Classification: N/A

Sample Type:	Undisturbed	Initial Values	Final Values			
Sample Dia. (in)		2.87	2.87	Permeant:	Water	
Sample Ht. (in)		2.30	2.30	Permeant Specific Gravity:	1.00	
Tare & Wet (g)		527.20	791.20	Sample Specific Gravity:	2.72	Est.
Tare & Dry (g)		448.71	712.20	Confining Pressure (psi):	100.0	
Tare (g)		0.00	263.49	Burette Diameter (in):	0.250	
Sample Wt. (g)		527.20	527.71	Burette Zero (cm):	100.0	
Moisture (%)		17.5	17.6	Maximum Gradient:	38.5	
Wet Density (pcf)		135.0	135.1	Average Gradient:	38.3	
Dry Density (pcf)		114.9	114.9	Max. Effect. Stress (psi):	7.4	
Saturation (%)		99.7	100.3	Min. Effect. Stress (psi):	4.2	
				Ave. Effect. Stress (psi):	5.8	

	Date			Time		Run	Temp	Pressure (psi)			Chan.		Bot.		Top	Flow	Kv ***	Ave.*
	Yr.	Mo.	Day	Hr.	Min.	Time	C***	Bot	Top	Chan	Dif.	Bot	Dif.	Top	Dif.	Dif.%	cm/sec	0,1
1	2009	12	22	8	17.00		0.0	95	93	63.30		7.55		92.80				
2	2009	12	22	10	19.00	7320	19.0	95	93	63.20	-0.10	7.65	0.10	92.65	0.15	-20.0	3.4E-09	
3	2009	12	22	12	18.00	7140	19.0	95	93	63.30	0.10	7.80	0.15	92.55	0.10	20.0	3.5E-09	
4	2009	12	22	14	18.00	7200	19.0	95	93	63.40	0.10	7.95	0.15	92.45	0.10	20.0	3.5E-09	
5	2009	12	22	16	20.00	7320	19.0	95	93	63.90	0.50	8.05	0.10	92.35	0.10	0.0	2.8E-09	1
6	2009	12	23	5	44.00	48240	19.0	95	93	63.90	0.00	8.90	0.85	91.55	0.80	3.0	3.5E-09	1
7	2009	12	23	7	47.00	7380	19.0	95	93	64.15	0.25	9.00	0.10	91.45	0.10	0.0	2.8E-09	1
8	2009	12	23	9	47.00	7200	19.0	95	93	64.60	0.45	9.10	0.10	91.35	0.10	0.0	2.8E-09	1
9	2009	12	23	11	47.00	7200	19.0	95	93	64.50	-0.10	9.25	0.15	91.20	0.15	0.0	4.2E-09	1
10	2009	12	23	13	47.00	7200	19.0	95	93	64.35	-0.15	9.40	0.15	91.05	0.15	0.0	4.3E-09	1
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**A zero in this column starts a series of measurements.

(Termination determined by stable Kv and low flow differential.)

*Average Kv for those rows with a 1 in the Ave. column.

3.4E-09 cm/sec

***Kv adjusted for temperature.

RMT, Inc.

Falling Head Permeability Test (ASTM D5084)

QC: JPH

QA: JPH

Project Name:	C.W. Purpero, Inc. : 67th Place Industrial Park	Cell #:	8
Project #:	CM09006-S	USCS Description:	N/A
Sample Name:	Sample #2, 6+35S, 6+50E	USCS Classification:	N/A
Visual Descript:	Lean clay	Average Kv =	4.2E-09 cm/sec

Sample Type: Undisturbed	Initial Values	Final Values		
Sample Dia. (in)	2.87	2.87	Permeant:	Water
Sample Ht. (in)	2.50	2.50	Permeant Specific Gravity:	1.00
Tare & Wet (g)	531.50	801.90	Sample Specific Gravity:	2.79 Est.
Tare & Dry (g)	454.64	720.30	Confining Pressure (psi):	100.0
Tare (g)	0.00	265.66	Burette Diameter (in):	0.250
Sample Wt. (g)	531.50	536.24	Burette Zero (cm):	100.0
Moisture (%)	16.9	17.9		
Wet Density (pcf)	133.5	136.7		
Dry Density (pcf)	115.9	115.9	Max. Effect. Stress (psi):	8.0
Saturation (%)	94.2	100.0	Min. Effect. Stress (psi):	4.0
			Ave. Effect. Stress (psi):	4.9

	Date		Time		Run	Temp	Pressure (psi)			Chan.	Bot.		Top		Flow	Kv ***	Ave.*
	Yr.	Mo. Day	Hr.	Min.	Time	C***	Bot	Top	Chan	Dif.	Bot	Dif.	Top	Dif.	Dif.%	cm/sec	0,1
1	2009	12 15	15	42.00		0.0	95	95	39.70		15.00		43.70				
2	2009	12 15	16	21.00	2340	19.0	95	95	41.20	1.50	15.05	0.05	43.55	0.15	-50.0	6.8E-08	
3	2009	12 16	8	2.00		0.0	95	95	51.70		21.50		43.70				
4	2009	12 16	10	3.00		0.0	95	95	53.90		20.80		43.20				
5	2009	12 16	12	2.00		0.0	95	95	54.00		20.65		43.00				
6	2009	12 16	13	22.00		0.0	95	95	55.70		1.80		98.70				
7	2009	12 16	16	4.00	9720	19.0	95	95	55.50	-0.20	2.00	0.20	97.80	0.90	-63.6	2.7E-08	
8	2009	12 17	7	42.00	56280	19.0	95	95	60.70	5.20	3.50	1.50	96.60	1.20	4.0	1.1E-08	
9	2009	12 17	9	43.00	7380	19.0	95	95	61.30	0.60	3.45	0.15	96.50	0.10	20.0	8.3E-09	
10	2009	12 17	11	43.00	7080	19.0	95	95	61.60	0.30	3.60	0.15	96.30	0.20	-14.3	1.2E-08	
11	2009	12 17	13	43.00	7200	19.0	95	95	61.90	0.30	3.75	0.15	96.20	0.10	20.0	8.5E-09	
12	2009	12 17	15	43.00	7200	19.0	95	95	62.50	0.60	3.90	0.15	96.10	0.10	20.0	8.5E-09	
13	2009	12 18	7	37.00	57240	19.0	95	95	66.20	3.70	5.00	1.10	95.15	0.95	7.3	8.9E-09	
14	2009	12 18	9	37.00	7200	19.0	95	95	66.50	0.30	5.10	0.10	95.00	0.15	-20.0	8.8E-09	
15	2009	12 18	11	37.00	7200	19.0	95	95	66.90	0.40	5.20	0.10	94.90	0.10	0.0	7.0E-09	
16	2009	12 18	13	38.00	7260	20.0	95	95	67.60	0.70	5.40	0.20	94.75	0.15	14.3	1.2E-08	
17	2009	12 18	16	5.00	8820	20.0	95	95	67.80	0.20	5.55	0.15	94.60	0.15	0.0	8.4E-09	
18	2009	12 21	6	8.00	223380	19.0	95	95	78.40	10.60	8.85	3.30	91.70	2.90	6.5	7.5E-09	
19	2009	12 21	8	14.00	7560	19.0	95	95	78.20	-0.20	8.95	0.10	91.65	0.05	33.3	5.4E-09	
20	2009	12 21	10	14.00	7200	19.0	95	95	79.00	0.80	9.00	0.05	91.60	0.05	0.0	3.8E-09	
21	2009	12 21	10	32.00		0.0	95	93	22.80		9.00		91.35				
22	2009	12 21	12	35.00	7380	19.0	95	93	27.05	4.25	9.00	0.00	90.95	0.40	-100.0	5.5E-09	
23	2009	12 21	16	12.00	13020	19.0	95	93	37.00	9.95	9.10	0.10	90.40	0.55	-69.2	5.1E-09	
24	2009	12 22	6	14.00	50520	19.0	95	93	46.60	9.60	10.15	1.05	89.15	1.25	-8.7	4.7E-09	
25	2009	12 22	8	19.00	7500	19.0	95	93	47.10	0.50	10.30	0.15	89.00	0.15	0.0	4.1E-09	
26	2009	12 22	10	20.00	7260	19.0	95	93	45.80	-1.30	10.55	0.25	88.85	0.15	25.0	5.7E-09	

**A zero in this column starts a series of measurements.

*Average Kv for those rows with a 1 in the Ave. column.

(Termination determined by stable Kv and low flow differential.)

***Kv adjusted for temperature.

RMT, Inc.

Falling Head Permeability Test (ASTM D5084)

QC: JPH

QA: JPH

Project Name:	C.W. Purpero, Inc. : 67th Place Industrial Park	Cell #:	8
Project #:	CM09006-5	USCS Description:	N/A
Sample Name:	Sample #2, 4+35S, 6+50E	USCS Classification:	N/A
Visual Descript:	Lean clay		

		Initial Values	Final Values			
Sample Type:	Undisturbed					
Sample Dia. (in)		2.87	2.87	Permeant:	Water	
Sample Ht. (in)		2.30	2.30	Permeant Specific Gravity:	1.00	
Tare & Wet (g)		531.50	801.90	Sample Specific Gravity:	2.79	Est.
Tare & Dry (g)		454.64	720.30	Confining Pressure (psi):	100.0	
Tare (g)		0.00	265.66	Burette Diameter (in):	0.250	
Sample Wt. (g)		531.50	536.24	Burette Zero (cm):	100.0	
Moisture (%)		16.9	17.9	Maximum Gradient:	37.3	
Wet Density (pcf)		135.5	136.7	Average Gradient:	37.0	
Dry Density (pcf)		115.9	115.9	Max. Effect. Stress (psi):	7.5	
Saturation (%)		94.2	100.0	Min. Effect. Stress (psi):	4.4	
				Ave. Effect. Stress (psi):	6.0	

	Date			Time		Run	Temp	Pressure (psi)			Cham.		Bot.		Top	Flow	Kv ***	Ave.*
	Yr.	Mo.	Day	Hr.	Min.	Time	C***	Bot	Top	Cham	Dif.	Bot	Dif.	Top	Dif.	Dif.%	cm/sec	0,1
1	2009	12	22	10	20.00		0.0	95	93	45.40		10.55		88.85				
2	2009	12	22	12	19.00	7140	19.0	95	93	46.50	0.70	10.75	0.20	88.70	0.15	14.3	5.1E-09	
3	2009	12	22	14	19.00	7200	19.0	95	93	48.20	1.70	10.80	0.05	88.50	0.20	-60.0	3.6E-09	
4	2009	12	22	16	21.00	7320	19.0	95	93	48.50	0.30	10.85	0.05	88.30	0.20	-60.0	3.6E-09	
5	2009	12	23	5	44.00	48180	19.0	95	93	49.65	1.15	11.95	1.10	87.35	0.95	7.3	4.4E-09	1
6	2009	12	23	7	47.00	7380	19.0	95	93	50.40	0.75	12.05	0.10	87.25	0.10	0.0	2.8E-09	1
7	2009	12	23	9	49.00	7320	19.0	95	93	52.40	2.00	12.10	0.05	87.15	0.10	-33.3	2.2E-09	1
8	2009	12	23	11	49.00	7200	19.0	95	93	51.90	-0.50	12.35	0.25	86.90	0.25	0.0	7.3E-09	1
9	2009	12	23	13	48.00	7140	19.0	95	93	51.10	-0.80	12.50	0.15	86.75	0.15	0.0	4.4E-09	1
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**A zero in this column starts a series of measurements. (Termination determined by stable Kv and low flow differential.)

*Average Kv for those rows with a 1 in the Ave. column. 4.2E-09 cm/sec

***Kv adjusted for temperature.

RMT, Inc.

Falling Head Permeability Test (ASTM D5084)

QC: JPH

QA: JPH

Project Name:	C.W. Purpero, Inc. : 67th Place Industrial Park	Cell #:	9
Project #:	CM09006-5	USCS Description:	N/A
Sample Name:	Sample #3, 3+30S, 6+50E	USCS Classification:	N/A
Visual Descript:	Lean clay	Average Kv =	4.6E-09 cm/sec

		Initial Values	Final Values			
Sample Type:	Undisturbed					
Sample Dia. (in)		2.87	2.87	Permeant:	Water	
Sample Ht. (in)		2.30	2.30	Permeant Specific Gravity:	1.00	
Tare & Wet (g)		525.80	790.50	Sample Specific Gravity:	2.76	Est
Tare & Dry (g)		444.40	707.70	Confining Pressure (psi):	100.0	
Tare (g)		0.00	263.30	Burette Diameter (in):	0.250	
Sample Wt. (g)		525.80	527.20	Burette Zero (cm):	100.0	
Moisture (%)		18.3	18.6			
Wet Density (pcf)		134.6	135.0			
Dry Density (pcf)		113.8	113.8	Max. Effect. Stress (psi):	7.5	
Saturation (%)		98.3	100.0	Min. Effect. Stress (psi):	4.4	
				Ave. Effect. Stress (psi):	5.1	

	Date			Time		Run	Temp	Pressure (psi)			Cham.		Bot.		Top		Flow	Kv ***	Ave.*
	Yr.	Mo.	Day	Hr.	Min.	Time	C***	Bot	Top	Cham	Dif.	Bot	Dif.	Top	Dif.	Flow	Dif.%	cm/sec	0,1
1	2009	12	15	15	50.00		0.0	95	95	37.40		15.20		43.80					
2	2009	12	15	16	22.00	1920	19.0	95	95	37.80	0.40	15.25	0.05	43.70	0.10	-33.3		6.2E-08	
3	2009	12	16	6	4.00		0.0	95	95	42.30		16.15		44.10					
4	2009	12	16	8	5.00		0.0	95	95	41.50		17.85		44.50					
5	2009	12	16	10	5.00		0.0	95	95	42.65		17.60		44.25					
6	2009	12	16	12	3.00		0.0	95	95	42.00		17.50		44.10					
7	2009	12	16	13	21.00		0.0	95	95	43.60		1.70		98.05					
8	2009	12	16	16	5.00	9840	19.0	95	95	42.70	-0.90	1.90	0.20	97.45	0.60	-50.0		1.9E-08	
9	2009	12	17	7	43.00	56280	19.0	95	95	45.30	2.60	3.10	1.20	96.40	1.05	6.7		9.6E-09	
10	2009	12	17	9	47.00	7440	19.0	95	95	45.50	0.20	3.30	0.20	96.25	0.15	14.3		1.1E-08	
11	2009	12	17	11	44.00	7020	19.0	95	95	45.70	0.20	3.40	0.10	96.15	0.10	0.0		7.0E-09	
12	2009	12	17	13	44.00	7200	19.0	95	95	45.90	0.20	3.55	0.15	96.00	0.15	0.0		1.0E-08	
13	2009	12	17	15	45.00	7260	19.0	95	95	46.20	0.30	3.70	0.15	95.85	0.15	0.0		1.0E-08	
14	2009	12	18	7	38.00	57180	19.0	95	95	47.90	1.70	4.75	1.05	95.00	0.85	10.5		8.3E-09	
15	2009	12	18	9	43.00	7500	19.0	95	95	48.20	0.30	4.90	0.15	94.85	0.15	0.0		1.0E-08	
16	2009	12	18	11	38.00	6900	19.0	95	95	48.50	0.30	5.05	0.15	94.70	0.15	0.0		1.1E-08	
17	2009	12	18	13	40.00	7320	20.0	95	95	48.70	0.20	5.10	0.05	94.60	0.10	-33.3		5.1E-09	
18	2009	12	18	16	6.00	8760	20.0	95	95	48.80	0.10	5.25	0.15	94.50	0.10	20.0		7.1E-09	
19	2009	12	21	6	9.00	223380	19.0	95	95	53.25	4.45	8.45	3.20	91.75	2.75	7.6		7.0E-09	
20	2009	12	21	8	15.00	7560	19.0	95	95	53.05	-0.20	8.55	0.10	91.65	0.10	0.0		7.2E-09	
21	2009	12	21	10	15.00	7200	19.0	95	95	53.40	0.35	8.65	0.10	91.65	0.00	100.0		3.8E-09	
22	2009	12	21	10	33.00		0.0	95	93	53.90		8.70		91.50					
23	2009	12	21	12	35.00	7320	19.0	95	93	53.80	-0.10	8.80	0.10	91.20	0.30	-50.0		5.6E-09	
24	2009	12	21	16	13.00	13080	19.0	95	93	54.30	0.50	9.10	0.30	90.85	0.35	-7.7		5.1E-09	
25	2009	12	22	6	14.00	50460	19.0	95	93	55.20	0.90	10.35	1.25	89.60	1.25	0.0		5.1E-09	
26	2009	12	22	8	20.00	7560	19.0	95	93	55.10	-0.10	10.55	0.20	89.40	0.20	0.0		5.5E-09	

**A zero in this column starts a series of measurements.

*Average Kv for those rows with a 1 in the Ave. column.

(Termination determined by stable Kv and low flow differential.)

***Kv adjusted for temperature.

RMT, Inc.

Falling Head Permeability Test (ASTM D5084)

QC: JPH

QA: JPH

Project Name: C.W. Purpero, Inc. : 67th Place Industrial Park

Project #: CM09006-5

Sample Name: Sample #3, 3+30S, 6+50E

Visual Descript: Lean clay

Cell #: 9

USCS Description: N/A

USCS Classification: N/A

Sample Type:	Undisturbed	Initial Values	Final Values
Sample Dia. (in)		2.87	2.87
Sample Ht. (in)		2.30	2.30
Tare & Wet (g)		525.80	790.50
Tare & Dry (g)		444.40	707.70
Tare (g)		0.00	263.30
Sample Wt. (g)		525.80	527.20
Moisture (%)		18.3	18.6
Wet Density (pcf)		134.6	135.0
Dry Density (pcf)		113.8	113.8
Saturation (%)		98.3	100.0

Permeant:	Water	
Permeant Specific Gravity:	1.00	
Sample Specific Gravity:	2.76	Est.
Confining Pressure (psi):	100.0	
Burette Diameter (in):	0.250	
Burette Zero (cm):	100.0	
Maximum Gradient:	37.3	
Average Gradient:	37.1	
Max. Effect. Stress (psi):	7.9	
Min. Effect. Stress (psi):	4.4	
Ave Effect. Stress (psi):	5.9	

	Date			Time		Run	Temp	Pressure (psi)			Cham.		Bot.		Top	Flow	Kv ***	Ave.*
	Yr.	Mo.	Day	Hr.	Min.	Time	C***	Bot	Top	Cham	Dif.	Bot	Dif.	Top	Dif.	Dif.%	cm/sec	0,1
1	2009	12	22	8	20.00		0.0	95	93	55.10		10.55		89.40				
2	2009	12	22	10	22.00	7320	19.0	95	93	55.30	0.20	10.70	0.15	89.20	0.20	-14.3	5.0E-09	
3	2009	12	22	12	20.00	7080	19.0	95	93	55.50	0.20	10.85	0.15	89.05	0.15	0.0	4.4E-09	
4	2009	12	22	14	21.00	7260	19.0	95	93	55.80	0.30	11.00	0.15	88.90	0.15	0.0	4.3E-09	
5	2009	12	22	16	23.00	7320	19.0	95	93	56.10	0.30	11.25	0.25	88.75	0.15	25.0	5.7E-09	
6	2009	12	23	5	45.00	48120	19.0	95	93	56.50	0.40	12.30	1.05	87.65	1.10	-2.3	4.7E-09	1
7	2009	12	23	7	48.00	7380	19.0	95	93	56.50	0.00	12.45	0.15	87.50	0.15	0.0	4.3E-09	1
8	2009	12	23	9	51.00	7380	19.0	95	93	57.10	0.60	12.60	0.15	87.35	0.15	0.0	4.3E-09	1
9	2009	12	23	11	50.00	7140	19.0	95	93	57.10	0.00	12.80	0.20	87.20	0.15	14.3	5.2E-09	1
10	2009	12	23	13	48.00	7080	19.0	95	93	57.15	0.05	12.95	0.15	87.05	0.15	0.0	4.5E-09	1
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**A zero in this column starts a series of measurements. (Termination determined by stable Kv and low flow differential.)

*Average Kv for those rows with a 1 in the Ave. column. 4.6E-09 cm/sec

***Kv adjusted for temperature.

RMT, Inc.

Falling Head Permeability Test (ASTM D5084)

QC: JPH

QA: JPH

Project Name:	C.W. Purpero, Inc. : 67th Place Industrial Park	Cell #:	10
Project #:	CM09006-5	USCS Description:	N/A
Sample Name:	Sample #4, 4+75S, 7+40E	USCS Classification:	N/A
Visual Descript:	Lean clay	Average Kv =	6.3E-09 cm/sec

Sample Type:	Undisturbed	Initial Values	Final Values		
Sample Dia. (in)		2.87	2.87	Permeant:	Water
Sample Ht. (in)		2.30	2.30	Permeant Specific Gravity:	1.00
Tare & Wet (g)		530.50	805.10	Sample Specific Gravity:	2.72 Est.
Tare & Dry (g)		459.12	730.50	Confining Pressure (psi):	100.0
Tare (g)		0.00	271.38	Burette Diameter (in):	0.250
Sample Wt. (g)		530.50	533.72	Burette Zero (cm):	100.0
Moisture (%)		15.5	16.2		
Wet Density (pcf)		135.8	136.7		
Dry Density (pcf)		117.6	117.6	Max. Effect. Stress (psi):	7.4
Saturation (%)		95.7	100.0	Min. Effect. Stress (psi):	4.3
				Ave. Effect. Stress (psi):	5.0

	Date			Time		Run	Temp	Pressure (psi)			Chamber		Bottom		Top		Flow	Kv***	Ave.*
	Yr.	Mo.	Day	Hr.	Min.	Time	C***	Bottom	Top	Chamber	Dif.		Dif.		Dif.		Dif.%	cm/sec	0.1
1	2009	12	15	15	51.00		0.0	95	95	46.00		18.60		46.55					
2	2009	12	15	16	23.00	1920	19.0	95	95	45.90	-0.10	18.80	0.20	46.55	0.00	100.0		8.5E-08	
3	2009	12	16	6	5.00	49320	19.0	95	95	49.05	3.15	21.85	3.05	46.80	0.25	84.8		5.8E-08	
4	2009	12	16	8	6.00		0.0	95	95	49.10		23.20		46.40					
5	2009	12	16	10	6.00		0.0	95	95	50.30		22.90		46.05					
6	2009	12	16	12	4.00	7080	19.0	95	95	49.50	-0.80	23.05	0.15	45.90	0.15	0.0		4.2E-08	
7	2009	12	16	14	3.00	7140	22.0	95	95	51.60	2.10	23.10	0.05	45.80	0.10	-33.3		1.9E-08	
8	2009	12	16	16	7.00	7440	19.0	95	95	50.30	-1.30	23.15	0.05	45.75	0.05	0.0		1.3E-08	
9	2009	12	17	7	44.00	56220	19.0	95	95	52.40	2.10	23.90	0.75	45.65	0.10	76.5		1.5E-08	
10	2009	12	17	9	48.00	7440	19.0	95	95	52.80	0.40	23.95	0.05	45.55	0.10	-33.3		2.1E-08	
11	2009	12	17	11	43.00	7020	19.0	95	95	52.90	0.10	24.00	0.05	45.55	0.00	100.0		7.5E-09	
12	2009	12	17	11	48.00		0.0	95	95	53.20		3.85		99.70					
13	2009	12	17	13	45.00	7020	19.0	95	95	53.30	0.10	4.05	0.20	99.10	0.60	-50.0		2.7E-08	
14	2009	12	17	15	46.00	7260	19.0	95	95	53.80	0.50	4.25	0.20	98.85	0.25	-11.1		1.5E-08	
15	2009	12	18	7	39.00	57180	19.0	95	95	55.40	1.60	5.65	1.40	97.60	1.25	5.7		1.1E-08	
16	2009	12	18	9	44.00	7500	19.0	95	95	55.70	0.30	5.80	0.15	97.45	0.15	0.0		9.9E-09	
17	2009	12	18	11	40.00	6960	19.0	95	95	55.85	0.15	5.95	0.15	97.25	0.20	-14.3		1.2E-08	
18	2009	12	18	13	41.00	7260	20.0	95	95	56.20	0.35	6.10	0.15	97.10	0.15	0.0		1.0E-08	
19	2009	12	18	16	7.00	8760	20.0	95	95	56.10	-0.10	6.25	0.15	96.95	0.15	0.0		8.4E-09	
20	2009	12	21	6	10.00	223380	19.0	95	95	60.40	4.30	10.55	4.30	93.15	3.80	6.2		9.5E-09	
21	2009	12	21	8	15.00	7500	19.0	95	95	60.45	0.05	10.65	0.10	93.05	0.10	0.0		7.3E-09	
22	2009	12	21	10	16.00	7260	19.0	95	95	60.80	0.35	10.75	0.10	93.00	0.05	33.3		5.7E-09	
23	2009	12	21	10	34.00		0.0	95	93	61.25		10.85		92.80					
24	2009	12	21	12	36.00	7320	19.0	95	93	61.00	-0.25	11.00	0.15	92.40	0.40	-45.5		7.7E-09	
25	2009	12	21	16	14.00	13080	19.0	95	93	61.50	0.50	11.40	0.40	91.80	0.60	-20.0		7.8E-09	
26	2009	12	22	6	15.00	50460	19.0	95	93	62.60	1.10	13.10	1.70	90.15	1.65	1.5		6.9E-09	

**A zero in this column starts a series of measurements.

*Average Kv for those rows with a 1 in the Ave. column.

(Termination determined by stable Kv and low flow differential.)

***Kv adjusted for temperature.

RMT, Inc.

Falling Head Permeability Test (ASTM D5084)

QC: JPH

QA: JPH

Project Name:	C.W. Pizzano, Inc. : 67th Place Industrial Park	Cell #:	10
Project #:	CM09006-5	USCS Description:	N/A
Sample Name:	Sample #4, 4+75S, 7+40E	USCS Classification:	N/A
Visual Descript:	Lean clay		

		Initial Values	Final Values			
Sample Type:	Undisturbed					
Sample Dia. (in)		2.87	2.87	Permeant:	Water	
Sample Ht. (in)		2.30	2.30	Permeant Specific Gravity:	1.00	
Tare & Wet (g)		530.50	805.10	Sample Specific Gravity:	2.72	Est.
Tare & Dry (g)		459.12	730.50	Confining Pressure (psi):	100.0	
Tare (g)		0.00	271.38	Burette Diameter (in):	0.250	
Sample Wt. (g)		530.50	533.72	Burette Zero (cm):	100.0	
Moisture (%)		15.5	16.2	Maximum Gradient:	36.9	
Wet Density (pcf)		135.8	136.7	Average Gradient:	36.5	
Dry Density (pcf)		117.6	117.6	Max. Effect. Stress (psi):	7.4	
Saturation (%)		95.7	100.0	Min. Effect. Stress (psi):	4.3	
				Ave. Effect. Stress (psi):	5.8	

	Date			Time		Run	Temp	Pressure (psi)			Cham.		Bot.		Top	Flow	Kv ***	Ave.*
	Yr.	Mo.	Day	Hr.	Min.	Time	C***	Bot	Top	Cham	Dif.	Bot	Dif.	Top	Dif.	Dif.%	cm/sec	0,1
1	2009	12	22	6	15.00		0.0	95	93	62.60		13.10		90.15				
2	2009	12	22	8	22.00	7620	19.0	95	93	62.30	-0.30	13.30	0.20	89.90	0.25	-11.1	6.2E-09	
3	2009	12	22	10	23.00	7260	19.0	95	93	62.40	0.10	13.55	0.25	89.65	0.25	0.0	7.2E-09	
4	2009	12	22	12	21.00	7080	19.0	95	93	62.80	0.40	13.80	0.25	89.30	0.35	-16.7	8.9E-09	
5	2009	12	22	14	22.00	7260	19.0	95	93	62.90	0.10	14.05	0.25	89.10	0.20	11.1	6.5E-09	
6	2009	12	22	16	24.00	7320	19.0	95	93	63.30	0.40	14.30	0.25	88.85	0.25	0.0	7.2E-09	1
7	2009	12	23	5	46.00	48120	19.0	95	93	63.85	0.55	15.75	1.45	87.50	1.35	3.6	6.2E-09	1
8	2009	12	23	7	48.00	7320	19.0	95	93	63.70	-0.15	15.90	0.15	87.25	0.25	-25.0	5.8E-09	1
9	2009	12	23	9	52.00	7440	19.0	95	93	64.20	0.50	16.10	0.20	87.10	0.15	14.3	5.0E-09	1
10	2009	12	23	11	51.00	7140	19.0	95	93	64.10	-0.10	16.30	0.20	86.90	0.20	0.0	6.0E-09	1
11	2009	12	23	13	49.00	7080	19.0	95	93	64.20	0.10	16.55	0.25	86.65	0.25	0.0	7.6E-09	1
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**A zero in this column starts a series of measurements. (Termination determined by stable Kv and low flow differential.)

*Average Kv for those rows with a 1 in the Ave. column.

6.3E-09 cm/sec

***Kv adjusted for temperature.

RMT, Inc.

Falling Head Permeability Test (ASTM D5084)

QC: JPH

QA: JPH

Project Name:	C.W. Purpero, Inc. : 67th Place Industrial Park	Cell #:	11
Project #:	CM09006-5	USCS Description:	N/A
Sample Name:	Sample #5, 3+305, 7+10E	USCS Classification:	N/A
Visual Descript:	Lean clay	Average Kv =	3.5E-09 cm/sec

		Initial Values	Final Values			
Sample Type:	Undisturbed					
Sample Dia. (in)		2.87	2.87	Permeant:	Water	
Sample Ht. (in)		2.30	2.30	Permeant Specific Gravity:	1.00	
Tare & Wet (g)		573.10	782.70	Sample Specific Gravity:	2.77	Est.
Tare & Dry (g)		442.63	698.60	Confining Pressure (psi):	100.0	
Tare (g)		0.00	255.97	Burette Diameter (in):	0.250	
Sample Wt. (g)		523.10	526.73	Burette Zero (cm):	100.0	
Moisture (%)		18.2	19.0			
Wet Density (pcf)		133.9	134.9			
Dry Density (pcf)		113.3	113.3	Max. Effect. Stress (psi):	7.5	
Saturation (%)		95.7	100.0	Min. Effect. Stress (psi):	4.6	
				Ave. Effect Stress (psi):	5.1	

	Date			Time		Run	Temp	Pressure (psi)			Cham.		Bot.		Top	Flow	Kv ***	Ave.*
	Yr.	Mo.	Day	Hr.	Min.	Time	C***	Bot	Top	Cham	Dif.	Bot	Dif.	Top	Dif.	Dif.%	cm/sec	0,1
1	2009	12	15	15	59.00		0.0	95	95	37.90		15.90		44.20				
2	2009	12	15	16	24.00	1500	19.0	95	95	37.90	0.00	16.10	0.20	44.20	0.00	100.0	1.1E-07	
3	2009	12	16	6	5.00		0.0	95	95	43.20		17.90		45.10				
4	2009	12	16	8	7.00		0.0	95	95	42.50		19.25		45.80				
5	2009	12	16	10	7.00	7200	21.0	95	95	43.30	0.80	19.25	0.00	45.70	0.10	-100.0	1.1E-08	
6	2009	12	16	12	6.00	7140	19.0	95	95	42.50	-0.80	19.45	0.20	45.70	0.00	100.0	2.4E-08	
7	2009	12	16	14	4.00		0.0	95	95	44.20		19.60		45.80				
8	2009	12	16	14	9.00		0.0	95	95	44.60		2.70		97.60				
9	2009	12	16	16	8.00	7140	19.0	95	95	43.40	-1.20	3.25	0.55	97.15	0.45	10.0	3.4E-08	
10	2009	12	17	7	45.00	56220	19.0	95	95	46.10	2.70	5.30	2.05	96.20	0.95	36.7	1.3E-08	
11	2009	12	17	9	49.00	7440	19.0	95	95	46.40	0.30	5.45	0.15	96.00	0.20	-14.3	1.2E-08	
12	2009	12	17	11	47.00	7080	19.0	95	95	46.70	0.30	5.60	0.15	95.85	0.15	0.0	1.1E-08	
13	2009	12	17	13	47.00	7200	19.0	95	95	46.80	0.10	5.80	0.20	95.75	0.10	33.3	1.1E-08	
14	2009	12	17	15	47.00	7200	19.0	95	95	47.20	0.40	6.10	0.30	95.70	0.05	71.4	1.2E-08	
15	2009	12	18	7	40.00	57180	19.0	95	95	49.20	2.00	7.20	1.10	94.85	0.85	12.8	8.7E-09	
16	2009	12	18	9	45.00	7500	19.0	95	95	49.40	0.20	7.40	0.20	94.70	0.15	14.3	1.2E-08	
17	2009	12	18	11	41.00	6960	19.0	95	95	49.80	0.40	7.50	0.10	94.60	0.10	0.0	7.5E-09	
18	2009	12	18	13	43.00	7320	19.0	95	95	50.10	0.30	7.60	0.10	94.55	0.05	33.3	5.3E-09	
19	2009	12	18	16	8.00	8700	19.0	95	95	50.20	0.10	7.75	0.15	94.40	0.15	0.0	9.0E-09	
20	2009	12	21	6	10.00	223320	19.0	95	95	55.10	4.90	11.15	3.40	91.50	2.90	7.9	7.7E-09	
21	2009	12	21	8	16.00	7560	19.0	95	95	54.90	-0.20	11.25	0.10	91.50	0.00	100.0	3.7E-09	
22	2009	12	21	8	21.00		0.0	95	93	55.05		11.30		91.40				
23	2009	12	21	10	16.00	6900	19.0	95	95	55.30	0.25	11.55	0.25	91.20	0.20	11.1	6.7E-09	
24	2009	12	21	12	36.00	8400	19.0	95	93	55.35	0.05	11.80	0.25	90.85	0.35	-16.7	7.4E-09	
25	2009	12	21	16	15.00	13140	19.0	95	93	55.60	0.25	12.15	0.35	90.70	0.15	40.0	3.9E-09	
26	2009	12	22	6	15.00	50400	19.0	95	93	56.55	0.95	13.20	1.05	89.85	0.85	10.5	3.9E-09	

**A zero in this column starts a series of measurements.

*Average Kv for those rows with a 1 in the Ave. column.

(Termination determined by stable Kv and low flow differential.)

***Kv adjusted for temperature.

RMT, Inc.

Falling Head Permeability Test (ASTM D5084)

QC: JPH

QA: JPH

Project Name: C.W. Purpero, Inc. : 67th Place Industrial Park — Cell #: 11

Project #: CM09006-5 — USCS Description: N/A

Sample Name: Sample #5, 3+30S, 7+10E — USCS Classification: N/A

Visual Descript: Lean clay

Sample Type:	Undisturbed	Initial Values	Final Values		
Sample Dia. (in)		2.87	2.87	Permeant:	Water
Sample Ht. (in)		2.30	2.30	Permeant Specific Gravity:	1.00
Tare & Wet (g)		523.10	782.70	Sample Specific Gravity:	2.77 Est.
Tare & Dry (g)		442.63	698.60	Confining Pressure (psi):	100.0
Tare (g)		0.00	256.97	Burette Diameter (in):	0.250
Sample Wt. (g)		523.10	526.73	Burette Zero (cm):	100.0
Moisture (%)		18.2	19.0	Maximum Gradient:	37.0
Wet Density (pcf)		133.9	134.9	Average Gradient:	36.8
Dry Density (pcf)		113.3	113.3	Max. Effect. Stress (psi):	7.5
Saturation (%)		95.7	100.0	Min. Effect. Stress (psi):	4.4
				Ave. Effect. Stress (psi):	5.9

	Date			Time		Run	Temp	Pressure (psi)			Cham.		Bot.		Top		Flow	Kv***	Ave.*
	Yr.	Mo.	Day	Hr.	Min.	Time	C***	Bot	Top	Cham	Dif.	Bot	Dif.	Top	Dif.	Dif.%	cm/sec	0,1
1	2009	12	22	6	15.00		0.0	95	93	56.55		13.20		89.85				
2	2009	12	22	8	24.00	7740	19.0	95	93	56.30	-0.25	13.35	0.15	89.75	0.10	20.0	3.4E-09	
3	2009	12	22	10	25.00	7260	19.0	95	93	56.50	0.20	13.50	0.15	89.60	0.15	0.0	4.3E-09	
4	2009	12	22	12	22.00	7020	19.0	95	93	56.60	0.10	13.60	0.10	89.50	0.10	0.0	3.0E-09	
5	2009	12	22	14	23.00	7260	19.0	95	93	56.90	0.30	13.75	0.15	89.40	0.10	20.0	3.6E-09	
6	2009	12	22	16	25.00	7320	19.0	95	93	57.30	0.40	13.85	0.10	89.30	0.10	0.0	2.9E-09	1
7	2009	12	23	5	46.00	48060	19.0	95	93	57.85	0.55	14.60	0.75	88.50	0.80	-3.2	3.4E-09	1
8	2009	12	23	7	49.00	7380	19.0	95	93	57.80	-0.05	14.75	0.15	88.40	0.10	20.0	3.6E-09	1
9	2009	12	23	9	53.00	7440	19.0	95	93	58.30	0.50	14.90	0.15	88.30	0.10	20.0	3.6E-09	1
10	2009	12	23	11	52.00	7140	19.0	95	93	58.90	0.60	15.10	0.20	88.20	0.10	33.3	4.5E-09	1
11	2009	12	23	13	50.00	7080	19.0	95	93	58.60	0.10	15.20	0.10	88.10	0.10	0.0	3.0E-09	1
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**A zero in this column starts a series of measurements. (Termination determined by stable Kv and low flow differential.)

*Average Kv for those rows with a 1 in the Ave. column. 3.5E-09 cm/sec

***Kv adjusted for temperature.

RMT, Inc.

Falling Head Permeability Test (ASTM D5084)

QC: JPH

QA: JPH

Project Name:	C.W. Purpero, Inc. : 67th Place Industrial Park	Cell #:	12
Project #:	CM09006-5	USCS Description:	N/A
Sample Name:	Sample #6, 3+70S, 7+20E	USCS Classification:	N/A
Visual Descript:	Lean clay	Average Kv =	7.2E-09 cm/sec

Sample Type: Undisturbed	Initial Values	Final Values			
Sample Dia. (in)	2.87	2.87	Permeant:	Water	
Sample Ht. (in)	2.30	2.30	Permeant Specific Gravity:	1.00	
Tare & Wet (g)	520.00	785.70	Sample Specific Gravity:	2.71	Est.
Tare & Dry (g)	440.68	704.00	Confining Pressure (psi):	100.0	
Tare (g)	0.00	263.32	Burette Diameter (in):	0.250	
Sample Wt. (g)	520.00	522.38	Burette Zero (cm):	100.0	
Moisture (%)	18.0	18.5			
Wet Density (pcf)	133.1	133.7			
Dry Density (pcf)	112.8	112.8	Max. Effect. Stress (psi):	7.5	
Saturation (%)	97.8	100.7	Min. Effect. Stress (psi):	4.4	
			Ave. Effect. Stress (psi):	5.0	

	Date			Time		Run	Temp	Pressure (psi)			Cham.		Bot.		Top	Flow	Kv***	Ave.*
	Yr.	Mo.	Day	Hr.	Min.	Time	C***	Bot	Top	Cham	Dif.	Bot	Dif.	Top	Dif.	Dif.%	cm/sec	0,1
1	2009	12	15	16	0.00		0.0	95	95	36.20		17.80		45.10				
2	2009	12	15	16	25.00	1500	19.0	95	95	36.20	0.00	17.90	0.10	45.10	0.00	100.0	5.6E-08	
3	2009	12	16	6	6.00		0.0	95	95	43.40		19.60		45.60				
4	2009	12	16	8	8.00		0.0	95	95	42.10		22.20		45.75				
5	2009	12	16	10	8.00		0.0	95	95	44.10		21.80		45.05				
6	2009	12	16	12	7.00	7140	19.0	95	95	43.50	-0.60	21.85	0.05	44.90	0.15	-50.0	2.7E-08	
7	2009	12	16	14	7.00	7200	22.0	95	95	45.70	2.20	21.90	0.05	44.90	0.00	100.0	6.4E-09	
8	2009	12	16	16	9.00	7320	19.0	95	95	44.60	-1.10	21.95	0.05	44.80	0.10	-33.3	2.0E-08	
9	2009	12	17	7	47.00	56280	19.0	95	95	47.60	3.00	22.80	0.85	44.55	0.25	54.5	2.0E-08	
10	2009	12	17	9	50.00	7380	19.0	95	95	47.90	0.30	22.85	0.05	44.55	0.00	100.0	7.1E-09	
11	2009	12	17	11	49.00	7140	19.0	95	95	48.10	0.20	22.90	0.05	44.55	0.00	100.0	7.3E-09	
12	2009	12	17	11	53.00		0.0	95	95	48.30		5.35		97.40				
13	2009	12	17	13	48.00	6900	19.0	95	95	48.70	0.40	5.60	0.25	97.00	0.40	-23.1	2.3E-08	
14	2009	12	17	15	48.00	7200	19.0	95	95	48.80	0.10	5.80	0.20	96.80	0.20	0.0	1.4E-08	
15	2009	12	18	7	41.00	57180	19.0	95	95	51.00	2.20	7.40	1.60	95.70	1.10	18.5	1.2E-08	
16	2009	12	18	9	46.00	7500	19.0	95	95	51.20	0.20	7.60	0.20	95.55	0.15	14.3	1.2E-08	
17	2009	12	18	11	42.00	6960	19.0	95	95	51.60	0.40	7.80	0.20	95.35	0.20	0.0	1.5E-08	
18	2009	12	18	13	44.00	7320	19.0	95	95	51.90	0.30	8.00	0.20	95.25	0.10	33.3	1.1E-08	
19	2009	12	18	16	9.00	8700	19.0	95	95	52.10	0.20	8.15	0.15	95.10	0.15	0.0	9.0E-09	
20	2009	12	21	6	11.00	223520	19.0	95	95	57.15	5.05	13.05	4.90	91.55	3.55	16.0	1.0E-08	
21	2009	12	21	8	17.00	7560	19.0	95	95	57.05	-0.10	13.15	0.10	91.45	0.10	0.0	7.7E-09	
22	2009	12	21	10	17.00	7200	19.0	95	95	57.35	0.30	13.25	0.10	91.30	0.15	-20.0	1.0E-08	
23	2009	12	21	10	35.00		0.0	95	93	57.80		13.30		91.30				
24	2009	12	21	12	37.00	7320	19.0	95	93	57.85	0.05	13.45	0.15	90.65	0.65	-62.5	1.1E-08	
25	2009	12	21	16	15.00	13080	19.0	95	93	58.30	0.45	13.90	0.45	90.10	0.55	-10.0	8.0E-09	
26	2009	12	22	6	16.00	50460	19.0	95	93	59.60	1.30	15.80	1.90	88.40	1.70	5.6	7.5E-09	

**A zero in this column starts a series of measurements.

*Average Kv for those rows with a 1 in the Ave. column.

(Termination determined by stable Kv and low flow differential.)

***Kv adjusted for temperature.

RMT, Inc.

Falling Head Permeability Test (ASTM D5084)

QC: JPH

QA: JPH

Project Name: C.W. Purpero, Inc.: 67th Place Industrial Park

Project #: CM09006-5

Sample Name: Sample #6, 3+70S, 7+20E

Visual Descript: Lean clay

Cell #: 12

USCS Description: N/A

USCS Classification: N/A

Sample Type: Undisturbed	Initial Values	Final Values			
Sample Dia. (in)	2.87	2.87	Permeant:	Water	
Sample Ht. (in)	2.30	2.30	Permeant Specific Gravity:	1.00	
Tare & Wet (g)	520.00	785.70	Sample Specific Gravity:	2.71	Est.
Tare & Dry (g)	440.68	704.00	Confining Pressure (psi):	100.0	
Tare (g)	0.00	263.32	Burette Diameter (in):	0.250	
Sample Wt. (g)	520.00	522.38	Burette Zero (cm):	100.0	
Moisture (%)	18.0	18.5	Maximum Gradient:	36.3	
Wet Density (pcf)	133.1	133.7	Average Gradient:	35.8	
Dry Density (pcf)	112.8	112.8	Max. Effect. Stress (psi):	7.4	
Saturation (%)	97.8	100.7	Min. Effect. Stress (psi):	4.4	
			Ave. Effect. Stress (psi):	5.9	

	Date			Time		Run	Temp	Pressure (psi)			Cham.	Bot.		Top		Flow	Kv ***	Ave.*
	Yr.	Mo.	Day	Hr.	Min.	Time	C***	Bot	Top	Cham	Dif.	Bot	Dif.	Top	Dif.	Dif.%	cm/sec	0,1
1	2009	12	22	6	16.00		0.0	95	93	59.60		15.80		88.40				
2	2009	12	22	8	25.00	7740	19.0	95	93	59.50	-0.10	16.10	0.30	88.15	0.25	9.1	7.6E-09	
3	2009	12	22	10	26.00	7260	19.0	95	93	59.70	0.20	16.30	0.20	87.90	0.25	-11.1	6.6E-09	
4	2009	12	22	12	23.00	7020	19.0	95	93	60.10	0.40	16.50	0.20	87.70	0.20	0.0	6.1E-09	
5	2009	12	22	14	24.00	7260	19.0	95	93	60.20	0.10	16.80	0.30	87.45	0.25	9.1	8.1E-09	1
6	2009	12	22	16	26.00	7320	19.0	95	93	60.60	0.40	17.05	0.25	87.30	0.15	25.0	5.9E-09	1
7	2009	12	23	5	47.00	48060	19.0	95	93	61.30	0.70	18.55	1.50	85.75	1.55	-1.6	6.9E-09	1
8	2009	12	23	7	50.00	7380	19.0	95	93	61.10	-0.20	18.85	0.30	85.50	0.25	9.1	8.2E-09	1
9	2009	12	23	9	54.00	7440	19.0	95	93	61.70	0.60	19.10	0.25	85.30	0.20	11.1	6.6E-09	1
10	2009	12	23	11	53.00	7140	19.0	95	93	61.80	0.10	19.30	0.20	85.15	0.15	14.3	5.4E-09	1
11	2009	12	23	13	50.00	7020	19.0	95	93	61.90	0.10	19.60	0.30	84.86	0.30	0.0	9.4E-09	1
12																		
13																		
14																		
15																		
16																		
17																		
18																		
19																		
20																		
21																		
22																		
23																		
24																		
25																		

**A zero in this column starts a series of measurements.

(Termination determined by stable Kv and low flow differential.)

*Average Kv for those rows with a 1 in the Ave. column.

7.2E-09 cm/sec

***Kv adjusted for temperature.

RMT, Inc.

Falling Head Permeability Test (ASTM D5084)

QC: JPH

QA: JPH

Project Name:	C.W. Purpero, Inc. : 67th Place Industrial Park	Cell #:	13
Project #:	CM09006-5	USCS Description:	N/A
Sample Name:	Sample #7, 3+90S, 7+90E	USCS Classification:	N/A
Visual Descript:	Lean clay	Average Kv =	3.8E-09 cm/sec

		Initial Values	Final Values		
Sample Type:	Undisturbed				
Sample Dia. (in)		2.87	2.87	Permeant:	Water
Sample Ht. (in)		2.30	2.30	Permeant Specific Gravity:	1.00
Tare & Wet (g)		527.60	786.70	Sample Specific Gravity:	2.74 Est.
Tare & Dry (g)		448.39	706.70	Confining Pressure (psi):	100.0
Tare (g)		0.00	258.31	Burette Diameter (in):	0.250
Sample Wt. (g)		527.60	528.39	Burette Zero (cm):	100.0
Moisture (%)		17.7	17.8		
Wet Density (pcf)		135.1	135.3		
Dry Density (pcf)		114.8	114.8	Max. Effect. Stress (psi):	7.6
Saturation (%)		99.0	100.0	Min. Effect. Stress (psi):	4.4
				Ave. Effect. Stress (psi):	5.1

	Date			Time		Run	Temp	Pressure (psi)			Cham.		Bot.		Top	Flow	Kv ***	Avg.*
	Yr.	Mo.	Day	Hr.	Min.	Time	C***	Bot	Top	Cham	Dif.	Bot	Dif.	Top	Dif.	Dif.%	cm/sec	0,1
1	2009	12	16	8	9.00		0.0	95	95	38.00		18.40		44.20				
2	2009	12	16	10	10.00	7260	21.0	95	95	39.50	1.50	18.40	0.00	43.50	0.70	-100.0	8.2E-08	
3	2009	12	16	12	8.00	7080	19.0	95	95	38.70	-0.80	18.50	0.10	43.05	0.45	-63.6	7.1E-08	
4	2009	12	16	14	8.00	7200	22.0	95	95	40.60	1.90	18.80	0.30	42.90	0.15	33.3	5.4E-08	
5	2009	12	16	16	10.00	7320	19.0	95	95	39.70	-0.90	18.90	0.10	42.70	0.20	-33.3	3.9E-08	
6	2009	12	17	7	48.00	56280	19.0	95	95	43.20	3.50	19.85	0.95	42.00	0.70	15.2	2.9E-08	
7	2009	12	17	9	51.00	7380	19.0	95	95	43.50	0.30	19.95	0.10	41.90	0.10	0.0	2.8E-08	
8	2009	12	17	11	51.00	7200	19.0	95	95	43.60	0.10	20.05	0.10	41.85	0.05	33.3	2.2E-08	
9	2009	12	17	13	49.00	7080	19.0	95	95	43.80	0.20	20.15	0.10	41.80	0.05	33.3	2.2E-08	
10	2009	12	17	15	49.00	7200	19.0	95	95	44.10	0.30	20.20	0.05	41.75	0.05	0.0	1.5E-08	
11	2009	12	17	15	53.00		0.0	95	95	44.40		20.20		48.80				
12	2009	12	18	7	42.00	56940	19.0	95	95	46.20	1.80	20.70	0.50	48.50	0.30	25.0	1.1E-08	
13	2009	12	18	9	47.00	7500	19.0	95	95	46.20	0.00	20.80	0.10	48.50	0.00	100.0	1.1E-08	
14	2009	12	18	11	43.00	6960	19.0	95	95	46.40	0.20	20.85	0.05	48.50	0.00	100.0	5.9E-09	
15	2009	12	18	11	50.00		0.0	95	95	46.70		6.50		95.15				
16	2009	12	18	13	45.00	6900	20.0	95	95	46.90	0.20	6.65	0.15	94.95	0.40	-45.5	2.0E-08	
17	2009	12	18	16	10.00	8700	19.0	95	95	46.90	0.00	6.75	0.10	94.60	0.15	-20.0	7.4E-09	
18	2009	12	21	6	12.00	223320	19.0	95	95	51.95	5.05	9.80	3.05	92.15	2.45	10.9	6.6E-09	
19	2009	12	21	8	18.00	7560	19.0	95	95	51.80	-0.15	9.90	0.10	92.05	0.10	0.0	7.3E-09	
20	2009	12	21	10	18.00	7200	19.0	95	95	52.10	0.30	10.00	0.10	92.00	0.05	33.3	5.8E-09	
21	2009	12	21	10	35.00		0.0	95	93	52.60		10.10		91.90				
22	2009	12	21	12	39.00	7440	19.0	95	93	52.70	0.10	10.20	0.10	91.60	0.30	-50.0	5.5E-09	
23	2009	12	21	16	16.00	13020	19.0	95	93	53.10	0.40	10.50	0.30	91.30	0.30	0.0	4.7E-09	
24	2009	12	22	6	16.00	50400	19.0	95	93	54.05	0.95	11.60	1.10	90.25	1.05	2.3	4.4E-09	
25	2009	12	22	8	27.00	7860	19.0	95	93	53.90	-0.15	11.80	0.20	90.10	0.15	14.3	4.6E-09	
26	2009	12	22	10	27.00	7200	19.0	95	93	54.00	0.10	11.90	0.10	90.00	0.10	0.0	2.9E-09	

**A zero in this column starts a series of measurements. (Termination determined by stable Kv and low flow differential.)

*Average Kv for those rows with a 1 in the Ave. column.

***Kv adjusted for temperature.

RMT, Inc.

Falling Head Permeability Test (ASTM D5084)

QC: JPH

QA: JPH

Project Name:	C.W. Purpero, Inc. : 67th Place Industrial Park	Cell #:	13
Project #:	CM09006-5	USCS Description:	N/A
Sample Name:	Sample #7, 3+90S, 7+90E	USCS Classification:	N/A
Visual Descript:	Lean clay		

Sample Type:	Undisturbed	Initial Values	Final Values			
Sample Dia. (in)		2.87	2.87	Permeant:	Water	
Sample Ht. (in)		2.30	2.30	Permeant Specific Gravity:	1.00	
Tare & Wet (g)		527.60	786.70	Sample Specific Gravity:	2.74	Est.
Tare & Dry (g)		448.39	706.70	Confining Pressure (psi):	100.0	
Tare (g)		0.00	258.51	Burette Diameter (in):	0.250	
Sample Wt. (g)		527.60	528.39	Burette Zero (cm):	100.0	
Moisture (%)		17.7	17.8	Maximum Gradient:	37.3	
Wet Density (pcf)		135.1	135.3	Average Gradient:	37.1	
Dry Density (pcf)		114.8	114.8	Max. Effect. Stress (psi):	7.5	
Saturation (%)		99.0	100.0	Min. Effect. Stress (psi):	4.4	
				Ave. Effect. Stress (psi):	5.9	

	Date			Time		Run	Temp	Pressure (psi)			Cham.		Bot.		Top	Flow	Kv ***	Ave.*
	Yr.	Mo.	Day	Hr.	Min.	Time	C***	Bot	Top	Cham	Dif.	Bot	Dif.	Top	Dif.	Dif.%	cm/sec	0,1
1	2009	12	22	10	27.00		0.0	95	93	54.00		11.90		90.00				
2	2009	12	22	12	25.00	7080	19.0	95	93	54.90	0.90	12.10	0.20	89.80	0.20	0.0	5.9E-09	
3	2009	12	22	14	25.00	7200	19.0	95	93	54.50	0.20	12.25	0.15	89.70	0.10	20.0	3.6E-09	
4	2009	12	22	16	27.00	7320	19.0	95	93	54.80	0.90	12.40	0.15	89.55	0.15	0.0	4.3E-09	1
5	2009	12	23	5	47.00	48000	19.0	95	93	55.40	0.60	13.35	0.95	88.65	0.90	2.7	4.0E-09	1
6	2009	12	23	7	50.00	7380	19.0	95	93	55.25	-0.15	13.50	0.15	88.55	0.10	20.0	3.6E-09	1
7	2009	12	23	9	56.00	7560	19.0	95	93	55.80	0.55	13.70	0.20	88.40	0.15	14.3	4.9E-09	1
8	2009	12	23	11	54.00	7080	19.0	95	93	53.80	0.00	13.80	0.10	88.30	0.10	0.0	3.0E-09	1
9	2009	12	23	13	51.00	7020	19.0	95	93	55.85	0.05	13.90	0.10	88.20	0.10	0.0	3.0E-09	1
10																		
11																		
12																		
13																		
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17																		
18																		
19																		
20																		
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22																		
23																		
24																		
25																		
26																		

**A zero in this column starts a series of measurements. (Termination determined by stable Kv and low flow differential.)

*Average Kv for those rows with a 1 in the Ave. column. 3.8E-09 cm/sec

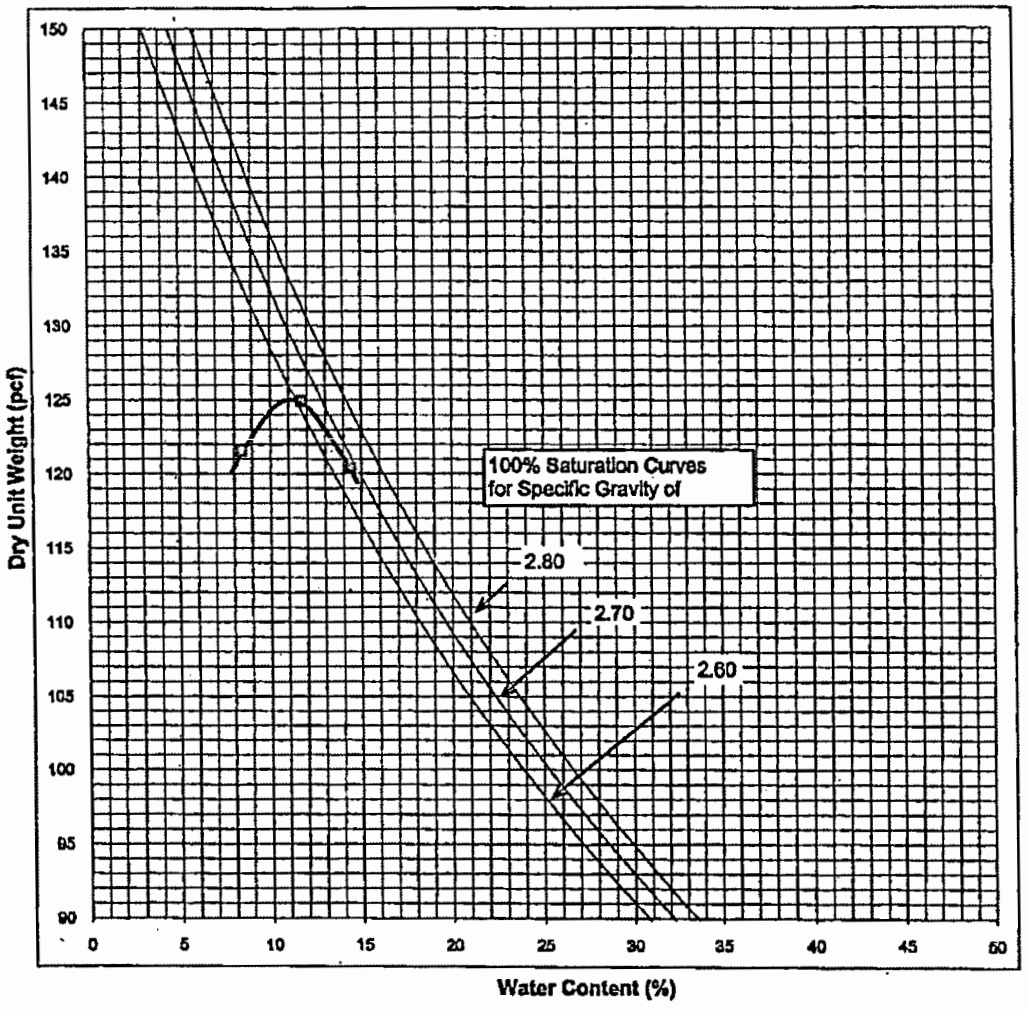
***Kv adjusted for temperature.

TABLE A3

Summary of Laboratory Compaction (Proctor) Test Results
67th Place Industrial Park
City of West Allis, Wisconsin

Specimen No.	Soil Description	Maximum Density, pcf	Optimum Moisture, %
A	Brown Mottled Lean CLAY; Little Fine Sand, Trace Gravel (Imported Soil)	125.0	11.0
1	Dark Brown Fine to Coarse Gravelly Silty SAND; Trace Cinders & Slag	128.0-131.5	6.5-8.0
2	Black Foundry SAND; Little to Some Cinders, Slag and Fine Gravel	100.5	14.0
3	Grayish Brown Fine to Coarse Silty SAND; Some Fine Gravel and Lime, Little Clay	116.0	13.0
4	Brown Lean CLAY; Little Fine to Medium Sand, Trace Gravel	126.0	11.5
5	Black FOUNDRY SAND, SLAG & CINDERS; Some Gravel	121.0	10.0
6	Brown Lean CLAY; Trace Gravel	122.0	10.0
7	Brown Mottled Lean CLAY; Trace Sand (Borrow Pit)	126.0	10.5
8	Brown Silty Sandy CLAY	118-120 (est.)	--
9	Light Brown Sandy CLAY; Little Lime Addition	112 (est.)	--

TEST REPORT



Source: St. John's on the Lake

Specimen No.		Maximum Dry Unit Weight, pcf		Optimum Water Content, %	
A		125.0		11.0	
Specimen Description					
Brown Mottled Lean CLAY; Little Fine Sand, Trace Gravel (Imported Soil)					
Corrected Maximum Dry Unit Weight, pcf		Corrected Optimum Water Content, %			
n/a		n/a			
Test Method		Liquid Limit	Plastic Limit	Plasticity Index	Specific Gravity
ASTM D1557-91, Method A		38	18	20	2.7 (est.)
Preparation Method	USCS	% Gravel	% Sand	% Fines	% Oversize
Dry	CL	-	-	68.6	-

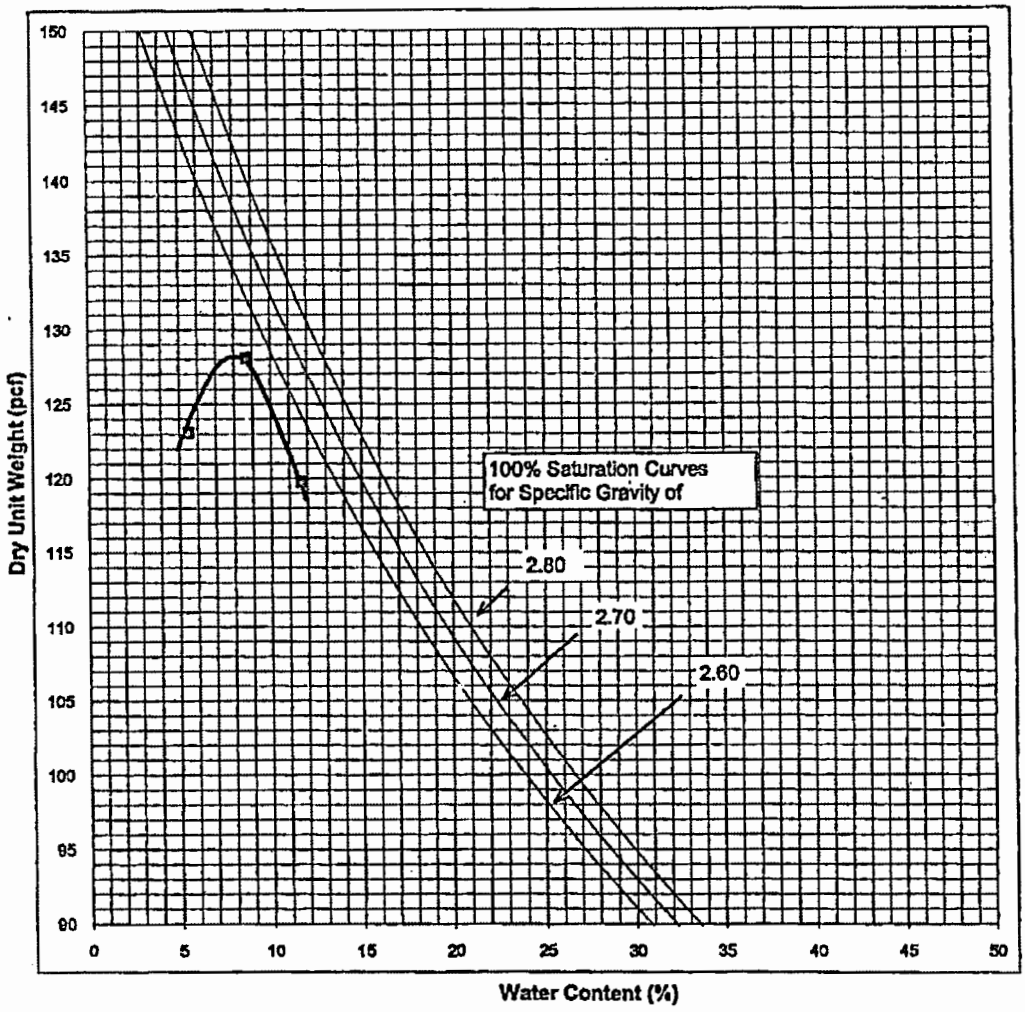
PROJECT: 67th Place Industrial Park
City of West Allis, Wisconsin
PROJECT NUMBER: CM09041

LABORATORY COMPACTION TEST

CGC, Inc.	CHECKED BY: JK	REVIEWED BY: JPS	DATE: 10/08/09

File:09041 pcA

TEST REPORT



Specimen No.	Maximum Dry Unit Weight, pcf	Optimum Water Content, %
1	128.0	8.0

Specimen Description
Dark Brown Fine to Coarse Gravelly Silty SAND; Trace Cinders & Slag

Corrected Maximum Dry Unit Weight, pcf	Corrected Optimum Water Content, %	
131.5	6.5	

Test Method		Liquid Limit	Plastic Limit	Plasticity Index	Specific Gravity
ASTM D1557-91, Method B		-	-	-	2.7 (est.)
Preparation Method	**USCS**	**% Gravel**	**% Sand**	**% Fines**	**% Oversize**
Dry	SM	-	-	-	18.5

PROJECT: 67th Place Industrial Park
City of West Allis, Wisconsin

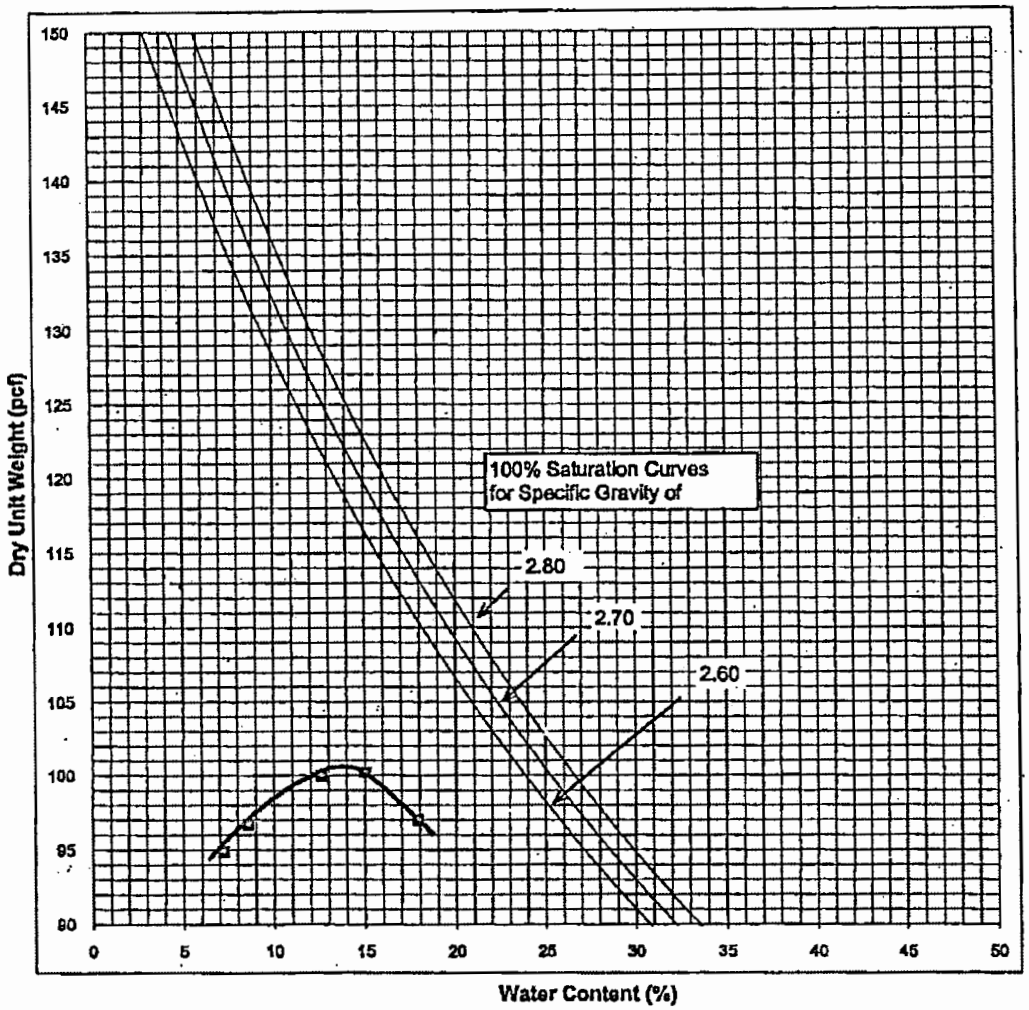
PROJECT NUMBER: CM09041

LABORATORY COMPACTION TEST

CGC, Inc.	CHECKED BY: JH	REVIEWED BY: JPS	DATE: 09/08/09

File:09041 pc1

TEST REPORT



Specimen No.		Maximum Dry Unit Weight, pcf	Optimum Water Content, %	
2		100.5	14.0	
Specimen Description				
Black Foundry SAND; Little to Some Cinders, Slag and Fine Gravel				
Corrected Maximum Dry Unit Weight, pcf		Corrected Optimum Water Content, %		
n/a		n/a		
Test Method		Liquid Limit	Plastic Limit	Plasticity Index	Specific Gravity
ASTM D1557-91, Method A		-	-	-	2.7 (est.)
Preparation Method	USCS	% Gravel	% Sand	% Fines	% Oversize
Dry	SM	-	-	-	-

PROJECT: 67th Place Industrial Park
City of West Allis, Wisconsin

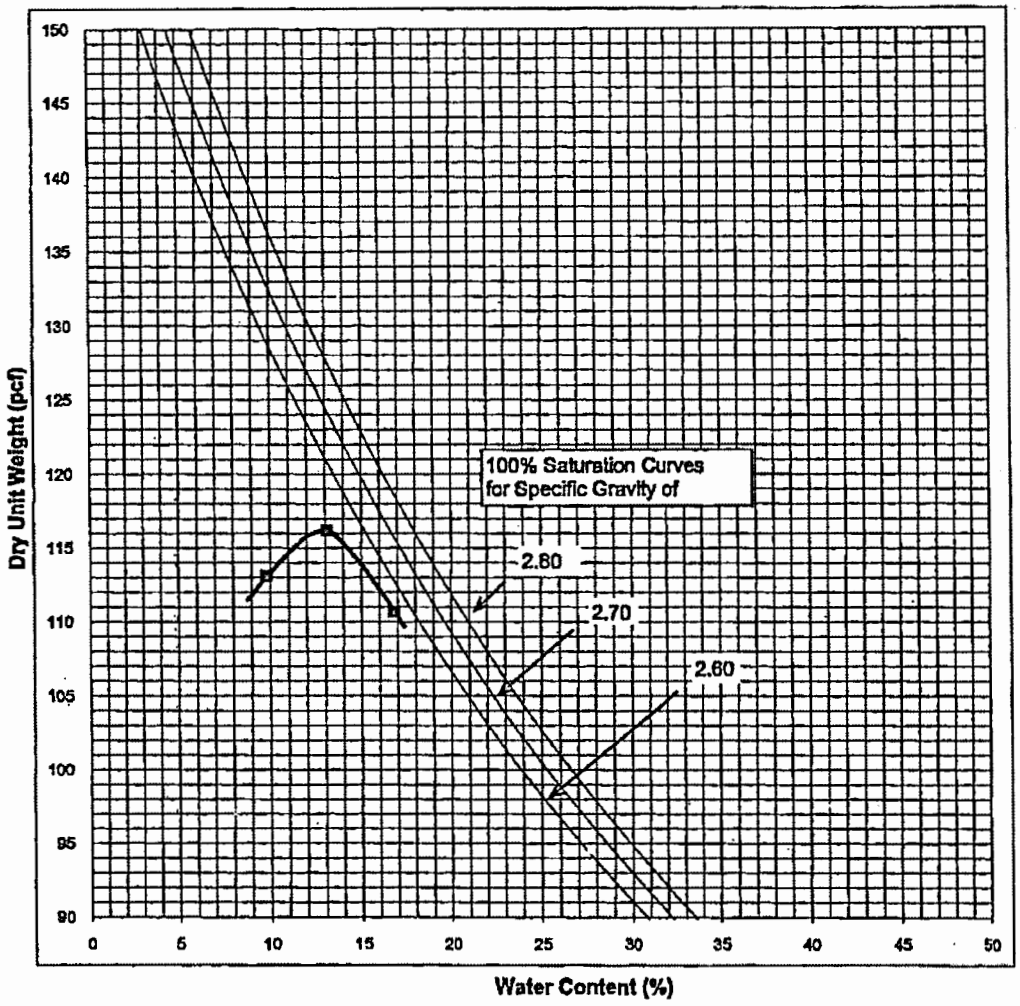
PROJECT NUMBER: CM09041

LABORATORY COMPACTION TEST

CGC, Inc.	CHECKED BY: JH	REVIEWED BY: JPS	DATE: 09/15/09

File:09041 pc2

TEST REPORT



Specimen No.		Maximum Dry Unit Weight, pcf		Optimum Water Content, %	
3		116.0		13.0	
Specimen Description					
Grayish Brown Fine to Coarse Silty SAND; Some Fine Gravel and Lime, Little Clay					
Corrected Maximum Dry Unit Weight, pcf		Corrected Optimum Water Content, %			
n/a		n/a			
Test Method		Liquid Limit	Plastic Limit	Plasticity Index	Specific Gravity
ASTM D1557-91, Method B		-	-	-	2.7 (est.)
Preparation Method	USCS	% Gravel	% Sand	% Fines	% Oversize
Dry	SM	-	-	-	-

PROJECT: 67th Place Industrial Park
City of West Allis, Wisconsin

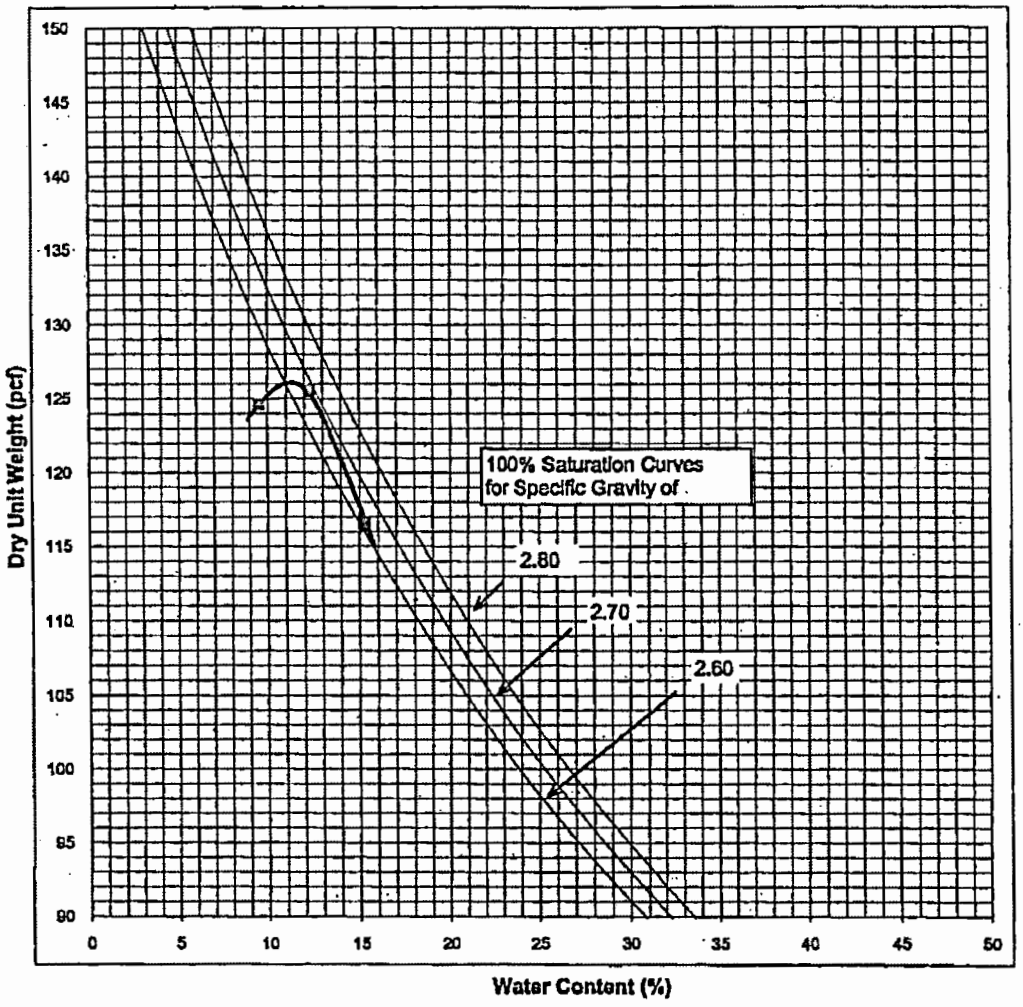
PROJECT NUMBER: CM09041

LABORATORY COMPACTION TEST

CGC, Inc.	CHECKED BY: BK	REVIEWED BY: JPS	DATE: 10/15/09

File:09041 pc3

TEST REPORT



Specimen No.		Maximum Dry Unit Weight, pcf		Optimum Water Content, %	
4		126.0		11.5	
Specimen Description					
Brown Lean CLAY; Little Fine to Medium Sand, Trace Gravel					
Corrected Maximum Dry Unit Weight, pcf		Corrected Optimum Water Content, %			
n/a		n/a			
Test Method		Liquid Limit	Plastic Limit	Plasticity Index	Specific Gravity
ASTM D1557-91, Method A		-	-	-	2.7 (est.)
Preparation Method	USCS	% Gravel	% Sand	% Fines	% Oversize
Dry	CL	-	-	-	-

PROJECT: 67th Place Industrial Park
City of West Allis, Wisconsin

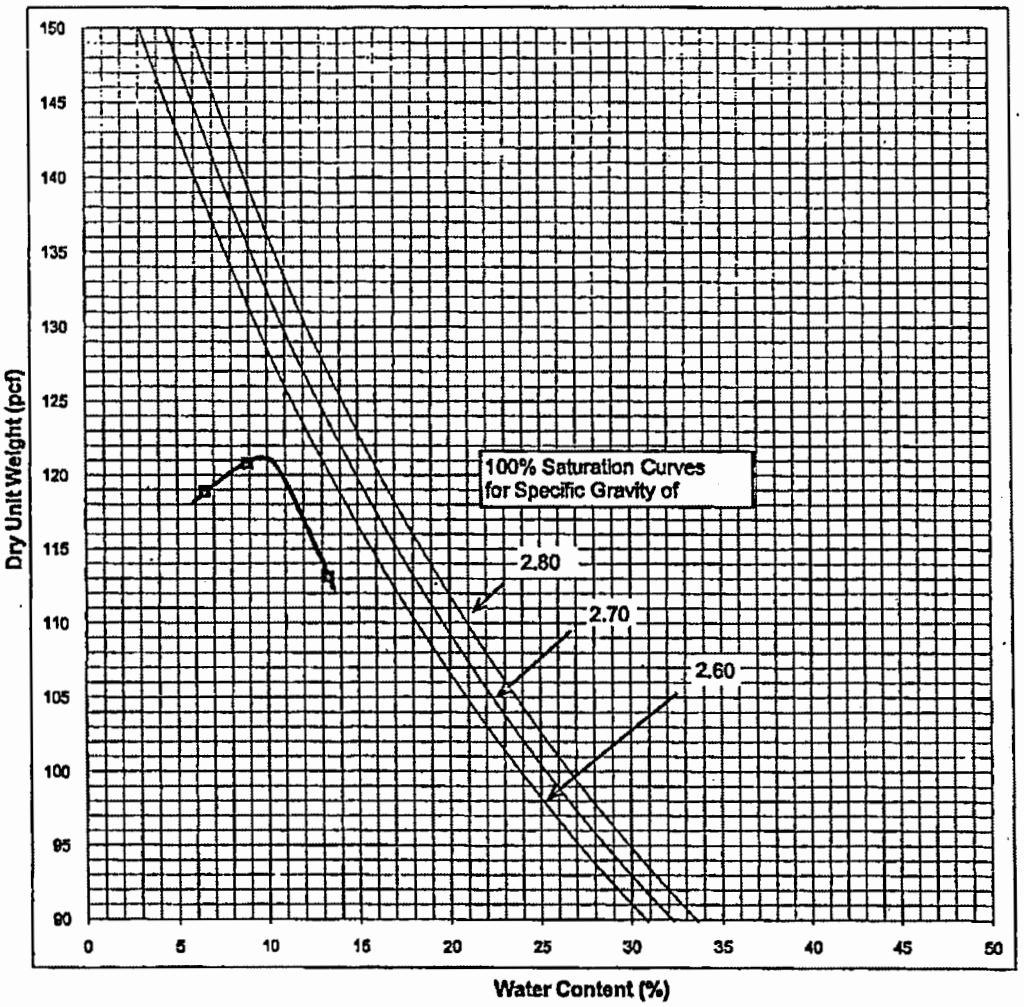
PROJECT NUMBER: CM09041

LABORATORY COMPACTION TEST

CGC, Inc.	CHECKED BY: BK	REVIEWED BY: JPS	DATE: 10/15/09

File:09041 pc4

TEST REPORT



Specimen No.		Maximum Dry Unit Weight, pcf		Optimum Water Content, %	
5		121.0		10.0	
Specimen Description					
Black Foundry SAND, SLAG & CINDERS; with Some Gravel					
Corrected Maximum Dry Unit Weight, pcf		Corrected Optimum Water Content, %			
n/a		n/a			
Test Method		Liquid Limit	Plastic Limit	Plasticity Index	Specific Gravity
ASTM D1557-91, Method C		-	-	-	2.7 (est.)
Preparation Method	USCS	% Gravel	% Sand	% Fines	% Oversize
Dry	-	-	-	-	-

PROJECT: 67th Place Industrial Park
City of West Allis, Wisconsin

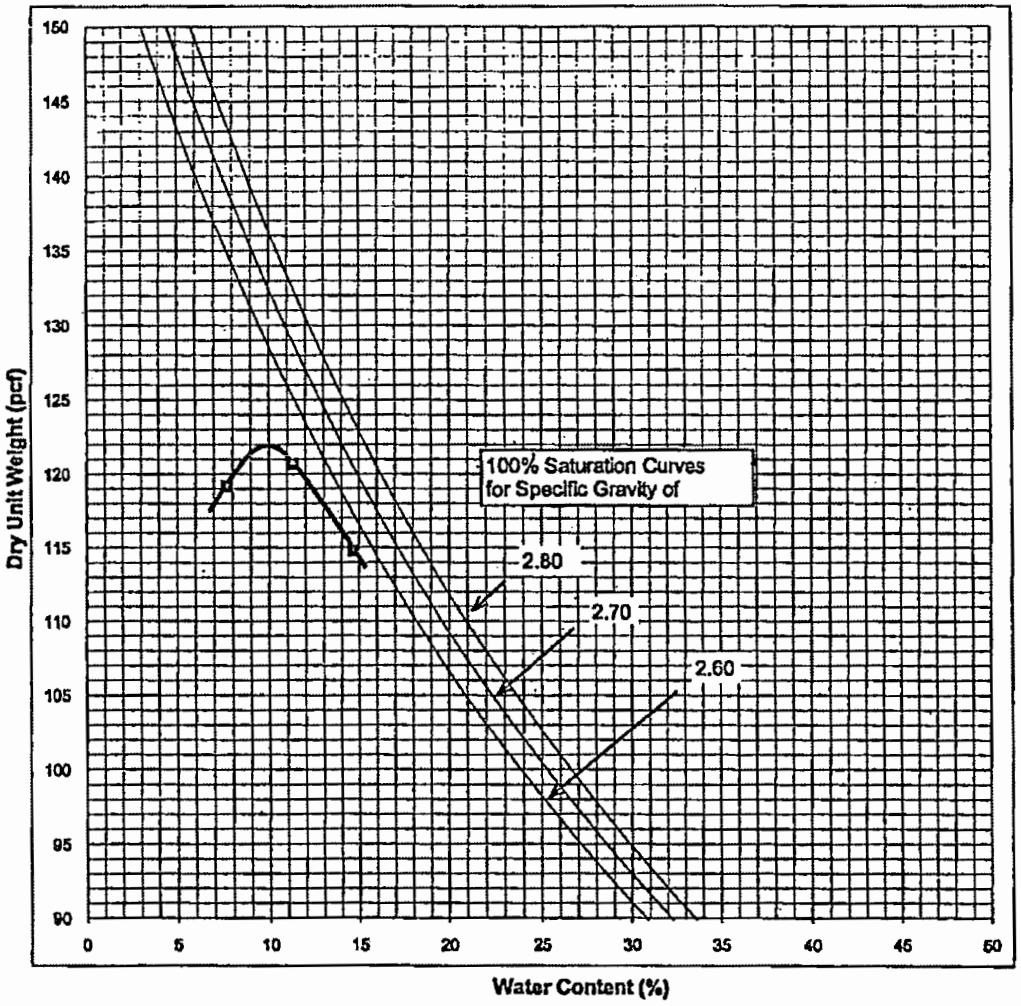
PROJECT NUMBER: CM09041

LABORATORY COMPACTION TEST

CGC, Inc.	CHECKED BY: BK	REVIEWED BY: JPS	DATE: 10/01/09

File:09041 pc5

TEST REPORT



Specimen No.		Maximum Dry Unit Weight, pcf		Optimum Water Content, %	
6		122.0		10.0	
Specimen Description					
Brown Lean CLAY; Trace Gravel					
Corrected Maximum Dry Unit Weight, pcf		Corrected Optimum Water Content, %			
n/a		n/a			
Test Method		Liquid Limit	Plastic Limit	Plasticity Index	Specific Gravity
ASTM D1557-91, Method A		-	-	-	2.7 (est.)
Preparation Method	USCS	% Gravel	% Sand	% Fines	% Oversize
Dry	CL	-	-	-	-

PROJECT: 67th Place Industrial Park
City of West Allis, Wisconsin

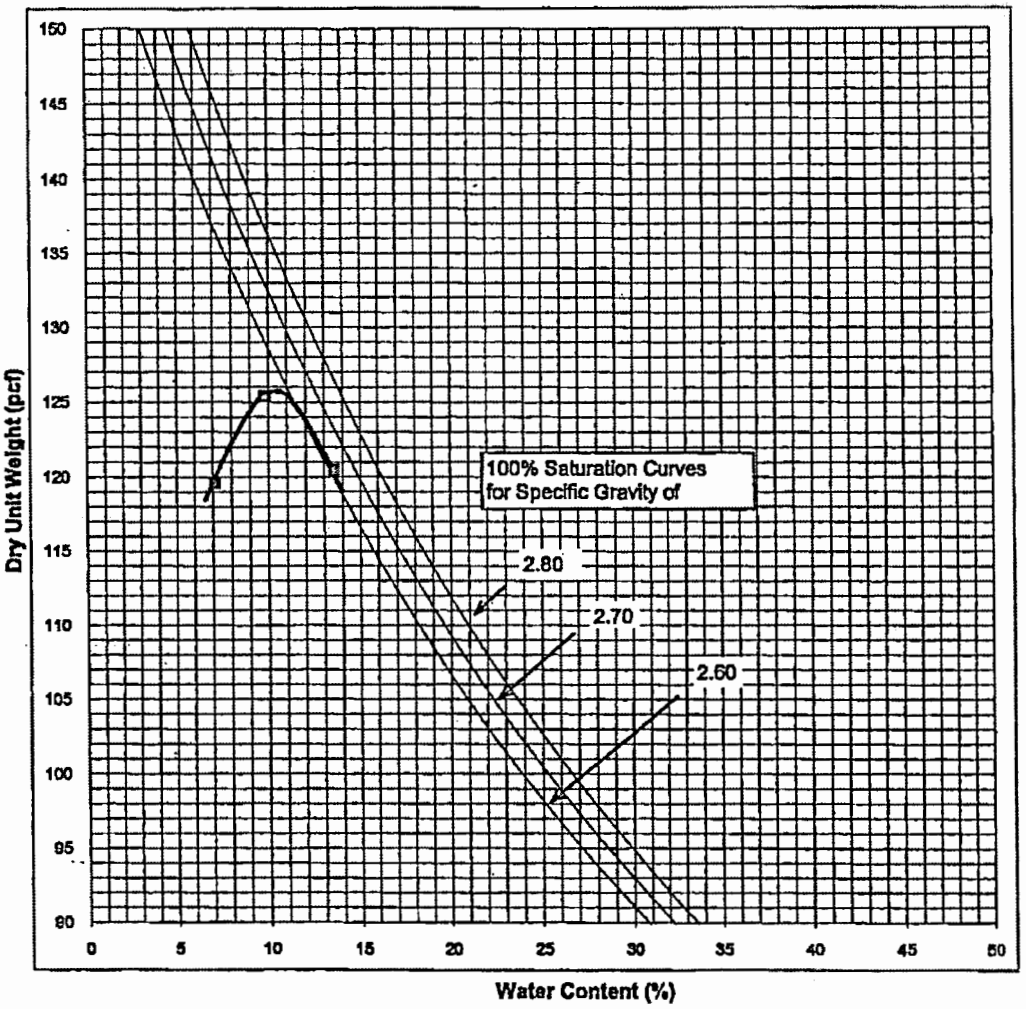
PROJECT NUMBER: CM09041

LABORATORY COMPACTION TEST

CGC, Inc. | CHECKED BY: BK | REVIEWED BY: JPS | DATE: 10/02/09

File:09041 pc6

TEST REPORT



Specimen No.		Maximum Dry Unit Weight, pcf		Optimum Water Content, %	
7		126.0		10.5	
Specimen Description					
Brown Mottled Lean CLAY; Trace Sand (Borrow Pit)					
Corrected Maximum Dry Unit Weight, pcf		Corrected Optimum Water Content, %			
n/a		n/a			
Test Method		Liquid Limit	Plastic Limit	Plasticity Index	Specific Gravity
ASTM D1557-91, Method A		-	-	-	2.7 (est.)
Preparation Method	USCS	% Gravel	% Sand	% Fines	% Oversize
Dry	CL	-	-	-	-

PROJECT: 67th Place Industrial Park
City of West Allis, Wisconsin

PROJECT NUMBER: CM09041

LABORATORY COMPACTION TEST

CGC, Inc. | CHECKED BY: BK | REVIEWED BY: JPS | DATE: 10/22/09

File:09041 pc7

APPENDIX B

FIELD DENSITY TEST REPORT NO. 1 - GENERAL SITE GRADING

Job No.	CM09041
Tested By:	BK

CGC, Inc.

FIELD DENSITY TEST REPORT - NO. 1 (General Site Grading)

336 S. Curtis Road, West Allis, WI 53214 - Phone (414) 443-2000 - Fax (414) 443-2099 - Email: cgcmilw@cgcinc.net

PROJECT: 67th Place Industrial Park
City of West Allis, Wisconsin

TO: ARCADIS U.S., Inc.
126 N. Jefferson Street, Suite 400
Milwaukee, WI 53202

ATTN: Mr. Ben J. Verburg, P.E.

TEST METHODS: Moisture-density relationship of soils based on MODIFIED Proctor (ASTM D1557).
"METHOD" indicates: (N) Nuclear (ASTM D2922)

Test No.	METHOD	Location	Test Elevation (ft)	Distance Below Fill Surface (in.)	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
9/29/09										
1	N	2+25S & 0+50E	723.5	2	Specimen No. 5	8.9	116.8	121	97%	95%
2	N	Retest of No. 1	723.5	2	Specimen No. 5	9.0	117.4	121	97%	95%
3	N	1+80S & 0+75E	723.5	2	Specimen No. 5	9.1	115.2	121	95%	95%
4	N	1+50S & 0+60E	723.5	2	Specimen No. 5	9.8	118.3	121	98%	95%
5	N	0+60S & 1+00E	723.5	2	Specimen No. 5	9.9	113.6	121	94% *	95%
9/30/09										
6	N	1+20S & 0+80E	723.5	2	Specimen No. 4	9.7	119.8	126	95%	93%
7	N	0+95S & 1+50E	723.5	2	Specimen No. 4	9.5	119.6	126	95%	93%
8	N	2+80S & 0+75E	724.5	3	Specimen No. 4	10.6	121.9	126	97%	93%
9	N	2+30S & 0+65E	724.5	3	Specimen No. 4	10.4	121.5	126	96%	93%
10	N	1+95S & 0+75E	724.5	3	Specimen No. 4	13.4	120.1	126	95%	93%
11	N	1+50S & 0+60E	724.5	4	Specimen No. 4	9.6	120.2	126	95%	93%
12	N	2+40S & 0+60E	724.5	4	Specimen No. 4	11.2	121.4	126	96%	93%

Test No.	METHOD	Location	Test Elevation (ft)	Distance Below Fill Surface (in.)	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
13	N	2+45S & 0+65E	724.5	4	Specimen No. 4	14.1	111.2	126	88% *	93%
14	N	Retest of No. 13	724.5	4	Specimen No. 4	12.1	117.4	126	93%	93%
15	N	Retest of No. 14	724.5	4	Specimen No. 4	13.0	121.0	126	96%	93%
10/1/09										
16	N	2+05S & 0+65E	725.5	4	Specimen No. 4	10.7	121.2	126	96%	93%
17	N	2+60S & 0+55E	725.0	4	Specimen No. 4	10.5	124.8	126	99%	93%
18	N	2+80S & 0+38E	725.5	6	Specimen No. 4	7.8	120.2	126	95%	93%
19	N	1+80S & 0+40E	726.0	0	Specimen No. 4	9.8	119.6	126	95%	93%
20	N	1+50S & 0+50E	726.5	2	Specimen No. 4	10.1	120.1	126	95%	93%
21	N	1+30S & 0+35E	727.0	4	Specimen No. 4	9.3	119.7	126	95%	93%
22	N	2+40S & 0+40E	726.0	2	Specimen No. 4	9.8	119.6	126	95%	93%
23	N	1+10S & 1+25E	723.0	4	Specimen No. 4	8.4	122.2	126	97%	93%
24	N	1+25S & 0+90E	725.5	4	Specimen No. 4	6.7	119.6	126	95%	93%
25	N	1+00S & 1+10E	725.0	4	Specimen No. 4	8.1	120.4	126	96%	93%
26	N	0+85S & 1+20E	724.5	4	Specimen No. 4	6.7	121.5	126	96%	93%
27	N	2+85S & 0+35E	726.0	4	Specimen No. 4	8.1	120.8	126	96%	93%
28	N	2+50S & 0+40E	727.0	0	Specimen No. 4	10.5	119.4	126	95%	93%
29	N	2+00S & 0+45E	727.5	0	Specimen No. 4	7.0	120.8	126	96%	93%
30	N	1+50S & 0+60E	728.0	0	Specimen No. 4	7.7	120.1	126	95%	93%
31	N	1+25S & 0+55E	728.5	0	Specimen No. 4	7.0	122.1	126	97%	93%
10/5/09										
32	N	1+80S & 1+00E	723.0	4	Specimen No. 4	12.1	119.8	126	95%	93%
33	N	1+00S & 0+50E	723.0	4	Specimen No. 4	13.7	120.1	126	95%	93%
34	N	2+00S & 0+90E	725.0	2	Specimen No. 4	11.2	120.2	126	95%	93%
35	N	2+25S & 0+90E	724.5	2	Specimen No. 6	11.6	119.4	122	98%	93%

Test No.	METHOD	Location	Test Elevation (ft)	Distance Below Fill Surface (in.)	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
36	N	2+30S & 1+00E	724.0	2	Specimen No. 6	12.7	117.4	122	96%	93%
37	N	1+85S & 1+00E	724.5	2	Specimen No. 6	12.9	114.6	122	94%	93%
38	N	1+00S & 1+75E	723.0	2	Specimen No. 6	11.1	119.3	122	98%	93%
39	N	0+90S & 2+10E	724.0	2	Specimen No. 6	12.5	118.4	122	97%	93%
40	N	1+10S & 2+00E	723.5	2	Specimen No. 6	12.1	116.2	122	95%	93%
41	N	1+25S & 1+60E	723.0	2	Specimen No. 6	12.7	116.7	122	96%	93%
42	N	Retest of No. 37	724.5	2	Specimen No. 6	12.8	117.3	122	96%	93%
10/7/09										
43	N	1+10S & 1+10E	727.0	2	Specimen No. 4	11.7	119.8	126	95%	93%
44	N	1+60S & 1+25E	724.5	2	Specimen No. 4	11.1	122.5	126	97%	93%
45	N	2+10S & 1+20E	724.0	2	Specimen No. 4	11.4	119.7	126	95%	93%
46	N	2+40S & 0+90E	723.5	2	Specimen No. 4	12.4	119.2	126	95%	93%
47	N	2+00S & 1+50E	723.0	2	Specimen No. 6	11.6	116.0	122	95%	93%
48	N	1+50S & 1+75E	723.5	2	Specimen No. 6	13.3	117.1	122	96%	93%
49	N	1+50S & 2+00E	723.5	2	Specimen No. 6	13.0	117.7	122	96%	93%
50	N	1+20S & 2+60E	722.5	2	Specimen No. 6	14.6	117.8	122	97%	93%
51	N	Retest of No. 50	722.5	2	Specimen No. 6	14.1	117.7	122	96%	93%
52	N	Retest of No. 51	722.5	2	Specimen No. 6	14.4	118.2	122	97%	93%
53	N	1+90S & 0+95E	726.5	2	Specimen No. 6	10.9	117.0	122	96%	93%
54	N	0+90S & 1+40E	728.0	2	Specimen No. 4	11.2	121.4	126	96%	93%
55	N	0+75S & 1+90E	727.0	2	Specimen No. 6	10.2	116.1	122	95%	93%
56	N	0+75S & 2+40E	725.5	2	Specimen No. 6	10.9	114.8	122	94%	93%
57	N	1+00S & 2+90E	724.0	2	Specimen No. 6	12.8	115.0	122	94%	93%
58	N	1+25S & 2+60E	722.5	2	Specimen No. 6	14.9	112.1	122	92% *	93%
59	N	3+50S & 0+90E	723.0	2	Specimen No. 6	10.8	118.2	122	97%	93%

Test No.	METHOD	Location	Test Elevation (ft)	Distance Below Fill Surface (in.)	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
60	N	4+10S & 0+50E	722.0	2	Specimen No. 6	9.1	119.5	122	98%	93%
61	N	4+30S & 1+40E	721.0	2	Specimen No. 6	10.7	118.7	122	97%	93%
62	N	3+80S & 1+70E	721.5	2	Specimen No. 4	12.8	120.2	126	95%	93%
63	N	5+10S & 0+50E	720.0	2	Specimen No. 3	12.0	111.9	116	96%	95%
64	N	4+80S & 0+60E	719.5	2	Specimen No. 3	12.5	112.7	116	97%	95%
65	N	4+30S & 0+75E	720.5	2	Specimen No. 3	11.2	115.2	116	99%	95%
66	N	Retest of No. 58	722.5	2	Specimen No. 6	11.6	118.0	122	97%	93%
67	N	4+00S & 0+75E	723.0	2	Specimen No. 3	12.0	105.5	116	91% *	95%
68	N	4+50S & 0+60E	723.5	2	Specimen No. 3	13.2	110.8	116	96%	95%
69	N	5+00S & 0+60E	723.5	2	Specimen No. 3	13.3	109.8	116	95%	95%
70	N	Retest of No. 67	723.0	2	Specimen No. 3	11.9	109.9	116	95%	95%
10/8/09										
71	N	3+75S & 0+75E	722.0	2	Specimen No. 8	11.9	113.6	120	95%	93%
72	N	3+50S & 0+65E	722.5	2	Specimen No. 3	11.3	113.1	116	98%	95%
73	N	3+05S & 0+60E	724.0	2	Specimen No. 3	12.8	111.6	116	96%	95%
74	N	2+75S & 0+55E	724.5	2	Specimen No. 3	12.5	109.8	116	95%	95%
75	N	2+25S & 1+00E	726.0	2	Specimen No. 4	9.4	125.3	126	99%	93%
76	N	1+75S & 1+10E	727.0	2	Specimen No. 4	12.7	121.8	126	97%	93%
77	N	2+00S & 1+75E	725.0	2	Specimen No. 8	12.0	112.7	120	94%	93%
78	N	3+10S & 1+90E	723.5	2	Specimen No. 8	11.7	113.6	120	95%	93%
79	N	2+40S & 1+50E	724.0	2	Specimen No. 8	14.4	111.7	120	93%	93%
80	N	Retest of No. 79	724.0	2	Specimen No. 8	10.3	112.7	120	94%	93%
81	N	1+25S & 1+00E	728.0	2	Specimen No. 4	11.6	118.7	126	94%	93%
82	N	1+90S & 0+90E	727.5	2	Specimen No. 4	9.5	122.8	126	97%	93%

Test No.	METHOD	Location	Test Elevation (ft)	Distance Below Fill Surface (in.)	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
83	N	2+30S & 0+90E	726.0	2	Specimen No. 6	10.1	115.0	122	94%	93%
84	N	2+80S & 0+85E	725.0	2	Specimen No. 4	9.4	122.3	126	97%	93%
85	N	3+20S & 0+80E	724.0	2	Specimen No. 8	10.3	107.7	118	91% *	93%
10/9/09										
86	N	1+50S & 0+90E	728.0	2	Specimen No. 8	14.0	102.7	120	86% *	93%
87	N	1+80S & 0+85E	727.0	2	Specimen No. 8	11.3	112.0	120	93%	93%
88	N	2+00S & 0+80E	726.5	2	Specimen No. 8	13.1	109.8	118	93%	93%
89	N	2+00S & 1+25E	726.0	2	Specimen No. 8	11.1	112.3	120	94%	93%
90	N	2+50S & 1+30E	725.0	2	Specimen No. 8	13.0	115.4	120	96%	93%
91	N	2+75S & 1+20E	724.0	2	Specimen No. 6	10.8	118.4	122	97%	93%
92	N	3+10S & 1+30E	723.5	2	Specimen No. 8	9.6	113.4	118	96%	93%
93	N	3+25S & 1+20E	723.5	2	Specimen No. 8	11.0	109.3	118	93%	93%
94	N	2+50S & 1+30E	725.5	2	Specimen No. 8	12.9	111.2	118	94%	93%
95	N	1+75S & 1+20E	727.5	2	Specimen No. 8	12.8	111.9	118	95%	93%
96	N	1+50S & 1+60E	726.0	2	Specimen No. 8	10.2	110.6	118	94%	93%
97	N	2+30S & 1+40E	725.0	2	Specimen No. 8	12.4	109.5	118	93%	93%
98	N	3+10S & 1+20E	724.5	0	Specimen No. 8	10.9	110.7	118	94%	93%
99	N	3+90S & 1+60E	722.0	0	Specimen No. 6	10.8	117.0	122	96%	93%
100	N	2+50E & 2+00E	723.0	2	Specimen No. 8	11.7	114.8	120	96%	93%
101	N	1+50S & 2+10E	724.0	2	Specimen No. 8	12.2	115.1	120	96%	93%
102	N	1+00S & 2+75E	724.0	2	Specimen No. 4	12.1	119.3	126	95%	93%
10/12/09										
103	N	1+30S & 0+80E	728.5	2	Specimen No. 4	12.8	119.6	126	95%	93%
104	N	1+80S & 0+85E	728.5	2	Specimen No. 4	11.4	118.3	126	94%	93%
105	N	2+95S & 1+00E	725.5	2	Specimen No. 8	12.3	109.9	118	93%	93%

Test No.	METHOD	Location	Test Elevation (ft)	Distance Below Fill Surface (in.)	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
106	N	3+40S & 0+90E	725.5	2	Specimen No. 8	12.6	112.6	120	94%	93%
107	N	3+30S & 1+25E	725.0	2	Specimen No. 8	13.0	109.5	118	93%	93%
108	N	2+75S & 1+30E	726.0	2	Specimen No. 8	12.4	114.6	120	96%	93%
109	N	1+30S & 1+20E	727.5	2	Specimen No. 8	13.6	111.7	120	93%	93%
110	N	1+80S & 1+50E	727.0	2	Specimen No. 8	12.9	111.2	118	94%	93%
111	N	2+30S & 1+50E	725.5	2	Specimen No. 8	12.3	110.9	118	94%	93%
112	N	2+50S & 1+75E	725.0	2	Specimen No. 8	12.5	109.2	118	93%	93%
113	N	1+75S & 1+80E	725.5	2	Specimen No. 8	13.0	114.5	120	95%	93%
114	N	0+90S & 2+00E	727.0	2	Specimen No. 8	12.4	109.9	118	93%	93%
115	N	1+10S & 1+10E	729.0	2	Specimen No. 4	13.4	119.5	120	100%	93%
116	N	1+10S & 2+00E	728.5	2	Specimen No. 8	12.1	109.8	118	93%	93%
117	N	2+60S & 1+10E	726.5	2	Specimen No. 8	11.0	111.1	120	93%	93%
118	N	2+75S & 1+50E	726.0	2	Specimen No. 4	12.0	122.1	126	97%	93%
119	N	1+75S & 1+60E	726.5	2	Specimen No. 8	13.4	111.6	120	93%	93%
120	N	1+00S & 1+60E	727.0	2	Specimen No. 8	12.9	112.6	120	94%	93%
121	N	1+10S & 1+00E	729.0	2	Specimen No. 4	12.6	118.3	126	94%	93%
122	N	Retest in Area of No. 86	728.0	2	Specimen No. 8	11.9	112.4	120	94%	93%
123	N	2+25S & 1+25E	727.5	2	Specimen No. 8	11.1	115.6	120	96%	93%
124	N	3+10S & 1+25E	727.0	2	Specimen No. 8	11.4	113.7	120	95%	93%
125	N	1+15S & 0+95E	729.0	2	Specimen No. 3	13.1	117.2	116	100+%	95%
126	N	2+00S & 0+75E	729.0	0	Specimen No. 3	9.6	112.5	116	97%	95%
127	N	2+25S & 0+90E	728.5	0	Specimen No. 3	11.7	109.7	116	95%	95%
128	N	2+75S & 1+40E	727.5	0	Specimen No. 3	14.2	106.3	116	92% *	95%
129	N	Retest of No. 128	727.5	0	Specimen No. 3	11.6	112.1	116	97%	95%

Test No.	METHOD	Location	Test Elevation (ft)	Distance Below Fill Surface (in.)	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
130	N	1+60S & 1+50E	727.5	0	Specimen No. 3	11.3	116.3	116	100%	95%
131	N	1+15S & 1+35E	728.5	0	Specimen No. 3	15.2	108.4	116	93% *	95%
132	N	Retest of No. 131	728.5	0	Specimen No. 3	12.7	111.4	116	96%	95%
10/13/09										
133	N	1+10S & 1+00E	729.0	2	Specimen No. 8	12.6	114.7	120	96%	93%
134	N	1+90S & 1+25E	728.5	2	Specimen No. 8	12.6	112.8	120	94%	93%
135	N	2+30S & 1+30E	728.0	2	Specimen No. 8	12.8	113.0	120	94%	93%
136	N	2+90S & 1+00E	728.0	2	Specimen No. 8	12.3	112.7	120	94%	93%
137	N	4+05S & 0+90E	729.0	2	Specimen No. 8	12.8	113.9	120	95%	93%
138	N	1+75S & 1+50E	728.0	2	Specimen No. 8	12.8	109.4	118	93%	93%
139	N	1+75S & 1+80E	726.5	2	Specimen No. 8	12.4	115.1	120	96%	93%
140	N	2+60S & 1+90E	725.5	2	Specimen No. 8	11.1	112.3	120	94%	93%
141	N	2+50S & 1+50E	726.5	2	Specimen No. 4	11.9	120.3	126	95%	93%
142	N	3+50S & 1+60E	726.5	2	Specimen No. 3	13.3	115.0	116	99%	95%
143	N	4+90S & 1+40E	727.5	2	Specimen No. 3	12.3	113.8	116	98%	95%
144	N	4+00S & 2+75E	725.0	2	Specimen No. 4	8.0	123.0	126	98%	93%
145	N	5+00S & 2+60E	726.0	2	Specimen No. 4	7.7	127.7	126	100+%	93%
146	N	5+30S & 2+30E	727.0	2	Specimen No. 4	10.3	126.7	126	100+%	93%
10/14/09										
147	N	1+75S & 1+05E	729.0	2	Specimen No. 3	13.2	113.8	116	98%	95%
148	N	3+00S & 1+00E	729.0	2	Specimen No. 3	13.3	110.8	116	96%	95%
149	N	4+00S & 1+00E	729.0	2	Specimen No. 3	12.6	113.3	116	98%	95%
150	N	5+00S & 1+00E	729.0	2	Specimen No. 3	11.4	111.2	116	96%	95%
151	N	5+00S & 1+60E	727.0	2	Specimen No. 3	13.3	112.0	116	97%	95%
152	N	4+00S & 1+60E	725.5	2	Specimen No. 4	11.1	120.6	126	96%	95%

Test No.	METHOD	Location	Test Elevation (ft)	Distance Below Fill Surface (in.)	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
153	N	3+00S & 1+70E	725.5	2	Specimen No. 4	7.6	120.0	126	95%	93%
154	N	2+00S & 1+70E	726.0	2	Specimen No. 3	11.1	113.0	116	97%	95%
155	N	1+00S & 2+00E	727.0	2	Specimen No. 4	10.5	121.8	126	97%	93%
156	N	3+75S & 2+40E	725.0	2	Specimen No. 3	11.9	113.1	116	98%	95%
157	N	3+35S & 2+50E	723.0	2	Specimen No. 4	10.1	121.8	126	97%	93%
158	N	3+50S & 2+50E	724.5	2	Specimen No. 4	10.9	120.0	126	95%	93%
159	N	1+00S & 1+25E	727.0	2	Specimen No. 4	11.4	119.1	126	95%	93%
160	N	2+40S & 1+50E	726.5	2	Specimen No. 8	11.5	109.7	118	93%	93%
161	N	2+80S & 1+40E	726.5	2	Specimen No. 3	12.2	114.7	116	99%	95%
10/19/09										
162	N	1+40S & 1+90E	726.5	2	Specimen No. 3	14.1	116.6	116	100+%	95%
163	N	1+90S & 1+50E	727.5	2	Specimen No. 3	13.4	117.5	116	100+%	95%
164	N	2+50S & 1+90E	726.0	2	Specimen No. 3	15.0	114.2	116	98%	95%
165	N	3+25S & 1+60E	726.0	2	Specimen No. 3	14.0	113.4	116	98%	95%
166	N	3+90S & 1+90E	726.5	2	Specimen No. 1	10.5	123.1	128	96%	95%
167	N	4+60S & 1+30E	727.5	2	Specimen No. 3	12.8	117.1	116	100+%	95%
168	N	1+10S & 1+60E	729.0	2	Specimen No. 3	9.4	116.2	116	100%	95%
169	N	1+60S & 1+40E	729.0	2	Specimen No. 3	10.2	112.4	116	97%	95%
170	N	2+30S & 1+60E	727.5	2	Specimen No. 3	10.3	111.6	116	96%	95%
171	N	2+75S & 1+20E	729.0	2	Specimen No. 3	11.5	115.0	116	99%	95%
172	N	3+50S & 1+70E	727.5	2	Specimen No. 3	12.3	115.2	116	99%	95%
173	N	3+75S & 1+30E	728.5	2	Specimen No. 3	11.7	114.8	116	99%	95%
174	N	4+70S & 1+30E	729.0	2	Specimen No. 3	8.7	113.5	116	98%	95%
175	N	4+75S & 1+80E	728.5	2	Specimen No. 3	10.5	112.6	116	97%	95%
176	N	6+30S & 3+60E	727.5	2	Specimen No. 8	15.2	116.2	120	97%	93%

Test No.	METHOD	Location	Test Elevation (ft)	Distance Below Fill Surface (in.)	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
177	N	6+70S & 3+80E	726.0	2	Specimen No. 8	14.8	108.6	118	92% *	93%
10/20/09										
178	N	5+60S & 5+10E	725.2	2	Specimen No. 9	22.9	106.0	112	95%	93%
179	N	4+70S & 4+50E	725.5	2	Specimen No. 9	17.5	106.5	112	95%	93%
180	N	5+00S & 3+95E	726.2	2	Specimen No. 9	21.3	104.4	112	93%	93%
181	N	5+10S & 3+25E	726.0	2	Specimen No. 4	12.1	119.6	126	95%	93%
182	N	6+00S & 2+50E	727.0	2	Specimen No. 3	13.4	112.7	116	97%	95%
183	N	Retest of No. 177	726.5	2	Specimen No. 8	13.8	113.1	118	96%	93%
184	N	6+80S & 2+75E	727.0	2	Specimen No. 8	12.7	116.8	120	97%	93%
185	N	2+25S & 1+50E	729.0	2	Specimen No. 9	11.6	103.3	112	92% *	93%
186	N	2+75S & 1+70E	728.5	2	Specimen No. 8	10.4	111.4	120	93%	93%
187	N	3+90S & 1+50E	728.5	2	Specimen No. 8	14.4	111.3	120	93%	93%
188	N	4+50S & 1+60E	728.5	2	Specimen No. 8	13.8	111.9	120	93%	93%
189	N	6+00S & 3+00E	727.0	2	Specimen No. 3	15.3	107.4	116	93% *	95%
190	N	6+75S & 3+60E	726.0	2	Specimen No. 3	11.0	112.7	116	97%	95%
191	N	5+00S & 4+10E	726.0	2	Specimen No. 3	12.4	112.7	116	97%	95%
192	N	Retest of No. 189	727.0	2	Specimen No. 3	12.3	112.0	116	97%	95%
10/21/09										
193	N	4+90S & 3+25S	727.0	2	Specimen No. 3	12.9	107.7	116	93% *	95%
194	N	5+10S & 4+10E	726.8	2	Specimen No. 3	15.0	106.1	116	91% *	95%
195	N	Retest in Area of Nos. 193 & 194	726.8	2	Specimen No. 3	14.2	115.7	116	100%	95%
196	N	1+50S & 2+00E	727.5	2	Specimen No. 8	13.5	115.0	120	96%	93%
197	N	2+00S & 1+90E	727.0	2	Specimen No. 8	10.0	110.8	118	94%	93%
198	N	3+50S & 1+70E	727.5	2	Specimen No. 8	10.5	108.8	118	92% *	93%

Test No.	METHOD	Location	Test Elevation (ft)	Distance Below Fill Surface (in.)	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
199	N	4+50S & 1+80E	727.5	2	Specimen No. 8	13.1	114.7	120	96%	93%
200	N	5+50S & 2+00E	727.5	2	Specimen No. 8	12.9	114.1	120	95%	93%
201	N	5+10S & 2+15E	727.0	2	Specimen No. 8	13.8	118.9	120	99%	93%
202	N	4+60S & 2+80E	726.5	2	Specimen No. 8	15.4	101.0	120	84% *	93%
203	N	4+05S & 2+15E	726.5	2	Specimen No. 8	14.2	112.6	120	94%	93%
204	N	3+50S & 2+50E	725.0	2	Specimen No. 8	14.1	113.5	120	95%	93%
205	N	6+50S & 4+90E	725.2	2	Specimen No. 3	14.3	110.2	116	95%	95%
206	N	5+00S & 6+20E	724.5	2	Specimen No. 3	14.1	115.6	116	100%	95%
207	N	4+50S & 6+20E	724.5	2	Specimen No. 3	12.3	115.6	116	100%	95%
208	N	1+30S & 2+25E	728.0	2	Specimen No. 7	12.1	118.9	126	94%	93%
209	N	2+10S & 2+10E	726.5	2	Specimen No. 8	14.5	115.7	120	96%	93%
210	N	3+00S & 2+00E	726.0	2	Specimen No. 7	12.3	120.3	126	95%	93%
211	N	4+10S & 1+95E	727.0	2	Specimen No. 7	13.0	117.3	126	93%	93%
212	N	5+00S & 2+00E	728.0	2	Specimen No. 7	11.8	118.7	126	94%	93%
213	N	Retest of No. 202	726.5	2	Specimen No. 8	10.4	111.4	120	93%	93%
11/3/09										
214	N	3+00S & 4+50E	726.0	3	Specimen No. 3	13.0	117.4	116	100+%	95%
215	N	2+75S & 4+40E	726.0	4	Specimen No. 3	15.9	112.6	116	97%	95%
216	N	3+00S & 4+00E	725.5	4	Specimen No. 3	14.1	113.3	116	98%	95%
11/4/09										
217	N	3+50S & 3+30E	724.0	4	Specimen No. 3	18.0	111.2	116	96%	95%
218	N	3+60S & 4+00E	724.0	4	Specimen No. 3	18.0	110.7	116	95%	95%
219	N	3+30S & 3+80E	723.5	4	Specimen No. 3	18.3	110.5	116	95%	95%
220	N	3+30S & 3+50E	723.5	4	Specimen No. 3	14.9	113.7	116	98%	95%
221	N	3+50S & 3+50E	724.0	4	Specimen No. 3	16.8	113.2	116	98%	95%

Test No.	METHOD	Location	Test Elevation (ft)	Distance Below Fill Surface (in.)	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
222	N	3+25S & 3+60E	724.5	4	Specimen No. 3	18.2	112.9	116	97%	95%
223	N	3+60S & 3+75E	725.0	4	Specimen No. 3	19.9	112.7	116	97%	95%
224	N	3+40S & 3+90E	725.0	4	Specimen No. 3	17.6	111.1	116	96%	95%
225	N	3+00S & 3+75E	724.0	4	Specimen No. 3	16.0	116.1	116	100%	95%
11/5/09										
226	N	1+75S & 2+40E	726.5	4	Specimen No. 7	13.3	121.4	126	96%	93%
227	N	1+50S & 2+80E	726.0	4	Specimen No. 7	12.8	124.9	126	99%	93%
228	N	1+50S & 3+10E	725.5	4	Specimen No. 7	10.6	120.0	126	95%	93%
229	N	3+00S & 2+10E	725.0	4	Specimen No. 7	12.9	120.3	126	95%	93%
230	N	3+40S & 2+30E	725.0	4	Specimen No. 7	13.0	118.5	126	94%	93%
231	N	3+80S & 2+00E	726.0	4	Specimen No. 7	12.8	122.6	126	97%	93%
232	N	4+20S & 2+15E	726.5	4	Specimen No. 7	13.3	120.9	126	96%	93%
233	N	4+00S & 2+90E	726.0	4	Specimen No. 7	12.8	117.4	126	93%	93%
234	N	4+50S & 3+10E	726.5	4	Specimen No. 7	12.8	118.8	126	94%	93%
235	N	3+75S & 3+25E	727.0	4	Specimen No. 7	13.3	119.1	126	95%	93%
236	N	4+00S & 3+90E	725.0	4	Specimen No. 3	12.0	109.2	116	94%	93%
237	N	3+80S & 3+50E	725.0	4	Specimen No. 3	14.2	113.7	116	98%	93%
238	N	1+50S & 2+75E	727.5	4	Specimen No. 7	12.2	121.7	126	97%	93%
239	N	1+40S & 3+00E	727.5	4	Specimen No. 7	13.2	120.7	126	96%	93%
240	N	3+90S & 2+00E	727.0	4	Specimen No. 7	13.3	117.8	126	93%	93%
241	N	3+00S & 2+75E	726.0	4	Specimen No. 7	12.9	118.5	126	94%	93%
242	N	3+60S & 2+90E	727.0	4	Specimen No. 7	12.8	118.2	126	94%	93%
243	N	3+80S & 3+75E	727.5	4	Specimen No. 7	12.8	118.4	126	94%	93%
244	N	1+25S & 2+40E	728.0	4	Specimen No. 7	12.8	119.6	126	95%	93%
245	N	1+10S & 3+00E	728.0	4	Specimen No. 7	13.3	119.8	126	95%	93%

Test No.	METHOD	Location	Test Elevation (ft)	Distance Below Fill Surface (in.)	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
11/6/09										
246	N	Retest in Area of No. 198	727.5	4	Specimen No. 8	14.0	117.9	126	94%	93%
247	N	4+00S & 2+75E	727.0	2	Specimen No. 7	14.8	118.6	126	94%	93%
248	N	4+75S & 2+60E	728.0	2	Specimen No. 7	13.7	120.2	126	95%	93%
249	N	2+75S & 3+10E	727.5	2	Specimen No. 7	13.1	120.5	126	96%	93%
250	N	2+50S & 3+00E	726.5	4	Specimen No. 7	13.7	120.5	126	96%	93%
251	N	1+10S & 2+10E	728.5	4	Specimen No. 7	13.5	119.3	126	95%	93%
252	N	1+30S & 2+80E	727.5	4	Specimen No. 7	13.6	118.6	126	94%	93%
253	N	1+50S & 3+00E	727.5	4	Specimen No. 7	13.5	117.5	126	93%	93%
254	N	3+20S & 2+30E	726.0	4	Specimen No. 7	13.6	119.8	126	95%	93%
255	N	4+00S & 2+40E	726.5	4	Specimen No. 7	12.9	122.0	126	97%	93%
256	N	4+00S & 2+90E	726.0	4	Specimen No. 7	13.0	123.4	126	98%	93%
257	N	3+75S & 3+20E	727.5	4	Specimen No. 7	13.2	118.4	126	94%	93%
258	N	3+00S & 2+25E	727.0	2	Specimen No. 7	12.9	121.1	126	96%	93%
259	N	3+00S & 3+25E	727.0	2	Specimen No. 7	14.0	117.4	126	93%	93%
260	N	4+00S & 3+06E	727.5	2	Specimen No. 7	14.8	120.4	126	96%	93%
261	N	4+10S & 3+40E	728.0	2	Specimen No. 7	13.0	126.2	126	100%	93%
11/7/09										
262	N	3+00S & 3+00E	727.5	4	Specimen No. 7	13.5	122.4	126	97%	93%
263	N	3+20S & 3+30E	728.0	4	Specimen No. 7	14.1	117.3	126	93%	93%
264	N	3+50S & 4+00E	728.0	4	Specimen No. 7	15.3	117.5	126	93%	93%
265	N	3+25S & 3+50E	728.0	4	Specimen No. 7	13.1	121.3	126	96%	93%
266	N	3+00S & 2+50E	728.0	1	Specimen No. 7	13.3	125.8	126	100%	93%
267	N	4+00S & 3+00E	728.0	1	Specimen No. 7	13.8	122.3	126	97%	93%
268	N	4+25S & 2+75E	728.0	1	Specimen No. 7	14.9	121.2	126	96%	93%

Test No.	METHOD	Location	Test Elevation (ft)	Distance Below Fill Surface (in.)	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
11/17/09										
269	N	5+00S & 0+50E	726.0	4	Specimen No. 7	12.3	121.6	126	97%	93%
270	N	4+40S & 0+55E	726.0	4	Specimen No. 7	11.8	121.4	126	96%	93%
271	N	3+80S & 0+45E	727.0	4	Specimen No. 7	11.7	123.8	126	98%	93%
272	N	3+70S & 0+50E	727.0	4	Specimen No. 7	11.9	120.7	126	96%	93%
273	N	4+50S & 0+40E	728.0	4	Specimen No. 7	12.1	119.9	126	95%	93%
274	N	5+00S & 0+45E	728.0	4	Specimen No. 7	12.1	120.3	126	95%	93%
275	N	3+25S & 2+60E	727.0	4	Specimen No. 7	12.0	122.3	126	97%	93%
276	N	3+00S & 2+50E	727.0	4	Specimen No. 7	12.1	121.7	126	97%	93%
277	N	2+75S & 2+60E	723.0	4	Specimen No. 7	13.3	121.6	126	97%	93%
278	N	2+20S & 2+40E	726.5	4	Specimen No. 7	11.9	124.4	126	99%	93%
279	N	2+00S & 2+00E	728.5	4	Specimen No. 7	13.4	120.3	126	95%	93%
280	N	2+00S & 2+75E	728.0	4	Specimen No. 7	12.8	118.6	126	94%	93%
281	N	3+60S & 3+00E	728.0	4	Specimen No. 7	10.2	120.0	126	95%	93%
282	N	3+50S & 3+00E	728.0	4	Specimen No. 7	10.8	119.5	126	95%	93%
283	N	3+75S & 3+50E	727.5	4	Specimen No. 7	9.7	119.7	126	95%	93%
284	N	4+00S & 0+50E	729.0	4	Specimen No. 7	11.0	121.3	126	96%	93%
285	N	5+10S & 0+55E	729.0	4	Specimen No. 7	10.6	120.7	126	96%	93%
286	N	2+75S & 2+60E	728.0	4	Specimen No. 7	11.4	121.3	126	96%	93%

Comments:

* Indicates measured compaction is below targeted percent. The lift of fill was typically aerated (dried), then recompacted and retested until satisfactory compaction and/or a stable subgrade was established.

Signed _____ Dated 5/18/10

Jeff P. Simkowski, P.E.

APPENDIX C

FIELD DENSITY TEST REPORT NO. 2 - COMPACTED CLAY LINER

Job No.	CM09041
Tested By:	BK

CGC, Inc.

FIELD DENSITY TEST REPORT - NO. 2 (Compacted Clay Liner)

336 S. Curtis Road, West Allis, WI 53214 - Phone (414) 443-2000 - Fax (414) 443-2099 - Email: cgcmilw@cgcinc.net

PROJECT: 67th Place Industrial Park
City of West Allis, Wisconsin

TO: ARCADIS U.S., Inc.
126 N. Jefferson Street, Suite 400
Milwaukee, WI 53202

ATTN: Mr. Ben J. Verburg, P.E.

TEST METHODS: Moisture-density relationship of soils based on MODIFIED Proctor (ASTM D1557).
"METHOD" Indicates: (N) Nuclear (ASTM D2922)

Test No.	METHOD	Location	Test Elevation (ft)	Distance Below Fill Surface (in.)	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
12/2/09										
Pond Embankment/Stabilized Areas:										
1	N	4+60S & 7+85E	715.5	2	Specimen No. A	13.4	117.4	125	94%	92%
2	N	4+40S & 8+20E	717.0	2	Specimen No. A	13.7	115.8	125	93%	92%
3	N	5+10S & 7+60E	720.0	2	Specimen No. A	14.0	115.6	125	92%	92%
4	N	4+15S & 8+30E	724.0	2	Specimen No. A	14.5	119.3	125	95%	92%
5	N	4+75S & 8+10E	724.0	2	Specimen No. A	13.8	115.1	125	92%	92%
6	N	4+55S & 8+10E	721.0	2	Specimen No. A	13.9	121.4	125	97%	92%
7	N	4+15S & 8+10E	715.0	2	Specimen No. A	13.9	118.4	125	95%	92%
8	N	4+15S & 8+30E	719.0	2	Specimen No. A	13.5	117.7	125	94%	92%
Pond Liner:										
9	N	4+80S & 7+50E	712.5	2	Specimen No. A	13.7	114.1	125	91%	90%
10	N	4+10S & 7+95E	712.5	2	Specimen No. A	13.3	113.2	125	91%	90%
11	N	4+40S & 7+50E	713.5	2	Specimen No. A	13.8	122.0	125	98%	90%
12	N	4+30S & 7+60E	713.5	2	Specimen No. A	12.7	118.1	125	94%	90%

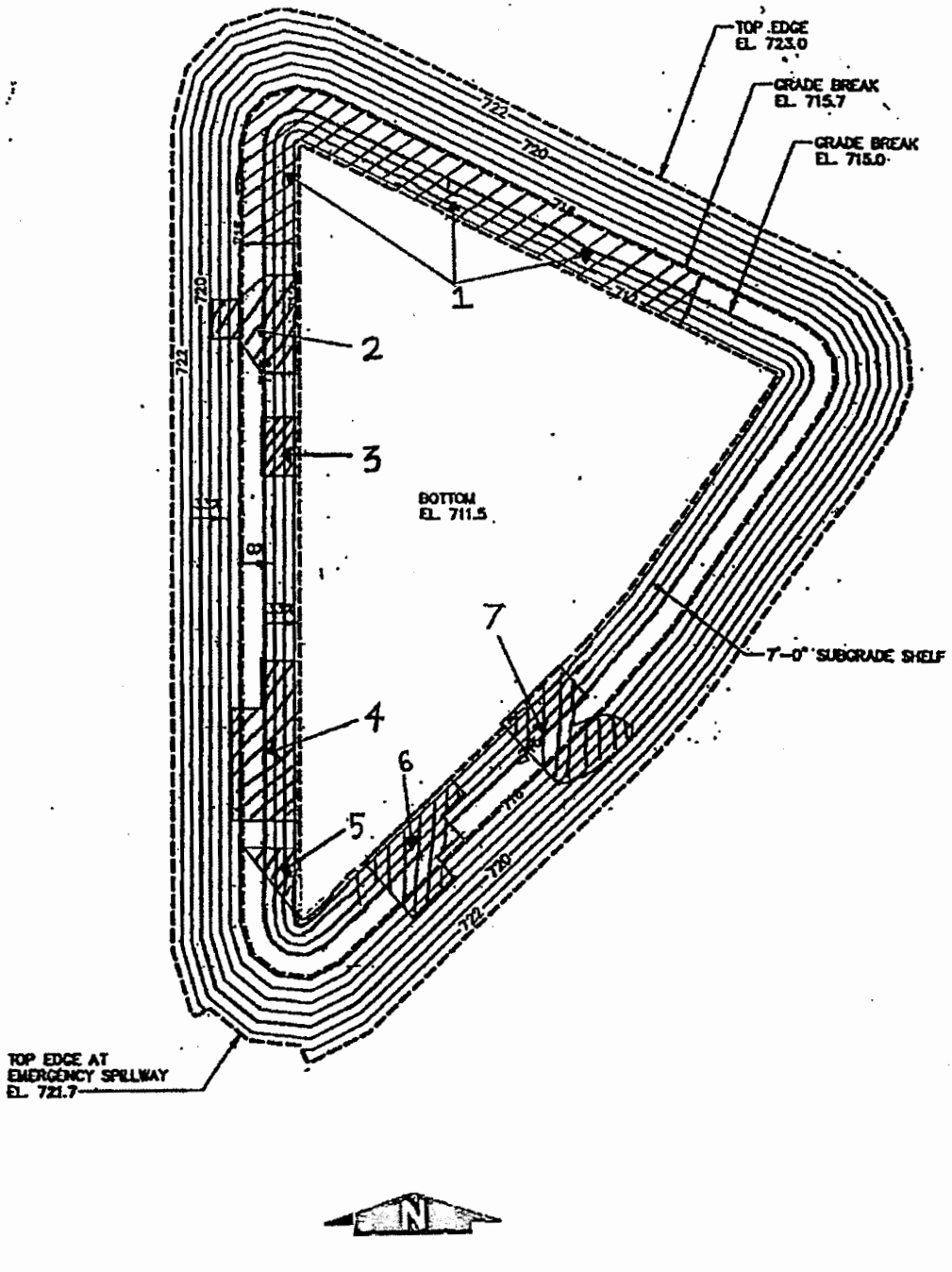
Test No.	METHOD	Location	Test Elevation (ft)	Distance Below Fill Surface (in.)	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
12/3/09										
Pond Liner:										
13	N	3+40S & 7+60E	720.0	2	Specimen No. A	13.0	115.5	125	92%	90%
14	N	3+20S & 6+90E	716.0	2	Specimen No. A	13.1	118.6	125	95%	90%
15	N	4+10S & 6+95E	712.5	2	Specimen No. A	13.7	119.2	125	95%	90%
16	N	3+85S & 8+10E	717.0	2	Specimen No. A	14.7	119.8	125	96%	90%
17	N	3+00S & 6+90E	720.0	2	Specimen No. A	13.8	116.0	125	93%	90%
18	N	3+50S & 7+85E	719.0	2	Specimen No. A	13.8	116.6	125	93%	90%
19	N	3+60S & 6+90E	713.5	2	Specimen No. A	14.9	113.0	125	90%	90%
20	N	3+95S & 6+90E	713.5	2	Specimen No. A	13.8	121.7	125	97%	90%
21	N	4+15S & 7+40E	713.5	2	Specimen No. A	13.0	118.7	125	95%	90%
22	N	4+50S & 6+60E	715.0	2	Specimen No. A	14.7	122.1	125	98%	90%
23	N	4+20S & 6+60E	718.5	2	Specimen No. A	14.5	124.7	125	100%	90%
24	N	4+00S & 6+40E	721.0	2	Specimen No. A	13.6	119.7	125	96%	90%
12/7/09										
Pond Liner:										
25	N	5+40S & 6+55E	717.0	2	Specimen No. A	13.9	116.6	125	93%	90%
26	N	5+55S & 6+50E	720.0	2	Specimen No. A	13.8	115.6	125	92%	90%
27	N	5+60S & 6+95E	719.0	2	Specimen No. A	13.4	119.0	125	95%	90%
28	N	5+55S & 6+85E	714.0	2	Specimen No. A	13.7	118.6	125	95%	90%
29	N	5+75S & 6+60E	717.0	2	Specimen No. A	13.3	116.4	125	93%	90%
30	N	5+85S & 6+65E	719.0	2	Specimen No. A	13.7	116.3	125	93%	90%

Signed _____ Dated 5/11/10

Jeff P. Simkowski, P.E.

APPENDIX D

SKETCH - POND SIDEWALL STABILIZATION



Legend

Denotes Approximate Location Where Stabilizing Efforts Were Required Along the Pond Sidewalls

Scale: Not to Scale

DWN: --	APP'D: JPS	Date: 1/13/10	CM09041

CGC, Inc.

SKETCH
67th Place Industrial Park
City of West Allis, Wisconsin

State of Wisconsin
Department of Natural Resources
PO Box 7921, Madison WI 53707-7921
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing

Form 3300-005 (R 8/07)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between $10-25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

Route to:

☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management ☒ Remediation/Redevelopment ☐ Other: _____

1. Well Location Information

County	WI Unique Well No. / Removed Well	Hicap #
Milwaukee		

Latitude / Longitude (Degrees and Minutes) — — ° — — ' — — — 'N — — ° — — ' — — — 'W

Method Code (see instructions)

1/4 / 1/4 or Gov't Lot #	1/4	Section	Township	Range
			N	☐ E ☐ W

Well Street Address: 1960 S. 67th Place

Well City, Village or Town	Well ZIP Code
West Allis	53214

Subdivision Name	Lot #

Reason For Removal From Service	WI Unique Well # of Replacement Well
Site Redevelopment	— — — — —

2. Well/Drillhole/Borehole Information

☒ Monitoring Well ☐ Water Well ☐ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 08/02/2004

If a Well Construction Report is available, please attach.

Construction Type:

☒ Drilled ☐ Driven (Sandpoint) ☐ Dug ☐ Other (specify): _____

Formation Type:

☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Groundsurface (ft.)	Casing Diameter (in.)
20.0	2
Lower Drillhole Diameter (in.)	**Casing Depth (ft.)**
8.25	20.0

Was well annular space grouted? ☐ Yes ☒ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)
	12.58

2. Facility / Owner Information

Facility Name	Common Well Name
67th Place Industrial Park/Lime Pit	MW-1

Facility ID (FID or PWS):

License/Permit/Monitoring #:

Original Well Owner:

Present Well Owner: City of West Allis Community Development Authority

Mailing Address of Present Owner: 1445 S. 66th Street

City of Present Owner	State	ZIP Code
West Allis	WI	53214

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☒ No	☐ N/A
Liner(s) removed?	☐ Yes	☒ No	☐ N/A
Screen removed?	☐ Yes	☒ No	☐ N/A
Casing left inplace?	☒ Yes	☐ No	☐ N/A
Was casing cut off below surface?	☒ Yes	☐ No	☐ N/A
Did sealing material rise to surface?	☒ Yes	☐ No	☐ N/A
Did material settle after 24 hours?	☐ Yes	☒ No	☐ N/A
If yes, was hole retopped?	☐ Yes	☐ No	☒ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☐ Yes	☐ No	☒ N/A

Required Method of Placing Sealing Material

☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped ☒ Screened & Poured (Bentonite Chips) ☐ Other (Explain): _____

Sealing Materials

☐ Neat Cement Grout ☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Sand-Cement (Concrete) Grout ☐ Bentonite-Sand Slurry**
☐ Concrete ☐ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:

☒ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole

	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
3/8 inch Bentonite Chips	TOC	22.87	2/3	

6. Comments

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing (mm/dd/yyyy)
ARCADIS		10/20/2009

Street or Route	Telephone Number
126 N. Jefferson Street, Suite 400	

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Milwaukee	WI	53202	Rebecca A Rothenmaier	11/04/10

DNR Use Only

Date Received	Noted By

Comments:

presstel/wi1074/limepit/graphics/logs/mw1.ai

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☐ Other ☐ _____

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 7-98

Facility/Project Name: NOVAK SITE	Local Grid Location of Well: _____ ft. ☐N. ☐S. _____ ft. ☐E. ☐W.	Well Name: MW-1
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. _____ ° _____ ' _____ " Long. _____ ° _____ ' _____ " or	Wis. Unique Well No. / DNR Well ID No.
Facility ID	St. Plane _____ ft. N, _____ ft. E. S/C/N	Date Well Installed: 08/02/2004 (m m d d y y y y)
Type of Well: Well Code 11 / MW	Section Location of Waste/Source: _____ 1/4 of _____ 1/4 of Sec. _____, T. _____ N, R. _____ ☐E ☐W	Well Installed By: Name (first, last) and Firm: HORAINE ENVIRONMENTAL, INC.
Distance from Waste/Source _____ ft. / Enf. Stds. Apply ☒	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☒ Not Known	Gov. Lot Number: _____
		WTM91 X = 683378, Y = 28373

A. Protective pipe, top elevation _____ ft. MSL

B. Well casing, top elevation 731.52 ft. MSL

C. Land surface elevation 728.7 ft. MSL

D. Surface seal, bottom _____ ft. MSL or 1.0 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☒ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☒ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☒ No

14. Drilling method used: Rotary ☐ 50
Hollow Stem Auger ☒ 41
_____ Other ☐

15. Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud ☐ 03 None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No

Describe _____

17. Source of water (attach analysis, if required):
N/A

E. Bentonite seal, top _____ ft. MSL or 1.0 ft.

F. Fine sand, top _____ ft. MSL or 4.0 ft.

G. Filter pack, top _____ ft. MSL or 5.0 ft.

H. Screen joint, top _____ ft. MSL or 5.0 ft.

I. Well bottom _____ ft. MSL or 20.0 ft.

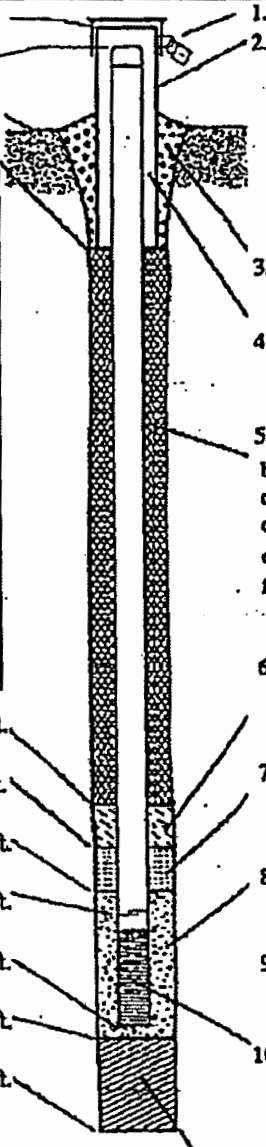
J. Filter pack, bottom _____ ft. MSL or 20.0 ft.

K. Borehole, bottom _____ ft. MSL or 20.0 ft.

L. Borehole, diameter 8.3 in.

M. O.D. well casing 2.37 in.

N. I.D. well casing 2.07 in.



1. Cap and lock? ☒ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 4.0 in.
b. Length: 5.0 ft.
c. Material: Steel ☒ 04
_____ Other ☐
d. Additional protection? ☐ Yes ☒ No
If yes, describe: _____

3. Surface seal: Bentonite ☐ 30
Concrete ☒ 01
_____ Other ☐

4. Material between well casing and protective pipe:
Bentonite ☒ 30
_____ Other ☐

5. Annular space seal: a. Granular/Chipped Bentonite ☒ 33
b. _____ Lbs/gal mud weight ... Bentonite-sand slurry ☐ 35
c. _____ Lbs/gal mud weight ..... Bentonite slurry ☐ 31
d. _____ % Bentonite ..... Bentonite-cement grout ☐ 50
e. _____ Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01
Tremie pumped ☐ 02
Gravity ☒ 08

6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite chips ☒ 32
c. _____ Other ☐

7. Fine sand material: Manufacturer, product name & mesh size
a. BADGER
b. Volume added _____ ft^3

8. Filter pack material: Manufacturer, product name & mesh size
a. BADGER
b. Volume added _____ ft^3

9. Well casing: Flush threaded PVC schedule 40 ☒ 23
Flush threaded PVC schedule 80 ☐ 24
_____ Other ☐

10. Screen material: PVC
a. Screen type: Factory cut ☒ 11
Continuous slot ☐ 01
_____ Other ☐
b. Manufacturer DIETRICH
c. Slot size: 0.010 in.
d. Slotted length: 15.0 ft.

11. Backfill material (below filter pack): None ☒ 14
_____ Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: _____ Firm: THE ENVIRONMENTAL MANAGEMENT CO LLC

Please complete both Form 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable [illegible] NOTE: See the instructions for more information, including where the completed forms should be

State of Wisconsin
Department of Natural Resources
PO Box 7921, Madison WI 53707-7921
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing

Form 3300-005 (R 8/07)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between $10-25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

Mail to:

☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management ☒ Remediation/Redevelopment ☐ Other: _____

1. Well Location Information

County	WI Unique Well No. / Removed Well	Hicap #
Milwaukee	_ _ _ _ _ _ _	

Latitude / Longitude (Degrees and Minutes) — Method Code (see instructions)

_ _ ° _ _ ' _ _ . _ _ _ _ " N
_ _ ° _ _ ' _ _ . _ _ _ _ " W

1/4 / 1/4 or Gov't Lot #	1/4	Section	Township	Range	E / W
			N		☐ E ☐ W

Well Street Address: 1960 S. 67th Place

Well City, Village or Town	Well ZIP Code
West Allis	53214

Subdivision Name	Lot #

Reason For Removal From Service	WI Unique Well # of Replacement Well
Site Redevelopment	_ _ _ _ _ _ _

2. Facility / Owner Information

Facility Name	Common Well Name
67th Place Industrial Park/Lime Pit	MW-2R

Facility ID (FID or PWS):

License/Permit/Monitoring #:

Original Well Owner:

Present Well Ower: City of West Allis Community Development Authority

Mailing Address of Present Owner: 1445 S. 66th Street

City of Present Owner	State	ZIP Code
West Allis	WI	53214

3. Well/Drillhole/Borehole Information

☒ Monitoring Well ☐ Water Well ☐ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 4/28/09

If a Well Construction Report is available, please attach.

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug ☐ Other (specify): _____

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Groundsurface (ft.)	Casing Diameter (in.)
18	2
Lower Drillhole Diameter (in.)	**Casing Depth (ft.)**
8.25	18

Was well annular space grouted? ☐ Yes ☐ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)
	12.56

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☒ No	☐ N/A
Liner(s) removed?	☐ Yes	☒ No	☐ N/A
Screen removed?	☐ Yes	☒ No	☐ N/A
Casing left inplace?	☒ Yes	☐ No	☐ N/A
Was casing cut off below surface?	☒ Yes	☐ No	☐ N/A
Did sealing material rise to surface?	☒ Yes	☐ No	☐ N/A
Did material settle after 24 hours?	☐ Yes	☒ No	☐ N/A
If yes, was hole retopped?	☐ Yes	☐ No	☒ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☐ Yes	☐ No	☒ N/A

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☒ Screened & Poured (Bentonite Chips) ☐ Other (Explain): _____

Sealing Materials
☐ Neat Cement Grout ☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Sand-Cement (Concrete) Grout ☐ Bentonite-Sand Slurry
☐ Concrete ☐ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:
☒ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole

From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
TOC	20.34	1 bag	

3/8 Inch Bentonite Chips

6. Comments

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing (mm/dd/yyyy)
ARCADIS		10/20/2009

Street or Route	Telephone Number
126 N. Jefferson Street, Suite 400	

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Milwaukee	WI	53202		

DNR Use Only

Date Received	Noted By

Comments:

presstel/wi1074/limepit/graphics/logs/mw2a_abandal

State of Wisconsin
Department of Natural Resources

Route to: Solid Waste ☐ Haz. Waste ☐ Waste Water ☐
Env. Response & Repair ☐ Underground Tanks ☐ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A 4/90

Facility/Project Name: Lime Pit	Local Grid Location of Well: _____ ft. ☐ N. ☐ S. _____ ft. ☐ E. ☐ W.	Well Name: MW-2R	
Facility License, Permit or Monitoring Number	Local Grid Origin: Lat. _____ Long _____ or St. Plane _____ ft. N, _____ ft. E	Wis. Unique Well Number	DNR Well Number
Type of Well: Water Table Observation Well ☐ 11, Piezometer ☐ 12		Date Well Installed: 04/28/2009	
Distance Well Is From Waste/Source Boundary: _____ ft.	Section Location of Waste Source: ___ 1/4 of ___ 1/4 of Sec ___ T. ___ N,R ___ ☐ E. ☐ W.	Well Installed by: Name (first, last) and Firm: Charles Rens, Giles Engineering	
Is Well A Point of Enforcement Std. Application? ☐ Yes ☐ No	Location of Well Relative to Waste/Source: ☐ Upgradinet ☐ Sidegradient ☐ Downgradient ☐ Not Known		

A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation _____ ft. MSL
C. Land surface elevation _____ ft. MSL
D. Surface seal, bottom _____ ft MSL or 1 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis attached? ☐ Yes ☒ No

14. Drilling method used: Rotary ☐ 50
Hollow Stem Auger ☒ 41
_____ Other ☐ ___

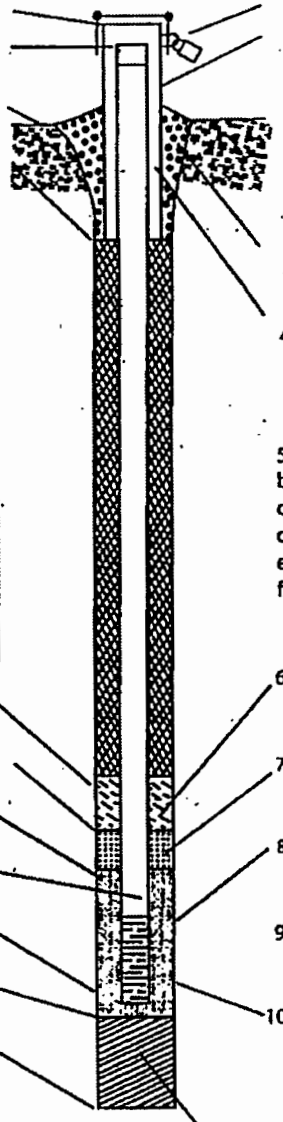
15. Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud ☐ 03 None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No

Describe _____

17. Source of Water (attached analysis if required):
_____

E. Bentonite seal, top _____ ft. MSL or 1 ft.
F. Fine sand, top _____ ft. MSL or 2 ft.
G. Filter pack, top _____ ft. MSL or 2.5 ft.
H. Screen joint, top _____ ft. MSL or 3 ft.
I. Well bottom _____ ft. MSL or 18 ft.
J. Filter pack, bottom _____ ft. MSL or 18 ft.
K. Borehole bottom _____ ft. MSL or 18 ft.
L. Borehole diameter 8.25 in.
M. O.D. well casing 2.375 in.
N. I.D. well casing 2.016 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: _____ in.
b. Length: _____ ft.
c. Material: Steel ☒ 04, Other ☐ ___
d. Additional protection? ☐ Yes ☒ No
If yes, describe: _____
3. Surface seal: Bentonite ☐ 30, Concrete ☒ 01, Other ☐ ___
_____
4. Material between well casing and protective pipe:
Bentonite ☒ 30, Annular space seal ☐ ___, Other ☐ ___
_____
5. Annular space seal: a. Granular Bentonite ☒ 33
b. _____ Lbs/gal mud weight..... Bentonite-sand slurry ☐ 35
c. _____ Lbs/gal mud weight..Bentonite-cement grout ☐ 31
d. _____ % Bentonite..... Bentonite-cement grout ☐ 50
e. _____ Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01, Tremie pumped ☐ 02, Gravity ☒ 08
6. Bentonite seal: a. Granular Bentonite ☐ 33
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. bentonite pellets ☒ 32
c. _____ Other ☐ ___
7. Fine sand Material: Manufacturer, product name and mesh size
a. #15 Red Flint
b. Volume added _____ ft^3
8. Filter pack material: Manufacturer, product name and mesh size
a. #40 Red Flint
b. Volume added _____ ft^3
9. Well casing: Flush threaded PVC schedule 40 ☒ 23
Flush threaded PVC schedule 80 ☐ 24
_____ Other ☐ ___
10. Screen material: sch. 40 PVC
a. Screen type: Factory cut ☒ 11
Continuous slot ☐ 01
_____ Other ☐ ___
b. Manufacturer Johnson
c. Slot size: 0.010 in.
d. Slotted length: _____ ft.
11. Backfill material (below filter pack): None ☒ 14
_____ Other ☐ ___

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: _____ Firm: ARCADIS, 126 N. Jefferson Street, Milwaukee, WI (414) 276-7742

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 293, 295, and 299, Wis. Stats, and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

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State of Wisconsin
Department of Natural Resources
PO Box 7921, Madison WI 53707-7921
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing

Form 3300-005 (R 8/07)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between $10-25,000, or imprisonment for up to on year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

Route to:

☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management ☒ Remediation/Redevelopment ☐ Other: _____

1. Well Location Information

County	WI Unique Well No. Removed Well	Hicap #
Milwaukee		

Lattitude / Longitude (Degrees and Minutes) — Method Code (see instructions)

__ __ ° __ __ . __ __ __ 'N
__ __ ° __ __ . __ __ __ 'W

1/4 / 1/4 or Gov't Lot #	1/4	Section	Township	Range	E / W
			N		☐ E ☐ W

Well Street Address: 1960 S. 67th Place

Well City, Village or Town	Well ZIP Code
West Allis	53214

Subdivision Name: — Lot #: —

Reason For Removal From Service	WI Unique Well # of Replacement Well
Site Redevelopment	— — — — —

3. Well/Drillhole/Borehole Information

☒ Monitoring Well ☐ Water Well ☐ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 08/03/2004

If a Well Construction Report is available, please attach.

Construction Type:

☒ Drilled ☐ Driven (Sandpoint) ☐ Dug ☐ Other (specify): _____

Formation Type:

☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Groundsurface (ft.)	Casing Diameter (in.)
20	2
Lower Drillhole Diameter (in.)	**Casing Depth (ft.)**
8.25	20

Was well annular space grouted? ☐ Yes ☒ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)
	11.20

2. Facility / Owner Information

Facility Name	Common Well Name
67th Place Industrial Park/Lime Pit	MW-4

Facility ID (FID or PWS): —

License/Permit/Monitoring #: —

Original Well Owner: —

Present Well Ower: City of West Allis Community Development Authority

Mailing Address of Present Owner: 1445 S. 66th Street

City of Present Owner	State	ZIP Code
West Allis	WI	53214

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☒ No	☐ N/A
Liner(s) removed?	☐ Yes	☒ No	☐ N/A
Screen removed?	☐ Yes	☒ No	☐ N/A
Casing left inplace?	☒ Yes	☐ No	☐ N/A
Was casing cut off below surface?	☒ Yes	☐ No	☐ N/A
Did sealing material rise to surface?	☒ Yes	☐ No	☐ N/A
Did material settle after 24 hours?	☐ Yes	☒ No	☐ N/A
If yes, was hole retopped?	☐ Yes	☐ No	☒ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☐ Yes	☐ No	☒ N/A

Required Method of Placing Sealing Material

☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☒ Screened & Poured (Bentonite Chips) ☐ Other (Explain): _____

Sealing Materials

☐ Neat Cement Grout ☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Sand-Cement (Concrete) Grout ☐ Bentonite-Sand Slurry
☐ Concrete ☐ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:

☒ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole

From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
TOC	21.61	2/3 bag	

3/8 inch Bentonite Chips

6. Comments

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing (mm/dd/yyyy)
ARCADIS		10/01/2009

Street or Route: 126 N. Jefferson Street, Suite 400 — Telephone Number:

City: Milwaukee — State: WI — ZIP Code: 53202 — Signature of Person Doing Work: Rebecca A Robbennalt — Date Signed: 11/4/09

DNR Use Only

Date Received: — Noted By: — Comments:

presstel/wi1074/limepit/graphics/logs/mw4_aband.ai

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 7-98

Facility/Project Name: NOVAK SITE	Local Grid Location of Well: ____ ft. ☐N. ☐S. ____ ft. ☐E. ☐W.	Well Name: MW-4
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ____ ' ____ " Long. ____ ' ____ " or	Wis. Unique Well No. / DNR Well ID No.
Facility ID	St. Plane ____ ft. N, ____ ft. E. S/C/N	Date Well Installed: 08/03/2004 (m m d d y y y y)
Type of Well: Well Code 11 / mw	Section Location of Waste/Source: ____ 1/4 of ____ 1/4 of Sec. ____ T. ____ N, R. ____ ☐E ☐W	Well Installed By: Name (first, last) and Firm: HORAINE ENVIRONMENTAL, INC
Distance from Waste/Source ____ ft. / Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☒ Not Known	Gov. Lot Number: ____
		WTM91 X=683378, Y=2837

A. Protective pipe, top elevation _____ ft. MSL

B. Well casing, top elevation 723.94 ft. MSL

C. Land surface elevation 721.0 ft. MSL

D. Surface seal, bottom _____ ft. MSL or 1.0 ft.

12. USCS classification of soil near screen:
OP ☐ GM ☐ GC ☐ GW ☒ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☒ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☒ No

14. Drilling method used: Rotary ☐ 50 / Hollow Stem Auger ☒ 41 / Other ☐ ____

15. Drilling fluid used: Water ☐ 02 Air ☐ 01 / Drilling Mud ☐ 03 None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No

Describe ____

17. Source of water (attach analysis, if required):
N/A

E. Bentonite seal, top _____ ft. MSL or 1.0 ft.

F. Fine sand, top _____ ft. MSL or 4.0 ft.

G. Filter pack, top _____ ft. MSL or 5.0 ft.

H. Screen joint, top _____ ft. MSL or 5.0 ft.

I. Well bottom _____ ft. MSL or 20.0 ft.

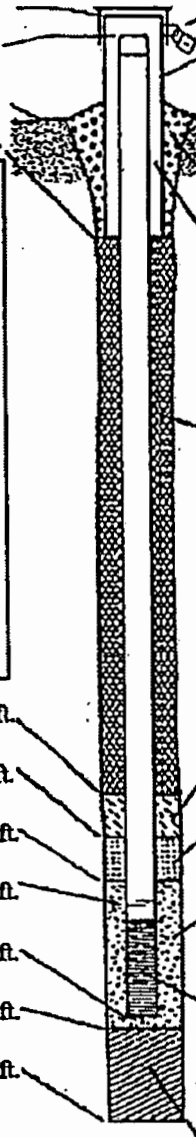
J. Filter pack, bottom _____ ft. MSL or 20.0 ft.

K. Borehole, bottom _____ ft. MSL or 20.0 ft.

L. Borehole, diameter 8.3 in.

M. O.D. well casing 2.37 in.

N. I.D. well casing 2.07 in.



1. Cap and lock? ☒ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 4.0 in.
b. Length: 5.0 ft.
c. Material: Steel ☒ 04 / Other ☐ ____
d. Additional protection? ☐ Yes ☒ No
If yes, describe: ____

3. Surface seal: Bentonite ☐ 30 / Concrete ☒ 01 / Other ☐ ____

4. Material between well casing and protective pipe: Bentonite ☒ 30 / Other ☐ ____

5. Annular space seal: a. Granular/Chipped Bentonite ☒ 33
b. ____ Lbs/gal mud weight ... Bentonite-sand slurry ☐ 35
c. ____ Lbs/gal mud weight ..... Bentonite slurry ☐ 31
d. ____ % Bentonite ..... Bentonite-cement grout ☐ 50
e. ____ Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01 / Tremie pumped ☐ 02 / Gravity ☒ 08

6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐1/4 in. ☒3/8 in. ☐1/2 in. Bentonite chips ☒ 32
c. ____ Other ☐ ____

7. Fine sand material: Manufacturer, product name & mesh size
a. BADGER
b. Volume added ____ ft^3

8. Filter pack material: Manufacturer, product name & mesh size
a. BADGER
b. Volume added ____ ft^3

9. Well casing: Flush threaded PVC schedule 40 ☒ 23 / Flush threaded PVC schedule 80 ☐ 24 / Other ☐ ____

10. Screen material: PVC
a. Screen type: Factory cut ☒ 11 / Continuous slot ☐ 01 / Other ☐ ____
b. Manufacturer DIETRICH
c. Slot size: 0.010 in.
d. Slotted length: 15.0 ft.

11. Backfill material (below filter pack): None ☒ 14 / Other ☐ ____

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] Firm: THE ENVIRONMENTAL MANAGEMENT CO LLC

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable

State of Wisconsin
Department of Natural Resources
PO Box 7921, Madison WI 53707-7921
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing

Form 3300-005 (R 8/07)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between $10-25,000, or imprisonment for up to on year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose 'eturn form to the appropriate DNR office and bureau. See instructions on reverse for more information.

Route to:

☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management ☒ Remediation/Redevelopment ☐ Other:

1. Well Location Information

County: Milwaukee
WI Unique Well No. Removed Well:
Hicap #:
Latitude / Longitude (Degrees and Minutes): ___ 'N ___ 'W
Method Code (see instructions):
1/4 / 1/4: 1/4: or Gov't Lot #:
Section: Township: N Range: ☐ E ☐ W
Well Street Address: 1960 S 67th Place
Well City, Village or Town: West Allis
Well ZIP Code: 53214
Subdivision Name:
Lot #:
Reason For Removal From Service: Site Redevelopment
WI Unique Well # of Replacement Well:

2. Facility / Owner Information

Facility Name: 67th Place Industrial Park/Lime Pit
Common Well Name: MW-5
Facility ID (FID or PWS):
License/Permit/Monitoring #:
Original Well Owner:
Present Well Ower: City of West Allis Community Development Authority
Mailing Address of Present Owner: 1445 S. 66th Street
City of Present Owner: West Allis
State: WI
ZIP Code: 53214

3. Well/Drillhole/Borehole Information

☒ Monitoring Well
☐ Water Well
☐ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 08/03/2004

If a Well Construction Report is available, please attach.

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug
☐ Other (specify):

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Groundsurface (ft.): 20
Casing Diameter (in.): 2"
Lower Drillhole Diameter (in.): 8.25"
Casing Depth (ft.): 20

Was well annular space grouted? ☐ Yes ☒ No ☐ Unknown

If yes, to what depth (feet)?
Depth to Water (feet): NA

4. Pump, Liner, Screen, Casing & Sealing Material

	Yes	No	N/A
Pump and piping removed?	☐	☒	☐
Liner(s) removed?	☐	☒	☐
Screen removed?	☐	☒	☐
Casing left inplace?	☒	☐	☐
Was casing cut off below surface?	☒	☐	☐
Did sealing material rise to surface?	☐	☒	☐
Did material settle after 24 hours?	☐	☒	☐
If yes, was hole retopped?	☐	☐	☒
If bentonite chips were used, were they hydrated with water from a known safe source?	☐	☐	☒

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain):

Sealing Materials
☐ Neat Cement Grout ☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Sand-Cement (Concrete) Grout ☐ Bentonite-Sand Slurry" "
☐ Concrete ☐ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:
☐ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole

5. Material Used to Fill Well / Drillhole	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
	Surface			

6. Comments

Well was damaged during grading activities.

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing: ARCADIS
License #:
Date of Filling & Sealing (mm/dd/yyyy): 10/01/2009
Street or Route: 126 N. Jefferson Street, Suite 400
Telephone Number:
City: Milwaukee State: WI ZIP Code: 53202
Signature of Person Doing Work: Rebecca A Lobbernagt
Date Signed: 1/04/10

DNR Use Only
Date Received:
Noted By:
Comments:

pressteVwi1074/limepit/graphics/logs/mw5_aband.ai

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Facility/Project Name: NOVAK SITE	Local Grid Location of Well: _____ ft. ☐N ☐S _____ ft. ☐E ☐W	Well Name: MW-5
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ° ' " Long. ° ' " or	Wis. Unique Well No. / DNR Well ID No.
Facility ID	St. Plane _____ ft. N, _____ ft. E. S/C/N	Date Well Installed: 08/03/2004 (m m d d y y y y)
Type of Well: Well Code 11 / MW	Section Location of Waste/Source: _____ 1/4 of _____ 1/4 of Sec. _____ T. _____ N. R. _____ ☐E ☐W	Well Installed By: Name (first, last) and Firm: MORAINE ENVIRONMENTAL, INC
Distance from Waste/Source _____ ft. / Enf. Stds. Apply ☒	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☒ Not Known	Gov. Lot Number: _____
		WTM 91 X = 683378, Y = 28373

A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation 723.89 ft. MSL
C. Land surface elevation 720.7 ft. MSL
D. Surface seal, bottom _____ ft. MSL or 1.0 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☒ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☒ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☒ No

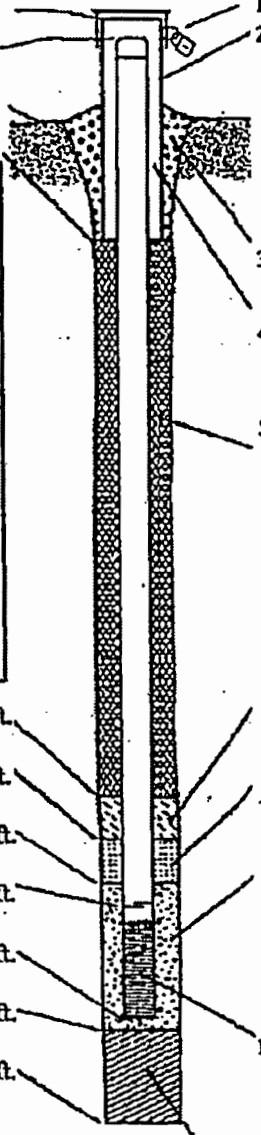
14. Drilling method used: Rotary ☐ 50 / Hollow Stem Auger ☒ 41 / Other ☐ _____

15. Drilling fluid used: Water ☐ 02 / Air ☐ 01 / Drilling Mud ☐ 03 / None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No
Describe _____

17. Source of water (attach analysis, if required):
N/A

E. Bentonite seal, top _____ ft. MSL or 1.0 ft.
F. Fine sand, top _____ ft. MSL or 4.0 ft.
G. Filter pack, top _____ ft. MSL or 5.0 ft.
H. Screen joint, top _____ ft. MSL or 5.0 ft.
I. Well bottom _____ ft. MSL or 20.0 ft.
J. Filter pack, bottom _____ ft. MSL or 20.0 ft.
K. Borehole, bottom _____ ft. MSL or 20.0 ft.
L. Borehole, diameter 8.3 in.
M. O.D. well casing 2.37 in.
N. I.D. well casing 2.07 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 4.0 in.
b. Length: 5.0 ft.
c. Material: Steel ☒ 04 / Other ☐ _____
d. Additional protection? ☐ Yes ☒ No
If yes, describe: _____
3. Surface seal: Bentonite ☐ 30 / Concrete ☒ 01 / Other ☐ _____
4. Material between well casing and protective pipe: Bentonite ☒ 30 / Other ☐ _____
5. Annular space seal: a. Granular/Chipped Bentonite ☒ 33
b. _____ Lbs/gal mud weight ... Bentonite-sand slurry ☐ 35
c. _____ Lbs/gal mud weight ..... Bentonite slurry ☐ 31
d. _____ % Bentonite ..... Bentonite-cement grout ☐ 50
e. _____ Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01 / Tremie pumped ☐ 02 / Gravity ☒ 08
6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite chips ☒ 32
c. _____ Other ☐ _____
7. Fine sand material: Manufacturer, product name & mesh size
a. BADGER
b. Volume added _____ ft^3
8. Filter pack material: Manufacturer, product name & mesh size
a. BADGER
b. Volume added _____ ft^3
9. Well casing: Flush threaded PVC schedule 40 ☒ 23 / Flush threaded PVC schedule 80 ☐ 24 / Other ☐ _____
10. Screen material: PVC
a. Screen type: Factory cut ☒ 11 / Continuous slot ☐ 01 / Other ☐ _____
b. Manufacturer DIETRICH
c. Slot size: 0.010 in.
d. Slotted length: 15.0 ft.
11. Backfill material (below filter pack): None ☒ 14 / Other ☐ _____

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: _____ Firm: THE ENVIRONMENTAL MANAGEMENT CO LLC

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable

State of Wisconsin
Department of Natural Resources
PO Box 7921, Madison WI 53707-7921
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing

Form 3300-005 (R 8/07)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between $10-25,000, or imprisonment for up to on year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose eturn form to the appropriate DNR office and bureau. See instructions on reverse for more information.

.oute to:

☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management ☒ Remediation/Redevelopment ☐ Other: _____

1. Well Location Information

County	Wi Unique Well No. Removed Well	Hicap #
Milwaukee	_ _ _ _ _	

Lattitude / Longitude (Degrees and Minutes) — Method Code (see instructions)

__ __ ° __ __ . __ __ __ 'N
__ __ ° __ __ . __ __ __ 'W

1/4 / 1/4	1/4	Section	Township	Range	
or Gov't Lot #			N		☐ E ☐ W

Well Street Address: 1960 S 67th Place

Well City, Village or Town	Well ZIP Code
West Allis	53214
Subdivision Name	Lot #

Reason For Removal From Service: Site Redevelopment

WI Unique Well # of Replacement Well: _ _ _ _ _

2. Facility / Owner Information

Facility Name	Common Well Name
67th Place Industrial Place/Lime Pit	MW-6

Facility ID (FID or PWS)

License/Permit/Monitoring #

Original Well Owner

Present Well Ower: City of West Allis Community Development Authority

Mailing Address of Present Owner: 1445 S. 66th Street

City of Present Owner	State	ZIP Code
West Allis	WI	53214

3. Well/Drillhole/Borehole Information

☒ Monitoring Well
☐ Water Well
☐ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 08/03/2004

If a Well Construction Report is available, please attach.

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug
☐ Other (specify): _____

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Groundsurface (ft.)	Casing Diameter (in.)
20	2
Lower Drillhole Diameter (in.)	Casing Depth (ft.)
8.25	20

Was well annular space grouted? ☐ Yes ☒ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)
	11.60

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☒ No	☐ N/A
Liner(s) removed?	☐ Yes	☒ No	☐ N/A
Screen removed?	☐ Yes	☒ No	☐ N/A
Casing left inplace?	☒ Yes	☐ No	☐ N/A
Was casing cut off below surface?	☒ Yes	☐ No	☐ N/A
Did sealing material rise to surface?	☒ Yes	☐ No	☐ N/A
Did material settle after 24 hours?	☐ Yes	☒ No	☐ N/A
If yes, was hole retopped?	☐ Yes	☐ No	☒ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☐ Yes	☐ No	☒ N/A

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☒ Screened & Poured (Bentonite Chips) ☐ Other (Explain): _____

Sealing Materials
☐ Neat Cement Grout ☐ Clay-Sand Slurry (11 lb/gal. wt.
☐ Sand-Cement (Concrete) Grout ☐ Bentonite-Sand Slurry " "
☐ Concrete ☐ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:
☒ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole

	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
3/8 inch Bentonite Chips	TOC	22.39	1 bag	

6. Comments

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing (mm/dd/yyyy)
ARCADIS		10/10/2009
Street or Route: 126 N. Jefferson Street, Suite 400		Telephone Number
City: Milwaukee	State: WI	ZIP Code: 53202

Signature of Person Doing Work: Rebecca A Robbennalt — Date Signed: 1/4/10

DNR Use Only

Date Received	Noted By
Comments	

presstel/wi1074/limepit/graphics/logs/mw6_abandal

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 7-98

Facility/Project Name: NOVAK SITE	Local Grid Location of Well: ____ ft. ☐N. ☐S. ____ ft. ☐E. ☐W.	Well Name: MW-6
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ____ ' ____ " Long. ____ ' ____ " or	Wis. Unique Well No. / DNR Well ID No.
Facility ID	St. Plane ____ ft. N. ____ ft. E. S/C/N	Date Well Installed: 08/03/2004 (m m d d y y y y)
Type of Well: Well Code 11 / MW	Section Location of Waste/Source: ____ 1/4 of ____ 1/4 of Sec. ____ T. ____ N. R. ____ ☐E ☐W	Well Installed By: Name (first, last) and Firm: MORAINE ENVIRONMENTAL, INC
Distance from Waste/Source ____ ft. / Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☒ Not Known	Gov. Lot Number: ____
		WTM 91 X = 683378, Y = 28373

A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation 724.84 ft. MSL
C. Land surface elevation 721.6 ft. MSL
D. Surface seal, bottom _____ ft. MSL or 1.0 ft.

12. USCS classification of soil near screen:
OP ☐ GM ☐ GC ☐ GW ☒ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☒ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☒ No

14. Drilling method used: Rotary ☐ 50
Hollow Stem Auger ☒ 41
Other ☐ ____

15. Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud ☐ 03 None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No
Describe ____

17. Source of water (attach analysis, if required):
N/A

E. Bentonite seal, top _____ ft. MSL or 1.0 ft.
F. Fine sand, top _____ ft. MSL or 4.0 ft.
G. Filter pack, top _____ ft. MSL or 5.0 ft.
H. Screen joint, top _____ ft. MSL or 5.0 ft.
I. Well bottom _____ ft. MSL or 20.0 ft.
J. Filter pack, bottom _____ ft. MSL or 20.0 ft.
K. Borehole, bottom _____ ft. MSL or 20.0 ft.
L. Borehole, diameter 8.3 in.
M. O.D. well casing 2.37 in.
N. I.D. well casing 2.07 in.

1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 4.0 in.
b. Length: 5.0 ft.
c. Material: Steel ☒ 04 Other ☐ ____
d. Additional protection? ☐ Yes ☒ No
If yes, describe: ____
3. Surface seal: Bentonite ☐ 30 Concrete ☒ 01 Other ☐ ____
4. Material between well casing and protective pipe: Bentonite ☒ 30 Other ☐ ____
5. Annular space seal: a. Granular/Chipped Bentonite ☒ 33
b. ____ Lbs/gal mud weight ... Bentonite-sand slurry ☐ 35
c. ____ Lbs/gal mud weight ..... Bentonite slurry ☐ 31
d. ____ % Bentonite ..... Bentonite-cement grout ☐ 50
e. ____ Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01 Tremie pumped ☐ 02 Gravity ☒ 08
6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite chips ☒ 32
c. ____ Other ☐ ____
7. Fine sand material: Manufacturer, product name & mesh size
a. BADGER
b. Volume added ____ ft^3
8. Filter pack material: Manufacturer, product name & mesh size
a. BADGER
b. Volume added ____ ft^3
9. Well casing: Flush threaded PVC schedule 40 ☒ 23 Flush threaded PVC schedule 80 ☐ 24 Other ☐ ____
10. Screen material: PVC
a. Screen type: Factory cut ☒ 11 Continuous slot ☐ 01 Other ☐ ____
b. Manufacturer DIETRICH
c. Slot size: 0.010 in.
d. Slotted length: 15.0 ft.
11. Backfill material (below filter pack): None ☒ 14 Other ☐ ____

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] Firm: THE ENVIRONMENTAL MANAGEMENT CO LLC

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable

State of Wisconsin
Department of Natural Resources
PO Box 7921, Madison WI 53707-7921
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing

Form 3300-005 (R 8/07)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between $10-25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

Route to:

☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management ☒ Remediation/Redevelopment ☐ Other: _____

1. Well Location Information

County	WI Unique Well No. / Removed Well	Hicap #
Milwaukee		

Lattitude / Longitude (Degrees and Minutes) — Method Code (see instructions)

— — ° — — . — — — 'N
— — ° — — . — — — 'W

1/4 / 1/4 or Gov't Lot #	1/4	Section	Township	Range	E / W
			N		☐ E ☐ W

Well Street Address: 1670 S. 67th Place

Well City, Village or Town	Well ZIP Code
West Allis	53214

Subdivision Name: | Lot #:

Reason For Removal From Service: Site Redevelopment

WI Unique Well # of Replacement Well: — — — — —

2. Facility / Owner Information

Facility Name: 67th Place Industrial Park/Lime Pit

Common Well Name: MW-7R

Facility ID (FID or PWS):

License/Permit/Monitoring #:

Original Well Owner:

Present Well Ower: City of West Allis Community Development Authority

Mailing Address of Present Owner: 1445 S. 66th Street

City of Present Owner	State	ZIP Code
West Allis	WI	53214

3. Well/Drillhole/Borehole Information

☒ Monitoring Well ☐ Water Well ☐ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 04/28/2009

If a Well Construction Report is available, please attach.

Construction Type:

☒ Drilled ☐ Driven (Sandpoint) ☐ Dug ☐ Other (specify): _____

Formation Type:

☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Groundsurface (ft.)	Casing Diameter (in.)
18	2
Lower Drillhole Diameter (in.)	**Casing Depth (ft.)**
8.25	18

Was well annular space grouted? ☐ Yes ☐ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)
	7.90

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☒ No	☐ N/A
Liner(s) removed?	☐ Yes	☒ No	☐ N/A
Screen removed?	☐ Yes	☒ No	☐ N/A
Casing left inplace?	☒ Yes	☐ No	☐ N/A
Was casing cut off below surface?	☒ Yes	☐ No	☐ N/A
Did sealing material rise to surface?	☒ Yes	☐ No	☐ N/A
Did material settle after 24 hours?	☐ Yes	☒ No	☐ N/A
If yes, was hole retopped?	☐ Yes	☒ No	☐ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☐ Yes	☐ No	☒ N/A

Required Method of Placing Sealing Material

☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☒ Screened & Poured (Bentonite Chips) ☐ Other (Explain): _____

Sealing Materials

☐ Neat Cement Grout ☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Sand-Cement (Concrete) Grout ☐ Bentonite-Sand Slurry
☐ Concrete ☐ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:

☒ Bentonite Pellets ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
Pure Gold Bentonite Chips	TOC	20.42	2/3 bag	

6. Comments

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing (mm/dd/yyyy)
ARCADIS/Rebecca Robbennalt		12/07/2009

Street or Route: 126 N. Jefferson Street, Suite 400 — Telephone Number:

City: Milwaukee | State: WI | ZIP Code: 53202 | Signature of Person Doing Work | Date Signed

DNR Use Only

Date Received | Noted By

Comments

presstel/wi1074/limepit/graphics/logs/mw7a_aband.ai

State of Wisconsin
Department of Natural Resources

Route to: Solid Waste ☐ Haz. Waste ☐ Waste Water ☐
Env. Response & Repair ☐ Underground Tanks ☐ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A 4/90

Facility/Project Name: Lime Pit	Local Grid Location of Well: _____ ft. ☐ N. ☐ S. _____ ft. ☐ E. ☐ W.	Well Name: MW-7R
Facility License, Permit or Monitoring Number	Local Grid Origin: Lat. _____ Long _____ or St. Plane _____ ft. N, _____ ft. E	Wis. Unique Well Number / DNR Well Number
Type of Well: Water Table Observation Well ☐ 11, Piezometer ☐ 12	Section Location of Waste/Source: ___ 1/4 of ___ 1/4 of Sec ___ T. ___ N,R ___ ☐ E. ☐ W.	Date Well Installed: 04/28/2009
Distance Well Is From Waste/Source Boundary: _____ ft.	Location of Well Relative to Waste/Source: ☐ Upgradient ☐ Sidegradient ☐ Downgradient ☐ Not Known	Well Installed by: Name (first, last) and Firm: Charles Rens, Giles Engineering
Is Well A Point of Enforcement Std. Application? ☐ Yes ☐ No		

A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation _____ ft. MSL
C. Land surface elevation _____ ft. MSL
D. Surface seal, bottom _____ ft MSL or 1 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis attached? ☐ Yes ☒ No

14. Drilling method used: Rotary ☐ 50; Hollow Stem Auger ☒ 41; _____ Other ☐ ___

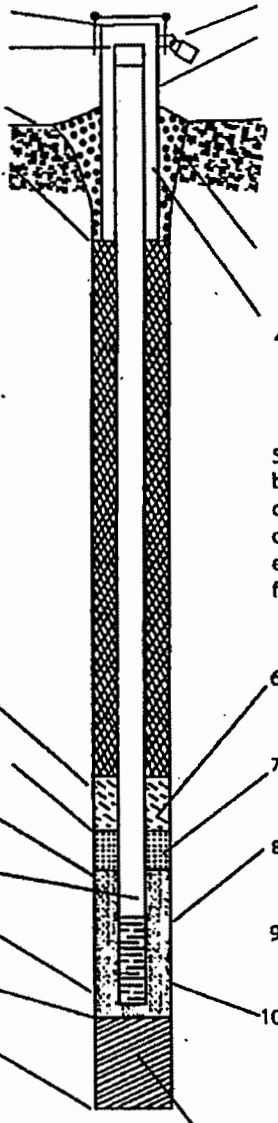
15. Drilling fluid used: Water ☐ 02 Air ☐ 01; Drilling Mud ☐ 03 None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No

Describe _____

17. Source of Water (attached analysis if required):
_____

E. Bentonite seal, top _____ ft. MSL or 1 ft.
F. Fine sand, top _____ ft. MSL or 2 ft.
G. Filter pack, top _____ ft. MSL or 2.5 ft.
H. Screen joint, top _____ ft. MSL or 3 ft.
I. Well bottom _____ ft. MSL or 18 ft.
J. Filter pack, bottom _____ ft. MSL or 18 ft.
K. Borehole bottom _____ ft. MSL or 18 ft.
L. Borehole diameter 8.25 in.
M. O.D. well casing 2.375 in.
N. I.D. well casing 2.016 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: _____ in.
b. Length: _____ ft.
c. Material: Steel ☒ 04; Other ☐ ___ _____
d. Additional protection? ☐ Yes ☒ No
If yes, describe: _____
3. Surface seal: Bentonite ☐ 30; Concrete ☒ 01; Other ☐ ___ _____
4. Material between well casing and protective pipe: Bentonite ☒ 30; Annular space seal ☐ ___; Other ☐ ___ _____
5. Annular space seal: a. Granular Bentonite ☒ 33
b. _____ Lbs/gal mud weight.... Bentonite-sand slurry ☐ 35
c. _____ Lbs/gal mud weight.. Bentonite-cement grout ☐ 31
d. _____ % Bentonite..... Bentonite-cement grout ☐ 50
e. _____ Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01; Tremie pumped ☐ 02; Gravity ☒ 08
6. Bentonite seal: a. Granular Bentonite ☐ 33
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. bentonite pellets ☒ 32
c. _____ Other ☐ ___
7. Fine sand Material: Manufacturer, product name and mesh size
a. #15 Red Flint ___
b. Volume added _____ ft^3
8. Filter pack material: Manufacturer, product name and mesh size
a. #40 Red Flint ___
b. Volume added _____ ft^3
9. Well casing: Flush threaded PVC schedule 40 ☒ 23; Flush threaded PVC schedule 80 ☐ 24; _____ Other ☐ ___
10. Screen material: sch. 40 PVC
a. Screen type: Factory cut ☒ 11; Continuous slot ☐ 01; _____ Other ☐ ___
b. Manufacturer Johnson
c. Slot size: 0.010 in.
d. Slotted length: _____ ft.
11. Backfill material (below filter pack): None ☒ 14; _____ Other ☐ ___

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: _____

Firm: ARCADIS
126 N. Jefferson Street
Milwaukee, WI (414) 276-7742

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 293, 295, and 299, Wis. Stats, and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

presstel/wl1074/limepit/graphics/logs/mw7r const.ai

State of Wisconsin
Department of Natural Resources
PO Box 7921, Madison WI 53707-7921
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing

Form 3300-005 (R 8/07)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between $10-25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

Route to:

☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management ☒ Remediation/Redevelopment ☐ Other: _____

1. Well Location Information

County	WI Unique Well No. / Removed Well	Hicap #
Milwaukee		

Latitude / Longitude (Degrees and Minutes) — Method Code (see instructions)

_ _ ° _ _ ' _ _ . _ _ _ 'N
_ _ ° _ _ ' _ _ . _ _ _ 'W

1/4 / 1/4 or Gov't Lot #	1/4	Section	Township	Range	E / W
			N		☐ E ☐ W

Well Street Address: 1960 S. 67th Place

Well City, Village or Town	Well ZIP Code
West Allis	53214

Subdivision Name	Lot #

Reason For Removal From Service	WI Unique Well # of Replacement Well
Site Redevelopment	

3. Well/Drillhole/Borehole Information

☒ Monitoring Well ☐ Water Well ☐ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 08/09/2004

If a Well Construction Report is available, please attach.

Construction Type:

☒ Drilled ☐ Driven (Sandpoint) ☐ Dug ☐ Other (specify): _____

Formation Type:

☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Groundsurface (ft.)	Casing Diameter (in.)
20	2
Lower Drillhole Diameter (in.)	**Casing Depth (ft.)**
8.25	20

Was well annular space grouted? ☐ Yes ☒ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)
	8.75

2. Facility / Owner Information

Facility Name	Common Well Name
67th Place Industrial Park/Lime Pit	MW-10

Facility ID (FID or PWS):

License/Permit/Monitoring #:

Original Well Owner:

Present Well Ower: City of West Allis Community Development Authority

Mailing Address of Present Owner: 1445 S. 66th Street

City of Present Owner	State	ZIP Code
West Allis	WI	53214

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☒ No	☐ N/A
Liner(s) removed?	☐ Yes	☒ No	☐ N/A
Screen removed?	☐ Yes	☒ No	☐ N/A
Casing left inplace?	☒ Yes	☐ No	☐ N/A
Was casing cut off below surface?	☒ Yes	☐ No	☐ N/A
Did sealing material rise to surface?	☒ Yes	☐ No	☐ N/A
Did material settle after 24 hours?	☐ Yes	☒ No	☐ N/A
If yes, was hole retopped?	☐ Yes	☐ No	☒ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☐ Yes	☐ No	☒ N/A

Required Method of Placing Sealing Material

☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☒ Screened & Poured (Bentonite Chips) ☐ Other (Explain): _____

Sealing Materials

☐ Neat Cement Grout ☐ Clay-Sand Slurry (11 lb/gal. wt.)
☐ Sand-Cement (Concrete) Grout ☐ Bentonite-Sand Slurry
☐ Concrete ☐ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:

☒ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
3/8 inch Bentonite Chips	TOC	22.81	1/2 bag	

6. Comments

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing (mm/dd/yyyy)
ARCADIS		10/14/2009

Street or Route	Telephone Number
126 N. Jefferson Street, Suite 400	

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Milwaukee	WI	53202	Rebecca Robbennolt	11/04/10

DNR Use Only

Date Received	Noted By

Comments:

presstel/wi1074/limepit/graphics/logs/mw10_aband.ai

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Facility/Project Name: NOVAK SITE	Local Grid Location of Well: _____ ft. ☐N. ☐S. _____ ft. ☐E. ☐W.	Well Name: MW-10
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ° ' " Long. ° ' " or	Wis. Unique Well No. / DNR Well ID No.
Facility ID	St. Plane _____ ft. N. _____ ft. E. S/C/N	Date Well Installed: 08/09/2004 (m m d d y y y y)
Type of Well: Well Code 11 / MW	Section Location of Waste/Source: _____ 1/4 of _____ 1/4 of Sec. ____ T. ____ N. R. ____ ☐E ☐W	Well Installed By: Name (first, last) and Firm: HORAIHE ENVIRONMENTAL, INC
Distance from Waste/Source _____ ft. / Enf. Stds. Apply ☒	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☒ Not Known	Gov. Lot Number: _____
		WTM 91 X = 683378, Y = 2837

A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation 727.07 ft. MSL
C. Land surface elevation 724.1 ft. MSL
D. Surface seal, bottom _____ ft. MSL or 1.0 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☒ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☒ No

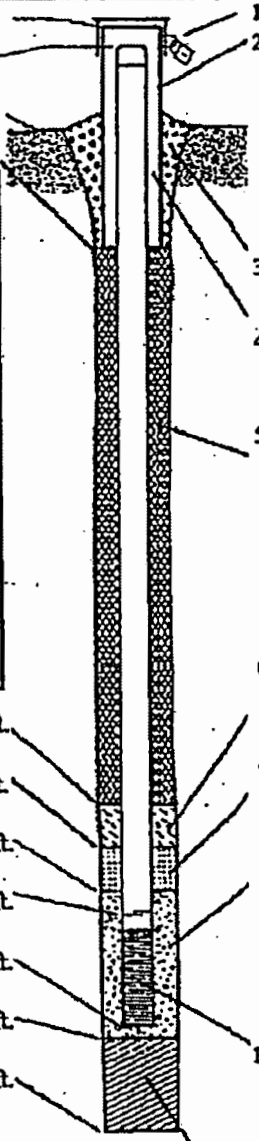
14. Drilling method used: Rotary ☐ 50 / Hollow Stem Auger ☒ 41 / Other ☐ _____

15. Drilling fluid used: Water ☐ 02 / Air ☐ 01 / Drilling Mud ☐ 03 / None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No
Describe _____

17. Source of water (attach analysis, if required): N/A

E. Bentonite seal, top _____ ft. MSL or 1.0 ft.
F. Fine sand, top _____ ft. MSL or 4.0 ft.
G. Filter pack, top _____ ft. MSL or 5.0 ft.
H. Screen joint, top _____ ft. MSL or 5.0 ft.
I. Well bottom _____ ft. MSL or 20.0 ft.
J. Filter pack, bottom _____ ft. MSL or 20.0 ft.
K. Borehole, bottom _____ ft. MSL or 20.0 ft.
L. Borehole, diameter 8.3 in.
M. O.D. well casing 2.37 in.
N. I.D. well casing 2.07 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 4.0 in.
b. Length: 5.0 ft.
c. Material: Steel ☒ 04 / Other ☐ _____
d. Additional protection? ☐ Yes ☒ No
If yes, describe: _____
3. Surface seal: Bentonite ☐ 30 / Concrete ☒ 01 / Other ☐ _____
4. Material between well casing and protective pipe: Bentonite ☒ 30 / Other ☐ _____
5. Annular space seal: a. Granular/Chipped Bentonite ☒ 33
b. _____ Lbs/gal mud weight ... Bentonite-sand slurry ☐ 35
c. _____ Lbs/gal mud weight ..... Bentonite slurry ☐ 31
d. _____ % Bentonite ..... Bentonite-cement grout ☐ 50
e. _____ Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01 / Tremie pumped ☐ 02 / Gravity ☒ 08
6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite chips ☒ 32
c. _____ Other ☐ _____
7. Fine sand material: Manufacturer, product name & mesh size
a. BADGER
b. Volume added _____ ft^3
8. Filter pack material: Manufacturer, product name & mesh size
a. BADGER
b. Volume added _____ ft^3
9. Well casing: Flush threaded PVC schedule 40 ☒ 23 / Flush threaded PVC schedule 80 ☐ 24 / Other ☐ _____
10. Screen material: PVC
a. Screen type: Factory cut ☒ 11 / Continuous slot ☐ 01 / Other ☐ _____
b. Manufacturer DIETRICH
c. Slot size: 0.010 in.
d. Slotted length: 15.0 ft.
11. Backfill material (below filter pack): None ☒ 14 / Other ☐ _____

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] Firm: THE ENVIRONMENTAL MANAGEMENT CO LLC

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file

State of Wisconsin
Department of Natural Resources
PO Box 7921, Madison WI 53707-7921
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing

Form 3300-005 (R 8/07) Page 1 of

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between $10-25,000, or imprisonment for up to or year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

Route to:

☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management ☒ Remediation/Redevelopment ☐ Other: _____

1. Well Location Information

County	WI Unique Well No. Removed Well	Hicap #
Milwaukee		

Lattitude / Longitude (Degrees and Minutes) — Method Code (see instructions)

— — ° — — . — — — 'N
— — ° — — . — — — 'W

1/4 / 1/4 or Gov't Lot #	1/4	Section	Township	Range
			N	☐ E ☐ W

Well Street Address: 1960 S. 67th Place

Well City, Village or Town	Well ZIP Code
West Allis	53214

Subdivision Name — Lot #

Reason For Removal From Service: Site Redevelopment

WI Unique Well # of Replacement Well: — — — — —

3. Well/Drillhole/Borehole Information

☒ Monitoring Well ☐ Water Well ☐ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 08/10/2004

If a Well Construction Report is available, please attach.

Construction Type:

☒ Drilled ☐ Driven (Sandpoint) ☐ Dug ☐ Other (specify): _____

Formation Type:

☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Groundsurface (ft.)	Casing Diameter (in.)
20	2
Lower Drillhole Diameter (in.)	**Casing Depth (ft.)**
8.25	20

Was well annular space grouted? ☐ Yes ☒ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)
	15.15

2. Facility / Owner Information

Facility Name	Common Well Name
67th Place Industrial Park/Lime Pit	MW-12

Facility ID (FID or PWS)

License/Permit/Monitoring #

Original Well Owner

Present Well Ower: City of West Allis Community Development Authority

Mailing Address of Present Owner: 1445 S. 66th Street

City of Present Owner	State	ZIP Code
West Allis	WI	53214

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☒ No	☐ N/
Liner(s) removed?	☐ Yes	☒ No	☐ N/
Screen removed?	☐ Yes	☒ No	☐ N/
Casing left inplace?	☒ Yes	☐ No	☐ N/
Was casing cut off below surface?	☒ Yes	☐ No	☐ N/
Did sealing material rise to surface?	☒ Yes	☐ No	☐ N/
Did material settle after 24 hours?	☐ Yes	☒ No	☐ N/
If yes, was hole retopped?	☐ Yes	☐ No	☒ N/
If bentonite chips were used, were they hydrated with water from a known safe source?	☐ Yes	☐ No	☒ N/

Required Method of Placing Sealing Material

☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☒ Screened & Poured (Bentonite Chips) ☐ Other (Explain): _____

Sealing Materials

☐ Neat Cement Grout ☐ Clay-Sand Slurry (11 lb./gal. wt.
☐ Sand-Cement (Concrete) Grout ☐ Bentonite-Sand Slurry
☐ Concrete ☐ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:

☒ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
3/8 inch Bentonite Chips	TOC	22.87	3/4 bag	

6. Comments

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing (mm/dd/yyyy)
ARCADIS		10/10/2009

Street or Route: 126 N. Jefferson Street, Suite 400 — Telephone Number

City: Milwaukee — State: WI — ZIP Code: 53202

Signature of Person Doing Work: Rebecca A Robbennolt — Date Signed: 11/04/10

DNR Use Only

Date Received — Noted By

Comments

presstel/wi1074/limepit/graphics/logs/mw12_aband.ai

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Facility/Project Name: NOVAK SITE	Local Grid Location of Well: ____ ft ☐N ☐S ____ ft ☐E ☐W	Well Name: MW-12
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ____ ' ____ " Long. ____ ' ____ " or	Wis. Unique Well No. / DNR Well ID No.
Facility ID	St. Plane ____ ft. N. ____ ft. E. S/C/N	Date Well Installed: 08/10/2004 (m m d d y y y y)
Type of Well — Well Code 11 / mw	Section Location of Waste/Source: ____ 1/4 of ____ 1/4 of Sec. ____ T. ____ N, R. ____ ☐E ☐W	Well Installed By: Name (first, last) and Firm: HORAINE ENVIRONMENTAL, INC
Distance from Waste/Source ____ ft. / Enf. Stds. Apply ☒	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☒ Not Known / Gov. Lot Number	WTM 91 X = 683378, Y = 28377

A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation 723.63 ft. MSL
C. Land surface elevation 720.2 ft. MSL
D. Surface seal, bottom _____ ft. MSL or 1.0 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☒ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☒ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes. ☒ No

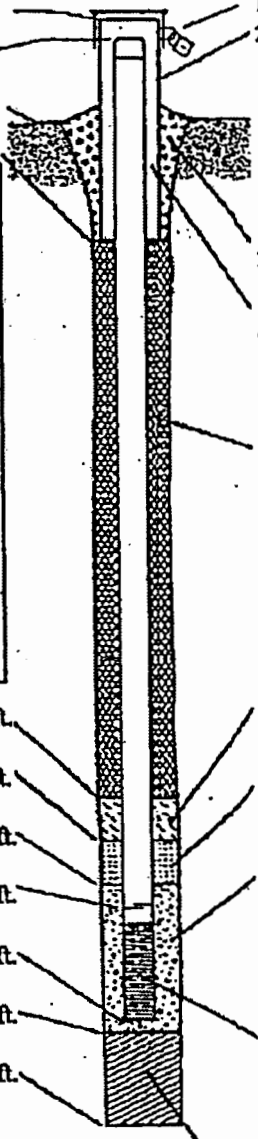
14. Drilling method used: Rotary ☐ 50 / Hollow Stem Auger ☒ 41 / Other ☐ ____

15. Drilling fluid used: Water ☐ 02 Air ☐ 01 / Drilling Mud ☐ 03 None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No
Describe _____

17. Source of water (attach analysis, if required):
N/A

E. Bentonite seal, top _____ ft. MSL or 1.0 ft.
F. Fine sand, top _____ ft. MSL or 4.0 ft.
G. Filter pack, top _____ ft. MSL or 5.0 ft.
H. Screen joint, top _____ ft. MSL or 5.0 ft.
I. Well bottom _____ ft. MSL or 20.0 ft.
J. Filter pack, bottom _____ ft. MSL or 20.0 ft.
K. Borehole, bottom _____ ft. MSL or 20.0 ft.
L. Borehole, diameter 8.3 in.
M. O.D. well casing 2.37 in.
N. I.D. well casing 2.07 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 4.0 in.
b. Length: 5.0 ft.
c. Material: Steel ☒ 04 / Other ☐ ____
d. Additional protection? ☐ Yes ☒ No
If yes, describe: _____
3. Surface seal: Bentonite ☐ 30 / Concrete ☒ 01 / Other ☐ ____
4. Material between well casing and protective pipe: Bentonite ☒ 30 / Other ☐ ____
5. Annular space seal: a. Granular/Chipped Bentonite ☒ 33
b. _____ Lbs/gal mud weight ... Bentonite-sand slurry ☐ 35
c. _____ Lbs/gal mud weight ..... Bentonite slurry ☐ 31
d. _____ % Bentonite ..... Bentonite-cement grout ☐ 50
e. _____ Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01 / Tremie pumped ☐ 02 / Gravity ☒ 08
6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite chips ☒ 32
c. _____ Other ☐ ____
7. Fine sand material: Manufacturer, product name & mesh size
a. BADGER
b. Volume added _____ ft^3
8. Filter pack material: Manufacturer, product name & mesh size
a. BADGER
b. Volume added _____ ft^3
9. Well casing: Flush threaded PVC schedule 40 ☒ 23 / Flush threaded PVC schedule 80 ☐ 24 / Other ☐ ____
10. Screen material: PVC
a. Screen type: Factory cut ☒ 11 / Continuous slot ☐ 01 / Other ☐ ____
b. Manufacturer DIETRICH
c. Slot size: 0.010 in.
d. Slotted length: 15.0 ft.
11. Backfill material (below filter pack): None ☒ 14 / Other ☐ ____

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: _____ Firm: THE ENVIRONMENTAL MANAGEMENT CO LLC

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information, including where the completed forms should be

State of Wisconsin
Department of Natural Resources
PO Box 7921, Madison WI 53707-7921
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing

Form 3300-005 (R 8/07) Page 1 of 2

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between $10-25,000, or imprisonment for up to or year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

Route to:

☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management ☒ Remediation/Redevelopment ☐ Other: _____

1. Well Location Information

County	WI Unique Well No. Removed Well	Hicap #
Milwaukee	— — — — — —	

Lattitude / Longitude (Degrees and Minutes) — — ° — — . — — — ' N / — — — ° — — . — — — ' W

Method Code (see instructions)

1/4 / 1/4	1/4	Section	Township	Range
or Gov't Lot #			N	☐ E ☐ W

Well Street Address: 1960 S 67th Place

Well City, Village or Town	Well ZIP Code
West Allis	53214

Subdivision Name	Lot #

Reason For Removal From Service	WI Unique Well # of Replacement Well
Site Redevelopment	— — — — —

2. Facility / Owner Information

Facility Name	Common Well Name
67th Place Industrial Park/Lime Pit	MW-13

Facility ID (FID or PWS)

License/Permit/Monitoring #

Original Well Owner

Present Well Ower: City of West Allis Community Development Authority

Mailing Address of Present Owner: 1445 S. 66th Street

City of Present Owner	State	ZIP Code
West Allis	WI	53214

3. Well/Drillhole/Borehole Information

☒ Monitoring Well ☐ Water Well ☐ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 08/10/2004

If a Well Construction Report is available, please attach.

Construction Type:

☒ Drilled ☐ Driven (Sandpoint) ☐ Dug ☐ Other (specify): _____

Formation Type:

☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Groundsurface (ft.)	Casing Diameter (in.)
20	2
Lower Drillhole Diameter (in.)	**Casing Depth (ft.)**
8.25	20

Was well annular space grouted? ☐ Yes ☒ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)
	NA/Damaged

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☒ No	☐ N/A
Liner(s) removed?	☐ Yes	☒ No	☐ N/A
Screen removed?	☐ Yes	☒ No	☐ N/A
Casing left inplace?	☒ Yes	☐ No	☐ N/A
Was casing cut off below surface?	☒ Yes	☐ No	☐ N/A
Did sealing material rise to surface?	☒ Yes	☐ No	☐ N/A
Did material settle after 24 hours?	☐ Yes	☒ No	☐ N/A
If yes, was hole retopped?	☐ Yes	☐ No	☒ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☐ Yes	☐ No	☒ N/A

Required Method of Placing Sealing Material

☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped ☒ Screened & Poured (Bentonite Chips) ☐ Other (Explain): _____

Sealing Materials

☐ Neat Cement Grout ☐ Clay-Sand Slurry (11 lb./gal.wt.)
☐ Sand-Cement (Concrete) Grout ☐ Bentonite-Sand Slurry
☐ Concrete ☐ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:

☒ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole

	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
3/8 inch Bentonite Chips	Surface	7.6	1/4 bag	

6. Comments

Monitoring Well MW-13 was damaged during grading activities. The well was dug out using a backhoe remaining screen/piping abandoned.

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing (mm/dd/yyyy)
ARCADIS		10/01/2009

Street or Route	Telephone Number
126 N. Jefferson Street, Suite 400	

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Milwaukee	WI	53202	Rebecca A Robbennolt	11/04/10

DNR Use Only

Date Received	Noted By

Comments

presstel/wl1074/limepit/graphics/logs/mw13_aband.ai

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 7-98

Facility/Project Name: NOVAK SITE	Local Grid Location of Well: ____ ft. ☐N. ☐S. ____ ft. ☐E. ☐W.	Well Name: MW-13
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ____ ' ____ " Long. ____ ' ____ " or	Wis. Unique Well No. / DNR Well ID No.
Facility ID	St. Plane ____ ft. N. ____ ft. E. S/C/N	Date Well Installed: 08/10/2004 (m m d d y y y y)
Type of Well: Well Code 11 / MW	Section Location of Waste/Source: ____ 1/4 of ____ 1/4 of Sec. ____ T. ____ N. R. ____ ☐E ☐W	Well Installed By: Name (first, last) and Firm: MORAINE ENVIRONMENTAL, INC
Distance from Waste/Source ____ ft. / Enf. Stds. Apply ☒	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☒ Not Known	Gov. Lot Number: ____
		WTM91 X = 683378, Y = 28373

A. Protective pipe, top elevation ____ ft. MSL

B. Well casing, top elevation 727.44 ft. MSL

C. Land surface elevation 724.3 ft. MSL

D. Surface seal, bottom ____ ft. MSL or 1.0 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☒ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☒ No

14. Drilling method used: Rotary ☐ 50
Hollow Stem Auger ☒ 41
Other ☐

15. Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud ☐ 03 None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No
Describe ____

17. Source of water (attach analysis, if required):
N/A

E. Bentonite seal, top ____ ft. MSL or 1.0 ft.

F. Fine sand, top ____ ft. MSL or 4.0 ft.

G. Filter pack, top ____ ft. MSL or 5.0 ft.

H. Screen joint, top ____ ft. MSL or 5.0 ft.

I. Well bottom ____ ft. MSL or 20.0 ft.

J. Filter pack, bottom ____ ft. MSL or 20.0 ft.

K. Borehole, bottom ____ ft. MSL or 20.0 ft.

L. Borehole, diameter 8.3 in.

M. O.D. well casing 2.37 in.

N. I.D. well casing 2.07 in.

1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 4.0 in.
b. Length: 5.0 ft.
c. Material: Steel ☒ 04 Other ☐
d. Additional protection? ☐ Yes ☒ No
If yes, describe: ____
3. Surface seal: Bentonite ☐ 30 Concrete ☒ 01 Other ☐
4. Material between well casing and protective pipe: Bentonite ☒ 30 Other ☐
5. Annular space seal: a. Granular/Chipped Bentonite ☒ 33
b. ____ Lbs/gal mud weight ... Bentonite-sand slurry ☐ 35
c. ____ Lbs/gal mud weight ..... Bentonite slurry ☐ 31
d. ____ % Bentonite ..... Bentonite-cement grout ☐ 50
e. ____ ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01 Tremie pumped ☐ 02 Gravity ☒ 08
6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite chips ☒ 32
c. ____ Other ☐
7. Fine sand material: Manufacturer, product name & mesh size
a. BADGER
b. Volume added ____ ft^3
8. Filter pack material: Manufacturer, product name & mesh size
a. BADGER
b. Volume added ____ ft^3
9. Well casing: Flush threaded PVC schedule 40 ☒ 23 Flush threaded PVC schedule 80 ☐ 24 Other ☐
10. Screen material: PVC
a. Screen type: Factory cut ☒ 11 Continuous slot ☐ 01 Other ☐
b. Manufacturer DIETRICH
c. Slot size: 0.010 in.
d. Slotted length: 15.0 ft.
11. Backfill material (below filter pack): None ☒ 14 Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] Firm: THE ENVIRONMENTAL MANAGEMENT CO LLC

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file [illegible] or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable

State of Wisconsin
Department of Natural Resources
PO Box 7921, Madison WI 53707-7921
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing

Form 3300-005 (R 8/07)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between $10-25,000, or imprisonment for up to on year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose eturn form to the appropriate DNR office and bureau. See instructions on reverse for more information.

Route to:

☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management ☒ Remediation/Redevelopment ☐ Other:

1. Well Location Information

County	WI Unique Well No. Removed Well	Hicap #
Milwaukee		

Lattitude / Longitude (Degrees and Minutes) ___ ___ ° ___ ___ . ___ ___ 'N ___ ___ ° ___ ___ . ___ ___ 'W

Method Code (see instructions)

1/4 / 1/4 or Gov't Lot #	1/4	Section	Township	Range
			N	☐ E ☐ W

Well Street Address: 1670 S. 67th Place

Well City, Village or Town	Well ZIP Code
West Allis	53214

Subdivision Name	Lot #

Reason For Removal From Service	WI Unique Well # of Replacement Well
Site Redevelopment	

3. Well/Drillhole/Borehole Information

☒ Monitoring Well ☐ Water Well ☐ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 01/10/2007

If a Well Construction Report is available, please attach.

Construction Type:

☒ Drilled ☐ Driven (Sandpoint) ☐ Dug ☐ Other (specify):

Formation Type:

☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Groundsurface (ft.)	Casing Diameter (in.)
19.5	2
Lower Drillhole Diameter (in.)	**Casing Depth (ft.)**
8.25	19.5

Was well annular space grouted? ☐ Yes ☐ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)
	NA

2. Facility / Owner Information

Facility Name	Common Well Name
67th Place Industrial Park/Lime Pit	MW-15

Facility ID (FID or PWS):

License/Permit/Monitoring #:

Original Well Owner:

Present Well Ower: City of West Allis Community Development Authority

Mailing Address of Present Owner: 1445 S. 66th Street

City of Present Owner	State	ZIP Code
West Allis	WI	53214

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☒ No	☐ N/A
Liner(s) removed?	☐ Yes	☒ No	☐ N/A
Screen removed?	☐ Yes	☒ No	☐ N/A
Casing left inplace?	☒ Yes	☐ No	☐ N/A
Was casing cut off below surface?	☒ Yes	☐ No	☐ N/A
Did sealing material rise to surface?	☒ Yes	☐ No	☐ N/A
Did material settle after 24 hours?	☐ Yes	☒ No	☐ N/A
If yes, was hole retopped?	☐ Yes	☒ No	☐ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☐ Yes	☐ No	☒ N/A

Required Method of Placing Sealing Material

☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped ☒ Screened & Poured (Bentonite Chips) ☐ Other (Explain):

Sealing Materials

☐ Neat Cement Grout ☐ Clay-Sand Slurry (11 lb./gal. wt.) ☐ Sand-Cement (Concrete) Grout ☐ Bentonite-Sand Slurry ☐ Concrete ☐ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:

☒ Bentonite Pellets ☐ Bentonite - Cement Grout ☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole

Material Used to Fill Well / Drillhole	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
3/8" Bentonite Chips	SURFACE	--	1/3 bag	

6. Comments

Well was damaged during construction. Bentonite chips poured into remaining casing. No water level taken, top of casing damaged.

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing (mm/dd/yyyy)
ARCADIS/Rebecca Robbennalt		11/17/2009

Street or Route	Telephone Number
126 N. Jefferson Street, Suite 400	

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Milwaukee	WI	53202	Rebecca A Robbennalt	1/04/10

DNR Use Only

Date Received	Noted By

Comments:

presstel/wi1074/limepit/graphics/logs/mw15_abandal

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 7-93

Facility/Project Name: LINE PIT SITE	Local Grid Location of Well: ft. ☐N ☐S, ft. ☐E ☐W	Well Name: MW-15
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ° ' " Long. ° ' " or	Wis. Unique Well No. / DNR Well ID No.
Facility ID: 241222520	St. Plane ft. N, ft. E. S/C/N	Date Well Installed: 01/10/2007 (m m d d y y y y)
Type of Well: Well Code 11 / MW	Section Location of Waste/Source: NW 1/4 of SE 1/4 of Sec. 3 T. 6 N. R. 21 ☐E ☐W	Well Installed By: Name (first, last) and Firm: MORAINE ENVIRONMENTAL ADAM SWEET
Distance from Waste/Source: 25 ft. / Ext. Strs. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☒ Downgradient n ☐ Not Known	Gov't Lot Number

A. Protective pipe, top elevation _____ ft. MSL

B. Well casing, top elevation _____ ft. MSL

C. Land surface elevation _____ ft. MSL

D. Surface seal, bottom _____ ft. MSL or 1.0 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☒ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☒ No

14. Drilling method used: Rotary ☐ 50
Hollow Stem Auger ☒ 41
Other ☐ ___

15. Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud ☐ 03 None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No
Describe ___

17. Source of water (attach analysis, if required):
N/A

E. Bentonite seal, top _____ ft. MSL or 1.0 ft.

F. Fine sand, top _____ ft. MSL or 6.5 ft.

G. Filter pack, top _____ ft. MSL or 7.5 ft.

H. Screen joint, top _____ ft. MSL or 9.5 ft.

I. Well bottom _____ ft. MSL or 19.5 ft.

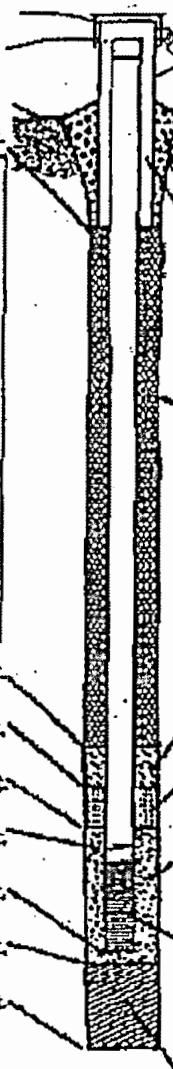
J. Filter pack, bottom _____ ft. MSL or 19.5 ft.

K. Borehole, bottom _____ ft. MSL or 19.5 ft.

L. Borehole, diameter 8.3 in.

M. O.D. well casing 2.37 in.

N. I.D. well casing 2.06 in.



1. Cap and lock? ☒ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 8.0 in.
b. Length: 4.0 ft.
c. Material: Steel ☒ 04
Other ☐ ___
d. Additional protection? ☐ Yes ☒ No
If yes, describe: ___

3. Surface seal: Bentonite ☐ 30
Concrete ☒ 01
Other ☐ ___

4. Material between well casing and protective pipe:
Bentonite ☒ 30
Other ☐ ___

5. Annular space seal: a. Granular/Chipped Bentonite ☒ 33
b. ___ Lbs/gal mud weight ... Bentonite-sand slurry ☐ 35
c. ___ Lbs/gal mud weight ..... Bentonite slurry ☐ 31
d. ___ % Bentonite ..... Bentonite-cement grout ☐ 50
e. ___ Ft³ volume added for any of the above
f. How installed: Tremie ☐ 01
Tremie pumped ☐ 02
Gravity ☒ 08

6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite chips ☒ 32
c. ___ Other ☐ ___

7. Fine sand material: Manufacturer, product name & mesh size
a. ___
b. Volume added ___ ft³

8. Filter pack material: Manufacturer, product name & mesh size
a. ___
b. Volume added ___ ft³

9. Well casing: Flush threaded PVC schedule 40 ☒ 23
Flush threaded PVC schedule 80 ☐ 24
Other ☐ ___

10. Screen material: PVC
a. Screen type: Factory cut ☒ 11
Continuous slot ☐ 01
Other ☐ ___
b. Manufacturer ___
c. Slot size: 0.010 in.
d. Slotted length: 10.0 ft.

11. Backfill material (below filter pack): None ☒ 14
Other ☐ ___

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Adam Hosler Firm: TEMCO

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and statutes involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources
PO Box 7921, Madison WI 53707-7921
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing

Form 3300-005 (R 8/07) Page 1 of

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between $10-25,000, or imprisonment for up to or year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose 'eturn form to the appropriate DNR office and bureau. See instructions on reverse for more information.

Route to:

☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management ☒ Remediation/Redevelopment ☐ Other: _____

1. Well Location Information

County	WI Unique Well No. Removed Well	Hicap #
Milwaukee		

Lattitude / Longitude (Degrees and Minutes) ___ ___ ' ___ ___ . ___ ___ ___ 'N ___ ___ ' ___ ___ . ___ ___ ___ 'W — Method Code (see instructions)

1/4 / 1/4	1/4	Section	Township	Range
or Gov't Lot #			N	☐ E ☐ W

Well Street Address: 1670 S. 67th Place

Well City, Village or Town	Well ZIP Code
West Allis	53214

Subdivision Name	Lot #

Reason For Removal From Service	WI Unique Well # of Replacement Well
Site Redevelopment	___ ___ ___ ___ ___

3. Well / Drillhole / Borehole Information

☒ Monitoring Well ☐ Water Well ☐ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 01/10/2007

If a Well Construction Report is available, please attach.

Construction Type:

☒ Drilled ☐ Driven (Sandpoint) ☐ Dug ☐ Other (specify): _____

Formation Type:

☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Groundsurface (ft.)	Casing Diameter (in.)
19.5	2
Lower Drillhole Diameter (in.)	**Casing Depth (ft.)**
8.25	19.5

Was well annular space grouted? ☐ Yes ☐ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)
	NA

2. Facility / Owner Information

Facility Name	Common Well Name
67th Place Industrial Park/Lime Pit	MW-16

Facility ID (FID or PWS):

License/Permit/Monitoring #:

Original Well Owner:

Present Well Ower: City of West Allis Community Development Authority

Mailing Address of Present Owner: 1445 S. 66th Street

City of Present Owner	State	ZIP Code
West Allis	WI	53214

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☒ No	☐ N/A
Liner(s) removed?	☐ Yes	☒ No	☐ N/A
Screen removed?	☐ Yes	☒ No	☐ N/A
Casing left inplace?	☒ Yes	☐ No	☐ N/A
Was casing cut off below surface?	☒ Yes	☐ No	☐ N/A
Did sealing material rise to surface?	☒ Yes	☐ No	☐ N/A
Did material settle after 24 hours?	☐ Yes	☒ No	☐ N/A
If yes, was hole retopped?	☐ Yes	☒ No	☐ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☐ Yes	☐ No	☒ N/A

Required Method of Placing Sealing Material

☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped ☒ Screened & Poured (Bentonite Chips) ☐ Other (Explain): _____

Sealing Materials

☐ Neat Cement Grout ☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Sand-Cement (Concrete) Grout ☐ Bentonite-Sand Slurry
☐ Concrete ☐ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:

☒ Bentonite Pellets ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole

Material Used to Fill Well / Drillhole	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
3/8" Bentonite Chips	SURFACE	--	1/3 bag	

6. Comments

Well was damaged during construction. No water level taken due to damage of top of casing. Bentonite chips poured into remaining casing.

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing (mm/dd/yyyy)
ARCADIS/Rebecca Robbennalt		11/17/2009

Street or Route	Telephone Number
126 N. Jefferson Street, Suite 400	

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Milwaukee	WI	53202	Rebecca A Robbennalt	11/04/10

DNR Use Only

Date Received	Noted By

Comments:

presstel/wi1074/limepit/graphics/logs/mw16_aband.ai

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐ _____

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 7-98

Facility/Project Name: LIMA AIR SITE	Local Grid Location of Well: ☐N ☐S _____ ft. ☐E ☐W _____ ft.	Well Name: MW-16
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ____ ____ ____ Long. ____ ____ ____ or	Wis. Unique Well No. / DNR Well ID No.
Facility ID: 241222520	St. Plane _____ ft. N. _____ ft. E. S/C/N	Date Well Installed: 01/10/2007 (m m d d y y y y)
Type of Well: Well Code 11 / MW	Section Location of Waste/Source: NW 1/4 of SE 1/4 of Sec. 3 T. 6 N. R. 2 ☐E ☐W	Well Installed By: Name (first, last) and Firm: MORAINE ENVIRONMENTAL ADAM SWEET
Distance from Waste/Source: 20 ft.	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☒ Downgradient n ☐ Not Known	Gov. Lot Number: _____
Enf. Stds. Apply: ☐		

A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation _____ ft. MSL
C. Land surface elevation _____ ft. MSL
D. Surface seal, bottom _____ ft. MSL or 1.0 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☒
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☒ No

14. Drilling method used: Rotary ☐ 50
Hollow Stem Auger ☒ 41
Other ☐ _____

15. Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud ☐ 03 None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No
Describe _____

17. Source of water (attach analysis, if required):
N/A

E. Bentonite seal, top _____ ft. MSL or 1.0 ft.
F. Fine sand, top _____ ft. MSL or 6.5 ft.
G. Filter pack, top _____ ft. MSL or 7.5 ft.
H. Screen joint, top _____ ft. MSL or 9.5 ft.
I. Well bottom _____ ft. MSL or 19.5 ft.
J. Filter pack, bottom _____ ft. MSL or 19.5 ft.
K. Borehole, bottom _____ ft. MSL or 19.5 ft.
L. Borehole, diameter 8.3 in.
M. O.D. well casing 2.37 in.
N. I.D. well casing 2.06 in.

1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 8.0 in.
b. Length: 1.0 ft.
c. Material: Steel ☒ 04
_____ Other ☐ _____
d. Additional protection? ☐ Yes ☒ No
If yes, describe: _____
3. Surface seal: Bentonite ☐ 30
Concrete ☒ 01
_____ Other ☐ _____
4. Material between well casing and protective pipe:
Bentonite ☒ 30
_____ Other ☐ _____
5. Annular space seal: a. Granular/Chipped Bentonite ☒ 33
b. ____ Lbs/gal mud weight ... Bentonite-sand slurry ☐ 35
c. ____ Lbs/gal mud weight ..... Bentonite slurry ☐ 31
d. ____ % Bentonite ..... Bentonite-cement grout ☐ 50
e. _____ ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01
Tremie pumped ☐ 02
Gravity ☒ 08
6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite chips ☒ 32
c. _____ Other ☐ _____
7. Fine sand material: Manufacturer, product name & mesh size
a. _____
b. Volume added _____ ft^3
8. Filter pack material: Manufacturer, product name & mesh size
a. _____
b. Volume added _____ ft^3
9. Well casing: Flush threaded PVC schedule 40 ☒ 25
Flush threaded PVC schedule 80 ☐ 24
_____ Other ☐ _____
10. Screen material: PVC
a. Screen type: Factory cut ☒ 11
Continuous slot ☐ 01
_____ Other ☐ _____
b. Manufacturer _____
c. Slot size: 0.010 in.
d. Slotted length: 10.0 ft.
11. Backfill material (below filter pack): None ☒ 14
_____ Other ☐ _____

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] Firm: TEMCO

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and borrow. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in forfeitures of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

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Appendix F

Interceptor Trench Operation and Maintenance Plan

ARCADIS
Infrastructure, environment, buildings

Imagine the result

City of West Allis
Community Development Authority

DRAFT
Interceptor Trench
Operation and Maintenance Plan

67th Place Industrial Park
1960 South 67th Place
West Allis, Wisconsin

April 2010

ARCADIS

Rebecca A. Robbennolt
Remediation Specialist

Benjamin J. Verburg, PE, CHMM
Principal Engineer

DRAFT
Interceptor Trench Operation and Maintenance Plan

67th Place Industrial Park
1960 West 67th Place
West Allis, Wisconsin

Prepared for:
City of West Allis
Community Development Authority

Prepared by:
ARCADIS U.S., Inc.
126 North Jefferson Street
Suite 400
Milwaukee
Wisconsin 53202
Tel 414.276.7742
Fax 414.276.7603

Our Ref.:
WI001074.0007

Date:
April 2010

D R A F T

Table

Figure

Attachment

1. Introduction

This Operation and Maintenance (O&M) Plan has been prepared for the interceptor trench constructed at the 67th Place Industrial Park in West Allis, Wisconsin (Site). The O&M Plan describes the maintenance requirements for the infiltration trench in accordance with project specifications as presented in the Site Grading and Earthwork Summary Report for the site. O&M activities are essential for preservation of the infiltration trench. This O&M Plan may require modification following site development and should be evaluated periodically to reflect current site conditions.

As presented in the Summary Report, the interceptor trench is located along the east property of the Site. The infiltration trench was constructed using two 6 inch diameter perforated High Density Polyethylene (HDPE) drain pipes. Two invert connections where installed in the storm manhole and sealed with non-shrink grout. Solid 6 inch diameter sewer piping was used from the manhole to +25 feet. The transition to perforated HDPE pipe was made after the first clean out, located at +25 feet, in effort to facilitate future maintenance. Perforated HDPE drain piping was installed from +25 feet to +475 feet. Clean outs were installed every 150 feet to facilitate maintenance. Four cleanouts were installed in each HDPE pipe for a total of eight cleanouts located along the trench. The perforated HDPE piping was installed a minimum of 4 feet below ground surface.

The interceptor trench was lined with non-woven geotextile and the HDPE drain piping backfilled with drainage stone. The retaining wall, located along the eastern property boundary, was perforated with a series of 2 inch diameter weep holes. One weep hole was installed every fifty feet from +25 feet to +425 feet. The interceptor trench was installed directly east of the retaining wall. The trench was routed 5 feet east around existing power poles.

A component of the construction of the interceptor trench included reworking a three-foot wide area west and adjoining the length of the existing retaining wall. The rework included removal of miscellaneous debris (e.g. solid waste refuse and vegetation), placement of nonwoven geotextile, and restoration to grade with rip-rap.

2. Objectives

The objective of the O&M Plan is to:

- Describe procedures for maintenance and monitoring of the infiltration trench at the 67th Place Industrial Park

The intent of this O&M Plan is to guide field personnel through maintenance procedures for the infiltration trench to maximize effectiveness of the system. Implementation of the O&M plan will assist in achieving the following objectives:

- Promote efficient site drainage.
- Minimize erosion or abrasion of the easement, eastern site slope, and gabion-lined channel.
- Verify that any settling or subsidence does not affect the integrity of the infiltration trench.
- Assess the scaling thickness, facilitate scaling removal, and disposal of accumulated scaling. Maintain the infiltration trench integrity during scaling removal.
- Inspection and maintenance of the infiltration trench discharge structure (storm manhole).
- Address weed or algae growth, insect and wild life control, and landscaping of the infiltration trench berm.

Elements of the O&M Plan address the following:

- Site Background
- Performance and Compliance Monitoring Program
- Contingency Plan
- Reporting Requirements

Contractor/Owners/Operators and other stakeholders should be provided copies of this O&M plan. This O&M Plan should be supplemented by a Site-Specific Health and Safety Plan and safety measures should be followed by future contractors/owners/operators/ and other stakeholders.

D R A F T

2.1 Site Background

The site consists of an approximate 11.6-acre parcel of land at 1960 South 67th Place, in West Allis, Wisconsin (Figure 1). The site is bounded by the Union Pacific Railroad tracks and Metal Technologies Incorporated (heavy industrial) to the north, Becher Place to the east, West Allis Fire Department and residential housing to the south, and St. Augustine Catholic Church and School and residential housing to the west, see Figure 1. The surrounding land use is predominantly residential properties. The site is located in the southeastern ¼ of U.S. Public Land Survey Section 3, Township 6 North, Range 21 East in Milwaukee County. The site is currently vacant and zoned as a M1 Manufacturing District.

AIRCO (AIRCO Industrial and AIRCO Welding Products) occupied the site between 1932 and 1984. The Pre Site Grading and Earthwork Site Plan View is illustrated on Figure C1. AIRCO manufactured carbide gas, which produced lime slurry as a byproduct of its operation. The lime slurry was disposed of in onsite pits or lagoons that covered approximately ±6 acres on the eastern portion and southwest portion of the property. The property formerly included five metal and masonry buildings of varying sizes between approximately 3,600 to 5,500 square feet and two large storage silos located in the central portion of the property. Mr. John Novak purchased the property in 1985. Mr. Novak rented the land out to various businesses including a waste storage and transfer facility, an oil/hazardous waste trucking terminal, and a salvage/junk yard. The city of West Allis (CWA) Community Development Authority acquired the property in 2006.

The primary focus of the Site grading and earthwork completed in 2009 was to prepare the site for development. The second objective of the grading and earthwork was to minimize storm and groundwater impacts to the municipal system. The infiltration trench was designed to mitigate storm and groundwater runoff for the site.

2.2 Performance and Monitoring

Routine care of the infiltration trench is required to maintain the integrity of the system. Performance and monitoring provides a way to verify the infiltration trench is

performing satisfactorily. Onsite care will include visual inspection of the infiltration trench to identify erosion and vegetation condition of the riprap, drainage stone, and berm vegetation, monitoring for settlement, measurement of the scaling deposition, inspection of the infiltration trench outlet structure, and inspection of the gabion-lined channel. These topics are discussed in further detail in the subsequent sections.

2.2.1 Inspection

On-site inspection will be conducted to document the activities identified in this O&M Plan. Inspection forms will be used to record findings, unusual conditions, and corrective action(s) taken. Examples of the inspection forms are included in Attachment A. These example inspection forms may change in format throughout the development period, however the substance will remain the same. Conditions requiring corrective action will be rectified, and the repair will be documented on a Corrective Action Form. Table G-1 summarizes the specific post-closure activities and frequencies. Records of corrective actions will be maintained onsite.

Care of the infiltration trench will require inspection and maintenance including visual inspection of the infiltration trench to identify erosion and vegetation, condition of the riprap, drainage stone, and berm vegetation to ensure integrity. The O&M Plan will be amended events occur during the development period that affect the monitoring requirements. The Wisconsin Department of Natural Resources (WDNR) should be contacted if changes are required to the O&M Plan.

2.2.2 Erosion Prevention

The site grading has been designed to promote run-off of precipitation, to facilitate site drainage to the wet detention pond, and to minimize run-on to the adjacent properties. Areas surrounding the wet detention pond are to be vegetated to prevent erosion at the pond slopes and berm. The infiltration trench has been designed to mitigate storm and groundwater flow to the eastern site easement.

Inspections to the infiltration trench will include, but not be limited to the following: obstructions to flow; erosion; excessive scaling or debris accumulations; inadequate vegetation; and loose or missing rip-rap or drainage stone. Should any vegetated area show significant washout or gullying (greater than 4 inches), the eroded area will be filled when the weather conditions permit or within 30 days, whichever occurs first. If results of the inspection indicate that any site drainage patterns have changed resulting in ponding or excessive run-off, the affected area will be appropriately repaired to re-

establish correct flow direction to the infiltration trench outlet structure. Inspections should be conducted after extreme weather events (e.g., tornadoes, 10-year/24-hour precipitation events).

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2.2.3 Scaling Depth Assessment

Accumulated scaling in the infiltration trench will be removed when its thickness restricts flow. Frequency of the sediment removal rate will vary with the site drainage, but should be completed on a bi-annually (every two years). Scaling thickness assessment should be completed annually with additional measurements recorded with a change in the site drainage (development). Measures should be made to prevent scaling debris from discharging into the city storm water discharge. Infiltration trench scaling debris shall be disposed at approved location and in accordance with NR 500, Wis. Adm. Code.

The infiltration trench bottom elevation varies along the length of the trench. Excavation in the area of the infiltration trench is prohibited unless approved by the CWA. If the infiltration trench is damaged during scaling removal the CWA shall prepare and submit and assessment or investigation plan and schedule action with 60 days. After implementation the assessment or investigation, CWA will prepare and submit a corrective action plan following any necessary communication with the WDNR.

2.2.4 Inspection and Maintenance of the Infiltration Trench Structure

The infiltration trench outlet structure and gabion-lined channel shall be kept clear of debris or overgrown vegetation that may inhibit or block the flow of run-off. Inspections should be conducted after extreme weather events (e.g., tornadoes, 10-year/24-hour precipitation events) as determined by CWA or on an annual basis at a minimum.

2.2.5 Address Weed or Algae growth, Insect and Wildlife Control, and Landscaping of the Pond.

If more than 20 percent of the vegetated berm is devoid of vegetation, the area will be re-vegetated as weather conditions permit. Steps will be taken to ensure that drainage pathways are maintained throughout the development period. During inspection, any tree or scrub brush seedling that is present at the vegetated perimeter will be removed to prevent potential deep root growth that might compromise the integrity of the infiltration trench. Baiting for rodents and treating for burrowing animals or insects will

also be administered, if the need is observed during inspection. Landscaping of the infiltration trench berm shall be maintained by the CWA.

2.3 Maintenance Schedule

Site inspections will be performed quarterly during the first year after construction of the wet detention pond. After the first year, inspections will be conducted annually. Active maintenance will be performed as necessary based on the observations reported during routine inspections of the infiltration trench. If there is rapid grass growth in areas surrounding the infiltration trench or gabion-lined channel, regularly scheduled grass mowing may be necessary.

3. Reporting Requirements

3.1 Records Retainage

Records will be managed by the CWA or their future owner/operator, and be maintained for a minimum of 3 years.

3.2 Operation and Maintenance Records

O&M activities for the infiltration trench will be recorded in the appropriate logbook or computer system. Notations will be made when the infiltration trench is inspected and maintained, engineering measurement taken, and when corrective measures are implemented. As indicated, inspection forms are included in Attachment A of this report. Corrective action measures and re-inspection forms will be completed during the period that the corrective measures take place.

3.3 Reporting

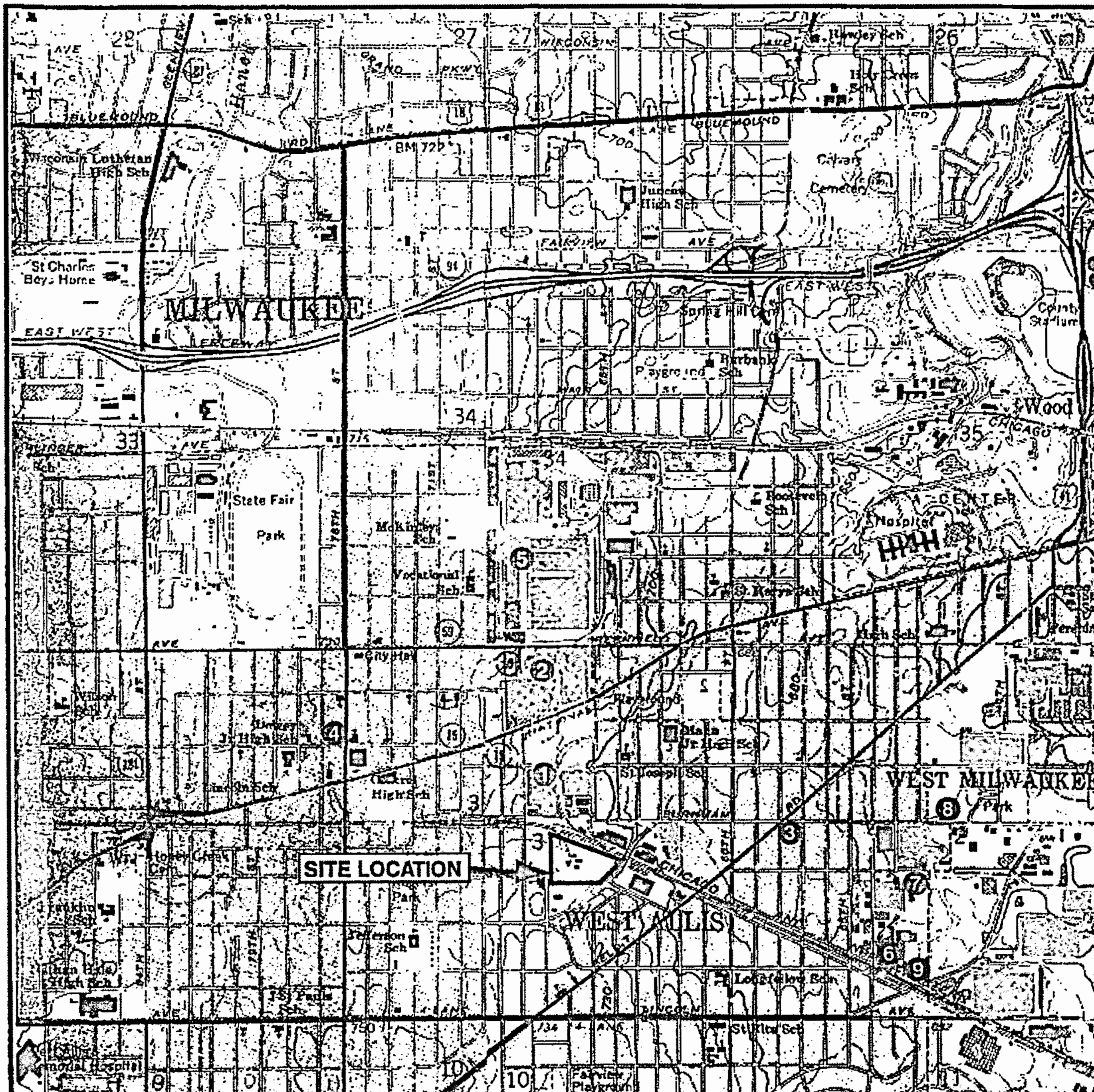
There are no formal reporting requirements for this project. However, modification to the interceptor trench should be documented and forwarded to the WNDR.

Table 1. Interceptor Trench Inspection Activities, 67th Place Industrial Park , West Allis, Wisconsin.

Item	Types of Problems	Frequency of Inspection	Circumstance or Trigger Level (if applicable)	Corrective Action
Infiltration Trench	Slumping, cracking, damage, or rutting of berm side slopes	Annually	Visual evidence of discontinuity of surface - by way of depressions or cracks	Evaluate cause of settlement. Prepare and implement corrective action plan
	Settlement or deteriorating of drainage stone or riprap	Annually	Visual evidence	Evaluate cause of settlement. Prepare and implement corrective action plan
	Presence of material lime products (scaling)	Annually	Visual evidence	Water Jet and remove scale waste from site
	Rodents, burrowing animals, or insect infiltration	Annually	Evidence of rodents, burrowing animals, or insect infiltration	Remove animals or insects by acceptable means
	Scaling, weed, or algae growth	Annually	Evidence weed or algae growth	Water Jet and remove scale from site
Infiltration Trench	Erosion, obstructions to flow, deterioration, excessive siltation, inadequate protective vegetation, loose or missing riprap	Annually and after extreme weather events	Any obstructions to flow; silt buildup in excess of 50% of design freeboard; greater than 20% of area devoid of vegetation	Remove obstruction and/or silt. Revegetate as required
Infiltration Trench Outlet and Gabion-Lined Channel	Excessive growth at discharge outlet (trimming required)	Annually	Evidence of excessive growth which hinders visual inspection of cover	Trim vegetation

Table 1. Interceptor Trench Inspection Activities, 67th Place Industrial Park , West Allis, Wisconsin.

Item	Types of Problems	Frequency of Inspection	Circumstance or Trigger Level (if applicable)	Corrective Action
Infiltration Trench Outlet and Gabion-Lined Channel (continued)	Tree and scrub oak seedlings or other deep-rooted vegetation	Annually	Evidence of growth	Remove unwanted vegetation
	Standing water on side walk or along West Becher Place	Annually and after extreme weather events	Visual evidence of water	Evaluate cause. Prepare and implement corrective action plan
	Excessive debris or scaling	Annually and after extreme weather events	Visual evidence of scaling or debris	Evaluate cause. Prepare and implement corrective action plan
	Slumping, cracking, damage, or rutting of channel side slopes	Annually	Visual evidence of discontinuity of surface - by way of depressions or cracks	Evaluate cause. Prepare and implement corrective action plan



SOURCE: Composite of USGS 7.5 Minute Topographic Maps, MILWAUKEE (1971) and WAUWATOSA (1994), WISCONSIN Quadrangles

WELL #	ID
1	ML-06/21E/03-0098
2	ML-06/21E/03-0111
3	ML-0621E/02-0114
4	ML-06/21E/04-0297
5	ML-07/21E/34-0022
6	ML-06/21E/02-0064
7	ML-06/21E/02-0370
8	ML-06/21E/02-0099
9	ML-06/21E/02-0225

N

0 1000 2000 4000

SCALE IN FEET

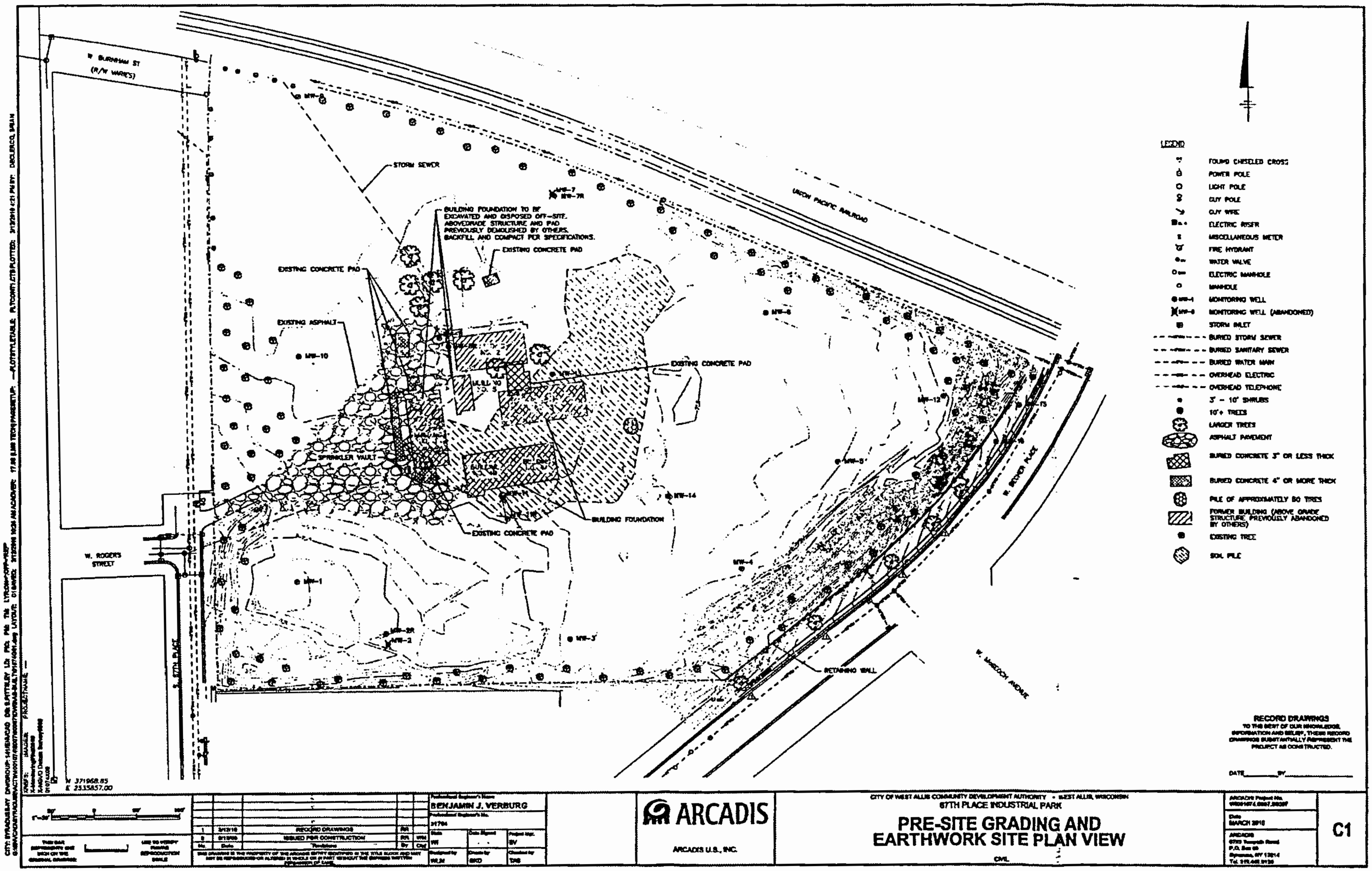
67TH PLACE INDUSTRIAL PARK
1960 SOUTH 67TH PLACE
WEST ALLIS, WISCONSIN

SITE LOCATION MAP

ARCADIS

FIGURE
1

28JANENVIRC ITTALMB
PRESSTEEL\W1074\LIMEPIT\GRAPHICS\WELL LOC.AI


W. BURNHAM ST
(R/W VARIES)
STORM SEWER
UNION PACIFIC RAILROAD
BUILDING FOUNDATION TO BE EXCAVATED AND DISPOSED OFF-SITE. ABOVEGRADE STRUCTURE AND PAD PREVIOUSLY DEMOLISHED BY OTHERS. BACKFILL AND COMPACT PER SPECIFICATIONS.
EXISTING CONCRETE PAD
EXISTING ASPHALT
SPRINKLER VAULT
BUILDING FOUNDATION
RETAINING WALL
W. ROGERS STREET
S. 67TH PLACE
W. MCGEOCH AVENUE
N 371968.85
E 2535857.00
LEGEND
FOUND CHISELED CROSS
POWER POLE
LIGHT POLE
GUY POLE
GUY WIRE
ELECTRIC RISER
MISCELLANEOUS METER
FIRE HYDRANT
WATER VALVE
ELECTRIC MANHOLE
MANHOLE
MONITORING WELL
MONITORING WELL (ABANDONED)
STORM INLET
BURIED STORM SEWER
BURIED SANITARY SEWER
BURIED WATER MAIN
OVERHEAD ELECTRIC
OVERHEAD TELEPHONE
3' - 10' SHRUBS
10'+ TREES
LARGER TREES
ASPHALT PAVEMENT
BURIED CONCRETE 3" OR LESS THICK
BURIED CONCRETE 4" OR MORE THICK
PILE OF APPROXIMATELY 80 TIRES
FORMER BUILDING (ABOVE GRADE STRUCTURE PREVIOUSLY ABANDONED BY OTHERS)
EXISTING TREE
SOIL PILE
RECORD DRAWINGS
TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, THESE RECORD DRAWINGS SUBSTANTIALLY REPRESENT THE PROJECT AS CONSTRUCTED.
DATE________BY________
1 | RECORD DRAWINGS | RR
0 | ISSUED FOR CONSTRUCTION | RR | WM
No. | Date | Revisions | By | Ckd
BENJAMIN J. VERBURG
ARCADIS
ARCADIS U.S., INC.
CITY OF WEST ALLIS COMMUNITY DEVELOPMENT AUTHORITY • WEST ALLIS, WISCONSIN
67TH PLACE INDUSTRIAL PARK
PRE-SITE GRADING AND EARTHWORK SITE PLAN VIEW
CIVIL
MARCH 2010
C1

Appendix A

Example Inspection Forms

Date of Inspection: _____

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Example Inspection Form
Infiltration Trench and Gabion-Lined Channel
67th Place Industrial Park
West Allis, Wisconsin
(Page 1 of 3)

Functional Group Assigned This Inspection Duty: _____
Inspector's Name: _____
Date of Inspection: _____
Time of Inspection: _____

Note: Perform this inspection on a quarterly basis and after extreme weather events to inspect erosion.

Inspection Checklist

1. Infiltration Trench: Walk the entire infiltration trench perimeter.

   - Are there any cracks or breaks in the infiltration trench berm or side slopes? _____
   - Are there any signs of uneven surfaces (depressions or bumps) in the drainage stone? _____
   - Are there any signs of excessive erosion of eastern slope or vegetated berm? _____
   - Are there any deep-rooted or woody plants established on the drainage swale or at the infiltration trench berm? _____
   - Are there any signs of burrowing animals or insect infiltration? _____
   - Is there any scaling, algae, or weed growth in the cleanouts or discharge manhole? _____

2. Infiltration Trench Outlet Structure (Storm Manhole)

   Inspect the infiltration trench outlet structure and gabion-lined channel.

   - Is there evidence of erosion? _____
   - Does scaling or silt accumulation prevent run-off? _____
   - Are there signs of ponding or surface flow? _____
   - Is there and blockage or debris? _____

Date of Inspection: _____

ARCADIS

Example Inspection Form
Infiltration Trench and Gabion-Lined Channel
67th Place Industrial Park
West Allis, Wisconsin
(Page 2 of 3)

3. Any deficiencies? _____
   _____
4. Comments: _____
   _____
   _____
5. Corrective Action Required (Complete Corrective Action Form): _____
   _____
   _____
   _____
6. Inspector's Signature: _____

ARCADIS

Example Inspection Form
Infiltration Trench Cleanout and Outlet Structure Inspection
67th Place Industrial Park
West Allis, Wisconsin
(Page 3 of 3)

Functional Group Assigned This Inspection Duty: _____
Inspector's Name: _____
Date of Inspection: _____
Time of Inspection: _____

Note: Perform benchmark, Infiltration Trench Cleanout, and Outlet Structure inspection annually.

Inspection Checklist

1. Check the Infiltration Trench Cleanouts, and Outlet Structure at the Infiltration Trench for any evidence of damage, scaling, or disturbance.

Findings (discuss): _____
_____
_____

2. Corrective Action Required (Complete Corrective Action form):

_____
_____

3. Inspector's Signature: _____

If any damage or disturbance is noted contact CWA immediately.

Send completed form to CWA for required records maintenance.

ARCADIS

Example Corrective Action Form
67th Place Industrial Park
West Allis, Wisconsin

Report Number: _____
Date of Initial Inspection: _____
Name of Inspector: _____

Note: If Corrective Action cannot be completed within 30 days of the Initial Inspection Date, a Corrective Action Plan must be prepared and maintained in the operating record.

Corrective Action Work Order

Type of problem: _____

_____

Required upgrade: _____

_____

Corrective action assigned to: _____ _____
Name Date

Corrective Action Completion Report

Received on: _____ By: _____
Completed on: _____
Comments: _____

_____

_____

By: _____ _____
Name Date

Reinspection Report

Observations: _____

_____

Comments: _____

_____

_____

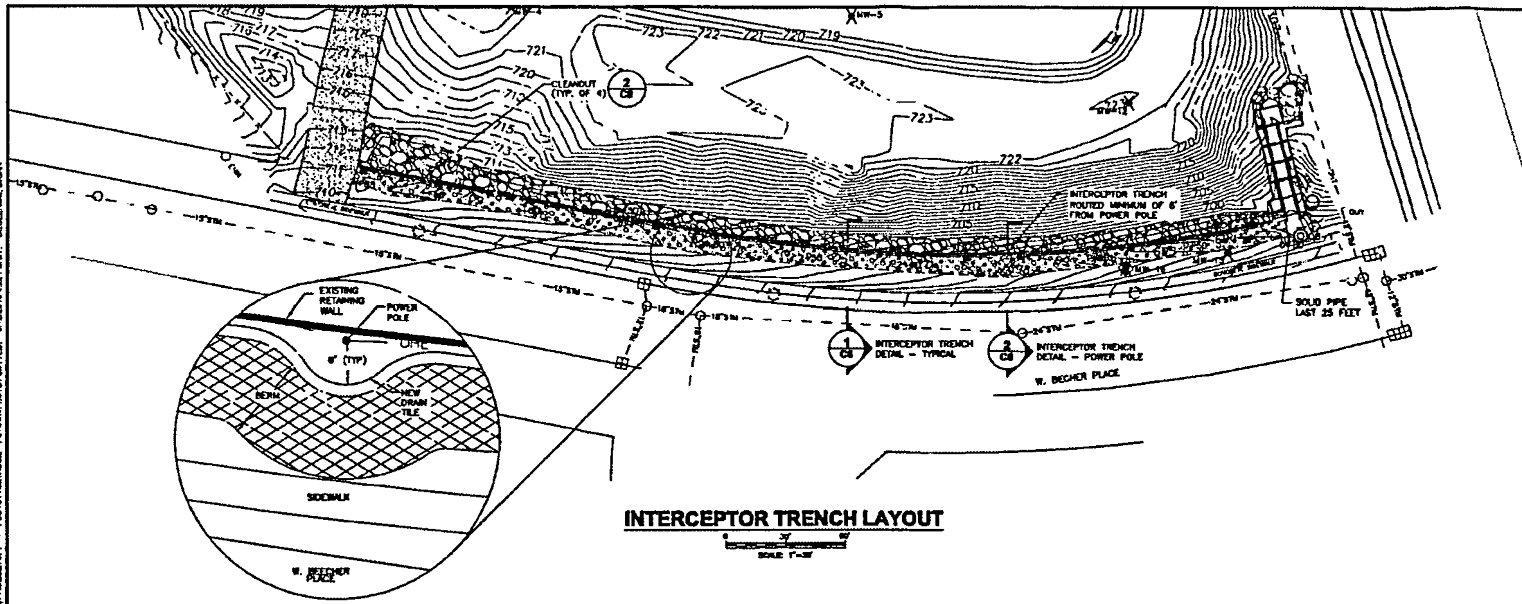
Inspector: _____ _____ _____
Signature Date

Send completed form to CWA for required records maintenance.

ARCADIS

Appendix B

Asbuilt Drawings



INTERCEPTOR TRENCH LAYOUT

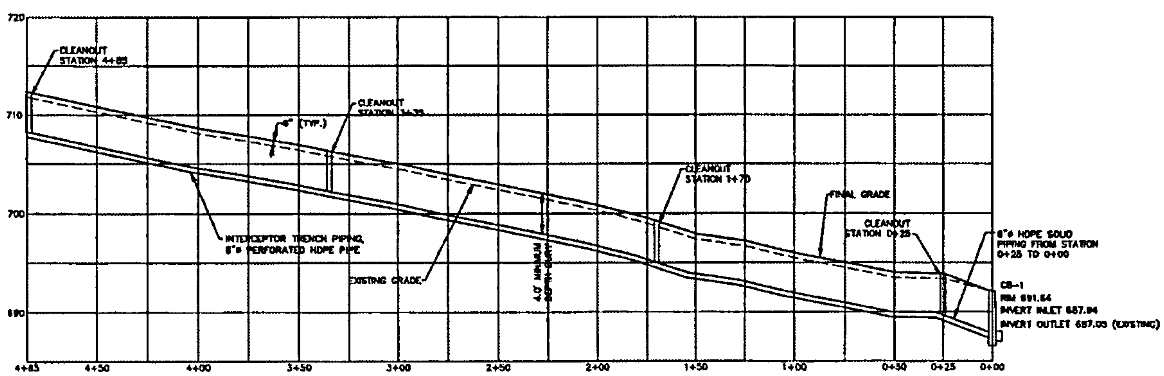
SCALE: 1"=30'

LEGEND

- CLEANOUT
- POWER POLE
- LIGHT POLE
- GUY POLE
- GUY WIRE
- ELECTRIC RISER
- ELECTRIC MANHOLE
- MANHOLE
- STORM INLET
- BURIED STORM SEWER
- BURIED SANITARY SEWER
- BURIED WATER MAIN
- OVERHEAD ELECTRIC
- OVERHEAD TELEPHONE
- CONTOUR LINE
- FENCE
- MONITORING WELL
- MONITORING WELL (ABANDONED)

NOTE:

1. CONTRACTOR SHALL COORDINATE WITH WE ENERGIES FOR THE SUPPORT OR RELOCATION OF THE POWER POLES ALONG WEST BECHER PLACE DURING THE INSTALLATION OF THE INTERCEPTOR TRENCH.



INTERCEPTOR TRENCH PROFILE

HORIZONTAL SCALE: 1"=30'

VERTICAL SCALE: 1"=6'

RECORD DRAWINGS
TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, THESE RECORD DRAWINGS SUBSTANTIALLY REPRESENT THE PROJECT AS CONSTRUCTED.

DATE_______ BY_______

SCALE AS INDICATED

No.	Date	Revisions	By	Ckd
1	3/13/16	RECORD DRAWINGS	RR	
0	8/13/08	ISSUED FOR CONSTRUCTION	RR	WV

Professional Engineer's Name: BENJAMIN J. VERBURG

ARCADIS
ARCADIS U.S., INC.

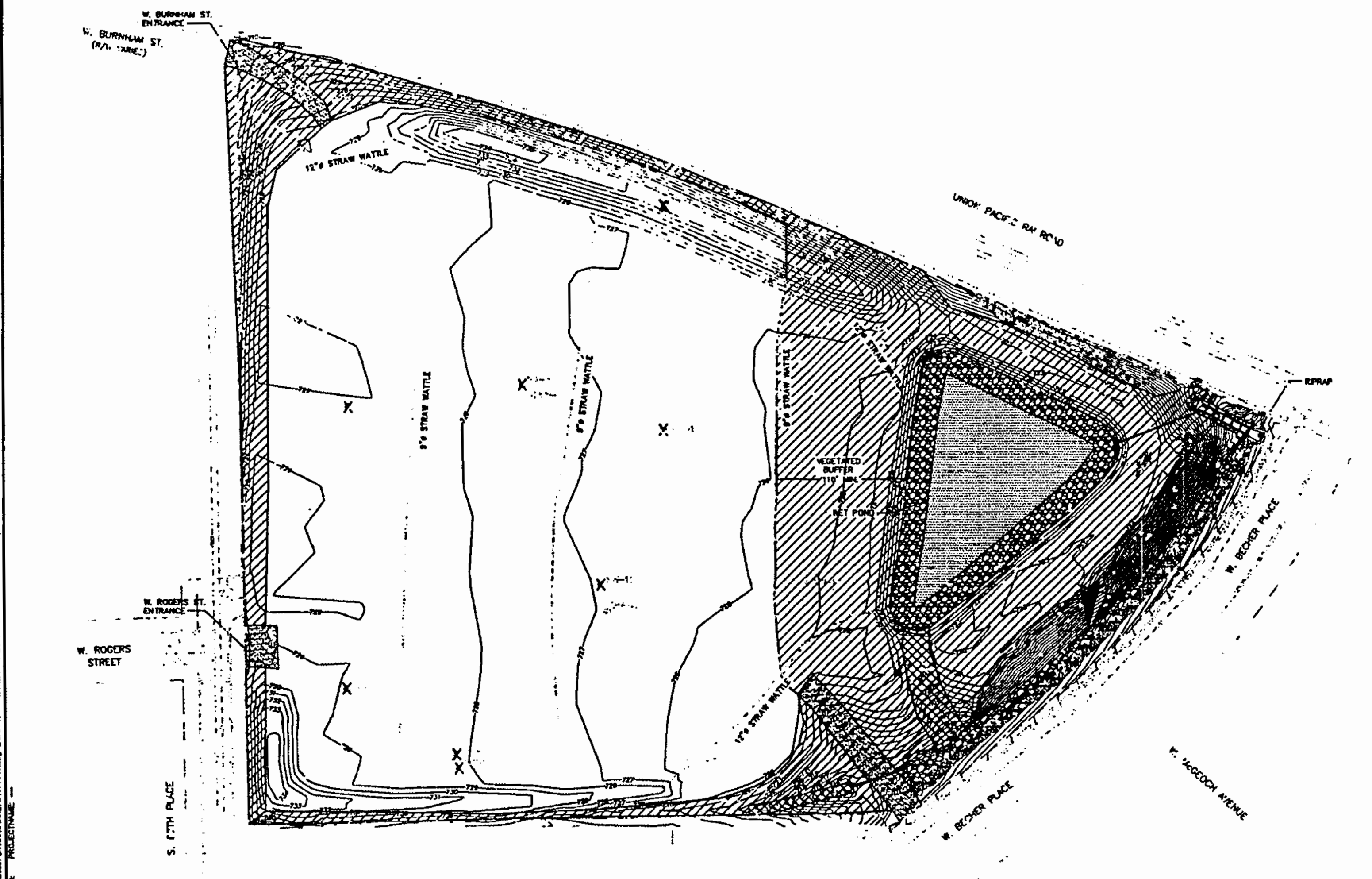
CITY OF WEST ALLIS COMMUNITY DEVELOPMENT AUTHORITY • WEST ALLIS, WISCONSIN
67TH PLACE INDUSTRIAL PARK

INTERCEPTOR TRENCH LAYOUT AND PROFILE

CIVIL

Date: MARCH 2016

C4



LEGEND:

EXISTING CONTOURS

724 / 725 — FINAL CONTOURS

APROXIMATE LIMIT OF GRADING

GRADE BREAK

CULVERT

STRAW WATTLE (WITH DIAMETER)

TEMPORARY EROSION CONTROL MATTING

PERMANENT TURF REINFORCEMENT MATTING

GRAVEL

DRAINAGE STONE

RIPRAP

NOTES:

1. SEE DRAWING C1 FOR BASEMAP INFORMATION.
2. ALL DISTURBED SOIL SURFACES FERTILIZED, SEEDED, AND MULCHED IMMEDIATELY UPON COMPLETION OF SITE GRADING ACTIVITIES WITHIN THOSE AREAS, IN ACCORDANCE WITH PROJECT SPECIFICATIONS.
3. ALL AREAS DESIGNATED TO RECEIVE TEMPORARY EROSION CONTROL MATTING (ECM) OR PERMANENT TURF REINFORCEMENT MAT (TRM) RECEIVED A MINIMUM OF 4 INCHES OF TOPSOIL COVER PRIOR TO SEEDING. THE SOIL BERM ALONG THE NORTHERN EDGE OF WEST BECHER PLACE ALSO RECEIVED A MINIMUM OF 4 INCHES OF TOPSOIL COVER PRIOR TO SEEDING.
4. ALL ECM AND TRM WAS PINNED TO THE GROUND AND PROPERLY ANCHORED AT THE EDGES, IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION GUIDELINES.
5. ENDS OF STRAW WATTLES WERE FIRMLY BUTTED AGAINST ONE ANOTHER. STRAW WATTLES WERE INSTALLED AND SECURED TO THE GROUND IN ACCORDANCE WITH THE MANUFACTURE'S INSTALLATION GUIDELINES. TOP OF 9" WATTLES ARE APPROXIMATELY 3" LOWER THAN TOP OF 12" WATTLES.

RECORD DRAWINGS

TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, THESE RECORD DRAWINGS SUBSTANTIALLY REPRESENT THE PROJECT AS CONSTRUCTED

DATE________ BY__________

No.	Date	Revisions	By	Ckd
1	3/13/16	RECORD DRAWINGS	RR	
0	8/13/08	ISSUED FOR CONSTRUCTION	RR	WN

Professional Engineer's Name: BENJAMIN J. VERBURG

Professional Engineer's No.: 31794

Designed by: TAS · Drawn by: BRD · Checked by: TAS

ARCADIS

ARCADIS U.S., INC.

CITY OF WEST ALLIS COMMUNITY DEVELOPMENT AUTHORITY • WEST ALLIS, WISCONSIN

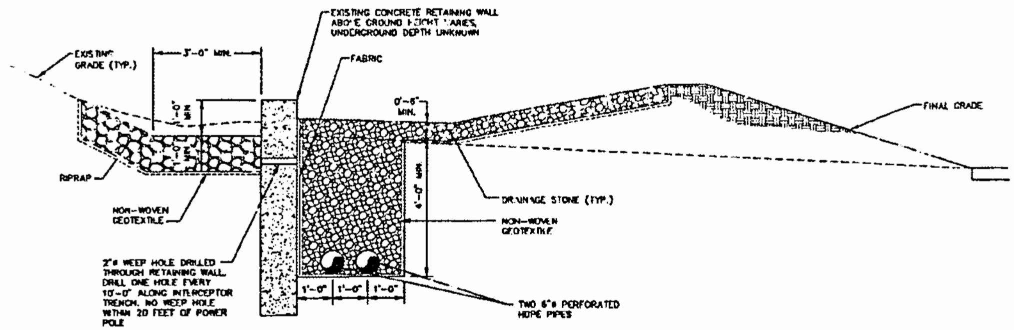
67TH PLACE INDUSTRIAL PARK

POST SITE GRADING & EARTHWORK RESTORATION AND STORMWATER MANAGEMENT PLAN

CIVIL

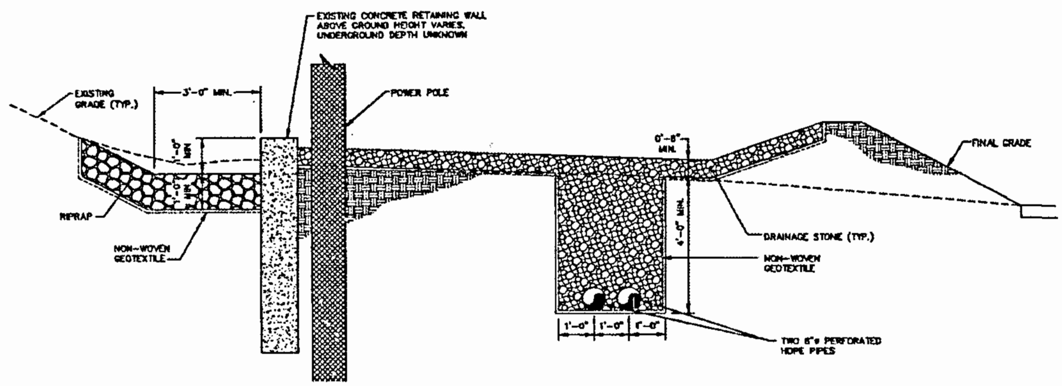
Date: MARCH 2016

C5



INTERCEPTOR TRENCH DETAIL - TYPICAL (1)

NOT TO SCALE



INTERCEPTOR TRENCH DETAIL - POWER POLE (2)

NOT TO SCALE

RECORD DRAWINGS
TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, THESE RECORD DRAWINGS SUBSTANTIALLY REPRESENT THE PROJECT AS CONSTRUCTED.

DATE________ BY____________

NOT TO SCALE

No.	Date	Revisions	By	Ckd
1	3/12/10	RECORD DRAWINGS	RR	
0	9/13/09	ISSUED FOR CONSTRUCTION	RR	WM

THIS DRAWING IS THE PROPERTY OF THE ARCADIS ENTITY IDENTIFIED IN THE TITLE BLOCK AND MAY NOT BE REPRODUCED OR ALTERED IN WHOLE OR IN PART WITHOUT THE EXPRESS WRITTEN PERMISSION OF SAME.

Professional Engineer's Name: BENJAMIN J. VERBURG
Professional Engineer's No.: 31796
Designed by: WLM — Drawn by: BKD — Checked by: TAB

ARCADIS
ARCADIS U.S., INC.

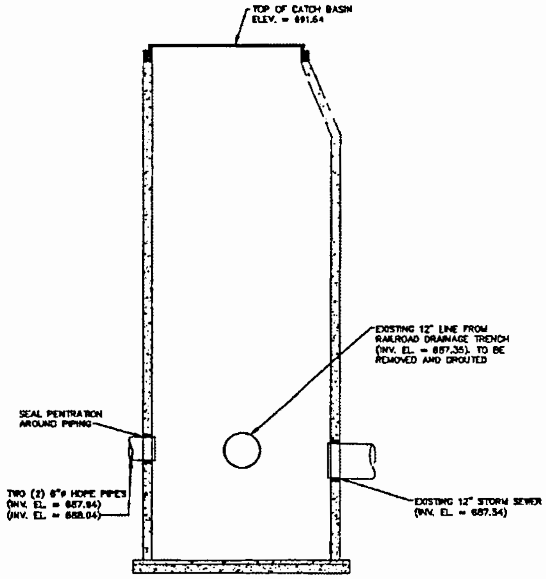
CITY OF WEST ALLIS COMMUNITY DEVELOPMENT AUTHORITY • WEST ALLIS, WISCONSIN
67TH PLACE INDUSTRIAL PARK

INTERCEPTOR TRENCH DETAILS

CIVIL

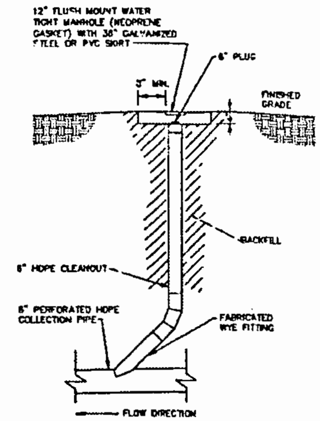
Date: MARCH 2010

C6



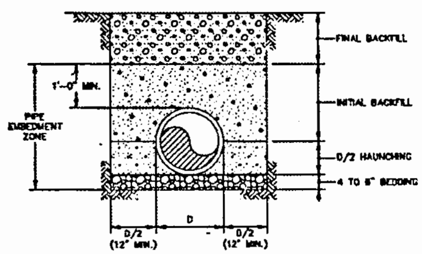
CATCH BASIN PENETRATION DETAIL (1)

NOT TO SCALE



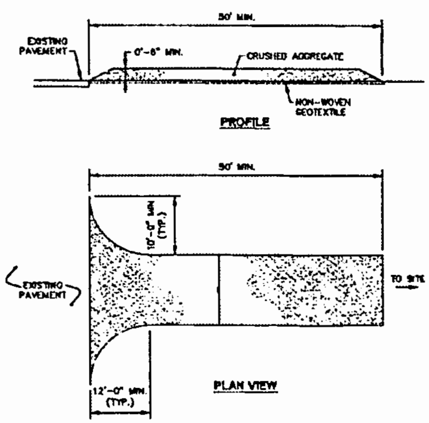
CLEANOUT DETAIL (2)

NOT TO SCALE



TYPICAL PIPE TRENCH DETAIL (3)

NOT TO SCALE



STABILIZED CONSTRUCTION ENTRANCE (4)

NOT TO SCALE

RECORD DRAWINGS
TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, THESE RECORD DRAWINGS SUBSTANTIALLY REPRESENT THE PROJECT AS CONSTRUCTED.

DATE________ BY________________

No.	Date	Revisions	By	Ckd
1	3/12/10	RECORD DRAWINGS	RR	
0	6/13/09	ISSUED FOR CONSTRUCTION	RR	WM

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING. USE TO VERIFY FIGURE REPRODUCTION SCALE

THIS DRAWING IS THE PROPERTY OF THE ARCADIS ENTITY IDENTIFIED IN THE TITLE BLOCK AND MAY NOT BE REPRODUCED OR ALTERED IN WHOLE OR IN PART WITHOUT THE EXPRESS WRITTEN PERMISSION OF SAME.

Professional Engineer's Name: BENJAMIN J. VERBURG
Professional Engineer's No.: 31794
State: WI | Date Signed: | Project Mgr.: BV
Designed by: WLM | Drawn by: BKD | Checked by: TAS

ARCADIS
ARCADIS U.S., INC.

CITY OF WEST ALLIS COMMUNITY DEVELOPMENT AUTHORITY - WEST ALLIS, WISCONSIN
67TH PLACE INDUSTRIAL PARK

INTERCEPTOR TRENCH DETAILS

CIVIL

ARCADIS Project No. WI001074.0007.00007
Date MARCH 2010
ARCADIS 6723 Towpath Road P.O. Box 66 Syracuse, NY 13214 Tel. 315.446.9120

C9

Customer Number: 978

Manifest NO. 999459

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - Jewell

Truck # 63

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date /

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - [signature]

Date 11/17/09

Landfill Signature - [signature]

Date 11/17/09

Quantity -

Tons 19.83

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

1

Customer Number: 978

Manifest NO. 000150

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck # 126

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date /

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - Date 11/23/09

Landfill Signature - Date 11/23/09

Quantity - Tons 17.58

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

2

Customer Number: 978

Manifest NO. 000145

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - condiffs

Truck # 33

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date /

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - Date 11/23/09

Landfill Signature - Date 11/23/09

Quantity - Tons 14.92

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

3

'tomer Number: 978

Manifest NO. 000148

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - Linos

Truck # 76

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date /

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - Linos

Date 11/23/09

Landfill Signature - TB

Date 11/23/09

Quantity -

Tons 17.82

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

4

Customer Number: 978

Manifest NO. 000160

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - Jahnke

Truck # 85

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date /

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - [signature]

Date 11/23/09

Landfill Signature - TB

Date 11/23/09

Quantity -

Tons 17.85

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

5

tomer Number: 978 Manifest NO. 000152

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - Wills Truck # 205

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF Date /

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - Date 11/23/09

Landfill Signature - Date 11/23/09

Quantity - Tons 16.38

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

6

Customer Number: 978 Manifest NO. 000153

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - Morales Truck # 501

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF Date /

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - Date 11/23/09

Landfill Signature - Date 11/23/09

Quantity - Tons 16.85

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

7

C omer Number: 978 Manifest NO. 000156

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - SM Truck # 279

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF Date /

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - SM Date 11/23/09

Landfill Signature - RB Date 11/23/09

Quantity - / Tons 16.61

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

8

Customer Number: 978 Manifest NO. 000

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - Lueders Truck # 37

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF Date /

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - Bill Date 11/23/09

L 'fill Signature - RD Date 11/23/09

Quantity - Tons 18.10

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

9

tomer Number: 978 Manifest NO. 000

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - Kelly Truck # 222

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF Date /

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - M. Kelly Date 11/23/09

Landfill Signature - RB Date 11/23/09

Quantity Tons 18.61

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

10

Customer Number: 978 Manifest NO. 000171

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - Kelly Truck # ~~221~~ 221

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF Date /

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - Bob Date 11/23/09

L tfill Signature - RB Date 11/23/09

Quantity - Tons 18.49

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

10

Customer Number: 978 Manifest NO. 000166

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - Lohman Truck # 36

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF Date /

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - MD Date 11/23/09

Landfill Signature - RB Date 11/23/09

Quantity - Tons 15.45

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

12

12

Customer Number: 978 Manifest NO. 000169

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - B&C Truck # 47

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF Date /

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - Chuck Date 11/23/09

Landfill Signature - RB Date 11/23/09

Quantity - Tons 14.68

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978

Manifest NO. 13
000175

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck # 126

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11/23/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature -

11 23 09

Date / /

Landfill Signature -

Date 11,23,09

Quantity -

Tons 19.10

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978

Manifest NO. 14
000176

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

CORRECTED
33

Bill to - CW PURPERO, INC
Transporter Name -

Truck #

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11/23/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature -

11 23 09

Date 11 23 09

Landfill Signature -

SC

Date / /

Quantity -

Tons 14.22

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

stomer Number: 978

Manifest NO. 15
000179

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck # 76

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature SOF

Date 11/23/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - Will

Date 11/23/09

Landfill Signature - AB

Date 11/23/09

Quantity -

Tons 17.94

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978

Manifest NO. 16
000183

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck # 205

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11/23/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - Will

Date 11/23/09

Landfill Signature - AB

Date 11/23/09

Quantity -

Tons 17.78

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

tomer Number: 978

Manifest NO. 17 000185

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck # 501

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11/23/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature -

Date 11/23/2008

Landfill Signature -

Date 11,23,09

Quantity -

Tons 17.47

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978

Manifest NO. 18 000187

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - SM

Truck # 279

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11/23/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature -

Date 11/23/09

L fill Signature -

Date 11/23/09

Quantity

Tons 12.60

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

(tomer Number: 978

Manifest NO. 19
000190

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck # 85

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11 23/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - JRB

Date 11/23/09

Landfill Signature - RB

Date 11/23/09

Quantity -

Tons 21.35

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978

Manifest NO. 20
000194

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck # 37

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11 23 09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - Bill Richard

Date 11 23 09

La fill Signature - RB

Date 11/23/09

Quantity -

Tons 18.15

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

(tomer Number: 978 Manifest NO. 21 /

000209

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - Truck #_____

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF Date. 11 23109

Description of Waste - Contaminated Soil DIRECT DISPOSAL. 227

Profile Number - EPL2009-183 BG

Driver Signature - Date / /

Landfill Signature - R.B // Date 11,23,09

Quantity - Tons 16.42

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978 Manifest NO. 22

000203

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - Truck # 766 Kelly

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF Date 11, 23109

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - M. Kelley Date 11,23,09

L. fill Signature - RB Date 11,23,09

Quantity Tons 15.89

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

tomer Number: 978

Manifest NO. 23
000209

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck # 36

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11/23/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - [signature]

Date 11 23,09

Landfill Signature - RB

Date 11 /23,09

Quantity -

Tons 17.18

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978

Manifest NO. 24
000211

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck # 47

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11 23109

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - [signature]

Date 11 23,09

L ifill Signature - RB

Date 11/2309

Quantity -

Tons 16.19

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

tomer Number: 978

Manifest NO. 25 000215

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck # 126

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature SOF

Date 11/23/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature -

Date 11 23 09

Landfill Signature -

Date 11/23/09

Quantity -

Tons 18.30

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978

Manifest NO. 26 000218

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

CONFF

Bill to - CW PURPERO, INC
Transporter Name -

Truck # 33

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11/23/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature

Date 11/23 09

L fill Signature -

SC

Date 11/23 09

Quantity -

Tons 17.63

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

stomer Number: 978 Manifest NO. 27

000219

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - Truck # 76

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF Date 11/23/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - Date 11.23.09

Landfill Signature - Date 11 23 09

Quantity - Tons 19.94

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978 Manifest NO. 28

000221

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - Truck # 501

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF Date 11 23 09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - Date 11 23 2009

Landfill Signature - Date 11 23 09

Quantity - Tons 19.32

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

(tomer Number: 978 Manifest NO. 29 000223

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - Truck # 205

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF Date 11/23109

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - Will Date 11/23/09

Landfill Signature - RB Date 11,23,09

Quantity Tons 17.74

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978 Manifest NO. 30 000227

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - Truck # 279

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF Date 11,23109

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - Date 11,25,09

La fill Signature - RB Date 11,25,09

Quantity - Tons 18.416

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

tomer Number: 978 Manifest NO. 31
000228

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - Truck # 85

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF Date 11/23/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - Date 11 23 09

Landfill Signature - Date 11 23,09

Quantity - Tons 17.22

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978 Manifest NO. 32
000240

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - Truck # 37

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF Date 11/23/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - Date 11 23 09

L fill Signature Date 11 23,09

Quantity - Tons 16.61

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

(tomer Number: 978 Manifest NO. 33

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest 000243

Bill to - CW PURPERO, INC
Transporter Name - Lothian Truck # 36

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF Date 11/23/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - [signature] Date 11,23,09

Landfill Signature - [signature] Date 11,23,09

Quantity - Tons 19.30

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978 Manifest NO. 34

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest 000252

Bill to - CW PURPERO, INC
Transporter Name - Truck # 272 Kc 14

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF Date 11/

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - M. Kelly Date 11,23,09

L. fill Signature - [signature] Date 11,23,09

Quantity Tons 15.93

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

L tomer Number: 978 Manifest NO. 35

C00253

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - Truck # 221

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF Date 11/23/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - Bob Date 11,23,09

Landfill Signature - [illegible] Date 11/23/09

Quantity - Tons 17.54

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978 Manifest NO. 36

000255

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - Truck # 47

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF Date 11/23/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - Chuck Date 11/23/09

L dfill Signature - [illegible] Date 11/23/09

Quantity - Tons 18.02

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978

Manifest NO. 37
000260

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck # 126

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature SOF

Date 11/23/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature

Date 23 09

Landfill Signature - TB

Date 11 23 09

Quantity -

Tons 19.17

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978

Manifest NO. 38
000264

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck # 501

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11/23/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature

Date 23-2009

Landfill Signature TB

Date 23 09

Quantity -

Tons 18.97

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978

Manifest NO. 39

000266

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck # 76

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11/23/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

LINDS 11-23-09

Driver Signature -

Date / /

Landfill Signature - TB

Date / /

Quantity - LINO

Tons 19.73

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978

Manifest NO. 40

000267

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck # 205

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11/23/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature -

Date 11/23/09

Landfill Signature - TB

Date 11/23/09

Quantity -

Tons 19.94

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

stomer Number: 978 Manifest NO. 41

000321

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - Truck # 59

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - Date 11/24/09

Landfill Signature - NB Date / /

Quantity - Tons 21.38

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978 Manifest NO. 42

000322

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - Jewell Truck # 54

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature Date 11 24 09

Landfill Signature - NB Date 11 24 09

Quantity - Tons 19.03

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978

Manifest NO. 43

000326

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - Jewell

Truck # 54

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-103

Driver Signature - Bill Mann

Date 11 24 09

Landfill Signature - RB

Date 11/24/09

Quantity -

Tons 20.04

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978

Manifest NO. 44

000320

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck # RW-31

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-103

Driver Signature -

Date 11 24 09

Landfill Signature - RB

Date 11/24/09

Quantity -

Tons 15.21

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

stomer Number: 978

Manifest NO. 45
000328

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck # RW20

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11/11/0

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature -

Date 11,24,09

Landfill Signature -

Date 11,24,09

Quantity -

Tons 22.43

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978

Manifest NO. 46
000329

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck # CW91

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature -

Date 11 24 09

L dfill Signature -

Date 11/24/09

Quantity -

Tons 19.49

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

(tomer Number: 978

Manifest NO. 47
000323

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck # 135

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature SOF

Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature -

Date 11 24 09

Landfill Signature -

Date 11,24,09

Quantity -

Tons 19.18

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978

Manifest NO. 48
000325

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck # M-72

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - Dustin McKay

Date 11,24,09

L. .dfill Signature -

Date 11/24/09

Quantity -

Tons 19.83

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

C tomer Numbers: 978

Manifest NO. 49
000327

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck # 45

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11.24.09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature -

Date 11/24/09

Landfill Signature - TB

Date 11/24/09

Quantity -

Tons 18.96

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978

Manifest NO. 50
000330

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - ES Meyer

Truck # 7

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature

Date 11/24/09

Landfill Signature - TB

Date 11/24/09

Quantity -

Tons 20.89

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

L tomer Number: 978

Manifest NO. 51
000331
50

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck #_____

Generator Name - CITY OF WEST ALLIS COMMUNITY DE' AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - [signature]

Date 11/24/09

L fill Signature - [signature]

Date 11/24/09

Quantity -

Tons 19.03

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978

Manifest NO. 52
000332

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - E.J. MEYER

Truck # 51

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature [signature]

Date 11/24/09

L fill Signature - [signature]

Date 11/24/09

Quantity -

Tons 20.62

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

T

C tomer Numbers 978

Manifest NO. 53
000333

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck # D-3

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - Don Cornell

Date 11,24,09

Landfill Signature -

Date 11/24/09

Quantity -

Tons 18.02

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Numbers 978

Manifest NO. 54
000334

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck # D-5

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - Don Dittmer

Date 11/24/09

L fill Signature -

Date 11/24/09

Quantity

Tons 21.13

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978

Manifest NO. 55
000337

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck # 63 J+O

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature -

Date 11/24/09

Landfill Signature - [illegible]

Date 11/24/09

Quantity -

Tons 18.43

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978

Manifest NO. 56
000347

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck # 54

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature

11 24 09

Date / /

Landfill Signature - [illegible]

Date 11/24/09

Quantity -

Tons 21.94

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978

Manifest NO. 57

000348

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck # 54

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - ~~EPL2009-183~~

Driver Signature -

Date 11/24/09

Landfill Signature - RB

Date / /

Quantity -

Tons 22.00

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978

Manifest NO. 58

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck # 52

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - Bill Marcu

Date 11/24/09

Landfill Signature - RB

Date 11 24 09

Quantity -

Tons 18.68

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

tomer Number: 978

Manifest NO. 59

000352

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck # RW20

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature -

Date 11'24'09

Landfill Signature - RB

Date 11'24'09

Quantity -

Tons 18.57

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978

Manifest NO. 60

000353

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

RW-31

Bill to - CW PURPERO, INC
Transporter Name -

Truck #

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature -

Date 11 24 09

Landfill Signature - RB

Date 11/24/09

Quantity -

Tons 17.92

Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978 Manifest NO. 61

000351

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - Truck # SWP91

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - Jerry S Date 11/24/09

Landfill Signature - [illegible] Date 11/24/09

Quantity - Tons 14.83

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978 Manifest NO. 62

000358

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - Truck # 135

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - [illegible] Date 11/24/09

Landfill Signature - [illegible] Date 11/24/09

Quantity - Tons 20.67

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978

Manifest NO. 63 000360

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck # M-72

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1493 S 66TH

Generator Signature - SOF

Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - Dustin Mayes

Date 11,24,09

Landfill Signature - [illegible]

Date 11,24,09

Quantity -

Tons 18.33

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978

Manifest NO. 64 000362

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - EJ Meyer

Truck # 7

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11/23/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - T. Batt

Date 11,24,09

Landfill Signature - [illegible]

Date 11/24/09

Quantity -

Tons 21.51

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

tomer Number: 978

Manifest NO. 65
000364

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck #: 45

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature -

Date 11/24/09

Landfill Signature -

Date 11/24/09

Quantity -

Tons 21.31

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978

Manifest NO. 66
000366

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck # 50

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature

Date 11/24/09

L fill Signature -

Date / /

Quantity -

Tons 21.88

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

C .tomer Number: 978

Manifest NO. 67

000368

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck #: 51

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature -

Date 11/24/09

Landfill Signature - [illegible]

Date / /

Quantity -

Tons 23.03

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978

Manifest NO. 68

000372

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck # D-3

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature -

Date 11/24/09

L dfill Signature - [illegible]

Date 11/24/09

Quantity -

Tons 19.95

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

stomer Number: 978

Manifest NO. 69
000374

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck # D-5

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - Dave Dethmers

Date 11 24 09

Landfill Signature - AM

Date / /

Quantity -

Tons 19.66

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978

Manifest NO. 70
000373

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck # 63 J-0

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature -

Date 11 24 09

Landfill Signature - AM

Date / /

Quantity -

Tons 17.25

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

,tomer Number: 978

Manifest NO. 71
000384

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck # 59

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature -

Date 11,24,09

Landfill Signature - RB

Date 11,24,09

Quantity -

Tons 22.43

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978

Manifest NO. 72
000385

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck # 54

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature -

Date 11,24,09

Landfill Signature - RB

Date 11 24 09

Quantity -

Tons 20.55

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

stomer Number: 978 Manifest NO. 73
000386

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - Truck # RW20

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - Date 11 24 09

Landfill Signature - Date 11 24 09

Quantity - Tons 16.47

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978 Manifest NO. 74
000389

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - Truck # RW-37

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - Date 11/24/09

Landfill Signature - Date 11/24/09

Quantity - Tons 16.94

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

tomer Number: 978 Manifest NO. 75

000392

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - Truck # 52 1

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature -- SOF Date 11,24109

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - Date 11 24 09

Landfill Signature - Date / /

Quantity - Tons 19.38

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978 Manifest NO. 76

000393

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - ES Meyer Truck # 7

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF Date 11,24109

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - T. Sutton Date 11,24,09

Landfill Signature - Date 11,24.09

Quantity - Tons 20.08

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

tomer Number: 978 Manifest NO. 77

000394

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - Truck # 135

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - [signature] Date 11,24,09

Landfill Signature - [signature] Date 11/24/09

Quantity - Tons 18.94

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978 Manifest NO. 78

000397

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - Truck # CWP91

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF Date 11,24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - Jerry S Date 11/24/09

Landfill Signature - [signature] Date / /

Quantity - Tons 17.42

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

t tomer Number: 978 Manifest NO. 79

000400

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - Truck # M-72

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF Date / 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - Dustin McKay Date 11/24/09

Landfill Signature - TB Date / /

Quantity - Tons 17.07

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978 Manifest NO. 80

000399

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - Truck # 50

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - Bill Krug Date 11/24/09

L ifill Signature TB Date / /

Quantity - Tons 15.35

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

C tomer Number: 978

Manifest NO. 81
000402

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck # 51

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature SOF

Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature -

Date 11/24/09

Landfill Signature - TB

Date / /

Quantity -

Tons 18.75

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978

Manifest NO. 82
000407

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck # 45

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1493 S 66TH

Generator Signature - SOF

Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature

Date 11/24/09

Landfill Signature - TB

Date 11/24/09

Quantity -

Tons 18.06

Generator Copy-Yellow Transporter Copy-Pink Landfill-White /

stomer Number: 978

Manifest NO. 83 000408

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck # D-3

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SDF

Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - [signature]

Date 11/24/09

Landfill Signature - [signature]

Date / /

Quantity -

Tons 14.31

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978

Manifest NO. 84 000409

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck # D-6

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SDF

Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - Dave Dethardt

Date 11 24 09

Landfill Signature - UP

Date / /

Quantity -

Tons 18.98

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978

Manifest NO. 95
000412

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck #3 J+O

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature -

Date 11/24/09

Landfill Signature -

Date / /

Quantity -

Tons 19.03

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978

Manifest NO. 86
000420

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck #RW20

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature -

Date 11/24/09

Landfill Signature -

Date 11/24/09

Quantity

Tons 20.19

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

stomer Number: 978

Manifest NO. 87
000422

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

RW-31
Truck #_____

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - [signature]

Date 11/24/09

Landfill Signature - [signature]

Date 11/24/09

Quantity -

Tons 17.68

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978

Manifest NO. 88
000425

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - EJ Meyer

Truck # 7

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - [signature]

Date 11/24/09

Landfill Signature - [signature]

Date 11/24/09

Quantity -

Tons 20.03

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

stomer Number: 978

Manifest NO. 89

000426

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck # 135

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature -

Date 11'24'09

Landfill Signature -

Date / /

Quantity -

Tons 20.05

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978

Manifest NO. 90

000428

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name -

Truck # CWP 91

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF

Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - Jerry

Date 11'24'09

l dfill Signature -

Date / /

Quantity -

Tons 16.70

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978 Manifest NO. 91

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest 0004130

Bill to - CW PURPERO, INC
Transporter Name - Truck # 50

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - Brian Knuth Date 11 24 09

Landfill Signature - RB Date 11/24/09

Quantity - Tons 15.71

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978 Manifest NO. 92

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest 0004132

Bill to - CW PURPERO, INC
Transporter Name - Truck # M-72

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - Dustin McKay Date 11/24/09

Landfill Signature - RB Date / /

Quantity - Tons 17.96

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

stomer Number: 978 Manifest NO. 93 000443

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - Truck # 45

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - Date 11,24,09

Landfill Signature - Date / /

Quantity - Tons 18.77

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978 Manifest NO. ~~000~~ 09 000444

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - CW PURPERO, INC
Transporter Name - Truck # D-3

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature Date 11,24,09

Landfill Signature - Date / /

Quantity - Tons 14.19

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

tomer Number: 978 Manifest NO. 95

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

000445

Bill to - CW PURPERO, INC
Transporter Name -

Truck # D-5

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature SOF Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature - Dave Deltrich Date 11/24/09

Landfill Signature - Date / /

Quantity - Tons 18.74

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 978 Manifest NO. 96

VEOLIA Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

000449

Bill to - CW PURPERO, INC
Transporter Name -

Truck # 163 J+O

Generator Name - CITY OF WEST ALLIS COMMUNITY DEV AUTHORITY 1495 S 66TH

Generator Signature - SOF Date 11/24/09

Description of Waste - Contaminated Soil DIRECT DISPOSAL

Profile Number - EPL2009-183

Driver Signature Date 11 24 09

ndfill Signature Date / /

Quantity - Tons 18.70

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 079 Manifest No. 97

001011

Veolia Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - C.H. Purpire Jarl Trucking

Transporter Name - _____ Truck # 54

Generator Name - City of West Allis, W. National Ave Renovation

Generator Signature - SOF Date - 12/1/09

Description of Waste - Contaminated Soil - Bip Soil

Profile Number - BIOFPL2008-060

Driver Signature - Date 12/1/09

Landfill Signature - Date 12/1/09

Quantity - Tons 23.83

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 279 Manifest No. 98

Veolia Emerald Park Landfill, LLC. 001013
Non-Hazardous Special Waste Manifest

Bill to - C.W. Purpero
Transporter Name - [illegible] Truck # 59

Generator Name - City of West Allis, W. National Ave Renovation

Generator Signature - SOF Date 12/1/09

Description of Waste - Contaminated Soil - Bio Soil

Profile Number - SITEPL2008-460

Driver Signature - [signature] Date 12/1/09

Landfill Signature - [signature] Date 12/1/09

Quantity - Tons 23.58

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 279 Manifest No. 99

Veolia Emerald Park Landfill, LLC. 001095
Non-Hazardous Special Waste Manifest

Bill to - C.W. Purpro
Transporter Name - R+W Truck # RW20

Generator Name - City of West Allis, W. National Ave Renovation

Generator Signature - SOF Date 12/1/09

Description of Waste - Contaminated Soil - Dio Soil

Profile Number - BIOEPL2009-060

Driver Signature - Date 12/1/09

Landfill Signature - RT Date 12/1/09

Quantity - Tons 18.13

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 079

Manifest No. 100 001021

Veolia Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Billing – C.W. Purpero
Transporter Name – R+W
Truck # 18

Generator Name – City of West Allis, 4/, National Ave Renovation

Generator Signature – SDF
Date 12, 1, 09

Description of Waste – Contaminated Soil – Rio Soil

Profile Number – [illegible]

Driver Signature – R+W
Date 12, 01, 09

Landfill Signature – [signature]
Date 12 01 09

Quantity – Tons 20.67

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 270

Manifest No. 101 001024

Veolia Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to – C.W. Purpura
Transporter Name – ______________________ Truck # ____________

Generator Name – City of West Allis, W. National Ave Renovation

Generator Signature – SQF Date 12.1.09

Description of Waste – Contaminated Soil – Big Soil

Profile Number – AIDEPL2004-060

Driver Signature – M. Schuett Date 12.1.09

Landfill Signature – RB Date 12.1.09

Quantity – Tons 21.27

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 279 Manifest No. 102

Veolia Emerald Park Landfill, LLC. 001034
Non-Hazardous Special Waste Manifest

Bill to - C.W. Purpero
Transporter Name - _____ Truck # 52

Generator Name - City of West Hills, W. National Ave Renovation

Generator Signature - SOF Date 12/1/07

Description of Waste - Contaminated Soil - Bio Soil

Profile Number - BIOEPL2008-060

Driver Signature - _____ Date 12/1/07

Landfill Signature - _____ Date 12/1/07

Quantity - Tons 18.61

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 279 Manifest No. 103 001041

Veolia Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - C.W. Purpero
Transporter Name - Jewell Trucking Truck # 54

Generator Name - City of West Allis, W. National Ave Renovation

Generator Signature SOF Date 12/1/09

Description of Waste - Contaminated Soil - Bio Soil

Profile Number - BIOEPL2008-R00

Driver Signature - Date / /

Landfill Signature - Date 12/1/09

Quantity - Tons 18.28

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 279

Manifest No. 104 001043

Veolia Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - C.W. Purpurp

Transporter Name - Jewel Hauling Truck # 59

Generator Name - City of West Allis, W. National Ave Renovation

Generator Signature - SOF Date 12/1/09

Description of Waste - Contaminated Soil - Bio Soil

Profile Number - BIOEPL2008-060

Driver Signature - [signature] Date 12/1/09

Landfill Signature - [signature] Date 12/1/09

Quantity - Tons 20.57

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 279 Manifest No. 165 0010414

Veolia Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - C.W. Purpura
Transporter Name - RW Truck # 18

Generator Name - City of West Allis, W. National Ave Renovation

Generator Signature - SOF Date 12.1.09

Description of Waste - Contaminated Soil - Rio Soil

Profile Number - BLOEPL.000A-000

Driver Signature [signature] Date 12.01.09

Landfill Signature [signature] Date 12.1.09

Quantity Tons 20.58

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 279 Manifest No. 106 001049

Veolia Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - C.W. Purpuro D+V RW20
Transporter Name - _____ Truck # _____

Generator Name - City of West Allis, W. National Ave Renovation

Generator Signature - BOE Date 12/1/09

Description of Waste - Contaminated Soil - Bio Soil

Profile Number - WIDNRL2008-060

Driver Signature - [signature] Date 12/1/09

Landfill Signature - [signature] Date 12/1/09

Quantity - Tons 20.31

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number 279 Manifest No. 108 001063

Veolia Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill To - C.W. Purpuro
Transporter Name - Dawell Truck # 52

Generator Name - City of West Allis, W. National Ave Renovation

Generator Signature - [illegible] Date 12/1/09

Description of Waste - Contaminated Soil - Bio Soil

Profile Number - WIOFPL2008-060

Driver Signature - [signature] Date 12/1/09

Landfill Signature - [signature] Date 12/1/09

Quantity Tons 20.45

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 279 Manifest No. 109

001068

Veolia Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - C.W. Purpero
Transporter Name - Jewll Trucking Truck # 59

Generator Name - City of West Allis, N. National Ave Renovation

Generator Signature - SOF Date 12/01/09

Description of Waste - Contaminated Soil - Bio Soil

Profile Number - BIOERL2008-060

Driver Signature - [signature] Date 12/1/09

Landfill Signature - [signature] Date 12/1/09

Quantity - Tons 25.18

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 279 Manifest No. 110 001064

Veolia Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - E.W. Purpuro
Transporter Name - Jewell Trucking Truck # 54

Generator Name - City of West Allis, W. National Ave Renovation

Generator Signature - SOF Date 12/1/09

Description of Waste - Contaminated Soil - Bio Soil

Profile Number - 8TDEPL200A-060

Driver Signature - Date 12/1/09

Landfill Signature - Date 12/1/09

Quantity - Tons 23.30

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 279 Manifest No. 111

001070

Veolia Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to -- C.W. Purpuro
Transporter Name - RKL Truck # 18

Generator Name - City of West Allis, W. National Ave Renovation

Generator Signature - SOF Date 12/1/09

Description of Waste - Contaminated Soil - Bio Soil

Profile Number - 410[illegible]

Driver Signature Rick Date 12/01/09

Landfill Signature - [illegible] Date 12/01/09

Quantity - Tons 22.35

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 279 Manifest No. 112

Veolia Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest 001073

Bill to - C.W. Purpuro
Transporter Name - R+W Truck # RWRO

Generator Name - City of West Allis, W. National Ave Renovation

Generator Signature - SUF Date 12,1,09

Description of Waste - Contaminated Soil - Bio Soil

Profile Number - BIOFPI 2008-000

Driver Signature - [signature] Date 12/1/09

Landfill Signature - [signature] Date 12/1/09

Quantity - Tons 25.59

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 279 Manifest No. 113

001076

Veolia Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - C.W. Purpuro
Transporter Name - _____ Truck # 34

Generator Name - City of West Allis, W. National Ave Renovation

Generator Signature - JOF Date 12/1/09

Description of Waste - Contaminated Soil - Bio Soil

Profile Number - BIOSOIL2008-068

Driver Signature - [signature] Date 12/1/09

Landfill Signature - [signature] Date 12/1/09

Quantity - Tons 20.02

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 279 Manifest No. 114

Emerald Park Landfill, LLC. 001096
Non-Hazardous Special Waste Manifest

Bill to: E.W. Burpee
Transporter Name - Jewell Truck # 52

Generation Name - City of West Allis, W. National Ave Renovation

Generator Signature - SOF Date 12/1/09

Description of Waste - Contaminated Soil - Rio Soil

Profile Number - 810EPL2008-060

Driver Signature - Bob Mac Date 12/1/09

Landfill Signature - AB Date 12/1/09

Quantity - Tons 21.81

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 279 Manifest No. 115

001097

Veolia Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - C.W. Marpure Jewell Trucking

Transporter Name - _____ Truck # 54

Generator Name - City of West Allis, W. National Ave Renovation

Generator Signature - BOF Date 12/1/09

Description of Waste - Contaminated Soil - Rio Soil

Profile Number - RIDEPL2008-060

Driver Signature [signature] Date 12/1/09

Landfill Signature - AD Date 12/1/09

Quantity - Tons 18.97

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 279 Manifest No. 116

Veolia Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest 001098

Bill to - C.W. Purpurg
Transporter Name - Sewer Rodding Truck # 59

Generator Name - City of West Allis, W. National Ave Renovation

Generator Signature - SOF Date 12/1/09

Description of Waste - Contaminated Soil - Bio Soil

Profile Number - BIOPL2008-060

Driver Signature - [signature] Date 12/1/09

Landfill Signature - [signature] Date 12/1/09

Quantity - Tons 19.74

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 279

Manifest No. 117 001099

Veolia Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - C.W. Purpero

Transporter Name - RKT Truck # 18

Generator Name - City of West Allis, W. National Ave Renovation

Generator Signature - SOF Date 12/1/09

Description of Waste - Contaminated Soil - Big Soil

Profile Number - WIEPL2000-MSR

Driver Signature - [signature] Date 12/01/09

Landfill Signature - [signature] Date 12/1/09

Quantity - Tons 19.67

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number: 279

Manifest No. 118 001101

Veolia Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - C.W. Purpero
Transporter Name - RW Truck # RW20

Generator Name - City of West Allis, W. National Ave Renovation

Generator Signature - SOF Date 12 / 1 / 09

Description of Waste - Contaminated Soil - Bio Soil

Profile Number - STOFIA 2009-060

Driver Signature - Date 12 / 1 / 09

Landfill Signature - Date 12 / 1 / 09

Quantity - Tons 18.68

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

Customer Number - 279

Manifest No. 119
001102

Veolia Emerald Park Landfill, LLC.
Non-Hazardous Special Waste Manifest

Bill to - C.W. Purpuro
Transporter Name - _____ Truck # 34

Generator Name - City of West Allis, W. National Ave Renovation

Generator Signature - SOF Date 12/1/09

Description of Waste - Contaminated Soil - Bio Soil

Profile Number - EIRCPL2009-000

Driver Signature - [signature] Date 12/09

Landfill Signature - [signature] Date 12/1/09

Quantity - Tons 21.87

Generator Copy-Yellow Transporter Copy-Pink Landfill-White

ARCADIS

Appendix H

Wet Detention Pond Operation and Maintenance Plan

ARCADIS
Infrastructure, environment, buildings

Imagine the result

City of West Allis
Community Development Authority

DRAFT
Wet Detention Pond
Operation and Maintenance Plan

67th Place Industrial Park
1960 South 67th Place
West Allis, Wisconsin

April 2010

ARCADIS

DRAFT
Wet Detention Pond Operation and Maintenance Plan

67th Place Industrial Park
1960 West 67th Place
West Allis, Wisconsin

Rebecca A. Robennolt
Remediation Specialist

Benjamin J. Verburg, PE, CHMM
Principal Engineer

Prepared for:
City of West Allis
Community Development Authority

Prepared by:
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Tel 414.276.7742
Fax 414.276.7603

Our Ref.:
WI001074.0007

Date:
April 2010

Table

Figure

Appendices

ARCADIS

Wet Detention Pond Operation and Maintenance Plan

67th Place Industrial Park
1960 South 67th Place
West Allis, Wisconsin

1. Introduction

This Operation and Maintenance (O&M) Plan has been prepared for the wet detention pond at the 67th Place Industrial Park in West Allis, Wisconsin (Site). The O&M Plan describes the maintenance requirements for the wet detention pond in accordance with the projects specifications and as presented in the Site Grading and Earthwork Summary Report for the Site. O&M activities are essential for preservation of the wet detention pond. This document is submitted to provide an approach to O&M of the wet detention pond at the 67th Place Industrial Park, but may require modification following site development, and should be evaluated periodically to reflect current site conditions.

As presented in the Summary Report, the wet detention pond is located on the eastern portion of the redeveloped parcel. The area beneath the wet detention pond footprint was overexcavated by approximately 3 feet then originally planned to address unsuitable structural materials (primarily lime). Then, from bottom to top, the pond was constructed using a bridge layer of granualar material over a Tensar BX 1200 Geogrid for subbase stability. A clay liner was installed and tested with measured permeability values ranging from 3.4-7.2 X 10^{-9} centimeters per second (cm/sec). The pond was completed with a layer of geotexitle material overlain by drainage stone at the pond base, riprap stone placed along the sideslope to the safety shelf, with seed and temporary erosion control matting placed along the remaining pond slope to the top berm. The surface area of the pond is approximately 0.79 acres. Operating water level is 718.95 feet above mean sea level (ft amsl). The operating depth of the pond is 4.95 feet for a total operating volume of 916,000 gallons. The pond outlet structure maintains the operating water level with a discharge outlet routed to the gabion-lined channel. The effluent invert elevation at the pond outlet structure is 713.65 ft amsl and 705.94 ft amsl at the gabion-lined channel.

2. Objectives

The objective of the O&M Plan is to:

- Describe procedures for operation and maintenance of the wet detention pond at the 67th Place Industrial Park

This O&M Plan serves as a guide for field personnel through maintenance procedures for the wet detention pond to maximize effectiveness of the system. Implementation of the O&M plan will assist in achieving the following objectives:

- Promote efficient site drainage.
- Minimize erosion or abrasion of the site green space, wet detention pond slopes, and gabion-lined channel.
- Verify that any settling or subsidence does not affect the integrity of the wet detention pond.
- Assess the sediment depth, facilitate sediment removal, and disposal of accumulated sediment. Maintain the clay liner integrity during sediment removal.
- Inspection and maintenance of the pond outlet structure.
- Address weed or algae growth, insect and wild life control, and landscaping of the pond slopes.

Elements of the O&M Plan address the following:

- Site Background
- Performance and Compliance Monitoring Program
- Contingency Plan
- Reporting Requirements

Contractors/owners/operators and other stakeholders should be proved copies of this O&M Plan. This O&M plan should be supplemented by a site-specific health and

safety plan and safety measures should be followed by future contractors/owners/operators and other stakeholders.

2.1 Site Background

The site consists of an approximate 11.6-acre parcel of land at 1960 South 67th Place, in West Allis, Wisconsin (Figure 1). The site is bounded by the Union Pacific Railroad tracks and Metal Technologies Incorporated (heavy industrial) to the north, Becher Place to the east, West Allis Fire Department and residential housing to the south, and St. Augustine Catholic Church and School and residential housing to the west, see Figure 1. The surrounding land use is predominantly residential properties. The site is located in the southeastern ¼ of U.S. Public Land Survey Section 3, Township 6 North, Range 21 East in Milwaukee County. The site is currently vacant and zoned as a M1 Manufacturing District.

AIRCO (AIRCO Industrial and AIRCO Welding Products) occupied the site between 1932 and 1984. The Pre Site Grading and Earthwork Site Plan View is illustrated on Figure C1. AIRCO manufactured carbide gas, which produced lime slurry as a byproduct of its operation. The lime slurry was disposed of in onsite pits or lagoons that covered approximately ±6 acres on the eastern portion and southwest portion of the property. The property formerly included five metal and masonry buildings of varying sizes between approximately 3,600 to 5,500 square feet and two large storage silos located in the central portion of the property. Mr. John Novak purchased the property in 1985. Mr. Novak rented the land out to various businesses including a waste storage and transfer facility, an oil/hazardous waste trucking terminal, and a salvage/junk yard. The city of West Allis (CWA) Community Development Authority acquired the property in 2006.

The primary focus of the Site grading and earthwork completed in 2009 was to prepare the site for development. The second objective of the grading and earthwork was to minimize storm and groundwater impacts to the municipal system. The wet detention pond was designed to mitigate storm water runoff for the site.

2.2 Performance Monitoring

Routine care of the wet detention pond is required to maintain the integrity of the system. Performance and monitoring provides a way to verify the wet detention pond is performing satisfactorily. Onsite care will include visual inspection of the pond to identify erosion and vegetation condition of the slopes, monitoring for settlement,

measurement of the sediment deposition, inspection of the pond outlet structure, inspection of the gabion-lined channel (pond discharge outfall), and observation of the permanent water pool. These topics are discussed in further detail in the subsequent sections.

2.2.1 Inspection

On-site inspection will be conducted to document the activities identified in this O&M Plan. Inspection forms will be used to record findings, unusual conditions, and corrective action(s) taken. Examples of the inspection forms are included in Attachment A. These example inspection forms may change in format throughout the development period, however; the substance will remain the same. Conditions requiring corrective action will be rectified, and the repair will be documented on a Corrective Action Form. Table 1 summarizes the specific post-closure activities and frequencies. Records of corrective actions will be maintained onsite.

Care of the wet detention pond will require inspection and maintenance of the slopes of the wet detention pond, at the pond outlet structure, as well as the pond pool itself to ensure integrity. The O&M Plan will be amended events occur during the development period that affect the monitoring requirements.

2.2.2 Erosion Prevention

The site grading has been designed to promote run-off of precipitation, to facilitate site drainage to the wet detention pond, and to minimize run-on to the adjacent properties. Areas surrounding the wet detention pond are to be vegetated to prevent erosion at the pond slopes and berm.

Inspections to the wet detention pond will include, but not be limited to the following: obstructions to flow; erosion; excessive sedimentation or debris accumulations; inadequate vegetation; and loose or missing rip-rap. Should any vegetated area show significant washout or gullying (greater than 4 inches), the eroded area will be filled when the weather conditions permit or within 30 days, whichever occurs first. If results of the inspection indicate that any site drainage patterns have changed resulting in ponding or excessive run-off, the affected area will be appropriately repaired to re-establish correct flow direction to the wet detention pond. Inspections should be conducted after extreme weather events (e.g., tornadoes, 10-year/24-hour precipitation events) as determined by the CWA.

2.2.3 Settlement Detection Monitoring

Inspection for excessive settlement will be performed bi-annually (every 2 years) by visually inspecting the wet detention pond outlet structure. Should inspection indicate that damage or disturbance has occurred to the wet detention pond or clay liner, surveying of the elevations of the wet detention pond outlet structure will be conducted using a city of West Allis benchmark as a reference point. Surveyed settlement elevations will be used to calculate the vertical change compared with installed elevations noted on the asbuilt drawings included on Drawing C2. All surveying will be performed by a Wisconsin Registered Land Surveyor, and the survey activities will be documented. If the vertical movement of the wet detention pond exceeds the allowable amount (to be dictated by the wet detention pond design), CWA will prepare and submit an assessment or investigation plan, and schedule action within 60 days. After implementing the assessment or investigation, CWA will prepare and submit a corrective action plan following any necessary communication with WDNR.

2.2.4 Sediment Depth Assessment

Accumulated sediment in the wet detention pond will be removed when the average depth of the permanent pool is less than 3.5 feet. Frequency of the sediment removal rate will vary with the site usage, but should be completed on a bi-annually (every two years). Sediment depth assessment should be completed annually with additional measurements recorded with a change in the site usage (development). Pond sediment shall be disposed at approved location and in accordance with NR 500, Wis. Adm. Code.

The pond bottom elevation is ±714.00 ft amsl, with the bottom of clay liner elevation ±708.5 ft amsl. Excavation below the clay liner depth is prohibited unless geotechnical analysis is completed in accordance with section V.A. 1.b.&c. of the *WDNR Wet Detention Pond Technical Reference (1001).* If the clay liner is damaged during sediment removal the owner/operator shall schedule action with 60 days.

2.2.5 Inspection and Maintenance of the Pond Outlet Structure, Eastern Embankment, Gabion-Line Channel

The wet detention pond outlet structure, eastern embankment, and gabion-lined channel discharge shall be kept clear of debris or overgrown vegetation that may inhibit or block the flow of run-off. Inspections should be conducted after extreme weather events (e.g., tornadoes, 10-year/24-hour precipitation events) or, at a minimum, on an

annual basis. The eastern embankment shall be inspected for groundwater seepage to ensure the integrity of the pond is maintained.

2.2.6 Address Weed or Algae growth, Insect and Wildlife Control, and Landscaping of the Pond.

If more than 20 percent of the vegetated slope is devoid of vegetation, the area will be re-vegetated as weather conditions permit. Steps will be taken to ensure that drainage pathways are maintained throughout the development period. During inspection, any tree or scrub brush seedling that is present at the vegetated perimeter will be removed to prevent potential deep root growth that might compromise the integrity of the clay liner. Baiting for rodents and treating for burrowing animals or insects will also be administered, if the need is observed during inspection. Landscaping of the pond shall be maintained by the CWA until the property has been sold for development.

2.3 Site Security

Signage will be posted identifying the site, with access granted by CWA authorization. Inspection of the signage is included in the inspection activities and on the documentation forms. These inspections will include checking for damage to posts and signs.

2.4 Maintenance Schedule

Site inspections will be performed quarterly during the first year after construction of the wet detention pond. After the first year, inspections of the outfall structure, erosion controls, and vegetation will be conducted annually. Settlement detection and pond sediment thickness measurements will be conducted bi-annually. Active maintenance will be performed as necessary based on the observations reported during routine inspections of the wet detention pond. If there is rapid grass growth in areas surrounding the wet detention pond or gabion-lined channel, regularly scheduled grass mowing may be necessary.

3. Contingency Plan

In the unlikely event that it is determined that the wet detention pond (clay liner) has failed and there has been a release to the environment, specific actions are necessary. This section provides direction regarding this potential, and is organized into two sections: Contingency Plan – Response and Contingency Plan – Procedures.

3.1 Contingency Plan – Response

Potential incidents that might require a contingency plan response include 1) failure of the clay liner, and 2) flood event.

- Spontaneous failure of the wet detention pond clay liner with release of storm water to the water table is highly unlikely. The wet detention pond has been completed at grade, and there are no slopes that might become unstable. Use of a liner material will maintain the storm water detention as designed. Proper construction with uniform permeability measurements across the wet detention clay liner will prevent localized liner seam failure. However, should clay liner failure occur, there exists the possibility of storm water infiltration to impacted groundwater. The site groundwater has known impacts due to the lime lagoons and site activities before the site grading and earthwork was completed. Clay liner repairs and/or modifications would then take place to prevent further leaching.

4. Reporting Requirements

4.1 Records Retainage

Records will be managed by CWA or the future owner/operator, and be maintained for a minimum of 3 years.

4.2 Operation and Maintenance Records

O&M activities for the wet detention pond will be recorded in the appropriate logbook or computer system. Notations will be made when the wet detention pond is inspected and maintained, engineering measurement taken, and when corrective measures are implemented. As indicated, inspection forms are included in Attachment A of this report. Corrective action measures and re-inspection forms will be completed during the period that the corrective measures take place.

4.3 Reporting

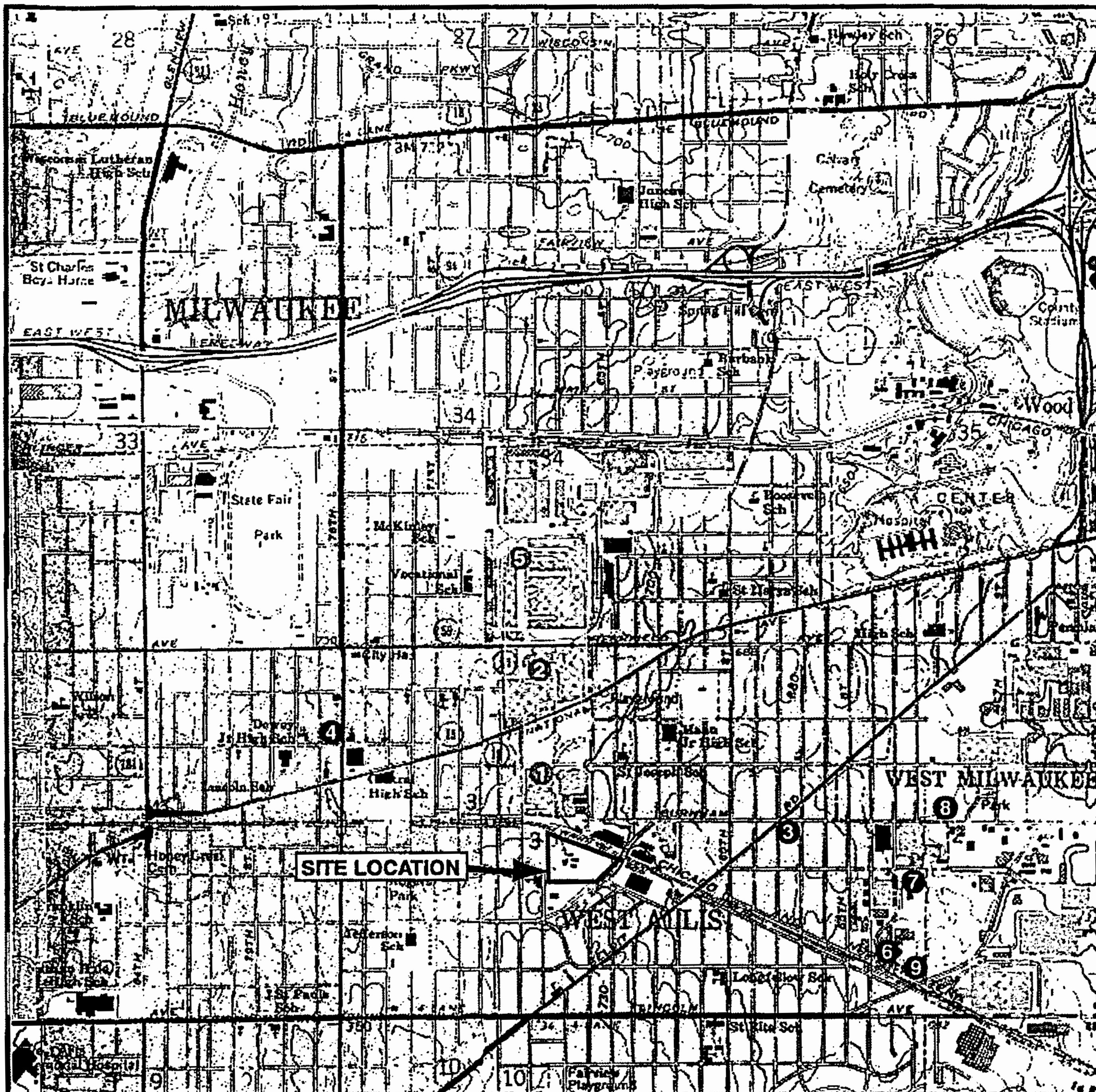
O&M reports shall be prepared annually that will include at a minimum: a discussion of the wet detention pond monitoring activities preformed during the reporting period; maintenance preformed that is other than preventative maintenance; key personnel changes; and coordination activities. Any proposed modifications to the configuration or operation of the wet detention pond will be included.

Table 1. Wet Detention Pond Inspection Activities, 67th Place Industrial Park , West Allis, Wisconsin.

Item	Types of Problems	Frequency of Inspection	Circumstance or Trigger Level (If applicable)	Corrective Action
Settlement Markers (Outlet Structure)	Excessive settlement, subsidence	Bi-Annually	Vertical movement of the pond outlet structure exceeding the design directed allowance	Assess conditions repair as needed.
Wet Detention Pond	Slumping, cracking, damage, or rutting of side slopes	Annually	Visual evidence of discontinuity of surface - by way of depressions or cracks	Assess conditions repair as needed.
	Softening or deteriorating side slopes	Annually	Visual evidence	Assess conditions repair as needed.
	Presence of material lime products	Annually	Visual evidence	Clean
	Rodents, burrowing animals, or insect infiltration	Annually	Evidence of rodents, burrowing animals, or insect infiltration	Remove animals or insects by acceptable means.
	Weed or algae growth	Annually	Evidence weed or algae growth	Assess conditions, remove and dispose of as necessary.
	Erosion, obstructions to flow, deterioration, excessive siltation, inadequate protective vegetation, loose or missing riprap	Annually and after extreme weather events	Any obstructions to flow; silt buildup in excess of 50% of design freeboard; greater than 20% of area devoid of vegetation	Remove obstruction and/or silt. Revegetate as required

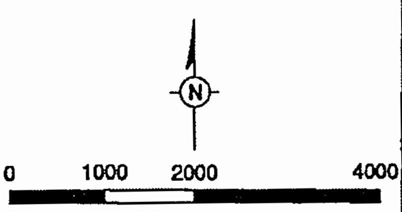
Table 1. Wet Detention Pond Inspection Activities, 67th Place Industrial Park , West Allis, Wisconsin.

Item	Types of Problems	Frequency of Inspection	Circumstance or Trigger Level (if applicable)	Corrective Action
Pond Outlet and Drainage Discharge (Gabion-Lined Channel)	Excessive growth at discharge outlet (mowing required)	Annually	Evidence of excessive growth which hinders visual inspection of cover	Mow vegetation
	Tree and scrub oak seedlings or other deep-rooted vegetation	Annually	Evidence of growth	Remove unwanted vegetation
	Standing water on side walk or along West Becher Place	Annually and after extreme weather events	Visual evidence of water	Assess conditions, inspect manholes, jet-clean as necessary.
	Seepage of groundwater along eastern embankment (Along West Becher)	Annually and after extreme weather events	Visual evidence of water	Assess conditions including clay liner. Repair as needed.
Signage	Damaged, illegible	Annually	Impacted by construction or vandalism	Replace Signs



SOURCE: Composite of USGS 7.5 Minute Topographic Maps, MILWAUKEE (1971) and WAUWATOSA (1994), WISCONSIN Quadrangles

WELL #	ID
1	ML-06/21E/03-0098
2	ML-06/21E/03-0111
3	ML-0621E/02-0114
4	ML-06/21E/04-0297
5	ML-07/21E/34-0022
6	ML-06/21E/02-0064
7	ML-06/21E/02-0370
8	ML-06/21E/02-0099
9	ML-06/21E/02-0225



67[TH] PLACE INDUSTRIAL PARK
1960 SOUTH 67TH PLACE
WEST ALLIS, WISCONSIN

SITE LOCATION MAP

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FIGURE 1

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Example Inspection Form
Security Devices
Wet Detention Pond
67th Place Industrial Park, West Allis, Wisconsin

Functional Group Assigned this Inspection Duty: _____
Inspector's Name: _____
Date of Inspection: _____
Time of Inspection: _____

Inspection Checklist

1. Signage – Site Access
   Inspect the signage
   - Are there any signs of vandalism or damage?_____
   - Is the gate locked and operable?_____
   - Is there any sign of damage to the lock?_____

2. Any deficiencies? _____
_____

3. Comments: _____

4. Corrective Action Required (Complete Correction Action Form): _____
_____
_____

5. Inspector's Signature: _____

Send completed form to CWA for required records maintenance.

Example Inspection Form
Wet Detention Pond Outlet Structure and Gabion-Lined Channel
67th Place Industrial Park, West Allis, Wisconsin
(Page 1 of 3)

Functional Group Assigned This Inspection Duty: _____
Inspector's Name: _____
Date of Inspection: _____
Time of Inspection: _____

Note: Perform this inspection on a quarterly basis and after extreme weather events to inspect erosion.

Inspection Checklist

1. Wet Detention Pond: Walk the entire wet detention pond perimeter.

   - Are there any cracks or breaks in the pond berm or side slopes?_____
     _____
   - Are there any signs of uneven surfaces (depressions or bumps) or clay liner breakdown?_____
   - Are there any signs of excessive erosion of slope or vegetated perimeter?
     _____
   - Are there any deep-rooted or woody plants established on the slope or at the perimeter?_____
   - Are there any signs of burrowing animals or insect infiltration?
     _____
   - Is there any weed or algae growth? _____

2. Settlement or subsidence (Bi-Annually or As Needed):

   - Does movement (elevation change) exceed allowable as determined by surveyor's calculations (Page 3 of 3)? _____
   - Are there any physical signs of settlement or subsidence? _____

Example Inspection Form
Wet Detention Pond Outlet Structure and Gabion-Lined Channel
67th Place Industrial Park, West Allis, Wisconsin
(Page 2 of 3)

3. Wet Detention Pond Outlet Structure

   Inspect the wet detention pond outlet structure and discharge outlet at the gabion-lined channel.

   - Is there evidence of erosion? _____
   - Does silt accumulation prevent run-off? _____
   - Are there signs of ponding? _____
   - Is there and blockage or debris? _____

4. Eastern Embankment

   Inspect the eastern embankment for groundwater seepage.

   - Is there evidence of erosion? _____
   - Are there signs of excessive seepage or ponding? _____
   - Are there any signs of uneven surfaces (depressions or bumps) or clay liner breakdown? _____

5. Any deficiencies? _____
   _____

6. Comments: _____
   _____
   _____

7. Corrective Action Required (Complete Corrective Action Form): _____
   _____
   _____

8. Inspector's Signature: _____

Example Inspection Form
Wet Detention Pond Outlet Structure and Gabion Channel
67th Place Industrial Park, West Allis, Wisconsin
(Page 3 of 3)

SAFETY SHELF AND POND OUTLET STRUCTURE MEASUREMENT AND MOVEMENT CALCULATIONS:

Survey contracted to: _____
Date/Time of Survey: _____

Using the benchmark elevation, City of West Allis benchmark, survey the pond outlet structure and note their Current Elevations and Placements to within ±0.01 foot.

	Current Elevations (CE)	Current Placements (CP)	
1.			
2.			

	Established Elevations (EE)	Established Placements (EP)		Movements (M)		
		Northing	Easting	Elevation	Northing	Easting
1.						
2.						

Calculate the vertical movement for the settlement markers using the following formulas:

$M_{elevation}$ abs (CE-EE) (Where abs absolute value.)

If any of the calculated movement exceed allowable (TBD), contact CWA immediately.

Send completed form to CWA for required records maintenance.

ARCADIS

Example Inspection Form
Safety Shelf, Eastern Embankment, and Pond Outlet Structure
67th Place Industrial Park, West Allis, Wisconsin

Functional Group Assigned This Inspection Duty: _____

Inspector's Name: _____

Date of Inspection: _____

Time of Inspection: _____

Note: Safety Shelf, Eastern Embankment, and Pond Outlet Structure inspection annually.

Inspection Checklist

1. Check the Eastern Embankment of the Site for any evidence of seepage or disturbance.

Findings (discuss): _____

_____

_____

2. Check the Safety Shelf, and Pond Outlet Structure at the wet detention pond for any evidence of damage or disturbance.

Findings (discuss): _____

_____

_____

3. Corrective Action Required (Complete Corrective Action form):

_____

_____

4. Inspector's Signature: _____

_____

_____

If any damage or disturbance is noted contact CWA immediately.

Send completed form to CWA for required records maintenance.

ARCADIS

Example Corrective Action Form
67th Place Industrial Park
West Allis, Wisconsin

Report Number: _____
Date of Initial Inspection: _____
Name of Inspector: _____

Note: If Corrective Action cannot be completed within 30 days of the Initial Inspection Date, a Corrective Action Plan must be prepared and maintained in the operating record.

Corrective Action Work Order

Type of problem: _____
_____
Required upgrade: _____
_____
Corrective action assigned to: _____ _____
Name Date

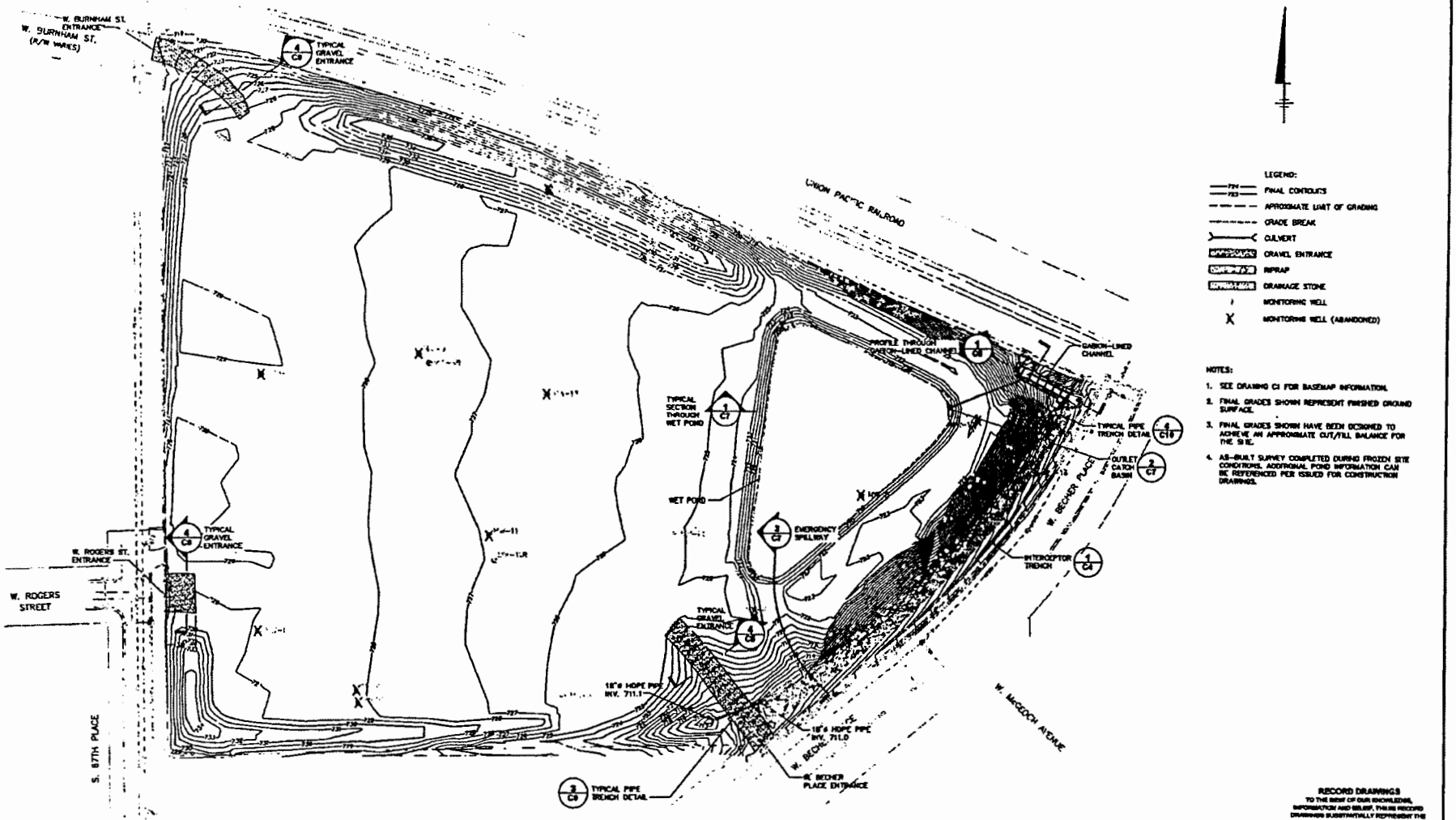
Corrective Action Completion Report

Received on: _____ By: _____
Completed on: _____
Comments: _____
_____
_____
By: _____ _____
Name Date

Reinspection Report

Observations: _____
_____
Comments: _____
_____
_____
Inspector: _____ _____
Signature Date

Send completed form to CWA for required records maintenance.



No.	Date	Revision	By	Chd
1	3/13/19	RECORD DRAWINGS	RR	
0	8/13/18	ISSUED FOR CONSTRUCTION	AR	MM

Professional Engineer's Name: BENJAMIN J. VERSBURG
Professional Engineer's No.: 31794
State: WI | Date Signed: | Project Mgr.: BV
Designed by: TAB | Drawn by: BKD | Checked by: TAB

ARCADIS U.S., INC.

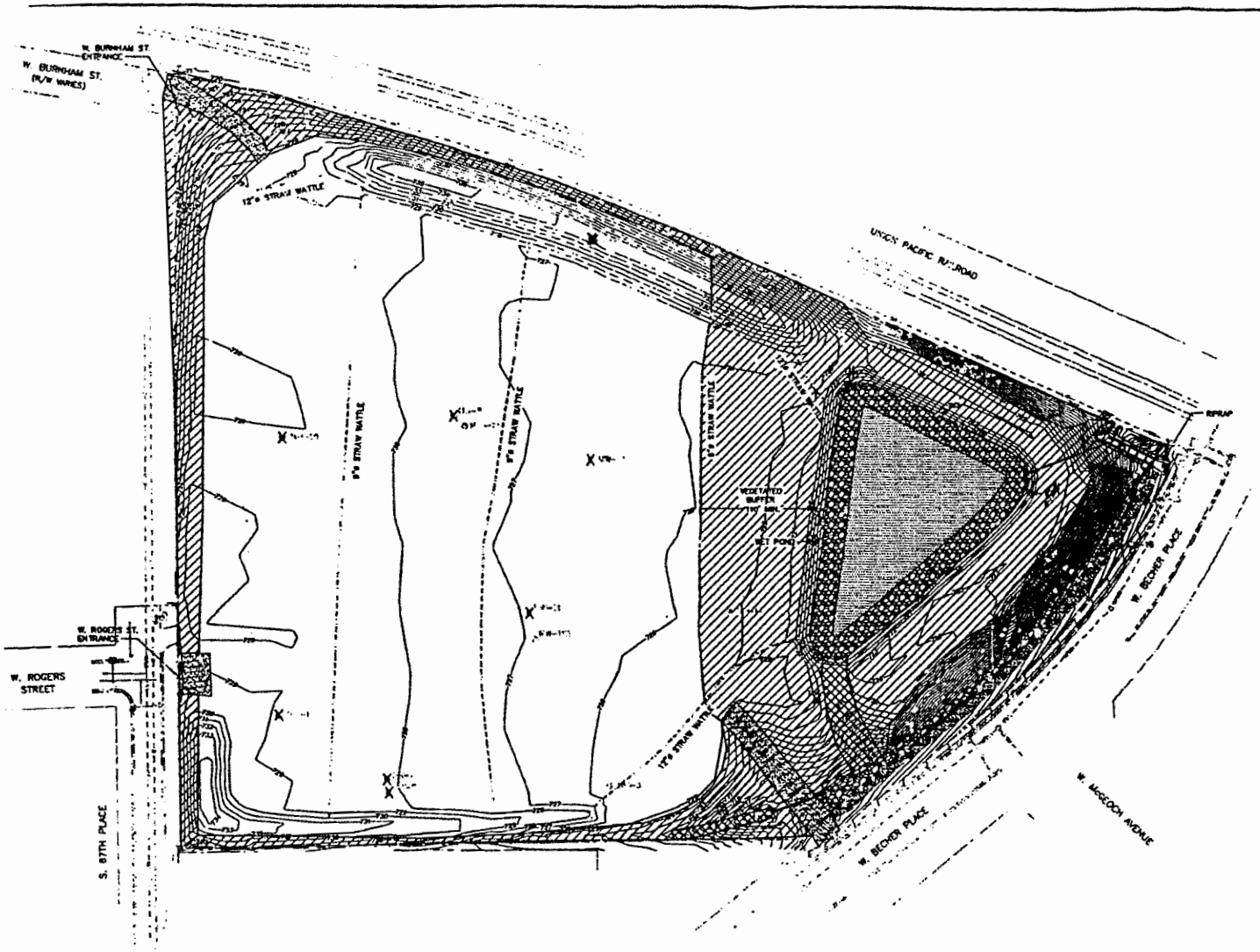
CITY OF WEST ALLIS COMMUNITY DEVELOPMENT AUTHORITY • WEST ALLIS, WISCONSIN
67TH PLACE INDUSTRIAL PARK

POST-SITE GRADING AND EARTHWORK PLAN

CIVIL

ARCADIS Project No.: WISWEIN.00027.00007
Date: MARCH 2019
ARCADIS, 6723 Towpath Road, P.O. Box 66, Syracuse, NY 13214, Tel. 315.446.9120

C3



LEGEND:

- EXISTING CONTOURS
- 724 / 725 FINAL CONTOURS
- APPROXIMATE LIMIT OF GRADING
- GRADE BREAK
- CULVERT
- STRAW WATTLE (WITH DIAMETER)
- TEMPORARY EROSION CONTROL MATTING
- PERMANENT TURF REINFORCEMENT MATTING
- GRAVEL
- DRAINAGE STONE
- RIPRAP

NOTES:

1. SEE DRAWING C1 FOR BASEMAP INFORMATION.
2. ALL DISTURBED SOIL SURFACES FERTILIZED, SEEDED, AND MULCHED IMMEDIATELY UPON COMPLETION OF SITE GRADING ACTIVITIES WITHIN THOSE AREAS, IN ACCORDANCE WITH PROJECT SPECIFICATIONS.
3. ALL AREAS DESIGNATED TO RECEIVE TEMPORARY EROSION CONTROL MATTING (ECM) OR PERMANENT TURF REINFORCEMENT MAT (TRM) RECEIVED A MINIMUM OF 4 INCHES OF TOPSOIL COVER PRIOR TO SEEDING. THE BOIL BERM ALONG THE NORTHERN EDGE OF WEST BECHER PLACE ALSO RECEIVED A MINIMUM OF 4 INCHES OF TOPSOIL COVER PRIOR TO SEEDING.
4. ALL ECM AND TRM WAS PINNED TO THE GROUND AND PROPERLY ANCHORED AT THE EDGES, IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION GUIDELINES.
5. ENDS OF STRAW WATTLES WERE FIRMLY BUTTED AGAINST ONE ANOTHER. STRAW WATTLES WERE INSTALLED AND SECURED TO THE GROUND IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION GUIDELINES. TOP OF 8" WATTLES ARE APPROXIMATELY 3" LOWER THAN TOP OF 12" WATTLES.

RECORD DRAWINGS
TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, THESE RECORD DRAWINGS SUBSTANTIALLY REFLECT THE PROJECT AS CONSTRUCTED

DATE_____BY_____

No.	Date	Description	By	Chkd
1	3/13/19	RECORD DRAWINGS	RR	
0	5/13/08	ISSUED FOR CONSTRUCTION	RR	WM

Professional Engineer's Name: BENJAMIN J. VERBURG
Professional Engineer's No.: 31794
State: WI

Designed by	Drawn by	Checked by
TAS	BRD	TAS

ARCADIS U.S., INC.

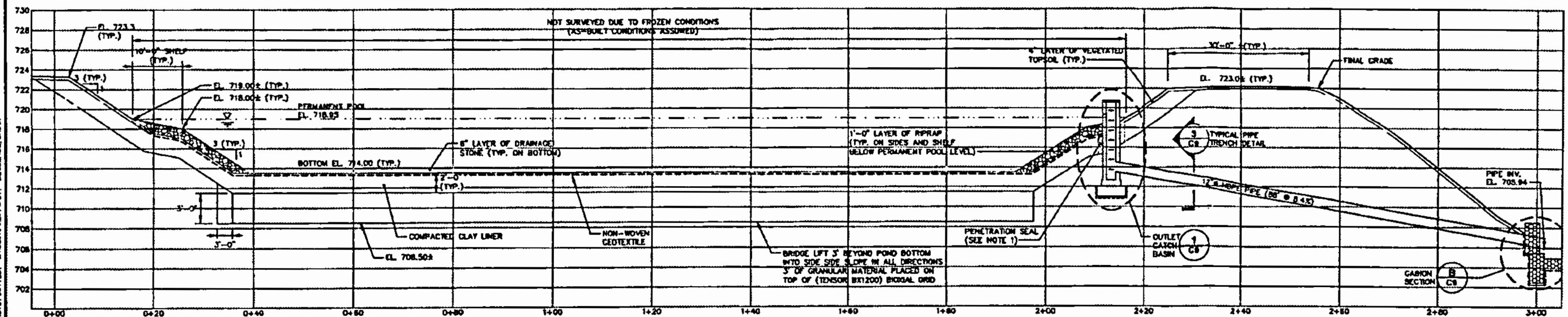
CITY OF WEST ALLIS COMMUNITY DEVELOPMENT AUTHORITY • WEST ALLIS, WISCONSIN
67TH PLACE INDUSTRIAL PARK

POST SITE GRADING & EARTHWORK RESTORATION AND STORMWATER MANAGEMENT PLAN

CIVIL

ARCADIS Project No.: WI001074.0067.00007
Date: MARCH 2019
ARCADIS 9722 Towpath Road P.O. Box 66 Syracuse, NY 13214 Tel. 315.446.9120

C5

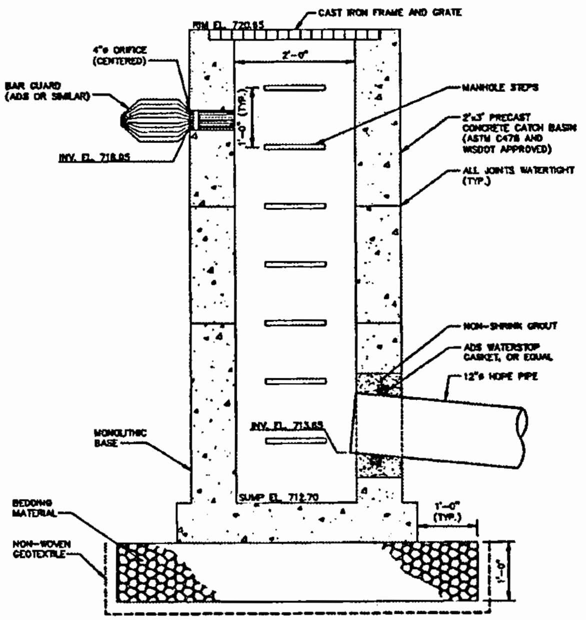


NOTE:

1. ALL PENETRATIONS THROUGH COMPACTED CLAY LINER SEALED WITH A MINIMUM OF 1 FOOT (AS MEASURED FROM FACE OF PENETRATION AND EXTENDING THROUGH FULL THICKNESS OF COMPACTED CLAY LINER) OF CLAY/BENTONITE MIX. CLAY/BENTONITE MIX SHALL CONSIST OF A MINIMUM OF 25% BY VOLUME, GRANULAR BENTONITE THOROUGHLY MIXED WITH THE CLAY MATERIAL USED TO CONSTRUCT THE LINER.

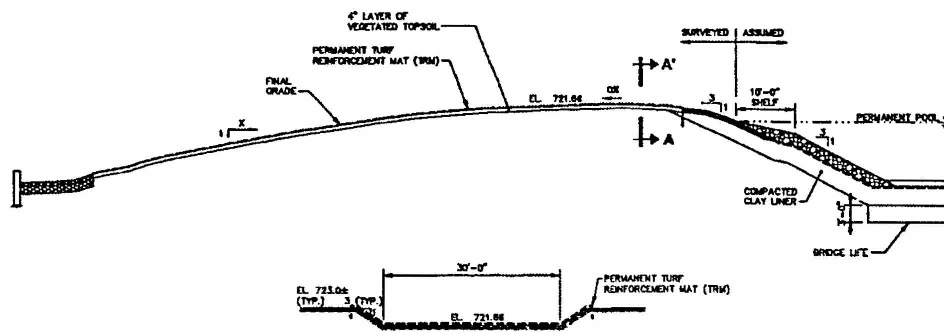
TYPICAL SECTION THROUGH WET POND (1)

(2X VERTICAL EXAGGERATION)



OUTLET CATCH BASIN (2)

NOT TO SCALE



EMERGENCY SPILLWAY (3)

NOT TO SCALE

RECORD DRAWINGS
TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, THESE RECORD DRAWINGS SUBSTANTIALLY REPRESENT THE PROJECT AS CONSTRUCTED.

DATE________ BY________

SCALE AS INDICATED

No.	Date	Revisions	By	Ckd
1	3/12/10	RECORD DRAWINGS	RR	
0	6/13/09	ISSUED FOR CONSTRUCTION	RR	WM

Professional Engineer's Name: BENJAMIN J. VERBURG
Professional Engineer's No.: 31794
State: WI
Designed by: TAS | Drawn by: BKD | Checked by: TAS

ARCADIS
ARCADIS U.S., INC.

CITY OF WEST ALLIS COMMUNITY DEVELOPMENT AUTHORITY • WEST ALLIS, WISCONSIN
67TH PLACE INDUSTRIAL PARK

WET POND SECTIONS AND DETAILS

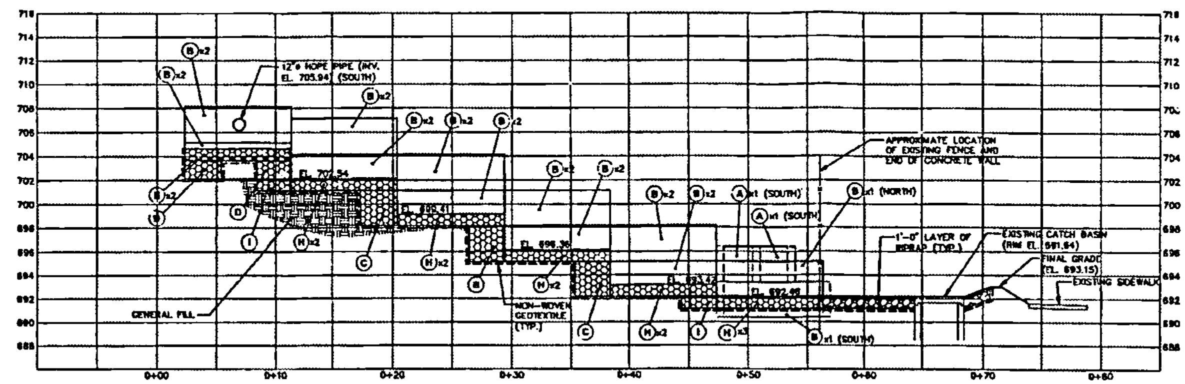
CIVIL

ARCADIS Project No. WI001074.0007.00007
Date MARCH 2010
ARCADIS
6723 Towpath Road
P.O. Box 66
Syracuse, NY 13214
Tel. 315.446.9120

C7

GABION SIZE AND QUANTITY CHART					
LETTER CODE*	LENGTH (FT)	WIDTH (FT)	HEIGHT (FT)	CAPACITY (CY)	QUANTITY
A	6	3	3	2.00	2
B	9	3	3	3.00	23
C	12	3	3	4.00	3
D	6	3	1.5	1.00	2
H	9	3	1	1.00	13
I	12	3	1	1.33	2

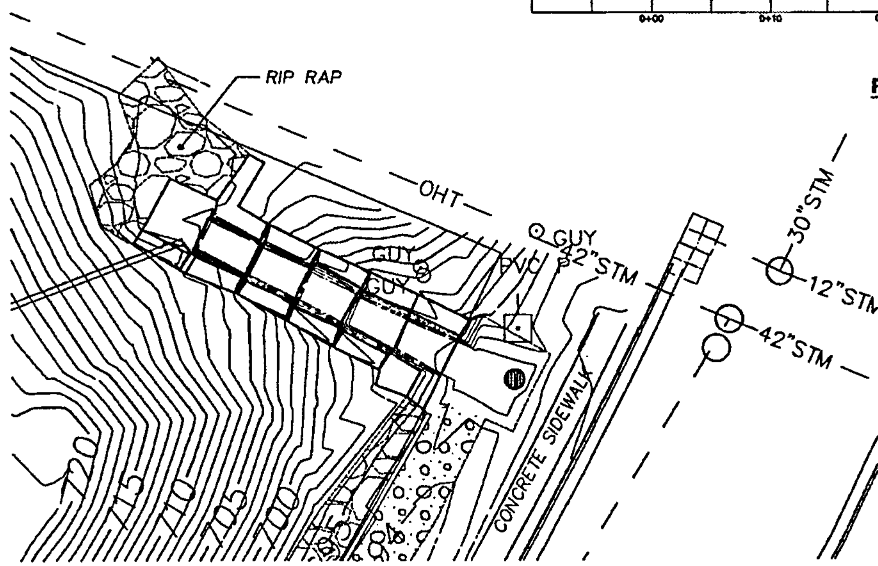
* LETTER CODES PER MACCAFERRI, INC.



PROFILE THROUGH GABION-LINED CHANNEL (1)

HORIZONTAL SCALE: 1"=5'-0"

VERTICAL SCALE: 1"=5'-0"



GABION-LINED CHANNEL PLAN VIEW (2)

GRAPHIC SCALE

RECORD DRAWINGS

TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, THESE RECORD DRAWINGS SUBSTANTIALLY REPRESENT THE PROJECT AS CONSTRUCTED.

DATE_________ BY_________

SCALE AS INDICATED

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING; USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Ckd
1	3/12/10	RECORD DRAWINGS	RR	
0	9/18/09	ISSUED FOR CONSTRUCTION	RR	WM

Professional Engineer's Name: BENJAMIN J. VERBURG
Professional Engineer's No.: 3179M
State: WI | Date Signed: | Project Mgr.: BV
Designed by: TAS | Drawn by: SKD | Checked by: TAS

ARCADIS
ARCADIS U.S., INC.

CITY OF WEST ALLIS COMMUNITY DEVELOPMENT AUTHORITY • WEST ALLIS, WISCONSIN

67TH PLACE INDUSTRIAL PARK

GABION-LINED CHANNEL PROFILE AND SECTIONS

CIVIL

ARCADIS Project No.: WI001074.0007.00007
Date: MARCH 2010
ARCADIS
6723 Towpath Road
P.O. Box 66
Syracuse, NY 13214
Tel. 315 446 9120

C8

CONCRETE SPECIALTIES

DATE: September 1, 2009

PLANT LOCATION: CONCRETE SPECIALTIES COMPANY
9TH & CHANNEL
R.R. #7 & 53
LOCKPORT, IL 60441

PLANT APPROVED BY: Steve Homar, P.E.Giles Engineering Associates, Inc.
WCPA Plant Inspection Date: December 17, 2008
DATE Revised: 02/23/09

THIS CERTIFIES THAT ALL CONCRETE PRODUCTS FURNISHED FOR THE ABOVE PROJECT CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO SPECIFICATION DESIGNATION:

REINFORCED CONCRETE PIPE	---AASHTO M170--522.2.2
REINFORCED ELLIPTICAL CONCRETE PIPE	---AASHTO M207---523.2.2
REINFORCED ELLIPTICAL APRON ENDWALLS	---AASHTO M207---523.2.3
REINFORCED CONCRETE APRON ENDWALLS	---AASHTO M170---522.2.4
GASKETS & LUBRICANT	---AASHTO M198---607.2.4
MASTIC	--- --607.2.5
JOINT TIES	---AASHTO M31

AND THE REQUIREMENTS OF THE CONTRACT. ALL PRECAST CONCRETE STRUCTURES ARE MANUFACTURED IN LOCKPORT, IL. ALL RAW MATERIALS ARE MANUFACTURED IN THE USA.

DAVID A. BOOSTED
GENERAL MANAGER
FOR: CONCRETE SPECIALTIES COMPANY

cc: PRIME CONTRACTOR
CSC FILE

P.O. Box 7369 Romeoville, IL 60446
PH: 815-834-0320 FX: 815-838-9275
Concretespecialtiescompany.com

Concrete Specialties
(Formerly Modern Building Materials, LLC)
8011 Green Bay Road
Kenosha, WI 53142
262/694-3166 Phone
262/694-9185 Fax

Plant Location: Concrete Specialties (Formerly Modern Building Materials, LLC)
Kenosha Plant
8011 Green Bay Road
Kenosha, WI 53142
Phone: (262)694-3166

Plant Approved By: Steve Homar, P.E. - Giles Engineering Associates, Inc.
WCPA Plant Inspection — Inspection Date: December 11, 2008
Wisconsin D.O.T. — Construction Season: 2009

This certifies that all concrete products furnished for the above referenced project conform to the pertinent requirements of AASHTO/ASTM Specifications Designation:

AASHTO M199 Precast Reinforced Concrete Manhole Sections or
AASHTO M259 Precast Reinforced Concrete Box Sections or
AASHTO M273 Precast Reinforced Concrete Box Sections
ASTM C478 Standard Specification for Precast Reinforced Manhole Sections

And the requirements of the contract. All precast concrete structures are manufactured in Kenosha, Wisconsin. All raw materials are manufactured in the U.S.A.

Concrete Specialties Company - Kenosha

Scott Wollersheim
Quality Control Manager
Cc: Resident Engineer
Contractor
Concrete Specialties, LLC Job File

Certification Report

Engineered Wire Products

Upper Sandusky, Ohio

Customer Concrete Specialties - Kenosha Cust.O.N. PO 15863

Product 3x8 W3 & W3 93" wide 1/2" & 1/2" o'hang 500' long Date 8-11-2009

Description	Wire Size	Heat Number	Yield Strength KSI	Tensile Strength KSI	Weld Shear Strength	Bend Test	ROA (W)			Remarks
Long Wire	W3	47842C	75.5	82 5	OK	OK	OK			
Cross Wire	W3	47842C	75.5	82.5		OK	OK			

ASTM A82(W), A185(W), A496(D), A497(D)

This certifies that the material was manufactured and tested, and that the representative results above are in accordance with the requirements of the ASTM Standard Specifications above as applicable. All material was melted and processed in the United States.

SIGNED *Joe Martin*

This certificate is notarized only when requested

SWORN AND SUBSCRIBED TO BEFORE ME

THIS _____ DAY OF _____ A.D

Notary Public

My Commission Expires _____

Certification Report
Engineered Wire Products
Upper Sandusky, Ohio

Customer Concrete Specialties - Kenosha Cust.O.N. PO 15863

Product 6x6 D7.5 & D7.5 96" wide 0" & 0" o'hang 15' long Date 8-11-2009

Description	Wire Size	Heat Number	Yield Strength KSI	Tensile Strength KSI	Weld Shear Strength	Bend Test	ROA (W)			Remarks
Long Wire	D7.5	47665C	88.3	104.2	OK	OK				
Cross Wire	D7.5	47687C	83.2	99.6		OK				

ASTM A82(W), A185(W), A496(D), A497(D)

This certifies that the material was manufactured and tested, and that the representative results above are in accordance with the requirements of the ASTM Standard Specifications above as applicable. All material was melted and processed in the United States.

SIGNED *Joe Martin*

This certificate is notarized only when requested

SWORN AND SUBSCRIBED TO BEFORE ME

THIS _____ DAY OF _____ A.D

Notary Public

My Commission Expires _____

Certification Report
Engineered Wire Products
Upper Sandusky, Ohio

Customer Concrete Specialties - Kenosha Cust.O.N. PO 15848

Product 3x8 W3 & W3 93" wide 1/2" & 1/2" o'hang 500' long Date 7-16-2009

Description	Wire Size	Heat Number	Yield Strength KSI	Tensile Strength KSI	Weld Shear Strength	Bend Test	ROA (W)			Remarks
Long Wire	W3	47715C	90.0	103.5	OK	OK	OK			
Cross Wire	W3	47717C	80.8	99.4		OK	OK			

ASTM A82(W), A185(W), A496(D), A497(D)

This certifies that the material was manufactured and tested, and that the representative results above are in accordance with the requirements of the ASTM Standard Specifications above as applicable. All material was melted and processed in the United States.

SIGNED *Joe Martin*

This certificate is notarized only when requested

SWORN AND SUBSCRIBED TO BEFORE ME

THIS _____ DAY OF _____ A.D

Notary Public

My Commission Expires _____

Certification Report

Engineered Wire Products

Upper Sandusky, Ohio

Customer Concrete Specialties - Kenosha Cust.O.N. 15848

Product 3x8 W4.5 & W3 93" wide 1/2" & 1/2" o'hang 500' long Date 7-16-2009

Description	Wire Size	Heat Number	Yield Strength KSI	Tensile Strength KSI	Weld Shear Strength	Bend Test	ROA (W)			Remarks
Long Wire	W4.5	48052C	81.3	87.9	OK	OK	OK			
Cross Wire	W3	48002C	92.2	96.7		OK	OK			

ASTM A82(W), A185(W), A496(D), A497(D)

This certifies that the material was manufactured and tested, and that the representative results above are in accordance with the requirements of the ASTM Standard Specifications above as applicable. All material was melted and processed in the United States.

SIGNED *Joe Martin*

This certificate is notarized only when requested

SWORN AND SUBSCRIBED TO BEFORE ME

THIS _____ DAY OF _____ A.D

Notary Public

My Commission Expires _____

Certification Report
Engineered Wire Products
Upper Sandusky, Ohio

Customer Concrete Specialties - Kenosha Cust.O.N. 15848

Product 2x8 W2.5 & W2.5 94" wide 1/2" & 1/2" c'hang 600' long Date 7-16-2009

Description	Wire Size	Heat Number	Yield Strength KSI	Tensile Strength KSI	Weld Shear Strength	Bend Test	ROA (W)			Remarks
Long Wire	W2.5	48114C	85.5	92.2	OK	OK	OK			
Cross Wire	W2.5	48113C	82.8	89.1		OK	OK			

ASTM A82(W), A185(W), A496(D), A497(D)

This certifies that the material was manufactured and tested, and that the representative results above are in accordance with the requirements of the ASTM Standard Specifications above as applicable. All material was melted and processed in the United States.

SIGNED *Joe Martin*

This certificate is notarized only when requested

SWORN AND SUBSCRIBED TO BEFORE ME

THIS _____ DAY OF _____ A.D

Notary Public

My Commission Expires _____

R3K

MATERIAL CERTIFICATION

REV DATE: JAN 18, 2010

P.O. Box 12400 · Detroit, MI 48212-0900
1-313-868-9000 1-800-462-1950
(FAX 1-800-292-3078)

P.O. Box 1134 · Milwaukee, WI 53201-1134
1-414-481-5000 1-800-323-8031
(FAX 1-800-292-6479)

Central Steel & Wire Company
P.O. Box 5100 · Chicago, IL 60680-5100
1-773-471-3800 1-800-621-8510
(FAX 1-773-471-1962)

P.O. Box 14140 · Cincinnati, OH 45250-0148
1-800-543-7100
(FAX 1-800-232-9279)

P.O. Box 22015 · Greensboro, NC 27420-2015
1-336-373-2700 1-800-621-8510
(FAX 1-800-232-9279)

SOLD TO: WILSON WELDING & MFG
1310 33RD ST
KENOSHA WI 53140-5215

DATE(ORG): JAN 14, 2010
CSW ORDER: 367543
CUSTOMER PO: VERBAL

09062 262 552 5339 SCOTT WILSON NO OF FAX PAGES: 003

ITEM 001 1-1/2" X 1" FLAT HR A-36---20 FT 134#

MILL:	HEAT#	SYM		
GERDAU AMERISTEEL	C903245	·	MILL CERTS ARE ATTACHED	07D9R

ITEM 002 3/8" X 1" FLAT HR A-36---20 FT 2024

MILL:	HEAT#	SYM		
GERDAU AMERISTEEL	W31893		MILL CERTS ARE ATTACHED	01D9R

GIATC

WE CERTIFY THAT THE ABOVE MATERIALS FURNISHED BY US WILL CONFORM TO THE REQUIREMENTS AND SPECIFICATIONS OUTLINED
Certifications furnished to the buyer by the seller describe the materials and/or services furnished, as indicated in the seller's records.
Results of all tests implied in such certification are based on standard mill practices and do not indicate each piece has been tested.

WE HEREBY CERTIFY THAT THE FOREGOING DATA IS A TRUE
REPRESENTATION OF THE DATA FURNISHED TO US BY THE PRODUCING MILL

Richard Serra

RICHARD SERRA METALLURGIST

Central Steel & Wire Company

Grate

GERDAU AMERISTEEL

WILTON STEEL MILL
1500-2500 WEST 3RD STREET
WILTON IA 52778 USA
(563) 732-3231

Chemical and Physical Test Report

MADE IN UNITED STATES

I-254332

SHIP TO	INVOICE TO	SHIP DATE
CENTRAL STEEL AND WIRE CO INC 3000 W. 51ST STREET 773-471-3800 CALL FOR APPT. CHICAGO, IL 60632	CENTRAL STEEL AND WIRE CO INC PO BOX 6100 CHICAGO, IL 60680-6100	01/07/09 CUST. ACCOUNT NO 40104952

PRODUCED IN: WILTON

SHAPE + SIZE	GRADE	SPECIFICATION	SALES ORDER	CUST P.O. NUMBER
F3/8 X 1	A36	ASTM A36-08, ASME SA36, ASTM A709 GR 36-08	9800494-01	CH74116-01

HEAT I.D.	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	V	Nb	Sn	Al	C Eqv
W31899	.21	.63	.013	.032	.22	.23	.09	.11	0.2	<.008	.002	.012	.030	.368

Mechanical Test: Yield 51500 PSI, 355.08 MPA Tensile: 77200 PSI, 504.7 MPA %El: 22.5/8in, 22.5/203.2mm Red R 61
Customer Requirements: SOURCE: IOWA BILLETS CASTING: STRAND CAST
Mechanical Test: Yield 52060 PSI, 358.83 MPA Tensile: 72700 PSI, 508.14 MPA %El: 23.8/8in, 23.8/203.2mm Red R 61
Customer Requirements: SOURCE: IOWA BILLETS CASTING: STRAND CAST
CUST ITEM NUMBER: 41824

PRODUCED IN: WILTON

SHAPE + SIZE	GRADE	SPECIFICATION	SALES ORDER	CUST P.O. NUMBER
F3/8 X 1	A36	ASTM A36-08, ASME SA36, ASTM A709 GR 36-08	9800494-01	CH74116-01

HEAT I.D.	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	V	Nb	Sn	Al	C Eqv
W31898	.15	.54	.012	.041	.18	.24	.03	.07	.016	<.008	.002	011	.000	.281

Mechanical Test: Yield 46960 PSI, 323.80 MPA Tensile: 65000 PSI, 452.3 MPA %El: 20.0/8in, 20.0/203.2mm Red R 61
Customer Requirements: SOURCE: IOWA BILLETS CASTING: STRAND CAST
Mechanical Test: Yield 47400 PSI, 326.81 MPA Tensile: 67200 PSI, 449.54 MPA %El: 23.8/8in, 23.8/203.2mm Red R 61
Customer Requirements: SOURCE: IOWA BILLETS CASTING: STRAND CAST
CUST ITEM NUMBER: 41824

Customer Notes

A36: ASTM A36-08 & A709-08A ASME-SA36-07A THE MATERIAL DESCRIBED HEREIN WAS MELTED AND MANUFACTURED IN THE U.S.A.

This material, including the billets, was produced and manufactured in the United States of America.

THE ABOVE FIGURES ARE CERTIFIED EXTRACTS FROM THE ORIGINAL CHEMICAL AND PHYSICAL TEST RECORDS AS CONTAINED IN THE PERMANENT RECORDS OF COMPANY.

Phaedra Yalamanchili
Quality Director
Gerdau Ameristeel

Mgr. Metallurg. Svcs.
WILTON STEEL MILL

CJ

Grade

GERDAU AMERISTEEL

CHARLOTTE STEEL MILL
6601 LAKEVIEW ROAD
CHARLOTTE NC 28269 USA
(704) 596-0361

Chemical and Physical Test Report

MADE IN UNITED STATES

C-532684

SHIP TO	INVOICE TO	SHIP DATE
CENTRAL STEEL AND WIRE CO INC 3600 W. 51ST STREET 773-471-3600 CALL FOR APPT. CHICAGO, IL 60632	CENTRAL STEEL AND WIRE CO INC PO BOX 5100 CHICAGO, IL 60680-5100	07/27/09 CUST. ACCOUNT NO 4010/952

PRODUCED IN: CHARLOTTE

SHAPE + SIZE	GRADE	SPECIFICATION	SALES ORDER	CUST P.O. NUMBER
F1/4 X 1	A36	ASTM A36-05 &ASME SA36-08A	9631672-01	CH038591-01

HEAT I.D.	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	V	Nb	Sn	C Eqv
C903245	.17	.68	.012	.036	.18	.35	.11	.12	.030	.001	<.008	.011	.34

Mechanical Test: Yield 53432 PSI, 368.4 MPA Tensile: 73792 PSI, 508.78 MPA %El: 25.0/8in, 25.0/200MM

Customer Requirements: CASTING: STRAND CAST

CUST ITEM NUMBER: 97373

Customer Notes

A36: ASTM A36-05 & A709-09A ASME-SA36-07A

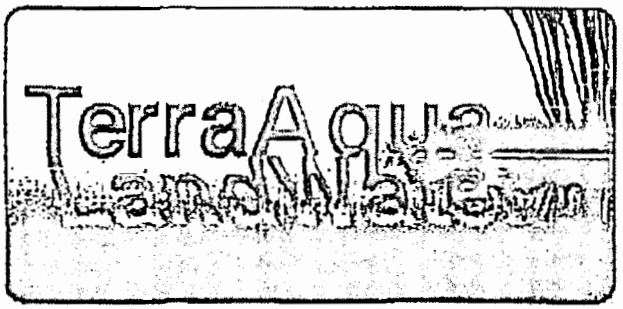
This material, including the billets, was produced and manufactured in the United States of America

Shankar Yelamanchili
Quality Director
Gerdau Ameristeel

THE ABOVE FIGURES ARE CERTIFIED EXTRACTS FROM THE ORIGINAL CHEMICAL AND PHYSICAL TEST RECORDS AS CONTAINED IN THE PERMANENT RECORDS OF COMPANY.

Mgr, Metallurg. Svcs.
CHARLOTTE STEEL MILL

LAS



CERTIFICATE OF COMPLIANCE

DATE: December 30, 2009

GSI
W239 N428 Pewaukee Road
Waukesha, Wisconsin 53188-6904
ATTN: Jean Wallace

PROJECT: 67th Place

This is to certify that the PVC coated gabion baskets supplied to you for the above referenced project conform to the dimensions and fabrication requirements as given in this enclosed specification and to Federal Standards. The galvanized steel wire used in the fabrication of these gabion baskets meet the tensile strength, weights of zinc coating requirements and elongation criteria stipulated in Federal Specification QQW-461H, ASTM A641 and ASTM A975-97. The gabions are manufactured at our production facility in Fort Smith, Arkansas, from wire sourced in the United States of America.

Sincerely,
TERRA AQUA GABIONS

Noel C. Cline
Officer/Account Manager

ADMINISTRATIVE OFFICE: P.O. BOX 7546 • RENO, NV 89510 • (775) 828-1390 • FAX (775) 828-1394
FACTORY: 1415 NORTH 32ND STREET • FT. SMITH, AR 72904 • (501) 785-5944 • FAX (501) 785-0633

Made in the U.S.A.

KING-HUGHES FASTENERS CORPORATION

We manufacture and stock hog rings, staples, clips and tools for immediate shipment.
Stainless Steel Galvanized Aluminum Bright Basic
Toll Free: 800-778-3762

Distributor: Terra Aqua Gabions

Purpose: Certificate of Compliance - Hog Ring Fasteners built to ASTM Specs.

Subject: Specifications of Hog Ring Fasteners

This is to certify that the hog ring fasteners listed below conform to the dimensional and fabrication requirements as set forth by Federal Standards (ASTM). Our fasteners meet the tensile strength and chemical composition. The specifications that King-Hughes produces their rings to are listed in the below text. Our fasteners are manufactured at our Imlay City, Michigan location from domestically drawn wire and our application tools are produced in Indiana from 100% U.S. produced materials and labor.

DIMENSIONAL

Open: 1-1/2 inches (3.81cm)
Closed: 9/16 – 5/8 inches (1.43 – 1.59cm)
Wire Diameter: 0.120 inch (3.05cm) [11 gauge]
Packaging: 1,600 pieces per box, 40 pieces per strip, and 96 boxes per pallet
Weight per box 16lbs. (7.3 Kilograms)

MATERIAL SPECIFICATION

11G40 The galvanized rings shall conform at ASTM A 641-92 for zinc coatings; ASTM A764-95 for chemical and mechanical specifications; and ASTM E 8/MPT 2004 for tensile strength requirements.

11SS40 Shall conform to ASTM A 313 type 302, Class I; and ASTM E 8/MPT 2004 for tensile strength requirements.

11AL40 Shall conform to ASTM B 341, and shall have a minimum weight of aluminum coating of .32oz/sq.ft.

TOOL INTERCHANGABILITY

- C1511 King-Hughes
- SC50 Speedx
- SC50HP Speedx

Best Regards,

Jason A. Hoeft
Sales Manager

Generated on: 3/22/2005 1:24:42 PM
G:\Jason\Gabions\RingCoC.DOC

650 Fourth Street • P.O. Box 98 • Imlay City, Michigan 48444
Phone: (810) 721-0300 Fax: (810) 721-0400
www.kinghughes.com

PROPEX

Propex Inc.
6025 Lee Highway, Suite 425
PO Box 22788
Chattanooga, TN 37422
Phone: 800 621 1273
Fax: 423 899 5005
www.propexinc.com

January 13, 2009

RE: Propex Geotextiles are made in U.S.A

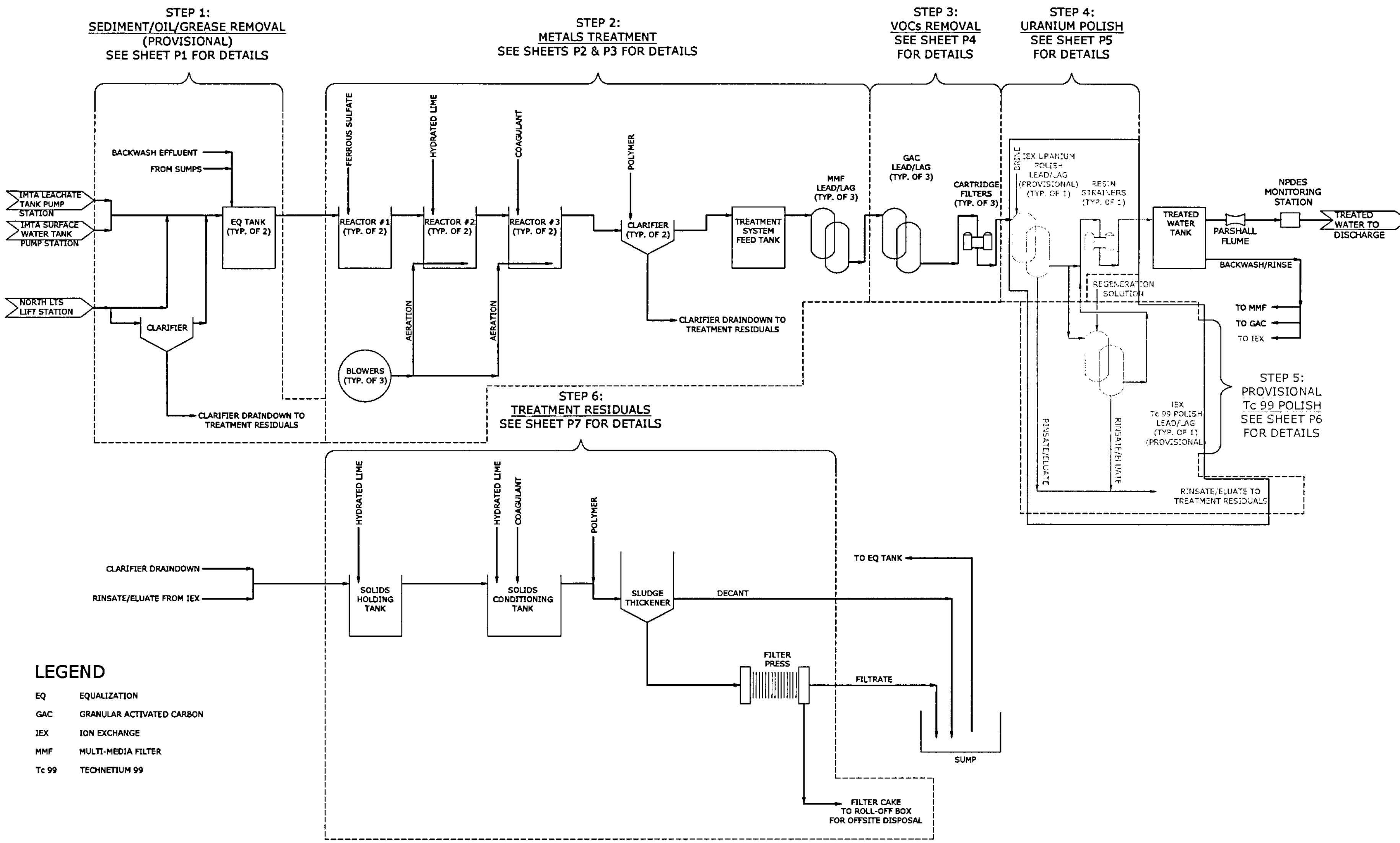
To Whom It May Concern:

Propex Inc. is a leading manufacturer of woven and non-woven geotextiles. Propex is proud to be an American producer of geotextiles products with manufacturing facilities across Georgia and Tennessee. Our Geotex® woven and non-woven products are manufactured, packaged and shipped from USA plants.

Please do not hesitate to email me with any questions you may have at scott.manning@propexinc.com.

Regards,

Scott Manning, PE
Geosynthetic Engineering Manager
Propex Inc.



LEGEND

EQ	EQUALIZATION
GAC	GRANULAR ACTIVATED CARBON
IEX	ION EXCHANGE
MMF	MULTI-MEDIA FILTER
Tc 99	TECHNETIUM 99

FBP-ER-OSDC-WD-ENG-0065

REV	REVISION DESCRIPTION	DRN BY	CHK BY	APPV BY	DATE
C	PRELIMINARY DESIGN PACKAGE ISSUED FOR OEPA REVIEW	VPT	SBM	JEF	03-21-16
B	PRELIMINARY DESIGN PACKAGE ISSUED FOR DOE REVIEW	LUK	JEF	SBM	09-01-15
A	PRELIMINARY IN-PROGRESS DESIGN REVIEW PACKAGE ISSUED FOR FBP REVIEW	LUK	JEF	SBM	07-31-15

REFERENCE DRAWINGS: XREFS: FBP-CH-LANDSCAPE

PRELIMINARY NOT FOR CONSTRUCTION

Prepared by ARCADIS

Fluor-BWXT | Portsmouth

CONTRACT DEAC3010CC40017
DESIGNED BY LUK
CHECKED BY SBM
ENGINEER JEF — APP DATE 03-21-16
MANAGER SBM — APP DATE 03-21-16
SHEET 95 OF 23
P0

PORTSMOUTH GASEOUS DIFFUSION PLANT D & D PROJECT

PROJECT: ON-SITE WASTE DISPOSAL FACILITY (OSWDF) INTERIM LEACHATE TREATMENT SYSTEM (ILTS)

ILTS GENERAL PROCESS FLOW DIAGRAM

SCALE: NOT TO SCALE — DRAWING NUMBER: X-780-P-10404 — REV: C