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September 11, 2026

Kendra Fisher
Hazardous Waste Licensing Engineer
Waste and Materials Management Program
Wisconsin Department of Natural Resources
141 NW Barstow Street, Room 180
Waukesha, WI 53188

Subject: Kestrel Hawk Landfill, Racine, WI (License #0572)
Revised Feasibility and Plan of Operation Report for Long-Term Care

Dear Ms. Fisher:

Enclosed, please find the Revised Feasibility and Plan of Operation Report, that our consultant, TRC Environmental Corporation prepared on our behalf. Please contact Michael Gilligan at (224) 970-1133 or Todd Martin with TRC at (608) 622-9382 if you have questions regarding the submittal.

Sincerely,

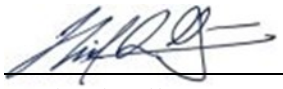
Republic Services of Wisconsin, Limited Partnership

Michael Gilligan
Environmental Manager

cc: Todd Martin – TRC
Kestrel Hawk Landfill Master File

Certification Statement:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.



Michael Gilligan
Environmental Manager

Feasibility Report and Plan of Operation

Kestrel Hawk Landfill
Racine, Wisconsin

November 2025
Revised September 2026

WDNR License No. 0572
EPA ID No. WID076171008
FID No. 252076990

Prepared For:

Republic Services of Wisconsin, Limited Partnership
City of Racine, Racine County, Wisconsin

Prepared By:

TRC
999 Fourier Drive, Suite 101
Madison, Wisconsin 53717



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REVISION LOG

Revision Date	Revision
09/2026	Revised Section 1.2 (facility contact and owner address); Section 2.3.2 (gas system process summary); Appendix C.2 – Site identification form (facility contact and owner address); Appendix I (Section 2.4- Gas system process summary), Appendix N (Job position personnel and Appendix C, Slide 9 - Alternative Emergency contacts), and Appendix O (Alternative Emergency Contacts – Technical Summary, Quick Reference Guide, Section 2.0)

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- A.4 – General Permit to Discharge (Tier 2 Industrial Facilities) – WPDES Permit No. WI-S067857-5 – May 14, 2021
- A.5 – Conditional Plan Modification Approval for Annual Reporting Requirements for Republic Services Kestrel Hawk Recycling and Disposal Facility (RDF), License #0572, Racine, Wisconsin – August 30, 2017
- A.6 – Modification to the Plan of Operation Approval for Gas and Leachate Extraction System, Land Reclamation Company Landfill, License #0572, Racine, WI – March 12, 1991
- A.7 – Environmental Monitoring Plan Modification to the Plan of Operation Approval and Hazardous Waste Closure Plan, and response to “Justification for Not Installing Additional Unit B Piezometers at LRC,” Land Reclamation Company Landfill, EPA ID# WID076171008 – February 7, 1994
- A.8 – Addendum to Notice of Noncompliance – Hazardous Waste Compliance Assessment – Kestrel Hawk Landfill – EPA ID WID076171008 – September 16, 2020

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- A.9 – Conditional Plan of Operation Approval Modification for Adjusting Owner Financial Responsibility for the Kestrel Hawk Landfill, Racine County, License #0572 – August 23, 2024
- A.10 – Plan of Operation Approval for the Northwest Expansion of the Land Reclamation Company Landfill – August 30, 1996
- A.11 – Conditional Close Out – Hazardous Waste Compliance Assessment – Kestrel Hawk Landfill – EPA ID WID076171008 – June 4, 2021
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CERTIFICATIONS

"I, Stephen Sellwood, hereby certify that I am a licensed professional geologist in the State of Wisconsin in accordance with the requirements of ch. GHSS 2, Wisconsin Administrative Code; that the preparation of this document has not involved any unprofessional conduct as detailed in ch. GHSS 5, Wisconsin Administrative Code; and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 500 to 538 and chs. NR 664 and 670, Wisconsin Administrative Code."



Stephen Sellwood, P.G.
Professional Geologist No. 1228-13

"I, BreAnne N. Kahnk, hereby certify that I am a licensed professional engineer in the State of Wisconsin in accordance with the requirements of ch. A–E 4, Wis. Adm. Code; that this document has been prepared in accordance with the Rules of Professional Conduct in ch. A–E 8, Wis. Adm. Code; and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 500 to 538 and chs. NR 664 and 670, Wis. Adm. Code."



BreAnne N. Kahnk, P.E.
Professional Engineer No. 46825

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1.0 General Facility Description

1.1 Introduction

On behalf of Republic Services of Wisconsin, Limited Partnership (Republic), TRC has prepared this Feasibility Report and Plan of Operation (FPOR) for Kestrel Hawk Landfill (License #0572) (KHL). This FPOR was prepared following the November 29, 2022 Closure/Long-Term Care Approval and Licensing Process Guidance Document and associated Attachments A, B, C that was provided to Republic by Wisconsin Department of Natural Resources (WDNR). This guidance document denotes that it applies to landfills regulated for Solid Waste and Hazardous Waste under chapter NR 500- and 600-series. This guidance document is included in **Appendix A.1** for reference. As required in the guidance document, a checklist or "cross-walk" has been developed to reference the locations of specified requirements. This "cross-walk" is provided in **Appendix B**. **Appendix C** includes WDNR Form 4400-117 "Solid Waste Facility Closure and Long-Term Care License Application" along with EPA Form 8700-12 "Site Identification Form" and the EPA Part A Form. Deed and legal property information are included in **Section 4.10**.

1.2 General Information

Facility Name	Kestrel Hawk Landfill WDNR License #0572 EPA ID# WID076171008 FID# 252076990
Facility Address	Kestrel Hawk Landfill 1969 Oakes Road Racine, Racine County, Wisconsin 53406-4680
Facility Location	KHL is located in the North ½ of Section 23, Township 3 North, Range 22 East, Racine, Racine County, Wisconsin. Refer to **Figure 1**.
Facility Latitude/Longitude	Latitude: 42.708843° North Longitude: -87.864133° West
Facility Authorized Contract	Republic Services of Wisconsin, Limited Partnership Michael Gilligan, Environmental Manager 26W850 Schick Road Hanover Park, Illinois 60133 Phone: (224) 970-1133
Facility Owner and Operator	Republic Services of Wisconsin, Limited Partnership 5353 East City North Drive Phoenix, Arizona 85054 Phone: (262) 417-9272

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Consultant	TRC 999 Fourier Drive, Suite 101 Madison, WI 53717 Project Manager: Todd Martin Telephone: (608) 622-9382 E-mail: twmartin@trccompanies.com
Total Acreage	125.4 Acres • Old Site (includes Hazardous Waste Unit): 70.1 acres • Northwest Expansion: 55.3 acres
Ceased Accepting Waste	December 2022
Indian Lands	KHL is not located on Indian Lands or Reservations. Refer to **Figure 2**.
Floodplain	KHL is not located within a 100-year floodplain. Refer to **Figure 3**.
Affected Municipalities	Racine, Wisconsin Mt. Pleasant, Wisconsin Racine County, Wisconsin
Endangered Resources Review	Facility is covered under the Broad Incidental Take Permit/Authorization for No/Low Impact Activities and therefore does not require an Endangered Resources Review. Refer to **Appendix S**.

1.3 Site Background and History

1.3.1 General Background

KHL is in the City of Racine, Racine County, Wisconsin and is owned and operated by Republic. KHL consists of the Existing Landfill (also known as the Old Unit or Old Site) and the Northwest Expansion Landfill (Northwest Expansion). These unit boundaries are shown on **Figure 4**. Because KHL is located within the City of Racine, the surrounding land use of the landfill varies. Generally, residential properties are located to the north, northeast, east, and south of KHL property. Commercial and industrial developments are located to the southeast, southwest, and west of KHL property.

The Old Site and Northwest Expansion were acquired by Republic in 1998. Therefore, a majority of regulatory determinations, design, and implementation of closure activities for the hazardous waste unit (HWU) was performed between the late 1980s and mid-1990s when the landfill was owned by a different entity.

The Old Site is approximately 70.1 acres in size and consists of an encapsulated Resource Conservation and Recovery Act (RCRA) HWU (Corridors 1 through 6), the former City of Racine Landfill, and non-hazardous municipal solid waste units (Corridors 7/7A, Corridors 8, 9, and 10

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[saddle area], and Corridor 11). Operations within the Old Site began in the early 1960s with the former City of Racine Landfill. In August 1970, operations of the former City of Racine Landfill were assumed by the Land Reclamation Landfill, Inc. Shortly after the change in operations, disposal activities within the former City of Racine Landfill ended and the site was covered. Waste disposal operations continued into Corridor 1 beginning in 1970, with Corridors 2 through 11 constructed incrementally until 1995. Additional information relating to the construction of the Old Site/HWU components, including timeline of initial construction, installed cutoff and barrier walls, and final cover installations, are provided in **Section 3.0** and **Appendix D**.

The Northwest Expansion occupies an area of approximately 55.3 acres and consists of Phases 1 through 5 and a vertical overlay area over the Old Site of approximately 9.5 acres. The Northwest Expansion, owned and operated by Land Reclamation Company at the time of permitting, received a NR 500 series Plan of Operation Approval in 1996 and was approved to accept non-hazardous municipal, commercial, and industrial solid wastes. The Northwest Expansion was constructed in phases over the following years.

KHL officially closed in December 2022 and construction of the last areas of final cover were completed in 2024.

1.3.2 History of Hazardous Waste Management

KHL previously operated as a hazardous waste large quantity generator. The landfill accepted hazardous wastes which were co-disposed with non-hazardous waste. In May 1975, WDNR issued the Land Reclamation Landfill (LRL) (currently known as KHL) a permit for the disposal of hazardous wastes at the site. LRL accepted hazardous waste beginning in the early to mid-1970s. LRL was granted an interim status with the United States Environmental Protection Agency (USEPA) as a hazardous waste disposal unit in 1980. By August 1982, LRL ceased acceptance of hazardous wastes and was denied continuance of the interim status by the WDNR in December 1982. As noted above, the HWU is comprised of Corridors 1-6, shown on **Figure 4**.

Complete data for hazardous waste disposed within Corridors 1 through 6 is limited due to the facility operating under a different organization at the time in which disposal occurred. However, the available summary of hazardous waste received at KHL from 1980 to 1982 is included in **Appendix E**.

Information relating to the construction of Corridors 1 through 6 is detailed in **Section 3.2.1**. A summary of closure activities for the HWU is detailed in the Closure Report for Corridors 1 through 6 provided in **Appendix D** and **Section 3.1.1**. The HWU is considered by the WDNR as inactive (WDNR, 2004) and is effectively closed by the existing final cover system, barrier wall, and containment structure. The HWU is managed for long-term care conditions with the maintenance of the final cover system and operating the leachate and landfill gas collection systems.

As detailed above, KHL no longer accepted hazardous waste following 1982. However, generation of hazardous waste continues due to the leachate removed from the HWU and collection of impacted groundwater associated with the HWU. These liquids are discharged to the Racine Wastewater Utility sanitary sewer system (City of Racine sanitary sewer) in compliance with the industrial wastewater discharge permit (**Appendix A.2**). In addition to these liquids, hazardous waste is periodically generated during the maintenance of equipment in contact with leachate in the HWU and annual oily substance removal events. These materials are

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containerized and shipped off-site for incineration by Safety-Kleen. Refer to the June 12, 2020 Hazardous Waste Generation Report prepared by TRC, and submitted to WDNR, for details regarding the management of produced hazardous waste. **Table 1** provides an updated quantities list which includes reported values to 2024.

1.3.3 Corrective Action Status

Corrective action per s. NR 664.0100 and s. NR 664.0101 is ongoing at KHL within the 141U area located southeast of KHL's limits of waste due to exceedances of vinyl chloride. Historical waste management activities are known to have resulted in the detection of vinyl chloride in groundwater in a saturated, confined Unit A sand lens. The vinyl chloride impacts were first identified in monitoring well 141U prior to 1990; therefore, this remedial area is referred to as the 141U area.

The USEPA initiated a RCRA Corrective Action at the site through a Consent Order obligating the site owners to perform a RCRA Facility Investigation (RFI), and if appropriate, an RCRA Corrective Measures Study (CMS) and Corrective Measures Implementation (CMI). KHL performed an RFI for the 141U Area in 1993 and 1994. A draft RFI report was submitted to the USEPA and the WDNR (Law, 1996). The RFI defined the extent of groundwater impacts and demonstrated that groundwater could be controlled and remediated by an extraction system consisting of three groundwater recovery wells with discharge to the landfill's leachate transfer system. KHL installed the extraction system in late 1995 and consists of three groundwater extraction wells (R5, R6R, and R7). The groundwater extraction system has operated nearly continuously since April 1996. The groundwater extraction system is depicted on Sheet 1 contained in **Appendix F.1** from the 2024 Groundwater Remediation System Alteration Construction Observation letter prepared by Foth Infrastructure and Environment. The Corrective Action activities are further detailed in **Sections 3.9** and **7.2**.

1.4 Environmental Licenses, Permits, and Authorizations

As required by s. NR 670.013(11), a summary of available permits, licenses, and construction approvals received related to the Hazardous Waste Unit are provided in **Table 2**.

1.5 Miscellaneous FPOR Requirements

Per the guidance document, several general drawings are requested within this FPOR. These include:

- s. NR 670.014(2)(s): A topographic map showing a distance of 1,000 feet around the facility…
- s. NR 670.013(8)(a): A scale drawing of the facility showing the location of all past, present, and future treatment, storage, and disposal areas.
- s. NR 670.013(8)(b): Photographs of the facility clearly delineating all existing structures; existing treatment, storage, and disposal areas; and sites of future treatment, storage, and disposal areas.

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- s. NR 670.013(12): A topographic map extending one mile beyond the property boundaries of the source depicting the facility and each of its intake and discharge structures; each of its hazardous waste treatment, storage or disposal facilities; each well where fluids from the facility are injected underground; and those wells, springs, other surface water bodies, and drinking water wells listed in public records or otherwise known to the applicant within ¼ mile of the facility property boundary.

The conformance or exclusion of these items is further detailed below.

1.5.1 s. NR 670.014(2)(s) and s. NR 670.013(8)(a)

Figure 4 denotes the locations of each of KHL's landfilling areas as described in **Section 1.3.** This complies with the requirements of by s. NR 670.013(8)(a). In addition, detail required by s. NR 670.014(2)(s) are included on **Figure 4** with the following exceptions:

- A slightly larger scale of 1-inch equals 250 feet was utilized to show the areas surrounding the landfill as a hole. Utilizing a smaller scale may remove some outlying features from the view area.
- Surrounding land uses are depicted on **Figure 4A** for clarity.
- A wind rose showing the prevailing wind-speed and direction is not provided as it is unlikely to provide pertinent value under the subject of this FPOR for long-term care.
- The location of the HWU is provided; however, descriptions pertaining to its legal description are not included on this figure as it is unlikely to provide pertinent value under the subject of this FPOR. No other hazardous waste storage areas are located on site.
- Barriers for drainage and flood control are not applicable to this site and therefore not shown.

No future treatment, storage, or disposal areas are proposed and therefore not depicted.

1.5.2 s. NR 670.013(8)(b)

Section NR 670.013(8)(b) requires that photographs be provided detailing all structures located at KHL. Typical photographs of KHL and associated infrastructure are provided in **Appendix G**. No future treatment, storage, or disposal areas are proposed within KHL as the landfill is closed and hazardous waste has not been accepted at KHL since 1982.

Construction documentation reports have been submitted to the WDNR detailing construction activities both within the HWU and outside the HWU at KHL. These submitted and approved documentation reports also include photographic documentation of constructed facilities at KHL related to the HWU and are sufficient to comply with this requirement.

1.5.3 s. NR 670.013(12)

Section NR 670.013(12) requires a topographic map that extends 1 mile beyond the property boundary and depicts several features such as the facility boundary, intake and discharge structures, the hazardous waste disposal and treatment facilities, wells were fluids are injected underground, along with wells and natural water sources. It is likely that a map at this scale will not provide additional value to the WDNR. **Figure 1** provides a topographic map which includes

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an area within 1 mile of KHL's limits of waste along with a depiction of the limits of waste and the location of water wells from the Wisconsin DNR well map. However, detailed information is not provided as it would be difficult to distinguish at this scale. Residential and industrial properties generally encompass the 1-mile radius around KHL, land uses for areas within 1,000 feet of the limits of waste are depicted on **Figure 4A** as required by s. NR 670.014(2)(s). Natural resources for areas within 1,000 feet of the limits of waste are depicted on **Figure 4**.

KHL does not have future plans for expanding its hazardous or solid waste management activities, and hazardous waste has not been accepted since 1982. No fluids are injected underground at the landfill property and discharges of leachate are routed to the City of Racine sanitary sewer system with only stormwater discharges routed overland.

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2.0 Long-Term Care Summary

Sections 2.0 and **3.0** of this FPOR are inter-related with each other. **Section 2.0** provides general details of the systems and their components requiring long-term care. In addition, a general overview of the maintenance and repair activities that will be required for each system will be detailed. In **Section 3.0**, these systems are discussed in further detail along with specific details relating to the required inspection, maintenance, monitoring, and repair activities.

2.1 Long-Term Care General

KHL is comprised of various environmental control and management systems that will be required to be maintained throughout the long-term care period. Republic is required to monitor and maintain these systems following closure activities for 40 years or until WDNR approves cessation of these activities. In addition to the landfill control and management systems, the corrective actions systems in place will also be monitored and maintained until WDNR approves a "no further action" status for the corrective action system.

In general, the long-term care components for KHL include the final cover, leachate and gas collection, stormwater controls (run-on and run-off management system), groundwater management and containment, and corrective action activities. These components are summarized in the following subsections and detailed in **Section 3.0**.

2.2 Final Cover

The final cover system is a barrier, whether soil only or a composite system, which separates the interred waste from the outdoor environment. At KHL, the final cover system was constructed over several different construction events, resulting in differing final cover makeups over the years. These construction events consist of four main final cover categories, which include:

- NON-RCRA covers (1991-1993): 6 inches of topsoil, 4 feet of compacted clay.
- RCRA covers:
  - 1990-2001: 6 inches of topsoil, 1.5 feet of general fill, geotextile filter, 1 foot of sand, 40 mil very low-density polyethylene [VLDPE] geomembrane, 3 feet of compacted clay.
  - 2023-2024: 6 inches of topsoil, 2.5 feet of general fill, geocomposite drainage layer, 40 mil low linear density polyethylene [LLDPE] geomembrane, geosynthetic clay liner [GCL], 2 feet of compacted clay.
- NR 180 covers (1994-2001): 6 inches of topsoil, 2 feet of general fill, and 2 feet of compacted clay.
- NR 500 covers:
  - 2002-2022: 6 inches of topsoil, 2.5 feet of general fill, geocomposite drainage layer, 40 mil LLDPE geomembrane, GCL, 2 feet of soil barrier layer.
  - 2023-2024: 6 inches of topsoil, 2.5 feet of general fill, geocomposite drainage layer, 40 mil LLDPE geomembrane, 2 feet of compacted clay.

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Following installation of the final cover system, the areas were mulched, fertilized, and vegetated. Stormwater controls (run-on and run-off controls) designed to protect the final cover against erosion were installed during final cover construction and are further detailed in **Section 2.4**.

In addition to the final cover system, KHL has several separation barrier walls installed between the HWU and non-hazardous portions of the landfill. These barrier walls extend from the liner system or native underlying clay to the final cover system to encapsulate the HWU from non-hazardous waste areas. The North Barrier Wall is located along the southern boundary of Corridor 7, whereas the West Barrier Wall is located along Corridors 8, 9, and 10.

Long-term care activities associated with the final cover system consist of inspections, settlement monitoring (to ensure that positive drainage is maintained), and repairs. In addition, general maintenance of the vegetated surface and access roads are also required. The final cover system and its associated components along with details pertaining to long-term care activities are further detailed in **Section 3.1**.

2.3 Leachate and Gas Collection and Control Systems

2.3.1 Leachate System and Conveyance

A leachate containment/collection system consists of landfill infrastructure that is designed to keep leachate within the waste unit to the extent practicable to allow for the managed collection of generated leachate. At KHL, this infrastructure includes base liners and cutoff walls that were designed to minimize the potential of leachate migration outside the waste limits or the migration of leachate from HWU into the adjoining non-hazardous waste units. In addition, collection and extraction infrastructure were designed to remove leachate from the waste mass and convey the liquids to the City of Racine sanitary sewer discharge locations. These systems will continue to operate throughout the long-term care period or until WDNR approves their discontinuation.

At KHL, the collection and extraction system consist of both vertical extraction wells and horizontal leachate collection lines, as further detailed in **Section 3.2.1**. Extracted leachate is routed from the waste mass into a conveyance system, which routes the leachate and other extracted liquids (condensate/groundwater) to the City of Racine sanitary sewer for discharge via constructed manholes and lift stations.

In addition to the extraction system, leachate headwells are installed to monitor leachate head levels within KHL. Leachate headwells within the HWU are evaluated annually against four performance criteria to evaluate the effectiveness of the leachate removal in the HWU. These performance criteria/goals are summarized in **Section 2.3.1.1** and further detailed in **Section 3.2.2**.

2.3.1.1 Leachate Management and Extraction Goals

The overall goal of the leachate collection system is to reduce leachate head levels within the Old Site. During the development of the 2005 Old Site Hydrogeologic Evaluation (RMT, 2005a), a detailed assessment of the leachate extraction system performance was conducted. Following this evaluation, 4 criteria were established to evaluate the effectiveness of the extraction system within the Old Site through a WDNR Plan Modification approval dated, December 28, 2005 (**Appendix A.3**). The criteria are as follows:

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1. Maintain decreasing head levels across the site on an area weighted average as indicated by the slope of the least-square trend line.
2. Maintain decreasing heads as indicated by the slope of least-square trend line for the eight-point moving average in the long-term trend analyses in 75 percent of the leachate headwells.
3. Maintain decreasing heads as indicated by the slope of the least-square trend line in the short-term trend analyses in 67 percent of the leachate headwells.
4. Remove more leachate by extraction from the hazardous waste unit than is entering the hazardous waste unit on an annual basis.

In addition to the above criteria, the 2005 approval from WDNR also required that polychlorinated biphenyls (PCB) oil product in the leachate or any other oil product is removed from the leachate extraction wells and headwells and properly disposed of according to its characteristics and classification. This removal is completed on an annual basis and will continue during the long-term care period.

2.3.1.2 Leachate Long-Term Care Activities Summary

Long-term care activities associated with the leachate collection and conveyance system consist of regular inspections and maintenance. Regular inspections of associated manholes, lift stations, and pumping equipment is required to confirm that extraction activities continue as designed. In addition, continued evaluation of the effectiveness of the HWU extraction is required through the monitoring of leachate head levels within the HWU along with the other waste areas of KHL. Leachate lines within the Old Site and Northwest Expansion require regular cleaning to remove blockages and reoccurring video inspections to confirm the condition of subsurface piping. The leachate collection system long-term care activities is further detailed in **Section 3.2.3**.

2.3.2 Gas Collection and Control System

The gas control system operates to control emissions and migration of landfill gas and to allow for energy recovery. The gas system within the HWU and former City of Racine Landfill operates in conjunction with the rest of KHL gas system. The gas system is further detailed in **Section 3.3.1**.

Gas collected from KHL is routed to the on-site biogas facility. A compressor located at the Biogas West Facility (aka gas plant) withdraws gas from the extraction wells. Then, the gas is directed to either the S.C. Johnson Inc. facility for energy recovery and/or burned at a utility flare at KHL's Biogas West Facility.

Monitoring probes are located around the perimeter of KHL to detect against off-site migration of landfill gas. Monitoring of the probes is conducted in accordance with KHL's environmental monitoring program as detailed in **Sections 2.5** and **3.5**.

Long-term care activities associated with the gas collection and control system consist of inspection and maintenance. Regular inspections of the extraction wells, valves, blowers, and

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flares is required to confirm that extraction activities continue to perform as designed. The gas collection and control system long-term care activities are further detailed in **Section 3.3.2**.

2.4 Run-on and Run-off Control Systems

Run-on and run-off control systems consist of the surface water management infrastructure constructed at a landfill. This infrastructure assists in routing surface water away from the landfill and controls run-off as it leaves the landfill area. As KHL is closed, with final cover fully constructed, these run-on and run-off systems assist in managing storm water and surface water runoff to minimize erosion and damage. The surface water management system components consist of diversion berms, ditches, culverts, flumes, final cover drains, sedimentation basins, and other erosional control methods. Surface water from the final cover system is routed through the diversion berms, downslope flumes, and perimeter drainage ditches to sedimentation basins located around the perimeter of the landfill. Surface water contained within the sedimentation basins is discharged through outfalls associated with the site as allowed per KHL's Wisconsin Pollutant Discharge Elimination System (WPDES) Permit (**Appendix A.4**). These components are further detailed in **Sections 3.4.1**, **3.4.2**, and **3.4.3**.

Throughout the long-term care period for KHL, maintenance of the surface water management components will be required. This maintenance includes regular inspections to evaluate the condition of the components, to identify potential sediment buildup, and to determine whether repairs are needed/warranted for a specific component.

Additional detail pertaining to the surface water management system long-term care requirements is provided in **Section 3.4.4**.

2.5 Environmental Monitoring

Environmental monitoring consists of the general monitoring and sampling of environmental protection infrastructure including groundwater wells, the leachate system, gas system, surface water management system, and gradient control system (Northwest Expansion only). The current environmental monitoring program will continue to be performed during long-term care unless a modification is approved by the WDNR.

The most recent plan modification summarizing the environmental monitoring requirements is dated August 30, 2017 (**Appendix A.5**) and is shown on **Figure 5**. Groundwater, gradient control system, leachate, leachate head elevations, surface water, gas, and surface settlement monitoring will be performed. The sampling will be conducted in general accordance with the previously approved sampling plan for the Northwest Expansion (**Appendix H**). The sample analytical methods will be consistent with NR 507 and NR 664. These monitoring programs are further detailed in **Section 3.5**.

2.6 Groundwater Collection and Containment

A groundwater containment structure was constructed to prevent possible migration of leachate/contaminated water from the unlined portions of the HWU. The containment structure extends along the western and southern perimeter of the HWU and includes perforated piping that conveys the captured groundwater/leachate to removal locations.

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Long-term care activities associated with the groundwater collection and containment system consist of regular inspection and maintenance of associated manholes and pumping equipment along with cleaning of groundwater collection piping. The containment and collection system along with details pertaining to long-term care activities is further detailed in **Section 3.6**.

2.7 Corrective Action

Corrective action at KHL is ongoing and will continue during long-term care until remedial objectives have been met. The corrective action measures include groundwater extraction through recovery wells located in the 141U area. A general summary of the corrective action program is included in **Section 1.3.3**. Associated groundwater monitoring is conducted to verify the effectiveness of the remedial system which consists of the corrective action system and the groundwater contaminant system (**Section 2.6**).

Supplemental corrective action activities that would occur during the long-term care period consist of inspections and general maintenance of the system. Systems components (such as pumps) would be replaced or repaired as necessary.

The corrective action program and associated activities are further detailed in **Section 3.9**.

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3.0 Long-Term Care Details

This section will provide specific information relating to the systems summarized in **Section 2.0** and their requirements pertaining to long-term care.

The following subsections detail the different components requiring long-term care for KHL. In addition to the inspections, maintenance, and repairs required for these components, general site inspections will be completed at the landfill during the long-term care period. The entire KHL will be inspected annually for the 40-year long-term care program. Written records of these inspections are to remain at the facility. These inspections evaluate the components of KHL and assess their need for maintenance and repairs. Maintenance and repairs identified from these inspections are documented along with corrective actions taken and are discussed in the Annual Report submitted for the entire KHL landfill as specified in **Section 4.9**.

3.1 Final Cover

3.1.1 Final Cover, Perimeter Berms, and Separation Barrier Design

The final cover system installed at KHL was completed through multiple construction events. In addition, dependent on the location and timing of the construction event, different final cover configurations have been utilized across KHL footprint.

Both composite final cover systems and soil only final cover systems have been constructed at KHL. Soil only covers are generally located in the cover areas that were constructed initially, which include the Former City of Racine Landfill and the outboard slopes of the HWU (Corridors 1-6), Corridors 7/7A, and Corridors 8-10. These systems consist of compacted clay overlain by general fill and topsoil. The remaining areas of KHL, including the interior portions of the Old Site and Northwestern Expansion, consist of composite cover systems that include geosynthetic materials (geomembrane, GCL, and/or geocomposite) in addition to the soil components. The respective cover system areas for KHL are depicted on **Figure 6**, which provides the extents of each cover event along with details relating to the associated documentation report and cover configuration.

In addition to the final cover areas, separation barriers and perimeter berms encapsulate and buttress the HWU and non-hazardous waste landfilling units. Separation barriers were constructed in the HWU to separate the interred hazardous waste from non-hazardous waste placement that occurred post 1982. The separation barriers (barrier walls) were constructed around the northern and western perimeter of the HWU. The barrier walls consist of a 7-foot-thick (measured perpendicular to the slope) compacted clay liners that were constructed at a 3-foot horizontal by 1-foot vertical (3:1) slope. The approximate locations of the barrier walls are depicted on **Figure 6**. The barrier walls are keyed into the existing compacted clay liner of Corridor 6 and into the native clay soils along the perimeter of the HWU. Within Corridors 8, 9, and 10, the composite liner ties into the side slope of the barrier wall. Sand drainage layers were installed on either side of the clay barrier wall to provide drainage for leachate and minimize the hydraulic pressure against the barrier wall. The barrier walls were constructed incrementally from 1987 through 1996 as KHL expanded. Documentation of the barrier wall construction was provided to the WDNR with approvals received from WDNR, which are listed in **Appendix D**.

Perimeter berms around KHL, including the HWU areas, were typically constructed at the time of the cell excavation. The final cover was ultimately tied into the perimeter berms during closure

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events, encapsulating the waste. The perimeter berms have been observed to be stable following construction. No stability concerns have been noted during site inspections.

3.1.2 Final Cover and Access Road Long-Term Care Activities

Long-term care activities associated with the final cover system and its associated structures consist of inspections, settlement monitoring, and general repairs and maintenance.

The final cover system and perimeter berms are to be inspected as detailed in the Inspection Manual (**Appendix I**). During the inspections, areas in need of maintenance or repairs are to be noted, and the appropriate corrective action determined and recorded. Recorded maintenance/repair activities are to be completed on a timely basis.

Throughout the long-term care period the final cover system typical maintenance activities are to be completed to maintain the integrity and functionality of the final cover system. Maintenance activities include mowing/grazing, cleaning out diversion berm ditches (**Section 3.4**), and maintenance of the access road, including snow plowing during the winter months. The final cover system should be mowed annually at a minimum, with additional mowing events as needed throughout the year to maintain vegetation height and prevent the development of woody vegetation. Snow plowing is to be completed on an as needed basis, as it is dependent on the weather and landfill access requirements.

Repairs will be completed on an as needed basis, depending on the condition of the final cover system. Settlement, erosion, or areas of ponding are to be repaired to maintain the integrity of the final cover system. Dependent on depth and location, select clay fill may be required to fill and rework the compacted clay layer of the final cover system. Settlement, cracking, and erosional areas should be brought to grade with similar materials as used in the final cover. It is anticipated that the rate at which settlement or erosional repairs are needed will reduce as the site stabilizes.

If settlement impacts the flowline of the diversion berm ditches, regrading of the final cover will be necessary to restore positive drainage. Recently filled and covered areas will likely require the most maintenance; however, as the landfill stabilizes, maintenance requirements are expected to reduce. Additional minor repairs, such as refinishing portions of the access road or repairs to final cover drainage structures (diversion berms as noted in **Section 3.4** or drain pipes) may be required and are to be completed on an as needed basis. Settlement monitoring will be completed visually with depressed areas being repaired as noted above.

Areas that have been repaired or areas with distressed or missing vegetation will require re-establishment of vegetative cover. Barren areas noted during the site inspections will also require repair (preparing topsoil, fertilizing, seeding, and placing mulch or erosion control feature). Reworked surfaces and areas of failed or eroded vegetation will be revegetated. As with cover repairs, it is anticipated that the rate of revegetation will be reduced after the site stabilizes.

3.2 Leachate Management

3.2.1 Leachate Collection and Conveyance System

Leachate management at KHL is completed using several landfill infrastructure systems. The base liner and cutoff walls provide containment of leachate within the waste mass, the

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extraction/collection system provide the means for removing leachate for discharge into the conveyance system, and the conveyance system routes the removed leachate to the discharge location (City of Racine sanitary sewer). These systems were developed and expanded over the course of landfill construction and improved as regulations are implemented. During long-term care, extraction of leachate will continue as required by the WDNR.

The liner system is used to prevent migration of leachate from the waste area. The older areas of the Old Site were constructed prior to regulations being enacted. Therefore, not all areas of the Old Site have engineered base liners (former City of Racine Landfill, Corridor 1, Corridor 2, Corridor 3, and Corridor 4). The remaining areas of the Old Site along with the Northwest Expansion were developed with compacted clay or composite liner systems. Subsurface leachate collection systems were installed starting in Corridor 4, no subsurface leachate collection system was installed in the former City of Racine Landfill or Corridors 1 through 3. The estimated liner areas, their construction dates, and approximate barrier wall (which also assist in the containment of leachate) construction areas are depicted on Figure A-1 from the 2005 Hydrogeologic Evaluation provided in **Appendix J.1**.

The former City of Racine Landfill began operations in the 1960s. A summary of the known construction information was included as part of the 2005 Hydrogeologic Evaluation Summary Report (excerpt provided in **Appendix J.1**). No liner system was constructed prior to waste placement, and it is estimated that the base of the City of Racine Landfill is at an approximate elevation of 658. In 1971, an estimated 14-foot-deep clay cutoff wall was installed on the western side of the former City of Racine Landfill based on a chronology prepared for the Land Reclamation Company draft to the Proposed Consent Order, dated December 21, 1990. The cutoff wall was installed with the intent of preventing horizontal migration of leachate from the landfill through permeable soil layers within the subsurface. Following waste disposal activities, leachate extraction was initiated at the landfill through 5 vertical leachate/gas extraction wells. Pumped leachate is gravity drained to nearby leachate manholes for conveyance to the City of Racine sanitary sewer.

A summary of known construction information for the HWU (Corridors 1 through 6) is provided in **Appendix J.1**. Additional information related to the Corridors is presented below.

- Corridor 1: Approximate base elevation of 680.
- Corridor 2: Approximate base elevation of 648.
- Corridor 3: Approximate base elevation of 654.
- Corridor 4: Base of this corridor varies from approximate average elevations 642 to 662. Single leachate collection line is connected to manhole MH1.
- Corridor 5: Base grade elevations of approximately 655 to 670 and the leachate piping is connected to manhole MH1.
- Corridor 6: No other information from what is presented in the appendix.

Within the vertical extraction system in Corridors 1 through 3, extracted leachate is routed through gravity drain piping toward manhole MH10. The leachate extraction conveyance design in the HWU is further detailed in system summaries provided in the Inspection Manual (**Appendix I**).

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During development of Corridors 7/7A and Corridors 8, 9, and 10, barrier walls were installed to encapsulate the HWU (Corridors 1 through 6). The barrier walls are summarized in **Section 3.1.1** and consist of a 7-foot-thick compacted clay liner constructed at an approximate 3:1 slope. The North Barrier Wall, built in conjunction with Corridors 7/7A and Corridor 11, was constructed from 1987 to 1992. The West Barrier Wall, in Corridors 8, 9, and 10 (also known as the saddle area), was constructed from 1992 to 1995.

South of the HWU (Corridors 1 through 6) is a groundwater containment structure that was installed to prevent migration of leachate from the unlined portion of the HWU. The groundwater containment structure is detailed in **Section 3.6**.

The Corridors 7 through 11 of the Old Site and the entire Northwest Expansion are considered non-hazardous solid waste units. Each of these units were constructed with both base liner systems and leachate collection systems. Within the Old Site, Corridor 7/7A was constructed between 1979 and 1987 in conjunction with the North Barrier Wall. A 5-foot-thick compacted clay liner was constructed on the base of the landfill and a 7-foot-thick compacted clay liner was constructed on the side slopes. Two horizontal leachate collection lines were installed connecting to manhole MH2. Corridors 8, 9, and 10 (saddle area) were constructed in 1995 with a composite liner consisting of 5 feet of compacted clay and a 60 mil HDPE geomembrane. The West Barrier Wall was constructed into this saddle area and one leachate collection line was installed. Corridor 11 was constructed in phases from 1989 to 1992 with up to 10 feet of compacted clay on the base and 5 feet of compacted clay on the side slopes. Four horizontal collection lines were installed in Corridor 11 (RMT, 2005b). **Figure 7** details the routing for the leachate collection system within the Old Site.

The Northwest Expansion area was developed with a composite liner system and horizontal leachate collection lines within each landfill phase. The layout of the leachate collection system in the Northwest Expansion is shown on **Figure 8**.

Outside the limits of waste, the extracted leachate from the Old Unit is routed to manhole MH15B through a dual-contained leachate transfer pipe via lift stations. From manhole MH15B, the combined liquids are conveyed to the City of Racine sanitary sewer for discharge. The leachate conveyance system is depicted on the flow chart presented on **Figure 9**. This process is repeated for the Northwest Expansion; however, the leachate is routed to manhole LV-6 and ultimately to the existing City of Racine manhole MH-7.

3.2.2 Leachate Management and Extraction Standards

The overall goal of the leachate extraction system is to reduce head levels within KHL. In the October 2005 Plan Modification entitled Plan Modification Request for Old Unit [Site] Leachate Extraction System (RMT, 2005b), four technical criteria were proposed for evaluating the effectiveness of the HWU leachate extraction system and for demonstrating progress in limiting impacts to the environment (i.e., reducing head levels). As noted in **Section 2.3.1.1**, the general criteria as approved by the WDNR are as follows:

1. Maintain decreasing head levels across the site on an area weighted average as indicated by the slope of the least-square trend line.

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2. Maintain decreasing heads as indicated by the slope of least-square trend line for the eight-point moving average in the long-term trend analyses in 75 percent of the leachate headwells.
3. Maintain decreasing heads as indicated by the slope of the least-square trend line in the short-term trend analyses in 67 percent of the leachate headwells.
4. Remove more leachate by extraction from the hazardous waste unit than is entering the hazardous waste unit on an annual basis.

The criteria were proposed to include a statistical evaluation of leachate heads on an area-weighted basis, a statistical evaluation of long-term leachate heads on a well-by-well basis, a statistical evaluation of short-term leachate heads on a well-by-well basis, and an evaluation of the HWU liquid balance (inflows versus outflows).

During the 2005 hydrogeologic evaluation of the Old Site, it was determined that the HWU and former City of Racine Landfill were protective of human health and the environment that evaluation the leachate collection system effectiveness should be completed through the determination of meeting the criteria listed above instead of the previous condition which required removal of leachate from all portions of the HWU to the greatest extent possible on a seven day per week basis. These criteria allow for a more thorough evaluation of effectiveness over the long-term and better understanding where changes need to occur, if required. The statistical methods to be used when evaluating if the four criteria have been met are detailed in the October 10, 2005 Plan Modification Report.

The effectiveness and performance of the leachate extraction system in the HWU is evaluated annually as part of the general annual report for KHL (**Section 4.9**). Associated tables, graphs, and figures are provided on an annual basis to determine compliance with the criteria. In addition, every five years, a comprehensive review of the leachate extraction system, which evaluates the entire extraction system, is performed. This five-year review provides a review in the following:

- leachate extraction system,
- assumptions associated with the calculations of leachate head levels and leachate removal,
- leachate quality relative to Unit B groundwater quality,
- summary of the breakthrough of indicator parameters in the Unit B monitoring wells down-gradient of the landfill, if present, and
- provides recommendations, if any, for more extensive response actions.

Compliance with the abovementioned performance criteria and the annual evaluation of the HWU effectiveness will continue through the long-term care period.

3.2.3 Leachate Collection and Conveyance Long-Term Care Activities

Long-term care activities associated with the leachate collection and conveyance system consist of inspections, monitoring, general repairs and maintenance. Leachate sampling and head monitoring are detailed in **Section 3.5.3**. Leachate disposal through the City of Racine sanitary sewer will continue through the long-term care period.

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Inspections for the leachate collection system and associated lift stations and manholes are to be completed as detailed in the Inspection Manual (**Appendix I**). During the inspections, the need for maintenance or repairs are to be noted and the appropriate corrective action determined and recorded. Recorded maintenance/repair activities are to be completed on a timely basis. For the entire KHL, inspections of the leachate collection system (manholes, forcemains, extraction wells, and pumps) will be completed.

Throughout the long-term care period maintenance activities will be completed to maintain the integrity and functionality of the leachate collection and conveyance system.

- The leachate extraction pumps will be serviced.
- Cleaning of leachate collection lines will be completed annually, except as noted below, or as needed to maintain flow through the pipes. Leachate conveyance piping associated the vertical leachate extraction system along with the eastern perimeter gas header piping are to be jetted biennially as required by the WDNR approval letters dated March 12, 1991 (**Appendix A.6**) and February 7, 1994 (**Appendix A.7**).
- Every 5-years the leachate lines will be televised to confirm the condition of the horizontal leachate lines and identify blockages that cannot be removed through the cleaning process.
- Additional maintenance/compliance activities that will be required through the long-term care period include the annual removal of PCB oil product from the leachate extraction wells and headwells.

Repairs to the system will be completed on an as needed basis. Repairs typically would include pump replacement and repairs to lift stations and manholes that are accessible from outside the waste mass.

3.3 Gas Collection Management

3.3.1 Gas Collection System

The gas control system operates to control emissions and migration of landfill gas along with energy recovery. The gas system within the HWU and former City of Racine Landfill operates with the Northwest Expansion and remaining portion of the Old Site gas systems. Within the HWU and former City of Racine Landfill, the gas collection and leachate extraction system are primarily operated out of the same extraction wells. Within the HWU, the gas control system components are detailed in the *Description of the Old Site Landfill Design* excerpt of the 2005 Hydrogeologic Evaluation in **Appendix J.1**.

In general, the vertical extraction wells (landfill gas or leachate/landfill gas) are located throughout the HWU, the former City of Racine Landfill, the remaining corridors of the Old Unit, and the Northwest Expansion and are connected to the landfill gas header pipe system which routes the collected gas to the biogas buildings. At the Biogas West Facility, landfill gas is directed to either the S.C. Johnson Inc. facility for energy recovery and/or to a utility flare. The utility flare is located at the Biogas West Facility. Combined leachate/landfill gas extraction wells are predominately located in the Old Site, and can be located within KHL based on liquids levels present in landfill gas wells. Four horizontal gas extraction trenches are located near the west and north barrier walls encapsulating the HWU. These trenches include wellheads that connect with the landfill

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gas header system to transport the collected gas. The gas collection trenches (GT-1 and GT-2) near the North Barrier Wall are monitored; however, monitoring no longer occurs in the trenches near the West Barrier Wall. The layout of the gas extraction wells and monitored collection trenches and their associated header piping is depicted on Figure 1 in **Appendix K**. The other collection trenches, extraction wells/monitoring points, and the biogas buildings are also depicted on **Figure 4**.

Condensate generated during landfill gas extraction operations is directed to drip legs located around KHL and is removed from the landfill as leachate. Condensate collected in drip legs is routed to lift stations associated with the leachate and groundwater collection system and is combined with the leachate extracted from KHL. The condensate is conveyed for discharge as detailed in **Section 3.2.1**.

Monitoring of gas migration is conducted through the gas probes located around the perimeter of KHL. A migration control trench was installed on the eastern perimeter of the HWU with wellhead connections to allow for a vacuum to be applied to the trench if gas is detected. Landfill gas monitoring will be completed throughout the long-term care period and is further detailed in **Section 3.5.5**.

3.3.2 Gas Long-Term Care Activities

Long-term care activities associated with the landfill gas collection and control system consist of inspections, monitoring, and general repairs and maintenance. Gas monitoring is detailed in **Section 3.5.5**.

Inspections for the gas collection system are to be completed as detailed in the Inspection Manual (**Appendix I**). During the inspections, necessary maintenance or repairs are to be noted and the appropriate corrective action determined and recorded. Recorded maintenance/repair activities are to be completed on a timely basis. For the entire KHL, inspections of the gas collection system (extraction wells, flare, blower, etc.) will be completed during monitoring events.

Throughout the long-term care period maintenance activities will be completed to maintain the integrity and functionality of the gas collection system. The landfill gas blower and flare will be serviced annually. Equipment at the biogas and blower building will be inspected and serviced monthly. Vacuum through the landfill gas system will be balanced as needed to prevent the migration of landfill gas outside KHL. KHL will maintain applicable air permits during the operation of the landfill gas extraction system, renewals of existing permits will be completed on an as required basis. Repairs to the system will be completed on an as needed basis. Repairs typically would include header or extraction well replacement or the addition of new extraction wells into the landfill.

3.4 Run-On and Run-Off Controls

Run-on and run-off controls consist of the surface water management components installed at KHL as noted in **Section 2.4**. These components consist of diversion berms, ditches, culverts, flumes, sedimentation basins, and other erosional control methods.

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3.4.1 Diversion Berms and Downslope Flumes

Diversion berms and downslope flumes are installed across the final cover system of KHL to assist in managing runoff from the landfill final cover and minimize infiltration into the underlying waste. The diversion berms are placed to minimize the flow distance of run-off from the final cover system. The distances between berms are determined on the slope of the final cover with steeper slopes requiring rows of diversion berms closer together than shallower slopes. The diversion berms assist in reducing velocity of surface water as it flows across the cover system, minimizing the potential for erosional velocities to develop, protecting the final cover system. Associated with the diversion berms, drain pipes are installed within the final cover to convey infiltrated water trapped above geomembranes to the perimeter storm water infrastructure. Approximate locations of diversion berms within KHL are provided in **Appendix L.1**.

Diversion berms are sloped to discharge collected surface water in the diversion berm ditch to the downslope flumes. The diversion berms were installed in phases as the final cover system was installed and their locations are detailed in the construction documentation for each final cover construction. Examples of the construction of the diversion berms from different final cover configuration construction events is provided in **Appendix L.2** through **Appendix L.5**.

The diversion berms convey the surface water to downslope flumes. The downslope flumes include multiple entrances so that several diversion berms along the slope can be routed to centralized flume locations. The downslope flume piping is installed within the final cover system and conveys collected surface water downslope to the perimeter drainage ditches. The flumes discharge through concrete weir structures located within the perimeter drainage ditches and assist in reducing the discharge velocity to protect the perimeter drainage ditches from erosion. An example of a downslope flume and discharge structure installed during the construction of the final cover system along the slopes of the Former City of Racine Landfill is provided in **Appendix L.4**.

3.4.2 Perimeter Drainage Ditches and Culverts

Perimeter drainage ditches are routed around the perimeter of KHL. The drainage ditches convey surface water that has flowed from the diversion berms and downslope flumes along with surface water from overland flows off the final cover system and from the RCRA drains and drain pipes installed in the cover system to the sedimentation basins located around KHL. Approximate locations of the final cover drains are provided in **Appendix L.6**. Culverts are located around KHL property to convey surface water under roadways and into sedimentation basins.

3.4.3 Sedimentation Basins

Five sedimentation basins are located throughout KHL property. These sedimentation basins collect runoff from KHL prior to discharging through approved WPDES outfall structures. The location of these basins is provided on **Figure 4**.

Per the Storm Water Pollution Prevention Plan for KHL, Sedimentation Basin No. 1 is located along the southwestern boundary of KHL, adjacent to the Former City of Racine Landfill. Discharge from Sedimentation Basin No. 1 is through Outfall 001, and is routed through the South Drainage Ditch and conveyed west to the Pike River.

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Sediment Basins No. 4 and 5 were built as part of the Northwest Expansion portion of KHL and are located to the northeast and north of the limits of waste, respectively. Each basin discharges through their respective outfall structure into the Gunderson Drainage ditch which flows to the surrounding street drainage or adjacent water features. The Gunderson Drainage Ditch also receives direct flow from areas northwest of the landfill (i.e., between the property line and the northern perimeter berm of the facility), which assist in limiting run-on onto KHL property.

Sedimentation Basin No. 6 is located south of the Northwest Expansion. Storm water flows into Sedimentation Basin No. 6 and is then discharged from Outfall 006 into the South Drainage ditch. Sedimentation Basin No. 7 is located along the western boundary of Phase 5 of the Northwest Expansion. Sedimentation Basin No. 7 discharges from Outfall 007 located on the north side of the basin.

3.4.4 Long-Term Care Activities

Surface water components such as the diversion berms, drainage ditches and ponds should be inspected for deterioration due to storm events.

Surface water components are to be inspected in accordance with the Inspection Manual (**Appendix I**). Diversion berms, downslope flumes, drainage ditches, culverts, and basins should be inspected for signs of erosion or deterioration. In addition, debris and sedimentation buildup within those components should be observed. Inlets and outlets of downslope flumes, culverts, and the sedimentation basins are to be inspected to confirm that they are clear and allow for unrestricted flow.

Long-term care activities associated with the surface water management components includes general maintenance and repairs as needed. Sedimentation basins are to be cleared of sediment as needed. Sediment and debris located within surface water management components that restrict flow through the system are to be removed as required. Vegetated surfaces are to be mowed or grazed as part of the final cover system maintenance. If erosion or other repairs are noted, they should be resolved as quickly as practicable.

3.5 Environmental Monitoring

Environmental monitoring associated with KHL includes monitoring of the following systems: groundwater, gradient control system (Northwest Expansion only), leachate, leachate head levels, surface water, gas, and surface settlement. Monitoring of these will continue to be conducted during the operational period of KHL. Monitoring infrastructure will be inspected as detailed in the Inspection Manual (**Appendix I**). Maintenance and/or replacement of groundwater monitoring wells will be conducted on an as needed basis. Maintenance of other monitoring infrastructure will be conducted as specified in the applicable sections. The monitoring programs are detailed in the following subsections.

3.5.1 Groundwater Monitoring Program

3.5.1.1 Hydrogeologic Units

Based on their hydrogeologic properties, and for purposes of clarity, the surficial deposits and underlying dolomite bedrock at the site have been divided into four major units (A, B, C, and D). The units are shown schematically on **Figure 10**. Units A and B belong to the Pleistocene Oak

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Creek Formation, with the lower Unit C possibly representing part of the Pleistocene Oak Creek Formation and the New Berlin Formation. The bedrock (Unit D) is the Silurian Niagara Dolomite. Each of the units is continuous beneath the site. The site stratigraphy is consistent with regional data. The units are described in detail below. Regional geology in the vicinity of the site is described in the Feasibility and Plan of Operation Reports for the proposed Northwest Expansion (RMT, 1995, 1996a).

3.5.1.1.1 Unconsolidated Deposits

Unit A

Unit A (part of the Pleistocene Oak Creek Formation) extends from the ground surface to depths ranging from 25 to 80 feet and consists predominantly of low-permeability gray clay till (Unified Soil Classification Symbol, CL) with scattered deposits of glaciofluvial or glaciolacustrine silty sand seams (RMT, 1995; Edil, T. and D. Mickelson, 1995). The sand seams are thickest and most continuous to the northwest and southwest of KHL.

The landfill directly overlies the cohesive fine-grained soil (silt and clay) of Unit A. Sand seams in Unit A have reportedly been removed from beneath Corridors 1-6 of the existing site prior to waste placement. However, sand lenses are known to underlie the adjacent former City of Racine Landfill. The vertical hydraulic conductivity of the silt and clay that make up the fine-grained soil in Unit A is approximately 1×10^{-8} cm/s (RMT, 2005a).

Unit B

Unit B, also part of the Oak Creek Formation, ranges in thickness from approximately 35 feet to 69 feet and directly underlies Unit A.

Unit B consists of two relatively continuous glaciofluvial or glaciolacustrine granular deposits (SM, SP, and ML) of varying thickness, separated by a clay till deposit ranging in thickness from approximately 5 feet to more than 30 feet. The uppermost surface of Unit B slopes to the southwest from a high of approximately 650 feet mean sea level (M.S.L.) in the north, to a low of approximately 625 feet M.S.L. in the southwestern corner of the site (RMT, 1996a). Soil borings south of the containment structure indicate that the Unit A-B contact is easily identifiable across the site. The contact surface is essentially flat, marking the base of a glacial advance.

Unit C

Unit C is believed to belong to the Oak Creek Formation that ranges from approximately 25 feet to 50 feet in thickness at depths ranging from approximately 75 feet to 100 feet below the ground surface. This unit consists predominantly of clay (CL), and contacts Unit B at an elevation of approximately 600 feet M.S.L. Based on information from borings 118B, 126D, 154D, 209D, and 202D, Unit C is continuous beneath the site.

As documented in borings 209D and 118B, Unit C includes a basal glaciofluvial sand and gravel deposit that ranges from 6 feet (118B) to 15 feet (209D) in thickness. The sand and gravel deposit is generally well graded and contains boulders greater than 12 inches in diameter. This deposit may belong to the New Berlin Formation.

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3.5.1.1.2 Bedrock

Unit D

Based on five on-site borings (118B, 126D, 154D, 202D, and 209D), the Silurian Niagara Dolomite is encountered at depths of approximately 110 feet to 135 feet below ground surface. The dolomite surface appears to be highest north of the site and dips to the south. This interpretation is consistent with the regional bedrock information, which indicates a local bedrock high north of the site.

The Niagara Dolomite is a gray to light-gray, highly fractured, massive dolomite. It contains trace pyrite and calcite crystals, and a few fossils. Iron staining is also present in places. The upper reaches of the formation have Rock Quality Designation (RQD) values ranging from 30 to 100 percent, as calculated from cores taken at borings 126D and 209D, respectively.

3.5.1.2 Groundwater Flow

The water table occurs primarily in the clay of the upper portion of Unit A, except in the northwestern portion of the site (Northwest Expansion area), where it occurs in the Unit A sand. Groundwater in Unit A generally flows from east to west across the site through the clay and sand. Localized variability in this general direction occurs as a result of topographic changes and groundwater/surface water interactions. At the southern perimeter of the site, groundwater flows to the west toward the Pike River. Except for the northwestern portion of the expansion area, the Unit A sand is confined by the Unit A till. Excavation has reportedly removed the Unit A sand beneath most of the existing landfill area. Horizontal gradients in the granular deposit within Unit A along the southern side of the landfill are typically between 0.01 and 0.02 ft/ft and are consistent with regional trends. Gradients along the southern side of the landfill are controlled by the groundwater containment structure, which has proved to be effective at isolating contaminants within the landfill (RMT, 1995 and RMT, 2005a).

A gradient control system (GCS) is present beneath the Northwest Expansion area. Pumping from the gradient control system may induce a slight inward gradient in the Northwest Expansion area. In this interpretation, the base of the gradient control system was assumed coincident with the water table. The impact of the gradient control system is less apparent when the water table is low.

Water table contours are influenced by the presence of the landfill, the containment structure, the groundwater collection trench installed interior to the containment structure, and the Northwest Expansion's gradient control system. Prior to construction of the Northwest Expansion, the groundwater in Unit A probably flowed directly west, following topography. The presence of the landfill has deflected the flow locally to the north and south, around the landfill. South of the landfill, the flow is westward. Along the eastern portion of the landfill, groundwater elevations are generally 13 to 24 feet higher outside the containment structure than they are immediately inside the containment structure, indicating that an inward gradient toward the landfill has developed across the containment structure (RMT, 1996a).

Groundwater in the upper sand of Unit B generally flows from northeast to southwest, with a slight southeasterly component of flow in the southeastern portion of the site. Flow beneath the former City of Racine Landfill and the HWU are to the southwest and south. Historical seasonal

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fluctuations in water levels in upper Unit B wells have been approximately 1 to 5 feet (RMT, 2004; 2005a). Groundwater head maps for Unit A and Unit B are included in **Appendix J.2**.

3.5.1.3 Groundwater Monitoring

The current groundwater monitoring program for KHL, including wells, parameters, and sampling frequencies, is detailed in the WDNR Conditional Plan Modification Approval dated August 30, 2017 (**Appendix A.5**) and summarized in **Table 3** and on **Figure 5**. Sampling procedures, equipment, and documentation requirements are detailed in **Appendix H**. The current groundwater monitoring program addresses requirements of chs. NR 507 and NR 664 and will continue during the post-closure period. Laboratory analysis is completed by a laboratory certified by the WDNR. Groundwater elevations are determined for each sampled well based on field depth-to-water measurements collected prior to purging and sampling. All data collected as part of the facility groundwater monitoring program will be maintained in the facility operating record. Additional information regarding the NR 664 groundwater monitoring program is provided in the following subsections.

3.5.1.3.1 NR 664 Compliance Groundwater Monitoring Program

Eight site monitoring wells (CS8, CS10, CS12, CS14, 49LR, UB6, UB8, and UB9) have been designated as NR 664 groundwater monitoring program wells (**Table 3**). These wells are sampled quarterly for routine parameters, including VOCs. These wells are also sampled annually for NR 664 Appendix IX parameters. NR 664 Appendix IX parameters that are detected during each annual event are added to the quarterly sample analysis for the wells with NR 664 Appendix IX detections. Following each quarterly sampling event, detections of NR 664 Appendix IX parameters are compared to NR 664 Maximum Concentrations and NR 140 Enforcement Standards in quarterly reports submitted to the WDNR. NR 664 Maximum Concentrations are summarized in **Table 4**. In accordance with NR 664.0095, the point of standards application is the hydraulically downgradient limit of the waste management area.

NR 664 Appendix IX includes five pesticides that have not been detected at the site (dimethoate, disulfoton, famphur, methyl parathion, and phorate). The eight hazardous waste monitoring wells have been sampled for these five pesticides at least 31 times since 1991. Approximately 30 additional groundwater and leachate monitoring points were sampled for these pesticides at least once between 1991 and 1996. The five pesticides have not been detected in any of these groundwater and leachate samples. Few laboratories maintain Wisconsin laboratory certifications for these pesticides. Recently, finding a laboratory with appropriate certifications has become a challenge, and may not always be possible. Due to the difficulty of finding a laboratory with the appropriate certifications for dimethoate, disulfoton, famphur, methyl parathion, and phorate analysis, and because they have never been detected in groundwater or leachate samples from the site, Republic requests removal of these five pesticides from the KHL groundwater monitoring program.

The HWU at KHL, which consists of Corridors 1 through 6, is situated adjacent to other solid waste management units, including Corridors 7 through 11 and the Former City of Racine Landfill. The vinyl chloride contamination in groundwater south of the containment structure in the vicinity of 141U (i.e., the 141U area) is a known release to groundwater undergoing corrective action. Due to the unlined nature of both the HWU and the Former City of Racine Landfill, both units are likely to have contributed to the release. The current groundwater monitoring program for KHL includes compliance monitoring as described above and monitoring of the 141U area for

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corrective action compliance to document continued plume containment. As a result, the current monitoring program is protective of human health and the environment. Based on the foregoing, provisions (a) and (b) of NR 664.0090(6) apply to the KHL groundwater monitoring program. Therefore, Republic requests that the department replace the requirements of NR 664.0091 to 664.0100 with the requirements of the current groundwater monitoring program. A summary of the proposed groundwater monitoring program requirements is provided in **Table 5**.

3.5.1.3.2 Corrective Action Monitoring Program

As outlined in **Section 1.3.3**, KHL installed a groundwater extraction system as a corrective action measure to address vinyl chloride in groundwater in a saturated, confined Unit A sand lens in the 141U area of the site. Four monitoring wells in the 141U area (134U, 141U, 152U, and 153U) are sampled semiannually for VOCs to monitor the corrective action. Quarterly VOC results from three of the NR 664 monitoring wells (CS10, CS12, and CS14) are also used to monitor the corrective action in the 141U area. The laboratory results for correction action monitoring in the 141U area are compared to the NR 140 ESs.

The corrective action in the 141U area is designed to prevent downgradient migration of vinyl chloride in the Unit A sand lens. The corrective action monitoring program demonstrates adequacy of the correction action by documenting through regular sampling of monitoring wells downgradient of the vinyl chloride plume that the vinyl chloride plume is not migrating downgradient. The extent of vinyl chloride in groundwater is limited to four monitoring wells (CS14, 141U, 152U, and 153U). The extent of the vinyl chloride plume in the 141U area based on April 2024 vinyl chloride concentrations is shown on Figure D-1 in **Appendix F.2**. Past vinyl chloride concentrations for wells in the 141U area are shown on trend graphs in **Appendix F.3**.

3.5.2 Gradient Control System Monitoring Program

The gradient control system is associated with the Northwest Expansion of KHL, which is a non-hazardous waste unit. It will be monitored for water quality and discharge volume. The sample locations, parameters, and frequency are included on **Figure 5**.

3.5.3 Leachate Monitoring and Leachate Head Elevations

Leachate quality will be analyzed in accordance with the approved monitoring plan included on **Figure 5**. KHL will maintain a discharge permit with the City of Racine or other appropriate disposal entity to manage leachate, landfill gas condensate, and groundwater extracted from the site during long-term care. A copy of the current discharge permit is included in **Appendix A.2**. The discharge permit will continue to be renewed prior to expiration.

Leachate head elevations will continue to be monitored. Leachate head elevations across the HWU will be evaluated to show compliance based on the criteria specified in **Section 3.2.2**. The leachate head evaluation criteria are not required in the Northwest Expansion and Corridors 7/7A, Corridors 8, 9, 10; and Corridor 11. Therefore, leachate head evaluations in these areas are monitored to confirm that leachate head levels are being maintained at one foot or less above the existing liner system.

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3.5.4 Surface Water Monitoring

Monitoring will be performed at the monitoring points according to the frequency and parameters indicated on **Figure 5**.

3.5.5 Gas Monitoring

Landfill gas monitoring will be conducted in accordance with the approved monitoring program during the long-term care period. **Figure 5** summarizes the frequency, parameters, and monitoring locations.

3.5.6 Surface Settlement

Settlement monitoring via survey hubs will not be completed during long-term care period. Settlement will be visually observed as detailed in **Section 3.1.2**.

3.6 Groundwater Collection and Containment

As noted in **Section 2.6**, a groundwater containment and associated collection structure was constructed along the western and southern perimeters of the HWU in KHL. The groundwater containment structure consists of a bentonite slurry wall and a gravel filled groundwater collection trench with perforated corrugated piping to collect and convey groundwater to removal points (manholes and lift stations). As part of the containment structure, a soil-bentonite slurry wall was constructed along the western perimeter of the HWU, located below Corridors 8, 9, and 10 to hydraulicly separate the subsurface soil between the HWU and former City of Racine Landfill. A groundwater collection trench was constructed immediately east of the slurry wall (Foth, 1988). The containment structure also extends along the southern and western perimeters of the former City of Racine landfill. Construction of the groundwater containment structure occurred during 1988 and 1989.

The bentonite slurry wall is approximately 4,490 lineal feet and a minimum of 30 inches in width. The slurry wall was keyed into the underlying soil to provide a barrier against off-site migration of groundwater (and or leachate) and landfill gas. In general, the slurry wall depth ranged from 15 to 34 feet with an average depth of 25 feet. The slurry wall was located approximately 15 feet from the groundwater collection trench.

The groundwater trench is designed to work in conjunction with the slurry wall and consists of a minimum 10-inch-wide by a maximum 24-foot-deep trench that is approximately 4,281 lineal feet in length. A perforated pipe is installed within the trench that collects groundwater and transfers it to lift stations along the southern and western boundary of the Old Site.

The associated groundwater collection pipe begins at manhole MH9, located at the southeastern corner of the HWU, and extends to lift stations LS8, LS6, and LS5. Groundwater/leachate that is collected in the collection pipe gravity flows to the lift stations, prior to being pumped from the lift stations into the combined leachate conveyance system at manholes MH13 and MH10. Approximate locations of the containment structure, manholes, and lift stations are detailed on **Figure 4**.

Long-term care activities associated with the groundwater collection and containment system consist of inspections, general repairs, and maintenance as detailed in **Appendix I**. The

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manholes and lift stations associated with the collection system are to be inspected monthly during their operation. The groundwater collection lines associated with the containment structure will continue to be jetted annually. Monitoring of the groundwater wells surrounding the containment structure will continue during the long-term care period. Pumps within the lift stations will be replaced on an as needed basis.

3.7 Benchmarks

Four benchmarks (also known as survey control points) are located at KHL. These benchmarks are used to develop surveys with a consistent coordinate system at KHL. The benchmarks are located as identified in **Appendix M**.

The control points are to be protected and maintain to ensure their integrity. The control points are concrete monuments with a utility marker to prevent accidental damage from occurring. The control points will be inspected annually during the sitewide annual inspection for signs of damage. The control points are to be surveyed routinely to ensure their integrity for survey control.

3.8 Site Security

Site security measures are detailed in **Section 4.1**. Reoccurring inspections of the site security measures will be completed as specified in the Inspection Manual (**Appendix I**). During inspections, security measures are to be evaluated to ensure they are in good working order. At a minimum:

- Openings within the security fencing are small enough that animals or humans are not able to enter. If large openings are found, the openings are to be identified and repaired as soon as is practical.
- Confirmation that locking mechanisms on the security gate are functional and can be locked and easily unlocked. Evidence of attempted unauthorized openings of the security gate locks should be noted (i.e., evidence of bolt cutters being used, damage to the locking interface, unexplained denting). If damage to the locking mechanism at the security gate is identified, the locking mechanism should be replaced.

3.9 Corrective Action

Corrective action is ongoing at KHL within the 141U area located to the southeast of KHL limits of waste. The corrective action system consists of 3 recovery wells. Initially three 2-inch recovery wells (R-2, R-3, and R-4) were installed in the Unit A sand in June 1995 and a pilot pumping test was performed. The groundwater extraction system was upgraded and winterized in November and December 1995 with the addition of 6-inch recovery wells R-5, R-6, and R-7 and discharge piping to the leachate collection system which empties into the City of Racine sanitary sewer. Installation of these vertical extraction wells along with the previously installed groundwater containment structure (1988/1989) was identified as the most effective implementable measure to control migration of the vinyl chloride plume and to remediate groundwater in the Unit A sand. These extraction wells have continued to remove groundwater from the area since their implementation in 1996. Recovery well R-6 was ultimately redrilled and replaced by R-6R in June to September 2008. The former recovery well R-6 was abandoned in June 2008. The locations of these recovery wells are included on **Figure 4** and on Sheet 1 in **Appendix F.1**.

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The three recovery wells (R-5, R-6R, and R-7) each have a dedicated submersible pump which is used to extract groundwater from the zone of influence around the recovery well. Extracted groundwater is pumped to manhole MH-10 which gets routed through the leachate conveyance system to the City of Racine Sanitary Sewer. **Appendix F.4** provides an excerpt from the Annual Report (Figure D-2) which details the instrumentation diagram for the remedial system consisting of the three recovery wells. Information pertaining to the monitoring history and general history of the corrective action measures is provided in **Section 7.2**.

Throughout long-term care, inspections relating to the extraction system are to continue as detailed in the Inspection Manual (**Appendix I**). Ineffective or damaged parts and components are to be replaced on an as-needed basis to maintain the operation of the extraction system. In addition, the submersible pumps within the extraction wells are removed annually and be treated to eliminate iron-fouling bacteria. This minimizes build-up in the extraction wells, allowing the extraction wells to operate efficiently.

The wells within the 141U area include monitoring points CS10, CS12, CS14, 134U, 141U, 152U, and 153U, which are regularly sampled per the monitoring program. Wells CS10, CS12, and CS14 are sampled quarterly for VOCs and multiple other parameters. Whereas wells 134U, 141U, 152U, and 153U are sampled on a semiannual basis for multiple parameters including VOCs. Sampling of these wells will continue to verify the effectiveness of corrective action measures.

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4.0 Other Applicable NR 664 Requirements

4.1 s. NR 664.0014 - Security Procedures and Equipment

In accordance with s. NR 664.0014, the owner or operator shall prevent the unknowing entry and minimize the possibility for the unauthorized entry, of persons or livestock onto the active portion of the facility. As previously noted, KHL is currently closed with final cover placed; therefore, no active areas are located at KHL. Signage indicating the entrance of the landfill is posted at the site entrance to notify persons entering the facility. Unauthorized access is restricted at KHL by security fencing and other physical barriers, which are located along the perimeter of KHL. Security gates prohibit access to KHL, which remain locked during non-operating hours. During operating hours, an on-site Environmental Supervisor oversees the property. This fencing and the security gates will be maintained in good working order throughout the long-term care period.

In addition to the site security measures, monitoring features and monitoring equipment are locked when not being utilized to prevent unauthorized use or access to the features and equipment.

4.2 s. NR 670.014(h)(4) - Equipment Failures

In accordance with s. NR 670.014(h)(4), procedures, structures, or equipment used to mitigate the effects of equipment failure and power outages are required to be accounted for at the landfill. Power outages encountered at KHL are unlikely to negatively impact the equipment at the landfill. The equipment and systems at KHL rely on the local utility network as no backup generators are used on site. The reliance on the local utility network provides a more reliable power source which is less likely to encounter widespread power outages. When power outages do occur, the local utility is incentivized to restoring power in a timely fashion and has the personnel available to complete this task at any point during the year.

Even in the case of power outages, the impacts at KHL are minimal. The existing monitoring system does not use any Supervisory Control and Data Acquisition (SCADA) systems; therefore, if power outages occur no changes or issues would occur with the existing monitoring system equipment.

To mitigate the effects of equipment failure, regular inspections will continue to take place to evaluate the condition of equipment. If equipment failures or deterioration are noted, the equipment would be repaired or replaced depending on its operational state. Replacement pumps are maintained at the facility to minimize the impact of equipment failures on the leachate and groundwater removal activities.

4.3 s. NR 664.0015 - Inspection Program

The Inspection Manual for KHL is provided in **Appendix I**. Inspections of the long-term care components are detailed in the Inspection Manual and in their applicable subsections in **Section 3.0**.

Inspections will be recorded and maintained at KHL and repairs and remedies for specific maintenance requirements will be noted. An example of the inspection forms for KHL are provided in **Appendix I**.

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4.4 s. NR 664.0016 - Personnel Training Program

KHL conducts training for employees who have hazardous waste management job responsibilities or could be exposed to hazardous waste. This training is generally consistent with the training requirements required for long-term care of closed landfills in Wisconsin. The training program assists in ensuring that maintenance and operations are completed and that the required documents are preserved.

The training program and associated records are provided in the Hazardous Waste Training Program in **Appendix N**. This document describes the necessary training for proper contingency plan implementation, and necessary training for performing inspections and repairs. Additionally, the Hazardous Waste Training Program provides awareness training such that key facility components are not inadvertently damaged by personnel doing work at the facility. Onsite personnel receive this training as needed. Copies of personnel certifications will also be maintained in the site office.

4.5 Ch. NR 664 - Contingency Plan

A Contingency Plan has been prepared for KHL to address risks to human health and the environment from hazardous waste contained in Corridors 1 through 6 at KHL. This document includes information pertaining to the facility layout, evacuation plan, emergency response procedures, shut-down, emergency equipment, and spill prevention plans. The most recent Hazardous Waste Unit Contingency Plan is included in **Appendix O**.

4.6 Miscellaneous Requirements

4.6.1 s. NR 670.014(h)(5) - Personnel Protection

Personnel protection is a primary objective at KHL. Personnel interacting with the landfill must complete the training program as detailed in **Section 4.4** and have a key understanding of emergency response and procedures at KHL noted in the Contingency Plan (**Section 4.5**).

The use of personal protective equipment (PPE) is to be used when working within the landfill area; however, the type of equipment will vary based on tasked being completed. During construction and repair related events, PPE such as high-visibility vests, hard hats, hearing protection, steel toe boots, and appropriate clothing (gloves, long sleeves and long pants) are required. When sampling, environmental PPE, such as nitrile gloves, appropriate clothing, and high-visibility vests, should be used. First aid kits, two-way radios, fire extinguishers, and telephones are made available. Radio communications are available to personnel who may be required to work in the HWU area.

Disturbance activities by landfill personnel within the HWU is limited to maintenance activities. Work that would require excavation through the cover system or exposure of waste will be performed by outside contractors that have experience in the type of work. These contractors are required to maintain and comply with a Health and Safety Plan and be familiar with the Contingency Plan for KHL.

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4.6.2 s. NR 670.014(h)(6) - Atmosphere releases prevented

In accordance with s. NR 670.014(h)(6), procedures, structures, or equipment used to prevent releases to the atmosphere are required to be accounted for. Prevention of atmospheric releases are primarily accomplished through the continued operation of the landfill gas extraction and collection system. This system is summarized in **Section 2.3.2** and will be inspected, monitored, and maintained as detailed in **Section 3.3**.

4.7 s. NR 664.0197 - Long-Term Plan for Tank Systems

WDNR previously identified two potential tank systems, gas condensate system and landfill liquid conveyance system, within the December 2019 Notice of Non-Compliance. However, it was determined in the September 2020 Notice of Non-Compliance Addendum letter that the tank system requirements did not apply to these systems (**Appendix A.8**). Therefore, long-term plan requirements for the tank system do not apply to facilities at KHL.

4.8 s. NR 664.0073 - Operating Record

An Operating Record is maintained at KHL to provide a centralized and standardized location for the following records: contingency plan incident records, inspection records, long-term care cost estimates, and training records. The Operating Record is updated annually and will continue to be updated during the long-term care period.

4.9 s. NR 664.0075 - Annual Reporting

KHL submits a Hazardous Waste Annual report to the WDNR by March 1 each year, which will continue throughout the long-term care period. This Hazardous Waste Annual report includes the required information in s. NR 664.0075. The authorized representative of the owner/operator will certify the Hazardous Waste Annual Report.

In addition to the Hazardous Waste Annual Report, an Annual Report for KHL is also completed annually. This report is required to be submitted before June 15th each year and details the general monitoring and maintenance activities completed at the landfill. KHL will continue to submit this Annual Report during the long-term care period.

4.10 s. NR 664.0119(1) - Compliance Documentation

Documentation of long-term care notices and deed notice is provided in **Appendix P**.

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5.0 Long-Term Care Cost Estimate

Cost estimates have been developed for the operation, maintenance, and monitoring activities anticipated for the long-term care period for KHL. The 2025 revision is provided in **Appendix Q.1**.

Long-term care costs have been grouped into four general categories. Three of these categories deal with maintenance of the final cover system, leachate system, and gas extraction system. The final category is related to environmental monitoring and miscellaneous items which covers maintenance of monitoring features along with the associated monitoring and reporting. The costs, quantities, and unit totals associated with each task and subtask are displayed with references for the basis of each price point. The tasks and totals account for costs to procure, manage, and administer the third-party work, as well as a 10% minimum contingency for unforeseen activities.

Cost associated with corrective action are managed under separate funding and are not included in the long-term care estimate. The corrective action estimates was included in the August 23, 2024 *Conditional Plan of Operation Approval Modification for Adjusting Owner Financial Responsibility for the Kestrel Hawk Landfill (***Appendix A.9**). The 2025 revision is provided in **Appendix Q.2**.

Republic understands that modifications to operation, maintenance, and monitoring activities are likely to occur throughout the long-term care period. Appropriate adjustments to the long-term care cost estimates will be made as modifications are approved and implemented.

The cost estimate extends to the end of the minimum 40-year financial assurance period.

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6.0 Long Term Care Financial Assurance

Financial assurance instruments satisfying the requirements of NR 500 and NR 600 are provided to the WDNR by Republic to ensure adequate funds are available to complete the specified operation, maintenance, and monitoring activities throughout the long-term care period. Annual adjustments will be made to these financial instruments to reflect completion of each year's activities and to adjust future annual amounts for inflation.

Bonds for long-term care and corrective action have recently been issued by Republic's financial institution and are held to demonstrate that funds would be available to pay for required post-closure care activities. The most recent long-term care cost bonding is provided in **Appendix Q.3**.

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7.0 Solid Waste Management Units and Corrective Action

WDNR guidance documentation requires that all solid waste management units (SWMUs) at KHL be identified and described. The following section provides or references within this report the required information in accordance with s. NR 670.014(4)(a)-(c).

7.1 Solid Waste Management Units

Two primary units are located at KHL. These are the Old Site and the Northwest Expansion. The general history of both these units is provided in **Section 1.3.1**.

The Old Site is comprised of several solid waste management units: the former City of Racine Landfill, the Hazardous Waste Unit (Corridors 1 through 6), along with municipal solid waste units (Corridors 7, 7A, and 8 through 11). The former City of Racine Landfill is approximately 10 acres in size and was the first area to begin accepting waste in the early 1960s. The waste accepted primarily consisted of foundry and municipal waste. There is minimal information as to the design features, waste placement procedures, and construction for this portion of KHL. However, clay barrier walls separate the former City of Racine Landfill from Corridors 8 through 10 to the east and Corridor 11 to the north. Construction began in the remaining areas of the Old Site starting with Corridor 1 in 1970. A summary of the available information pertaining to the Old Site's design is provided **Appendix J.1** and **Section 3.2.1**. Areas of the Old Site were closed over the course of several years, these closure areas (including those for the Northwest Expansion) are identified on **Figure 6**.

In addition to the solid waste management units that comprise the Old Site, there is also the Northwest Expansion solid waste management unit. The Northwest Expansion was approved for construction in August 1996 (**Appendix A.10**) by the WDNR and consists of 5 landfill phases. A portion of the Northwest Expansion overlays the Old Site. The Northwest Expansion was approved to accept non-hazardous municipal, commercial, and industrial solid wastes and has operated from 1996 through 2022. Design drawings associated with the Northwest Expansion were provided to the WDNR as part of the May 1996 Plan of Operation prepared by RMT, Inc (RMT, 1996b). The Northwest Expansion was designed with a composite liner system, leachate collection system, gas extraction system, final cover system, and stormwater management infrastructure, which are summarized in the Plan of Operation Approval Letter from the WDNR provided in **Appendix A.10**. In December 2022 landfilling activities at KHL ceased and construction of the remaining cover areas was completed in 2024. These cover areas are also depicted on **Figure 6**.

7.2 Corrective Action

As summarized in **Section 1.3.3**, corrective action is ongoing at KHL within the 141U area due to exceedances of vinyl chloride from historical waste management activities. The corrective action system was designed to achieve the following objectives (1) control the source of vinyl chloride release, (2) to contain the migration of the vinyl chloride contaminant plume, and (3) to restore the site, as necessary, to protect human health and the environment by attaining ch. NR 140 cleanup standards.

This subsection provides a summary of monitoring-related information that was developed previously and led to the need to enter corrective action along with the corrective actions taken to date and future corrective actions planned in accordance with s. NR 670.014(4)(c).

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The following information is summarized from the December 1996 Corrective Measures Study and Corrective Measures Implementation Workplan, prepared by RMT, Inc (RMT, 1996c). Excerpts from the December 1996 Corrective Measures Study and Corrective Measures Implementation Workplan are included in **Appendix F.5** and **Appendix F.6**. A list of documents was prepared for the 141U area prior to the December 1996 workplan is provided in **Appendix F.5**. These documents can be referenced for additional detail pertaining to the previously conducted investigation.

In December 1991, the Land Reclamation Company of Racine, Wisconsin (LRC) (former owner of KHL) entered into an Administrative Order of Consent (Consent Order) with the USEPA and WDNR for vinyl chloride exceedances south of the landfill, near well 141U. This Consent Order required that LRC perform a RCRA Facility Investigation to determine the nature and extent of impacts from the facility, perform a corrective measure study to identify and evaluate remedial alternatives, and implement the corrective measure selected by USEPA. These investigations began in August 1993 with Law Engineering and Environmental Services, Inc., conducting three phases of investigation in 1993 and 1994. During this investigation, a plume of vinyl chloride was identified in the groundwater in Unit A sand, located approximately 40 feet below the ground surface, in the area of well 141U south of the landfill. **Appendix F.6** provides a summary of vinyl chloride concentrations from the wells in the 141U area during this investigation period (March 1990 to July 1996) along with the analytical data.

The Unit A sand is part of the Pleistocene Oak Creek Formation which extends from the ground surface to depths ranging from 25 to 80 feet and consists predominantly of low-permeability gray clay till (Unified Soil Classification Symbol, CL) with scattered deposits of glaciofluvial or glaciolacustrine silty sand seams. The sand seams are thickest and most continuous to the northwest and southwest of KHL. The landfill directly overlies the cohesive fine-grained soil (silt and clay) of Unit A. Sand seams in Unit A were removed from beneath Corridors 1-6 of the existing site prior to waste placement. However, sand lenses are known to underlie the adjacent former City of Racine Landfill. Within the Well 141U area, the Unit A sand ranges in thickness from 1 to 6 feet with depth of water ranging from 12 to 29 feet below the ground surface, depending on season and sampling point.

Following USEPA and WDNR approval, RMT installed three 2-inch recovery wells (R-2, R-3, and R-4) in the Unit A sand in June 1995 and performed a pilot pumping test. The groundwater extraction system was upgraded and winterized in November and December 1995 with 6-inch recovery wells R-5, R-6, and R-7 and discharge piping to the leachate collection system which empties into the City of Racine sanitary sewer. Installation of these vertical extraction wells was identified as the most effective implementable measure to control migration of the vinyl chloride plume and to remediate groundwater in the Unit A sand. These extraction wells have continued to remove groundwater from the area since their implementation in 1996.

To determine if cleanup standards have been met, groundwater monitoring is completed in the area. Cleanup standards require that the wells meet existing ch. NR 140 standards by lowering the vinyl chloride concentrations to the current Preventative Action Limit (PAL) concentrations. The wells are sampled semi-annually and evaluated for multiple parameters, including volatile organic compound (VOC) concentrations, in conformance with the approved 2017 environmental monitoring plan.

Since the installation of well 141U in April 1988, vinyl chloride has been detected in groundwater samples collected from the well at concentrations consistently above the NR 140 enforcement

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standard (ES) value (0.2 µg/L). Monitoring well 141U is located approximately 200 feet south of the HWU and is screened in the Unit A sand. In 1988, five additional Unit A wells (147U, 148U, 149U, 150U, and 151U) were installed within a 500-foot radius of 141U to further investigate vinyl chloride migration. Except for one low-level vinyl chloride detect in 150U in March 1991, vinyl chloride and other VOCs were not detected in these wells, which were abandoned in October 1991 because of construction activities in the area.

It was determined that the source of this impact was likely due to landfill gas that escaped into the partially dewatered Unit A sand early in the site development, before the groundwater containment structure was in place. The lack of corresponding increases in inorganic concentrations, concurrent with the vinyl chloride increase at the 141U area wells, supports this conclusion. Vinyl chloride levels in the groundwater at well 141U declined sharply after 1991, from a high of 170 µg/L (March 1991) to a low of 3.0 µg/L (October 2002). Vinyl chloride concentrations increased from 2002 through 2014 due to increased maintenance conducted on the system to address fouling of the pumps with iron bacteria.

As a result of repairs and the annual treatment to remove iron bacteria, vinyl chloride concentrations at 141U have been reduced since 2014 to near-historical lows. Trends of the vinyl chloride monitoring for wells within the 141U area are provided in **Appendix F.3**, these trends were provided in the 2023 Annual Report, prepared by TRC, dated June 2024.

The system has demonstrated its effectiveness in containing the vinyl chloride impacts in the Unit A sand, as evidenced by non-detects at downgradient monitoring wells in the most recent year (2023). The long-term declines in vinyl chloride concentrations in wells 141U and CS14 are likely due to the migration of unimpacted groundwater through the impacted area, the presence of the groundwater containment structure, the groundwater extraction system, and to the natural attenuation of the vinyl chloride. This corrective action effort is evaluated and detailed in the Annual Reports submitted by KHL.

The extraction wells will continue to operate during the long-term care period to continue to manage the vinyl chloride plume until it is deemed unnecessary by the WDNR. Associated groundwater monitoring within the 141U area will also continue to verify the effectiveness of the implemented corrective action measures until the remedial goal has been achieved. No other corrective action activities, other than the continued operation of the existing extraction well system, are planned.

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8.0 Other Hazardous Waste Requirements

As part of the WDNR guidance document, this section is to memorialize hazardous waste compliance details. WDNR requested that this FPOR include information assembled by KHL as part of the hazardous waste compliance assessment that concluded with the WDNR's June 4, 2021 Conditional Close-Out letter (**Appendix A.11**), such as generator waste determinations, documentation regarding gas processing residual including condensate, and WWTU exemption support. Documents associated with this memorialization of these items are provided in **Appendix R**, unless otherwise specified.

The hazardous waste compliance assessment for KHL was originally initiated through the issuance of a Notice of Noncompliance (NON) on December 9, 2019, from the WDNR (**Appendix A.12**), with an addendum that was issued on September 16, 2020 (**Appendix A.8**). Within these documents, 21 alleged areas of non-compliance were identified. KHL addressed these items in a series of meetings, three letters, and several reports included with the letters which provided additional information in response to the NON and addendum items that the WDNR deemed satisfactory and sufficient to resolve the issues.

As noted above, the primary items that are requested to be memorialized in this section include generator waste determinations, documentation regarding gas processing residuals, including condensate, and WWTU exemption support. Documentation related to these items are provided as follows:

- Generator waste determinations: Per the close out letter, the submitted response dated November 16, 2020, provided as the additional information related to waste determinations. This response letter is provided in **Appendix R.1**.
- Documentation regarding gas processing residuals, including condensate: Per the close out letter, the submitted responses dated November 16, 2020, and April 7, 2021, provided the additional information pertaining to the gas processing residuals, including condensate. The November 2020 submittal is provided in **Appendix R.1**. The applicable excerpts of the subsequent April 2021 submittal is provided in **Appendix R.2**. A memorandum prepared by KHL's legal advisors regarding characterization of leachate gas condensate is included in the Hazardous Waste Generation Report included in **Appendix R.2**, this documentation was initially provided in March 2020. It should be noted that in the Close-out letter, a new area of concern was added as Item 22, regarding the regulatory status of condensate from landfill gas processing. This issue required classification from the US EPA, but no further actions from KHL. If the response from the EPA contradicted KHL's position, the department reserved the right to revisit this issue.
- WWTU exemption support: The WWTU exemption was initially introduced in NON item 16 "Tank System Requirements" within the December NON letter from WDNR. By the Addendum NON letter from WDNR, it was noted that this NON item had been resolved. Additional information relating to NON item 16 was provided to the WDNR on April 14, 2020, which is provided in **Appendix R.3**. This documentation indicated the following:
  - The condensate was not considered a hazardous waste, therefore the hazardous waste storage requirements, transportation, tank system, and generator requirements were not applicable.

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- The leachate and groundwater are covered by the domestic sewage exclusion per a memorandum prepared by KHL's legal advisors and therefore not subject to the requirements of NR 664 and 670.

It was subsequently determined by WDNR that the requirements and subsequent exclusions related to the tank system requirements did not apply.

These remaining actions include the implementation by KHL of revised procedures that demonstrate compliance with hazardous waste requirements in NR 600 through 679. The department indicated no further action was required for previously identified areas of concern and alleged areas of non-compliance.

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9.0 References

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RMT. 2005a. Old Site Hydrogeologic Evaluation – Phase I Summary Report: Kestrel Hawk Landfill, Racine, Wisconsin. October 10, 2005.

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Table 1: 2014 - 2024 Annual Hazardous Report Summary
Kestrel Hawk Landfill
Racine, Wisconsin

Values From Annual Hazardous Waste Reports[1]			
Year	Annual Hazardous Waste Report Quantities (lbs)	Net Waste (Generated minus Exemptions) (lbs)	Excluded Waste Transported to WWTP (lbs)
2014	9,112,329	392	9,111,937
2015	5,770,691		5,770,691
2016	14,827,720	70	14,827,650
2017	34,490,282		34,490,282
2018	841,030		841,030
2019	2,074,183		2,074,183
2020	89,175,529	3,343	89,172,186
2021	69,834,124	5,187	69,828,937
2022	74,643,968	95	74,643,873
2023	77,794,085	1,676	77,792,409
2024	74,846,217	461	74,845,756

Footnotes:

[1] Values summarize the previous annual hazardous waste reports submitted by KHL.

Created by: B. Kahnk 3/26/2025
Checked by: T. Martin 3/27/2025

Table 2: List of Available Permits, Licenses, and Construction Approvals
Kestrel Hawk Landfill - Hazardous Waste Unit
Racine, Wisconsin

Date	Subject
April 15, 1970	Landfill Approval Letter
May 16, 1975	Hazardous Waste Acceptance Approval
May 17, 1975	Landfill License Application, License #0572
August 2, 1976	Hazardous Waste Acceptance Approval
March 31, 1981	Review of Documentation of Corridor 5 Construction and Conditional Approval, Land
May 12, 1981	Review of Hazardous Waste Plan and Amendments for Land Reclamation Ltd., License #572
November 20, 1981	Corridor 5 Approval Modifications, Land Reclamation, Ltd., License #572
January 8, 1982	Determination of NR 180 Feasibility for the Land Reclamation, Ltd Solid Waste Disposal Site, License #572, Racine County
December 10, 1982	"Interim License Denial", Land Reclamation Ltd. Landfill
February 9, 1983	Clay Cutoff Wall Documentation, Land Reclamation Ltd. Sanitary Landfill, License No. 572, Racine County
October 30, 1984	Corridor 6 Construction Approval, Land Reclamation Ltd. Landfill, License No. 572
December 19, 1984	Plan of Operation Approval, Land Reclamation, Ltd. Landfill, License #572
November 4, 1985	Plan Modification Approval, Interim Sanitary Sewer Connection, Land Reclamation Ltd., License #572, Racine County
November 19, 1985	Site Construction Documentation Approval, Corridor 6, Land Reclamation, Ltd. Landfill, License #572, Racine County
April 11, 1986	Leachate Collection Line Plan Modification Review, Land Reclamation Landfill License #0572, Racine County
May 2, 1986	Comments on Corridor 6 Construction Documentation Approval, Land Reclamation, Ltd. Landfill, License #572, Racine County
June 15, 1987	Facility Construction Documentation Review, Corridor 7 - Land Reclamation Ltd., License #0572, Racine County
February 1, 1988	Approval of Phase II of North Barrier Wall Construction (Verbal Approval)
June 28, 1988	Sedimentation Basin No. 1, Land Reclamation, Ltd, Landfill, #0572 Racine County
May 1, 1989	Solid Waste Facility Operation License No 11193, EPA ID No. WID980784179
November 17, 1989	Construction Documentation Approval for Corridor No. 7 - Land Reclamation, Ltd., License No. 0572, Racine County, WI
November 17, 1989	Construction Documentation Approval for the Hazardous Waste Unit North Barrier Wall and the East and North Sidewalls of Corridor No. 7 - Land Reclamation, Ltd., License No. 0572, Racine County, WI
June 6, 1990	Facility Construction Documentation Approval, East Half of the North Face of Corridor 7, and Plan Modification Approval to Accept Petroleum Contaminated Soils, Land Reclamation Landfill, #0572, Racine County, WI
October 26, 1990	Facility Construction Documentation Approval, East Half of the North Face of Corridor 7-Phase IB, and Southern Clay Liner Sidewall-Corridor 11, Land Reclamation Landfill, #0572, Racine County, WI
January 11, 1991	Facility Construction Documentation Approval, West Half of the North Face of Corridor 7, Land Reclamation Landfill, #0572, Racine County, WI
July 29, 1991	Facility Post-Construction Documentation Approval, East Slope Final Clay Cover, Land Reclamation Landfill, #0572, Racine County, WI
May 11, 1992	Interior Manhole Construction Documentation Approval
February 22, 1993	Construction Documentation Approval for Corridor 11-Phase 2, Land Reclamation Company Landfill, License #0572, WID 076171008

Table 2: List of Available Permits, Licenses, and Construction Approvals
Kestrel Hawk Landfill - Hazardous Waste Unit
Racine, Wisconsin

Date	Subject
April 13, 1993	RCRA Cover - Phase I, Construction Documentation Approval, Land Reclamation Company Landfill, Racine County
July 7, 1993	Gas and Leachate Extraction System Construction Documentation Approval, Land Reclamation Company Landfill, Racine County
July 28, 1993	Construction Documentation Approval for the Completion of Corridor 11, Land Reclamation Company Landfill, Racine County
September 13, 1993	Groundwater Containment Structure Construction Documentation Approval, Land Reclamation Company Landfill, Racine County
November 4, 1993	Construction Documentation Approval for Phase II of West Barrier Wall and Horizontal Gas Well Construction and Plan of Operation Modification, Land Reclamation Company Landfill, Racine County
March 14, 1994	Construction Documentation Approval for Phase IV & V of the North Barrier Wall, Land Reclamation Company Landfill, Racine County
April 19, 1994	Construction Documentation Approval, East Slope Final Clay Cover, Land Reclamation Landfill #0572, Racine County, WI
July 13, 1994	Construction Documentation Approval, East Slope and Corridor 7 Gas & Leachate Extraction System, Land Reclamation Company Landfill, #0572, Racine County, WI
August 19, 1994	Host Agreement between Land Reclamation Company and the City of Racine, Wisconsin.
November 2, 1994	Construction Documentation Approval, Corridor 7, North Slope Final Cover and Completion of Corridor 7, East Slope Final Cover, Land Reclamation Landfill, #0572, Racine County, WI
May 22, 1996	Construction Documentation Approval for the South Slope of the Hazardous Waste Unit, Land Reclamation Company Landfill, Racine County
August 1, 1996	Construction Documentation Approval for the Barrier Wall of the Hazardous Waste Unit, Land Reclamation Company Landfill, Racine County
August 30, 1996	Plan of Operation Approval for the Northwest Expansion of the Land Reclamation Company Landfill
September 8, 2004	Construction Documentation Determination for 2001 Old Site Final Cover Closure, Kestrel Hawk Recycling and Disposal Facility (RDF), License #0572
May 24, 2010	Construction Documentation Determination for the Phase 2 and Partial Closure and RCRA Cover Extensions, Kestrel Hawk Recycling and Disposal Facility (RDF), License #0572
January 1, 2017	Industrial Wastewater Discharge Permit #1007L
October 1, 2020	Solid Waste Facility Operation License - Solid Waste Processing - Solidification as Part of Landfill Operation (#3089)
October 1, 2020	Solid Waste Facility Operation License - Solid Waste Processing - Soil Remediation as Part of Landfill Operations (#3872)
January 1, 2021	Renewal of the Local Limits Pretreatment Discharge Permit
May 14, 2021	General Permit to Discharge Under the Wisconsin Pollutant Discharge Elimination System WPDES Permit No. WI-S067857-5
March 8, 2022	Air Pollution Control Operation Permit (#25207699A-P30)
October 1, 2022	Solid Waste Facility Operation License (License #572)
November 8, 2024	Construction Documentation Approval for 2023-2024 Composite Cover Construction for the Kestrel Hawk Landfill, License #0572
December 16, 2024	Renewal of the Local Limits Pretreatment Discharge Permit

Table 3: Groundwater Monitoring Program Summary
Kestrel Hawk Landfill
Racine, Wisconsin

Unit	Wells	Parameters	Frequency
NR664			
A	CS8, CS10, CS12, CS14	VOCs alkalinity, sodium, chloride, hardness, fluoride, field pH, field specific conductance, field temperature, elevation, NR 664 Appendix IX detects from annual monitoring	Quarterly
B	49LR, UB6, UB8, UB9	VOCs alkalinity, sodium, chloride, hardness, fluoride, field pH, field specific conductance, field temperature, elevation, NR 664 Appendix IX detects from annual monitoring	Quarterly
A & B	CS8, CS10, CS12, CS14 49LR, UB6, UB8, UB9	NR 664 Appendix IX Parameters	Annual
NR500			
A and B	134U, 141U, 152U, 153U, 204URR, 208U, 209U	VOCs	Semiannually
A	7U, 40U, 47TR, 109TRR, 201T, 202T, 204TR, 208T, 209T, CS2, CS6R	VOCs	Annual
B	109L, 201U, UB2, UB4, UB5, UB7	VOCs	Annual
A, B, and D	5TR, 5UR, 5LRR, 6TR, 6U, 6L, 7T, 17TR, 17UR, 17LR, 46TR, 46U, 47U, 48TR, 48UR, 48LR, 49T, 49U, 108T, 108U, 108L, 109U, 120T, 120U, 120L, 126T, 126U, 126L, 126D, 134T, 141T, 146UR, 202U, 202D, 209D, 210U, 211U, CS1, CS3, CS4, CS5, UB1	Groundwater elevation	Semiannually
A	7U, 40U, 47TR, 109TRR, 134U, 141U, 152U, 153U, 201T, 202T, 204TR, 208T, 209T, CS2, CS6R	Groundwater elevation, field temperature, field conductivity, field pH, alkalinity, hardness, chloride, fluoride, sodium	Semiannually
B	109L, 201U, 204URR, 208U, 209U, UB2, UB4, UB5, UB7	Groundwater elevation, field temperature, field conductivity, field pH, alkalinity, hardness, chloride, fluoride, sodium	Semiannually
Non-NR140 Compliance Wells			
A	CS7, CS9, CS11, CS13	Specific conductance, elevation	Quarterly
A	CS9, CS13	VOCs	Annual

Note:

Program based on December 28, 2005, WDNR Plan Modification approval as modified by the November 3, 2009, and August 30, 2017, WDNR Plan Modification approvals.

Checked by: CLS, 1/15/2007; TEK, 12/16/2009; TEK, 6/12/2012; JNH, 4/2/2015; JNH 12/8/2016; JNH 6/27/2017, AAS 09/15/2017, SS 06/21/2023

Table 4: NR 664 Maximum Concentration Limits
Kestrel Hawk Landfill
Racine, Wisconsin

Parameter	NR 140 ES (µg/L)	NR 664, Table 1 (µg/L)
Inorganics[(1)]		
Antimony, dissolved	***6***	None
Arsenic	***10***	50
Barium	2,000	***1,000***
Beryllium, dissolved	***4***	None
Cadmium	***5***	10
Chromium, dissolved	100	***50***
Cobalt	**40**	None
Copper, dissolved	***1,300***	None
Cyanide, total	***200***	None
Lead, dissolved	***15***	50
Mercury	**2**	2
Nickel	**100**	None
Selenium	50	***10***
Silver	**10**	50
Sulfide, total	None	None
Thallium, dissolved	***2***	None
Tin, dissolved	None	None
Vanadium, dissolved	***30***	None
Zinc	***5,000***	None
Organics		
Acetophenone	None	None
Carbon disulfide	***1,000***	None
Chloroethane	***400***	None
Chloroform	***6***	None
4,4-DDT	None	None
Dichlorodifluoromethane	***1,000***	None
1,1-Dichloroethane	***850***	None
Heptachlor	***0.4***	None
Methylene chloride	***5***	None
Phenol	***2,000***	None
Toluene	***800***	None
Vinyl chloride	***0.2***	None

Notes:

(1) Filtered samples.

Bold and *italic* font indicates the maximum concentration limit that shall be met.

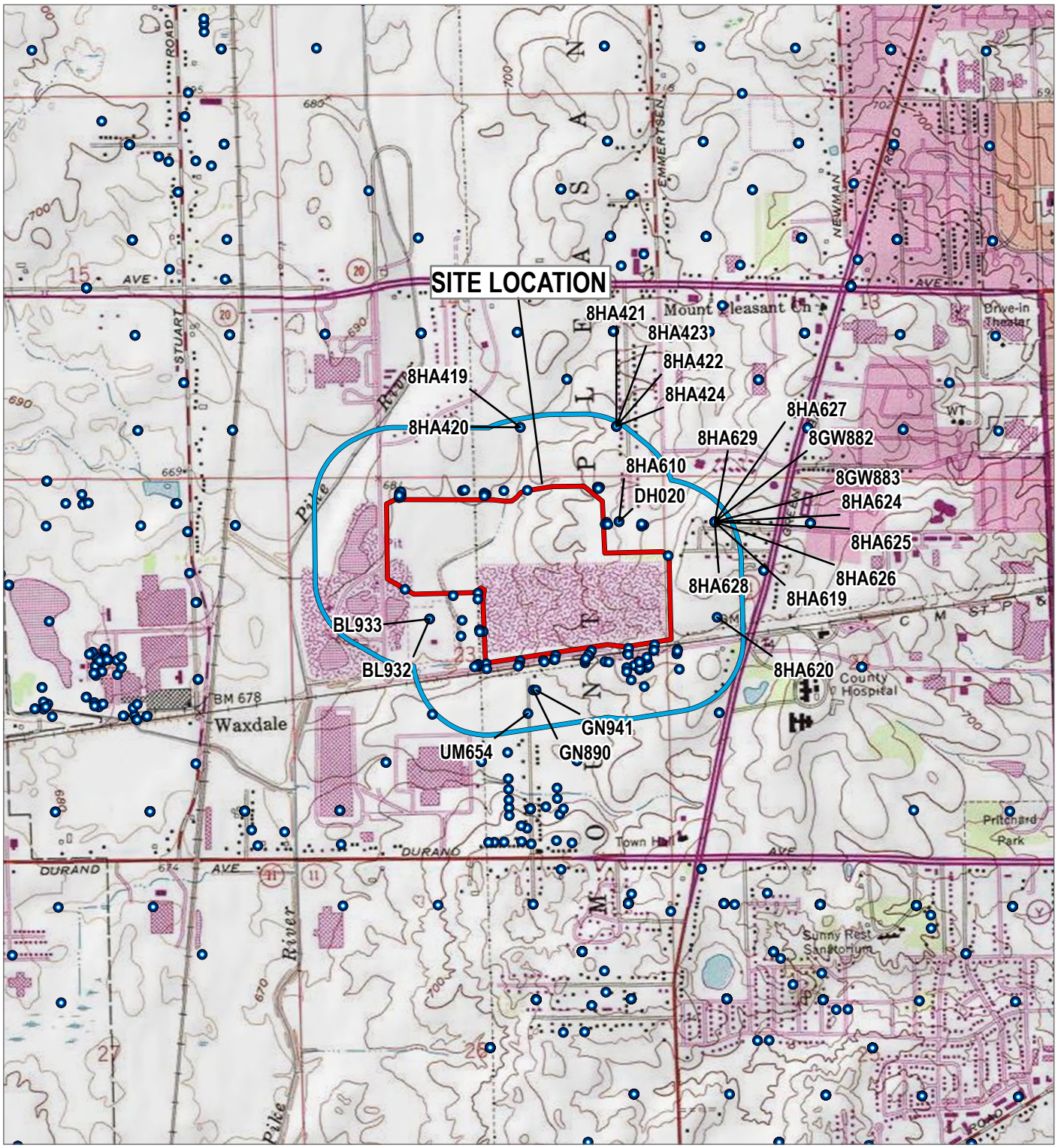
Checked By: JNH, 9/24/2014, AAS 09/15/2017

Table 5: Proposed Groundwater Monitoring Requirements
Kestrel Hawk Landfill - Hazardous Waste Unit
Racine, Wisconsin

NR 664.0091 through NR 664.0100 Requirements	Proposed Replacement Requirements
NR 664.0091(1)(a) Compliance monitoring	The current monitoring program includes compliance monitoring
NR 664.0091(1)(b) Corrective action - Groundwater Protection Standard	The current monitoring program includes corrective action monitoring
NR 664.0091(1)(c) Corrective action - Concentration Limits	The current monitoring program includes corrective action monitoring
NR 664.0091(1)(d) Detection monitoring	Not applicable, current program includes compliance and corrective action monitoring
NR 664.0091(1)(e) Certified lab use	No change required
NR 664.0091(2) Department shall specify program elements in license	Department to specify
NR 664.0092 Department shall specify the groundwater protection standard	Groundwater protection standard based on the current compliance monitoring (wells, parameters, concentration limits, etc.)
NR 664.0093 Hazardous constituents	Substances detected from annual sampling for NR 664 Appendix IX parameters
NR 664.0094 Concentration limits	NR 664 Table 1 and NR 140 Table 1
NR 664.0095 Point of standards application	Per NR 664.0095
NR 664.0096 Compliance period	Closure period
NR 664.0097(1) Number, location, and depth of wells	Current monitoring network
NR 664.0097(2) Multiple units	Current monitoring network
NR 664.0097(3) Casing	Current monitoring network
NR 664.0097(4) Sampling and analysis procedures	Current monitoring program
NR 664.0097(5) Sampling and analysis methods	Current monitoring program
NR 664.0097(6) GW elevation	Current monitoring program
NR 664.0097(7) Establishment of background	Current monitoring program
NR 664.0097(8) Data evaluation and methods	Comparison of results to concentration limits
NR 664.0097(9) Data evaluation and methods	Comparison of results to concentration limits
NR 664.0097(10) Recordkeeping and reporting	Current monitoring program
NR 664.0098 Detection monitoring program	Not applicable, current program includes compliance and corrective action monitoring
NR 664.0099 Compliance monitoring program	Current monitoring program
NR 664.0100 Corrective action program	Current monitoring program

Note:

The current monitoring program is described in the August 30, 2017 Conditional Plan Modification Approval.



LIMITS OF WASTE

1,000 FT SITE BUFFER

WATER WELL

BASE MAP: USGS TOPO MAP
DATA SOURCE: TRC, WISCONSIN DNR

0 1,000 2,000
FEET
1:24,000 1" = 2,000'



PROJECT:
KESTREL HAWK LANDFILL
LONG-TERM CARE PLAN APPLICATION
RACINE, WISCONSIN

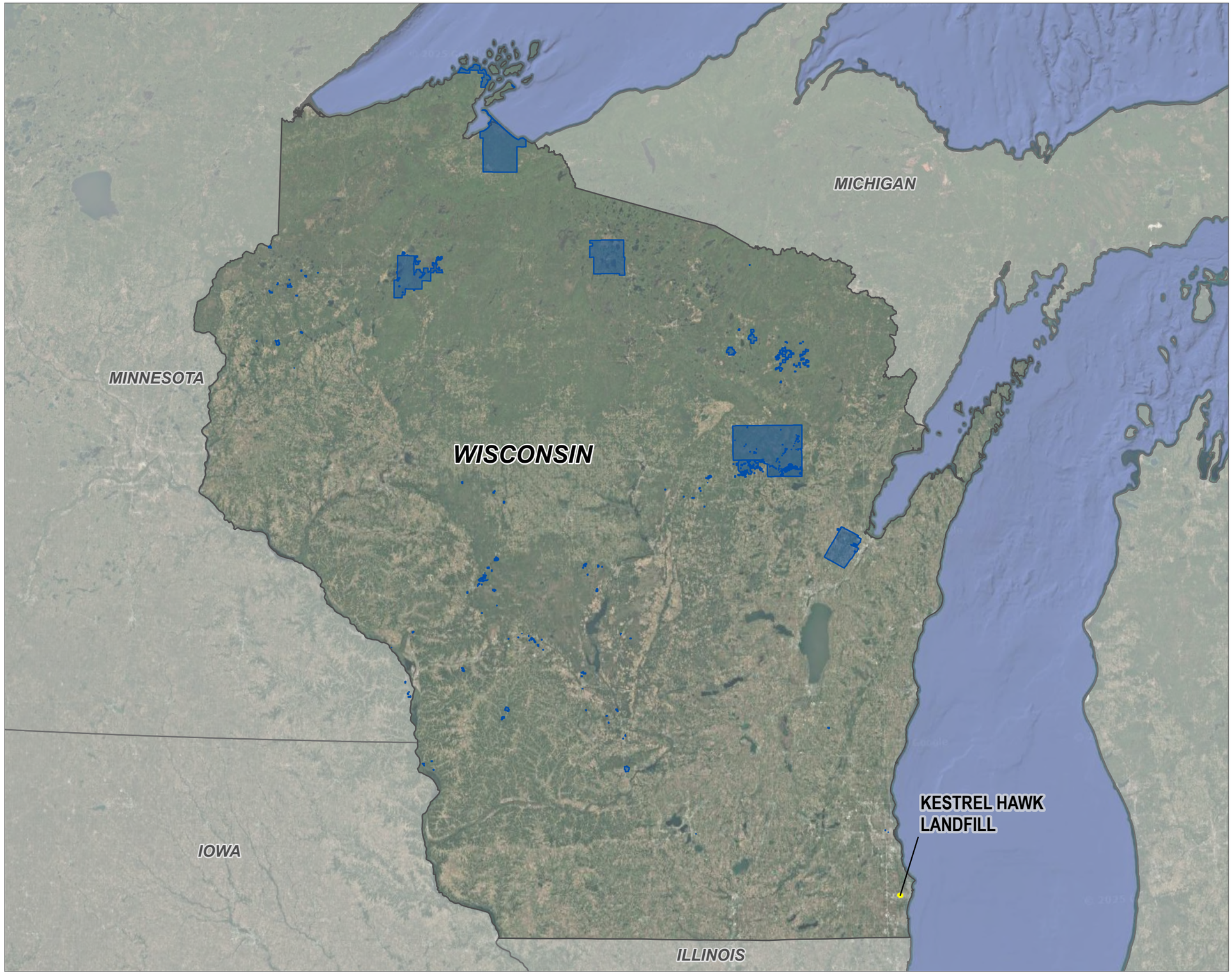
TITLE:
TOPOGRAPHIC MAP

DRAWN BY:	A. FOJTIK	PROJ. NO.:	557469
CHECKED BY:	B. KAHNK		
APPROVED BY:	T. MARTIN		**FIGURE 1**
DATE:	JUNE 2025		

TRC
999 FOURIER DRIVE
SUITE 101
MADISON, WI 53717
PHONE: 608.826.3663

FILE: 557469_KESTRELHAWKLF

COORDINATE SYSTEM: NAD 1983 STATEPLANE WISCONSIN SOUTH FIPS 4803 FEET: MAP ROTATION: 0
-- SAVED BY: AFOJTIK ON 6/25/2025, 16:50:13 PM: FILE PATH: T:\1-PROJECTS\REPUBLIC\KESTREL HAWK\F2-APRX\557469_KESTRELHAWK.FAPRX: -- LAYOUT NAME: 557469_KESTRELHAWKLF_FIG1



LIMITS OF WASTE

NATIVE AMERICAN LANDS

NOTES:

BASE MAP: GOOGLE EARTH PRO IMAGERY, APRIL 2021.
DATA SOURCE: TRC, ARCGIS ONLINE

1:2,160,000
1" = 34 MILES
0 50 MILES

PROJECT:
KESTREL HAWK LANDFILL
LONG-TERM CARE PLAN APPLICATION
RACINE, WISCONSIN

TITLE:
NATIVE AMERICAN LANDS
IN WISCONSIN

DRAWN BY:	A. FOJTIK	PROJ. NO.:	557469
CHECKED BY:	B. KAHNK		
APPROVED BY:	T. MARTIN		FIGURE 2
DATE:	JUNE 2025		

TRC
999 FOURIER DRIVE
SUITE 101
MADISON, WI 53717
PHONE: 608.826.3663

FILE: 557469_KestrelHawkLF.aprx

Coordinate System: NAD 1983 Wisconsin TM US Ft - Map Rotation: 0
Saved By: AFOJTIK on 6/25/2025 - 10:46:25 AM - File Path: T:\PROJECTS\Republic\KestrelHawkLF\2-APRX\557469_KestrelHawkLF.aprx - Layout Name: 557469_KestrelHawkLF_fig2_NativeAmericanLands



LIMITS OF WASTE

100-YEAR FLOODPLAIN

NOTES:

BASE MAP: GOOGLE EARTH PRO IMAGERY, MAY 2023.
DATA SOURCE: TRC, FEMA

1:6,000
1" = 500'
0 500 FEET

PROJECT:
KESTREL HAWK LANDFILL
LONG-TERM CARE PLAN APPLICATION
RACINE, WISCONSIN

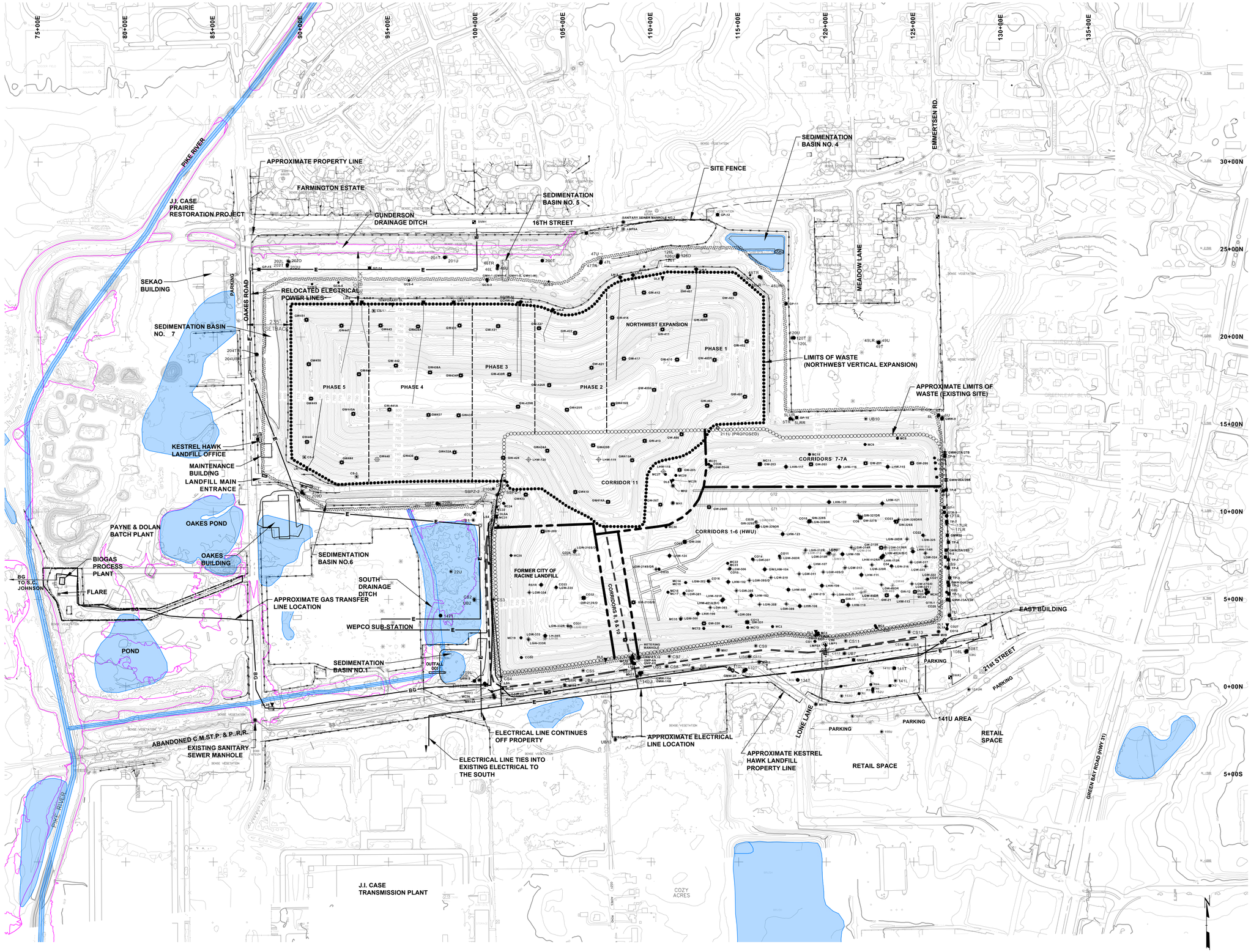
TITLE:
FLOODPLAIN MAP

DRAWN BY:	A. FOJTIK	PROJ. NO.:	557469
CHECKED BY:	B. KAHNK	**FIGURE 3**	
APPROVED BY:	T. MARTIN		
DATE:	JUNE 2025		

TRC
999 FOURIER DRIVE
SUITE 101
MADISON, WI 53717
PHONE: 608.826.3663

FILE: 557469_KestrelHawkLF.aprx

Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet - Map Rotation: 0
Saved By: AFOJTIK on 6/25/2025 - 16:46:25 PM - File Path: T:\PROJECT\S\Solution\KestrelHawk\LF\2-APRX\557469_KestrelHawkLF.aprx - Layout Name: 557469_KestrelHawkLF_fig3



LEGEND

- APPROXIMATE PROPERTY LINE
- EXISTING PAVED ROAD
- EXISTING UNPAVED ROAD
- EXISTING BUILDING
- SITE FENCING (AS EXISTING IN 6/04)
- 710 — EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- 673.4 — EXISTING SPOT ELEVATION
- TREES AND / OR BRUSH
- 30+00N — SITE GRID COORDINATE
- NEW WELL INSTALLED
- 161T — EXISTING WATER TABLE OBSERVATION WELL LOCATION AND NUMBER
- UB5 — PIEZOMETER LOCATION AND NUMBER
- 205T — ABANDONED WATER TABLE OBSERVATION WELL LOCATION AND NUMBER
- 205U — ABANDONED PIEZOMETER LOCATION AND NUMBER
- GMW24A/24B — GAS MONITORING WELL LOCATION AND NUMBER (TWO NUMBERS INDICATES A WELL NEST)
- DL4R — GAS CONDENSATE DRIPLEG LOCATION AND NUMBER
- DL7 — PROPOSED GAS CONDENSATE DRIPLEG LOCATION AND NUMBER
- LHW120 — LEACHATE HEADWELL LOCATION AND NUMBER (PROPOSED)
- LHW114 — LEACHATE HEADWELL LOCATION AND NUMBER (EXISTING)
- LHW38 — ABANDONED LEACHATE HEADWELL LOCATION AND NUMBER
- TP9 — GAS T-PROBE LOCATION AND NUMBER
- GMW22 — ABANDONED GAS T-PROBE LOCATION AND NUMBER
- SW1 OR SG2 — STAFF GAUGE LOCATION AND NUMBER
- LS5 OR MH3 — MANHOLE/LIFT STATION LOCATION AND NUMBER
- CO7N — LEACHATE COLLECTION CLEANOUT RISER PIPE LOCATION AND NUMBER
- LGW322 — LEACHATE GAS WELL LOCATION AND NUMBER
- LGW312 — ABANDONED LEACHATE GAS WELL LOCATION AND NUMBER
- GP10 — GAS PROBE LOCATION AND NUMBER
- GW411 — GAS WELL LOCATION AND NUMBER
- LMP8A — LEACHATE MONITORING POINT LOCATION AND NUMBER
- LH–1 — LEACHATE HEADWELL MONITORING PORT
- LEACHATE HEAD MONITORING LOCATION AND NUMBER
- GCHW–1 — GRADIENT CONTROL HEADWELL
- APPROXIMATE LOCATION OF GROUNDWATER CONTAINMENT STRUCTURE
- EXISTING LIMITS OF WASTE (NORTHWEST HORIZONTAL AND VERTICAL EXPANSION)
- DESIGN MANAGEMENT ZONE
- APPROXIMATE LIMITS OF WASTE (EXISTING SITE)
- APPROXIMATE LIMITS OF WASTE CORRIDORS (EXISTING SITE)
- SS — SANITARY SEWER
- BG — BIOGAS
- BG — ABANDONED IN-PLACE BIOGAS
- E — OVERHEAD ELECTRICAL
- GW447 — PROPOSED GAS EXTRACTION WELL LOCATION AND NUMBER
- 211U — PROPOSED PIEZOMETER LOCATION AND NUMBER
- GCS–4 GCHW–1 — GRADIENT CONTROL SYSTEM MONITORING POINT AND NUMBER
- GMH–1 — GRADIENT CONTROL SYSTEM MANHOLE
- OUTFALL 003 — SEDIMENTATION BASIN OUTFALL LOCATION AND NUMBER
- GAS TRENCH LOCATION (MONITORED)
- GAS TRENCH LOCATION (NOT MONITORED)
- PROPOSED FENCE LINE
- OLD SITE CORRIDOR BOUNDARY
- R–2 — RECOVERY WELL / MC GAS CONTROL VALVE
- LV–1 — LEACHATE RISER VAULT
- BM#1 — BENCH MARK LOCATION AND NUMBER
- RW — ABANDONED RECOVERY WELL
- 141U AREA BOUNDARY
- CS–1 — CONDENSATE SUMP AND NUMBER
- NHD FLOW LINES
- NHD WETLANDS
- FEMA 100 YEAR FLOOD ZONE

NOTES

1. SITE LOCATION: PART OF THE NORTH 1/2 OF SECTION 23, TOWNSHIP 3 NORTH, RANGE 22 EAST, IN THE CITY OF RACINE, COUNTY OF RACINE, STATE OF WISCONSIN.
2. TOPOGRAPHIC BASE MAP WAS OBTAINED FROM AERO-METRIC ENGINEERING, INC. (DATE OF PHOTOGRAPHY OCTOBER 06, 1994; JUNE 1995, MARCH 28, 2005 MARCH 29, 2008), HENDERSON AERIAL SURVEYS, INC. (DATE OF PHOTOGRAPHY APRIL 9, 2012), FIRMATEK AERIAL SURVEYS CO. (DATE OF SURVEY OCTOBER 23, 2024)
3. MONITORING WELL LOCATIONS DETERMINED BY SURVEY INFORMATION PROVIDED BY KESTREL HAWK LANDFILL.
4. APPROXIMATE LIMITS OF EXISTING WASTE WERE PROVIDED BY KESTREL HAWK LANDFILL.
5. VERTICAL DATUM IS USGS MEAN SEA LEVEL. TOPOGRAPHIC CONTOUR INTERVAL IS TWO FEET.
6. HORIZONTAL DATUM IS BASED ON THE WISCONSIN STATE PLANE COORDINATE SYSTEM.THE SITE GRID IS PARALLEL AND PERPENDICULAR TO THE STATE PLANE COORDINATE SYSTEM. SITE GRID IS BASED ON THE STATE PLANE COORDINATE GRID WITH SITE GRID COORDINATE 0+00N, 100+00E EQUAL TO STATE PLANE COORDINATE 264,196.55N, 2,573,700.72E.
7. LOCATION OF PROPERTY LINE PROVIDED BY KESTREL HAWK LANDFILL.

PROJECT:
KESTREL HAWK LANDFILL
LONG TERM CARE PLAN APPLICATION
RACINE, WISCONSIN

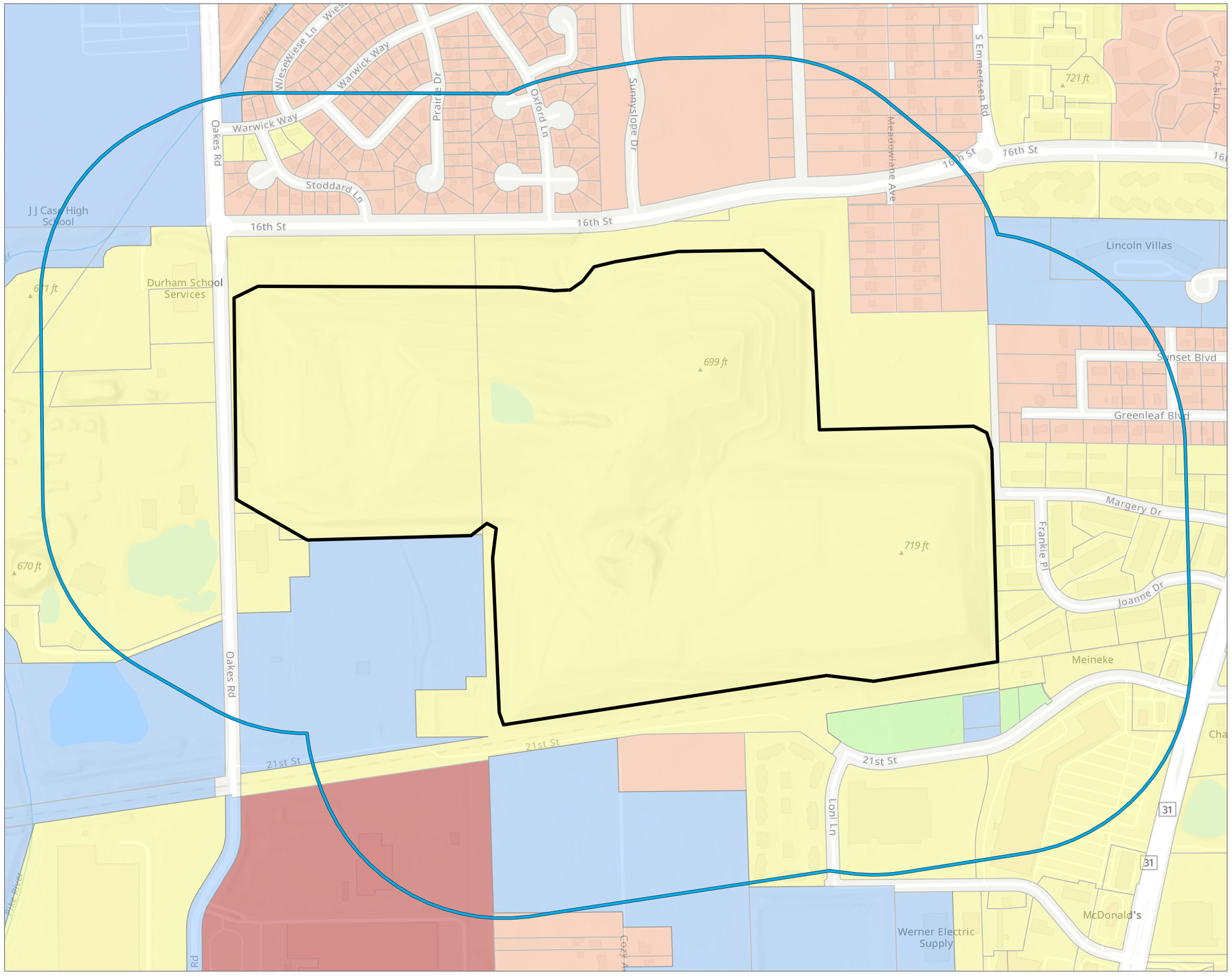
TITLE:
FACILITY MAP

DRAWN BY:	T. FIEBRANZ	PROJ NO.:	557496.0000
CHECKED BY:	B. KAHNK		**FIGURE 4**
APPROVED BY:	T. MARTIN		
DATE:	APRIL 2025		

TRC
999 Fourier Drive
Suite 101
Madison, WI 53717
Phone: 608.826.3600

FILE NO.: 557496.0000.02.dwg

24x36 -- USER: TFiebranz -- ATTACHED XREFS: pipe ods-site; utility; proposed; bnmnt; EG - 2024-10-23; Site Features; bnc-2019May; gas; gas trench -- ATTACHED IMAGES:
DRAWING NAME: J:\Republic\Kestrel Hawk\557496 - Closure Process\0000\ 557496.0000.02.dwg -- PLOT DATE: June 26, 2025 - 9:37AM -- LAYOUT: FACILITY MAP
Version: 2017-10-31



NOTES:

BASE MAP: GOOGLE EARTH PRO IMAGERY, MAY 2023.
DATA SOURCE: TRC, WISCONSIN STATE CARTOGRAPHER'S OFFICE

1:6,000
1" = 500'

0 500 FEET

PROJECT:
KESTREL HAWK LANDFILL
LONG-TERM CARE PLAN APPLICATION
RACINE, WISCONSIN

TITLE:
SURROUNDING LAND USE

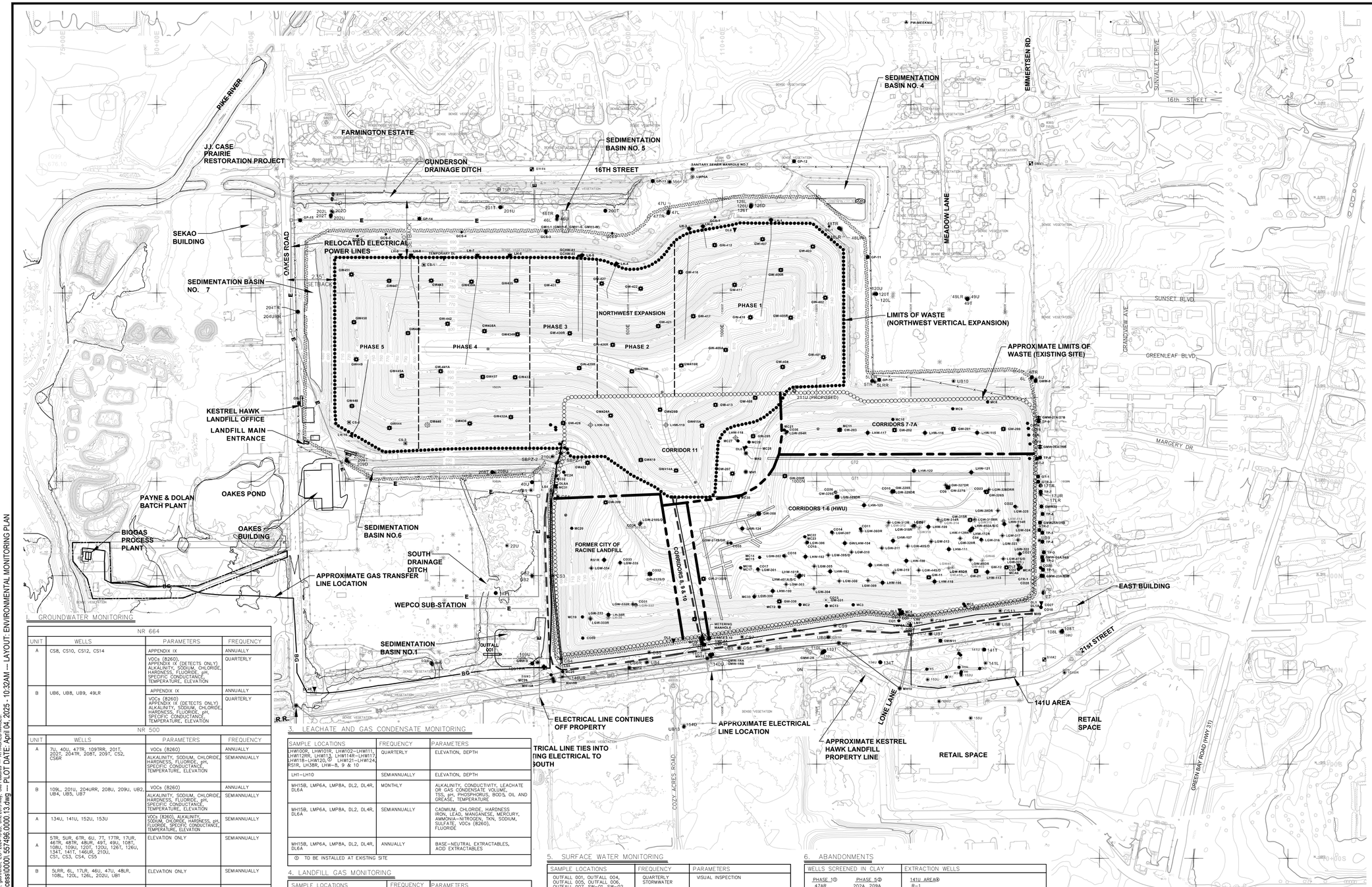
DRAWN BY:	A. FOJTIK	PROJ. NO.:	557469
CHECKED BY:	B. KAHNK		
APPROVED BY:	T. MARTIN		
DATE:	JUNE 2025		

FIGURE 4A

TRC
999 FOURIER DRIVE
SUITE 101
MADISON, WI 53717
PHONE: 608.826.3663

FILE: 557469_KestrelHawkLF.aprx

Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet; Map Rotation: 0
Saved By: AFOJTIK on 6/25/2025, 10:45:25 PM; File Path: T:\PROJECTS\Kestrel\Hawk\LF\2-APRX\557469_KestrelHawkLF.aprx; Layout Name: 557469_KestrelHawkLF_fig4



LEGEND

- APPROXIMATE PROPERTY LINE
- EXISTING PAVED ROAD
- EXISTING UNPAVED ROAD
- EXISTING BUILDING
- SITE FENCING (AS EXISTING IN 6/04)
- 710 — EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- ×673.4 — EXISTING SPOT ELEVATION
- TREES AND / OR BRUSH
- 30+00N — SITE GRID COORDINATE
- 161T — EXISTING WATER TABLE OBSERVATION WELL LOCATION AND NUMBER
- UB5 — PIEZOMETER LOCATION AND NUMBER
- 205T — ABANDONED WATER TABLE OBSERVATION WELL LOCATION AND NUMBER
- 205U — ABANDONED PIEZOMETER LOCATION AND NUMBER
- GMW24A/24B — GAS MONITORING WELL LOCATION AND NUMBER (TWO NUMBERS INDICATES A WELL NEST)
- DL4R — GAS CONDENSATE DRIPLEG LOCATION AND NUMBER
- DL2 — PROPOSED GAS CONDENSATE DRIPLEG LOCATION AND NUMBER
- LHW120 — LEACHATE HEADWELL LOCATION AND NUMBER (PROPOSED)
- LHW114 — LEACHATE HEADWELL LOCATION AND NUMBER (EXISTING)
- LHW38 — ABANDONED LEACHATE HEADWELL LOCATION AND NUMBER
- TP9 — GAS T-PROBE LOCATION AND NUMBER
- GMW22 — ABANDONED GAS T-PROBE LOCATION AND NUMBER
- SW1 OR SG2 — STAFF GAUGE LOCATION AND NUMBER
- LS5 OR MH3 — MANHOLE/LIFT STATION LOCATION AND NUMBER
- CO7N — LEACHATE COLLECTION CLEANOUT RISER PIPE LOCATION AND NUMBER
- LGW322 — LEACHATE GAS WELL LOCATION AND NUMBER
- LGW31 — ABANDONED LEACHATE GAS WELL LOCATION AND NUMBER
- GP10 — GAS PROBE LOCATION AND NUMBER
- GW411 — GAS WELL LOCATION AND NUMBER
- LMP8A — LEACHATE MONITORING POINT LOCATION AND NUMBER
- LH–1 — LEACHATE HEAD MONITORING LOCATION AND NUMBER
- GCHW–1 — GRADIENT CONTROL HEADWELL
- APPROXIMATE LOCATION OF GROUNDWATER CONTAINMENT STRUCTURE
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- DESIGN MANAGEMENT ZONE
- APPROXIMATE LIMITS OF WASTE (EXISTING SITE)
- APPROXIMATE LIMITS OF WASTE CORRIDORS (EXISTING SITE)
- SS — SANITARY SEWER
- BC — BIOGAS
- BG — ABANDONED IN-PLACE BIOGAS
- E — OVERHEAD ELECTRICAL
- GW447 — PROPOSED GAS EXTRACTION WELL LOCATION AND NUMBER
- 211U — PROPOSED PIEZOMETER LOCATION AND NUMBER
- GCS–4 GCHW–1 — GRADIENT CONTROL SYSTEM MONITORING POINT AND NUMBER
- GMH–1 — GRADIENT CONTROL SYSTEM MANHOLE
- OUTFALL 001 — SEDIMENTATION BASIN OUTFALL LOCATION AND NUMBER
- GAS TRENCH LOCATION (MONITORED)
- GAS TRENCH LOCATION (NOT MONITORED)
- PROPOSED FENCE LINE
- OLD SITE CORRIDOR BOUNDARY
- R–2 — RECOVERY WELL / MC GAS CONTROL VALVE
- LV–1 — LEACHATE RISER VAULT
- BM#2 — BENCH MARK LOCATION AND NUMBER
- R6 — ABANDONED RECOVERY WELL
- CS–1 — CONDENSATE SUMP AND NUMBER

NOTES

1. SITE LOCATION PART OF THE NORTH 1/2 OF SECTION 23, TOWNSHIP 3 NORTH, RANGE 22 EAST, IN THE CITY OF RACINE, COUNTY OF RACINE, STATE OF WISCONSIN.
2. TOPOGRAPHIC BASE MAP WAS OBTAINED FROM AERO-METRIC ENGINEERING, INC. (DATE OF PHOTOGRAPHY OCTOBER 06, 1994; JUNE 1995, MARCH 28, 2005 MARCH 29, 2008). HENDERSON AERIAL SURVEYS, INC. (DATE OF PHOTOGRAPHY APRIL 9, 2012). FIRMATEK AERIAL SURVEYS CO. (DATE OF SURVEY OCTOBER 23, 2024)
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7. LOCATION OF PROPERTY LINE PROVIDED BY KESTREL HAWK LANDFILL.
8. LOCATION OF PRIVATE RESIDENCE WELLS PROVIDED BY KESTREL HAWK LANDFILL.

1. GROUNDWATER MONITORING

NR 664			
UNIT	WELLS	PARAMETERS	FREQUENCY
A	CS8, CS10, CS12, CS14	APPENDIX IX	ANNUALLY
		VOCs (8260), APPENDIX IX (DETECTS ONLY) ALKALINITY, SODIUM, CHLORIDE, HARDNESS, FLUORIDE, pH, SPECIFIC CONDUCTANCE, TEMPERATURE, ELEVATION	QUARTERLY
B	UB6, UB8, UB9, 49LR	APPENDIX IX	ANNUALLY
		VOCs (8260) APPENDIX IX (DETECTS ONLY) ALKALINITY, SODIUM, CHLORIDE, HARDNESS, FLUORIDE, pH, SPECIFIC CONDUCTANCE, TEMPERATURE, ELEVATION	QUARTERLY

NR 500			
UNIT	WELLS	PARAMETERS	FREQUENCY
A	7U, 40U, 47TR, 109TRR, 201T, 202T, 204TR, 208T, 209T, CS2, CS6R	VOCs (8260)	ANNUALLY
		ALKALINITY, SODIUM, CHLORIDE, HARDNESS, FLUORIDE, pH, SPECIFIC CONDUCTANCE, TEMPERATURE, ELEVATION	SEMIANNUALLY
B	109L, 201U, 204URR, 208U, 209U, UB2, UB4, UB5, UB7	VOCs (8260)	ANNUALLY
		ALKALINITY, SODIUM, CHLORIDE, HARDNESS, FLUORIDE, pH, SPECIFIC CONDUCTANCE, TEMPERATURE, ELEVATION	SEMIANNUALLY
A	134U, 141U, 152U, 153U	VOCs (8260), ALKALINITY, SODIUM, CHLORIDE, HARDNESS, pH, FLUORIDE, SPECIFIC CONDUCTANCE, TEMPERATURE, ELEVATION	SEMIANNUALLY
A	57R, 5UR, 6TR, 6U, 7T, 17TR, 17UR, 46TR, 48TR, 48UR, 49T, 49U, 108T, 108U, 109U, 120T, 120U, 126T, 126U, 134T, 141T, 146UR, 210U, CS1, CS3, CS4, CS5	ELEVATION ONLY	SEMIANNUALLY
B	5LRR, 6L, 17LR, 46U, 47U, 48LR, 108L, 120L, 126L, 202U, UB1	ELEVATION ONLY	SEMIANNUALLY
D	126D, 202D, 209D	ELEVATION ONLY	SEMIANNUALLY

SUBTITLE D			
UNIT	WELLS	PARAMETERS	FREQUENCY
B	49LR, 204URR, 208U, 209U	VOCs (8260), ALKALINITY, SODIUM, CHLORIDE, HARDNESS, FLUORIDE, pH, SPECIFIC CONDUCTANCE, TEMPERATURE, ELEVATION	SEMIANNUALLY

NON–NR 140 COMPLIANCE WELLS			
UNIT	WELLS	PARAMETERS	FREQUENCY
A	CS7, CS9, CS11, CS13	SPECIFIC CONDUCTANCE, ELEVATION	QUARTERLY
	CS9, CS13	VOCs (8260)	ANNUALLY

2. GRADIENT CONTROL SYSTEM MONITORING

SAMPLE LOCATIONS	FREQUENCY	PARAMETERS
GMH1 EAST, GMH1 SOUTH, GMH1 WEST	QUARTERLY	CONDUCTIVITY, TSS, pH, BOD5, TEMPERATURE
GMH–1	MONTHLY	VOLUME–PUMPED
GCHW–1, GCHW–2	MONTHLY	ELEVATION

3. LEACHATE AND GAS CONDENSATE MONITORING

SAMPLE LOCATIONS	FREQUENCY	PARAMETERS
LHW100R, LHW101R, LHW102–LHW111, LHW112RR, LHW113, LHW114R–LHW117, LHW118–LHW120,① LHW121–LHW124, RS1R, LH38R, LHW–8, 9 & 10	QUARTERLY	ELEVATION, DEPTH
LH1–LH10	SEMIANNUALLY	ELEVATION, DEPTH
MH15B, LMP6A, LMP8A, DL2, DL4R, DL6A	MONTHLY	ALKALINITY, CONDUCTIVITY, LEACHATE OR GAS CONDENSATE VOLUME, TSS, pH, PHOSPHORUS, BOD5, OIL AND GREASE, TEMPERATURE
MH15B, LMP6A, LMP8A, DL2, DL4R, DL6A	SEMIANNUALLY	CADMIUM, CHLORIDE, HARDNESS IRON, LEAD, MANGANESE, MERCURY, AMMONIA–NITROGEN, TKN, SODIUM, SULFATE, VOCs (8260), FLUORIDE
MH15B, LMP6A, LMP8A, DL2, DL4R, DL6A	ANNUALLY	BASE–NEUTRAL EXTRACTABLES, ACID EXTRACTABLES

① TO BE INSTALLED AT EXISTING SITE

4. LANDFILL GAS MONITORING

SAMPLE LOCATIONS	FREQUENCY	PARAMETERS
LGW300–LGW311, LGW312R, LGW313, LGW314R, GW315R, LGW315RR, LGW316, LGW317, LGW318R, LGW319–LGW325, LGW326DRR, LGW327DR–LGW329DR, GW326S–GW329S, LGW332R, LGW333R–LGW335, LGW350, GW331, LGW36DR, LGW38DR–40S/D, LGW44S/D, LGW45DR, LGW46DR, LGW47S/D, GW321, GW330, GW331, GW11,GW12, GT1–GT2, GW200–GW203, LGW204R, GW205, GW206R, GW207, GW208, GW209, LGW210S/DR, GW211, GW212S/D, GW213S/D, LGW214S/DR, C05, C06, C07N, C07S, C07X, GW401–GW451, GW/LHW104	MONTHLY	VACUUM, PERCENT METHANE, PERCENT OXYGEN, VALVE SETTING, INITIAL AND STABILIZED METHANE LEVELS ②, GAS TEMPERATURE, AMBIENT AIR TEMPERATURE, BAROMETRIC PRESSURE, TREND IN BAROMETRIC PRESSURE, GROUND CONDITIONS
BLOWER HOUSE WEST	MONTHLY	PERCENT METHANE, PERCENT OXYGEN, ESTIMATED FLOW RATE, VACUUM
BLOWER HOUSE WEST	ANNUALLY	VOCs METHOD TO – 14
GMP6A/B, GMW1RA, GMW1RB, GMW2R, GMW5, GMW9, GMW23A/B, GMW24A/B, GMW26A, GMW27A, TP1–TP9, GP10–GP16,	MONTHLY	VACUUM, PERCENT METHANE, PERCENT OXYGEN ②, GAS TEMPERATURE, AMBIENT AIR TEMPERATURE, BAROMETRIC PRESSURE, TREND IN BAROMETRIC PRESSURE, GROUND CONDITIONS
JOHNSON WAX FLOW METER	MONTHLY	VOLUME
FLARE FLOW METER	MONTHLY	VOLUME

① TO BE INSTALLED AT EXISTING SITE
② ALSO TO BE NOTED ONCE AT TIME OF SAMPLING: BAROMETRIC PRESSURE,/TREND,GROUND, VEGETATION, CAP AND WEATHER CONDITIONS; TEMPERATURE

5. SURFACE WATER MONITORING

SAMPLE LOCATIONS	FREQUENCY	PARAMETERS
OUTFALL 001, OUTFALL 004, OUTFALL 005, OUTFALL 006, OUTFALL 007, SW–01, SW–02	QUARTERLY STORMWATER SEMI–ANNUAL NON–STORM WATER	VISUAL INSPECTION
SG–01, SG–03	MONTHLY	WATER SURFACE ELEVATION
NOTE: SEDIMENTATION BASIN 003 WAS ABANDONED IN AUGUST 1994. SEDIMENTATION BASIN 002 ABANDONED IN 2001.		

EVENT SCHEDULE:

QUARTERLY EVENTS: JANUARY, APRIL, JULY & OCTOBER

SEMIANNUAL EVENTS: APRIL & OCTOBER

ANNUAL EVENTS: OCTOBER

6. ABANDONMENTS

WELLS SCREENED IN CLAY		EXTRACTION WELLS
PHASE 1①	PHASE 5④	141U AREA⑥
47AR	202A 209A	R–1
126A	202C 209C	R–2
126B	204A	R–3
126C	204L	R–4

WELLS WITHIN EXPANSION CONSTRUCTION AREA				
PHASE 1①	PHASE 2①	PHASE 3②	PHASE 4③	PHASE 5④
UB11 48T	111T	4UR	205T	204T
6DT 48U	111U	4L	205U	204UR
60L 48L	118T	5BT		
41R	118U	58U		
14UR	118L	58L		
14LR				
GMW5				

WELL LOCATIONS ALREADY MONITORED BY OTHER WELLS	
PHASE 2	OTHER AREAS ⑦
200T	147U, 148U, 149U, 150U, 151U

① THESE WELLS WERE ABANDONED IN AUGUST 1996
② THESE WELLS WERE ABANDONED IN APRIL 2001
③ THESE WELLS WERE ABANDONED IN OCTOBER 1991
④ THESE WELLS WERE ABANDONED IN SEPTEMBER 2015

7. REPLACEMENT WELLS

48TR⑤ 48UR⑤, 48LR⑤, 204TR⑤, 204URR⑤

⑤ WELLS INSTALLED IN AUGUST 1997
⑥ WELLS INSTALLED IN AUGUST 2001

8. WELL MODIFICATION/EXTENSION

47TR, 47U, 47L, 126T, 126U, 126L, 126D, 209T, 209U, 209L, 209D

0 250 500 750 1000
SCALE IN FEET

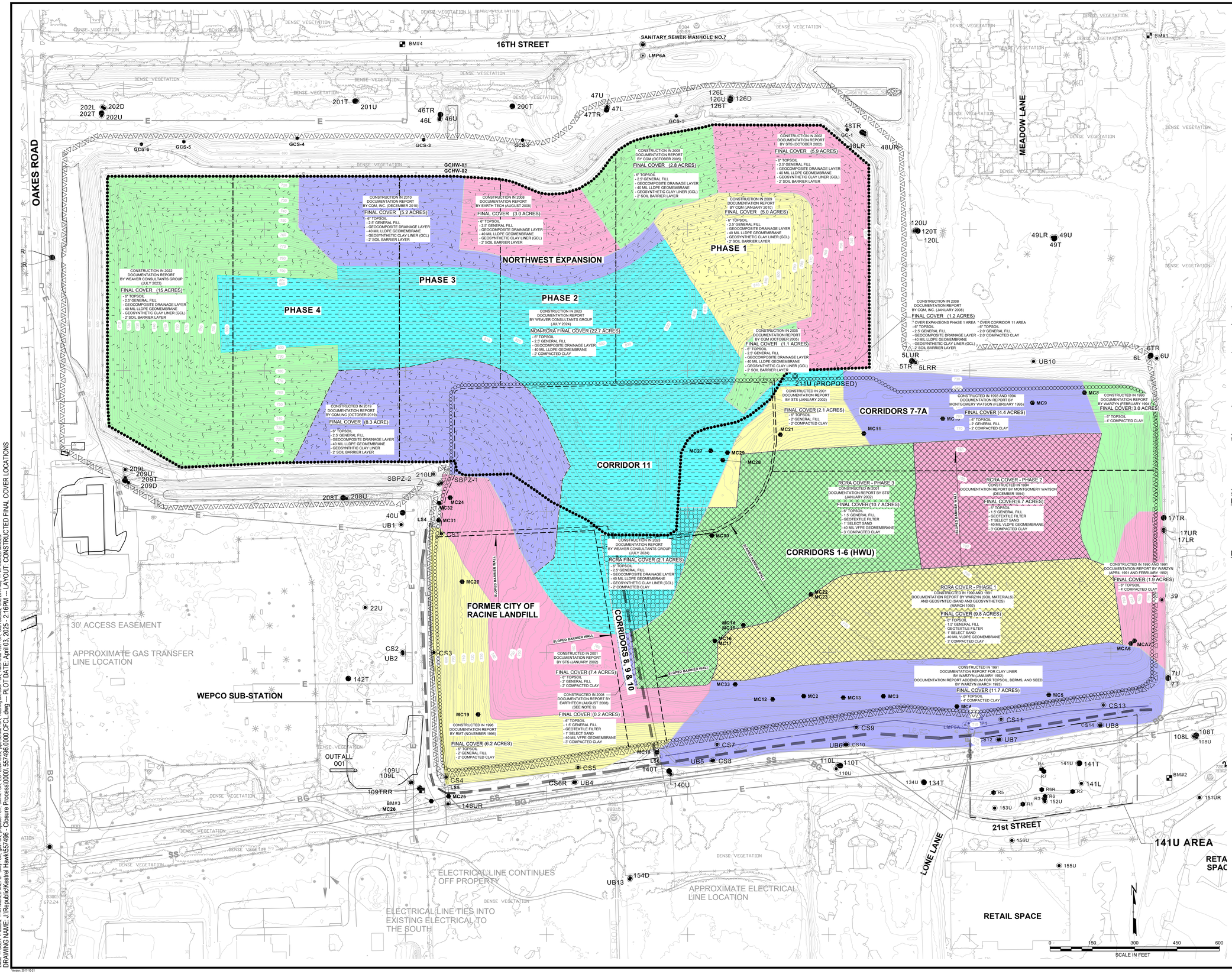
PROJECT:	KESTREL HAWK LANDFILL LONG TERM CARE PLAN APPLICATION RACINE, WISCONSIN
TITLE:	ENVIRONMENTAL MONITORING PLAN
DRAWN BY:	T. FIEBRANZ
CHECKED BY:	B. KAHNK
APPROVED BY:	T. MARTIN
DATE:	APRIL 2025
PROJ NO.:	557496.0000
	FIGURE 5

TRC
999 Fourier Drive
Suite 101
Madison, WI 53717
Phone: 608.826.3600

FILE NO.: 557496.0000.13.dwg

24x36 -- USER: TFiebranz -- ATTACHED XREFS: utility, gas, proposed, bnmnt, pipe old-site, gas trench, EQ - 2024-10-22, bnc 2019 May, Site Features -- ATTACHED IMAGES:
DRAWING NAME: J:\Republic\kestrel Hawk\557496 - Closure Process\0000\ 557496.0000.13.dwg --- PLOT DATE: April 04, 2025 - 10:32AM --- LAYOUT: ENVIRONMENTAL MONITORING PLAN

Version: 2017-10-21



LEGEND

- APPROXIMATE PROPERTY LINE
- EXISTING PAVED ROAD
- EXISTING UNPAVED ROAD
- EXISTING BUILDING
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- EXISTING SPOT ELEVATION
- TREES AND / OR BRUSH
- SITE GRID COORDINATE
- EXISTING WATER TABLE OBSERVATION WELL LOCATION AND NUMBER
- PIEZOMETER LOCATION AND NUMBER
- STAFF GAUGE LOCATION AND NUMBER
- MANHOLE/LIFT STATION LOCATION AND NUMBER
- APPROXIMATE LOCATION OF GROUNDWATER CONTAINMENT STRUCTURE
- NORTHWEST EXPANSION LIMITS OF WASTE
- OLD SITE LIMITS OF WASTE
- DESIGN MANAGEMENT ZONE
- APPROXIMATE LIMITS OF WASTE (EXISTING SITE)
- APPROXIMATE LIMITS OF WASTE CORRIDORS (EXISTING SITE)
- SANITARY SEWER
- OVERHEAD ELECTRICAL
- SEDIMENTATION BASIN OUTFALL LOCATION AND NUMBER
- RECOVERY WELL / MC GAS CONTROL VALVE

COVER DESIGNS

1991 TO 1993 (NON-RCRA)
- 6" TOPSOIL
- 4' COMPACTED CLAY

1990 TO 2001 (RCRA)
- 6" TOPSOIL
- 1.5' GENERAL FILL
- GEOTEXTILE FILTER
- 1' SELECT SAND
- 40 MIL VLDPE GEOMEMBRANE
- 3' COMPACTED CLAY

LOCATION OF INSTALLED RCRA FINAL COVER

1994 TO 2001 (NR 180)
- 6" TOPSOIL
- 2' GENERAL FILL
- 2' COMPACTED CLAY

2002 TO 2022 (NR 500)
- 6" TOPSOIL
- 2.5' GENERAL FILL
- GEOCOMPOSITE DRAINAGE LAYER
- 40 MIL LLDPE GEOMEMBRANE
- GEOSYNTHETIC CLAY LINER (GCL)
- 2' SOIL BARRIER LAYER

LOCATION OF INSTALLED NR 500 FINAL COVER

2023 TO 2024 (NR 500 AND RCRA)

RCRA AREA
- 6" TOPSOIL
- 2.5' GENERAL FILL
- GEOCOMPOSITE DRAINAGE LAYER
- 40 MIL LLDPE GEOMEMBRANE
- GEOSYNTHETIC CLAY LINER (GCL)
- 2' COMPACTED CLAY

LOCATION OF REVISED RCRA FINAL COVER UPDATED

NON-RCRA AREA (REVISED NR 500)
- 6" TOPSOIL
- 2.5' GENERAL FILL
- GEOCOMPOSITE DRAINAGE LAYER
- 40 MIL LLDPE GEOMEMBRANE
- 2' COMPACTED CLAY

LOCATION OF NR 500 FINAL COVER (REVISED)

NOTES

1. SITE LOCATION PART OF THE NORTH 1/2 OF SECTION 23, TOWNSHIP 3 NORTH, RANGE 22 EAST, IN THE CITY OF RACINE, COUNTY OF RACINE, STATE OF WISCONSIN.
2. TOPOGRAPHIC BASE MAP WAS OBTAINED FROM AERO-METRIC ENGINEERING, INC. (DATE OF PHOTOGRAPHY OCTOBER 06, 1994; JUNE 1995, MARCH 28, 2005 MARCH 29, 2008); HENDERSON AERIAL SURVEYS, INC. (DATE OF PHOTOGRAPHY APRIL 9, 2012); FIRMATEK AERIAL SURVEYS CO. (DATE OF SURVEY OCTOBER 23, 2024)
3. MONITORING WELL LOCATIONS DETERMINED BY SURVEY INFORMATION PROVIDED BY KESTREL HAWK LANDFILL.
4. APPROXIMATE LIMITS OF EXISTING WASTE WERE PROVIDED BY KESTREL HAWK LANDFILL.
5. VERTICAL DATUM IS USGS MEAN SEA LEVEL. TOPOGRAPHIC CONTOUR INTERVAL IS TWO FEET.
6. HORIZONTAL DATUM IS BASED ON THE WISCONSIN STATE PLANE COORDINATE SYSTEM. THE SITE GRID IS PARALLEL AND PERPENDICULAR TO THE STATE PLANE COORDINATE SYSTEM. SITE GRID IS REFERENCED TO STATE PLANE COORDINATE GRID WITH SITE GRID COORDINATE 0+00N, 100+00E EQUAL TO STATE PLANE COORDINATE 264,196.55N, 2,573,700.72E.
7. LOCATION OF PROPERTY LINE PROVIDED BY KESTREL HAWK LANDFILL.
8. THE WESTERN BOUNDARY OF THE RCRA COVER EXTENDS TO THE WESTERN BOUNDARY OF THE GEOMEMBRANE LINER PLACED ON THE BASE OF CORRIDORS 8, 9, AND 10 PER THE AUGUST 2008 DOCUMENTATION REPORT BY EARTHTECH.

PROJECT:
KESTREL HAWK LANDFILL
LONG TERM CARE PLAN APPLICATION
RACINE, WISCONSIN

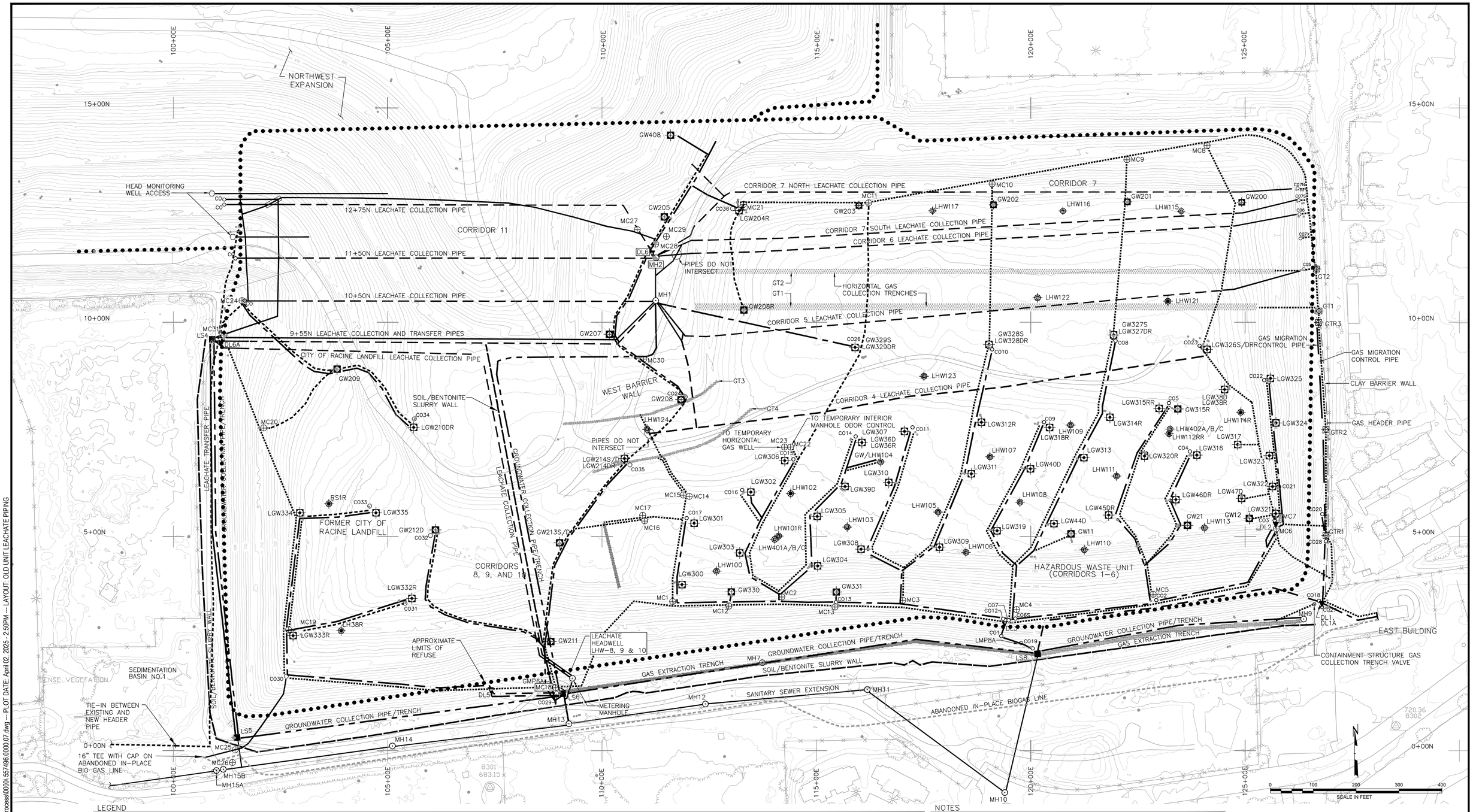
TITLE:
CONSTRUCTED FINAL COVER LOCATIONS

DRAWN BY:	T. FIEBRANZ	PROJ NO.:	557496.0000
CHECKED BY:	B. KAHNK		
APPROVED BY:	T. MARTIN		**FIGURE 6**
DATE:	APRIL 2025		

TRC
999 Fourier Drive
Suite 101
Madison, WI 53717
Phone: 608.826.3600

FILE NO.: 557496.0000.CFCL.dwg

24x36 --- USER: Tfiebranz --- ATTACHED XREFS: utility - CR, gas - CR, proposed - CR, bmmt - CR, EG - 2024-10-23, pipe old-site - CR, hatching and color - CR, Hatch area Text - CR, Site Features: bmc 2019 May --- ATTACHED IMAGES: DRAWING NAME: J:\Republic\Kestrel Hawk\557496 - Closure Process\0000\557496.0000.CFCL.dwg --- PLOT DATE: April 03, 2025 - 2:16PM --- LAYOUT: CONSTRUCTED FINAL COVER LOCATIONS
Version: 2017-10-21



LEGEND

- SPOT ELEVATION
- GROUND CONTOUR
- ACCESS ROAD
- FENCE
- TREES AND/OR SHRUBS
- APPROXIMATE LIMITS OF REFUSE
- UTILITY TOWER
- SITE DRAINAGE FLOW
- HORIZONTAL GAS EXTRACTION TRENCH
- SOIL/BENTONITE SLURRY WALL
- COMPACTED CLAY BARRIER WALL
- LEACHATE COLLECTION PIPE (PERFORATED)
- LEACHATE TRANSFER PIPE (NON–PERFORATED)
- GROUNDWATER COLLECTION PIPE/TRENCH
- HDPE GAS HEADER PIPE
- DOUBLE–WALLED LEACHATE/ CONDENSATE CONVEYANCE PIPE
- GRAVITY LEACHATE CONVEYANCE PIPE
- COMBINED GAS AND LEACHATE HEADER PIPE
- ABANDONED IN–PLACE BIOGAS LINE
- GAS MIGRATION CONTROL PIPE
- LEACHATE HEADWELL LOCATION AND NUMBER
- LEACHATE/GAS EXTRACTION WELL LOCATION AND NUMBER
- GAS EXTRACTION WELL LOCATION AND NUMBER
- GAS TRENCH RISER LOCATION AND NUMBER
- GAS EXTRACTION TRENCH WELLHEAD LOCATION AND NUMBER
- MANHOLE LOCATION AND NUMBER
- CLEANOUT LOCATION AND NUMBER
- LIFT STATION LOCATION AND NUMBER
- MONITORING AND CONTROL ASSEMBLY LOCATION AND NUMBER
- DRIPLEG LOCATION AND NUMBER
- HEAD MONITORING WELL ACCESS
- CONTAINMENT STRUCTURE GAS COLLECTION TRENCH VALVE

NOTES

1. TOPOGRAPHIC BASE MAP WAS OBTAINED FROM AERO–METRIC ENGINEERING, INC. (DATE OF PHOTOGRAPHY: OCTOBER 6, 1994, JUNE 1995, MARCH 28, 2005, MARCH 29, 2008). TOPO SURVEY BY FIRMATEK ON OCTOBER 23, 2024
2. PIPING AND APPURTENANCE LOCATIONS WERE OBTAINED FROM MONTGOMERY WATSON DRAWING 1272013.25090320–D1, DATED MARCH 1997.
3. LOCATIONS OF PIPING AND APPURTENANCES ARE APPROXIMATE AND WILL REQUIRE FIELD VERIFICATION PRIOR TO FUTURE CONSTRUCTION ACTIVITIES.
4. GAS EXTRACTION WELL LOCATION AND LEACHATE/GAS EXTRACTION WELL LOCATIONS FOR GW205, GW207, GW208, GW212S/D, GW213S/D, LGW214S/D, GW408, LGW210S/D, LGW332, LGW335, AND ASSOCIATED PIPING TO THESE WELLS WERE OBTAINED FROM CONSTRUCTION DOCUMENTATION REPORT FOR 2001 LEACHATE/GAS SYSTEM IMPROVEMENTS PREPARED BY EMCON/OWT, DATED DECEMBER 2001, DRAWING NUMBERS 2 AND 3 FOR PROJECT NUMBER 821679.
5. DUAL EXTRACTION WELLS LGW45DR, LGW46DR, LGW204R, LGW315RR, LGW329DR WERE INSTALLED IN 2003. THE CONSTRUCTION WAS DOCUMENTED BY EARTH TECH INC., REPORT DATED JUNE 2004, PROJECT NUMBER 69974.
6. LGW–326DRR – OCTOBER 2004
   LHW–401 & 402 – BY RMT INC.
7. LGW 36S/D, LGW 38S/D, GW45S, GW46S REMOVED IN 2008.
8. LGW 36R, LGW 38R, LGW 320R, AND LGW 214DR INSTALLED IN 2008.
9. LGW314 WAS REPLACED WITH LGW314R IN 2010.
10. LGW–210DR, LGW–333R, LGW 332R, LHW 112RR AND LHW 114R WERE INSTALLED IN 2012.
11. GAS EXTRACTION WELL LOCATION GW206R WAS OBTAINED FROM THE 2015 LANDFILL GAS SYSTEM SOUTH PLAN VIEW DRAWING BY CQM, INC. DATED FEBRUARY 2016.

PROJECT:	**KESTREL HAWK LANDFILL** **LONG TERM CARE PLAN APPLICATION** **RACINE, WISCONSIN**
TITLE:	**OLD UNIT LEACHATE PIPING**
DRAWN BY:	T. FIEBRANZ
CHECKED BY:	B. KAHNK
APPROVED BY:	T. MARTIN
DATE:	APRIL 2025
PROJ NO.:	557496.0000
	FIGURE 7

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Madison, WI 53717
Phone: 608.826.3600

FILE NO.: 557496.0000.07.dwg

24x36 – ATTACHED XREFS: EQ - 2024-10-23, Site Features – ATTACHED IMAGES:
DRAWING NAME: J:\Republic\Kestrel Hawk\557496 - Closure Process\0000\ 557496.0000.07.dwg – PLOT DATE: April 02, 2025 - 2:50PM – LAYOUT: OLD UNIT LEACHATE PIPING

24x36 -- USER: TFiebranz -- ATTACHED XREFS: proposed, obt, pipe, obt, utility, EG - 2024-10-23, Site Features -- ATTACHED IMAGES:
DRAWING NAME: J:\Republic\Kestrel Hawk\557496 - Closure Process\0000\ 557496.0000.08.dwg -- PLOT DATE: April 02, 2025 - 2:50PM -- LAYOUT: NW EXPANSION LEACHATE PIPING
Version: 2017-10-21



LEGEND

- SPOT ELEVATION (747.2)
- GROUND CONTOUR (730)
- ACCESS ROAD
- FENCE
- TREES AND/OR SHRUBS
- UTILITY TOWER
- LEACHATE COLLECTION PIPE (PERFORATED)
- LEACHATE TRANSFER PIPE (NON-PERFORATED)
- FM — DOUBLE-WALLED LEACHATE FORCEMAIN TRANSFER PIPE
- LV-1 — MANHOLE LOCATION AND NUMBER
- CLEANOUT LOCATION
- 1053' — PIPE DISTANCE
- 200 — ANNUAL PIPE CLEANING I.D. NUMBER, REFER TO TABLE 1 IN APPENDIX G OF THE ACCOMPANYING REPORT
- DL-8 — DRIPLEG LOCATION AND NUMBER
- APPROXIMATE LIMITS OF WASTE

NOTES

1. TOPOGRAPHIC BASE MAP WAS OBTAINED FROM AERO-METRIC ENGINEERING, INC. (DATE OF PHOTOGRAPHY OCTOBER 06, 1994; JUNE 1995, MARCH 28, 2005 MARCH 29, 2008), HENDERSON AERIAL SURVEYS, INC. (DATE OF PHOTOGRAPHY APRIL 9, 2012), FIRMATEK AERIAL SURVEYS CO. (DATE OF SURVEY OCTOBER 23, 2024)

2. PIPING AND APPURTENANCE LOCATIONS FOR PHASE 1 WERE OBTAINED FROM RMT, INC. PLAN SHEET 9 OF 22, PROJECT NO. 21739.36, DATED DECEMBER 1997. GRADE CONTOURS PIPING AND APPURTENANCE LOCATION FOR PHASE 2 WERE OBTAINED FROM RMT, INC. PLAN SET 6 OF 13, PROJECT NO. 4865.05, DATED AUGUST 2000. PIPING AND APPURTENANCE LOCATIONS FOR PHASE 3 WERE OBTAINED FROM RMT, INC. PLAN SHEET 6 OF 13 PROJECT NO. 4865.55, DATED JUNE 2001. PIPING AND APPURTENANCE LOCATIONS FOR PHASE 4 WERE OBTAINED FROM THE CONSTRUCTION DOCUMENTATION REPORT, DATED MAY 2005, CQM, INC. PLAN SHEET 13 OF 18. PIPING AND APPURTENANCE LOCATIONS FOR PHASE 5 WERE OBTAINED FROM THE CONSTRUCTION DOCUMENTATION REPORT, DATED OCTOBER 2013, CQM, INC. PLAN SHEET A-10.

0 100 200 300 400
SCALE IN FEET

PROJECT: KESTREL HAWK LANDFILL
LONG TERM CARE PLAN APPLICATION
RACINE, WISCONSIN

TITLE: NW EXPANSION LEACHATE PIPING

DRAWN BY:	T. FIEBRANZ	PROJ NO.:	557496.0000
CHECKED BY:	B. KAHNK		FIGURE 8
APPROVED BY:	T. MARTIN		
DATE:	APRIL 2025		

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Phone: 608.826.3600

FILE NO.: 557496.0000.08.dwg

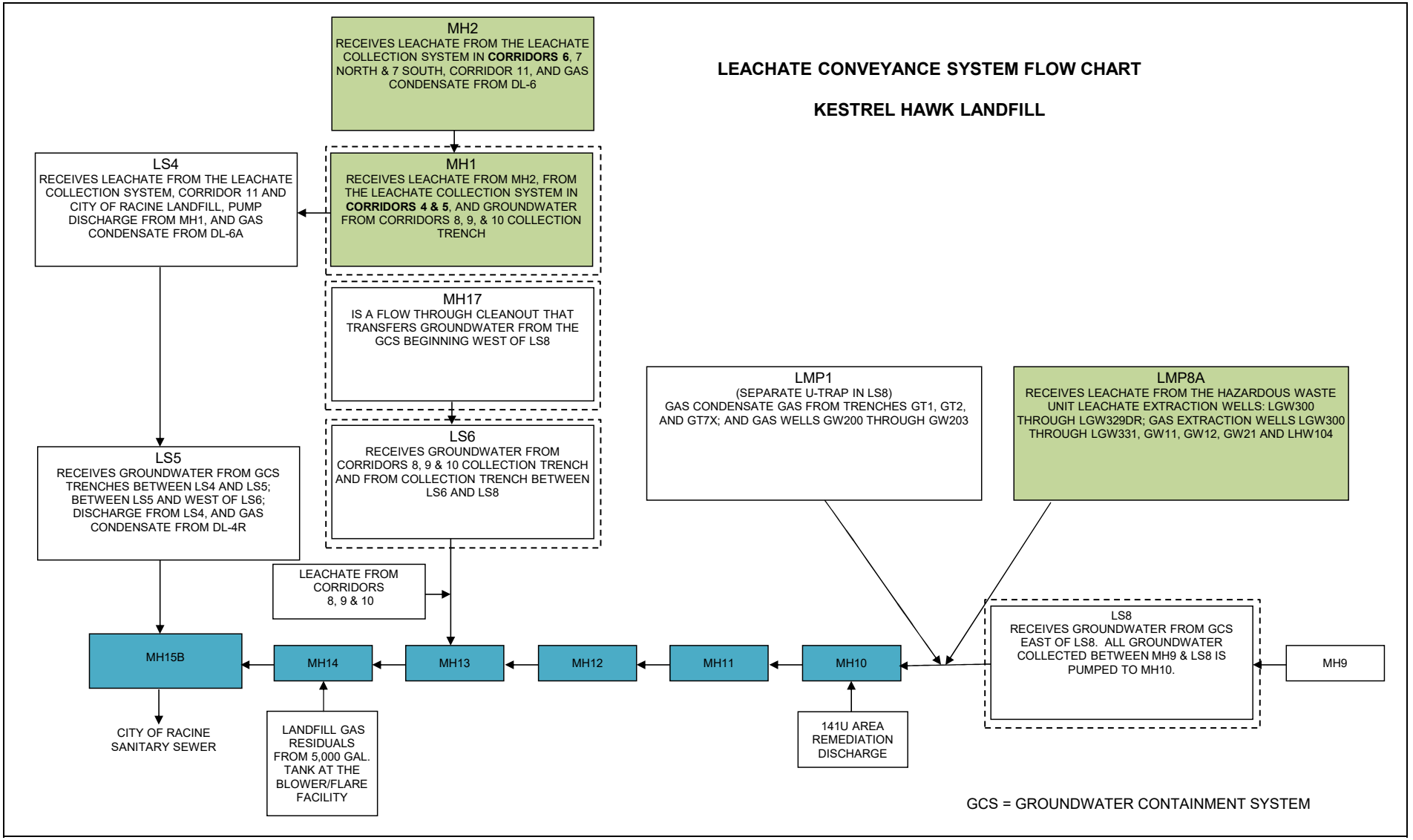
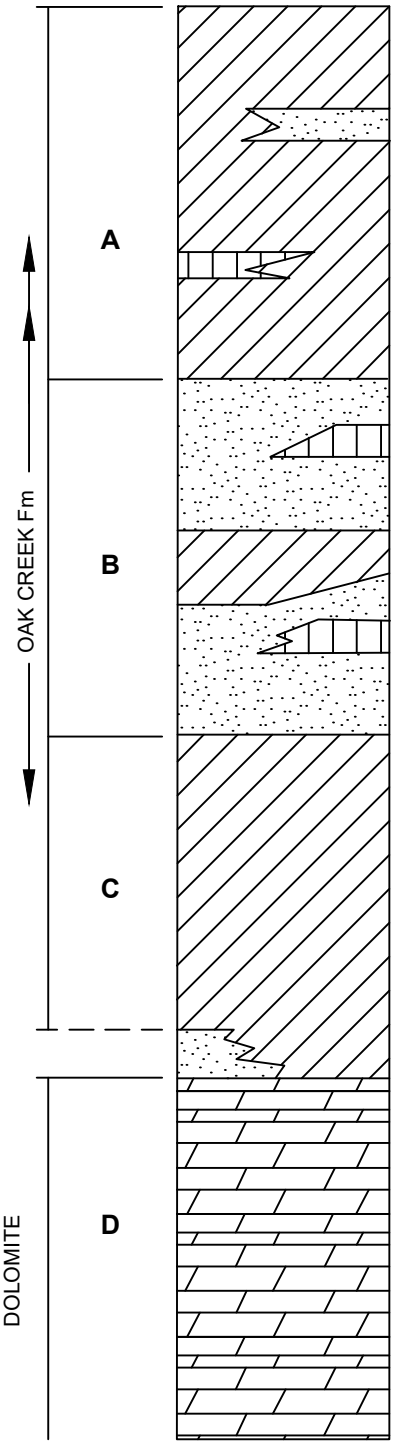


FIGURE 9

J:\Republic\Kestrel Hawk\557496 - Closure Process\0000\Source Files\Tables\557496 - Figure 9 11/6/2024



UNIT	THICKNESS	USCS [1] CLASSIFICATION	SOIL DESCRIPTION
A	25 FT TO 80 FT THICK, SAND/SILT SEAMS UP TO 14 FT THICK	CL WITH SOME CL-ML, ML, SM AND SP	CLAY WITH SOME SILT, WITH OCCASIONAL SILT AND SAND SEAMS
B	35 FT TO 69 FT THICK WITH CLAY SEAM(S) UP TO >30 FT THICK	SM AND ML WITH SOME CL AND CL-ML	SILTY SAND TO SANDY SILT WITH CLAY SEAM(S)
C	20 FT TO 50 FT THICK WITH 15 FT SAND/SILT SEAMS	CL WITH SW AND GW OVERLYING THE BEDROCK	CLAY, SOME SILT
	(BASAL COARSE-GRAINED MATERIAL LIKELY NEW BERLIN Fm)		
D	APPROXIMATELY 200 FT THICK		

NOTE [1] UNIFIED SOIL CLASSIFICATION SYSTEM

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Madison, WI 53717
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PROJECT:
KESTREL HAWK LANDFILL
LONG TERM CARE PLAN APPLICATION
RACINE, WISCONSIN

TITLE:
GENERALIZED STRATIGRAPHIC COLUMN OF GEOLOGIC UNITS

DRAWN BY:	T. FIEBRANZ
CHECKED BY:	B. KAHNK
APPROVED BY:	T. MARTIN
DATE:	APRIL 2025
PROJ. NO.:	557496.0000
FILE:	557496.0000.10.dwg

FIGURE 10

8.5x11 --- ATTACHED XREFS: --- ATTACHED IMAGES:
DRAWING NAME: J:\Republic\Kestrel Hawk\557496 - Closure Process\0000.557496.0000.10.dwg --- PLOT DATE: April 02, 2025 - 2:50PM --- LAYOUT: GENERALIZED STRATIGRAPHIC COLUMN OF GEOLOGIC UNITS

Appendix A: Communication

- A.1 – Closure/Long-Term Care Approval and Licensing Process Guidance Document – November 29, 2022
- A.2 – Kestrel Hawk Landfill – Industrial Wastewater Discharge Permit (Permit #1007-L), December 16, 2024
- A.3 – Kestrel Hawk Landfill (Lic# 0572) – Hazardous Waste Site Leachate Head Level Plan Modification Request and Conditions 1(a), (b), and (c) of the December 15, 2004 Stipulation and Order for Judgement – December 28, 2005
- A.4 – General Permit to Discharge (Tier 2 Industrial Facilities) – WPDES Permit No. WI-S067857-5 – May 14, 2021
- A.5 – Conditional Plan Modification Approval for Annual Reporting Requirements for Republic Services Kestrel Hawk Recycling and Disposal Facility (RDF), License #0572, Racine, Wisconsin – August 30, 2017
- A.6 – Modification to the Plan of Operation Approval for Gas and Leachate Extraction System, Land Reclamation Company Landfill, License #0572, Racine, WI – March 12, 1991
- A.7 – Environmental Monitoring Plan Modification to the Plan of Operation Approval and Hazardous Waste Closure Plan, and response to "Justification for Not Installing Additional Unit B Piezometers at LRC," Land Reclamation Company Landfill, EPA ID# WID076171008 – February 7, 1994
- A.8 – Addendum to Notice of Noncompliance – Hazardous Waste Compliance Assessment – Kestrel Hawk Landfill – EPA ID WID076171008 – September 16, 2020
- A.9 – Conditional Plan of Operation Approval Modification for Adjusting Owner Financial Responsibility for the Kestrel Hawk Landfill, Racine County, License #0572 – August 23, 2024
- A.10 – Plan of Operation Approval for the Northwest Expansion of the Land Reclamation Company Landfill – August 30, 1996
- A.11 – Conditional Close Out – Hazardous Waste Compliance Assessment – Kestrel Hawk Landfill – EPA ID WID076171008 – June 4, 2021
- A.12 – Notice of Non-Compliance – Hazardous Waste Compliance Assessment – Kestrel Hawk Landfill – EPA ID WID076171008 – December 9, 2019

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Appendix A.1
Closure/Long-Term Care Approval and Licensing Process Guidance Document
November 29, 2022

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November 29, 2022

Closure/Long-Term Care Approval and Licensing Process

Landfills Regulated for Solid Waste and Hazardous Waste (NR 500- and 600-series regulations)

Definitions and Key Regulatory References

- NR 500 Closure: See NR 506.08 for closure requirements. The following forms are required:
  - DNR Form 4400-117 (R-1/15), Solid Waste Facility Closure and Long-Term Care License Application
  - DNR Form 4400-067, Solid Waste Land Disposal Site Affidavit
- NR 664 Closure: See NR 664.0115 and 664.0116 for requirements related to closure certification.
- NR 500 LTC License: See NR 520.04(3) for "licensure during the closure and long-term care period". (Note that current operating license 1099 will remain in effect until closure is approved and LTC licensing occurs).
- NR 600 LTC License: See NR 670.001(3), NR 670.014(1) and NR 670.028. NR 670.28 details the information needed for a long-term care license.
- NR 664 LTC Notice: NR 664.0119(1) requires a notice to the department (and to the local zoning authority) regarding the type, location and quantity of hazardous wastes disposed.
- NR 664 LTC Deed Notation: NR 664.0119(2) requires certification to the department that a deed notation has been filed, including a copy the notation document.

Steps

1. If it has not already done so, facility submits to the department (regional staff) a notice of landfill closure. The notice is either:
   a. 120-day closure notice submitted by landfill owner or licensee (as required under s. NR 506.08(1), Wis. Adm. Code), or
   b. Non-renewal box is checked in Section II of the Solid Waste Tonnage/Capacity Certification/License Renewal Form 4400-123
2. Facility submits the NR 500 closure documentation report for the recently completed cap construction along with a summary of past closure reports and approvals.
   a. We recommend that the facility combine this with an NR 664 closure certification report as a single report.
   b. Assuming that all required construction documentation reports and approvals have been previously submitted/issued for all of the previously-capped areas of the site, the closure certification report can simply discuss and list to previous construction documentation submittals and their related approvals rather than regurgitating the contents of these documents. The list should include the title and date of each document and the number of acres that it addresses.
   c. A description of past capping and separation barriers for the HWU should be provided.
   d. A figure or figures should also be provided which identifies the landfill areas associated with each documentation report.
   e. The NR 664 LTC Notice is required to be provided to the department within 60 days of closure certification. This can be included with the NR 664 closure certification report or the NR 670 LTC license application.
   f. Certification of (and a copy of) the NR 664 Deed Notation is required to be provided to the department within 60 days of closure certification. This can be included with the NR 664 closure certification report or the NR 670 LTC license application.
3. DNR regional staff will conduct a final inspection of the facility, alerting the facility of any outstanding closure work/documentation requirements.
4. DNR central office staff will send the following information to the facility (upon their request):
   a. Solid Waste Facility Closure and Long-Term Care License Application – DNR Form 4400-117.

b. Solid Waste Land Disposal Site Affidavit - DNR Form 4400-067.

5. DNR approves the closure documentation/certification report(s), conditioned on:
   a. submittal of a complete NR 500 closure license application;
   b. submittal of a complete NR 670 LTC license application;
   c. any other technical conditions.
6. The facility submits the NR 500 LTC license application and the NR 670 LTC license application. The NR 600 LTC license application must contain all of the information specified in NR 670.028. It is recommended that this application take the form of a revised LTC Plan, thus establishing one stand-alone document for future review and consultation. Attachment A identifies the specific minimum information required by NR 670.028 and the LTC Plan. Attachment B provides recommendations regarding the organization/formatting of this information. Attachment C provides guidance regarding submittal logistics.
   [Note that Attachment B recommends that the information required for the NR 670 LTC license application be presented in the form of a revised LTC Plan, which could also be proposed to serve as the NR 500-series LTC Plan. In this way, all facility LTC information would be documented in one place for future reference].
7. The facility pays the one-time license fees specified in NR 520 Table 3 ($6,600) and NR 670, Appendix II ($80,000)
8. DNR issues one LTC approval letter (for both programs) and issues two separate licenses (NR 500-series LTC license and NR 670 LTC license).
   [Note that in accordance with NR 670.050, the NR 670 LTC license would be issued for 10-year term, and will establish a license renewal application process for subsequent terms not to exceed 10-years].
9. The facility requests, and DNR releases, closure financial assurance.

Attachment A

Long-Term Care License Information Identified in NR 670

Section NR 670.028, Wis. Adm. Code, states, "Information requirements for long-term care licenses. For long-term care licenses, the owner or operator shall submit only the information specified in ss. NR 670.014 (2) (a), (d) to (f), (k), (m), (n), (p) and (s), (3) and (4), unless the department determines that additional information from s. NR 670.014, 670.016, 670.017, 670.018 or 670.021 is necessary...". Each of these elements is identified below and is part of the minimum required elements to be addressed in the long-term care (LTC) license application. This Attachment A is provided for the purpose of providing regulatory citations for the information identified in Attachment B (later), which presents a summary of the information needed in the LTC license application and formatting suggestions.

1. NR 670.014(2)(a), *"A general description of the facility"*.

2. Security- and inspection-related information:
   a. NR 670.014(2)(d), "*A description of the security procedures and equipment required by s. NR 664.0014*".
   b. NR 670.014(2)(e), "*A copy of the general inspection schedule required by s. NR 664.0015 (2)…*"

3. NR 670.014(2)(f), "*A justification of any request for a waiver of the preparedness and prevention requirements of subch. C of ch. NR 664"* (if applicable).

4. NR 670.014(2)(k), floodplain information.

5. The first part of NR 670.014(2)(m) begins with, *"A copy of the closure plan and, where applicable, the long-term care plan required by ss. NR 664.0112, 664.0118 and 664.0197."*
   a. A copy of the long-term care plan is required. (A copy of the closure plan is not needed).
   b. NR 664.0112 also involves future closure-related information, which is not applicable.
   c. The <u>first</u> part of NR 664.0118 requires the inclusion of "*activities that will be carried on after closure of each disposal unit and the frequency of these activities*". This should include:
      (i) A description of the existing systems that require long-term care (e.g. final cover, leachate collection systems. run-on control systems, run-off control systems, monitoring systems, etc.) and describe associated routine and contingent LTC activities.
      (ii) A description of the activities to comply with other applicable requirements of NR 664, including for example:
         - NR 664.0014, Security.
         - NR 664.0015, General inspection requirements.
         - NR 664.0016, Personnel training.
         - NR 664, Subchapter C, Preparedness and Prevention.
         - NR 664, Subchapter D, Contingency Plan and Emergency Procedures.
         - The operating record requirements of NR 664.0073.
         - Annual reporting requirements of NR 664.0075.
   d. The <u>second</u> part of NR 664.0118 goes on to require "*at least all of the following*":
      (i) NR 664.0118(2)(a), regarding monitoring: This should describe the groundwater monitoring and corrective action program and describe how it complies with the requirements of NR 664, Subchapter F.
      (ii) NR 664.0118(2)(b). This should include the planned maintenance activities and frequencies to ensure integrity of the cap and final cover or other containment systems (such as leachate collection systems and cut-off wall-related liquid collection systems) and the function of the monitoring equipment.
      (iii) NR 664.0118(2)(c), facility contact information.

(iv) NR 664.0118(2)(d), alternate requirements for monitoring and LTC financial assurance (probably not applicable)

e. NR 664.0197 involves contingent long-term care for and cost estimates for tank systems.

6. The last part of NR 670.014(2)(m) goes on to require, "*Include, where applicable, as part of the plans, specific requirements in ss. NR 664.0178, 664.0197, 664.0228, 664.0258, 664.0310, 664.0351, 664.0601 and 664.0603*". (Note that most of these sections are not applicable because they relate to units other than landfills). NR 664.0310(2) applies to landfill long-term care below (for ease of reference, each of these requirements is labelled below with bold font as 6 and 6.a through 6.f):

   (6) "After final closure, the owner or operator shall comply with all long-term care requirements contained in ss. NR 664.0117 to 664.0120, including maintenance and monitoring throughout the long-term care period (specified in the operating license under s. NR 664.0117). The owner or operator shall do all of the following:
   (**6.a**) (a) Maintain the integrity and effectiveness of the final cover, including making repairs to the cap as necessary to correct the effects of settling, subsidence, erosion, or other events.
   (**6.b**) (b) Continue to operate the leachate collection and removal system until leachate is no longer detected.
   (**6.c**) (c) Maintain and monitor the leak detection system in accordance with ss. NR 664.0301 (3) (c) 4. and (d) and 664.0303 (3), and comply with all other applicable leak detection system requirements of this chapter.
   (**6.d**) (d) Maintain and monitor the groundwater monitoring system and comply with all other applicable requirements of subch. F.
   (**6.e**) (e) Prevent run-on and run-off from eroding or otherwise damaging the final cover.
   (**6.f**) (f) Protect and maintain surveyed benchmarks used in complying with s. NR 664.0309."

7. NR 670.014(2)(n): *"…documentation that notices required under s. NR 664.0119 have been filed.*"
   a. NR 664.0119(1): Submit a record of the type, location and quantity of hazardous wastes disposed of within each cell, to be submitted to the local land use authority.
   b. NR 664.0119(2)(a): File a notation on the property's deed regarding hazardous waste management, restriction of use, and survey plan information.
   c. NR 664.0119(2)(b): Certification of the deed notation, to be provided to the department.

8. NR 670.014(2)(p) relates to closure costs and is not applicable.

9. NR 670.014(2)(p): *"…the most recent long-term care cost estimate for the facility prepared according to s. NR 664.0144 plus a copy of the documentation required to demonstrate financial assurance under s. NR 664.0145."*

10. NR 670.014(2)(s): *"A topographic map showing a distance of 1,000 feet around the facility…".* This section goes on to establish the specifications and minimum contents of the map.

11. NR 670.014(3): This establishes the required information regarding protection of groundwater. NR 670.014(3)(b) through (h) identifies the detailed groundwater-related information required to be provided for the regulated unit(s), such as:
    a. NR 670.014(3)(b) is not applicable.
    b. NR 670.014(3)(b) specifies hydrogeologic information.
    c. NR 670.014(3)(c) specifies groundwater-related information to be presented in maps.
    d. NR 670.014(3)(d) specifies groundwater contamination-related information
    e. NR 670.014(3)(e) requires "Detailed plans and an engineering report describing the proposed groundwater monitoring program to be implemented to meet s. NR 664.0097"
    f. NR 670.014(3)(f) requires information regarding the detection monitoring program (if applicable).
    g. NR 670.014(3)(g) requires information regarding the compliance monitoring program (if applicable).
    h. NR 670.014(3)(h) requires information regarding the compliance monitoring program (if applicable).

12. NR 670.014(4): This establishes the required information regarding solid waste management units.
    a. NR 670.014(4)(a)1. through (a)5. includes information regarding SWMUs.
    b. NR 670.014(4)(a)6. requires past and future corrective action information (if applicable):
    c. NR 670.014(4)(b) requires all available information pertaining to any release of hazardous wastes or hazardous constituents from the unit or units.
    d. NR 670.014(4)(c) refers to completion of a RCRA Facility Assessment. The facility should provide a summary of monitoring-related information that was developed previously and led to the need to enter corrective action, the corrective actions taken to date, and future corrective actions planned.

13. The final part of NR 664.028 goes on further to allow the department to determine that additional information related to NR 670.014 (General Requirements), 670.016 (Tanks), 670.017 (Surface Impoundments), 670.018 (Waste Piles) or 670.021 (Landfills) is necessary. The department has currently identified the following additional informational requirements that should be included in a long-term care application:
    a. From NR 670.014, General Requirements
        (i) NR 670.014(2)(g), a copy of the contingency plan.
        (ii) NR 670.014(h)2., runoff controls
        (iii) NR 670.014(h)3., how contamination of water supplies is prevented
        (iv) NR 670.014(h)4., how equipment failure and power outages are mitigated
        (v) NR 670.014 (h)5., how personnel are protected
        (vi) NR 670.014(h)6., how releases to atmosphere are prevented
        (vii) Per NR 670.014(2)(L), an outline of both the introductory and continuing training programs.
    b. From NR 670.021, Landfills. Most of these additional informational requirements generally relate to active landfill operations and closure, which do not need to be addressed. However, NR 670.021(5) requires "*…a description of how each landfill will be maintained and monitored after closure according to s. NR 664.0310(2).*" This is covered in item 6 above.

14. Part A Application: NR 670.001(2) states, "*A license application consists of two parts, part A (see s. NR 670.013) and a feasibility and plan of operation report (see s. NR 670.014 and applicable sections in ss. NR 670.015 to 670.029*". [Note that a feasibility and plan of operation report (FPOR) is generally not needed for closed facilities; rather, the LTC license application; rather, for the purposes of s. NR 670.014, Wis. Adm. Code, the long-term care license application will constitute the facility's FPOR]. The following Part A application information specified in NR 670.013 should be included in the LTC license application:

    a. NR 670.013(1) The activities conducted by the applicant which require it to obtain a license.
    b. NR 670.013(2) Name, mailing address and location, including latitude and longitude of the facility for which the application is submitted.
    c. NR 670.013(4) The operator's name, address, telephone number, ownership status and status as federal, state, private, public, or other entity.
    d. NR 670.013(5) The name, address, and phone number of the owner of the facility.
    e. NR 670.013(6) Whether the facility is located on Indian lands.
    f. NR 670.013(8) For existing facilities, all of the following:
       (a) A scale drawing of the facility showing the location of all past, present, and future treatment, storage, and disposal areas.
       (b) Photographs of the facility clearly delineating all existing structures; existing treatment, storage, and disposal areas; and sites of future treatment, storage, and disposal areas.
    g. NR 670.013(9) A description of the processes to be used for treating, storing, and disposing of hazardous waste, and the design capacity of these items.
    a. NR 670.013(10) A specification of the hazardous wastes listed or designated under ch. NR 661 to be treated, stored or disposed of at the facility, an estimate of the quantity of wastes to be treated, stored or disposed annually, and a general description of the processes to be used for the wastes.

b. NR 670.013(11) A listing of all permits, licenses or construction approvals received or applied for under any applicable federal or state regulations.
c. NR 670.013(12) A topographic map (or other map if a topographic map is unavailable) extending one mile beyond the property boundaries of the source, depicting the facility and each of its intake and discharge structures; each of its hazardous waste treatment, storage or disposal facilities; each well where fluids from the facility are injected underground; and those wells, springs, other surface water bodies, and drinking water wells listed in public records or otherwise known to the applicant within ¼ mile of the facility property boundary.
d. NR 670.013(13) A brief description of the nature of the business.

15. Please note that the department reserves the right to request additional information in the LTC license application.

Attachment B
NR 670 Long-Term Care License Application Contents

This attachment synthesizes the minimum information requirements for a long-term care (LTC) license application under ch. 670, Wis. Adm. Code, and provides the recommended contents and format for the application. For many of the items outlined below, a code is provided that identifies the source(s) of the requirement within the Attachment A regulatory citations (e.g., code "A.2" refers to section 2 of Attachment A, located immediately before this Attachment B).

While there is no standard format prescribed for the long-term care application, the department recommends that the facility incorporate all required application information into its proposed long-term care plan (LTCP), thus establishing one stand-alone document for future review and consultation. Also, the LTCP can consolidate LTC requirements established under the NR 500- and NR 600-series of regulations.

This Attachment B presents a recommended organizational format for the NR 670 information within a revised LTC Plan.

Long-Term Care Plan (A.5.a)

1. General Facility Description

A description of the facility and history (A.1 and A.14). This should be written to assist the unindoctrinated reader with understanding the key aspects of the facility and its hazardous waste requirements. At a minimum, this should be sure to include:

a. A brief description of the property, location, and current status of the facility (A.1). The property description information should and briefly describe the history of the development of the facility's various landfill areas. A property map(s) depicting these areas and other key appurtenant improvements (e.g. the landfill gas control units, key leachate management components, corrective action components, office, and maintenance buildings, fencing and access points, etc.) should be included. The location information should include the address, the name of the local municipality in which it is located (and any affected municipalities), and the latitude/longitude (A.14.b). This should also address Indian lands (A.14.e) and floodplain information (A.4).
b. Facility owner, operator, and contact information (A.5.d.iii, A.14.c, A.14.d.).
c. A brief history of the hazardous waste management activities at the facility that may be relevant to current hazardous waste requirements, such as the types, approximate quantities, locations, and timeframe of hazardous wastes disposed (A.1, A.14.a, A.14.h), the disposal methods used (e.g. the use of trenches dug into previously-landfilled solid wastes) and the different parts of the HWU that were used for hazardous waste disposal.
d. A summary of capping units and segregation layers that were installed (A.5.b).
e. A brief description of any other environmental licenses, permits, or authorizations that relate in any way to the HWU (A.14.i).
f. Maps and drawings, which include maps/drawings that are needed to support the general description of the facility and that are:
    (i) required in NR 670.014(2)(s) (A.10). Note that if certain detailed NR 670.014(2)(s) mapping requirements are pertinent or not of value, the applicant should identify them and state the reason they are not needed.
    (ii) required as part of the groundwater monitoring plan (A.11.b).
    (iii) required for the Part A application (A.14.f and A.14.j). Note that if certain NR 670.013 detailed mapping requirements are not of value, the applicant should identify them and state the reason they are not needed.

g. Photos (A.14.f). Please describe the purpose of the photo, and indicate the date, location from which the photo was taken, and the direction faced.
h. If corrective action requirements in NR 664.0100 and NR 664.0101 are occurring the facility description briefly describe the program.

2. Long-Term Care Summary

a. Identification of the components and systems that require or facilitate long-term care (e.g. final cover, leachate and gas collection, conveyance and control systems, run-on control systems, run-off control systems, monitoring systems and components, etc.). (A.1) (A.5.c.i) (A.5.d.i) (.5.d.ii) (6.c)
b. A description of long-term leachate management and extraction goals/requirements.
c. A general summary of the site maintenance and repair program activities for these systems and components. (A.5.c.i) (A.5.d.ii) (A.6) (A.6.a through e)
d. A general description of LTC-related environmental monitoring programs (A.5.d.i) (A.6.d)
e. The minimum and remaining estimated duration of LTC and corrective action `activities.

Details of these components and their associated LTC activities should be addressed as discussed in section 3 below.

3. Long-Term Care Details

This should include a detailed description of each of the existing systems that require or facilitate long-term care and the detailed site maintenance and repair program activities. All discrete tasks and subtasks should be broken out and separately described such that they support the LTC cost estimate.

a. Final Cover (A.5.c.i) (A5.d.ii) (A.6.a) (A.6.e)

This should include a detailed description of the final cover/cap system, and drawings/schematics that depict its key components and location(s). Different caps placed in different areas should be addressed. Separation barriers and cover systems that were left in place to separate and or/create barriers between landfill sections this should be described. This should also address any perimeter berms that provide structural support.

A detailed description of the routine and contingent operational and maintenance activities of the final cover systems should be provided.

b. Leachate Management (A.5.c.i) (A.5.d.ii) (A.6.b) This should include a detailed description of leachate containment systems for the facility (such a liners, documented base, cutoff walls, etc. regarding the old east hill, west hill, and saddle area) and the leachate/gas collection systems used for these areas. It should also provide This should include a detailed description of the standards to be met for leachate extraction activities, the rationale for the standards, and associated reporting activities.

f. Run-on and Run-off Controls (A.5.c.i, A.5.d.ii, A.6.e, A.13a.ii)

This should include a detailed description of the run-on and run-off control system(s), drawings/schematics that depict its key components, and all routine and contingent operational and maintenance activities.

g. Groundwater Monitoring Program (A.5.d.i) (A.6.d) (A.11) (A.13.a.iii)

This should include a detailed description the groundwater monitoring program, drawings/schematics that depict its key components, and all routine and contingent activities.

The facility has indicated it is currently implementing a detection monitoring program per ss. NR 664.0091(1)(d) and NR 664.0098, Wis. Adm. Code for the HWU, so this should be articulated along with the basis for this status. The plan should then identify and describe how each of the applicable monitoring program requirements in NR 664.0091 through NR 664.0099 are met, including but not limited to requirements for well network/layout, parameters, frequencies, points of compliance, data evaluation, concentration limits, reporting, etc.); more information is presented in subsection C below. The plan should briefly address the triggers for moving into compliance monitoring.

(i) We recommend that the groundwater monitoring plan address the applicable requirements of NR 507. The plan may be written and organized in a manner typical of other monitoring plans (such as NR 507 plans) but must and address each of the applicable monitoring program requirements in NR 664.0091 through NR 664.0099.

(ii) Note that NR 670.014(3) requires information regarding protection of groundwater and the monitoring plan, including for example site hydrogeologic information, a map, and specific details regarding the monitoring program. Please see section 11 of Attachment A (A.11) for more information.

(iii) The plan should address each of the applicable monitoring program requirements in NR 664.0091 through NR 664.0099. We recommend that the plan include a "crosswalk" that identifies where each of these requirements is addressed. The following is list of examples of these requirements for facilities in detection monitoring:

NR 664.0091(1)(e) Certified lab use
NR 664.0091(2) Specific program elements
NR 664.0092 Groundwater protection standard(s)
NR 664.0093(1), (2), and (2m) Hazardous constituents that apply
NR 664.0093(3) Groundwater use/exempted aquifers
NR 664.0094(1), (2), (2m) Concentration limits
NR 664.0094(3) Groundwater use/exempted aquifers
NR 664.0095 Point of standards application
NR 664.0097(1) Number, location, and depth of wells (background, POS, and detection)
NR 664.0097(3) Casing
NR 664.0097(4) Sampling and analysis procedures
NR 664.0097(5) Sampling and analysis methods
NR 664.0097(6) GW elevation
NR 664.0097(7) Sampling procedures (including establishment of background)
NR 664.0097(8) and (9) Data evaluation and methods
NR 664.0097(10) Recordkeeping and reporting

The plan should clearly identify and justify any alternative requirement proposed pursuant to s.NR 664.0090(6), Wis, Adm. Code.

(iv) Certain parts of NR 664.0091 through NR 664.0099 refer to requirements to be established in the license and/or by the department. The groundwater monitoring program plan presented by the facility should identify and propose these requirements for the department's consideration in reviewing and approving the plan as part of the re-issued LTC license.

h. Benchmarks: Please describe the locations of surveyed benchmarks and how they are protected and maintained (A.6.f).

i. Corrective Action: Please describe in detail the corrective actions taken to date, and future corrective actions planned. Include descriptions of equipment, operations, and monitoring related to the corrective action program.

j. Please address any other facility components and systems identified in section 2 above that require or facilitate long-term care.

4. Other Applicable NR 664 Requirements

This should describe how the following requirements are to be met:

e. Security procedures and equipment (A.2.a) (A.5.c.ii)

f. Equipment failures (A.13.a.iv)

g. Inspection program (A.2.b) (A.5.c.ii) (A.6). This should include documentation forms and protocols for maintaining the operating record.
   (i) The inspection program should include all the components fitting within NR 664.0015(2)9(a), which includes "monitoring equipment, safety and emergency equipment, security devices and operating and structural equipment (such as dikes and sump pumps) that are important to preventing, detecting, or responding to environmental or human health hazards". This would also include, for example, monitoring wells, fencing/gates, run-off controls, etc.
   (ii) The inspection program should identify the types of problems (e.g., malfunctions or deterioration) which are to be looked for during the inspection, per NR 664.0015(2)(c).
   (iii) The inspection program should describe the frequencies of inspections, per NR 664.0015(2)(d).
   (iv) In addition to meeting NR 664.0015(4), the inspection forms should match with the LTC plan's inspection program description. clearly identify the item(s) that are inspected.
   (v) The inspection forms should provide for documentation of remedies/repairs per NR 664.0015(3).

h. Personnel training program (A.5.c.ii) (A.13.a.vii). This should describe the training program and associated documentation/records. At and minimum, the program should describe training that is necessary or appropriate for proper contingency plan implementation, and necessary for proper inspections and repairs to occur, and awareness training such that key facility components (e.g. the cap and monitoring equipment) are not inadvertently damaged by personnel doing work at the facility. The program should describe who (which positions or roles) receives the training and the training frequency.

i. The Contingency Plan (A.5.c.ii) (A.13.a.i). which should also address all applicable preparedness and prevention requirements in subch. C of ch. NR 664, Wis. Adm. Code.

j. How personnel are protected (A.13.a.V)

k. How releases to the atmosphere are prevented (A.13.a.vi)

l. The contingent long-term care plan (and cost estimates) for tank systems per NR 664.0197 (A.5.e). Note that this may not apply because of the WWTU exclusion, which exempts certain units from NR 664 and NR 670 requirements; see NR 664.0001(7)(f); if this exclusion applies the facility should assert this, and identify the tank system components to which it applies.

m. The operating record requirements of NR 664.0073. This should describe operating record and recordkeeping requirements, such as the following:
   (i) NR 664.0073(2)(d), contingency plan incident records

(ii) NR 664.0073(2)(e), inspection records
(iii) NR 664.0073(2)(h), LTC cost estimates
(iv) NR 664.0016(4), training records

n. The annual reporting requirements per s. NR 664.0075, Wis. Adm Code.

o. Documentation that demonstrates compliance with the requirements for long-term care notices per s. NR 664.0119(1) , Wis. Adm. Code (A.7.a) and the deed notice/certification per s. NR 664.0119(1), Wis. Adm. Code (A.7.b and c)

5. Long-Term Care Cost Estimate (A.9)

The long-term care cost estimate should be certified by a qualified professional engineer and/or qualified professional geologist. The cost estimate should be summarized in tabular form showing tasks and subtasks in rows, and units, quantities, unit costs, and extended totals, along with a grand total of all tasks and subtasks, and provide sufficient detail and support to ensure that they:

a. estimate LTC and corrective action costs for the duration of the long-term care period;
b. are based on and present costs for each of the discreet tasks and subtasks described in the work descriptions contained in the LTC Plan. An example of a task may be groundwater monitoring, with example subtasks for sampling, lab analyses, data review, reporting, etc.;
c. for each discrete task and sub-task, include units, quantities, unit costs, and extended totals, along with a grand total of all tasks and subtasks.
d. for each quantity and unit cost, provide the source of or basis for the numbers;
e. are based on exclusive use of a third parties to perform the work, and include costs to procure, administer and manage the third-party work;
f. include a minimum 10% contingency for unforeseen activities;
g. clearly show the basis year of the cost estimate (costs “as of” year, e.g. “all costs are in 2021 dollars”); and
h. cover all costs until the end of the minimum 40-year long-term care financial assurance period.

The department recommends that the LTC Plan discuss a minimum “rolling 30-year window” (i.e. to begin during Year 10 of the LTC period) for its LTC cost estimate (and associated financial assurance) that annually maintains financial assurance for the following 30 years, until the facility demonstrates (and the department approves) that a shorter time period is justified.

6. Long-Term Care Financial Assurance (A.9)

This should address documentation to demonstrate the establishment of LTC and corrective action financial assurance.

7. Solid Waste Management Units and Corrective Action (A.12)

This should identify and describe all SWMUs (A.12.a - c). Note that NR 670.014(4)(a)1. through (a)5. specifies minimum information to be provided for each SWMU (A.12.a). Also note that that NR 670.014(4)(b) requires all available information pertaining to any release of hazardous wastes or hazardous constituents from the unit or units (A.12.c). Note that the facility may refer to previous reports rather than repeating such information, to the extent the previous reports may provide some of this information. In particular, the facility should consider the waste disposal areas outside of the HWU, as well as any other SWMUs at the facility.

This section should provide a summary of monitoring-related information that was developed previously and led to the need to enter corrective action, and should describe in detail the corrective actions taken to date, and future corrective actions planned.

8. Other Hazardous Waste Requirements in NR 600-679

To memorialize other hazardous waste compliance details, the LTC Plan should include information assembled by KHL as part of the hazardous waste compliance assessment that concluded with the department's June 4, 2021 Conditional Close-Out letter, such as:

- Generator waste determinations
- Documentation regarding gas processing residuals, including condensate
- WWTU exemption support

Attachment C
NR 670 LTC License Application Submittal Logistics

1. Please provide a cover letter via email addressed to the assigned hazardous waste program licensing specialist (Mr. Coenen) that introduces the application submittal, and provides instructions for downloading any attachments/documents not emailed. Please cc the assigned WNDR solid waste program engineer and hydrogeologist on the cover letter via email.

2. The license application must be certified in accordance with s. NR 670.011, Wis. Adm. Code, which can be included as part of the cover letter. Per s. NR 670.010(2), Wis. Adm. Code, the signature requirements apply to the operator and to the owner. If these are separate entities, separate certifications and signatures are needed. Please ensure that the LTC license application describes the relationship between such multiple entities.

3. Rather than submitting hard (paper) copies: Provide a single portable document format (PDF) file. This can be provided using a file sharing web-site if the file is too large to transmit via email. (Paper copies of certain sections, or Word versions of certain sections, may be requested by the department to facilitate review).

4. Regarding the format of the PDF, please follow these guidelines:
    - The application should be submitted to the department in a single, combined PDF (including the transmittal or cover letter).
    - The single PDF should be built as a searchable/readable PDF, and/or ran through an optical character recognition (OCR) software such as Enhance Scans in Adobe Pro, to make the document a searchable/readable PDF.
    - All parts/sections/subsections (e.g., current Part 1.a.1) and attachments (e.g., appendences, sub-appendices, figures, tables) should be designated bookmarks in the PDF and the name of the bookmark should be the name of the section or attachment.
    - All cross-references to attachments should be internally hyperlinked to the appropriate attachment (e.g., all references to Appendix A in the body of the FPOR should include a hyperlink to Appendix A).
    - Please include a Table of Contents which also contains hyperlinks.
    - Please ensure that the PDF bookmarks are properly populated.

5. Please include a table of contents. Please use a page numbering system where every page is marked with the page number, including the chapter and the date so revised pages (in later versions) are clearly identified. For example, a page numbering system of 5-13 (rev. 12-23-21), indicates Chapter 5, page 13 including revisions made on December 23, 2021. Please refrain from the use of using roman numerals for numbering pages.

6. Some information may be most easily provided by referring to and/or providing copies of previous reports and correspondence, or parts of previous reports or correspondence. An example of such information is site hydrogeologic information. Please ensure that when only a part of previous correspondence is used in this way, the title and date of the original document is provided.

7. The department requests that the facility provides, along with its application, a “crosswalk” that points to the page or section of the application which addresses each informational element identified in Attachments A/B. This is intended assist both the facility and the department in assuring the application is complete. This can be provided with the cover letter.

8. Please note that previous submittals and approvals may establish applicable requirements that still remain in effect. We recommend that the facility carefully review these documents for such requirements. If the long-

term care application seeks to rescind or replace such requirements, it should specifically identify and propose these changes in the application, perhaps in the application's cover letter.

Appendix A.2
Kestrel Hawk Landfill – Industrial Wastewater Discharge Permit (Permit #1007-L)
December 16, 2024

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Anjuman A. Islam, Ph.D.
Water Utility Director

Nathaniel Tillis
Wastewater Utility Director

Water and Wastewater Utilities
RACINE ON THE LAKE
City of Racine, Wisconsin

Kenneth M. Scolaro
Administrative Manager

Chad W. Regalia, P.E.
Chief Engineer

December 16, 2024

RE: Renewal of the Local Limits Pretreatment Discharge Permit

Dear Local Industry:

Your application for an industrial user pretreatment permit has been reviewed and processed in accordance with Section 98-153 of the Racine Municipal Code.

The enclosed permit covers the wastewater discharge from the facility into the Racine Wastewater Utility sewerage system. All discharges from this facility and actions and reports relating thereto shall be in accordance with the terms and conditions of this permit.

This permit is effective for four years (January 1, 2025 to December 31, 2028). If there are any changes to flow volume, processes, or wastewater characteristics at any time during the duration of the permit, you must notify the Utility.

Complete reports need to be postmarked by January 15th and July 15th of each year. Reports postmarked after this date will result in a Notice of Noncompliance for late reporting. Any reports received 45 days after the due date will result in Significant Noncompliance.

If there is TTO testing listed in your permit, this is because one of the parameters that the Utility tested met the threshold for future monitoring. These samples will be collected by the Utility throughout the duration of the permit and sent in for analysis. You will be billed for this analysis but there is nothing further your facility needs to do. Note that if the results are above the TTO limit, it will result in a Notice of Noncompliance.

If you wish to appeal or challenge the effluent limitations, pretreatment requirements, or conditions imposed by the issued wastewater discharge permit, a petition shall be filed for appeal with the Utility Commission within 20 days from the issuance date for the permit as provided for in Section 98-153(a)(11) of the Municipal Code.

If you have any questions regarding your new permit, please contact Amanda Kaminski, Field Services Director directly.
[Email: Amanda.kaminski@cityofracine.org] [Phone: 262-497-5202 / 262-636-9528]

Sincerely,

Nate Tillis
Wastewater Director
Racine Wastewater Utility

800 Center Street, Room 227 | Racine, Wisconsin 53403 | 262-636-9181 (Phone)| 262-636-3933 (Fax)

Kestrel Hawk Landfill
Republic Services of Wisconsin, LLP
1969 Oakes Road
PERMIT #1007-L

INDUSTRIAL WASTEWATER DISCHARGE PERMIT
LOCAL LIMITS INDUSTRIES
DURATION OF PERMIT 2025 - 2028

RACINE ON THE LAKE
City of Racine, WISCONSIN

RACINE WASTEWATER UTILITY
800 Center Street - Room 227
Racine, Wisconsin 53403
Phone 262-636-9528

INDUSTRIAL USER PERMIT

In compliance with the provisions of Chapter 98 of the Code of General Ordinances of the City of Racine,

KESTREL HAWK LANDFILL-REPUBLIC SERVICES OF WISCONSIN, LLP
PERMIT # 1007-L

located at
1969 OAKES ROAD

is permitted to discharge from the above identified industrial facility and through the outfalls identified in this permit to the Racine Wastewater Treatment Plant in accordance with the effluent limitations, monitoring requirements and other conditions set forth in this permit. Compliance with this permit does not relieve the permittee of its obligation to comply with any or all applicable pretreatment regulations, standards, or requirements under local, state and federal laws, including any such regulations, standards, requirements or laws that might become effective during the term of this permit.
All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit more frequently than, or at a level in excess of, that authorized shall constitute a violation of the permit and the Racine Wastewater Utility Sewer Use Ordinance. This permit is issued to this specific user and may not be reassigned, transferred or sold.

This permit shall become effective January 1, 2025

This permit shall expire at midnight: December 31, 2028

The permittee shall not discharge after the date of expiration. If the permittee wishes to continue to discharge after this expiration date an application shall be filed for reissuance of this permit in accordance with the requirements of Chapter 98 of the Code of General Ordinances of the City of Racine, a minimum of 90 days prior to the expiration date.

By: Date: **December 16, 2024**

Nate Tillis
Wastewater Director
Racine Wastewater Utility

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INDUSTRY: Kestrel Hawk Landfill-Republic Services of Wisconsin, LLP
PERMIT # 1007-L
ISSUED: 08/31/1985
REISSUED: 08/31/1989, 08/31/1993, 01/01/1997, 01/01/2001, 01/01/2005, 01/01/2009, 01/01/2013, 01/01/2017, 01/01/2021, **01/01/2025**
MODIFIED: N/A

SECTION 1: INDUSTRIAL CATEGORY AND LIMITS

1. INDUSTRIAL CATEGORY:

   - Non-Categorical (Local Limits)

2. DISCHARGE OUTFALLS AND LIMITS:

Upon receipt of this discharge permit, and during the period covered by this permit, all wastewater being discharged from this facility shall not exceed the following effluent limitations:

a. SAMPLE LOCATION: MANHOLE #6A – NORTH SIDE OF THE LANDFILL OFF 16TH STREET
b. SAMPLE LOCATION: MANHOLE #15B – SOUTH SIDE OF THE LANDFILL OFF 21ST STREET

- Local Limits
- Permit pollutants monitored and sampling frequency will be evaluated and may be amended as needed. Both of these sites will also be used for user charge monitoring for BOD, TSS, TP, etc. These parameters have no limit but are used to determine wastewater strength for invoicing. This sampling will be done by the Utility. Third party sampling is voluntary. If the Industry chooses to have their third-party sample for user charge parameters according to sample collection requirements in 40 CFR Part 136, these results must be turned into the Utility. The results will be averaged with the Utility results for invoicing.

POLLUTANT	DAILY MAXIMUM MG/L
CADMIUM (T)	0.70
CHROMIUM (T)	14.0
COPPER (T)	3.61
CYANIDE (T)	1.9
LEAD (T)	1.38
MERCURY	0.10
NICKEL (T)	4.1
ZINC (T)	7.1
pH (Local)	5.0 - 10.0
OIL & GREASE (Local)	200.0
TTO	2.13

SECTION 2: SELF MONITORING AND ANNUAL INSPECTION REQUIREMENTS

1. SELF MONITORING

All sampling and analysis required by this permit shall be performed in accordance with the techniques prescribed in 40 CFR Part 136 and amendments thereto, otherwise approved by EPA, or as specified in this permit.

The required number of samples listed below shall be taken between the period of **January 1 to June 30** of each year. The remaining samples shall be taken between **July 1 to December 31** each year. Sample results should be reported to the Utility when completed. Reports for the first half of the year are due no later than July 15 each year and reports for the second half of the year are due no later than January 15. Any self-monitoring results which indicate a violation must be reported to the Utility within 24 hours of becoming aware of the violation. (See SECTION 3: REPORTING REQUIREMENTS).

The monitoring shall consist of sampling of the regulated wastewaters for those pollutants regulated under **SECTION 1** of this permit, reporting the results and notifying the Utility of any violation.

Composite samples shall be collected over the total discharge period (24 hours, 16 hours, 8 hours), during hours of production. Flow proportional samples shall be taken unless otherwise indicated. 24-hour flow shall be reported.

Grab samples must be taken for batch discharges. The grab sample must be representative of the total tank contents and shall be taken prior to batch discharging. The contents of the tank are to be mixed uniformly or subsamples of the top, middle and bottom of the tank shall be taken and composited.

2. SAMPLE COLLECTION TECHNIQUES

Pretreatment regulations require each significant industrial user to self-monitor semi-annually.

a. Composite Sampling: 24-hour flow-proportional composite samples are required (FPC) for metals.
b. Grab Sampling:

- Sampling for pH, cyanide, oil & grease requires manual collection of grab samples. Grab samples must be representative of the monitored discharge.
- pH must be analyzed immediately.

If an industry samples itself or if an independent company provides this service, the following sampling and preservation requirements should be followed. All sampling and analysis required by this permit shall be performed in accordance with the techniques prescribed in 40 CFR Part 136 and amendments thereto, otherwise approved by EPA, or as specified in this permit. A DNR certified or registered laboratory should be used. Supply the laboratory with the appropriate parts of your permit. Obtain and use proper sample containers and proper preservation chemicals supplied by the laboratory. Changes in flow (+/- 20%) shall be reported to the Utility.

Parameter	Sample Type	Container	Preservative	Holding Time
pH	Grab	Polyethylene, Fluoropolymer/Teflon or glass (P,FP,G)	(Cannot be preserved)	Analyze immediately
Oil & Grease (HEM)	Grab	Glass	Cool, ≤6°C, HCL or H_2SO_4 to pH<2	28 days
Cyanide, total	Grab	P,FP,G	Cool, ≤6°C, NaOH to pH>12 and reducing agent if residual chlorine is present	14 days
Metals (total)	FPC	P,FP,G	HNO_3 to pH<2	6 months
Mercury (Hg)	FPC	P,FP,G	HNO_3 to pH<2	28 days

3. SAMPLING FREQUENCY AND SAMPLE TYPE REQUIRED
   a. Parameter Limitations for Sampling Manhole #6A (North) and #15B (South): Discharge from this facility must meet the following limitations. Flow proportional composite sampling (FPC) is required where indicated. The proper sampling location must be used as indicated in this permit, Manhole #6A (North) and 15B (South)

PARAMETER:	DAILY MAXIMUM MG/L (LOCAL)	January – June SAMPLING FREQUENCY	July - December SAMPLING FREQUENCY	SAMPLE TYPE
CADMIUM (Total)	0.70	One Sample at each Site	One Sample at each Site	FPC
CHROMIUM (Total)	14.0	One Sample at each Site	One Sample at each Site	FPC
COPPER (Total)	3.61	One Sample at each Site	One Sample at each Site	FPC
CYANIDE (Total)	1.9	One Sample at each Site	One Sample at each Site	GRAB
LEAD (Total)	1.38	One Sample at each Site	One Sample at each Site	FPC
MERCURY (Total)	0.10	One Sample at each Site	One Sample at each Site	FPC
NICKEL (Total)	4.1	One Sample at each Site	One Sample at each Site	FPC
ZINC (Total)	7.1	One Sample at each Site	One Sample at each Site	FPC
OIL & GREASE (HEM)	200	One Sample at each Site	One Sample at each Site	GRAB
PH	5.0 MINIMUM 10.0 MAXIMUM	One Sample at each Site	One Sample at each Site	GRAB – analyzed immediately

   b. Additional Parameter Limitations for Sampling Manhole #6A (North) and #15B (South): Discharge from this facility must meet the following limitations.

PARAMETER:	January- March Sampling Frequency	April- June Sampling Frequency	July - September Sampling Frequency	October-December Sampling Frequency
Pollutants as listed in Section 11.1 of the Leachate Testing Agreement (Attached)	One Sample at each Site	One Sample at each Site	One Sample at each Site	One Sample at each Site

PARAMETER:	Sample Frequency
Pollutants as listed in Section 11.2 of the Leachate Testing Agreement EPA 129 Priority Pollutant Analysis (Attached)	One Sample at each Site taken Annually This sample may be taken in lieu of Section 11.1 testing for **one** quarter of the above requirements.

   c. The Wastewater Director may develop best management practices (BMPs), by ordinance or in individual wastewater discharge permits, to implement local limits and general discharge prohibitions. Control mechanisms (permits) shall contain effluent limits, including best management practices, based on prohibited discharge standards, categorical pretreatment standards, local limits and state and local law.

d. *Daily Maximum Limit*—The maximum allowable discharge limit of a pollutant during a calendar day. Where daily maximum limits are expressed in terms of a concentration, the daily discharge is the arithmetic average measurement of the pollutant concentration derived from all measurements taken that day.

4. REPORTING: All monitoring results should include the full lab report, self-monitoring certification page and must be postmarked by the due date indicated in the table below. Any submitted report postmarked after the due date is a violation of this permit. Any submitted report postmarked more than 45 days after the due date will result in Significant Noncompliance and must be published by the City in the local newspaper as required by section 4 item 23(f) of this permit.

Amanda Kaminski
Field Services Director
Racine Wastewater Utility
800 Center Street
City Hall Annex, Room 227
Racine, Wisconsin 53403

REPORT Signed and Certified	**JANUARY to JUNE Due July 15**	**JULY to DECEMBER Due January 15**
Self-monitoring lab report and signed certification for parameters listed in 3.a. above	One full lab report and signed certification form is required for each sample taken during this period.	One full lab report and signed certification form is required for each sample taken during this period.
Hauled Waste Summary	One Summary	One Summary
Flow Data	Measured or Estimated **Average** Daily Flow AND Measured or Estimated **Maximum** Daily Flow	Measured or Estimated **Average** Daily Flow AND Measured or Estimated **Maximum** Daily Flow
Slug Control Plan**	No Spill plan is required for this facility.	

** Following the slug control plan is a condition of the permit per Section 3.7 of this permit and NR 211.235; therefore, not following the most current slug control plan is a violation of permit requirements. The most current slug discharge control plan approved by the city is hereby incorporated into the permit as a permit requirement. The slug control plan will be reviewed annually at inspections to ensure compliance.

REPORT Signed and Certified	**January-March Due April 15**	**April-June Due July 15**	**July-September Due October 15**	**October-December Due January 15**
Agreement Section 11.1	One report for samples taken during this period	One report for samples taken during this period	One report for samples taken during this period	One report for samples taken during this period
Agreement Section 11.2	One report for priority pollutants taken during this annual period. Report is due January 15			

a. All significant industrial users shall, at a frequency determined by the Wastewater Director but in no case less than twice per year (in June and December), submit a report indicating the nature and concentration of pollutants in the discharge which are limited by pretreatment standards and the measured or estimated average and maximum daily flows for the reporting period. In cases where the pretreatment standard requires compliance with a Best Management Practice (BMP) or pollution prevention alternative, the user must submit documentation required by the Wastewater Director or the pretreatment standard necessary to determine the compliance status of the user. All periodic compliance reports must be signed and certified.
b. All wastewater samples must be representative of the user's discharge. Wastewater monitoring and flow measurement facilities shall be properly operated, kept clean, and maintained in good working order at all times. The failure of a user to keep its monitoring facility in good working order shall not be grounds for the user to claim that sample results are unrepresentative of its discharge.
c. If an industrial user subject to the reporting requirement in this section monitors any pollutant more frequently than required by the Wastewater Director, using the procedures prescribed, the results of this monitoring shall

be included in the report. Both categorical and non-categorical industrial users shall report all monitoring results.

5. FEES AND COSTS

All permittees are required to pay any fees, including administrative fees, analytical fees, sampling fees, fines and surcharge fees to the Utility as necessary to provide for the recovery of costs incurred for the implementation of the Pretreatment Program. All fees are due within 30 days of invoice.

a. Late fees and penalties will be assessed on any pretreatment fee and/or fine on an escalating basis up to and including termination of discharge privileges.
b. Failure to pay the annual Pretreatment Permit Fee will result in noncompliance penalties and fines in addition to increasing enforcement response up to and including rescinding the industry discharge permit and termination of discharge privileges.
c. Pretreatment Permit fees and Utility sampling frequency and associated costs may be increased by industrial non-compliance.

6. ANNUAL INSPECTION:

Control authorities are required to inspect all significant industrial user properties, Sec 98-137

a. At least once per year, Utility personnel will inspect this facility to update the classification of the site. More frequent inspections may be required. The inspection will include a thorough inspection of the site, a review of records including any hauled waste manifests, sampling records, slug control plans and any other review pertaining to wastewater discharge deemed necessary by the pretreatment inspector.
b. The Wastewater Director, members of the board of standards and other duly authorized employees of the city or utility bearing proper credentials and identification, shall be permitted to enter upon all properties connected to the wastewater works for the purpose of inspection and observation of the measurement, sampling and testing, in accordance with the provisions of this division, and to inspect the discharge to the sewers or natural outlets or wastewater treatment facilities. The Wastewater Director, or his authorized deputy, agent or representative, shall be permitted to enter any premises for the purpose of reviewing plant operations with designated plant personnel for the purpose of determining the scope of the waste control program, and any information so obtained shall be confidential, provided that any review of trade secrets or proprietary processes shall be limited to any discharge therefrom that flows into a public sewer.

SECTION 3: REPORTING REQUIREMENTS

1. BEST MANAGEMENT PRACTICES REPORTS/RECORDS RETENTION

In cases where the pretreatment standard requires compliance with a Best Management Practice (BMP) or pollution prevention alternative, the user must submit documentation required by the Wastewater Director or the pretreatment standard necessary to determine the compliance status of the user. All periodic compliance reports must be signed and certified.

In accordance with NR 211.15 (8) (c) Any industrial user subject to the reporting requirements established in this section shall retain for a minimum of 3 years all records of monitoring activities and results, whether or not such monitoring activities are required, and shall make such records available for inspection and copying by EPA, the Wisconsin Department of Natural Resources, and the receiving POTW. This period for retaining records shall be extended during the pendency of any litigation to which the industrial user or the POTW into which the industrial user discharges is a party, or when requested by the Wisconsin Department of Natural Resources or EPA.
Records shall include the date, exact place, method, and time of sampling, and the name of the person(s) taking the samples; the dates analyses were performed; who performed the analyses; the analytical techniques or methods used, and the results of such analyses. The retention period shall be automatically extended for the duration of any litigation concerning the user or Wastewater Director, or where the user has been specifically notified of a longer retention period by the Wastewater Director.

2. REPORTS OF CHANGED CONDITIONS AND SELF-MONITORING RESULTS

Each user must notify the Wastewater Director of any planned significant changes to the user's operations or system which might alter the nature, quality, or volume of its wastewater at least twenty (20) days before the change.

a. The Wastewater Director may require the user to submit such information as may be deemed necessary to evaluate the changed condition, including the submission of a wastewater discharge permit application.
b. The Wastewater Director may issue a wastewater discharge permit or modify an existing wastewater discharge permit in response to changed conditions or anticipated changed conditions.
c. For purposes of this requirement, significant changes include but are not limited to, flow increases of 20 percent or greater, and the discharge of any previously unreported pollutants.

All Industrial Users are *required* to report, during the months of July and January, the self-monitoring results of their wastewater discharge(s). Reports for the first half of the year are due no later than July 15th each year and reports for the second half of the year are due no later than January 15th each year. The report shall indicate the nature and concentration of all pollutants in the effluent for which sampling and analyses were performed including measured maximum and average daily flows during the reporting period.

Any self-monitoring results which indicate a violation must be reported to the Utility within 24 hours of becoming aware of the violation. Initial contact with the Utility should be by phone at 262-636-9550.

All analyses shall be performed and all collected samples properly preserved in accordance with the procedures contained in 40 CFR, PART 136 and amendments thereto or with any other test procedures approved by the EPA administrator. Sampling shall be performed in accordance with the techniques approved by the Administrator.
prescribed in 40 CFR Part 136 or amendments thereto, or otherwise approved by EPA or as specified in this permit, the results of such monitoring shall be included in any calculations of actual daily maximum or monthly average pollutant discharge and results shall be reported in the report submitted to the Racine Wastewater Utility.

3. VIOLATION NOTIFICATION AND AUTOMATIC RESAMPLING

Notice of violation/repeat sampling and reporting. If sampling performed by an industrial user indicates a violation, the user must notify the Wastewater Director within 24 hours of becoming aware of the violation. **Initial contact with the Utility should be by phone at 262-636-9550.** The user shall also repeat the sampling and analysis and submit the results of the repeat analysis to the Wastewater Director within 30 days after becoming aware of the violation. The user is not required to resample if the POTW monitors at the user's facility at least once a month, or if the POTW samples between the user's initial sampling and when the user receives the results of this sampling, or if the POTW has performed the sampling and analysis in lieu of the industrial user.

4. HAULED WASTE REPORTING:

Permittees who have (process) wastes hauled off site for disposal or treatment must have the waste manifested by a licensed waste hauler. Copies of the waste hauler's manifests must be submitted to the Utility semi-annually. The manifests to be submitted should be from the previous six month period and are due July 15 and January 15 each year. In lieu of submitting hauled waste manifests, a semi-annual summary of hauled wastes may be

submitted. In place of submittal, and when approved upon written request, the hauled waste manifests or summary of (process) hauled wastes may be provided at the time of any POTW inspection, or upon request from the POTW. All manifests must be available upon request from the POTW. Reports should indicate the source of the process waste, if categorical waste, what categorical process the waste originated from, the gallons, date hauled and destination of the waste.

5. REPORTS OF POTENTIAL PROBLEMS / SLUG DISCHARGE NOTIFICATION

Each industrial user shall provide protection from accidental discharge of prohibited materials or other substances regulated by the wastewater ordinance. Facilities to prevent accidental discharge of prohibited materials shall be provided and maintained at the user's own expense. Notification shall be immediately provided to the POTW of any discharge that could cause problems at the POTW. Initial contact with the Utility should be by phone at 262-636-9550.

In the case of any discharge, including, but not limited to, accidental discharges, discharges of non-routine, episodic nature, a non-customary batch discharge, or a slug load, that may cause potential problems for the POTW, such as any slug loading in violation of NR 211.10(2) and section 98-151(a) or (b) of the wastewater ordinance, or of any changes at the industrial users' facility affecting the potential for a slug discharge and the need for a slug control plan as required by NR 211.235(4)(a) and section 98-151(m) of the wastewater ordinance, the user shall immediately telephone 262-636-9550 and notify the Wastewater Director of the incident. This notification shall include the location of the discharge, type of waste, concentration and volume, if known, and corrective actions taken by the user.

A notice shall be permanently posted on the user's bulletin board or other prominent location advising employees whom to call in the event of a discharge described above. Employers shall ensure that all employees, who may cause such a discharge to occur, are advised of the emergency notifications procedure.

a. Slug or accidental discharges. Industrial users shall notify the utility immediately upon having a slug or accidental discharge of substances or wastewater in violation of this division in order to enable countermeasures to be taken by the utility to minimize damage to the POTW and the receiving waters. The notification shall include damage to the POTW and the receiving waters, location of discharge, type of waste, concentration and volume, and corrective actions. The utility may choose to immediately take action pursuant to section 98-155 of the wastewater ordinance (Enforcement).

b. Within five days following an accidental discharge, the industrial user shall submit to the Wastewater Director a detailed written report describing the cause of the discharge and the measures to be taken by the industrial user to prevent similar future occurrences. Such notification shall not relieve the industrial user of any expense, loss, damage, or other liability that may be incurred as a result of damage to the POTW, fish kills, or any other damage to person or property; nor shall such notification relieve the industrial user of any fines, civil penalties, or other liability that may be imposed by this division or other applicable law. After receipt and review of the written report, the utility may choose to take no further action or to take action in accordance with section 98-155 of the wastewater ordinance.

c. *Operating upsets report.* For the purposes of this section, upset means an exceptional incident in which there is unintentional and temporary noncompliance with categorical pretreatment standards because of factors beyond the reasonable control of the user. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. Any categorical industrial user which experiences a temporary state of noncompliance with this section or a wastewater discharge permit issued pursuant hereto shall inform the utility thereof within 24 hours of first awareness of the commencement of the upset. The utility may choose to immediately take action pursuant to section 98-155. Where such information is given orally, the user shall file a written follow-up report with the utility within five days. The report shall specify:

    i. Description of the upset, the cause thereof, and the upset's impact on a user's compliance status.

    ii. Duration of noncompliance, including exact dates and times of noncompliance and if the noncompliance continues, the time by which compliance is reasonably expected to occur.

    iii. All steps taken or to be taken to reduce, eliminate, and prevent recurrence of such an upset or other conditions of noncompliance.

A documented and verified bona fide operating upset shall be an affirmative defense to any enforcement action brought by the utility against a user for any noncompliance with the section or any wastewater discharge permit issued pursuant hereto, which arises out of violations alleged to have occurred during the period of the upset. Such notification shall not relieve the user of any expense, loss, damage, or other liability that may be incurred as result of damage to the POTW, fish kills, or any other damage to person or property; nor shall such notification relieve the user of any fines, civil penalties, or other liability that may be imposed by this division or other applicable law. After

receipt and review of the written report, the utility may choose to take no further action or to take action in accordance with section 98-155 of the wastewater ordinance.

6. **BATCH DISCHARGE REPORT/SLUG DISCHARGE NOTIFICATION:**
The Wastewater Director may require a user to notify the utility five days prior to discharging the contents of any tank with a batch discharge. Included in this report shall be the volume of all batch discharges recorded for each discharge event and batch tank volumes. The Wastewater Director may require that batch discharges or tank contents to be discharged must be analyzed by procedures outlined under the self-monitoring reports section, and must be found to be in compliance with all discharge limits that are in effect before discharge may occur. Grab samples must be taken for batch discharges. The grab samples must be representative of the monitored discharge or total tank contents and shall be taken prior to batch discharging. The contents of the tank are to be mixed uniformly or subsamples of the top, middle and bottom of the tank shall be taken and composited.

7. **SLUG DISCHARGE CONTROL PLAN**
The Wastewater Director shall evaluate whether each significant industrial user needs an accidental discharge/slug control plan or other action to control slug discharges [NR 211.235] Significant industrial users shall be evaluated within 1 year of being designated as significant industrial users. The Wastewater Director may require any user to develop, submit for approval, and implement a slug discharge control plan; see 98-151(m) for approved slug plan. Alternatively, the Wastewater Director may develop such a plan for any user. An accidental discharge/slug control plan shall follow the approved format outlined below:

INDUSTRIAL USER (IU) SPILL/SLUG CONTROL PLAN

- GENERAL INFORMATION: Name and Address, Contact Person, Discharge Practices, facility layout, Security Provisions and Employee Training (SECTION 1)
- MATERIAL INVENTORY: Types, volumes, containers, etc. (SECTION 2)
- SPILL/SLUG REPORTING: Description of procedures for notifying POTW (SECTION 3)
- SPILL AND LEAK PREVENTION: Procedures to prevent spills, maintain chemical storage, transfer materials, site run-off and training. (SECTION 4)
- EMERGENCY RESPONSE EQUIPMENT AND PROCEDURES: Inventory and location of equipment; and procedures (SECTION 5)
- DAMAGE CONTROL: Limiting damage to the environment and the wastewater treatment plant. (SECTION 6)
- TRAINING: Providing employee training. (SECTION 7)
- CERTIFICATION: A certification that the Plan is being implemented to prevent and control slugs and spills. (SECTION 8)

SECTION 1: GENERAL INFORMATION

A. Slug/Spill Control Plans must include enough information to allow the Utility to:
1) categorize and restrict the industry's potential for a slug discharge; and
2) respond promptly and efficiently in an emergency.
   a) Name
      Address
      Industry description
      Contact person
      Location of Slug/spill plan
   b) Previous spills and actions taken
   c) General layout of the facility indicating location of chemicals, chemical storage, drains, loading and unloading areas, and pretreatment facilities.
   d) Discharge practices, continuous, occasional, no-discharge, drains with plugs

SECTION 2: MATERIALS INVENTORY

A. The facility should provide data on all materials of concern used and stored on site. This may include those materials for which the Utility has established local limits. This information is useful in determining the origin of a slug or spill, potential hazards and appropriate response procedures. A chart format works well:

Chemical	Location	Volume present in facility	Type of container	Transfer areas and practices	Remarks

1) Materials - Both chemical and trade names should be listed (OSHA SDSs may be used).
2) Location – This will assist personnel in locating areas affected by a spill.
3) Container Volume - Useful in determining the potential impact of a slug/spill.

4) Container Description - The type of container (e.g. steel drum, fiberglass tank, etc.) and the presence of any valves, pumps, transfer pipes, etc.
5) Transfer/Transport Areas – To assess spill potential, possible effects on the treatment plant.
6) Additional Remarks - Information on the physical, chemical, and toxicological effects of each material, and special precautions to prevent contact between incompatible materials.

B. Each facility must demonstrate that the following aspects have been considered:
1) construction of the container;
2) other materials in the immediate vicinity; and
3) surrounding environment

SECTION 3: SPILL REPORTING

A. Reporting and documenting spills and slug discharges should be described.
1) Time, date, and cause of the incident;
2) impact of the spill on the treatment plant and the environment;
3) extent of injury and/or damage; and
4) how future incidents can be avoided.
5) A description of clean-up and disposal procedures must be included where applicable. Reports should address the following questions regarding plan adequacy:
a) Was the safety of personnel and the surrounding community ensured throughout the incident?
b) Were personnel working near the spill provided with access to protective equipment?
c) Was the spill confined quickly?
d) Was fire extinguishing equipment adequate and readily available?
e) Did secondary containment structures remain intact? Were they properly sized?
f) Were appropriate authorities immediately notified of the incident?

B. Recommendations for improvement in spill response should be included.
The investigation report should be available to the Utility, fire, and insurance firms (if applicable) to assist these agencies in their investigations. Copies of forms used for reporting and a list of appropriate response agencies and phone numbers should be included in the Plan.

SECTION 4: SPILL AND LEAK PREVENTION

This subsection is divided into a discussion of equipment and procedures. Information that a Slug Control Plan could contain are listed here.

A. Existing and Proposed Spill Prevention and Containment Equipment
1) This section should identify all existing equipment and systems that are in place.
2) If equipment needs to be purchased, the expected purchase dates should be provided.

B. Equipment to Prevent or Detect Spills
1) Chemical storage, process tanks, holding tanks, use compatible materials in construction; underground seepage protection; cathodic protection; level sensing devices; overflow, temperature, pressure alarms; heating coils; collision protection; secondary containment; diversionary structures.
2) Drums: drum construction; storage areas; secondary containment; diversionary structures; collision protection; drum handling equipment; drip pans
3) Pipes, Valves, Fittings, Pumps, Electrical and Mechanical Equipment: seals; valve stem packing; gaskets; cathodic protection; vehicular traffic warning signs
4) Loading Stations: fill safeguards; curbs and drains; warning signs/improper disconnect protection; secondary containment
5) Alarm Systems: to detect unauthorized discharge flows, pH excursions, etc.

C. Equipment to Contain Spills
1) Booms, barriers, sweeps, and fenders; surface collecting agents; absorbent materials; skimmers, oil/water separators; sumps; sewer plugs.
2) Address secondary containment system. A facility which has spill potential should provide secondary containment systems wherever possible.
a) Diking is the most effective secondary containment for bulk chemical storage. Dikes can be constructed from concrete, cinder blocks, or earth. They should contain 110% of the largest tank capacity, or water from a maximum 24 hour/ten year rainfall event, whichever is greater. Design of the dike should include the containment of a spraying leak from the side of the tank or baffles could be installed on top of the dike to deflect spray and cause it to drop into the containment area.
b) Diversion of flow of spilled material away from its naturally expected path can also be an effective means of secondary containment. Diversionary structures consist of curbs, sumps or gutters which divert spilled material to the collection tank.

D. Procedures
1) Many operation and maintenance procedures are common-sense and should be included in the Plan.

Good housekeeping includes chemical storage and prompt spill cleanup to prevent reaching the sewage system. Preventive maintenance includes periodic inspections and equipment testing, adjustment, repair, or parts replacement. A security system to prevent facility site entry would reduce the risk of illegal activities that could cause a slug or spill.

2) Examples of operating and maintenance procedures are listed below:
    a) Inspect chemical storage vessels, and process vessels and fittings (pumps, valves, piping): Appropriate materials of construction are to be used that are compatible with chemicals being processed. Inspections and monitoring frequencies should be listed.
    b) Inspect foundations and supports of large tanks, vessels, and piping:
    c) Above-ground vessels should be protected with truck guards. Underground vessels and pipes should be protected from physical and corrosion damage.
    d) Liquid level control devices placed on open tanks, use grounding apparatus (where necessary): Overflow, temperature and pressure alarms should be installed.
    e) Use proper drum handling equipment: No scooping drums with forks of a fork truck. Use pallets. Oil dispensing racks should be provided with drip pans.
    f) Secure loading/unloading pump station controls: Warning signs or crossing gates should be used to prevent trucks from driving away while the loading hose is connected.
    g) Eliminate all unnecessary cross connections: Unnecessary floor drains should be plugged, especially in high-risk areas.
    h) Utilize automatic storm water and/or sewer sampling systems to monitor for spills: Systems can have automatic shut-off devices to prohibit discharge.

SECTION 5: EMERGENCY RESPONSE EQUIPMENT AND PROCEDURES

Information in this section of the Plan includes an inventory of available emergency response equipment and a description of emergency response procedures.

A. Equipment
    1) Communication equipment and alarms: Phone, intercom, radio, alarm, etc.
    2) Spill containment and control equipment and tools: Absorbent materials and dry chemicals.
    3) Spilled material storage containers: Spills must be contained and removed as soon as possible to prevent spreading into other areas.
    4) Protective clothing and respirators (if needed):
        - flameproof protective clothing
        - rubber gloves
        - apron
        - goggles/face mask
        - hard hat
        - self-contained breathing apparatus
    5) First aid kits: Immediately available for use if necessary. State the location of first aid kits.
    6) Ventilation equipment: Tests should be made for explosive atmosphere, toxic gases and oxygen deficiency. Ventilate area if needed.
    7) Decontamination equipment: Appropriate protective clothing and monitoring equipment should be used for radioactive material.
    8) Fire extinguishing systems: Locations should be posted throughout the plant.

B. Procedures: Spill plans should contain a spill response description. Procedures should minimize danger to human health and to assist in containment and cleanup of a spill.
    1) Notification of proper facility personnel: The proper qualified person should respond to a spill. This person(s) should be familiar with the Plan and have the authority to initiate emergency response procedures. Signs indicating this contact and their phone number should be posted.
    2) Evacuation procedures: An evacuation plan should be posted. The plan should contain: (1) a map of evacuation routes, (2) a map of alternative evacuation routes, and (3) a description of signals used to begin and conduct an evacuation.
    3) Notification of response agencies and contractors: A list of spill response agencies and phone numbers should be posted. In the event of a spill, the appropriate response agency should be notified immediately.
    4) Spill assessment and response procedures: Those designated to carry out spill response procedures should assess the spill. The origin of the spill and the impact should be assed. Spill response procedures that should be included in the plan:
        a) Notification of facility personnel by activating the communication and/or alarm system
        b) Begin evacuation procedures if necessary
        c) Notification of appropriate local, state, and federal agencies
        d) Stop the flow by shutting off pumps or closing valves
        e) Prevent contact between incompatible materials
        f) Commence clean-up activities

g) Submit necessary reports

5) Procedures for clean-up, treatment, and/or disposal of spilled materials: Spilled material should be treated or disposed of to eliminate health and safety hazards. Information pertaining to treatment and disposal methods used by the facility should be included in the Plan. If outside contractors and/or consultants are utilized in clean-up, treatment, or disposal, the plan should include the company name, contact person and phone number.

These procedures should be consistent with the ones established in the facility's OSHA Emergency Action Plan, as required by 29 CFR §1910.38

SECTION 6: DAMAGE CONTROL
Information in this section of the plan should describe how the facility plan will limit damage to the environment and the wastewater treatment plant.

SECTION 7: TRAINING PROGRAM

A. The Plan should contain an outline of the training program given to employees. Specialized training should also be provided to each employee or group of employees that handle potentially dangerous chemicals.

B. Periodic training sessions should be conducted to assure understanding of the Plan.
   1) New employees should be trained immediately upon employment.
   2) Employees should also be notified and retrained with any Plan changes.
   3) Training records should be maintained and kept three years from the date the employee last worked at the facility.
   4) Periodic drills should be set up. The purpose and frequency of drills should be indicated in the Plan.

SECTION 8: CERTIFICATION
BASED ON MY INQUIRY OF THE PERSON OR PERSONS DIRECTLY RESPONSIBLE FOR MANAGING COMPLIANCE WITH THE SLUG/SPILL CONTROL MEASURES IN THE SLUG/SPILL PLAN, I CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF, THIS FACILITY IS IMPLEMENTING THE SLUG CONTROL PLAN SUBMITTED TO THE RACINE WASTEWATER UTILITY.

_____ _____

NAME DATE

_____

TITLE OF AUTHORIZED REPRESENTATIVE

8. COMPLIANCE SCHEDULE REPORT:

An industrial user subject to a compliance schedule shall submit to the Utility, not later than 14 days following each date in the compliance schedule, a progress report. The report must indicate whether or not the increment of progress was met on the date, the reason for delay, and the steps taken by the permittee to return to the established schedule.

Compliance schedule progress reports: The following conditions shall apply to the compliance schedule required by section 98-153(b)(1)b.7. of the wastewater ordinance:

a. The schedule shall contain progress increments in the form of dates for the commencement and completion of major events leading to the construction and operation of additional pretreatment required for the user to meet the applicable pretreatment standards (such events include, but are not limited to, hiring an engineer, completing preliminary and final plans, executing contracts for major components, commencing and completing construction, and beginning and conducting routine operation);
b. No increment referred to above shall exceed nine months; The Wastewater Director may reduce any increment referred to above pending the severity of the noncompliance and compliance history of the user;
c. The user shall submit a progress report to the Wastewater Director no later than 14 days following each date in the schedule and the final date of compliance including, as a minimum, whether or not it complied with the increment of progress, the reason for any delay, and, if appropriate, the steps being taken by the user to return to the established schedule; and
d. In no event shall more than nine months elapse between such progress reports to the Wastewater Director.

9. NOTIFICATION OF HAZARDOUS WASTES IN DISCHARGE REPORT

An industry which discharges any amount of acute hazardous waste according to s. NR 661.30 (4) or 661.33 (5); or more than 15 kilograms per calendar month of any substance that would be hazardous waste according to ch. NR 661 if otherwise disposed, to the sanitary sewer shall notify the POTW, the WDNR's Bureau of Solid Waste and the EPA Region V Waste Management Division Director in writing, of any discharge into the POTW of a substance

which, if otherwise disposed of, would be a hazardous waste under 40 CFR Part 261. Such notification must include the name of the hazardous waste, the EPA hazardous waste number and the type of discharge (batch, continuous or other); and submit a certification that the industrial user has a program in place to reduce to the extent economically practicable the volume and toxicity of the generated hazardous wastes. If the user discharges more than one hundred (100) kilograms of such waste per calendar month to the POTW, the notification also shall contain the following information to the extent such information is known and readily available to the user: an identification of the hazardous constituents contained in the wastes, an estimation of the mass and concentration of such constituents in the wastestream discharged during that calendar month, and an estimation of the mass of constituents in the wastestream expected to be discharged during the following twelve (12) months. All notifications must take place no later than one hundred and eighty (180) days after the discharge commences. Any notification under this section needs to be submitted only once except for notification of changed discharge in section 98-153(b)(5). The notification requirement in this section does not apply to pollutants already reported by users subject to categorical pretreatment standards under self-monitoring requirements. In the case of any new regulations under section 3001 of RCRA identifying additional characteristics of hazardous waste or listing any additional substance as a hazardous waste, the user must notify the Wastewater Director, the EPA Regional Waste Management Waste Division Director, and State hazardous waste authorities of the discharge of such substance within ninety (90) days of the effective date of such regulations.

10. CERTIFICATION STATEMENTS for REPORTS:

All wastewater discharge permit applications, baseline monitoring reports, 90-day compliance reports categorical industrial user periodic reports on continued compliance and any other user reports containing analytical data, including reports from non-categorical permitted industrial users must be signed by an authorized representative of the user as specified, as follows, and contain the following certification statement:

> "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

AUTHORIZED REPRESENTATIVE DEFINITION – for signing reports:

a. If the industrial user is a corporation, the certification shall be signed by:
   i. A president, secretary, treasurer, vice-president in charge of a principal business function or any other person who performs similar policy or decision making functions for the corporation;

   ii. The manager of one or more manufacturing facilities provided the manager is authorized to make decisions which govern the operation of the facility, make major capital investment recommendations, initiate and direct comprehensive measures to assure long-term compliance with environmental laws, can ensure the necessary systems are established to gather complete and accurate information for the report and where authority to sign documents has been delegated to the manager according to the corporation's procedures; or

   iii. A representative of a person described above if the representative has been authorized according to d. below.

b. If the industrial user is a partnership, the certification statement shall be signed by either a general partner of a representative authorized according to d. below.
c. If the industrial user is a sole proprietorship, the certification statement shall be signed by either the proprietor or a representative authorized according to d. below.
d. Authority to sign the certification statement may be delegated if:
   The person to whom authority is delegated is an individual or occupies a position with responsibility for:
   - The overall operation of the facility from which the discharge occurs, such as a plant manager; or
   - The overall environmental matters for the company, such as a corporate environmental officer; and
   - A written authorization is submitted to the control authority. If circumstances change so that an authorization is no longer accurate, the industrial user shall submit a new authorization before or along with the submission of any report signed by a new representative.
e. Signed statements shall be submitted to the following address:

Amanda Kaminski
Field Services Director
Racine Wastewater Utility
800 Center Street
City Hall Annex, Room 227
Racine, Wisconsin 53403

11. PERMITS ISSUED

All significant users are required to obtain a wastewater discharge permit. All new users proposing to connect to or to contribute to the wastewater works shall be surveyed to determine their need to obtain a wastewater discharge permit before connecting to or contributing to the POTW. All significant users that have facilities in more than one geographic location will be issued separate wastewater discharge permits for each facility. An individual wastewater discharge permit shall include such conditions as are deemed reasonably necessary by the Wastewater Director to prevent pass-through or interference, protect the quality of the receiving water, protect worker health and safety, facilitate sludge management and disposal, and protect against damage to the POTW. All permits must contain:

a. A statement that indicates the wastewater discharge permit issuance date, expiration date and effective date;
b. A statement that the wastewater discharge permit is issued to a specific industrial user for a specific operation. A wastewater discharge permit shall not be reassigned or transferred or sold to a new significant user without the written permission of the Utility.
c. Effluent limits, including Best Management Practices, based on applicable Pretreatment Standards and local limits;
d. Self-monitoring, sampling, reporting, notification, and record-keeping requirements. These requirements shall include an identification of pollutants (or best management practice) to be monitored, sampling location, sampling frequency, and sample type based on Federal, State, and local law.
e. A new wastewater discharge applicant or industry user applying for permit renewal shall sample for suspected TTO compounds. Any toxic organic compound found in the user's discharge at a concentration greater than 0.01 mg/l will be summed for a determination of compliance with the TTO limit specified in section 98-151(d). If an individual identified TTO is below 0.01 mg/l, no sampling for that TTO compound will be required for the duration of the permit.
f. A statement of applicable civil and criminal penalties for violation of pretreatment standards and requirements, and any applicable compliance schedule. Such schedule may not extend the time for compliance beyond that required by applicable federal, state, or local law.
g. Requirements to control slug discharge, if determined by the Wastewater Director to be necessary.

Other permits. The Wastewater Director may require other users to obtain wastewater discharge permits as necessary to carry out the purpose of this division. Industries that do not discharge process waste, or discharge minimal amounts of wastewater, but are still considered by the Wastewater Director to have the potential to impact the POTW, may be issued a minimal or no-discharge permit. This permit is approved only after the Wastewater Director has inspected the facility. A slug discharge plan must be on file with the utility. The facility will be inspected annually to confirm the no discharge status of the facility. Groundwater discharge permits may be required in accordance with Chapter 98-151(o).

h. Excepting that upon finding that a user meeting the criteria of a significant non-categorical user has no reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement, the Wastewater Director may at any time, on its own initiative or in response to a petition received from a user, and in accordance with procedures in 40 CFR 403.8(f)(6), determine that such user should not be considered a significant industrial user. Such user shall be classified as a non-significant industrial user.

12. PERMIT APPLICATION

Application: Users required to obtain a wastewater discharge permit shall complete and file with the utility an application in the form prescribed by the utility, and accompanied by a permit fee as specified in section 98-154 of the wastewater ordinance. Significant users shall submit a permit application for a wastewater discharge permit within 90 days after the effective date of this division, and proposed new significant users shall submit a permit application at least 90 days prior to connecting to or contributing to the POTW. Users which plan to become significant users by changing their wastewater volume and/or characteristics shall submit a permit application at least 90 days before the proposed process wastewater is discharged to the sewerage system. A 180-day baseline report may be substituted for the permit application. New users shall submit estimates for those required items where actual data is not yet available. The permit application shall be signed by an authorized representative of the industrial user, and certified by a qualified professional. In support of the application, the significant user shall submit, in units and terms appropriate for evaluation, the following information:

a. Name, address and location for each facility (if different from the address), including the name of the operator

and owner;

b. Contact information, description of activities, facilities and plant production processes on the premises;
c. Any environmental control permits held by or for the facility;
d. SIC number according to the Standard Industrial Classification Manual, Bureau of the Budget, 1972, as amended; or NAICS code according to the North American Industrial Classification System (1997);
e. Description of operations:
    i. A brief description of the nature, activities, average rate of production (including each product produced by type, amount, processes, and rate of production). This description should include a schematic process diagram, which indicates points of discharge to the POTW from the regulated processes.
    ii. Types of waste generated, and a list of all raw materials and chemicals used or stored at the facility which are, or could accidentally or intentionally be, discharged to the POTW; a spill plan may be required if deemed necessary for permit approval. The spill plan shall meet all requirements as found in section 98-151(m).
    iii. Number and type of employees, hours of operation, and proposed or actual hours of operation;
    iv. Type and amount of raw materials processed (average and maximum per day);
    v. Site plans, floor plans, mechanical and plumbing plans, and details to show all sewers, floor drains, and appurtenances by size, location, and elevation, and all points of discharge, and all connections to the municipal sanitary sewer system by size and location;

f. Wastewater constituents and characteristics for each facility, including but not limited to, those standards mentioned in section 98-151 of this division as determined by a reliable analytical laboratory; sampling and analysis if required by categorical pretreatment standards shall be performed in accordance with procedures established by the EPA pursuant to section 304(h) of the Act and contained in 40 CFR, part 136, as amended. In the case of new industrial users, item 3 shall mean projected wastes;
g. Times and duration of wastewater contribution for each facility;
h. The location for monitoring all wastes covered by the permit.
i. Flow measurement. Information showing the measured average daily and maximum daily flow in gallons per day, to the POTW from regulated process streams and other streams, as necessary, to allow use of the combined wastestream formula (40 CFR 403.6(e));
j. Measurement of pollutants.
    i. If any categorical pretreatment standard is applicable, each regulated process and any new categorically regulated processes for existing sources.
    ii. The results of sampling and analysis identifying the nature and concentration, and/or mass, where required by any city, state, or national categorical pretreatment standard or by the Wastewater Director, of regulated pollutants in the discharge from each regulated process.
    iii. Instantaneous, daily maximum and long-term average concentrations, or mass, where required, shall be reported.
    iv. Analysis of suspected TTO compounds shall be reported. If an identified TTO compound is below 0.01 mg/l, no sampling for that TTO compound will be required for the duration of the permit.
    v. The sample shall be representative of daily operations and shall be analyzed in accordance with procedures set out in section 98-153(b)(9) of the code. Where any pretreatment standard requires compliance with a BMP or pollution prevention alternative, the industrial user shall submit documentation as required by the Wastewater Director or the applicable pretreatment standard to determine compliance with the standard.
    vi. The sample shall be representative of daily operations and shall be analyzed in accordance with procedures set out in section 98-153(b)(9) of the code. Where any pretreatment standard requires compliance with a BMP or pollution prevention alternative, the industrial user shall submit documentation as required by the Wastewater Director or the applicable pretreatment standard to determine compliance with the standard.
    vii. Sampling must be performed in accordance with procedures set out in section 98-153(b) reporting requirements and 98-153(b)(10) sample collection, of the code.
    viii. Sampling must be performed in accordance with procedures set out in section 98-153(b) reporting requirements and 98-153(b)(10) sample collection, of the code.
    ix. The nature and concentration of any pollutants in the discharge which are limited by any city, state, or national categorical pretreatment standards, and a statement regarding whether or not the pretreatment standards are being met on a consistent basis and if not, whether additional operation and maintenance and/or additional pretreatment is required for the significant user to meet applicable categorical pretreatment standards at each facility;
k. If additional pretreatment and/or operation and maintenance will be required to meet the categorical pretreatment standards, the significant user shall submit the shortest schedule by which the significant user will provide such additional treatment. The completion date in this schedule shall not be later than the compliance

date established for the applicable categorical pretreatment standard. The following conditions shall apply to this schedule:

i. The schedule shall contain increments of progress in the form of dates for the commencement and completion of major events leading to the construction and operation of additional pretreatment required for the significant user to meet the applicable categorical pretreatment standards (e.g., hiring an engineer, completing preliminary plans, completing final plans, executing contract for major components, commencing construction, completing construction, etc.). No increment shall exceed nine months.

ii. Not later than 14 days following each date in the schedule and the final date for compliance, the significant user shall submit a report to the Wastewater Director if the significant user has not complied with the increment of progress to be made on such date, the date on which the significant user expects to comply with this increment of progress, the reason for delay, and the steps being taken by the significant user to return the construction to the schedule established.

l. Conditions. Wastewater discharge permits shall be expressly subject to all provisions of the wastewater ordinance and all other applicable regulations, user charges and fees established by the utility. Permits shall contain the following:

i. Requirements for installation and maintenance of inspection and sampling facilities and equipment, including flow measurement devices;

ii. Requirements for installation and maintenance of pretreatment facilities or technology, pollution control, or construction of appropriate containment designed to reduce, eliminate or prevent the introduction of pollutants into the POTW;

iii. Requirements for notification to the utility of any new introduction of wastewater constituents or any substantial change in the volume or character of the wastewater constituents being introduced into the wastewater treatment system;

iv. Requirements for maintaining and retaining plant records relating to wastewater discharge as specified by the utility, and affording utility access thereto;

v. Requirements for the development and implementation of spill control plans or other special conditions including management practices necessary to adequately prevent accidental, unanticipated, or non-routine discharges per section 98-151(m); and notification of slug discharges as per section 98-153(b)(6);

vi. A statement that indicates wastewater discharge permit duration, which in no instance shall exceed five years;

vii. Effluent limits based on applicable pretreatment standards;

viii. Self-monitoring, sampling, reporting, notification, and recordkeeping requirements. These requirements shall include an identification of pollutants to be monitored, sampling location, sampling frequency, and sample type based on federal, state, and local law;

ix. A statement of applicable civil and criminal penalties for violation of pretreatment standards and requirements, and any applicable compliance schedule. Such schedule may not extend the time for compliance beyond that required by applicable federal, state, or local law; and

x. Other conditions as deemed appropriate by the utility to ensure compliance with this division.

m. Timing. Written reports will be deemed to have been submitted on the date postmarked. For reports that are not mailed, postage prepaid, into a mail facility serviced by the United States Postal Service, the date of receipt of the report shall govern.

All the above reports shall be signed and sworn to by a principal executive officer, or his designee as described in SECTION 3, part 15.

All reports shall be submitted to the following address:

Amanda Kaminski
Field Services Director
Racine Wastewater Utility
800 Center Street
City Hall Annex, Room 227
Racine, Wisconsin 53403

SECTION 4: GENERAL CONDITIONS

Wastewater discharge permits are subject to the provisions of Chapter 98 of the Code of General Ordinances of the City of Racine. The Industrial Discharge Permit contains key elements of the Code. The entire Code is available on the City of Racine website.

1. **PERMIT DURATION:**
Permits shall be issued for a period not to exceed five years. A significant user shall apply for permit reissuance a minimum of 90 days prior to the expiration of the user's existing permit. The terms and conditions of the permit may be subject to modifications by the utility during the term of the permit as limitations or requirements identified in section 98-151 are modified or as other just causes exist. A significant user shall be informed of any proposed changes in its permit at least 30 days prior to the effective date of change. Any changes or new conditions in the permit shall include a reasonable time schedule for compliance. All wastewater discharge permits issued to a particular user are void upon the issuance of a new wastewater discharge permit to that user. Expired discharge permits remain in effect until the new permit is issued by the utility.

2. **CONTINUATION OF EXPIRED PERMITS:**
An expired permit will continue to be effective and enforceable until the permit is reissued if:
   a. The permittee has submitted a complete permit application at least ninety (90) days prior to the expiration date of the user's existing permit.
   b. The failure to reissue the permit, prior to expiration of the previous permit, is not due to any act or failure to act on the part of the permittee.

3. **PERMIT CONDITIONS:**
   a. REISSUANCE. Permitted industrial users with an expiring permit shall apply for a wastewater discharge permit reissuance by submitting a complete permit application a minimum of 90 days prior to the expiration of the existing discharge permit.
   b. DISCHARGE PERMIT DECISION. Within 30 days of receipt of a complete wastewater discharge permit application, the Wastewater Director will determine whether or not to issue a wastewater discharge permit. The Wastewater Director will evaluate the data furnished by the user and may require additional information. The Wastewater Director may deny any application for a wastewater discharge permit.
   c. ANALYTICAL REQUIREMENTS. All pollutant analyses, including sampling techniques, to be submitted as part of a wastewater discharge permit application or report shall be performed in accordance with the techniques prescribed in 40 CFR, Part 136 and amendments thereto, unless otherwise specified in an applicable categorical pretreatment standard. If 40 CFR, Part 136 does not contain sampling or analytical techniques for the pollutant in question, sampling and analyses shall be performed in accordance with procedures approved by EPA. Where an industrial user requires compliance with a Best Management Practice or pollution prevention alternative, the user shall submit documentation as required by the POTW or the applicable standard to determine compliance.
   d. SAMPLE COLLECTION. Sampling and analysis shall be performed by all significant industrial users (categorical and non-categorical) to identify the concentration or mass of regulated pollutants in the discharge from each regulated process, according to the requirements of the applicable categorical pretreatment standard and the utility. Both daily maximum and average values shall be reported.
      - Except as indicated below, the user shall collect wastewater samples using 24-hour flow proportional composite collection techniques. In the event flow proportional sampling is not feasible, the Wastewater Director may authorize the use of time proportional sampling or grab samples where the user demonstrates that this will provide a representative sample of the effluent being discharged. Sampling requirements are documented in each individual industrial discharge permit.
      - In addition, grab samples may be required to show compliance with instantaneous discharge limits. Samples for oil and grease, temperature, pH, cyanide, phenols, sulfides, and volatile organic compounds shall be obtained using grab collection techniques. Using protocols (including appropriate preservation) specified in 40 CFR Part 136 and appropriate EPA guidance, multiple grabs samples collected during a 24-hour period may be composited prior to the analysis as follows: for cyanide, total phenols, and sulfides the samples may be composited in the laboratory or the field. Composite samples for other parameters unaffected by the compositing procedures documented in approved EPA methodologies may be authorized by the utility, as appropriate.
      - For sampling required in support of baseline monitoring and 90-day compliance reports [40 CFR 403.12(b) and (d)], a minimum of four (4) grab samples must be used for pH, cyanide, total phenols, oil and grease, sulfide and volatile organic compounds for facilities for which historical sampling data do not exist.
      - For facilities for which historical sampling data are available, the Wastewater Director may authorize a lower minimum of one grab sample of each parameter where grab samples are required.

- For the periodic reports required by the industrial user discharge permit, the industrial user is required to collect the number of grab samples necessary (as indicated by discharge permit) to assess and assure compliance by with applicable pretreatment standards and requirements.

4. PERMIT MODIFICATION:

Any significant user with an existing wastewater discharge permit shall submit to the Wastewater Director within 180 days after the promulgation of an applicable national categorical pretreatment standard the information required by section 98-153(a)(4) Application. Where a significant user, subject to national categorical pretreatment standards, has not previously submitted an application for a wastewater discharge permit, the significant user shall apply for a wastewater discharge permit within 180 days after the promulgation of the applicable national categorical pretreatment standards.

The Wastewater Director may modify a wastewater discharge permit for good cause, including, but not limited to the following reasons:

a. To incorporate any new or revised federal, state, or local pretreatment standards or requirements;
b. To address significant alterations or additions to the user's operation, processes, or wastewater volume or character since the time of wastewater discharge permit issuance;
c. A change in the POTW that requires either a temporary or permanent reduction or elimination of the authorized discharge;
d. Information indicating that the permitted discharge poses a threat to the utility's POTW, personnel, or the receiving waters, or the beneficial use of treatment plant sludge;
e. Violation of any terms or conditions of the wastewater discharge permit;
f. Misrepresentations or failure to fully disclose all relevant facts in the wastewater discharge permit application or in any required reporting;
g. Revision of or a grant of variance from categorical pretreatment standards pursuant to 40 CFR 403.13;
h. To correct typographical or other errors in the wastewater discharge permit;
i. Upon request of the user, provided such request does not create a violation of any applicable requirements, standards, laws, or rules and regulations.

The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

5. REVOCATION OF WASTEWATER DISCHARGE PERMIT

Any industrial user which violates the following conditions of this division, or applicable state and federal regulations, is subject to having its individual wastewater discharge permit revoked in accordance with the procedures of section 98-155. The Wastewater Director may revoke a wastewater discharge permit for good cause, including, but not limited to, the following reasons:

- Failure to notify the Wastewater Director of significant changes to the wastewater prior to the changed discharge;
- Failure to provide prior notification to the Wastewater Director of changed conditions pursuant to section 98-153(b)(5) of the wastewater ordinance;
- Misrepresentation or failure to fully disclose all relevant facts in the wastewater discharge permit application;
- Falsifying self-monitoring reports and certification statements;
- Is found tampering or to have tampered with sampling or flow measurement equipment, samples, and/or analyses being conducted by or at the direction of the utility. ;
- Refusing to allow the Wastewater Director timely access to the facility premises and records;
- Failure to meet effluent limitations;
- Failure to pay fines;
- Failure to pay sewer charges;
- Failure to meet compliance schedules;
- Failure to complete a wastewater survey or the wastewater discharge permit application;
- Failure to provide advance notice of the transfer of business ownership of a permitted facility;
- Violation of any pretreatment standard or requirement, or any terms of the wastewater discharge permit or this division;
- Failure of an industrial user to factually report the wastewater constituents and characteristics of its discharge;
- Failure of the industrial user to report significant changes in operations, or wastewater constituents and characteristics.
- The utility may also revoke the wastewater treatment service and/or a wastewater discharge permit when such revocation is necessary, in the opinion of the utility, in order to stop an actual or threatened discharge which presents or may present an imminent or substantial endangerment to the health or

welfare of persons, to the environment, causes interference to the POTW or causes the utility to violate any condition of its WPDES permit.

6. **APPEALS PROCEDURE:**
A user desiring to appeal regarding the wastewater discharge permit denial or conditions shall, not more than 20 days after the user receives notice of denial or receives the wastewater discharge permit with conditions, file a petition for appeal with the wastewater commission for referral to the board of standards. If the user does not file a petition for appeal within said time, the action on the wastewater discharge permit is final. In its petition, the appealing party shall indicate the wastewater discharge permit action or provisions objected to, the reasons for the objection, and the alternative conditions, if any, it seeks to place in the wastewater discharge permit. The effectiveness of the wastewater discharge permit shall not be stayed pending the appeal.

7. **PERMIT TRANSFER:**
Wastewater discharge permits are issued to a specific significant user for a specific operation. A wastewater discharge permit shall not be reassigned or transferred or sold to a new significant user without the written permission of the Utility.

8. **UTILITY'S RIGHT OF REVISION:**
The Utility reserves the right to establish by ordinance more stringent limitations or requirements on discharges to the POTW if deemed necessary to comply with the objectives presented in Section 98-150 of the Racine wastewater ordinance.

9. **VIOLATIONS**
Any violation of the terms and conditions of a wastewater discharge permit shall be deemed a violation of the wastewater ordinance and subjects the wastewater discharge permittee to the sanctions set out in the ordinance. Obtaining a wastewater discharge permit does not relieve a permittee of its obligation to comply with all federal and state pretreatment standards or requirements or with any other requirements of state, federal, and local law.

10. **MONITORING FACILITIES:**
The industrial user is required to provide and operate at its own expense, monitoring facilities to allow inspection, sampling, and flow measurement of the building sewer and/or internal drainage systems. The monitoring facility should be situated on the industrial user's premises, but, when such a location would be impractical or cause undue hardship on the industrial user, the facility may be constructed in the public street or sidewalk area and located so that it will not be obstructed by landscaping or parked vehicles and comply with Wis. Stats. § 66.0425. There shall be ample room in or near such sampling manhole or facility to allow accurate sampling and preparation of samples for analysis. The facility shall be maintained at all times in a safe and proper operating condition at the expense of the industrial user. Whether conducted on public or private property, the sampling and monitoring facilities shall be provided in accordance with the utility's requirements and all applicable local construction standards and specifications. Construction shall be completed within 90 days following written notification by the utility, unless a time extension is otherwise granted by the utility.

11. **CHOICE OF MONITORING LOCATION:**
Where a treated regulated process waste stream is combined prior to treatment with wastewaters other than those generated by the regulated process, monitoring of either the segregated process waste stream or the combined waste stream for the purpose of determining compliance with applicable Pretreatment Standards is allowed. If monitoring the segregated process waste stream, the applicable categorical Pretreatment Standard will apply. If monitoring the combined waste stream, an alternative discharge limit calculated using the combined wastestream formula will apply.
Monitoring points may change only after receiving approval from the Racine Wastewater Utility.

12. **INSPECTION AND SAMPLING:**
The utility shall inspect the facilities of any industrial user to ascertain whether the purpose of Chapter 98 is being met and all requirements are being complied with. Persons or occupants or premises where wastewater is created or discharged shall allow the utility or their representative ready access at all reasonable times to all parts of the premises for the purposes of inspection, sampling, records examination, or in the performance of any of their duties. The utility, DNR, and EPA shall have the right to set up on the industrial user's property such devices as are necessary to conduct sampling inspection, compliance monitoring, and/or metering operations; as well as facility and documentation inspection to assess compliance with Best Management Practices, including, but not limited to, mercury reduction, kitchen FOG management, and vehicle service fluid and vehicle wash management. Where an industrial or commercial user has security measures in force which would require proper identification and clearance before entry into their premises, the industrial or commercial user shall make necessary arrangements

with its security guards so that upon presentation of suitable identification, personnel from the utility, DNR, and EPA will be permitted to enter, without delay, for the purposes of performing their specific responsibilities.

a. The Wastewater Director shall have the right to set up on the user's property, or require installation of, such devices as are necessary to conduct sampling and/or metering of the user's operations.
b. The Wastewater Director may require the user to install monitoring equipment as necessary. The facility's sampling and monitoring equipment shall be maintained at all times in a safe and proper operating condition by the user at its own expense. All devices used to measure wastewater flow and quality shall be calibrated to ensure their accuracy.
c. Any temporary or permanent obstruction to safe and easy access to the facility to be inspected and/or sampled shall promptly be removed by the user at the written or verbal request of the Wastewater Director and shall not be replaced. The costs of clearing such access shall be born by the user.
d. Unreasonable delays in allowing the Wastewater Director access to the user's premises shall be a violation of this division.
e. Monitoring points may change only after receiving written approval from the Wastewater Director.

13. SPECIAL INSPECTION WARRANTS:

If the Wastewater Director has been refused access to a building, structure, or property, or any part thereof, and is able to demonstrate probable cause to believe that there may be a violation of this division, or that there is a need to inspect and/or sample as part of a routine inspection and sampling program designed to verify compliance with this division or any permit or order issued hereunder, or to protect the overall public health, safety and welfare of the community, then the Wastewater Director may seek issuance of a special inspection warrant from an appropriate court.

12. CHANGE IN FLOW AND WASTEWATER CHARACTERISTICS:

The permittee shall inform the Racine Wastewater Utility at least 90 days before the initiation of any new introduction of wastewater constituents or any substantial change in the volume (+ or – 20%) or character of the wastewater constituents being introduced into the Racine POTW.

13. BYPASS OF TREATMENT FACILITIES:

Bypass means the intentional diversion of wastestreams from any portion of the user's treatment facility

Bypass is prohibited unless it is unavoidable to prevent loss of life, personal injury, or severe property damage or there are no feasible alternatives; and

The permittee may allow bypass to occur which does not cause effluent limitations to be exceeded, but only if it is also for essential maintenance to assure efficient operation;

NOTIFICATION OF BYPASS:

a. Anticipated bypass. If the permittee knows in advance of the need for bypass, it shall submit prior written notice, at least ten days before the date of the bypass, to the wastewater utility.
b. Unanticipated bypass. The permittee shall submit oral notice within 24 hours from the time the user becomes aware of the bypass to the wastewater utility and submit a written notice to the utility within five days. This report shall specify:
    i. A description of the bypass and its cause, including its duration, including exact dates and times;
    ii. Whether the bypass has been corrected, and, if the bypass has not been corrected, the anticipated time it is expected to continue, and
    iii. The steps being taken or to be taken to reduce, eliminate and prevent a reoccurrence of the bypass.
    iv. The Wastewater Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

14. EXCESSIVE DISCHARGE (DILUTION):

No user shall ever increase the use of process or potable water or attempt to dilute a discharge as a partial or complete substitute for adequate treatment to achieve compliance with the limitations contained in the categorical pretreatment standards or this division. The Wastewater Director may impose mass limitations on users that are using dilution to meet applicable pretreatment standards or requirements or in other cases when the imposition of mass limitations is appropriate. Mass limit determination shall be in accordance with Chapter 98-151(d)b.

15. PRETREATMENT:

Users shall provide wastewater treatment as necessary to comply with the wastewater ordinance and shall achieve compliance with all categorical pretreatment standards, local limits, and the prohibitions set out in section 98-151 of the wastewater ordinance within the time limitations specified by EPA, the state, or the Wastewater Director, whichever is more stringent. Any facilities necessary for compliance shall be provided, operated, and maintained at

the user's expense. Detailed plans describing such facilities and operating procedures shall be submitted to the WDNR and Wastewater Director for review, and shall be acceptable to the WDNR and Wastewater Director before such facilities are constructed. The review of such plans and operating procedures shall in no way relieve the user from the responsibility of modifying such facilities as necessary to produce a discharge acceptable to the utility under the provisions of this division. No person shall do such work that is within the purview of the city building, plumbing or electrical code without first obtaining required permits.

16. **COMPLIANCE WITH APPLICABLE PRETREATMENT STANDARDS AND REQUIREMENTS:**
Compliance with this permit does not relieve the permittee from its obligations regarding compliance with any and all applicable local, state and federal pretreatment standards and requirements including any such standards or requirements that may become effective during the term of this permit.

17. **SLUDGES GENERATED:**
Sludges, floatables, skimmings, etc., generated by an industrial or commercial pretreatment system shall not be placed into the wastewater works. Such sludges shall be contained, transported, and disposed of by haulers in accordance with all federal, state and local regulations.

18. **POTW INTERFERENCE:**
No user shall contribute or cause to be contributed, directly or indirectly, any pollutant or wastewater which causes pass-through or will interfere with the operations or performance of the wastewater works. These general prohibitions apply to all such users of the wastewater works whether or not the user is subject to national categorical pretreatment standards or any other national, state, or local pretreatment standards or requirements.

19. **FALSIFYING INFORMATION:**
The permittee shall not make any false statements, representation or certification on any application, record, report, plan, or other document filed or required to be maintained pursuant to Chapter 98 of the Code of General Ordinances, or wastewater discharge permit. The permittee shall not falsify, tamper with or knowingly render inaccurate any monitoring device or methods required by Chapter 98.

20. **CONFIDENTIAL INFORMATION:**
Information and data concerning a user which may be obtained from reports, surveys, wastewater discharge permit applications, wastewater discharge permits, and monitoring programs, and from the Wastewater Director's inspection and sampling activities, shall be available to the public without restriction, unless the user specifically requests, and is able to demonstrate to the satisfaction of the Wastewater Director, that the release of such information would divulge information, processes, or methods of production entitled to protection as trade secrets under applicable state law. Any such request must be asserted at the time of submission of the information or data. When requested and demonstrated by the user that such information should be held confidential, the portions of a report which might disclose trade secrets or secret processes shall not be made available for inspection by the public, but shall be made available immediately upon request to governmental agencies for uses related to the WPDES program or pretreatment program, and in enforcement proceedings involving the person furnishing the report. Wastewater constituents and characteristics and other "effluent data" as defined by 40 CFR 2.302 will not be recognized as confidential information and will be available to the public without restriction.

21. **SEVERABILITY:**
If any provision, paragraph, word, section or article of Chapter 98 is invalidated by any court of competent jurisdiction, the remaining provision, paragraphs, words, sections, and chapters shall not be affected and shall continue in full force and effect.

22. **ENFORCEMENT**

a. Notice of noncompliance. Whenever the utility finds that any industrial user has violated or is violating this division, wastewater discharge permit, or any prohibition, limitation or requirements contained here, including required Best Management Practices, the utility shall issue the permittee a "notice of noncompliance" for violations, except where serious noncompliance justifies immediate issuance of a notice of violation. The notice of noncompliance will explain the nature of the noncompliance and require that the permittee, within 45 days of the date of notice, file a plan for the correction of the noncompliance. The plan shall be reviewed by the utility and approved if the plan demonstrates that the proposed action will eliminate the violation. If the industrial user does not comply with an approved plan, the utility may take action in accordance with section 98-155.

b. Notice of violation. Whenever the utility finds that any industrial user has violated, continues to violate, or is violating this division, wastewater discharge permit, or any prohibition, limitation or requirements contained herein, including required Best Management Practices, the utility may serve upon such user a written notice of violation stating the nature of the violation. Within 45 days of the date of the notice, a plan for the satisfactory correction thereof shall be submitted to the utility by the industrial user. If the plan is satisfactory

to the utility and the industrial user complies with the plan, the utility may not take further action against the industrial user. Submission of this plan in no way relieves the user of liability for any violations occurring before or after the receipt of the "notice of violation." Nothing in this section shall limit the authority of the Wastewater Director to take any action, including emergency actions or any other enforcement action, without first issuing a notice of violation.

c. Show cause hearing.

i. Notice of hearing. The utility may order a user which has violated, or continues to violate, any provision of this ordinance, an individual wastewater discharge permit, or order issued hereunder, or any other pretreatment standard or requirement, or allows an unauthorized discharge to enter the wastewater works to show cause before the board of standards why the proposed enforcement action should not be taken. A notice shall be served on the industrial user specifying the time and place of a hearing to be held by the board of standards regarding the violation, the reasons why the action is to be taken, the proposed enforcement action, and directing the industrial user to show cause before the board of standards why the proposed enforcement action should not be taken. The notice of the hearing shall be served personally or by registered or certified mail (return receipt requested) at least ten days before the hearing. The notice of the hearing may be served on any agent or officer of a corporation.

ii. Hearing officials. The board of standards may itself conduct the hearing and take evidence, or may designate any of its members or any officer or employee of the utility to:

- Issue in the name of the board of standards notices of hearings requesting the attendance and testimony of witnesses and the production of evidence relevant to any matter involved in such hearings;
- Take evidence;
- Transmit a report of the evidence and hearing, including transcripts and other evidence, together with recommendations to the board of standards for action thereon.

iii. Transcripts. At any hearing held pursuant to this division, testimony taken must be under oath and recorded stenographically. The transcript, so recorded, will be made available to any member of the public or any party to the hearing upon payment of the usual charges thereof.

d. Issuance of orders. After the board of standards has reviewed the evidence, it shall make a recommendation to the utility. Further orders and directives as are necessary and appropriate may be issued by the utility, including, but not limited to, a compliance order, a consent order, a cease and desist order, or other action as deemed necessary and appropriate. If the user violates an order or directive, the utility may take action in accordance with section 98-155.

The remedies provided for in this ordinance are not exclusive. The Wastewater Director may take any, all, or any combination of these actions against a noncompliant user. Enforcement of pretreatment violations will generally be in accordance with the utility's enforcement response plan. However, the Wastewater Director may take other action against any user when the circumstances warrant. Further, the Wastewater Director is empowered to take more than one enforcement action against any noncompliant user.

i. Consent orders. The Wastewater Director may enter into consent orders, assurances of voluntary compliance, or other similar documents establishing an agreement with any user responsible for noncompliance. Such documents will include specific action to be taken by the user to correct the noncompliance within a time period specified by the document. Such documents shall have the same force and effect as the administrative orders and shall be judicially enforceable.

ii. Compliance orders. When the Wastewater Director finds that a user has violated, or continues to violate, any provision of this division, an individual wastewater discharge permit or order issued hereunder, or any other pretreatment standard or requirement, the Wastewater Director may issue an order to the user responsible for the discharge directing that the user come into compliance within a specified time. If the user does not come into compliance within the time provided, sewer service may be discontinued unless adequate treatment facilities, devices, or other related appurtenances are installed and properly operated. Compliance orders also may contain other requirements to address the noncompliance, including additional self-monitoring and management practices designed to minimize the amount of pollutants discharged to the sewer. A compliance order may not extend the deadline for compliance established for a pretreatment standard or requirement, nor does a compliance order relieve the user of liability for any violation, including any continuing violation. Issuance of a compliance order shall not be a bar against, or a prerequisite for, taking any other action against the user.

iii. Cease and desist orders. When the Wastewater Director finds that a user has violated, or continues to violate, any provision of this division, an individual wastewater discharge permit or order issued hereunder, or any other pretreatment standard or requirement, or that the user's past violations are

likely to recur, the Wastewater Director may issue an order to the user directing it to cease and desist all such violations and directing the user to:

- Immediately comply with all requirements; and
- Take such appropriate remedial or preventative action as may be needed to properly address a continuing or threatened violation, including halting operations and/or terminating the discharge.

Issuance of a cease and desist order shall not be a bar against, or a prerequisite for, taking any other action against the user.

23. SIGNIFICANT NONCOMPLIANCE/ANNUAL PUBLICATION:

The Wastewater Director shall publish annually, in a newspaper of general circulation that provides meaningful public notice in the area serviced by the utility, a list of users which, at any time during the previous 12 months, were in significant noncompliance with applicable pretreatment standards and requirements. Significant noncompliance means:

a. Chronic violations of wastewater discharge limits, defined here as those in which 66 percent or more of wastewater measurements taken during a six-month period exceed the daily maximum limit or average limit for the same pollutant parameter by any amount including an instantaneous limit
b. Technical Review Criteria (TRC) violations, defined here as those in which 33 percent or more of wastewater measurements taken for each pollutant parameter during a six-month period equals or exceeds the product of the daily maximum limit or the average limit, including an instantaneous limit, multiplied by the applicable criteria (1.4 for BOD, TSS, fats, oils and grease, and 1.2 for all other pollutants except pH; or exceed a pH limit by 0.4 standard units.)
c. Any other discharge violation that the Wastewater Director believes has caused, alone or in combination with other discharges, interference or pass-through, including endangering the health of POTW personnel or the general public because of a violation of a pretreatment standard or requirement
d. Any discharge of pollutant that has caused imminent endangerment to the public or to the environment, or has resulted in the Wastewater Director's exercise of its emergency authority to halt or prevent such a discharge;
e. Failure to meet, within 90 days of the scheduled date, a compliance schedule milestone contained in a wastewater discharge permit, compliance schedule or enforcement order for starting construction, completing construction, or attaining final compliance
f. Failure to provide within 45 days after the due date, any required reports, including baseline monitoring reports, reports on compliance with categorical pretreatment standard deadlines, periodic self-monitoring reports, and reports on compliance with compliance schedules
g. Failure to accurately report noncompliance
h. Any other violation(s) that the Wastewater Director determines will adversely affect the operation or implementation of the local pretreatment program, including violation of best management practices.

24. EMERGENCY SUSPENSIONS

The Wastewater Director may immediately suspend a user's discharge, after informal notice to the user, whenever such suspension is necessary to stop an actual or threatened discharge which reasonably appears to present or cause an imminent or substantial endangerment to the health or welfare of persons. The Wastewater Director may also immediately suspend a user's discharge, after notice and opportunity to respond, that threatens to interfere with the operation of the wastewater works, or which presents, or may present, an endangerment to the environment.

a. Any industrial user notified of a suspension of the wastewater treatment service and/or the wastewater discharge permit shall immediately stop or eliminate the contribution. In the event of a failure of the industrial user to comply voluntarily with the suspension order, the utility shall take such steps as deemed necessary including immediate severance of the sewer connection, to prevent or minimize damage to the wastewater works or endangerment to any individuals. The utility may reinstate the wastewater discharge permit and/or the wastewater treatment service upon proof of the elimination of the noncomplying discharge.
b. A user that is responsible, in whole or in part, for any discharge presenting imminent endangerment shall submit a detailed written statement, describing the causes of the harmful contribution and the measures taken to prevent any future occurrence, to the Wastewater Director prior to the date of any show cause or termination hearing.

Nothing in this section shall be interpreted as requiring a hearing prior to any emergency suspension under this section.

25. TERMINATION OF DISCHARGE:

Any user which violates the following conditions is subject to termination of discharge privileges:

- Violation of individual wastewater discharge permit conditions;

- Failure to accurately report the wastewater constituents and characteristics of its discharge;
- Failure to report significant changes in operations or wastewater volume, constituents, and characteristics prior to discharge;
- Refusal of reasonable access to the user's premises for the purpose of inspection, monitoring, or sampling; or
- Violation of the pretreatment standards.

Such user will be notified of the proposed termination of its discharge and be offered an opportunity to show cause why the proposed action should not be taken. Exercise of this option by the Wastewater Director shall not be a bar to, or a prerequisite for, taking any other action against the user.

26. LEGAL ACTION

If any industrial user discharges sewage, industrial wastes or other wastes into the utility's wastewater works contrary to the provisions of this division, federal or state pretreatment requirements, or any order of the utility, the utility may commence an action for appropriate legal and/or equitable relief in the appropriate court. The utility may take further action pursuant to section 98-155 and/or section 98-156.

27. CIVIL AND CRIMINAL LIABILITY:

The Department of Natural Resources may seek civil and criminal penalties and injunctive relief from an industrial user or POTW, as necessary, if the WDNR deems that the POTW enforcement actions are insufficient [NR 211.32(2)].

28. PENALTIES, COSTS AND ACTIONS:

a. CIVIL PENALTIES. An industrial user which is found to have violated an order of the board of standards or which willfully or negligently failed to comply with any provision of the wastewater ordinance or any orders, rules, regulations or permits issued hereunder, shall forfeit civil or criminal penalties in at least the amount of $1,000.00 per day for each violation, plus costs for each offense. Each permit limit violation shall be considered a separate and distinct violation. Each day on which a violation shall occur or continue shall be deemed a separate and distinct offense. [NR 211.22(8)]

b. COSTS OF DAMAGE. An industrial user violating any division of the wastewater ordinance or which has a discharge that causes a deposit, obstruction, damage or other impairment to the wastewater works shall become liable to the utility for any expense, loss, or damage caused by the violation or discharge. The utility may add to the industrial user's charges and fees the costs assessed for any cleaning, repair, or replacement work caused by the violation or discharge. Failure to pay the assessed costs shall constitute a violation of this division.

c. FALSIFYING INFORMATION. Any person who knowingly makes any false statements, representation or certification on any application, record, report, plan or other document filed or required to be maintained pursuant to the wastewater ordinance, or wastewater discharge permit, or falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required under this division, shall, upon conviction, be punished by a forfeiture of not more than $1,000.00 per occurrence, plus court costs.

d. PENALTY ESCALATION. Unpaid charges shall, after 30 calendar days, be assessed an additional penalty of ten percent of the unpaid balance. Additional penalties, up to and including termination of sewer service, shall apply for continued unpaid fees or charges, or continued pretreatment program noncompliance, in accordance with the utility Enforcement Response Plan, as approved by the wastewater commission.

29. FEES:

a. The wastewater ordinance shall provide for the recovery of necessary costs from the users of the utility's POTW for the implementation of the programs established herein. The applicable charges or fees shall be set forth in the utility's schedule of charges and fees, to be prepared from time to time, by the Wastewater Director and approved by the wastewater commission. These fees relate solely to matters covered by this division and are separate from all other fees chargeable by the utility.

b. Charges and fees. The utility may adopt charges and fees that may include:

   i. Permit fee. The utility will charge an annual permit fee. Permit fees include the costs of processing applications, slug discharge plans, solvent management plans, inspections, reviewing monitoring reports and certification statements, responding to non-compliance issues and preparing semi-annual and annual reports to the WDNR. Permit fees are calculated and based upon categorical status, flow and compliance of a permitted user.

   ii. Sampling charge. The utility will assess a sampling charge for sampling a user's wastewater with utility equipment and manpower.

   iii. Laboratory analysis charge. The utility will assess a laboratory analysis charge to recover the utility's expenses to have the industrial wastewater samples analyzed for specific pollutants under categorical pretreatment standards or where specifically regulated by the utility.

c. Additional charges. Additional costs will be charged to industrial users on a case by case basis for the following items:
   i. Fees for filing appeals;
   ii. Fees for consistent removal (by the utility) of pollutants otherwise subject to categorical pretreatment standards where this is an additional cost to the utility; and
   iii. Other fees as the utility may deem necessary to carry out the requirements contained herein where there is an additional cost to the utility.

30. RECOVERY OF COSTS INCURRED:

In addition to civil and criminal liability, the permittee violating any of the provisions of this permit or ordinance or causing damage to or otherwise inhibiting the Racine Wastewater Utility shall become liable to the Utility for any expense, loss, or damage caused by such violation or discharge. The Racine Wastewater Utility may add to the industrial user's charges and fees the costs assessed for any cleaning, or repair, or replacement work caused by the violation or discharge. Refusal to pay the assessed costs shall constitute a separate violation of Racine's Wastewater Control Ordinance.

SECTION 5: GENERAL DISCHARGE PROHIBITIONS

Sec. 98-151. General Sewer Use Requirements.

1. *General discharge prohibitions.* No user shall contribute or cause to be contributed, directly or indirectly, any pollutant or wastewater which causes pass-through or will interfere with the operations or performance of the wastewater works. These general prohibitions apply to all such users of the wastewater works whether or not the user is subject to national categorical pretreatment standards or any other national, state, or local pretreatment standards or requirements.
2. *Specific discharge prohibitions.* A user may not contribute the following pollutants or substances to the wastewater works:
   (1) Any liquids, solids, or gases which by reason of their nature or quantity are, or may be, sufficient either alone or by interaction with other substances to cause fire or explosion or be injurious in any other way to the POTW or to the operation of the POTW. At no time shall two successive readings on an explosion hazard meter, at the point of discharge into the system (or at any point in the system), be more than 15 percent nor any single reading over 30 percent of the lower explosive limit (LEL) of the meter for that specific chemical. In addition, pollutants which create a fire or explosive hazard in the POTW, including but not limited to, wastestreams with a closed cup flash point of less than 140 degrees Fahrenheit (60 degrees Celsius) using the test methods specified in 40 CFR 261.21. Prohibited materials include, but are not limited to, gasoline, kerosene, naphtha, benzene, toluene, xylene, ethers, alcohols, ketones, aldehydes, peroxides, chlorates, perchlorates, bromates, carbides, hydrides, and sulfides and any other substances which the utility, the state, or EPA has notified the user is a fire hazard or a hazard to the system;

   (2) Solid or viscous substances which may cause obstruction to the flow in a sewer, but in no case solids greater than one (1) inch in any dimension or create interference with the operation of the wastewater treatment facilities or wastewater collection system such as, but not limited to: articles with sufficient dimensions or quantity either alone or in combination with other particles to obstruct the wastewater flow, , bones, hair, , whole blood, , ashes, cinders, sand, spent lime, stone or marble dust, metal, glass, straw, shavings, grass clippings, disposable diapers, paper hand towels, wipes, rags, cloth towels, clothing articles, , waste paper, wood, plastics, gas, tar, asphalt residues, residues from refining or processing of fuel or lubricating oil, construction materials, mud, or glass grinding residues, or polishing waste residues;

   (3) Any wastewater entering the municipal sanitary sewer system having a pH less than 5.0, or wastewater having any other corrosive property capable of causing damage or hazard to structures, equipment, and/or personnel of the POTW;

   (4) Any wastewater entering the municipal sanitary sewer system having a pH in excess of 10.0;

   (5) Pollutants, including oxygen-demanding pollutants (BOD, etc.), released in a discharge at a flow rate and/or pollutant concentration which, either singly or by interaction with other pollutants will cause interference with the POTW and/or which would constitute a slug;

   (6) Petroleum oil, nonbiodegradeable cutting oil, or products of mineral oil origin, in amounts that will cause interference or pass-through;

   (7) Trucked or hauled pollutants, except at the wastewater treatment plant discharge point, under permit as listed in section 98-151(n);

   (8) Any wastewater containing toxic pollutants in sufficient quantity, either singly or by interaction with other pollutants, to injure or interfere with any wastewater treatment process, constitute a hazard to humans or animals, create a toxic effect in the receiving waters of the POTW, or to exceed the limitation set forth in categorical pretreatment standard. A toxic pollutant shall include but not be limited to any pollutant identified pursuant to section 307(a) of the Act;

   (9) Any noxious or malodorous liquids, gases, or solids, which either singly or by interaction with other wastes are sufficient to create a public nuisance or hazard to life or are sufficient to prevent entry into the sewers for maintenance and repair;

   (10) Any substance which may cause the POTW's effluent or any other product of the POTW such as residues, sludges, or scums, to be unsuitable for reclamation and reuse or to interfere with the reclamation process. In no case shall a substance discharged to the POTW cause the POTW to be in noncompliance with sludge use or disposal criteria, guidelines or regulations developed under section 405 of the Act; any criteria, guidelines, or regulations affecting sludge use or disposal developed pursuant to the Solid Waste Disposal Act, the Clean Air

Act, the Toxic Substances Control Act, or state or local criteria applicable to the sludge management method being used;

(11) Any substance which will cause the utility to violate its WPDES permit or the receiving water quality standards; Wastewater causing, alone or in conjunction with other sources, the treatment plant's effluent to fail a Whole Effluent Toxicity test;

(12) Any wastewater with objectionable color not removed in the treatment process, such as, but not limited to, ink residues, paint residues, dye wastes and vegetable tanning solutions;

(13) Any wastewater having a temperature which will inhibit biological activity in the POTW treatment plant resulting in interference, but in no case wastewater with a temperature which is lower than 32 degrees Fahrenheit (0 degrees Celsius) at discharge point from the source to the sanitary sewer system. The temperature shall not exceed 104 degrees Fahrenheit (40 degrees Celsius) at the POTW wastewater treatment plant;

(14) Any unpolluted water including, but not limited to, cooling water, storm water, or groundwater;

(15) Wastewater containing inert suspended solids (such as, but not limited to, Fullers earth, lime slurries, and lime residues) or dissolved solids (such as, but not limited to, sodium chloride and sodium sulfate) in such quantities that they would cause interference with the wastewater disposal system;

(16) Any wastewater containing any radioactive wastes or isotopes of such half-life or concentration as may exceed limits established in compliance with applicable state or federal regulations;

(17) Any wastewater which causes a hazard to human life or creates a public nuisance;

(18) Sludges, screenings or other residues from the pretreatment of industrial wastes;

(19) Medical wastes, except as specifically authorized by the Wastewater Director in a wastewater discharge permit; and

(20) Detergents, surface-active agents, or other substances which may cause excessive foaming in the POTW.

Pollutants, substances or wastewater prohibited by this section shall not be processed or stored in such a manner that they could be discharged to the POTW.

When the Wastewater Director determines that a user is contributing to the POTW, any of the substances enumerated above in such amounts as to interfere with the operation of the POTW, the Wastewater Director shall:

(1) Notify user.

(2) Develop effluent limits, if possible, for such user(s) to correct the interference with the POTW.

(3) Take immediate action if necessary to eliminate interference.

Appendix A.3
Kestrel Hawk Landfill (Lic# 0572) – Hazardous Waste Site Leachate Head Level Plan Modification Request and Conditions 1(a), (b), and (c) of the December 15, 2004 Stipulation and Order for Judgement December 28, 2005

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State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

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December 28, 2005

FID # 252076990
SW/Approvals

Mr. Daniel Otzelberger, P.E.
Republic Services - Kestrel Hawk Recycling and Disposal Facility (RDF)
1989 Oakes Road
Racine, WI 53406

SUBJECT: Kestrel Hawk Landfill (Lic#: 0572) - Hazardous Waste Site Leachate Head Level Plan Modification Request and Conditions 1(a), (b) and (c) of the December 15, 2004 Stipulation and Order For Judgment

Dear Mr. Otzelberger:

We have completed our review of your report dated October 10, 2005 entitled " Old Site Hydrogeologic Evaluation – Phase I Summary Report, Kestrel Hawk Landfill, Racine Wisconsin" and your plan modification request dated October 8, 2005/October 10, 2005 to modify conditions 12, 18 and 19 of the March 12, 1991 plan of operation modification approval for the Kestrel Hawk Landfill.

With the submittal of your October 10, 2005 report detailing the hydrogeologic and leachate head level investigation that Republic Services, Inc. conducted in 2004 for the Hazardous Waste Unit at the Kestrel Hawk Landfill, the Department considers condition 1(a) of the December 15, 2004 Stipulation and Order For Judgment to be fulfilled.

Additionally, with the submittal of Republic's December 28, 2004 report containing monitoring point survey data and flow meter calibration verification, the Department considers conditions 1(b) and 1(c) of the December 15, 2005 stipulation to be fulfilled.

At this time nothing is required under 1(d) and therefore quarterly reporting under 1(e) for 1(d) is not required. If in the future remedial or corrective action is required under 1(d), the plan modification can impose any necessary quarterly reporting requirement.

Likewise the Department considers Notice of Violation (NOV) item #4 and Areas of Concern #96 and #97 in the February 25, 2003 NOV to be resolved.

After review and careful consideration of Republic's request to modify conditions 12, 18 and 19 of the March 12, 1991 approval the Department has determined that it is the best interest of human health and the environment to not remove or modify condition 18.

The Department has determined that condition 12 should be part of the overall monitoring and annual reporting approval for the landfill and therefore have modified the Department's conditional November 10, 2004 Environmental Monitoring and Annual Reporting Approval to include condition 12. Enclosed is a plan modification approval which incorporates condition 12 into the environmental monitoring and annual reporting requirements for the site.

The Department has also determined that condition 19 may be appended to in order to provide a clearer

understanding of what is expected regarding leachate removal with the existing leachate extraction system. Therefore the Department has determined that it is appropriate to observe the behavior of the current system with the upgrades to maintenance, which Republic started in the last 2 years.

As was proposed in Republic's October 10, 2005 plan modification request, the revised environmental monitoring and annual reporting approval requires an evaluation in 2010 by Republic to be submitted with the annual report, to evaluate the effectiveness of the current leachate extraction system. It is the Department's opinion that, if leachate levels do not change much in the next 5 years, another action may be necessary in addition to the existing leachate extraction system in order to protect the environment near the site. Information obtained in the 5-year report will be used to help determine if the more extensive measures are necessary.

This plan of operation modification approval contains two conditions which will need to be followed. The first condition appends to condition 19 of the Department's March 12, 1991 plan of operation modification approval and the second condition requires Republic Services, Inc. to remove the PCB oil product in those leachate extractions wells which contain oil product.

Additionally, as called out by Republic in the October 10, 2005 plan modification request, four leachate headwells in corridors 4, 5 and 6 will need to be installed.

The Department greatly appreciates the work and effort put forth by Republic Services, Inc. in the last 2 years to evaluate the current hydrogeologic and leachate head level conditions at the site, and Republic's improved commitment to adequately maintain the gas and leachate removal equipment and monitoring devices at the site.

If you have any questions, please feel free to call Joe Lourigan, Hydrogeologist, at (262) 884-2347.

Sincerely,

Frances M. Koonce

Frances M. Koonce
Supervisor – Waste Management Program
WDNR Southeast Region

c. Mr. Phil Peterson, Attorney - DOJ
John Oswald, RMT
Joe Lourigan, WA/Sturtevant

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
PLAN OF OPERATION MODIFICATION
HAZARDOUS WASTE UNIT – LEACHATE HEAD LEVEL PERFORMANCE
FOR THE KESTREL HAWK LANDFILL
LICENSE # 00572
FINDINGS OF FACT

The Department finds that:

1. Republic Services, Inc. owns and operates the Kestrel Hawk Landfill (formerly owned by USA Waste Services and known as the Land Reclamation Company Landfill or LRC Landfill), a solid and hazardous waste disposal facility located in the N1/2 of S23, T3N, R22E, City of Racine, Racine County, Wisconsin.

2. On December 19, 1984 the Department issued a conditional Plan of Operation Approval for the facility with subsequent modifications.

3. On August 30, 1996 the Department issued a conditional plan of operation for the expanded Kestrel Hawk Landfill, referred to as the Kestrel Hawk Park Northwest Expansion Landfill, with subsequent modifications.

4. On March 12, 1991 the Department issued a conditional plan of operation modification approval to the Kestrel Hawk Landfill (formerly Land Reclamation Company Landfill or LRC Landfill) for the Gas and Leachate Extraction System, entitled "Modification to the Plan of Operation Approval For Gas and Leachate Extraction System, Land Reclamation Company Landfill, License # 0572., Racine, WI, WID: 076171008".

   a. Condition #18 of the March 12, 1991 approval states the following:

      Should the Department determine at a later date that the vertical leachate extraction system is not reducing leachate head levels at an acceptable rate or is otherwise not operating effectively, LRC shall supplement this system or implement an alternative system as directed by the Department.

   b. Condition #19 of the March 12, 1991 approval states the following:

      LRC shall remove leachate from all portions of the LRC landfill to the greatest extent possible on a seven day per week basis. No consideration shall be given to previously set leachate head maintenance levels.

5. On October 11, 2005 the Department received a plan of operation modification request from Republic Services, Inc., dated October 10, 2005, which is requesting to remove conditions 12, 18 and 19 in the Department's March 12, 1991 Plan Modification Approval; and replace the conditions with other performance measures and commitments as described in the plan modification request.

6. On February 14, 2005 the Department received a letter dated February 10, 2005 from Republic Services, Inc. which reported PCB concentrations in leachate samples collected from manhole 15B and attributes the PCB concentrations possibly from free PCB oil product found in LGW-3 02.

7. The Department's area of concern #83 in the February 25, 2003 Notice of Violation (NOV) identified other instances when PCBs were detected in leachate samples collected from the Kestrel Hawk Landfill.

8. Other documents or information which are directly related to the October 10, 2005 plan of operation modification request and were reviewed by the Department for this approval include the following:

   a. a report dated October 26, 2005 and received by the Department on October 27, 2005 prepared by RMT, Inc. on behalf of Republic Services, Inc., entitled "Plan Modification Request for Old Site Leachate Extraction System, Additional Requested Information, Kestrel Hawk Recycling and Disposal Facility – Racine, Wisconsin, License No. 00572";

   b. a bound report with plan sheets dated October 10, 2005 and received by the Department on October 11, 2005, prepared by RMT, Inc. on behalf of Republic Services, Inc., and entitled "Old Site Hydrogeologic Evaluation – Phase I Summary Report, Kestrel Hawk Landfill, Racine Wisconsin";

   c. a memorandum dated and received by the Department on September 20, 2005 by e-mail, prepared by RMT, Inc. on behalf of Republic Services, Inc., entitled " Working Copy – Proposed Revisions to ' Plan Modification Request For Old Site Leachate Extraction System' ";

   d. a plan modification request dated and received by the Department on June 22, 2005 by e-mail, prepared by RMT, Inc. on behalf of Republic Services, Inc., entitled "Working Copy – Plan Modification Request For Old Site Leachate Extraction System, Kestrel Hawk Recycling and Disposal Facility, Racine, Wisconsin, License No. 00572";

   e. a meeting on May 26, 2005 with Republic Services, Inc., RMT, Inc. and the Department to discuss the May 20, 2005 bound report prepared by RMT, Inc., entitled "Working Copy - Old Site Hydrogeologic Evaluation – Phase I Summary Report, Kestrel Hawk Landfill, Racine Wisconsin";

   f. a bound report with plan sheets dated May 20, 2005 and received by the Department on May 23, 2005, prepared by RMT, Inc. on behalf of Republic Services, Inc., and entitled "Working Copy - Old Site Hydrogeologic Evaluation – Phase I Summary Report, Kestrel Hawk Landfill, Racine Wisconsin";

   g. a conference call on March 9, 2005 between Republic Services, Inc. staff (Michael Schaffer, Robert Vallis and Daniel Otzelberger); RMT, Inc. staff (Galen Kenoyer, Joel Schittone, John Oswald, Tom Silverman) and Department staff (Joe Lourigan and Chris Carlson) to discuss the February, 2005 report prepared by RMT entitled "Phase I Summary, Old Site Hydrogeologic Evaluation, Kestrel Hawk Landfill";

   h. a bound report with plan sheets dated February, 2005 and received by the Department on February 23, 2005, prepared by RMT, Inc. on behalf of Republic Services, Inc., and entitled "Phase I Summary, Old Site Hydrogeologic Evaluation, Kestrel Hawk Landfill";

   i. a conference call on October 21, 2004 between Republic Services, Inc. staff (Michael Ettner, Robert Vallis and Daniel Otzelberger); RMT, Inc. staff (Galen Kenoyer, Joel Schittone, John Oswald) and Department staff (Joe Lourigan and Chris Carlson) to discuss observations from the drilling of nested leachate headwells LHW-401 and LHW-402;

   j. field observations by Joe Lourigan, Department Hydrogeologist, on October 11, 2004 to observe the drilling of nested leachate headwell LHW-402 in the old Hazardous Waste Unit at the Kestrel Hawk Landfill;

k. field observations by Joe Lourigan, Department Hydrogeologist, on October 6, 2004 to observe the drilling of nested leachate headwell LHW-401 in the old Hazardous Waste Unit at the Kestrel Hawk Landfill;

l. a discussion on September 23, 2004 between RMT, Inc. staff (Galen Kenoyer and Joel Schittone) and Department staff (Joe Lourigan and Chris Carlson) regarding the plan for nested leachate headwell construction;

m. a technical memorandum dated September 15, 2004 and received by the Department on September 16, 2004, prepared by RMT, Inc. on behalf of Republic Services, Inc., entitled " Plan For Kestrel Hawk FieldWork – Well Locations, Schedule";

n. a bound report dated June 21, 2004 and received by the Department on June 22, 2004, submitted by Republic Services, Inc., and entitled " Old Site Hydrogeologic Evaluation Workplan – Addendum No. 1, Kestrel Hawk Landfill, Racine, Wisconsin";

o. a conference call on May 21, 2004 between Republic Services, Inc. staff (Michael Ettner, and Daniel Otzelberger); RMT, Inc. staff (Galen Kenoyer, Joel Schittone and John Oswald) and Department staff (Joe Lourigan and Chris Carlson) to discuss revised Hydrogeologic Evaluation Workplan, dated May 7, 2004;

p. a document dated May 7, 2004 and received on May 11, 2004 by the Department, prepared by RMT, Inc. on behalf of Republic Services, Inc. entitled " Old Site Hydrogeologic Evaluation Workplan (Revised), Kestrel Hawk Landfill, Racine Wisconsin";

q. a meeting on March 23, 2004 with Republic Services, Inc., RMT, Inc. and the Department to discuss the February 13, 2004 proposed workplan for the Hydrogeologic Evaluation at the Old Site (Hazardous Waste Unit) for the Kestrel Hawk Landfill;

r. a document dated February 13, 2004 and received by the Department on February 16, 2004, prepared by RMT, Inc. on behalf of Republic Services, Inc. entitled " Working Copy Workplan for a Hydrogeologic Evaluation at the Old Site (Hazardous Waste Unit) Kestrel Hawk Recycling and Disposal Facility, Racine, Wisconsin", and;

s. the Department's March 12, 1991 conditional plan of operation modification approval to the Kestrel Hawk Landfill (formerly Land Reclamation Company Landfill) for the Gas and Leachate Extraction System.

9. Other information reviewed by the Department for this approval include the document identified in finding of fact (FOF) #6 and information identified in FOF #7 above and documents contained in the Department's file for the Kestrel Hawk RDF Facility under Facility Identification Number (FID#) 252076990.

10. The Department received payment of the $1,650 plan review fee as required in ch. NR 520, Wis. Adm. Code on July 18, 2005.

11. The special conditions set forth below are needed to assure compliance with chapters NR 500-538 and NR 600 series, Wis. Adm. Code. If the special conditions are complied with, the proposed modifications will not inhibit compliance with the standards set forth in chapters NR 500-538 and the NR 600 series, Wis. Adm. Code.

CONCLUSIONS OF LAW

1. The Department has authority under s. 289.30, Stats., to modify a plan of operation approval if the modification would not inhibit compliance with chapters NR 500-538 and the NR 600 series, Wis. Adm.. Code.

2. The Department has authority to approve a plan of operation with special conditions if the conditions are needed to ensure compliance with chapters NR 500-538 and the NR 600 series, Wis. Adm. Code.

3. Conditions of approval set forth below are needed to ensure compliance with chs. NR 500-538 and the chs. NR 600 series, Wis. Adm. Code.

4. In accordance with the foregoing, the Department has the authority under s. 289, Stats., to issue the following plan of operation approval modification.

CONDITIONAL PLAN OF OPERATION APPROVAL MODIFICATION

The Department has determined that it is in the best interest for human health and the environment not to remove or modify condition number 18 of the Department's conditional March 12, 1991 Plan of Operation Modification entitled "Modification to the Plan of Operation Approval For Gas and Leachate Extraction System, Land Reclamation Company Landfill, License # 0572., Racine, WI, WID: 076171008". Therefore Republic Services Inc.'s request to modify condition #18 of the Department's March 12, 1991 conditional plan of operation modification approval is not approved.

The Department has determined that Republic Services, Inc. has effectively demonstrated a need to establish some standards for evaluating leachate removal using the existing leachate extraction system at the Kestrel Hawk Landfill Hazardous Waste Unit (corridors 1-6) and to establish what consideration shall be given in determining leachate head maintenance levels for condition number 19 of the Department's March 12, 1991 conditional plan of operation modification approval.

Therefore the Department hereby approves a plan of operation modification for the management of leachate head levels in the hazardous waste unit (corridors 1-6) for the Kestrel Hawk Landfill (Lic#: 0572) subject to chs. NR 500 and NR 600, Wis. Adm. Code and the following conditions:

1. Condition number 19, of the Department's March 12, 1991 conditional plan of operation modification approval shall be appended with the following: As described in Republic's October 10, 2005 Plan of of Operation Modification Request, the demonstration of removal of leachate shall include, at a minimum:

   a. the following four compliance criteria (i-iv):

      i. an area weighted average long-term head evaluation

      which shall maintain decreasing head levels across the site on an area weighted average as indicated by the slope of the least-square trend line.

      ii. an individual leachate headwell long-term evaluation

      which shall maintain decreasing heads as indicated by the slope of the least–square trend line for the eight point moving average in the long-term trend analyses in 75 percent of the leachate headwells.

iii. an individual leachate headwell short-term evaluation

which shall maintain decreasing heads as indicated by the slope of the least-square trend line in the short-term trend analyses in 67 percent of the leachate headwells.

iv. an inflow versus outflow evaluation

which shall remove more leachate by extraction from the hazardous waste unit than is entering the hazardous waste unit on an annual basis.

b. documentation that the operation and maintenance program referenced in Table 3 of the October 10, 2005 plan modification request is being implemented, and;

c. the response actions described in Republic Services, Inc.'s plan of operation modification request dated October 10, 2005 to determine if leachate is being removed to the greatest extent possible in the hazardous waste unit (corridors 1-6), using the currently designed vertical leachate extraction system.

2. PCB oil product which is leachate, or any other oil product shall be pumped, bailed or otherwise removed from those leachate extraction wells containing oil product, and the oil product shall be properly disposed of according to its characteristics and classification. Oil product shall also be pumped, bailed or otherwise removed from those leachate headwells which contain oil product where pumping or bailing is possible.

The Department retains its jurisdiction to modify this conditional plan of operation approval if, in the Department's opinion, circumstances or conditions change or if new information is found which would warrant such a modification.

Unless specifically noted, the conditions of this permit do not supersede or replace any previous conditions of approval for this facility.

NOTICE OF APPEAL RIGHTS

If you believe you have a right to challenge this decision made by the Department, you should know that Wisconsin statutes, administrative codes and case law establish time periods and requirements for reviewing Department decisions.

To seek judicial review of the Department's decision, sections 227.52 and 227.53, Stats., establish criteria for filing a petition for judicial review. Such a petition shall be filed with the appropriate circuit court and shall be served on the Department. The petition shall name the Department of Natural Resources as the respondent.

Dated DECEMBER 28, 2005

DEPARTMENT OF NATURAL RESOURCES
For the Secretary

Frances M. Koonce

Frances M. Koonce, Supervisor
WDNR Waste Management Program
Southeast Region

Joe Lourigan

Joe Lourigan, Hydrogeologist
WDNR Waste Management Program, SER-Sturtevant

Joe Lourigan for PB

Patrick Brady, Engineer
WDNR Waste Management Program, SER-Milwaukee

Mike Ellenbecker, Specialist
WDNR Waste Management Program, SER-Sturtevant

Appendix A.4
General Permit to Discharge (Tier 2 Industrial Facilities) – WPDES Permit No. WI-S067857-5
May 14, 2021

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STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

GENERAL PERMIT TO DISCHARGE UNDER THE WISCONSIN POLLUTANT DISCHARGE ELIMINATION SYSTEM WPDES PERMIT NO. WI-S067857-5

TIER 2 INDUSTRIAL FACILITIES

In compliance with the provisions of ch. 283, Wis. Stats., and ch. NR 216, Wis. Adm. Code, any **Tier 2** facility as defined in ch. NR 216, Wis. Adm. Code, and located in the State of Wisconsin, excluding section 2.5.1, that discharges

STORM WATER ASSOCIATED WITH INDUSTRIAL ACTIVITY

and meeting the applicability criteria in section 2 of this permit and that receives a letter from the Wisconsin Department of Natural Resources (Department) granting coverage under this permit, is authorized to discharge storm water to waters of the state provided that the discharge is in accordance with the conditions set forth in this permit.

This permit is issued by the Department and covers storm water discharges from the facility as of the **Start Date** of permit coverage to the permittee. For initial permit coverage, the Department will transmit a cover letter to the permittee stating that the facility is covered under this permit. Initial coverage under this permit will become effective at a facility beginning upon the **Start Date** specified by the Department in the cover letter. For an existing facility with permit coverage under a previously issued version of the Tier 2 general permit, coverage under this permit will become effective at the facility beginning upon the **Effective Date** below. For these facilities, the **Effective Date** is the **Start Date.**

State of Wisconsin Department of Natural Resources
For the Secretary

By _____ May 14, 2021
Brian Weigel, Director Date
Bureau of Watershed Management

PERMIT EFFECTIVE DATE: May 31, 2021 **PERMIT EXPIRATION DATE:** June 2, 2025

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Note: Information about the Department of Natural Resources' storm water program, this general permit, forms, and other helpful resources is available at https://dnr.wisconsin.gov/topic/Stormwater.

1. APPLICATION REQUIREMENTS

1.1 Initial Permit Coverage The owner or operator of a Tier 2 industrial facility type listed in s. NR 216.21(2)(b), Wis. Adm. Code, and not previously covered under the Tier 2 general permit shall submit a complete Notice of Intent (NOI) to the Department to apply for coverage under an industrial storm water discharge permit in accordance with the time frames in s. NR 216.22(2), Wis. Adm. Code. Within 30 calendar days of receipt of the NOI, the Department will evaluate the information submitted in the NOI to determine whether the NOI is complete, whether additional information is needed for review, whether the facility will be covered under this permit or an individual permit, or whether coverage under a permit will be denied. Based upon this evaluation, unless notified to the contrary by the Department, within 30 calendar days of receipt of the NOI, the Department will transmit a cover letter to the owner or operator indicating the **Start Date** upon which permit coverage becomes effective at the facility with instructions on where to download the permit from the Department website. In the alternative, a hard copy of the permit will be mailed to the owner or operator of the facility upon request.

Note: The NOI form (Form 3400-163), information about submitting via the Department's Water ePermitting System, and general permit are available for download from the Department website at: https://dnr.wi.gov/topic/stormwater/industrial/forms.html. The Notice of Intent requires applicants to provide information on the applicant, facility location, applicability and operations information, storm water discharge information, and non-storm water discharge information.

1.2 Existing Permit Coverage Unless the Department makes a determination for an individual WPDES permit under section 2.5.7, a Tier 2 industrial facility type listed in s. NR 216.21(2)(b), Wis. Adm. Code, with existing Tier 2 general permit coverage prior to the **Effective Date** of this permit is automatically covered under this permit as of the **Effective Date**. For these permittees, the **Effective Date** is the permittee's **Start Date.** The Department will notify the owner or operator of the facility's continued coverage under this permit with instructions on where to download the permit from the Department website. In the alternative, a hard copy of the permit will be mailed to the owner or operator of the facility upon request.

Note: The general permit is available on the Department website at: https://dnr.wi.gov/topic/stormwater/industrial/forms.html.

1.3 No Exposure Certification The owner or operator of a facility not currently covered under this permit that has submitted a Conditional No Exposure Certification to the Department in accordance with s. NR 216.21(3), Wis. Adm. Code, but that has been denied a No Exposure Exclusion by the Department shall apply for permit coverage in accordance with section 1.1 of this permit within 14-working days of being notified by the Department of the denial. The owner or operator of a facility that has previously been granted a No Exposure Exclusion by the Department but that has had that exclusion revoked shall apply for permit coverage in accordance with section 1.1 of this permit within 14-working days of being notified by the Department of the revocation.

1.4 Permit Coverage Transfers A permittee who will no longer control the permitted industrial facility may request that permit coverage be transferred to the person who will control the industrial facility. The transfer request shall be signed by both the permittee and the new owner or operator and sent electronically through the Department's Water ePermitting System. The Department may require additional information including an NOI to be filed prior to transferring permit coverage. Coverage is not transferred until the Department sends notification of transfer approval to the new owner or operator. The transfer request shall contain the following information:

1.4.1 The name and address of the facility.

1.4.2 The Facility Identification Number.

1.4.3 The names of the persons involved in the transfer, their signatures, and date of signatures.

1.4.4 A description of any significant changes in the operation of the facility.

1.4.5 A statement of acknowledgement by the transferee that it will be the permittee of record and is responsible for compliance with the permit.

Note: The Transfer of Coverage form (Form 3400-222) and information about submitting via the Department's Water ePermitting System are available on the Department website at: https://dnr.wi.gov/topic/stormwater/industrial/forms.html.

1.5 Permit Coverage Terminations

If the permittee no longer claims coverage under this permit, the permittee shall submit a signed Notice of Termination (NOT) to the Department in accordance with s. NR 216.32, Wis. Adm. Code.

Note: The NOT form (Form 3400-170) and information about submitting via the Department's Water ePermitting System are available on the Department website at: https://dnr.wi.gov/topic/stormwater/industrial/forms.html.

2. PERMIT APPLICABILITY CRITERIA

2.1 Applicability This permit applies to point sources at facilities which discharge contaminated storm water associated with industrial activity to waters of the state, either directly or via a separate storm sewer system, originating from industrial facilities belonging to:

2.1.1 Manufacturing facilities described by the following SIC codes:

SIC	Description
20--	Food & Kindred Products
21--	Tobacco Products
22--	Textile Mill Products
23--	Apparel & Other Textile Products
2434	Wood Kitchen Cabinets
25--	Furniture & Fixtures
265-	Paperboard Containers & Boxes
267-	Misc. Converted Paper Products
27--	Printing, Publishing, & Allied Industries
283-	Drugs
285-	Paints & Allied Products
30--	Rubber & Misc. Plastics Products
31--	Leather & Leather Products
323-	Products of Purchased Glass
34--	Fabricated Metal Products
35--	Industrial & Commercial Machinery & Computer Equipment
36--	Electronic & Other Electrical Equipment & Components
37--	Transportation Equipment
38--	Instruments & Related Products
39--	Misc. Manufacturing Industries
4221	Farm Product Warehousing & Storage
4222	Refrigerated Warehousing & Storage
4225	General Warehousing & Storage

Note: Facilities in SIC codes 311-, 3441 and 373- are included in s. NR 216.21(2)(a) 1. as Tier 1 facilities.

2.1.2 Transportation facilities described by the following SIC codes that have vehicle maintenance shops, equipment cleaning operations, or airport de-icing operations. This only applies to those portions of these facilities that are either involved in vehicle maintenance including rehabilitation, mechanical repairs, painting, fueling, lubrication, and associated parking areas, or involved in cleaning operations, or de-icing operations, or that are listed as a pollution source area under s. NR 216.27(3)(e):

SIC	Description
40--	Railroad Transportation
41--	Local & Interurban Passenger Transit
42--	Trucking & Warehousing
43--	U.S. Postal Service
44--	Water Transportation

45--	Transportation by Air
5171	Petroleum Bulk Stations & Terminals

2.1.3 Facilities described by the following SIC codes, including active and inactive mining operations. This permit only applies where storm water runoff has come into contact with any overburden, raw material, intermediate product, finished product, by-product, or waste material.

SIC	Description
10--	Metal Mining
12--	Coal Mining
13--	Oil & Gas Extraction
14--	Non-metallic Minerals, except fuels

Note: An industry-specific general permit has been developed by the Department that regulates both process and storm water discharges associated non-metallic mining operations, SIC code 14--. While the Department intends to cover non-metallic mining operations under the industry-specific general permit, it may alternatively cover storm water discharges associated with non-metallic mining operations under this Tier 2 general permit. This permit does not apply to non-coal mining operations which have been released from applicable state or federal reclamation requirements after December 17, 1990; nor to coal mining operations released from the performance bond issued to the facility by the appropriate Surface Mining Control and Reclamation Act authority under 30 USC 1201 et seq. and 16 USC 470 et seq. Production, processing, or treatment operations or transmission facilities associated with oil and gas extraction are included only if there has been a discharge of storm water after November 16, 1987 containing a reportable quantity of a pollutant, or if a storm water discharge contributed to a violation of a water quality standard.

2.1.4 Facilities subject to storm water effluent limitation guidelines, new or existing source performance standards, or toxic pollutant effluent standards under 33 USC 1251, 1311, 1314 (b) and (c), 1316 (b) and (c), 1317 (b) and (c), 1326 (c), except for those facilities identified in paragraph A.(1) that do not have contaminated storm water.

2.1.5 Treatment works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that are located within the confines of the facility, with a design flow of one million gallons per day or more, or required to have an approved pretreatment program. Not included are farm lands, domestic gardens or lands used for sludge management where sludge is beneficially reused and which are not physically located in the confines of the facility, or areas that are in compliance with Section 405 of the Clean Water Act under 33 USC s. 1345.

2.1.6 Hazardous waste treatment, storage, and disposal facilities, including those operating under interim status or a permit under Subtitle C of the Resource Conservation and Recovery Act (RCRA), 42 USC 6901 et seq.

2.1.7 Landfills, land application sites, and open dumps that receive or have received any industrial waste from any of the facilities identified in this section 2.1 of this permit, including those subject to regulation under subtitle D of RCRA, 42 USC 6901 et seq., or ch. 289, Wis. Stats. For purposes of this section, landfills include those landfills for construction and demolition waste disposal.

2.1.8 Steam electric power generating facilities, including coal handling sites but not including offsite transformer or electric substations.

2.1.9 Facilities described in SIC code 2951 for asphalt paving mixes and block, and facilities described in SIC codes 3271, 3272 and 3273 for cement products.

Note: In 1997, the North American Industry Classification System (NAICS) was developed as the standard for use by Federal agencies in classifying business establishments and has been adopted by Federal agencies to replace the SIC Code system. As a result, an industrial facility identified in sections 2.1.1 through 2.1.9 of this permit may have an NAICS Code assigned to it by a Federal agency, trade association, or other organization. If needed, the Department may use Federal data to convert the NAICS Code to the corresponding SIC Code for purposes of determining the applicability of this permit to the facility.

2.1.10 Facilities originally covered under a Tier 1 general permit, but subsequently covered under a Tier 2 general permit pursuant to s. NR 216.23(3), Wis. Adm. Code.

2.2 Authorized Discharges This permit authorizes storm water point source discharges to waters of the State from industrial activities identified in section 2.1 of this permit. This permit also authorizes the discharge of storm water commingled with flows contributed by process and non-process wastewater, provided those flows are regulated by other WPDES permits, if required.

2.3 Movement to Tier One Coverage In accordance with s. NR 216.23(4), Wis. Adm. Code, the Department may revoke coverage under this permit. In this case, the permittee shall reapply for Tier 1 general permit coverage.

2.4 Exclusions This permit does not apply to any of the following:

2.4.1 Diffused surface drainage or agricultural storm water discharges.

2.4.2 Non−storm water discharges.

2.4.3 Non−storm water discharges for which coverage under an individual or general WPDES permit is not required, including landscape irrigation, diverted stream flows, uncontaminated groundwater infiltration, uncontaminated pumped groundwater, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, lawn watering, individual residential car washing, flows from riparian habitats and wetlands and fire fighting.

2.4.4 Inactive, closed or capped landfills that have no potential for contamination of storm water. The Department shall make a determination of contamination potential on a case−by−case basis.

2.4.5 Remedial action discharges or discharges authorized by a WPDES permit for discharging contaminated or uncontaminated groundwater.

2.4.6 Areas located on plant lands that are segregated from the industrial activities of the plant, such as office buildings and accompanying parking lots, if the drainage from the segregated areas is not mixed with contaminated storm water drainage.

2.4.7 Storm water discharges into a municipal combined sewer system.

Note: Areas where this exclusion may apply include portions of the City of Milwaukee, the City of Superior, and the Village of Shorewood.

2.4.8 Storm water discharges from an industrial facility for which the owner or operator has submitted a Conditional No Exposure Certification to the Department in accordance with s. NR 216.21(3), Wis. Adm. Code, provided that the Department concurs with the no exposure certification and the conditions under which a No Exposure Exclusion was granted remain in effect.

2.5 Discharges Not Covered by this Permit The following are not authorized under this permit:

2.5.1 Storm water discharges within Indian Country.

Note: Indian County is defined under 18 USC §1151 and includes all lands within the exterior boundaries of federally recognized Indian reservations and on lands held in federal trust status. Facilities that currently do not have storm water discharge permit coverage and are located within Indian Country should contact the United States Environmental Protection Agency (USEPA) to apply. For existing discharges covered under a National Pollution Discharge Elimination System (NPDES) permit from USEPA, discharges will continue to be covered by a NPDES permit. Dischargers that previously held permit coverage under previous versions of this permit after September 30, 2001, are no longer eligible for coverage under this permit and must contact USEPA to apply.

USEPA's website contains information on the Multi-Sector General Permit: https://www.epa.gov/npdes/stormwater-discharges-industrial-activities. Facilities should verify eligibility for coverage under the general permit or determine if an individual permit is needed. Information on how to apply for the Multi-Sector General Permit can be accessed here: https://epanet.zendesk.com/hc/en-us/articles/360001508168-How-to-Create-a-NOI-for-MSGP-PPT-.

2.5.2 Discharges of hazardous substances that are required to be reported under ch. NR 706, Wis. Adm. Code.

2.5.3 Storm water discharges that affect wetlands, unless the Department determines that the storm water discharges comply with the wetland water quality standards provisions in ch. NR 103, Wis. Adm. Code.

2.5.4 Storm water discharges that affect endangered and threatened resources, unless the Department determines that the storm water discharges comply with the endangered and threatened resource protection requirements of s. 29.604, Wis. Stats., and ch. NR 27, Wis. Adm. Code.

2.5.5 Storm water discharges that affect any historic property that is listed property, or on the inventory or on the list of locally designated historic places under s. 44.45, Wis. Stats., unless the Department determines that the storm water discharges will not have an adverse effect on any historic property pursuant to s. 44.40(3), Wis. Stats.

2.5.6 Storm water discharges from land disturbing construction activity affecting one acre or more of land that require storm water permit coverage under subch. III of NR 216, Wis. Adm. Code, for new construction, reconstruction, or expansion of an industrial facility.

Note: Storm water discharges from areas of bare soil due to the normal industrial operation of the facility are covered under this permit provided those areas are managed in accordance with section 3.3.2.8.2.

2.5.7 Facilities where the Department makes a determination, pursuant to s. 283.35(3), Wis. Stats. or

s. NR 216.25(3), Wis. Adm. Code, that a storm water discharge is more appropriately covered under an individual WPDES permit. The Department may make this determination if one or more of the following conditions are met:

2.5.7.1 The storm water discharge is potentially a significant source of pollution and more appropriately regulated by an individual WPDES storm water discharge permit.

2.5.7.2 The facility is not in compliance with the terms and condition of this permit or Subchapter II of ch. NR 216, Wis. Adm. Code.

2.5.7.3 Numeric effluent limitations or standards are promulgated for a storm water discharge covered by this permit.

2.5.7.4 Storm water discharges that are regulated by permits containing storm water effluent limitations.

2.5.8 Storm water discharges in violation of the regulation of injection wells under ch. NR 815, Wis. Adm. Code.

Note: Information about the Department's injection well program may be found at: https://dnr.wi.gov/topic/wells/uiw.html.

2.5.9 Discharges associated with activities subject to any of the federal effluent limitation guidelines listed in Table 1 below:

Table 1.

Regulated Activity	**40 CFR Part/Subpart**
Discharges resulting from spray down or intentional wetting of logs at wet deck storage areas	Part 429, Subpart I
Runoff from phosphate fertilizer manufacturing facilities that comes into contact with any raw materials, finished product, by-products or waste products (SIC 2874)	Part 418, Subpart A
Runoff from asphalt emulsion facilities	Part 443, Subpart A
Runoff from material storage piles at cement manufacturing facilities	Part 411, Subpart C
Mine dewatering discharges at crushed stone, construction sand and gravel, or industrial sand mining facilities	Part 436, Subparts B, C, and D
Runoff from hazardous waste landfills	Part 445, Subpart A
Runoff from non-hazardous waste landfills	Part 445, Subpart B
Runoff from coal storage piles at steam electric generating facilities	Part 423
Runoff containing urea from airfield pavement deicing at existing and new primary airports with 1,000 or more annual non-propeller aircraft departures	Part 449

Note: The federal effluent limitations guidelines are available at the following website: https://www.epa.gov/eg/industrial-effluent-guidelines. Discharges associated with activities subject to any of the federal effluent limitation guidelines listed in Table 1 require coverage under a separate WPDES general permit or individual permit. However, these industrial facilities still require coverage under this permit for discharges not subject to the federal effluent limitation guidelines listed in Table 1.

2.6 Water Quality Standards

2.6.1 This permit specifies the conditions under which storm water may be discharged to waters of the state for the purpose of achieving water quality standards contained in chs. NR 102 through 105, NR 140, and NR 207, Wis. Adm. Code. For the term of this permit, compliance with water quality standards will be addressed by adherence to general narrative-type storm water discharge limitations and implementation of a storm water pollution prevention plan.

2.6.2 This permit does not authorize storm water discharges that the Department, prior to authorization of coverage under this permit, determines will cause or have reasonable potential to cause or contribute to an excursion above any applicable water quality standard. Where such determinations have been made prior to authorization, the Department may notify the applicant that an individual permit application is necessary. However, the Department may authorize coverage under this permit where the storm water pollution prevention plan required under this permit will include appropriate controls and implementation procedures designed to bring the storm water discharge into compliance with water quality standards.

2.7 Outstanding and Exceptional Resource Waters

2.7.1 Storm water discharges from industrial facilities covered under a previously issued version of this permit shall comply with sections 2.7.2 through 2.7.5 as of the **Effective Date**. Storm water discharges from industrial facilities covered under this permit after the **Effective Date** shall comply with sections 2.7.2 through 2.7.5 as of the **Start Date** of coverage under this permit.

2.7.2 The permittee shall determine whether any part of its facility discharges storm water to an outstanding resource water (ORW) or exceptional resource water (ERW). ORWs and ERWs are listed in ss. NR 102.10 and 102.11, Wis. Adm. Code, respectively.

Note: A list of ORWs and ERWs may be found on the Department website at: https://dnr.wi.gov/topic/surfacewater/orwerw.html.

2.7.3 The permittee may not establish a new storm water discharge of pollutants directly to an ORW or an ERW unless the discharge of pollutants is equal to or less than existing levels of pollutants immediately upstream of the discharge site. The storm water pollution prevention plan required under section 3 of this permit shall include practices designed to meet this requirement for new discharges.

2.7.3.1 "New storm water discharge" or "new discharge" means a storm water discharge that would first occur after the permittee's **Start Date** of coverage under this permit to a surface water to which the facility did not previously discharge storm water, and does not include an increase in a storm water discharge to a surface water to which the facility discharged on or before coverage under this permit.

2.7.4 The permittee may increase an existing storm water discharge directly to an ERW only if the increased discharge will not cause a significant lowering of water quality and the discharge is to accommodate to important economic or social development.

2.7.5 The permittee may increase an existing storm water discharge to an ORW only if the increased discharge of pollutants is equal to or less than the background levels of the pollutant upstream of the discharge and the discharge is to accommodate to important economic or social development.

2.8 Impaired Water Bodies and Total Maximum Daily Load Requirements

2.8.1 "Pollutant(s) of concern" means a pollutant that is contributing to the impairment of a water body.

2.8.2 By February 15th of each calendar year, the permittee shall perform an annual check to determine whether its facility discharges a pollutant of concern via storm water to an impaired water body listed in accordance with Section 303 (d) (1) of the Federal Clean Water Act, 33 USC §1313 (d) (1) (C), and the implementing regulation of the U.S. Environmental Protection Agency (USEPA), 40 CFR §130.7 (c) (1). Impaired waters are those listed as not meeting applicable surface water quality standards. The results of the annual check shall be documented with the Annual Facility Site Compliance Inspection required under section 4.3.1 of this permit.

Note: The Department updates the list approximately every two years. The updated list is effective upon approval by the USEPA. The current list may be found on the Department website at: https://dnr.wi.gov/topic/impairedwaters/.

2.8.3 A permittee that discharges a pollutant of concern via storm water to an impaired water body shall, within 180 days of the annual check that determines the facility discharges to an impaired water body, include a written section in the storm water pollution prevention plan that specifically identifies source area pollution prevention controls and storm water best management practices that will collectively be used to reduce, with the goal of eliminating, the storm water discharge of pollutant(s) of concern that contribute to the impairment of the water body and explain why these controls and practices were chosen as opposed to other alternatives. Changes identified in the storm water pollution prevention plan shall be implemented with the 180-day timeframe.

Note: For a permittee that discharges a pollutant of concern via storm water to an impaired water body, amending the storm water pollution prevention plan will be required after the initial annual check and if subsequent annual checks indicate additional pollutants of concern have been added, additional water bodies have been designated as impaired, or other relevant changes to the designation have occurred.

2.8.4 The permittee may not establish a new storm water discharge of a pollutant of concern to an impaired water body or significantly increase an existing discharge of a pollutant of concern to an impaired water body unless the new or increased discharge does not contribute to the receiving water impairment, or the discharge is consistent with a State and Federal approved total maximum daily load (TMDL) allocation for the impaired water body.

2.8.4.1 "New storm water discharge" or "new discharge" has the meaning given in section 2.7.3.1 of this permit.

2.8.5 By February 15th each calendar year, the permittee shall perform an annual check to determine whether its facility discharges a pollutant of concern via storm water to a water body included in a State and Federal approved TMDL. If so, the permittee shall assess whether any TMDL wasteload allocation for the facility's discharge is being met through the existing pollution prevention controls and storm water best management practices or whether additional controls or treatment are necessary and feasible. The assessment of the feasibility of additional controls or treatment shall focus on the ability to improve

pollution prevention and treatment system effectiveness and the adequacy of implementation and maintenance of the additional controls or treatment. The results of the annual check shall be documented with the Annual Facility Site Compliance Inspection required under section 4.3.1 of this permit.

Note: The current State and Federal approved TMDLs may be found on the Department website at: https://dnr.wi.gov/topic/tmdls/.

2.8.6 Within 180 days of the annual check that determines the facility discharges to a TMDL allocated water body, a permittee that is included in a State and Federal approved TMDL shall submit to the Department a proposed implementation plan for the storm water discharge that meets the requirements of the State and Federal approved TMDL wasteload allocation for the facility. The proposed TMDL implementation plan shall specify any feasible pollution prevention and treatment improvements that could be made and specify any revisions or redesigns that could be implemented to increase the effectiveness of the permittee's storm water pollution prevention controls and treatment practices. The TMDL implementation plan shall also specify a time schedule for implementation of the improvements, revisions or redesigns necessary to meet the wasteload allocation for the facility. If a specific wasteload allocation has not been assigned to the facility under a TMDL, compliance with this permit shall be deemed to be in compliance with the TMDL.

2.9 Fish and Aquatic Life Waters

2.9.1 The permittee shall determine whether it will have a storm water discharge to a fish and aquatic life water as defined in s. NR 102.13, Wis. Adm. Code.

Note: Most receiving waters of the state are classified as a fish and aquatic life waters and this classification includes all surface waters of the state except ORWs, ERWs, Great Lakes system waters and variance water identified within ss. NR 104.05 through 104.10, Wis. Adm. Code. The Department may be consulted if the permittee is not certain of the classification.

2.9.2 The permittee may not establish a new storm water discharge of pollutants to a fish and aquatic life water if the discharge will result in the significant lowering of water quality of the fish and aquatic life water. Significant lowering of water quality is defined within ch. NR 207, Wis. Adm. Code.

2.9.2.1 "New storm water discharge" or "new discharge" has the meaning given in section 2.7.3.1 of this permit.

2.9.3 If the permittee's facility has an existing storm water discharge to a fish and aquatic life water, it may not increase the discharge of pollutants if the increased discharge would result in a significant lowering of water quality.

2.9.4 Any increased or new discharge of storm water authorized under this permit shall be to accommodate to important economic or social development.

2.10 Toxic Pollutants In accordance with s. NR 102.12 Wis. Adm. Code, a new discharge and increased discharge as defined in ch. NR 207, Wis. Adm. Code, of persistent, bioaccumulating toxic substances to the Great Lakes waters or their tributaries shall be avoided or limited to the maximum extent practicable. Any new or increased discharge of these substances is prohibited unless the permittee certifies that the new or increased discharge is necessary after utilization of best technology in process or control using waste minimization, pollution prevention, municipal pretreatment programs, material substitution or other means of commercially available technologies which have demonstrated capability for similar applications.

2.11 Minimum Source Area Control Requirements All permittees shall comply with the following minimum source area control requirements. The Storm Water Pollution Prevention Plan required under section 3 shall identify how each source area control requirement will be met. Source area controls shall be utilized to prevent storm water from becoming contaminated at the facility. Structural source area controls that are either proposed or in place at the facility shall be indicated on the facility drainage base map described in section 3.3.2.2 of this permit. The permittee shall:

2.11.1 Minimize exposure of pollutants associated with the potential sources of storm water contamination identified in section 3.3.2.4 of this permit.

2.11.2 Use good house-keeping measures such as sweeping, appropriate storage, and proper management of waste materials and dumpsters/compactors.

2.11.3 Maintain both structural and non-structural control measures, institute preventive maintenance for vehicles and equipment, and perform routine visual inspections.

2.11.4 Minimize the potential for leaks, spills, and other releases that may contaminate storm water, and institute spill prevention and response measures, including spill reporting described in section 6.5 of this permit.

2.11.5 Stabilize areas of bare soil with vegetation or through permanent land cover to control soil erosion, or when that is not possible, implement best management practices to meet the requirements of section 3.3.2.8.2 of this permit.

2.11.6 Construct and maintain salt storage facilities so that neither precipitation nor storm water runoff can come into contact with the stored salt in order to minimize pollutant discharges.

2.11.6.1 Salt storage piles shall be constructed on an impervious, curbed surface to prevent salt or brine from passing through the base and reaching waters of the state. Salt storage piles shall be enclosed by a building or structure with walls and a cover sufficient to prevent contact between precipitation and the salt and to prevent wind from eroding the salt or carrying any amount of the substance into potential contact with the waters of the state. Alternatively, for permittees that use brine and have salt storage piles on impervious curbed surfaces, install a means of diverting contaminated storm water to a brine treatment system for process use.

2.11.6.2 Any salt spillage resulting from activities such as loading or unloading, shall be immediately cleaned up to minimize contact with storm water.

2.11.7 Train and raise awareness of employees as appropriate on storm water pollution prevention, the requirements of this permit, and their specific responsibilities in implementing any of the requirements, practices, or activities of this permit or the Storm Water Pollution Prevention Plan.

2.11.8 Evaluate the facility for the presence of non-storm water discharges as specified in section 4.2. of this permit.

Note: This permit does not cover non-storm water discharges. See section 2.3.
2.11.9 Minimize dust and off-site tracking of soil, raw materials, intermediate products, final products, or waste materials.

2.11.10 If applicable, use a combination of storm water contact control or containment, drainage controls, or diversions to control SARA Title III Section 313 "Water Priority Chemicals" (42 USC s. 11023 (c)) potentially discharged through the action of storm water runoff, leaching, or wind.

2.12 Compliance with Runoff Management Performance Standards The owner or operator of a facility subject to the performance standards in s. NR 151.12 or ss. NR 151.121 to 151.128, Wis. Adm. Code, shall describe in the Storm Water Pollution Prevention Plan the best management practices necessary to maintain compliance with the applicable performance standards in s. NR 151.12 or ss. NR 151.121 to 151.128, Wis. Adm. Code, for those areas that are described in s. NR 151.12(2) or s. NR 151.121(2), Wis. Adm. Code, respectively. Best management practices installed to meet the performance standards in s. NR 151.12 or s. NR 151.121 to 151.128, Wis. Adm. Code, shall be maintained to meet the treatment capability as originally designed.

2.13 Post-Construction Performance Standards for Landfills For landfills, post-construction storm water best management practices constructed after the effective date of this permit shall be in compliance with the performance standards in ss. NR 151.122 and NR 151.123, Wis. Adm. Code.

Note: The infiltration performance standard in s. NR 151.124, Wis. Adm. Code, does not apply to landfills.

3. STORM WATER POLLUTION PREVENTION PLAN

3.1 Storm Water Pollution Prevention Plan Required In accordance with s. NR 216.27, Wis. Adm. Code, and section 3.3 of this permit, the owner or operator of a facility requiring coverage under this permit shall prepare a Storm Water Pollution Prevention Plan (SWPPP) prior to applying for permit coverage under s. NR 216.22, Wis. Adm. Code.

3.2 Incorporation by Reference When plans are developed or activities conducted in accordance with other federal, state or local regulatory programs that meet the requirements of section 3.3.2 of this permit, the plans may be incorporated by the permittee into the SWPPP by reference.

3.3 Purpose and Content of a Storm Water Pollution Plan

3.3.1 Purpose of the Plan Any SWPPP prepared to comply with this permit shall do all of the following:

3.3.1.1 Identify sources of storm water and non-storm water contamination to the storm water drainage system.

3.3.1.2 Identify and prescribe appropriate "source area control" type best management practices designed to prevent storm water contamination from occurring.

3.3.1.3 Identify and prescribe "storm water treatment" type best management practices to reduce pollutants in contaminated storm water prior to discharge.

3.3.1.4 Prescribe actions needed either to bring non-storm water discharges under an appropriate WPDES permit or to remove these discharges from the storm drainage system.

3.3.1.5 Prescribe an implementation schedule so as to ensure that the storm water management actions prescribed in the SWPPP are carried out in a timely manner and evaluated on a regular basis.

3.3.2 Required Plan Content The SWPPP shall contain, at a minimum, the following items and provisions:

3.3.2.1 Pollution Prevention Individual The SWPPP shall identify by job title the specific individual who has primary responsibility for all aspects of SWPPP development and implementation and identify any other individuals concerned with SWPPP development or implementation, and their respective roles. The specific individual who has primary responsibility shall develop, evaluate, maintain and revise the SWPPP, and carry out the specific management actions identified in the SWPPP, including maintenance practices, monitoring activities, preparing and submitting reports, recordkeeping, and serving as facility contact for the Department.

3.3.2.2 Facility Site Description and Drainage Base Map The SWPPP shall contain a short summary of the major activities conducted at various locations throughout the facility. The SWPPP shall also include a facility drainage base map depicting all of the following:

3.3.2.2.1 How storm water drains on, through and from the facility to groundwater, surface water, or wetlands.

3.3.2.2.2 The facility property boundaries.

3.3.2.2.3 The storm drainage collection and disposal system including all surface and subsurface conveyances.

3.3.2.2.4 Any secondary containment structures.

3.3.2.2.5 The location of all outfalls that discharge channelized flow to groundwater, surface water or wetlands, including outfalls recognized as permitted outfalls under another WPDES permit, numbered for reference.

3.3.2.2.6 The drainage area boundary for each outfall.

3.3.2.2.7 The surface area in acres draining to each outfall, including the percentage that is impervious such as paved, roofed or highly compacted soil, and the percentage that is pervious such as grassy areas and woods.

3.3.2.2.8 Existing structural storm water controls.

3.3.2.2.9 The name and location of receiving waters.

3.3.2.2.10 The location of activities and materials that have the potential to contaminate storm water.

3.3.2.3 Summary of Existing Sampling Data or Observations The SWPPP shall summarize any results of available storm water sampling data or other observations that characterize the quality of storm water discharges or identifying sources of storm water contamination. Available data that characterizes the quality of storm water discharges under dry weather flow conditions shall also be included, except when such data has been or will be reported to the Department under another WPDES permit.

3.3.2.4 Potential Sources of Storm Water Contamination The SWPPP shall identify any significant pollutants or activities associated with the storm water pollution source areas identified in this permit. When possible, specific pollutants likely to be present in storm water as a result of contact with specific materials shall also be listed. The SWPPP shall identify all potential source areas of storm water contamination, including but not limited to:

3.3.2.4.1 Outdoor manufacturing areas.

3.3.2.4.2 Rooftops contaminated by industrial activity, exhaust vents, or a pollution control device.

3.3.2.4.3 Industrial plant yards.

3.3.2.4.4 Storage and maintenance areas for material handling equipment.

3.3.2.4.5 Immediate access roads and rail lines owned or operated by the permittee.

3.3.2.4.6 Material handling sites including storage, loading, unloading, transportation, or conveyance of any raw material, finished product, intermediate product and by-product or waste areas.

3.3.2.4.7 Storage areas (including tank farms) for raw materials, finished and intermediate products.

3.3.2.4.8 Disposal or application of wastewater.

3.3.2.4.9 Areas containing residual pollutants from past industrial activity.

3.3.2.4.10 Areas of significant soil erosion, including areas of bare soil.

3.3.2.4.11 Refuse sites.

3.3.2.4.12 Vehicle maintenance and cleaning areas.

3.3.2.4.13 Washing areas for equipment, vehicles, containers, or other items.

3.3.2.4.14 Shipping and receiving areas.

3.3.2.4.15 Manufacturing buildings.

3.3.2.4.16 Residual treatment, storage, and disposal sites.

3.3.2.4.17 Any other areas capable of contaminating storm water runoff.

3.3.2.5 Status of Non-Storm Water Discharges to the Storm Sewer The SWPPP shall identify all known contaminated and uncontaminated sources of non-storm water discharges to the storm sewer system or waters of the state and indicate which are covered by WPDES permits. The SWPPP shall contain the results of the non-storm water discharge monitoring required by s. NR 216.28, Wis. Adm. Code. If monitoring is not feasible due to the lack of suitable access to an appropriate monitoring location, the SWPPP shall include a statement that the monitoring could not be conducted and an explanation of the reasons why.

3.3.2.6 Source Area Control Best Management Practices The SWPPP shall rely, to the maximum extent practicable, on the use of source area control best management practices designed to prevent storm water from becoming contaminated at the facility. Source area control best management practices that are either proposed or in place at the facility shall be indicated on the facility drainage base map described in section 3.3.2.2 of this permit. The SWPPP shall provide for the use of the following source area control best management practices:

3.3.2.6.1 Activities to stabilize areas of bare soil with vegetation or through permanent land cover to control soil erosion.

3.3.2.6.2 Good house-keeping measures, preventive maintenance measures, visual inspections, spill prevention and response measures, and employee training and awareness.

3.3.2.6.3 Manage salt storage facilities so that neither precipitation nor storm water runoff can come into contact with the stored salt in order to minimize pollutant discharges. Alternatively, for permittees that use brine and have salt storage piles on impervious curbed surfaces, install and

maintain a means of diverting contaminated storm water to a brine treatment system for process use.

3.3.2.6.4 Use of a combination of storm water contact control or containment, drainage controls, or diversions to control SARA Title III Section 313 "Water Priority Chemicals" (42 USC s. 11023 (c)) potentially discharged through the action of storm water runoff, leaching, or wind.

3.3.2.7 Residual Pollutants The SWPPP shall identify pollutants that are likely to contaminate storm water discharges to waters of the state following implementation of source area control best management practices. Past sampling data collected at the facility or at sufficiently similar outfalls at other facilities may be used in making this determination. At a minimum, the following pollutants shall be considered for their potential to contaminate storm water:

3.3.2.7.1 Any pollutant for which an effluent limitation is contained in any discharge permit issued to the permittee, for this facility, by the Department.

3.3.2.7.2 Any pollutant contained in a categorical effluent limitation or pre-treatment standard to which the facility is subject.

3.3.2.7.3 Any SARA Title III Section 313 "Water Priority Chemical" (42 USC s. 11023 (c)) for which the permittee, for this facility, has reporting requirements and which has the potential for contaminating storm water.

3.3.2.7.4 Any other toxic or hazardous pollutants from present or past activity at the site that remain in contact with precipitation or storm water and which could be discharged to the waters of the state, and which are not regulated by another environmental program.

3.3.2.7.5 Any of the following parameters which might be present in significant concentrations: Oil and grease, pH, total suspended solids, 5-day biological oxygen demand, and chemical oxygen demand.

3.3.2.8 Storm Water Treatment Best Management Practices When source area control best management practices are not practicable or are inadequate to control storm water pollution, or when the Department determines source area control best management practices are inadequate to achieve a water quality standard, the SWPPP shall prescribe appropriate storm water treatment practices as needed to reduce the pollutants in contaminated storm water prior to discharge to waters of the state. Proposed or existing storm water treatment practices shall be shown on the facility drainage basin map described in section 3.3.2.2 of this permit. The SWPPP shall provide for the following types of storm water treatment practices:

3.3.2.8.1 Storm water significantly contaminated with petroleum products shall be treated for oil and grease removal by an adequately sized, designed, and functioning wastewater treatment device. Coverage under a separate individual or general permit is required for discharges of storm water from oil/water treatment devices. Under s. 281.41, Wis. Stats., prior Department approval of plans for oil and grease removal devices may be required.

3.3.2.8.2 Storm water discharges contaminated by sediment eroding from areas of bare soil that cannot be stabilized by pavement, gravel, vegetation, or other permanent land cover shall be treated by best management practices designed, installed and maintained to achieve compliance with the

construction site performance standards in s. NR 151.11(6m), Wis. Adm. Code, and in accordance with the Department's Construction Site Erosion and Sediment Control Technical Standards.

Note: The Construction Site Erosion and Sediment Control Technical Standards are available at the following Department website: https://dnr.wi.gov/topic/stormwater/standards/const_standards.html.

3.3.2.9 Facility Monitoring The SWPPP shall include provisions for complying with the monitoring requirements specified in s. NR 216.28, Wis. Adm. Code, and section 4 of this permit. The SWPPP shall include a checklist of inspections to be made during the annual facility site inspection required by s. NR 216.28(2), Wis. Adm. Code. The SWPPP shall also identify for each outfall the type of monitoring that will be conducted, such as non-storm discharge monitoring and storm water discharge quality inspections.

3.3.2.10 SWPPP Implementation Schedule The SWPPP shall include an implementation schedule for the requirements of this permit that meet the compliance timeframes set forth in this permit.

3.3.2.11 Certification and Signature The SWPPP shall be signed in accordance with s. NR 216.22(7), Wis. Adm. Code, and contain the following statement:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

3.4 Amending a SWPPP Unless an alternative timeframe is specified by the Department, the permittee shall amend and submit the SWPPP to the department within 30 days of the occurrence of any of the following circumstances:

3.4.1 When expansion, production increases, process modifications, changes in material handling or storage, or other activities are planned which will result in significant increases in the exposure of pollutants to storm water discharged either to waters of the state or to storm water treatment devices. The amendment shall contain a description of the new activities that contribute to the increased pollutant loading, planned source control activities that will be used to control pollutant loads, an estimate of the new or increased discharge of pollutants following treatment, and when appropriate, a description of the effect of the new or increased discharge on existing storm water treatment facilities.

3.4.2 The comprehensive annual facility site compliance inspection, quarterly visual inspection of storm water quality, or other information reveals that the provisions of the SWPPP are ineffective in controlling storm water pollutants discharged to waters of the state.

3.4.3 Upon written notice that the Department finds the SWPPP to be ineffective in achieving the conditions of this permit.

3.5 Storm Water Discharges to Outstanding and Exceptional Resource Waters If the permittee's industrial storm water will discharge to an outstanding resource water or exceptional resource water, the permittee shall include a written section in the SWPPP that discusses and identifies the management practices and control measures the permittee will implement to prevent the discharge of any pollutant(s) in excess of the background

level within the water body. This section of the permittee's plan shall specifically identify control measures and practices that will collectively be used to prevent the discharge of pollutants in excess of the background level within the water body.

4. MONITORING REQUIREMENTS

4.1 Purpose Monitoring includes site inspections and non-storm water discharge assessments. The purpose of monitoring is to evaluate storm water outfalls for the presence of non-storm water discharges, and to evaluate the effectiveness of the permittee's pollution prevention activities in controlling contamination of storm water discharges.

4.2 Evaluation of Non-Storm Water Discharges

4.2.1 The permittee shall evaluate all storm water outfalls for non-storm water contributions to the storm drainage system for the duration of this permit. Any monitoring shall be representative of non-storm water discharges from the facility. Evaluations shall take place during dry periods, and may include either end of pipe screening or detailed testing of the storm sewer collection system. Either of the following monitoring procedures is acceptable:

4.2.1.1 A detailed testing of the storm sewer collection system may be performed. Acceptable testing methods include dye testing, smoke testing, or video camera observation. The Department may require a re-test after 5 years or a lesser period as deemed necessary by the Department.

4.2.1.2 End of pipe screening shall consist of visual observations made at least twice per year at each outfall of the storm sewer collection system. Instances of dry weather flow, stains, sludge, color, odor, or other indications of a non-storm water discharge shall be recorded.

Note: The department recommends compiling photographic documentation of visual observations made during non-storm water discharge evaluations.

4.2.2 In addition to maintaining results on-site at the facility, results of the non-storm water evaluations shall be included in the SWPPP required in section 3.3.2.5 of this permit and the Annual Facility Site Compliance Inspection report required in section 5.2 of this permit. Information reported shall include the date of testing, test method, outfall location, testing results, and potential significant sources of non-storm water discovered through testing. Upon discovering non-storm water flows that are not covered under another WPDES permit, the permittee shall either immediately seek coverage under another permit from the Department or eliminate the non-storm water flow.

4.2.3 Any permittee unable to evaluate an outfall for non-storm water discharges shall sign a statement certifying that this requirement could not be complied with, and include a copy of the statement in the SWPPP and the Annual Facility Site Compliance Inspection report. The statement shall be submitted to the Department within 30 days after the permittee determines that it is unable to evaluate an outfall.

4.3 Evaluation of Storm Water Discharges The permittee shall evaluate storm water outfalls for storm water contributions to the storm drainage system. Any monitoring shall be representative of storm water discharges from the facility.

4.3.1 Annual Facility Site Compliance Inspection Permittees shall perform and document the results of an Annual Facility Site Compliance Inspection (AFSCI). The AFSCI shall be adequate to verify that the site drainage conditions and potential pollution sources identified in the SWPPP remain accurate, and that the best management practices prescribed in the SWPPP are being implemented, properly operated and adequately maintained. Information reported shall include the inspection date, inspection personnel, scope of the inspection, major observations, and revisions needed in the SWPPP.

The AFCSI Report Form can be accessed at the following website:
https://dnr.wi.gov/files/PDF/forms/3400/3400-176.pdf

4.3.2 Quarterly Visual Monitoring Permittees shall perform and document quarterly visual inspections of storm water discharge quality at each storm water discharge outfall. Inspections shall be conducted within the first 30 minutes of discharge or as soon thereafter as practical, but not exceeding 60 minutes. The inspections shall include any observations of color, odor, turbidity, floating solids, foam, oil sheen, or other obvious indicators of storm water pollution. Information reported shall include the inspection date, inspection personnel, visual quality of the storm water discharge, and probable sources of any observed storm water contamination.

The Quarterly Visual Inspection Form can be accessed at the following website:
https://dnr.wi.gov/files/PDF/forms/3400/3400-176a.pdf

4.3.3 Monitoring Waivers The Department may waive specific monitoring requirements for the following reasons:

4.3.3.1 The permittee indicates that either an employee could not reasonably be present at the facility at the time of the snowmelt or runoff event, or that attempts to meet the monitoring requirement would endanger employee safety or well-being.

4.3.3.2 The permittee indicates that there were no snow melt or runoff events large enough to conduct a quarterly visual inspection at an outfall. A waiver is automatically granted for a quarter where the permittee sufficiently documents and retains records demonstrating that there were no snow melt or runoff events large enough to conduct a quarterly visual inspection at the facility during that quarter. Documentation and records used to qualify for an automatic waiver shall be submitted to the Department upon request.

4.3.3.3 The facility is inactive or remote facility (such as an inactive mining operation) where the permittee demonstrates that monitoring and inspection activities are impractical or unnecessary. At a minimum, the Department shall establish an alternative requirement that the permittee make site inspections by a qualified individual at least once in every 3-year period.

4.3.3.4 The permittee demonstrates to the Department's satisfaction that the sources of storm water contamination are outside of the permittee's property boundary and are not associated with the permittee's activities. The demonstration shall be presented in the SWPPP or AFSCI report and submitted to the Department for evaluation.

5. COMPLIANCE AND REPORTING REQUIREMENTS

5.1 SWPPP Compliance and Reporting Requirements

5.1.1 An owner or operator of a facility requiring coverage under this permit shall prepare a Storm Water Pollution Prevention Plan (SWPPP) prior to applying for permit coverage under s. NR 216.22, Wis. Adm. Code, and shall submit the SWPPP summary to the Department when applying for coverage under this permit. For existing facilities that previously operated without required permit coverage and without a SWPPP as required, the owner or operator shall immediately develop a SWPPP, submit the SWPPP summary to the Department when applying for coverage under this permit, and implement the SWPPP to achieve compliance with this permit in the shortest practicable time. A facility has the option to submit their full SWPPP in lieu of the SWPPP summary when applying for coverage.

5.1.2 The SWPPP shall conform to the requirements specified in s. NR 216.27 (3), Wis. Adm. Code, and section 3.3 of this permit.

5.1.3 The SWPPP shall be kept at the facility and made available to the Department for inspection and copying upon request. If storm water discharges from the facility enter a municipal separate storm sewer system covered under a storm water permit pursuant to Subchapter I of ch. NR 216, Wis. Adm. Code, the SWPPP shall be made available to the owner or operator of the municipal separate storm sewer system for inspection and copying upon request.

5.1.4 Unless an alternate implementation schedule is specified by the Department, the SWPPP shall be implemented in accordance with the implementation schedule developed under section 3.3.2.10 of this permit.

5.1.5 The permittee shall keep the SWPPP current and amend it as necessary to correct deficiencies in the SWPPP as they are identified. The permittee shall amend the SWPPP and submit it to the Department in the event of any facility operational changes that may result in additional significant storm water contamination.

5.2 Monitoring Compliance and Reporting Requirements

5.2.1 The permittee shall conduct the first Annual Facility Site Compliance Inspection (AFSCI) within 12 months of the **Start Date** of coverage under this general permit. Subsequent AFSCIs shall be conducted and AFSCI reports prepared by the permittee by the anniversary of the **Start Date** for each year of coverage under this permit. Reports shall be written on forms available from the Department and shall contain information from the AFSCI, the quarterly visual inspection, and the non-storm water evaluation. Copies of all AFSCI reports, quarterly visual inspections and nonstorm water monitoring reports shall be maintained on site at the facility and made available to the Department for inspection and copying upon request for the duration of permit coverage.

Note: The AFSCI Report form, Quarterly Visual Inspection form, and Storm Water Chemical Analysis Report form are available on the Department website at:
https://dnr.wi.gov/topic/stormwater/industrial/forms.html.

5.2.2 Quarterly visual inspections of storm water discharge quality shall be conducted by the permittee four times annually by the anniversary date of **Start Date** of coverage under the permit.

5.3 Discharges to Regulated Municipal Separate Storm Sewer Systems

5.3.1 Permittees regulated under this permit with storm water discharges and non-storm water discharges entering a municipal separate storm sewer system covered under a storm water permit pursuant to Subchapter I of ch. NR 216, Wis. Adm. Code, shall provide information on these discharges to the owner or operator of the municipal separate storm sewer system upon request. Information the permittee shall provide includes the area or sub-areas of the facility draining to the municipal separate storm sewer system, the nature of industrial activity and potential storm water contamination sources in the areas draining to the system, the nature and number of non-storm water discharges to the system, storm water best management practices employed at the facility and their effectiveness at pollutant removal, storm water monitoring data, and copies of the SWPPP and AFSCI reports.

5.3.2 Upon discovering a previously unknown non-storm water discharge to the municipal separate storm sewer system that is not authorized to discharge under a required WPDES permit or that is an illicit discharge as defined by s. NR 216.002(11), Wis. Adm. Code, the permittee shall immediately report the discharge to the owner or operator of the municipal separate storm sewer system.

5.3.3 The permittee shall immediately report spills or dumping of materials that enter the municipal separate storm sewer system to the owner or operator of the system.

5.3.4 In accordance with the owner or operator's established authority to control discharges to its municipal separate storm sewer system, the permittee shall assist the owner or operator of the system with detecting and eliminating illicit discharges to the system to the maximum extent practicable if the owner or operator finds that the source of an illicit discharge may originate from the permittee's facility.

6. GENERAL CONDITIONS The general conditions in s. NR 205.07(1), (3), and (5), Wis. Adm. Code, are hereby incorporated by reference into this permit, except for s. NR 205.07(1)(n) and(3)(b), Wis. Adm. Code. Under s. NR 205.08(9), Wis. Adm. Code, dischargers covered under a storm water general permit are not required to submit an application for reissuance unless directed to do so by the Department under s. NR 216.22(9), Wis. Adm. Code. The requirements for spill reporting are in section 6.5 below.

Note: Chapter NR 205 is available at the following website: https://docs.legis.wisconsin.gov/code/admin_code/nr/200.

6.1 Work near Surface Waters and Wetlands Activities performed in wetland areas, in floodplains, or near shorelands may require permits or approvals through applicable state law, state regulations, or county or local ordinances. Additionally, state permits or contracts required by chs. 30, 31 and 87, Wis. Stats. and s. 281.36, Wis. Stats. (or Wisconsin Administrative Code promulgated under these laws), and federal permits may be applicable.

6.2 Continuation of the Expired General Permit As provided in s. NR 205.08(9), Wis. Adm. Code, and s. 227.51, Wis. Stat., the terms and conditions of this general permit shall continue to apply until this general permit is reissued or revoked or until an individual permit is issued for the discharge to which the general permit applied.

6.3 Petition to Move to Individual Permit Coverage Any person may submit a written request to the department to withdraw coverage under this general permit and to replace it with an individual storm water permit under s. NR 216.25(4), Wis. Adm. Code.

6.4 Liabilities under Other Laws Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the federal Clean Water Act (33 USC s. 1321), any applicable federal, state, or local law or regulation under authority preserved by Section 510 of the Clean Water Act (33 USC s. 1370).

6.5 Severability The provisions of this permit are severable, and if any provisions of this permit or the application of any provision of this permit to any circumstance is held invalid the remainder of this permit shall not be affected thereby.

6.6 Spill Reporting The permittee shall notify the Department immediately of any release or spill of a hazardous substance to the environment in accordance with s. 292.11, Wis. Stats., and ch. NR 706, Wis. Adm. Code.

Note: The 24-hour toll free spills hotline number is (800) 943-0003. Information about hazardous substance spills is available from the Department's website at: https://dnr.wi.gov/topic/Spills/.

6.7 Submitting Records Any forms or reports submitted to the Department of Natural Resources in accordance with this permit shall be submitted via the Department's Water ePermitting System available at: https://dnr.wi.gov/topic/stormwater/industrial/forms.html.

6.8 Enforcement Any violation of s. 283.33, Wis. Stats., ch. NR 216, Wis. Adm. Code, or this permit is enforceable under s. 283.89, Wis. Stats.

6.9 Permit Fee A storm water discharge permit fee shall be paid annually for each industrial facility covered under this permit. The permittee will be billed by the Department annually in May of each year and the fee is

due by June 30 of each year in accordance with s. NR 216.30, Wis. Adm. Code. A permittee may be referred to the Wisconsin Department of Revenue for the collection of any unpaid storm water fee.

Appendix A.5
Conditional Plan Modification Approval for Annual Reporting Requirements for Republic Services Kestrel Hawk Recycling and Disposal Facility (RDF), License # 0572, Racine, Wisconsin – August 30, 2017

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State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Scott Walker, Governor
Cathy Stepp, Secretary
Joe Liebau, Secretary's Director

Waukesha Service Center
141 NW Barstow St., Rm.180
Waukesha, Wisconsin 53188
FAX 262-574-2117
Telephone 262-574-2100

FID# 252076990
Racine County
SW/APPR

August 30, 2017

Mr. Khalid Umer, P.E., Area Environmental Manager
Republic Services, Inc., Kestrel Hawk Landfill
1989 Oakes Road
Racine, WI 53406

RE: Conditional Plan Modification Approval for Annual Reporting Requirements for the Republic Services Kestrel Hawk Recycling and Disposal Facility (RDF), License # 0572, Racine, Wisconsin

Dear Mr. Umer:

Your requested modifications to the plan of operation for the Kestrel Hawk Landfill have been reviewed and approved subject to the conditions listed in the attached approval. The plan modification included a request to modify the environmental monitoring and annual reporting for the facility.

Condition 1 requires that the 2016 Annual Report be submitted within 60 days of the date of this letter. The report is due by June 15 of the following year in subsequent years.

Condition 2 contains the new environmental monitoring and annual reporting requirements.

If you have any questions about this approval, please contact Gerald DeMers at (414) 263-8594 or gerald.demers@wisconsin.gov or Joe Lourigan at (608) 267-9386 or joseph.lourigan@wisconsin.gov .

Sincerely,

Matt Matrise
Waste and Materials Management Program Supervisor
Southeast Region

Attachments: #1-Environmental Monitoring Tables
#2-Required Annual Reporting Information
#3-Inspection Frequency Change & Location of Leachate Pipes That Will Not be Cleaned

cc: Curtis Madsen, TRC
SER file

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

CONDITIONAL PLAN OF OPERATION APPROVAL MODIFICATION FOR THE REPUBLIC SERVICES, INC. KESTREL HAWK RDF LICENSE No. 0572

FINDINGS OF FACT

The department finds that:

1. Republic Services, Inc. (Republic) owns and operates a municipal solid waste and hazardous waste disposal facility in the North ½ of Section 23, T3N, R22E, City of Racine, Racine County, Wisconsin known as the Kestrel Hawk RDF (formerly known as Land Reclamation Landfill).

2. The department issued a plan of operation approval for Land Reclamation, Ltd. on December 19, 1984, with subsequent modifications.

3. On August 30, 1996 the department issued a conditional plan of operation for the expanded Kestrel Hawk Landfill, referred to as the Kestrel Hawk Park Northwest Expansion Landfill, with subsequent modifications.

4. On June 9, 2017, TRC, on behalf of Republic, submitted a request to modify the annual reporting requirements for the Kestrel Hawk RDF.

5. On July 3, 2017, the department received the correct review fee of $1,650 (Invoice#11291).

6. The information submitted in connection with the modification request is contained in a June 9, 2017 "Request for a Plan Modification of the Annual Reporting Requirements for Republic Services, Inc., Municipal Waste Disposal Facility (Kestrel Hawk), Racine, Wisconsin." The request was received by the department on June 15, 2017. The request included two attachments which are attachments to this approval.

7. On July 20, 2017, the department shared a draft of this plan modification approval with Republic. Republic responded on August 4, 2017 indicating that the draft approval is consistent with Republic's requested changes to the environmental monitoring and annual reporting requirements.

8. Additional documents considered in connection with the review of the construction documentation include the following:

    a. The department's December 28, 2005, Plan Modification Approval which established the most recent environmental monitoring and annual reporting requirements for the facility prior to this approval.

    b. The department files for the Kestrel Hawk RDF (Lic.#572).

9. Additional facts relevant to the to the review of the modification request include the following:

   a. The Kestrel Hawk landfill has been in compliance with the requirements of the December 28, 2005 Plan Modification Approval for environmental monitoring and annual reporting requirements. Some of the annual reporting requirements are already provided in other reports and submittals to the department, some are repetitive of previous years' information with little to no changes and some no longer provide the same level of informative value that they originally did, because many of the operational procedures and technology used are well established.

   b. The department met with representatives of Republic Services, Inc. and TRC on May 16, 2017 to discuss proposed modifications to the required contents of the Annual Report for the facility.

   c. Removing items that no longer provide the same value as they originally did or are already provided to the department in a different form will reduce the size of the annual report, making it more time efficient to review.

   d. The requested changes to storm water monitoring are warranted because many years of data do not show water quality indicators at a level of concern. The storm water monitoring will remain consistent with the facility's Tier 2 general industrial storm water permit and associated storm water pollution prevention plan and surface water monitoring requirements at most other active landfills.

   e. The proposal includes a revision to the dual extraction well pump maintenance frequency from monthly to semi-annually and the pump cycle meter reading frequency from weekly to monthly. Republic indicated that a low number of pumps require maintenance on the current interval and that the current meter reading schedule does not provide sufficient time for well recharge and changes to flow.

   f. The proposal includes a list of the leachate collection pipes that will not be cleaned (Attachment #3) because of pipe blockages and provides reasons for not performing the cleaning in each pipe. None of the pipes are associated with the Northwest Expansion approved in 1996. The reason for allowing these pipes to no longer be cleaned is because of the concern that continued cleaning may break the pipes or exacerbate the blockages with additional blockages caused by the cleaning equipment getting stuck and breaking off.

CONCLUSIONS OF LAW

1. The department has authority under s. 289.30, Stats., to modify a plan of operation approval if the modification would not inhibit compliance with chapter NR 500-538 and chs. NR 664-670, Wis. Adm. Code.

2. The department has authority to approve a plan of operation with special conditions if the conditions are needed to ensure compliance with chapter NR 500-538 and chs. NR 664-670, Wis. Adm. Code.

3. The conditions of approval set forth below are needed to ensure compliance with NR chs. NR 500-538 and chs. NR 664-670, Wis. Adm. Code.

In accordance with the foregoing, the department has authority under chapter 289, Stats., to issue the following conditional plan of operation approval modification.

CONDITIONAL PLAN OF OPERATION APPROVAL MODIFICATION

The department hereby approves the proposed plan of operation modification for the Kestrel Hawk Landfill, subject to compliance with chs. NR 500-538 and chs. NR 664-670, Wis. Adm. Code and the following conditions:

1. The due date for the 2016 Annual Report is 60 days from the date of this letter. All future annual reports will be due on June 15 of the following year.

2. Republic Services, Inc. shall implement an environmental monitoring plan that follows the schedules, parameters and requirements contained in attachment 1 and annual reporting plan that contains the information outlined in attachment 2. This condition supersedes and replaces condition 3 of the department's December 28, 2005 environmental monitoring and annual reporting plan of operation modification approval.

This approval is based on the information available to the Department as of the date of approval. If additional information, project changes, or other circumstances indicate a possible need to modify this approval, the Department may ask you to provide further information relating to this activity. Likewise, the Department accepts proposals to modify approvals, as provided for in state statutes and administrative codes.

NOTIFICATION OF APPEAL RIGHTS

If you believe that you have a right to challenge this decision, you should know that Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed.

For judicial review of a decision pursuant to sections 227.52 and 227.53, Stats., you have 30 days after the decision is mailed or otherwise served by the department, to file your petition with the appropriate Circuit Court and serve the petition on the Department. Such a petition for judicial review shall name the Department of Natural Resources as the respondent.

Dated August 30, 2017

DEPARTMENT OF NATURAL RESOURCES

For the Secretary

Matt Matrise
Waste and Materials Management Program Supervisor
Southeast Region

Gerald DeMers, P.E.
Waste and Materials Management Program Engineer
Southeast Region

Joseph Lourigan
Hydrogeologist Plan Review Expert
Waste and Materials Management Program

Attachment 1

Table 1a
Groundwater Monitoring NR 507 Wells

Wells	DNR ID#	WUWN	Comment[1]	Sampling & Reporting Frequency	Parameter Codes	Parameters
Non-Subtitle D Wells						
Unit A				Sample and Report Semiannually April and October	04189	Elevation, Groundwater (feet above mean sea level)
007U	024	CV674			00010	Temperature, of Water taken in field ^{0}C
040U	043	BS728			00094	Field Conductivity @ 25^0 C(umho/cm)
047T	291	EH079	**abandoned**		00400	Field pH (standard units)
047TR	110	EH364			00940	Chloride (mg/L)
109T	254	BS734	**abandoned**		22413	Total Hardness, filtered (mg/L)
109TR	255	CV692	**abandoned**		39036	Alkalinity, filtered (mg/L)
109TRR	039	GN865			00950	Fluoride, filtered (mg/L)
201T	104	GM728			00930	Sodium, filtered (mg/L)
202T	100	GM730				
204T	097	GM736	**abandoned**			
204TR	308	JY923				
208T	075	GM742		Sample & Report Annually October	VOCs (ug/L)	Using EPA Solid Waste Method 8260
209T	093	GM744				
CS002	012	GN856				
CS006	054	GN876	**abandoned**			
CS006R	138	GN942				
Unit B						
109L	040	BS736				
201U	105	GM729				
204UR	098	GM737	**abandoned**			
204URR	307	JY922				
208U	076	GM743				
209U	094	GM748				
UB002	048	GN870				
UB004	047	GN869				
UB005	008	GN852				
UB007	010	GN854				
141U Area and Subtitle D Wells						
Unit A				Sample & Report Semiannually April and October	04189	Elevation, Groundwater (feet above mean sea level)
134U	033	BS747			00010	Temperature, of Water taken in field ^{0}C
141U	007	BS744			00094	Field Conductivity @ 25^0 C(umho/cm)
152U	135	GN939			00400	Field pH (standard units)
153U	136	GN940			00940	Chloride (mg/L)
Subtitle D Wells					22413	Total Hardness, filtered (mg/L)
Unit B					39036	Alkalinity, filtered (mg/L)
049L	292	EH087	**abandoned**		00950	Fluoride, filtered (mg/L)
049LR	004	GN851			00930	Sodium, filtered (mg/L)
204UR	098	GM737	**abandoned**			
204URR	307	JY922			VOCs (ug/L)	Using EPA Solid Waste Method 8260
208U	076	GM743				
209U	094	GM748				

1. Monitoring Points that are abandoned are no longer monitored.
Trip Blank (999) and/or Field Blank (997) Data must also be submitted electronically

Table 1b
Groundwater Monitoring NR 507 Wells

Wells	DNR ID#	WUWN	Comment[1]	Sampling & Reporting Frequency	Parameter Codes	Parameters
Groundwater Elevation Monitoring						
005T	295	BS696	**abandoned**			
005TR	061	GN882				
005U	296	BS703	**abandoned**	Sample & Report	04189	Elevation, Groundwater
005UR	001	GN850		Semiannually		feet above mean sea level
005L	293	BS704	**abandoned**	April and October		
005LR	294	CV708	**abandoned**			
005LRR	002	EH075				
006T	297	BS649	**abandoned**			
006TR	063	CV671				
006U	022	BS724				
006L	023	BS732				
007T	065	BS733				
017T	273	BS684	**abandoned**			
017TR	064	GN883				
017U	274	BS685	**abandoned**			
017UR	0027	CV675				
017L	272	BS686	**abandoned**			
017LR	006	CV676				
046T	106	EH076	**abandoned**			
046TR	252	GN885				
046U	107	EH077				
047U	111	EH080				
048T	119	EH082	**abandoned**			
048TR	160	LO951				
048U	120	EH083	**abandoned**			
048UR	161	LO952				
048L	121	EH084	**abandoned**			
048LR	162	LO953				
049T	092	EH085				
049U	003	EH086				
108T	066	BS756				
108U	025	BS752				
108L	026	BS725				
109U	041	BS735				
120T	005	BS750				
120U	090	BS751				
120L	091	EH094				
126T	114	EH095				
126U	115	EH096				
126L	116	GN886				
126D	118	GN888				
134T	067	BS739				
141T	262	BS741				
146U	038	BS748	**abandoned**			
146UR	139	GN943				
202U	101	GM731				
202D	103	GM735				
209D	096	GM751				
210U	248	PL531				
211U	249	**will not be installed**				
CS001	050	GN872				
CS003	051	GN873				
CS004	052	GN874				
CS005	053	GN875				
UB001	049	GN871				
SBPZ1	301	GN896	**inactive**			
SBPZ2	302	GN897	**inactive**			

1. Monitoring Points that are abandoned are no longer monitored.

Table 1c
Groundwater Monitoring NR 635 Wells

Monitoring Pt.	DNR ID#	WUWN	Comment[1]	Sampling & Reporting Frequency	Parameter Codes	Parameters
	Unit A			Sample & Report Annually October		Appendix 1
CS008	013	GN857				
CS010	014	GN858				
CS012	015	GN859				
CS014	016	GN860				
	Unit B			Sample & Report Quarterly January, April, July & October	04189	Elevation, Groundwater feet above mean sea level
049L	292	EH087	**abandoned**		00010	Temperature, of Water taken in field ^{0}C
049LR	004	GN851			00094	Field Conductivity @ 25 ^{0}C (umho/cm)
UB006	009	GN853			00400	Field pH (standard units)
UB008	011	GN855			00940	Chloride (mg/L)
UB009	045	GN867			22413	Total Hardness, filtered (mg/L)
					39036	Alkalinity, filtered (mg/L)
					00950	Fluoride, filtered (mg/L)
					00930	Sodium, filtered (mg/L)
						VOCs (ug/L) Using EPA method 8260
						Appendix 1 detects from annual appendix 1 monitoring

1. Monitoring Points that are abandoned are no longer monitored.
Trip Blank (999) and/or Field Blank (997) Data must also be submitted electronically

Table 2
Interior Containment Structure Monitoring - Hazardous Waste Unit

Monitoring Pt.	DNR ID#	WUWN	Comment[1.]	Sampling & Reporting Frequency	Parameter Codes	Parameters
CS007	055	GN877		Sample & Report Quarterly	04189	Elevation, Groundwater feet above mean sea level
CS009	056	GN878				
CS011	057	GN879		January, April, July & October	00094	Field Conductivity @ 25 ^{0}C (umho/cm)
CS013	058	GN880				
CS009	056	GN878		Sample & Report Annually October	VOCs (ug/L) Using EPA method 8260	
CS013	058	GN880				

1. Monitoring Points that are abandoned are no longer monitored.

Table 3
Gradient Control Structure Monitoring - NW Expansion

Monitoring Pt.	DNR ID#	WUWN	Comment[1]	Sampling & Reporting Frequency	Parameter Codes	Parameters
GMH1East	151	NA		Monitor & Report Quarterly January, April, July & October	00010	Temperature, of Water taken in field ^{0}C
GMH1South	152	NA			00094	Field Conductivity @ 25 ^{0}C (umho/cm)
GMH1West	153	NA			00150	Total Suspended Solids (mg/L)
					00310	BOD_5 5 day @ 20 ^{0}C (mg/L)
					00400	Field pH (standard units)
GCHW-1	157	NA		Sample Monthly Report Quarterly January, April, July & October	04189	Elevation, Groundwater feet above mean sea level
GCHW-2	158	NA				
GMH1	156	NA		Sample Monthly Report Quarterly January, April, July & October	50052	Groundwater Volume Pumped, (1000 gallons)

1. Monitoring Points that are abandoned are no longer monitored.

Table 4a
Leachate Characteristic Monitoring

Monitoring Pt.	DNR ID#	WUWN	Comment[1]	Sampling & Reporting Frequency	Parameter Codes	Parameters
MH15B	606	NA	original or old site	Sample Monthly	00032	Leachate Volume Pumped Monthly (kgallons)
LMP6A	440	NA	NW Expansion		00010	Field Temperature °C
LMP8A	600	NA	Corr 1-6	Report Semiannually	00410	Alkalinity, total as $CaCO_3$ (mg/L)
				April and October	00310	BOD_5 5 day @ 20 °C (mg/L)
					00094	Field Conductivity @ 25°C (umho/cm)
					03582	Oil and Grease (mg/L) EPA Method 1664/1664A
					00400	Field pH, (standard units)
					00665	Phosphorous, Total (mg/L)
					00150	Total Suspended Solids (mg/L)
				Sample & Report Semiannually April & October	01027	Cadmium, total (mg/L)
					00940	Chloride (mg/L)
					00951	Fluoride, total (mg/L)
					00900	Hardness, total (mg/L as $CaCO_3$)
					74010	Iron, total (mg/L)
					01051	Lead, total (mg/L)
					01055	Manganese, total (mg/L)
					71900	Mercury, total (mg/L)
					00610	Nitrogen, Ammonia, total (mg/L as N)
					00625	Nitrogen, Kjeldahl, total (mg/L as N)
					00929	Sodium, total (mg/L)
					00945	Sulfate, total (mg/L)
						VOCs (ug/L) Using EPA Solid Waste Method 8260
				Sample & Report Annually October		Base/Neutral Extractable Compounds
						Acid Extractable Compounds

1. Monitoring Points that are abandoned are no longer monitored.

Table 4b
Leachate Headlevel Monitoring

Monitoring Pt.	DNR ID#	WUWN	Comment[1]	Sampling & Reporting Frequency	Parameter Codes	Parameters
Old Site						
LHW100	400	NA		Sample & Report Quarterly January, April, July & October	00023	Elevation, Leachate Head feet above mean sea level
LHW101	401	NA	**abandoned**		00031	Depth of Leachate from top of liquid level to bottom in feet
LHW101R	422	NA				
LHW102	402	NA				
LHW103	403	NA				
GW/LHW104	404	NA				
LHW105	405	NA				
LHW106	406	NA				
LHW107	407	NA				
LHW108	408	NA				
LHW109	409	NA				
LHW110	410	NA				
LHW111	411	NA				
LHW112	412	NA	**abandoned**			
LHW112R	423	NA				
LHW113	413	NA				
LHW114	414	NA				
LHW115	415	NA				
LHW116	416	NA				
LHW117	417	NA				
LHW118	418	NA	**to be installed[2]**			
LHW119	419	NA	**to be installed[2]**			
LHW120	420	NA	**to be installed[2]**			
LHW121	421	NA				
LHW122	502	NA				
LHW123	503	NA				
LHW124	504	NA				
RS1	424	NA	**abandoned**			
RS1R	441	NA				
LH38	425	NA				
LHW-8,9&10	949	NA				
Northwest Expansion						
LH1	426	NA	**Phase 1**	Sample & Report Semiannually April & October	00023	Elevation, Leachate Head feet above mean sea level
LH2	427	NA	**Phase 1**		00031	Depth of Leachate from top of liquid level to bottom in feet
LH3	428	NA	**Phase 2**			
LH4	429	NA	**Phase 2**			
LH5	481	NA	**Phase 3**			
LH6	430	NA	**Phase 3**			
LH7	431	NA	**Phase 4**			
LH8	432	NA	**Phase 4**			
LH9	433	NA	**Phase 5**			
LH10	434	NA	**Phase 5**			

Monitoring Points that are abandoned are no longer monitored.
2. Leachate Head Wells will be installed during final cover construction of the "saddle area."

Table 5a
Landfill Gas Condensate Monitoring

Monitoring Pt.	DNR ID#	WUWN	Comment[1]	Sampling & Reporting Frequency	Parameter Codes	Parameters
The Whole Site:						
DL-4	610	NA	**abandoned**	Sample Monthly	99187	Volume of Gas Condensate Collected or Pumped (gallons)
DL-4R	619	NA				
				Report Semiannually	00010	Field Temperature °C
Hazardous Waste Unit:				April and October	00410	Alkalinity, total as $CaCO_3$ (mg/L)
DL-2	607	NA			00310	BOD_5 5 day @ 20 °C (mg/L)
					00094	Field Conductivity @ 25°C (umho/cm)
					03582	Oil and Grease EPA Method 1664/1664A
City of Racine LF:						
DL-6A	608	NA	can't sample from DL-6A at this time		00400	Field pH, (standard units)
					00665	Phosphorous, Total (mg/L)
					00150	Total Suspended Solids (mg/L)
NW Expansion:						
DL-7	613	NA	**will not be installed**			
				Sample & Report Semiannually April & October	01027	Cadmium, total (mg/L)
					00940	Chloride (mg/L)
					00951	Fluoride, total (mg/L)
					00900	Hardness, total (mg/L)
					74010	Iron, total (mg/L)
					01051	Lead, total (mg/L)
					01055	Manganese, total (mg/L)
					71900	Mercury, total (mg/L)
					00610	Nitrogen, Ammonia, total (mg/L as N)
					00625	Nitrogen, Kjeldahl, total (mg/L as N)
					00929	Sodium, total (mg/L)
					00945	Sulfate, total (mg/L)
						VOCs (ug/L) Using EPA Solid Waste Method 8260
				Sample & Report Annually April		Base/Neutral Extractable Compounds Acid Extractable Compounds

1. Monitoring Points that are abandoned are no longer monitored.

Table 5b
Landfill Gas Extraction Well Monitoring

Monitoring Point - DNR ID #						Sampling & Reporting Frequency	Parameter Codes	Parameters
Monitoring Pt	ID#	Comment[1]	Monitoring Pt	ID#	Comment[1]			
Old Site								
GT1	778		LGW300	750				
GT2	779		LGW301	751		Sample Monthly	46390	Vacuum (inches of water column)
CO5	780		LGW302	752			85547	Percent Methane, by volume
CO6	781		LGW303	753		Report Quarterly	85550	Percent Oxygen, by volume
CO7N	782		LGW304	754		January, April, July	46387	Valve Opening (% open)
CO7S	783		LGW305	755		& October	46388	Gas Temperature (^{0} F)
CO7X	784		LGW306	756				
GW9	788	abandoned	LGW307	757				
GW11	789		LGW308	758				
GW12	790		LGW309	759				
GW21	794		LGW310	760				
LGW36-S	770		LGW311	761				
LGW36-D	631		LGW312	762				
LGW38-S	771		LGW313	763				
LGW38-D	632		LGW314	764				
LGW39-S	772		LGW315	765	abandoned			
LGW39-D	633		GW315-R	942				
LGW40-S	773		LGW315-RR	937				
LGW40-D	634		LGW316	766				
LGW44-S	871		LGW317	767				
LGW44-D	635		LGW318	872	abandoned			
GW45-S	697		LGW318-R	933				
LGW45-DR	940		LGW319	768				
GW46-S	698		LGW320	769				
LGW46-DR	941		LGW321	873				
LGW47-S	777		LGW322	874				
LGW47-D	636		LGW323	875				
GW/LHW104	404		LGW324	876				
GW200	815		LGW325	877				
GW201	816		GW326-S	879				
GW202	817		LGW326-D	878	abandoned			
GW203	818		LGW326-DR	934	abandoned			
LGW204-R	618		LGW-326-DRR	950				
GW205	921		GW327-S	881				
GW206	922		LGW327-D	880	abandoned			
GW207	923		LGW327-DR	935				
GW208	924		GW328-S	883				
GW209	616		LGW328-D	882	abandoned			
LGW210-S	926		LGW328-DR	936				
LGW210-D	925		LGW329	886	abandoned			
GW211	617		LGW329-S	938				
GW212-S	928		LGW329-DR	637				
GW212-D	927		GW330	943				
GW213-S	930		GW331	944				
GW213-D	929		LGW332	945				
LGW214-S	932		LGW333	946				
LGW214-D	931		LGW334	947				
			LGW335	948				
Northwest Expansion								
GW401	819		GW426	844				
GW402	820		GW427	845				
GW403	821		GW428	846				
GW404	822		GW429	847				
GW405	823		GW430	848				
GW406	824		GW431	849				
GW407	825		GW432	850				
GW408	826		GW433	851				
GW409	827		GW434	852				
GW410	828		GW435	853				
GW411	829		GW436	854				
GW412	830		GW437	855	to be installed			
GW413	831		GW438	856	to be installed			
GW414	832	to be installed	GW439	857				
GW415	833	to be installed	GW440	858	to be installed			
GW416	834	to be installed	GW441	859	installed[3]			
GW417	835		GW442	860	installed[3]			
GW418	836		GW443	861	to be installed[2]			
GW419	837		GW444	862	to be installed[2]			
GW420	838		GW445	863	to be installed			
GW421	839		GW446	864	to be installed			
GW422	840		GW447	865	to be installed[2]			
GW423	841	to be installed	GW448	866	to be installed[2]			
GW424	842		GW449	867	to be installed[2]			
GW425	843	to be installed	GW450	868	to be installed[2]			
			GW451	869	to be installed[2]			

Table 5c

Landfill Gas Monitoring Probes, Blowers, Flow Meters & Site Conditions

Monitoring Point - DNR ID #						Sampling & Reporting Frequency	Parameter Codes	Parameters
Landfill Gas Monitoring Probes								
Monitoring Pt	ID#	Comment[1]	Monitoring Pt	ID#	Comment[1]			
GMW-1RA	700		TP-1	910				
GMW-1RB	701		TP-2	911		Sample Monthly	85547	Percent Methane, by volume
GMW-2R	798		TP-3	912			85550	Percent Oxygen, by volume
GMW-4	704	abandoned	TP-4	913		Report Quarterly	46388	Gas Temperature (^{0} F)
GMP-6A	785		TP-5	914		January, April, July		This is the air temp if no gas is present.
GMW-8	706		TP-6	915		& October		
GMW-9	707		TP-7	916				
GMW-22	716	abandoned	TP-8	917				
GMW-23A	717		TP-9	918				
GMW-23B	718		GP-10	808				
GMW-24A	719		GP-11	809				
GMW-24B	720		GP-12	810				
GMW-26A	723		GP-13	811				
GMW-27A	725		GP-14	812				
			GP-15	813				
			GP-16	814				
Blowers								
Monitoring Pt.		**ID#**		**Comment**		Sample Monthly	46390	Vacuum (inches of water column)
Blower House West		920					85547	Percent Methane, by volume
						Report Quarterly	85550	Percent Oxygen, by volume
						January, April, July	46386	Gas Flow Rate (cfm)
						& October		
						Sample & Report Annually April	VOCs using EPA Method TO-14	
Flow Meters								
Monitoring Pt.		**ID#**		**Comment**		Sample Monthly	46384	Gas Volume Pumped (cfm)
Johnson Wax Flow Meter		870						
Flare Flow Meter		746				Report Quarterly		
						January, April, July		
						& October		
Site Conditions (may be recorded electronically under this ID or under the ID for each gas probe and extraction well)								
Monitoring Pt.		**ID#**		**Comment**				
GP-Site		996				Sample Monthly on the same day as the gas probes & gas extraction wells	00011	Ambient Air Temperature (^{0} F)
							00025	Barometric Pressure (mm of Hg)
							46381	Trend in Barometric Pressure
							00007	Ground Conditions 1 = Frozen, 2 = Wet, 3 = Dry
						Report Quarterly January, April, July & October		

Table 6
Surfacewater Monitoring

Monitoring Point	DNR ID #	Comments	Sampling & Reporting Frequency	Parameter Codes	Parameters
Surfacewater Quality					
Outfall-01	801				
Outfall-05	888				
Outfall-04	887				
SW-01	893	Gunderson near SG-1			
SW-02	894	S. of WEPCO Sub Station near SG-3			
Outfall-06	889				
Outfall-07	890	to be installed			
			Visual inspections in accordance with the storm water pollition prevention plan (SWPP) and the general tier 2 storm water discharge permit		
Stream Guages					
SG-01	900		Monitor Monthly	99520	Elevation, Surface Water feet above mean sea level
SG-03	902		Report Quarterly January, April, July & October		

Table 7
Settlement Monitoring

Grid Location				Sampling & Reporting Frequency	Parameter Codes	Parameters
Landfill Surface						
04+00N 09+00E	07+00N 08+00E	09+00N 08+00E	11+00N 12+00E		99422	Elevation, Ground Surface feet above mean sea level
	07+00N 09+00E	09+00N 09+00E	11+00N 13+00E			
05+00N 09+00E	07+00N 10+00E	09+00N 10+00E	11+00N 14+00E	Annually		
05+00N 10+00E	07+00N 11+00E	09+00N 11+00E	11+00N 15+00E			
		09+00N 12+00E		Documentation to be maintained at facility and available upon DNR request		
05+00N 11+00E	07+00N 12+00E		11+00N 16+00E			
05+00N 12+00E	07+00N 13+00E	09+00N 13+00E	11+00N 17+00E			
05+00N 13+00E	07+00N 14+00E	09+00N 14+00E	11+00N 18+00E			
05+00N 14+00E	07+00N 15+00E	09+00N 15+00E	11+00N 19+00E			
05+00N 15+00E	07+00N 16+00E	09+00N 16+00E	11+00N 20+00E			
05+00N 16+00E	07+00N 17+00E	09+00N 17+00E	11+00N 21+00E			
05+00N 17+00E	07+00N 18+00E	09+00N 18+00E	11+00N 22+00E			
05+00N 18+00E	07+00N 19+00E	09+00N 19+00E	11+00N 23+00E			
05+00N 19+00E	07+00N 20+00E	09+00N 20+00E	11+00N 24+00E			
05+00N 20+00E	07+00N 21+00E	09+00N 21+00E				
05+00N 21+00E	07+00N 22+00E	09+00N 22+00E				
05+00N 22+00E		09+00N 23+00E				
		09+00N 24+00E				
06+00N 08+00E	08+00N 08+00E	10+00N 12+00E	12+00N 13+00E			
06+00N 09+00E	08+00N 09+00E	10+00N 13+00E	12+00N 14+00E			
06+00N 10+00E	08+00N 10+00E	10+00N 14+00E	12+00N 15+00E			
06+00N 11+00E	08+00N 11+00E	10+00N 15+00E	12+00N 16+00E			
06+00N 12+00E	08+00N 12+00E	10+00N 16+00E	12+00N 17+00E			
06+00N 13+00E	08+00N 13+00E	10+00N 17+00E	12+00N 18+00E			
06+00N 14+00E	08+00N 14+00E	10+00N 18+00E	12+00N 19+00E			
06+00N 15+00E	08+00N 15+00E	10+00N 19+00E	12+00N 20+00E			
06+00N 16+00E	08+00N 16+00E	10+00N 20+00E	12+00N 21+00E			
06+00N 17+00E	08+00N 17+00E	10+00N 21+00E	12+00N 22+00E			
06+00N 18+00E	08+00N 18+00E	10+00N 22+00E	12+00N 23+00E			
06+00N 19+00E	08+00N 19+00E	10+00N 23+00E	12+00N 24+00E			
06+00N 20+00E	08+00N 20+00E	10+00N 24+00E				
06+00N 21+00E						
06+00N 22+00E	page 101 & page 115 of August 1996 Plan of Operation Report for Northwest Expansion					
06+00N 23+00E						
06+00N 24+00E						
06+00N 25+00E						

Attachment 2

The following information shall be included in the Kestrel Hawk RDF Annual Report and as provided in the attached modified 2015 annual report table of contents from the meeting between DNR and Republic Services, Inc. on May 16, 2017:

Note: Geologic units A, B, C and D cited in this document refer to the geologic units as referenced in RMT's Figure 4 - Stratigraphic Column of Geologic Units located in the bound report dated October 10, 2005 and entitled "Old Site Hydrogeologic Evaluation – Phase I Summary Report, Kestrel Hawk Landfill, Racine Wisconsin" and found in other reports prepared by RMT for the Kestrel Hawk Facility.

Part I: General

1. a listing of the amount of solid waste received in tons and the estimated remaining capacity in years; (For special waste received, do not need to include producer profile number.)

2. an overall summary of the performance of the site as a whole, any issues regarding compliance at the facility and any complaints received;

3. an updated Well Information Form (WIF) listing all groundwater monitoring wells, piezometers, leachate headwells, gas extraction wells, leachate extraction wells, and driplegs that have been replaced, abandoned or newly constructed;

Part II: Groundwater

4. a narrative containing the following evaluations:

   a. a comparison of leachate head level measurements to the hydraulic heads measured in the groundwater monitoring wells screened in the permeable sediments at the top of the Unit B layer;

   b. an evaluation of whether inward or outward flow from the landfill is occurring using groundwater monitoring well water elevations (including UB-1, 210U and 211U when it is installed) and leachate headlevel elevations;

Hazardous Waste Unit Corrective Action - 141U Area Groundwater Contamination:

5. an evaluation of the performance of the remedial/groundwater extraction system which includes at a minimum the following:

   a. a summary of operating performance for the groundwater extraction system including a general narrative explaining observed trends in the groundwater extraction system during the past year and any correlations that can be made with the performance of the system including volume of water extracted, downtime for repairs, etc. and the contaminant concentrations in the monitoring wells and the lateral and vertical extent of contamination;

      - Include a description with diagrams of any physical changes that are made to the groundwater extraction system or the surrounding area; and a description of significant maintenance/repairs made to the remediation/ groundwater extraction system during the year.

- Also include an evaluation of any new technologies to enhance the groundwater extraction system or other possible methods to remediate the groundwater that may be used in addition to, or in replacement of the current system, that may produce faster results.

b. an estimated extent and concentration of contamination in the groundwater and the influence of the remedial measures on the contamination;

- Isoconcentration maps, groundwater elevation and potentiometric maps shall be revised and submitted annually to reflect changing site conditions. The maps should delineate the zone of capture for the extraction wells.

c. a description of the degree and extent of the vinyl chloride contamination in the 141U area;

- Any change over time shall be noted.

d. an estimate of the time required to achieve the Preventative Action Limit (PAL) based on the operating performance of the system to date;

- Note that the Department understands that initial numbers are not typically representative of long term steady state conditions. Time concentration plots and/or other supporting results should be included to support the estimates.

e. regulatory contact including any updates or problems that have arisen on permits or licenses required for the remedial activities;

- Emphasis shall be placed on deficiencies discovered from oversight inspections or other types of inspections performed by the Department or Republic staff /consultants and how and when the deficiencies were corrected.

Part III: Leachate and Gas Condensate

6. an evaluation of leachate head levels in the old hazardous waste unit (Corridors 1-6) which includes at a minimum the following:

   a. tabulations of the following:

      i. volume of leachate and gas condensate removed quarterly as measured at the respective monitoring points MH15B, LMP6A, LMP8A & DL4R;

      ii. volume of leachate removed quarterly as measured at each extraction point listed above in (8).(a).(i);

   b. leachate head level evaluation and leachate extraction system performance as described in the October 10, 2005 report, prepared by RMT, Inc. on behalf of Republic Services, Inc. entitled " Plan Modification Request For Old Site Leachate Extraction System, Kestrel Hawk, Recycling and Disposal Facility, Racine, Wisconsin, License No. 00572" which includes the following:

      i. an area weighted average long-term head evaluation;

ii. an individual leachate headwell long-term evaluation;

iii. an individual leachate headwell short-term evaluation;

iv. an inflow versus outflow evaluation;

v. a report every five years with the annual report, with the first one to be completed in 2010, containing a comprehensive review of the leachate extraction system as a whole, the breakthrough of indicator parameters in the Unit B monitoring wells down-gradient of the landfill, if present, a review of leachate quality relative to the Unit B groundwater quality and the assumptions associated with the calculations of leachate head levels and leachate removal, and recommendations, if any, for more extensive response actions;

c. an evaluation of the performance of the containment structure including quantity and quality of leachate collected from the containment structure;

d. an evaluation of the effectiveness of the leachate extraction well network, the leachate headwell network and the leachate collection volume be measured, and recommendations for any replacement wells or additional wells needed to provide adequate coverage, or wells that should be abandoned;

- The evaluation in item d. above shall discuss the leachate extraction wells which have had a decrease in performance, leachate extraction well and head well cleaning and desilting, flow meters that were not functioning properly and downtime for non-functioning equipment.

7. documentation of all cleaning done for the following:

a. leachate conveyance piping;

b. leachate collection lines;

c. gas header piping.

- The documentation for the cleaning of items a., b., and c. above shall include a listing of which lines were cleaned, the total length of pipe cleaned and a narrative of any problems encountered and any repairs accomplished, and photos showing the cleaning.

8. A description of the variation in leachate and gas condensate quality and quantity both seasonally and year to year. The evaluation shall include monitoring points MH15B, LMP8A and DL4R. The total mass of individual volatile organic compounds extracted from each point shall be tabulated per year.

Part IV: Surface Water

9. a summary of the performance and maintenance of the sedimentation basins, and;

10. documentation that the storm water runoff permit and storm water pollution prevention plan (SWPPP) are current and complied with.

Part V: Landfill Gas

11. a summary of any detects of methane in the gas probes outside of waste shall be provided with their significance explained;

12. monthly and annual mass of methane and any specific volatile compounds extracted from the site;

    - The gas volume and quality data representing total site gas extraction shall be used to total the monthly and annual mass of methane and any specific volatile compounds extracted from the site. Volume estimates will be made using flow data at the blower house until the flow meter is installed at the flare. When this flow meter is operational, it will be used with the Johnson Wax flow meter to record gas volume extracted from the site.

13. a narrative which outlines the performance of the gas extraction system;

    - The narrative shall contain at a minimum a listing of the system downtime, any repairs performed on the system, and whether the performance of the system has been as expected.

Part VI: Contaminated Soil Processing Facility (Lic#: 3872)

14. Summary of the contaminated soil processing facility as approved in the department's September 1, 1995 plan of operation approval and modified by the department on January 26, 2007, which includes at a minimum the following:

    a. the volumes and locations of the biopiles located at the facility at the end of each year;

    b. the total volumes of new soil received and soil removed from each pile;

    c. a description of the nature of contamination in each biopile;

    d. record of operation of each soil pile, including total tonnage treated, total time of active operation, and any noticeable effects of temperature and seasonal conditions on the time period used for processing;

    e. description of the disposition of the soil used in the processing operation, whether by disposal or reuse, including any soil sent to an alternative disposal or treatment facility and disposition of any material rejected from the processing operation or subjected to additional treatment;

    f. tabulation of the gas concentration data, summary of the amount of time soil air was handled by recycle mode and by direct discharge to the atmosphere, and tabulation of any data from testing air discharged to the carbon canisters and atmosphere;

    g. tabulation of soil pile grids selected randomly for post treatment sampling and tabulation of post treatment soil testing data;

    h. summary of any problems encountered with the soil processing equipment or operation, proposed or implemented solutions, and any deviations from the approved plans;

i. a description of the source and tonnage of oil dry materials accepted for treatment and a description of the petroleum products which the oil dry materials were applied to, and;

j. a summary of any changes to the mechanical equipment, operating controls, or methods of operation due to operator experience and technical advances and any plan modifications necessary to incorporate long-term or permanent changes to the plan of operation or approval conditions;

Part VII: Wet Waste Processing Facility

15. Summary of the annual operations as required by condition number 8 of the September 17, 1999 approval and modified by the January 17, 2003 approval.
    a. summary tables of the free liquid data from pretreatment and post treatment samples;

    b. a description of the source and quantity of solid waste containing free liquids accepted including the percent solids and total volume of liquid treated;

    c. a description of the source and tonnage of absorbant materials used for treatment;

    d. a discussion of the ratio of absorbant material to solid waste containing free liquids and which absorbants work the best;

    e. a summary of any problems encountered with the processing equipment or operation proposed or implementated solutions to the problems, and any deviations from the approved plan, and;

    f. a summary of any changes to the mechanical equipment, operating controls and methods of operation due to operator experience and technical advances and any plan modifications necessary to incorporate long-term permanent changes to the plan of operation approval conditions.

Part VIII: Settlement Monitoring – See Table 7 in Attachment #1

16. A statement documenting that settlement monitoring was conducted.

Kestrel Hawk Annual Report – Table of Contents

Certifications ..... NO CHANGE

1. Introduction and General Site Information

1.1 Introduction ..... NO CHANGE
1.2 Purpose and Scope ..... NO CHANGE
1.3 Operational Summary
1.3.1 Amount of Solid Waste Received ..... NO CHANGE
1.3.2 Amount of Special Waste Received ..... IDENTIFY BY CATEGORY ONLY IN APPENDIX B - WILL NOT INCLUDE PRODUCER PROFILE NUMBER
1.3.3 Estimated Remaining Landfill Capacity ..... NO CHANGE
1.3.4 Alternative Daily Cover ..... NO CHANGE
1.3.5 141U Parcel Ownership ..... NO CHANGE
1.4 Facility Compliance
1.4.1 Air Monitoring .... REMOVE REFERENCE TO NSPS MONITORING IN APPENDIX I
1.4.2 WDNR Inspections and Compliance Activities ..... NO CHANGE
1.4.3 Kestrel Hawk Landfill Inspections and Compliance Activities ..... NO CHANGE
1.4.4 Storm Water Compliance ..... NO CHANGE
1.5 Construction Projects ..... REMOVE REFERENCE TO FIGURE 14
1.6 Environmental Monitoring Program Changes ..... NO CHANGE

2. Groundwater

2.1 Hydrogeologic Units ..... NO CHANGE
2.1.1 Unconsolidated Deposits ..... NO CHANGE
2.1.2 Bedrock ..... NO CHANGE
2.2 Groundwater Flow
2.2.1 Water Table and Leachate Head Elevations ..... GROUNDWATER FLOW MAPS (FIGURES 5 & 6) AND APPENDIX E WILL NO LONGER BE PROVIDED - FLOW CONTOURS NOT SIGNIFICANTLY CHANGED SINCE MONITORING BEGAN.
2.2.2 Potentiometric Surface of Upper Unit B ..... POTENTIOMETRIC SURFACE MAPS (FIGURES 7 & 8) WILL NO LONGER BE PROVIDED - FLOW CONDITIONS HAVE NOT SIGNIFICANTLY CHANGED SINCE MONITORING BEGAN.
2.2.3 Leachate Head and Upper Unit B Groundwater Evaluation ..... REMOVE REFERENCE TO TABLE 2 - NO CHANGE SINCE SITE HAS BEEN MONITORED

2.3 Groundwater Quality.....REMOVE THIS ENTIRE SECTION - REPEATING INFORMATION FROM QUARTERLY REPORTING
2.3.1 Background Quality
2.3.2 Evaluation of Chemistry
2.4 Proposed Revisions to Groundwater Monitoring Program.....REMOVE REFERENCE TO TABLE 6
2.5 Hazardous Waste Unit Corrective Action – 141U Area Groundwater Contamination
2.5.1 141U Area Corrective Action Summary.....NO CHANGE
2.5.2 Vinyl Chloride Assessment.....NO CHANGE

3. Leachate and Gas Condensate Systems
3.1 Hazardous Waste Unit (HWU) Leachate Evaluation.....NO CHANGE
3.1.1 Criteria Evaluation: Leachate Head and Liquid Balance.....REMOVE REFERENCE TO TABLE 7 AND MODIFY TABLE 8 TO INCLUDE LEACHATE HEAD ELEVATION FOR MOST RECENT 5 YEARS
3.1.2 Required Response Action.....NO CHANGE
3.1.3 Leachate Head Well Installation.....NO CHANGE
3.1.4 Operation/Maintenance Evaluation of Leachate Gas Well (LGW).....NO CHANGE
3.2 Leachate and Groundwater Piping System Cleaning
3.2.1 General.....NO CHANGE
3.2.2 Pipe Cleaning.....PIPES THAT HAVE BEEN PLUGGED IN THE SAME LOCATION EVERY YEAR WILL NO LONGER BE CLEANED. THESE LOCATIONS ARE IDENTIFIED IN ATTACHMENT 2. THE LOCATION OF PLUGGED PIPES WILL BE SHOWN ON FIGURE 14. DRIPLEGS IN THE GAS COLLECTION SYSTEM WILL NO LONGER BE REGULARLY FLUSHED OUT - NOT REQUIRED AT OTHER LANDFILL SITES - DRIPLEGS WILL BE FLUSHED IF IT HAS BEEN IDENTIFIED SEDIMENT IS AFFECTING THE PERFORMANCE OF THE GAS SYSTEM. TABLE 1 IN APPENDIX L WILL BE MODIFIED TO INCLUDE TOTAL LENGTH OF PIPE CLEANED - VERTICAL AND HORIZONTAL CLEANING DISTANCES ALONG WITH DRIPLEG FLUSHING WILL BE REMOVED FROM TABLE.
3.2.3 Conclusion.....NO CHANGE
3.3 Leachate Volume.....NO CHANGE
3.4 Leachate Quality.....NO CHANGE
3.5 Containment Structure Performance
3.5.1 Volume.....NO CHANGE
3.5.2 Comparison of Heads Adjacent to Containment Structure.....NO CHANGE
3.5.3 Leachate Containment.....NO CHANGE

4. Surface Water

IT IS PROPOSED TO REVISE THE SAMPLING FOR THE SURFACE WATER QUALITY MONITORING LOCATIONS TO VISUAL OBSERVATIONS AS REQUIRED BY THE INDUSTRIAL TIER 2 STORMWATER PERMIT FOR THE FACILITY. THIS CHANGE REQUEST IS DUE TO IMPROVED SITE MANAGEMENT AND TO BE CONSISTENT WITH CURRENT PRACTICE AT OTHER LANDFILLS IN WISCONSIN. ELEVATIONS AT THE STREAM GAUGE LOCATIONS WILL CONTINUE TO BE COLLECTED ON A MONTHLY BASIS.

4.1 Sedimentation Basin Performance and Maintenance ..... NO CHANGE

4.2 Quality and Quantity ..... REMOVE THIS SUBSECTION

4.3 Storm Water Inspection Report ..... REFERENCE THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

5. Landfill Gas Evaluation

5.1 Bio-Gas Production ..... REMOVE REFERENCE TO TABLE 14

5.2 Monitoring ..... REMOVE REFERENCE TO GAS MONITORING DATA IN APPENDIX I

6. Contaminated Soil Processing Facility ..... REMOVE REFERENCE TO TABLE 17

6.1 Assessment of Contaminant Sources ..... REMOVE REFERENCE TO TABLE 17

6.2 Source, Tonnage, Composition Contaminated Soil and Oil-Dry Materials ..... REMOVE REFERENCE TABLE 17

6.3 Record of Operation for Each Soil Pile ..... REMOVE REFERENCE TO WEEKLY DATA FORMS IN APPENDIX J

6.4 Description of Soil Disposition ..... NO CHANGE

6.5 Summary of Gas Concentration and Atmospheric Discharge ..... NO CHANGE

6.6 Usage of Carbon Canisters ..... NO CHANGE

6.7 Summary of Soil Sampling Post Treatment ..... NO CHANGE

6.8 Summary of Soil Processing Operations and Mechanical Equipment ..... NO CHANGE

6.9 Assessment of Process and Operation Advancements ..... NO CHANGE

THE 5-YEAR REVIEW REQUIREMENT FOR REVIEWING CONTAMINATED SOIL TREATMENT WILL BE REMOVED BECAUSE THIS TECHNOLOGY HAS BEEN CONSISTENTLY PERFORMING AT THE SITE.

7. Wet Waste Processing Facility

7.1 Introduction ..... NO CHANGE

7.2 Facility Operations ..... NO CHANGE

7.3 Permit and Other Activity ..... NO CHANGE

8. Settlement Monitoring Summary..... REMOVE REFERENCE TO TABLE 18

9. Evaluation of Site Monitoring Devices.....NO CHANGE

9.1 Groundwater.....NO CHANGE

9.2 Leachate and Gas Condensate.....NO CHANGE

9.3 Landfill Gas.....NO CHANGE

9.4 Surface Water.....NO CHANGE

10. References.....NO CHANGE

REVISED INSPECTION FREQUENCY FOR MULTIPLE ITEMS PROPOSED - SEE ATTACHMENT 2 FOR SCHEDULE PREVIOUSLY USED AND PROPOSED NEW SCHEDULE

List of Tables

Table 1 2015 Construction Projects.....NO CHANGE

Table 2 2015 Leachate and Upper Unit B Piezometer Water Level Elevations.....REMOVE THIS TABLE

Table 3 Parameters That Equal or Exceed Well-Specific PALs or ACLs.....REMOVE THIS TABLE

Table 4 Parameters That Meet or Exceed Current NR 140 Standards.....REMOVE THIS TABLE

Table 5 Summary of NR 664 Detected Compounds.....NO CHANGE

Table 6 Vinyl Chloride Concentrations - 141U Area Wells.....REMOVE THIS TABLE

Table 7 Area-weighted Average Leachate Head Elevations – 1995-2006.....REMOVE THIS TABLE

Table 8 Area-weighted Average Leachate Head Elevations – 2007-2015..... REVISE THIS TABLE TO PROVIDE THE MOST RECENT FIVE YEARS OF DATA

Table 9 Slope of Linear Regression Lines of Moving Average Leachate Elevations.....NO CHANGE

Table 10 2015 Leachate, Gas Condensate, and Groundwater Containment Structure Removal Volumes.....NO CHANGE

Table 11 Estimated Total Mass of Volatile Organic Compounds (VOCs) in Leachate/Gas Condensate Removed in 2015.....NO CHANGE

Table 12 2015 Comparison of Head Levels Adjacent to the Groundwater Containment Structure.....NO CHANGE

Table 13 Summary of 2015 Quarterly Water Quality Data from Surface Water Outfalls..... REMOVE THIS TABLE

Table 14 2015 Monthly Bio-Gas Production.....NO CHANGE

Table 15 2015 Gas Extraction System Performance.....NO CHANGE

Table 16	2015 C-Soil Biopile Soil Tonnages	NO CHANGE
Table 17	Year 2015 Summary of C-Soil Sources	REMOVE THIS TABLE
Table 18	Summary of Elevation Differences Based on Topographic Map Comparison	REMOVE THIS TABLE
Table 19	2015 Summary of Biopile Post-Treatment Analyses	NO CHANGE

List of Figures

Figure 1	Site Location Map	NO CHANGE
Figure 2	Existing Conditions Map	NO CHANGE
Figure 3	Site Plan	NO CHANGE
Figure 4	Generalized Stratigraphic Column of Geologic Units	NO CHANGE
Figure 5	High Water Table and Leachate Head Surface Map (April 2015)	REMOVE THIS FIGURE
Figure 6	Low Water Table and Leachate Head Surface Map (October 2015)	REMOVE THIS FIGURE
Figure 7	High Potentiometric Surface Map - Upper Unit "B" (April 2015)	REMOVE THIS FIGURE
Figure 8	Low Potentiometric Surface Map - Upper Unit "B" (October 2015)	REMOVE THIS FIGURE
Figure 9	Thiessen Polygons Used To Derive Area-weighted Average Leachate Head Levels and New Leachate Head Wells in Corridors 1-6	NO CHANGE
Figure 10	Area-weighted Average Leachate Heads in Corridors 1-6 (LHW-100-LHW-114)	NO CHANGE
Figure 11	Existing Conditions – Corridors 1 through 11 and Former City of Racine Landfill	ADD LOCATION OF PIPE BLOCKAGES
Figure 12	Existing Conditions and Pipe Cleaning Locations – Northwest Expansion	NO CHANGE
Figure 13	Pipe Locations in Manhole and Lift Stations	NO CHANGE
Figure 14	Pipe Cleaning Summary -- Corridors 1 through 11 and Former City of Racine Landfill	NO CHANGE
Figure 15	Leachate Conveyance System Flow Chart	NO CHANGE
Figure 16	Settlement ID Location Map - Corridors 1-6	NO CHANGE
Figure 17	Environmental Monitoring Plan	NO CHANGE

List of Appendices

Appendix A	WDNR Correspondence	INCLUDE ONLY CORRESPONDENCE GENERATED SINCE LAST ANNUAL REPORT - PREVIOUS CORRESPONDENCE PROVIDED ON A CD.

Appendix B	Solid Waste Capacity and Special Waste Summary	TABLE MODIFIED TO INCLUDE WASTE BY CATEGORY - WILL NOT SEPARATE BY PRODUCER PROFILE NUMBER
Appendix C	Facility Compliance Inspection Reports	WILL NOT INCLUDE INSPECTION REPORTS BECAUSE THEY ARE ALREADY IN APPENDIX A
Appendix D	Quarterly Detections in HWU Wells	NO CHANGE
Appendix E	Summary of Depth to Water and Water Elevations	REMOVE THIS APPENDIX
Appendix F	Quarterly Environmental Monitoring Results	KEEP QUARTERLY LETTERS OF MONITORING EVENTS SENT TO WDNR BUT REMOVE DATA TABLES
Appendix G	141U Area Corrective Action Data	NO CHANGE
Appendix H	Leachate Head Data	NO CHANGE
Appendix I	Gas Monitoring Data	REMOVE GAS MONITORING DATA AND NSPS MONITORING INFORMATION - DUPLICATING PREVIOUS SUBMITTALS.
Appendix J	Contaminated Soil (C-soil) Monitoring Data	KEEP FIGURE BUT REMOVE OPERATIONAL DATA WEEKLY (INSPECTION LOGS) - AVAILABLE FOR REVIEW AT FACILITY.
Appendix K	Wet Waste Processing Facility Data	KEEP ANNUAL SUMMARY TABLE BUT REMOVE SOLIDIFICATION LOGS
Appendix L	Pipe Cleaning Information	MODIFY TABLE TO INCLUDE TOTAL LENGTH OF PIPE CLEANED AND REMOVAL OF VERTICAL AND HORIZONTAL LENGTHS CLEANED. REMOVE FLUSHING OUT OF GAS SYSTEM DRIPLEGS.
Appendix M	Closure Bond Information	NO CHANGE

Attachment 3

Inspection Frequency Previously Used and Proposed New Schedule

ITEM	CURRENT INTERVAL	PROPOSED INTERVAL	REASON
Dual Extraction Well Pump Maintenance	Monthly	Semiannually	Low number of pumps requiring maintenance on the current interval.
Pump Cycle Meter Reading	Weekly	Monthly	Current inspection provides insufficient time for well recharge and changes in flow.

Location of Pipes That Will Not Be Cleaned

LOCATION OF PIPE	DESCRIPTION OF PIPE BLOCKAGE
Corridor 4 horizontal leachate collection pipe from interior Manhole MH-1 (Pipe Cleaning ID 21)	The pipe blockage is caused by a broken cable and jetting nozzle/hose from a 1996 cleaning from the line at MH-1. Attempts to remove these devices have been unsuccessful. This pipe consists of a 4 inch diameter ABS pipe.
Corridor 5 leachate collection pipe (Pipe Cleaning ID 20)	A blockage was discovered in this pipe during a pipe cleaning in 1992. The blockage is located approximately 500 feet horizontally from Cleanout 5 and 800 feet horizontally from MH-1. During a 1993 pipe cleaning, an attempt to remove a stuck cable and jetting nozzle/hose, permanently damaged the hose. Portions of the pipe have been cleaned from both ends of the pipe up to the blockage, but in a pipe cleaning attempt in 2015 a hose was again broken.
Corridor 6 leachate collection pipe (Pipe Cleaning ID 19)	A blockage was discovered in this pipe during a pipe cleaning in 1995. The blockage is located approximately 150 feet horizontally from Cleanout 6. Video logging of the pipe in 1995 showed a breakage in the pipe. Only approximately 125 feet of the pipe can be cleaned.
Corridor 11 leachate collection pipe (Pipe Cleaning ID 23)	For Leachate Collection Pipe 12+75N, there is a blockage located approximately 95 feet from the west end of the cleanout for MH-2 leachate.
Groundwater collection pipe between LS 6 and MH-1 (Pipe Cleaning ID 7)	A blockage to this pipe occurred during a pipe cleaning in 2013 when a hose became stuck in the pipe and broke off approximately 625 feet from MH-1.
The leachate lines in MH-1 and MH-2 (MH-1 Pipe Cleaning IDs: 3B, 4B, 7B, 20B, 21A, 25A, and 26A) (MH-2 Pipe Cleaning IDs: 17B, 18B, 19B, 23A, 24A)	Several existing blockages as detailed above. In addition, 2 hoses have become damaged in MH-1 and 2 hoses have become damaged in MH-2 in the past 2 years due to the 90 degree pipe bend at the bottom of the approximately 100 ft. long vertical riser. Republic is concerned with further damage and the possibility of jetting hoses becoming stuck and clogging these components of the leachate collection system.
Riser pipes No. 62, 64 and 81	The cleanouts for these pipes have always been described by the pipe cleaning company as not located or are inaccessible.

Appendix A.6
Modification to the Plan of Operation Approval for Gas and Leachate Extraction System, Land Reclamation Company Landfill, License #0572, Racine, WI
March 12, 1991

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State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Carroll D. Besadny, Secretary
Box 7921
Madison, Wisconsin 53707
DNR TELEFAX NO. 608-267-3579
TDD NO. 608-267-6897
SOLID WASTE TELEFAX NO. 608-267-2768

MAR 12 1991

FID # 252076990

Mr. Eric Pederson, Operations Manager
Land Reclamation Company
2000 Oakes Road
Racine, WI 53406

SUBJECT: Modification to the Plan of Operation Approval for Gas and Leachate Extraction System, Land Reclamation Company Landfill, License # 0572, Racine, WI. WID: 076171008.

Dear Mr. Pederson:

I am pleased to inform you that your requested modifications to your plan of operation approval have been reviewed and approved. The Department believes that the proposed modifications will not have an adverse effect on the performance of your landfill provided the conditions in the enclosed conditional plan of operation approval modification are fulfilled. You should attach this conditional plan of operation approval modification directly to the plan of operation approval issued on December 19, 1984.

This letter approves a gas and leachate extraction system for the Land Reclamation Company (LRC) Landfill. The proposed gas extraction system is designed to recover landfill gas from the facility for the purposes of energy recovery and emission control. Vertical and horizontal wells will be used to extract the gas. A compressor will be used to induce a vacuum and to convey the gas to a second compressor and landfill gas processing plant located off-site. Currently, LRC's landfill gas is sold to S.C. Johnson, Inc., a local manufacturing facility. The header piping will be sloped at a minimum 2% to provide for gravity flow of the condensate which is generated as the gas cools. The condensate will be removed by one of two driplegs and then conveyed to the local sanitary sewer system. The approved gas extraction system covers the first phase, which will be constructed in the site's hazardous waste unit (HWU) and corridor 7, and the second conceptual phase, which will be installed in the site's remaining corridors (8 through 11).

The approved leachate extraction system will remove leachate through the same wells installed for gas removal in the HWU. The wells have been spaced at intervals of 150 feet to optimize the volume of extracted leachate. Pneumatic pumps will be used to extract the leachate. The leachate transfer lines will

be constructed with a minimum slope of 2% to provide for gravity flow. The leachate will ultimately be discharged into the local sanitary sewer system.

The approved extraction well design consists of a 36-inch diameter borehole. Six-inch diameter Schedule 120 PVC piping will be placed within the borehole, and the lower half of the annular space filled with a washed stone pack. The lower half of the pipe will be perforated for gas and leachate entry. In order to minimize air intrusion, the upper half of the extraction well piping will not contain perforations and a bentonite seal will be placed in the annular space.

Once the extraction system is installed, start-up will take place and the system will be balanced to optimize the landfill gas withdrawal and minimize air intrusion at each extraction point. The system will be routinely monitored to determine the performance of the gas extraction system.

Fifteen leachate head wells will be installed to monitor leachate head levels in Corridors 1 through 6. The head wells will be constructed similar to the gas and leachate extraction wells. The leachate heads will be monitored on a regular basis to monitor the performance of the leachate extraction system.

An additional manhole is required to be installed just southeast of manhole-6. The leachate transfer line will enter directly into this manhole. The leachate will then be pumped directly from this additional manhole into the 21st Street sewer. The purpose of this manhole is to eliminate the connection of the leachate transfer line to the forcemain running from manhole-6 to the 21st Street sewer. This manhole will also serve to prevent the possibility of leachate backup into the groundwater containment structure.

In the evaluation of the performance of the head reduction program, we believe the most critical remaining groundwater contamination vector is the potential for downward movement of leachate from Unit A into the permeable upper strata of Unit B. Lateral movement of leachate in Unit A is of less concern due to the presence of the containment structure and barrier walls surrounding the hazardous waste unit on the south and west sides. However, the unlined portions of the waste fill area have been excavated such that only 16 to 25 feet of Unit A clay soil remains between the wastes and the upper permeable zones in Unit B. With leachate heads on the eastern and central portions of landfill base presently measured at 690 to 730 feet MSL, and hydraulic potentials of about 662 feet MSL measured at the top of Unit B, there is a strong gradient downward into Unit B. The LRC NW Expansion ISR report gave a value of 1.5 X 10E-6 cm/sec for the geometric mean of the in-field conductivity of the clay soils of Unit A. This is in marked contrast (nearly 30 times higher) to the value of 5.5 X 10E-8 cm/sec used in the performance evaluation assumptions of Section 3 of the July, 1990 Gas and Leachate Extraction System Plan. We would like to point out that with a calculated gradient of about 2.0 downward through the Unit A soils below the waste, and an in-field conductivity value as above, there is potential for significant downward movement of leachate from the waste area.

Since the hydraulic potentials at the top of Unit B are at approximately 662 feet MSL, it appears prudent to reduce leachate head potentials at the base of

the landfill to as close to 662 feet MSL as possible in order to minimize the gradients driving landfill contaminants downward. Since base elevations vary from about 660 to 670 feet MSL, the Department supports a head maintenance goal of bringing head levels as close to the landfill base elevation as can be practically accomplished.

As indicated above, we believe the implementation of the containment structure and barrier wall designs are probably effective at limiting lateral movement of landfill contaminants. However, we have not received or reviewed construction documentation for these structures, and there is not yet a complete groundwater monitoring system in place to monitor the effectiveness of these structures.

Please call Cindy Cook at (608)267-3542 or Ken Hein at (414)263-8647 if you have any questions regarding this approval.

Sincerely,

Lakshmi Sridharan

Lakshmi Sridharan, Ph.D., P.E., Chief
Solid Waste Management Section
Bureau of Solid & Hazardous Waste Management

LS:cmc

cc: Ken Hein - SED
Ed Lynch - HW/3
Mary Carrington - Town of Mt. Pleasant
Trish Polston/Laura Ladislo - U.S. EPA, Region V, 5HR/13
Chuck Slaustas/Al Debus - U.S. EPA, Region V, 5HR/13
Ted Juszczyk - Creative Resource Ventures
PSS - SW/3

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

CONDITIONAL PLAN OF OPERATION
APPROVAL MODIFICATION FOR THE
LAND RECLAMATION COMPANY LANDFILL (# 0572)
WID 076171008

FINDINGS OF FACT

The Department finds that:

1. Land Reclamation Company (LRC) owns and operates a hazardous and solid waste disposal facility located in the N 1/2 of S23, T3N, R22E, City of Racine, Racine County, Wisconsin. Prior to May 1, 1989, the owner was known as Land Reclamation, Ltd. (LRL).

2. The Department issued a conditional plan of operation approval for the facility on December 19, 1984. A subsequent plan modification dated March 31, 1988 required LRL to design and submit a leachate and gas extraction system.

3. On July 30, 1990, the Department received a report and associated plan sheets submitted by Warzyn Engineering, Inc. (Warzyn) entitled, " Plan Modification, Gas and Leachate Extraction System, Land Reclamation Company Landfill, City of Racine, Racine County, WI". The report was dated July 27, 1990.

4. Additional information submitted in connection with the modification request includes the following:

   a. A report and associated plan sheets submitted by Foth & Van Dyke entitled, "Leachate and Gas Extraction System Design for the Hazardous Waste Unit." The report was dated August 23, 1988.

   b. A report and associated plan sheets submitted by Warzyn entitled, "Radius of Influence Evaluation and Conceptual Extraction Well Layout", dated February 16, 1990.

   c. A report and associated plan sheets submitted by Warzyn entitled, "Design Report, Gas and Leachate Extraction Wells," dated March 19, 1990.

   d. A letter and associated plan sheet addressing the outstanding issues discussed at the March 19, 1990 meeting between the Department, LRC, Creative Resource Ventures (CRV), and Warzyn. The letter was dated March 29, 1990.

   e. A report submitted by Warzyn dated April 6, 1990 entitled, "Gas and Leachate System Design Supplement".

f. A letter dated April 17, 1990 which summarizes the results of the April 14, 1990 meeting between the Department, LRC, CRV, and Warzyn.

5. The $1500 plan review fee was received by the Department on August 1, 1990.

6. Additional documents considered in connection with the modification request include the following:

a. The Department's plan of operation approval modification to the hazardous waste closure and long-term care plan, dated March 31, 1988.

b. A letter from the Department to LRC dated January 31, 1990 which requested additional information.

c. A letter from the Department to LRC dated May 1, 1990 giving approval to begin construction of the gas and leachate extraction wells and the leachate head wells.

d. A field modification request dated December 21, 1990 submitted by LRC to the Department. The letter requests the approval to install a temporary header on the existing south slope of the site, to relocate a discharge line and to use a pneumatic pumping system instead of a submersible pumping system.

e. A field modification request, submitted to the Department by LRC, dated January 31, 1991 which requests the approval of the installation of a condensate drain line and outlines header abandonment procedures.

7. The special conditions set forth below are needed to assure compliance with chapters NR 500-520 and NR 660-685, Wis. Adm. Code. If the special conditions are complied with, the proposed modifications will not inhibit compliance with the standards set forth in chapters NR 500-520 and NR 660-685, Wis. Adm. Code.

CONCLUSIONS OF LAW

1. The Department has authority under s. 144.44(3), Stats., to modify a plan of operation approval if the modification would not inhibit compliance with chapters NR 500-520 and NR 660-685, Wis. Adm. Code.

2. The Department has authority to approve a plan of operation with special conditions if the conditions are needed to ensure compliance with chapters NR 500-520 and NR 660-685, Wis. Adm. Code.

3. Conditions of approval set forth below are needed to ensure compliance with NR 500-520 and NR 660-685, Wis. Adm. Code.

4. In accordance with the foregoing, the Department has the authority under s. NR 144.44 Stats. to issue the following conditional plan of operation approval modification.

CONDITIONAL PLAN OF OPERATION
APPROVAL MODIFICATION

The Department hereby approves the plan of operation modification for the Land Reclamation Ltd. landfill, subject to the following conditions:

CONSTRUCTION

1. Anti-seep collars shall be placed around all leachate, condensate or gas transfer lines as they exit the limits of waste. A minimum of five feet of compacted clay shall be placed around the collar in all directions.

2. No leachate or gas transfer lines shall exit and then re-enter the limits of waste.

3. All temporary gas and leachate conveyance lines shall be buried a minimum of two feet deep.

4. All permanent gas and leachate conveyance piping associated with the hazardous waste unit shall be installed by January 31, 1992.

5. Locks shall be installed on all the monitoring and control assembly (MCA) boxes. Also, a locking cover, or similar device, shall be placed over the heads of all extraction wells to prevent vandalism.

6. Abandonment of the tank and dripleg by the existing blower on the southeast corner of the site shall be performed according to the following procedures:

   a. Following tank and dripleg removal, the area of excavation shall be assessed for releases through visual observation and field screening using a photo-ionization detector (PID). Any contaminated soil or other media shall be properly managed.

   b. If any releases are found to have occurred, the Department shall be notified. The contaminated soil shall be removed and the need for subsequent investigation be determined.

   c. Documentation shall include a discussion covering the removal of the tank and dripleg, location of the disposal of the tank and any excavated soil, and sampling and analytical results. The documentation shall also contain 35 mm photos and a P.E. stamp. A discussion of the need for subsequent investigation shall be included.

   d. In accordance with s. NR 615.06, Wis. Adm. Code, LRC shall determine if any contaminated soil is considered hazardous waste.

7. The Department's environmental engineer assigned to this project shall be contacted a minimum of one week prior to beginning each of the construction events for each phase listed below, for the purpose of allowing the Department to inspect the work. A fee shall be paid to the Department for each required inspection in accordance with s. NR 520 and s. NR 680, Wis. Adm. Code. The inspection fees for the gas and leachate extraction system construction shall be paid at the time the construction documentation is submitted.

   Construction Events

   a. Installation of the gas and leachate extraction wells.

   b. Abandonment of the tank and dripleg at the Southeast blower house.

   c. Final inspection of the leachate and gas extraction system in operation.

FURTHER SUBMITTALS

8. A plan shall be submitted to the Department by July 1, 1991 which addresses the monitoring of flow from the horizontal gas extraction wells to ensure their proper operation.

9. By July 1, 1991, LRC shall submit to the Department a narrative explaining how the extracted gas will be handled prior to completion of the gas utilization study scheduled to begin after startup of the system. The narrative shall contain the following:

   a. What percentage of the gas extracted from the site is used by S.C. Johnson?

   b. On what occasions will the gas be burned by the flare? When flared, does the burning comply with the standards established by the DNR Air Management Program?

   c. What is the capacity of the flare, and what fraction of the expected gas flow can it handle?

10. The RCRA final cover plan of operation modification proposal shall contain a narrative addressing how the FML will be repaired if repairs in the header system are found to be necessary.

11. A report shall be submitted to the Department proposing a design for a manhole to be installed to the southeast of manhole-6 (MH-6). This second, clay-lined manhole shall be designed to accept leachate and condensate from the gas and leachate extraction system. Included in the report shall be a method for determining leachate extraction rates at the new manhole. The report shall be submitted to the Department within 60 days of the date of this approval.

12. Information documenting progress in removing leachate and reducing leachate head levels within the landfill shall be submitted to the Department as part of each annual report. The following information shall be provided:

    a. Monthly tabulations of leachate removed from each extraction point.

    b. Tabulations of leachate head level measurements and maps of the leachate head distribution over the site.

    c. A comparison of the leachate head potentials to the hydraulic heads measured in groundwater monitoring wells screened in the permeable sediments at the top of Unit B (Foth and Van Dyke Unit 4).

    d. Annual and cumulative leachate volumes removed from the leachate extraction wells with comparisons to total leachate changes in storage in the waste fill area. Measurements or estimates of potential leachate drainage from the hazardous waste unit to the dewatering trench of the containment structure shall also be provided. Head measurements in Unit 2 (Foth and Van Dyke) from wells between the dewatering trench and the waste shall be evaluated and conclusions regarding gradient and resultant flow changes shall be reported.

    e. A summary of progress in the program goal of reducing leachate head levels to as close to the base as possible and a description of additional efforts needed in the next year to improve the effectiveness of the leachate extraction program.

MONITORING AND MAINTENANCE

13. All leachate conveyance piping associated with the vertical leachate extraction system and the eastern perimeter gas header piping shall be cleaned out at least once every 2 years. Documentation of this cleaning shall be submitted in the annual report.

14. The gas extraction system shall be monitored for the items listed below for the frequency shown. The results shall be submitted quarterly along with the TADs. The results shall also be submitted in a summary table as part of the annual report.

    a. Gas Extraction Wells - To be monitored monthly:

    Percent Methane
    Percent Oxygen
    Pressure
    Gas Temperature
    Flow Rate
    Valve Setting

b. Blower - To be monitored twice a month:

Flow Rate
Pressure
Percent Methane
Percent Oxygen

c. Condensate:

Volume - measured monthly
pH, COD, TSS, Conductivity - measured quarterly
The condensate shall also be monitored annually according to the annual requirements for leachate as listed in condition 15, below.

d. Miscellaneous - To be monitored monthly:

Date, time of sampling, barometric pressure and trend and ground surface condition. Any recent precipitation and a qualitative description of the vegetation and/or cap condition shall also be noted.

15. The leachate monitoring program shall include:

a. Monthly tabulations of leachate volumes from both the hazardous waste unit and the rest of the site.

b. Leachate quality measurements from both the hazardous waste unit and the rest of the site as follows:

Monthly Sample Parameters:

Parameter	ID#	Parameter	ID#
Field Conductivity (Corrected to 25°C)	00872	Field pH	00400
Leachate Volume Pumped	00032	Total Phosphorus	00133
Total Suspended Solids	00134	BOD5	00310

Quarterly Sample Parameters:
(in addition to those monthly parameters listed above)

Parameter	ID#	Parameter	ID#
Total Iron	74010	Total Nitrate + Nitrite as N	00630
Chloride	00307	COD, Unfiltered	00340
Total Sulfate	00945	Total Ammonia Nitrogen	00610
Total Barium	01007	Total Alkalinity, Unfiltered	00410
Total Manganese	00253	Total Hardness, Unfiltered	00900

Annual Sampling Parameters:

Parameter	ID#	Parameter	ID#
Total Nickel --	00128	Total Mercury ----------	00126
Total Silver --	01077	Total Potassium ---------	00076
Total Sulfite -	00740	Total Chromium ----------	00122
Total Sodium --	00929	Total Cadmium ----------	00120
Total Phenols -	00129	Total Arsenic ----------	01002
Total Copper --	00123	Total Selenium ----------	00270
Total Lead ----	00125	Total Kjeldahl Nitrogen -	00625
Total Zinc ----	00131	Total Cyanide ----------	00720
VOC Scan ------	84085		

In addition, the annual leachate analysis should include any Appendix 9 (from 7/9/87 CFR) constituents not included above.

16. Leachate head levels shall be monitored according to the following schedule. The results shall be reported quarterly and summarized in the annual report.

    a. Monthly prior to system startup, beginning with the date of this approval, to establish background levels;

    b. Weekly, after startup, for the first month;

    c. Monthly for the next five months; and

    d. Quarterly thereafter.

17. All driplegs shall be cleaned out on an annual basis. These cleanouts shall be documented in the annual report.

OPERATIONS

18. Should the Department determine at a later date that the vertical leachate extraction system is not reducing leachate head levels at an acceptable rate or is otherwise not operating effectively, LRC shall supplement this system or implement an alternative system as directed by the Department.

19. LRC shall remove leachate from all portions of the LRC landfill to the greatest extent possible on a seven day per week basis. No consideration shall be given to previously set leachate head maintenance levels.

20. Continued operation of both the gas and the leachate extraction systems shall be maintained until the end of the long-term care period.

21. A narrative shall be included in each annual report which outlines the performance of the gas extraction system. The report shall contain at a

minimum a listing of system downtime, any repairs performed on the system and whether the performance of the system has been as expected.

DOCUMENTATION

22. The construction documentation for the gas and leachate extraction system shall be submitted to the Department within 60 days of the completion of the systems construction.

23. In addition to the construction documentation proposed, LRC shall also record and submit to the Department the length of the screens of each leachate head well.

24. A cross-section drawing parallel to the main header shall be submitted to the Department in the construction documentation report.

25. A map of the base grades of the hazardous waste unit shall be submitted to the Department along with the construction documentation. The map shall be drawn using a two foot contour interval with a scale of one inch = 100 feet. Existing leachate head contours shall be submitted on a separate map. These maps shall be drawn using field data obtained during the installation of the wells.

26. The volume of leachate present in the hazardous waste unit shall be calculated and submitted with the construction documentation report. The volume calculations shall be based upon the field measurements made during the installation of the vertical extraction wells.

27. A plan sheet showing inverts at occasional points along the temporary gas and leachate conveyance line shall be submitted to the Department with the construction documentation.

The Department retains the jurisdiction either to require the submittal of additional information or to modify the approval at any time if, in the Department's opinion, further modifications are necessary. Unless specifically noted, the conditions of this approval do not supersede or replace any previous conditions of approval for this facility.

NOTICE OF APPEAL RIGHTS

If you believe you have a right to challenge this decision, you should know that Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed.

For judicial review of a decision pursuant to sections 227.52 and 227.53, Stats., you have 30 days after the decision is mailed, or otherwise served by the Department, to file your petition with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial review shall name the Department as the respondent.

This notice is provided pursuant to section 227.48(2), Stats.

Dated: _____

DEPARTMENT OF NATURAL RESOURCES
For the Secretary

Barbara J. Zellmer, Chief
Hazardous Waste Management
Section

Lakshmi Sridharan, Ph.D., P.E., Chief
Solid Waste Management
Section

Bureau of Solid & Hazardous Waste Management

Edward K. Lynch, P.E.
Environmental Engineering Supervisor
Hazardous Waste Management Section
Bureau of Solid & Hazardous Waste Management

Cindy M. Cook, Environmental Engineer
Solid Waste Management Section
Bureau of Solid & Hazardous Waste Management

Ken Wade, Hydrogeologist
Solid Waste Management Section
Bureau of Solid & Hazardous Waste Management

Appendix A.7
Environmental Monitoring Plan Modification to the Plan of Operation Approval and Hazardous Waste Closure Plan, and response to "Justification for Not Installing Additional Unit B Piezometers at LRC," Land Reclamation Company Landfill, EPA ID# WID076171008 February 7, 1994

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WISCONSIN
DEPT. OF NATURAL RESOURCES
George E. Meyer
Secretary

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

101 South Webster Street
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TELEPHONE 608-266-2621
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DNR TDD 608-267-6897
SOLID & HAZARDOUS WASTE MGMT 608-266-2111
SOLID & HAZARDOUS WASTE TELEFAX 608-267-2768

February 7, 1994

File Ref: FID# 252076990
Racine County
HW LIC

Mr. Henry Koch, Vice President
Land Reclamation Company
1989 Oakes Road
P.O. Box 081220
Racine, WI 53408-1220

SUBJECT: Environmental Monitoring Plan Modification to the Plan of Operation Approval and Hazardous Waste Closure Plan, and response to "Justification for Not Installing Additional Unit B Piezometers at LRC,"
Land Reclamation Company Landfill
EPA ID#: WID076171008

Dear Mr. Koch:

The Department has completed its review of the following two documents submitted by Land Reclamation (LRC): "Proposed Amendment to Existing Environmental Monitoring Program," prepared by Warzyn, Inc. on behalf of LRC and received by the Department on July 12, 1993; and "Justification for Not Installing Additional Unit B Piezometers at LRC," prepared by RMT, Inc. and received by the Department on June 30, 1993. A plan review fee of $500 was received by the Department on January 24, 1993. A draft version of this determination was sent to LRC for comment on December 22, 1993. LRC's comments were received in the Department on January 24, 1994 and were considered or incorporated in finalization of this determination.

This letter and the attached report conditionally approve the Proposed Amendment to Existing Environmental Monitoring Program. This modification will replace the December 30, 1991 Modification to the Plan of Operation Approval and Hazardous Waste Closure Plan except as noted below. Specifically, conditions 7 through 12 in the December 30, 1991 plan modification that required installation of monitoring equipment have been met with the following exceptions: 1) those portions of condition 7 and the Environmental Monitoring Summary that required the installation of four Unit B piezometers (UB-12, UB-14, UB-15 and UB-16) are no longer required based on documentation provided in RMT's report "Justification for Not Installing Additional Unit B Piezometers at LRC;" 2) those portions of condition 10 and the Environmental Monitoring Summary that required the installation of LMP-6 are no longer required; and 3) the requirements in conditions 7 and the Environmental Monitoring Summary for the installation of wells CS-3, CS-4 and CS-5 are still in effect and not deleted by any conditions of the attached plan modification. Conditions 13 through 22 of the December 30, 1991 plan

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modification that outline monitoring requirements and related portions of the Environmental Monitoring Summary are superseded by the conditions and monitoring summary of the attached plan modification. Condition 24 of the December 30, 1991 plan modification outlining requirements for an annual report is superseded by conditions in the attached plan modification. Finally, condition 23 has been fulfilled by the submittal of the document entitled "Environmental Sampling Plan," prepared by RMT, Inc. on behalf of LRC and received by the Department on November 3, 1993.

Please note that the Department has required that LRC's annual report be submitted each year in June instead of September. As part of that report, methane detects in the gas probes outside of the waste shall be summarized. However, any methane detects over 25% of the lower explosive limit of methane shall be reported to the Department immediately, as well as included in the annual summary. Also, well 17UR shall not be abandoned due to its inclusion as a gas monitoring point.

LRC is no longer required to submit paper copies of monitoring data that is transferred to the Department each quarter by computer diskette. Instead, LRC shall provide the Department each quarter with a paper copy of all data that is not submitted by diskette as well as a summary of groundwater analytical data. The groundwater data summary should be similar to the letter summary and summary tables that are currently provided with each quarter's water quality data.

Please attach this modification to your Plan of Operation Approval issued on December 19, 1984 and your Hazardous Waste Closure Plan dated March 31, 1988. If you have any questions regarding this modification, please call Jill Fermanich at (608) 266-5741 or Jim Bauer at (608) 267-7572.

Sincerely,

Lakshmi Sridharan

Lakshmi Sridharan, Ph.D., P.E., Chief
Solid Waste Management Section
Bureau of Solid & Hazardous Waste Management

Barbara J. Zellmer

Barbara J. Zellmer, Chief
Hazardous Waste Management Section
Bureau of Solid & Hazardous Waste Management

attachment

cc: Ken Hein - SED
Ed Lynch - SW/3
Marty Herrick/Jill Fermanich - SW/3
Cindy Cook/Jim Bauer - SW/3
Jean Gromnicki - U.S. EPA Region 5, HRM/7J
Laura Lodisio/Allen Wojtas - U.S. EPA Region 5, HRE/8J
Katherine Martin/Mark Osten - RMT, Inc., Madison

RECEIVED
FEB 14 1994
SOLID WASTE MGT SECTION
BUR OF SOLID & HAZRD WASTE

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
MODIFICATION TO THE PLAN OF OPERATION APPROVAL
AND HAZARDOUS WASTE CLOSURE AND LONG-TERM CARE PLAN
LAND RECLAMATION COMPANY LANDFILL (#0572), RACINE COUNTY
WID076171008

FINDINGS OF FACT

The Department finds that:

1. Land Reclamation Company (LRC) owns and operates a hazardous and solid waste disposal facility located in the N 1/2 of Section 23, T3N, R22E, City of Racine, Racine County, Wisconsin. Prior to May 1, 1989 the owner was known as Land Reclamation, Ltd. (LRL).

2. The Department issued a conditional plan of operation approval for the facility on December 19, 1984. A subsequent modification of the plan of operation approval and modification of the hazardous waste closure and long-term care plan, dated March 31, 1988 required LRL to submit groundwater, surface water, and leachate monitoring plans. The March 31, 1988 modification was modified on December 30, 1991.

3. On July 12, 1993, LRC submitted a request to the Department for modifications to the conditional plan of operation approval. The proposed modifications include changes to the environmental monitoring plan.

4. The information submitted in connection with the modification request includes a report and associated plan sheets submitted by RMT, Inc. on behalf of LRC and dated July 1993. The report is entitled "Proposed Amendment to Existing Environmental Monitoring Program."

5. The $500 review fee for this project was received by the Department on January 24, 1993.

6. Additional documents considered with the modification request include the following:

   * "Justification for Not Installing Unit B Piezometers at Land Reclamation Company," prepared by RMT, Inc. and received by the Department on June 30, 1993.

   * "Environmental Sampling Plan," prepared by RMT, Inc. and received by the Department on November 3, 1993.

7. Conditions of approval set forth below are needed to ensure compliance with NR 140, chs. NR 500 through 520 and chs. NR 600 through 685, Wis. Adm. Codes.

CONCLUSIONS OF LAW

1. The Department has authority under s. 144.44(3), Stats. to condition a plan of operation approval if the conditions are necessary to comply with chs. NR 500 through 520 and chs. NR 600 through 685, Wis. Adm. Code. The Department also has authority under s. 144.44(3), Stats. to modify a plan of operation approval with special conditions if the conditions are needed to ensure compliance with chs. NR 500 through 520 and chs. NR 600 through 685, Wis. Adm. Code.

2. The Department has the authority pursuant to ch. NR 140, the applicable portions of chs. NR 500 through 520, and chs. NR 600 through 685, Wis. Adm. Code to require sampling of groundwater, evaluation of impacts to groundwater, and remedial measures where groundwater standards are attained or exceeded.

3. The Department has authority under s. 144.62(8)(e), Stats. to promulgate rules covering the design, construction, operation, closing and long-term care of hazardous waste facilities.

4. The Department has authority under ss. NR 685.05 and 685.06, Wis. Adm. Code to modify hazardous waste facility closure and long-term care plans.

5. The Department has authority under ch. NR 635, Wis. Adm. Code to require groundwater and leachate monitoring at hazardous waste disposal facilities.

6. In accordance with the preceding, the Department has the authority under s. 144.44 Stats. and ch. 160, Stats. to issue the following conditional plan of operation approval modification.

MODIFICATION TO THE PLAN OF OPERATION APPROVAL

AND HAZARDOUS WASTE CLOSURE AND LONG-TERM PLAN

The Department hereby modifies the plan of operation approval and the hazardous waste closure and long-term care plan modification. The conditions of this determination supersede conditions of the December 30, 1991 Modification to the Plan of Operation Approval and Hazardous Waste Closure Plan except as noted in conditions 5, 6 and 7 of this modification. This modification authorizes LRC to proceed with the environmental monitoring activities as proposed in the July 1993 submittal, provided the following conditions are met:

GENERAL

1. All aspects of environmental monitoring of the LRC landfill shall be performed in accordance with this plan modification approval and the requirements of chs. NR 500 to 520, NR 600 to 685 and NR 140 Wis. Adm.

Code. In the case of any discrepancies between the conditions of this approval and the plan of operation, or other prior environmental monitoring approvals, the conditions of this modification shall take precedence.

2. The environmental monitoring requirements contained in this modification shall commence with the issuance of this approval and shall continue until otherwise modified by the Department in writing.

3. The environmental and performance monitoring of the facility shall be conducted in accordance with the schedules of sampling locations, parameters and frequencies listed in the "LRC Environmental Monitoring Summary" attached to this approval. All requirements of the attached Environmental Monitoring Summary shall be considered as conditions of this modification.

4. In accordance with s. NR 635.10(1), Wis. Adm. Code, the design management zone (DMZ) for which groundwater protection standards apply shall be at the edge of waste along the east and south sides of the HWU (Corridors 1 through 6). The DMZ shall be 150 feet from the edge of waste on the west and north sides of the site, the south side of the former City of Racine Landfill, the south side of Corridors 8, 9, 10, and the east side of Corridors 7, and 7A. This is consistent with the requirements of s. NR 140.22(5)(j), Wis. Adm. Code, which establishes a 0 foot DMZ for facilities subject to regulation under s. NR 635.10 and a 150 foot DMZ for facilities subject to regulation under s. NR 504.04(4)(d), Wis. Adm. Code.

INSTALLATIONS AND ABANDONMENTS

5. The requirements in condition 7 and the Environmental Monitoring Summary of the December 30, 1991 plan modification for installation of piezometers UB-12, UB-14, UB-15 and UB-16 are waived based upon justification provided by LRC in the June 29, 1993 document "Justification for Not Installing Additional Unit B Piezometers at LRC."

6. The requirement in condition 10 and the Environmental Monitoring Summary of the December 30, 1991 plan modification for installation of LMP-6 is waived.

7. The requirements in conditions 7 and 9 and the Environmental Monitoring Summary of the December 30, 1991 plan modification for installation of CS-3, CS-4 and CS-5 stand. Construction of those wells shall be completed during the 1994 field season.

8. The following monitoring points will be abandoned for reasons outlined in the "Proposed Amendment to Existing Environmental Program" (Warzyn, July 1993). All probes and wells shall be abandoned in accordance with s. NR 141.25, Wis. Adm. Code.

Unit A Wells	Unit B Wells	Gas Monitoring Probes and Wells	
22M	22L	GMW3	GMW18U
40U	40L	GMW16	GMW19
10U	10LR	GMW17	GMW20
5A		GMW18	GMW21

MONITORING

Groundwater

9. The groundwater monitoring program for LRC shall consist of the sampling protocols included in the report entitled "Environmental Sampling Plan" (RMT, October 1993) and the site monitoring wells, frequency, and parameters outlined in the Environmental Monitoring Summary and the conditions within this modification.

Leachate and Gas Condensate

10. The leachate and gas condensate monitoring program for LRC shall consist of the sampling protocols included in the report entitled "Environmental Sampling Plan" (RMT, October 1993) and the site monitoring points, frequency, and parameters outlined in the Environmental Summary and conditions within this modification.

11. All leachate conveyance piping associated with the vertical leachate extraction system and the eastern perimeter gas header piping shall be cleaned out at least once every 2 years.

12. The following points shall be cleaned out on an annual basis:

    a. All condensate driplegs.

    b. All leachate collection and transfer lines, except those associated with the vertical leachate extraction system.

    c. All leachate collection and transfer piping constructed as part of the west barrier wall.

Gas

13. The gas monitoring program for LRC shall consist of the sampling protocols included in the report entitled "Environmental Sampling Plan" (RMT, October 1993) and the site monitoring points, frequency and parameters outlined in the Environmental Monitoring Summary and conditions within this modification.

Surface Water

14. The surface water monitoring program for LRC shall consist of the sampling protocols included in the report entitled "Environmental Sampling Plan" (RMT, October 1993) and the site monitoring points, frequency and parameters outlined in the Environmental Monitoring Summary and conditions within this modification.

Cap Settlement

15. Settlement of the final cover shall be monitored by the following:

    a. An aerial topographic survey shall be performed at the site on an annual basis with the preparation of drawings with a 2-foot contour interval at a scale of 1-inch equal to 100-feet.

    b. Settlement monitoring shall be performed annually at the locations indicated on Table 1 in the attached Environmental Monitoring Summary.

    c. Vertical settlement shall be estimated to within a 1-foot tolerance. Pipe invert elevations shall be estimated assuming that settlement will be equal to cover settlement.

    d. A report shall be submitted with each annual report which includes annual and cumulative settlement, as well as pipe invert elevations and the slope between the wells.

SUBMITTALS

16. An annual comprehensive site operation and environmental monitoring report shall be submitted to the Department by June 15th of each year. This report shall be prepared in accordance with the requirements of chs. NR 635 and 680. The report shall be prepared and certified by a hydrogeologist and engineer, as appropriate, as defined by ss. NR 500.03 and 600.03, Wis. Adm. Code. The following information shall be included in the report:

    a. A high and low water table contour map of site area with water elevations in feet MSL indicated next to each identified control point. Leachate head measurements and leachate collection pipe invert elevations from unlined portions of the site shall be used to estimate water table conditions in the site interior. Leachate head measurements and leachate collection pipe invert elevations from lined portions of the site shall be used to monitor leachate head conditions in the site interior. The report text should note wells showing significant seasonal or long-term water level fluctuations.

    b. A potentiometric map of water elevations in the upper part of Unit B, using seasonal low measurements. Control points and elevations

shall be noted on the map. Significant changes or trends shall be reported.

c. A summary of groundwater flow conditions and description of any significant changes for hydrologic units A and B.

d. A description and explanation of any changes or new interpretations regarding background groundwater quality in the site area.

e. An evaluation and analysis of any potential landfill contaminant migration.

f. A description of the degree and extent of the vinyl chloride contamination in the 141U area. Any change over time shall be noted.

g. A summary of leachate data including:

i. Tabulation of leachate volumes measured at monitoring points MW15B and LMP8A and of gas condensate measured at monitoring point DL2.

ii. Description of the performance of the containment structure including:

a) Quantity and quality of leachate collected from the containment structure,

b) Head levels from wells on each side of the containment structure,

c) Comparison of the assumed heads in the dewatering trench, the interior and exterior containment structure (CS) monitoring wells, and at the adjacent landfill leachate head monitoring wells.

iii. Map of leachate head levels using the latest round of head measurements with text descriptions of any changes since the previous year. A comparison shall be made between leachate head elevations and groundwater elevations in the upper Unit B wells around the site perimeter.

iv. A description of variation in leachate and gas condensate quality and quantity both seasonally and year to year. The evaluation shall include monitoring points MW15B, LMP8A and DL2. The total mass of individual volatile organic compounds extracted from each point shall be tabulated per year.

h. Preparation of an annual site water budget including surface water runoff, percolation into waste, leachate collection and

extraction, containment structure dewatering, and estimated leakage through or into lined and unlined areas. Measurement of precipitation from the nearest weather station monitored by the State Climatologist shall be used as a component of the budget. Annual precipitation records from the State Climatologist shall be included in the report.

i. A discussion of surface water monitoring results including:

   i. Tabulation of monthly flows.

   ii. Description of seasonal and long term variations in quality and quantity, including a discussion whether the Canal is gaining or losing water relative to the adjacent aquifer, and potential water quality impacts.

j. The water elevations and quality at sub-base piezometers SB-PZ-1 and 2 shall be tabulated along with the leachate head data from the lined landfill area above the sub-base piezometers. Prior to construction of the leachate head wells, a one foot leachate head over the liner can be assumed and used for comparison to the piezometer water elevations. This data shall be used to describe whether inward or outward flow from the landfill is occurring. Groundwater elevation data from adjacent upper Unit B piezometers (4L, 10LR, and 40UB) shall be tabulated and used to describe the groundwater flow relationship between the sub-base piezometers and upper Unit B.

k. A summary of any detects of methane in the gas probes outside of waste shall be provided with their significance explained. The gas volume and quality data representing total site gas extraction shall be used to total the monthly and annual mass of methane and any specific volatile compounds extracted from the site. Volume estimates will be made using flow data at the blower house until the flow meter is installed at the flare. When this flow meter is operational, it will be used with the Johnson Wax flow meter to record gas volume extracted from the site.

   i. Any methane detects over 25% of the lower explosive limit of methane in the probes outside the waste shall be reported immediately to the Department.

l. A description of cap settlement shall be provided including significant areas of settlement for the year or areas of significant total cumulative settlement. Areas sensitive to uneven settlement such as those crossed by leachate or gas condensate lines shall be evaluated as to their potential disruption. Surveying of pipeline gradients shall be conducted where such changes could result in the loss of positive drainage. Yearly and cumulative elevation changes shall be recorded annually for each settlement monitoring point.

m. An evaluation of the performance of all monitoring devices shall be included and a detailed proposal of what actions are needed to restore or establish monitoring effectiveness at the site shall be provided.

n. Documentation of the cleaning of all leachate conveyance piping, leachate collection lines, gas header piping and condensate drip legs. Included in the documentation shall be a listing of which lines were cleaned, the distance the cleaning equipment penetrated each cleaning point, a narrative of any problems encountered and any repairs accomplished, and photos showing the cleaning.

o. A narrative which outlines the performance of the gas extraction system. The narrative shall contain at a minimum a listing of the system downtime, any repairs performed on the system, and whether the performance of the system has been as expected.

p. A narrative summarizing the performance and maintenance of the sedimentation basins shall be included in the annual report.

q. A listing of the amount of solid waste received in tons, the estimated remaining capacity in years, a summary of the status of the ongoing remedial action, an evaluation of how well the remedial action is working to satisfy the requirements of the feasibility approval and this approval, and an evaluation of all monitoring results. The portions of the annual report which require an evaluation of the remedial action and monitoring shall include the following:

    i. Leachate head level plots through time for all leachate head wells. This shall also include all existing data.

    ii. An evaluation of the performance of all remedial action work which has been implemented and an assessment of whether additional remedial actions are necessary.

    iii. An evaluation of the monitoring network which measures performance of the site and any recommendations for additional monitoring.

NOTIFICATION OF APPEALS RIGHTS

If you believe your have a right to challenge this decision, you should know that Wisconsin Statutes and Administrative rules provide time periods within which requests to review Department decisions must be filed. For judicial review of a decision pursuant to Sections 227.52 and Sections 227.53, Wisconsin Statutes, you have 30 days after the decision is mailed or otherwise served by the Department, to file your petition with the appropriate circuit court and serve the petition on the Department. Such a petition for a judicial review shall name the Department of Natural Resources as the respondent.

This notice is provided pursuant to Section 227.48(2), Statutes.

DATED: FEB 1 1 1994

DEPARTMENT OF NATURAL RESOURCES
For the Secretary

Barbara J. Zellmer, Chief
Hazardous Waste Management Section
Bureau of Solid & Hazardous Waste Management

Lakshmi Sridharan, Ph.D, P.E., Chief
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LRC ENVIRONMENTAL MONITORING SUMMARY

This document outlines the environmental and performance monitoring required of this facility for the following groups:

I. Groundwater monitoring wells
II. Leachate and gas condensate
III. Gas probes and gas extraction points
IV. Surface water
V. Landfill surface elevation

Tables I through V summarize the monitoring requirements.

Quarterly sampling and analyses will be performed during the months of January, April, July, and October. Semiannual sampling will be performed during the months of January and July. Groundwater sampling for ch. NR 635 Appendix 1 parameters will be conducted during July. Monitoring data shall be submitted to the Department on computer diskette within 60 days after sampling is completed. In addition, a paper copy of data not submitted digitally shall be submitted to the Department within 60 days after the quarterly sampling event: 1) all data that is not transferred via diskette; and 2) a written summary and summary tables of all groundwater analytical results, including the following: a summary and evaluation of all ch. NR 140 exceedances according to geologic unit; a summary and evaluation of all detected compounds in the NR 635 wells, including a summary of PAL and ES exceedances; and a summary of detects of all non-naturally occurring compounds detected in all site wells. LRC shall submit 4 copies of the summary to the Bureau and 2 copies to the Southeast District.

I. Groundwater Monitoring

The groundwater monitoring program is organized into two groups according to geologic unit. Groundwater monitoring shall be conducted at the wells listed below using the associated protocols. Monitoring wells 5UR, 6L, CS-8, 141U, UB-5, UB-6, UB-7, and UB-8 shall be sampled according to protocols that fulfill the requirements of ch. NR 635, Wis. Adm. Code.

Unit A Monitoring

Wells	Frequency	Parameters
6U, 17TR, 7U, 108U, CS14, 141U, 152U, 153U, CS12, 134U, CS10, CS8, CS6R, 109U, CS2, 22U, CS1, 4U, 14UR, 5UR	Annually	VOCs, chromium, lead, selenium arsenic, barium, fluoride, manganese
141U, 5UR, CS-8	Annually	ch. NR 635 Appendix 1
6U, 17TR, 7U, 108U, CS14, 141U, 152U, 153U, CS12, 134U, CS10, CS8, CS6R, 109U, CS2, 22U, CS1, 4U, 14UR, 5UR	Semi-annually	alkalinity, COD, specific conductance, pH, potassium, iron, sodium, chloride, sulfate, hardness
141U, 152U, 153U, 134U	Semi-annually	VOCs

I. Groundwater Monitoring (continued)

6U, 6TR, 17TR, 7U, 7T, 108U, 108T, 151U, CS13, CS14, 141U, 141T, 152U, 153U, CS11, CS12, 134U, 134T, CS9, CS10, CS7, CS8, CS5, CS6R, 146U, 109U, 109TRR, CS4, CS2, CS3, 22U, CS1, 4U, 14UR, 14TR, 5UR, 5TR, SB-PZ1, SB-PZ-2	Semi-annually	elevation

Unit B Monitoring

Wells	Frequency	Parameters
6L, 17LR, UB9, 108L, UB8, UB7, UB6, UB5, UB4, 109L, UB2, UB1, 4L, 14LR, 5LRR, 141L	Annually	VOCs, chromium, lead, selenium, arsenic, barium, fluoride, manganese
6L, UB8, UB7, UB6, UB5	Annually	ch. NR 635 Appendix 1
6L, 17LR, UB9, 108L, UB8, UB7, UB6, UB5, UB4, 109L, UB2, UB1, 4L, 14LR, 5LRR, 141L	Semi-annually	alkalinity, COD, specific conductance, pH, potassium, iron, sodium, chloride, sulfate, hardness, elevation
6L, UB6, 109L, UB4	Semi-annually	Subtitle D Appendix 1

II. Leachate and Gas Condensate Monitoring

Leachate and gas condensate monitoring shall be conducted at each of the points described below using the sampling protocols provided.

Point	Frequency	Parameters
MH15B, LMP8A, DL2	Monthly	Conductivity, volume, TSS, COD, pH, phosphorus, BOD, oil and grease, temperature
MH15B, LMP8A, DL2	Annually	Sulfide, sodium, phenols, TKN, chloride, sulfate, manganese, alkalinity, hardness, fluoride, nitrate+nitrite nitrogen, ch. NR 635 Appendix 1
LHW100, LHW101, LHW102, LHW103, LHW104, LHW105, LHW106, LHW107 LHW108, LHW109, LHW110, LHW111, LHW112, LHW113, LHW114, RS1, LH38, LHW115, LHW116, LHW117, LHW118, LHW119, LHW120, LHW121	Quarterly	Elevations
DL2	Weekly	Volume
	Quarterly	pH, COD, TSS, conductivity
	Annually	Priority pollutants

III. Gas Monitoring

Gas monitoring shall be performed at the points listed below using the sampling protocols provided.

Point	Frequency	Parameters
LGW300, LGW301, LGW302, LGW303, LGW304, LGW305, LGW306, LGW307, LGW308, LGW309, LGW310, LGW311, LGW312, LGW313, LGW314, LGW315, LGW316, LGW317, LGW318, LGW319, LGW320, LGW321, LGW322, LGW323, LGW324, LGW325, LGW326S/D, LGW327S/D, LGW328S/D, LGW329S/D, LGW36, LGW38, LGW39, LGW40, LGW44, LGW45, LGW46, LGW47, GW21, GW9, GW11, GW12, GT1, GT2, GW200, GW201, GW202, GW203, GMP6A, CO5, CO6, CO7N, CO7S, CO7X	Monthly	Barometric pressure, barometric pressure trend, vacuum, methane oxygen, ground conditions, vegetation conditions, cap condition, temperature, estimated flow, valve setting, weather conditions
Blower house east	Twice monthly	Methane, oxygen, estimated flow, vacuum
	Annually	VOCs (benzene, vinyl chloride, and non-methane organic compounds)
GMW1RA, GMW1RB, GMW2R, GMW4, GMW5, GMW8, GMW9, GMW22, GMW26A GMW27A, 141U, TP1, TP2, TP3, TP4, TP5, TP6, TP7, TP8, TP9, GP1, GP2, GP3, GP4, 17UR	Monthly	Barometric pressure, barometric pressure trend, vacuum, methane, oxygen, ground conditions, vegetation conditions, cap condition, weather conditions
Johnson Wax Flow Meter[1] Flare Flow Meter[1]	Monthly	Volume

IV. Surface Water Monitoring

Surface water monitoring shall be performed at the points listed below according to the sampling protocols provided.

Point	Frequency	Parameters
Outfall 001, Outfall 002	Quarterly	Specific conductance, pH, temperature, sodium, potassium, chloride, sulfate, VOCs
SW-1, SW-2	Quarterly	Specific conductance, pH, temperature, sodium, potassium, sulfate, chloride, TSS, COD, BOD
Outfall 001, Outfall 002	Monthly	TSS, COD, BOD, estimated flow
SW-1, SW-2	Monthly	Water surface elevation

Note: 1 Monitor after Flare Flow Meter is installed.

V. Landfill Surface Elevation Monitoring

Annual measurement of all cap settlement monitoring points shall be performed at the points listed below.

4+00N 9+00E	6+00N 17+00E	8+00N 8+00E	9+00N 19+00E	11+00N 17+00E
5+00N 9+00E	6+00N 18+00E	8+00N 9+00E	9+00N 20+00E	11+00N 18+00E
5+00N 10+00E	6+00N 19+00E	8+00N 10+00E	9+00N 21+00E	11+00N 19+00E
5+00N 11+00E	6+00N 20+00E	8+00N 11+00E	9+00N 22+00E	11+00N 20+00E
5+00N 12+00E	6+00N 21+00E	8+00N 12+00E	9+00N 23+00E	11+00N 21+00E
5+00N 13+00E	6+00N 22+00E	8+00N 13+00E	9+00N 24+00E	11+00N 22+00E
5+00N 14+00E	6+00N 23+00E	8+00N 14+00E	10+00N 12+00E	11+00N 23+00E
5+00N 15+00E	6+00N 24+00E	8+00N 15+00E	10+00N 13+00E	11+00N 24+00E
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6+00N 8+00E	7+00N 14+00E	9+00N 10+00E	10+00N 21+00E	12+00N 20+00E
6+00N 9+00E	7+00N 15+00E	9+00N 11+00E	10+00N 22+00E	12+00N 21+00E
6+00N 10+00E	7+00N 16+00E	9+00N 12+00E	10+00N 23+00E	12+00N 22+00E
6+00N 11+00E	7+00N 17+00E	9+00N 13+00E	10+00N 24+00E	12+00N 23+00E
6+00N 12+00E	7+00N 18+00E	9+00N 14+00E	11+00N 12+00E	12+00N 24+00E
6+00N 13+00E	7+00N 19+00E	9+00N 15+00E	11+00N 13+00E	
6+00N 14+00E	7+00N 20+00E	9+00N 16+00E	11+00N 14+00E	
6+00N 15+00E	7+00N 21+00E	9+00N 17+00E	11+00N 15+00E	
6+00N 16+00E	7+00N 22+00E	9+00N 18+00E	11+00N 16+00E	

Appendix A.8
Addendum to Notice of Noncompliance – Hazardous Waste Compliance Assessment – Kestrel Hawk Landfill – EPA ID WID076171008 September 16, 2020

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September 16, 2020

HW CMEL
File Ref: FID 252076990
Racine County

Khalid Umer, P.E.
Republic Services
1969 Oakes Road
Racine, WI 53406

SUBJECT: Addendum to Notice of Noncompliance
Hazardous Waste Compliance Assessment
Kestrel Hawk Landfill
EPA ID WID076171008

Dear Mr. Umer:

This letter serves as an Addendum to the Notice of Noncompliance (NON) dated December 9, 2019 to the Kestrel Hawk Landfill (KHL).

The NON outlined 15 areas of alleged noncompliance and 6 areas of concern. For each item the department recommended follow-up actions for KHL to take. Attachment A includes a summary of KHL's response submittals from January through June 2020. Thank you for these responses.

After reviewing KHL's responses to the NON, the department continues to allege that KHL is not in compliance with hazardous waste program requirements and continues to have areas of concern about other requirements. Today's Addendum updates the status of each NON item, based on the department's review of KHL's responses and further analysis, for KHL's review and action prior to further stepped enforcement. In some cases, alleged areas of noncompliance have been added. In some cases, the department makes specific recommendations to assist KHL in demonstrating and returning to compliance. In some cases, the item requires no further action and is resolved.

The updated status of each alleged area of noncompliance and area of concern is summarized below.

Alleged Areas of Noncompliance

1. Waste Determinations for Absorbent "Socks" – Resolved
2. Manifesting of Oil-Absorbent "Socks" – Submittal of additional information recommended
3. LDR requirements for Oil-Absorbent "Socks" – Submittal of additional information recommended
4. Waste Determinations for Gas Processing Residuals – Submittal of additional information recommended

4.1 Disposal of Separator Oil – ADDED as new alleged area of noncompliance; Submittal of additional information recommended

5. Waste Determination for Contaminated Groundwater - Submittal of additional information recommended

5.1 Waste Determination for Leachate - ADDED as new alleged area of noncompliance; Submittal of additional information recommended

5.2 Waste Determination for Pipe Condensate - ADDED as new alleged area of noncompliance; Submittal of additional information recommended

6. Hazardous Waste Generator Annual Reporting - Submittal of additional information recommended

7. Hazardous Waste Generator Fees - Submittal of additional information recommended
8. LDR for POTW Discharges and NR 211 Notice - Submittal of additional information recommended
9. Closure Plan - Submittal of additional information recommended
10. Long-Term Care Plan - Submittal of additional information recommended
11. Training – Resolved
12. Contingency Plan Distribution and Licensing - Submittal of additional information recommended
13. Operating Record - Submittal of additional information recommended
14. FPOR - Resolved
15. Financial Assurance Cost Estimates - Submittal of additional information recommended

Areas of Concern

16. Tank System Requirements - Resolved
17. Gas Condensate Volumes; 90-day Storage - Submittal of additional information recommended
18. Emergency Communications – Resolved
19. Hazardous Waste Facility Annual Reporting – Resolved
20. Solid Waste Program Annual Reports – Resolved
21. Transportation of Gas Condensate - Submittal of additional information recommended

Alleged Areas of Noncompliance

1. Waste Determination for Oil-Absorbent Socks

In the NON, the department alleged a failure to make a waste determination for oil-absorbent socks as required by s. NR 662.011, Wis. Adm. Code. KHL's response information addressed both oil-absorbent socks and free product oil removed from the landfill' hazardous waste unit (HWU). KHL's June 12, 2020 "Hazardous Waste Generation Report", Table 1, indicates that KHL's "current management approach" identifies these wastes as F039 hazardous waste. The department considers this issue to be resolved.

2. Manifesting of Oil-Absorbent Socks

In the NON, the department alleged a failure to properly manifest hazardous waste for shipments of oil-absorbent socks from 2015 through 2018. In at least 5 cases identified in the NON, KHL had shipped these hazardous wastes using a uniform hazardous waste manifest, but the manifests identified the waste as a non-hazardous TSCA-regulated PCB waste. KHL's Hazardous Waste Generator Report submitted on June 12, 2020 did not dispute the department's allegation and summarized information regarding shipments. The report indicated (on page 4) that "KHL will coordinate with WDNR to update these previous manifests." The department continues to allege that KHL failed to properly manifest these shipments.

To demonstrate compliance, KHL must ensure that all shipments after June 30, 2018 are properly reflected in U.S. EPA's e-manifest system. The department **recommends** that KHL provide associated documentation.

For all improperly manifested shipments since 2015, (including manifest 005724045SKS, January 2017, which KHL omitted from Table 1 of its Hazardous Waste Generator Report), the department **recommends** that (a) KHL notify the recipient(s) of improperly manifested hazardous waste so they can take appropriate actions [such as the unmanifested waste report requirements of s. NR 664.0076, Wis. Adm. Code, or for out-of-state facilities, 40 CFR 264.76 or similar destination state requirements], and (b) KHL provide the department with documentation of this recommended actions.

3. LDR requirements for Oil-Absorbent "Socks"

In the NON, the department alleged a failure to provide a land disposal restriction (LDR) notification for shipments of oil-absorbent socks from 2015 through 2018 as required by s. NR 668.07(1)(b) and recommended that KHL provide the department with a copy of the LDR notification to be used in future shipments, and documentation that the LDR has been provided to all destination facilities that received past shipments of hazardous waste oil-absorbent "socks". KHL indicated that they intended to perform sampling and analysis on 14 gallons of skimmed oil recently placed in a container along with oil-absorbent socks but did not provide the LDR and related transmittal documentation. Therefore, the department continues to allege that KHL has failed to comply with this requirement.

To demonstrate compliance, and as previously recommended in the NON, the department **recommends** that KHL provide a copy of the LDR notification to be used for shipments of this waste, including supportive sampling and analytical information, and documentation that the LDR has been provided to all destination facilities that previously received shipments of hazardous waste oil-absorbent "socks" (and other oily wastes from the HWU) without an LDR.

4. Waste Determinations for Gas Processing Residuals

For background, KHL pipes landfill gas to a gas processing facility. Some of this landfill gas is generated from the HWU which was used for the disposal of non-hazardous and hazardous waste, including listed hazardous waste. The processing facility dewaters the gas using a chiller, compresses the dewatered gas, and injects the compressed gas into a gas pipeline that carries the gas off-site for use by S.C. Johnson in its energy production system. The liquid generated by the dewatering and compression processes (pre-separator condensate) is routed to an oil-water separator. The oil from the separator is periodically removed by a vendor and managed off-site (separator oil). The remaining liquid from the separator (separator effluent) is stored in a nearby underground tank and periodically trucked by a vendor to an on-site manhole that drains to the City of Racine sewer system.

In the NON, the department alleged a failure to make hazardous waste determinations for the three landfill gas condensate wastes generated at the landfill gas chiller/compressor system and recommended that KHL submit specified information. KHL's letter dated March 12, 2020, included a legal memorandum from Jones Day, March 12, 2020 ("March 12 Legal Memo") concluding that the condensate from the landfill gas chiller equipment cannot be a derived-from hazardous waste. The department disagrees, as outlined in Attachment B, and concludes that each of these wastes in a derived-from hazardous waste bearing the codes of the listed wastes disposed in the HWU.

The department recognizes that this issue may not have been directly addressed by the department since the development of the gas-to-energy pipeline project, and KHL may view it as representing a new interpretation of the department's waste program. program. Please note that the department is required to enforce state its regulations and to ensure program consistency with U.S. EPA requirements. If KHL desires the department to seek additional guidance from U.S EPA, please provide the department with a written request.

Item 4.a of the NON recommended the submittal of waste determinations for the three condensate waste streams. The NON discussed the need for these waste determinations to address hazardous waste characteristics as well as listings. No information regarding characteristics were provided. Therefore, the department continues to allege that KHL has failed to make proper hazardous waste determinations for the three landfill gas condensate wastes generated at the landfill gas chiller/compressor system, as required by s. NR 662.011.011, Wis. Adm. Code.

KHL's March 26, 2020 letter states, "The collected oil is hydraulic oil that was added to the compressor at the biogas building" and included an SDS for a Castrol hydraulic fluid product. No further information, such as a waste profile or analytical information, was provided. The department respectfully disagrees with this statement. Though it is possible that the separated oil phase may contain hydraulic fluid that leaks from the compressor, it is also likely that this phase contains the lighter fraction of landfill gas constituents that are removed during chilling

and compression. This should be considered in KHL's waste determinations. To demonstrate compliance, the department **recommends** that KHL provide the department with waste determinations, and supportive information, for the three landfill gas condensate wastes that at a minimum consider the ignitability and toxicity characteristics. This effort should also develop the information need to comply with land disposal restriction (LDR) requirements. The department believes that KHL should implement a waste sampling and analysis procedure to support this waste determination. (It is noted that page 4 of KHL's June 12, 2020 letter indicates indicated that the separator oil will be sampled and evaluated in June 2020; this is also mentioned in Attachment 4's table titled "Kestrel Hawk Landfill - Waste Determination Outline.")

Additional discussion regarding pre-separator condensate: In Attachment 2 of its April 14, 2020 letter, KHL provided laboratory analytical information for "Biogas Building Condensate Tank Testing"; none of these results appear to exceed hazardous waste characteristic limits. The chain-of-custody form indicates that this sample was obtained on March 16, 2020, from the "GC Tank." T, so the department assumes that KHL is using this analytical data to support its waste determination of the condensate after the oil-water separator (separator effluent). However, information was not supplied to show that the sample collected was a representative sample as defined by s. NR 660.10(101) Wis. Adm. Code. If this data is used to support the waste determination, the department **recommends** that KHL provide information showing that the sample collected was a representative sample of the separator effluent waste. If this information is not available, KHL should consider performing a new sampling and waste determination process.

Additional discussion regarding separator oil: In developing the waste determination for the separator oil, it would be informative to compare the generation rate of oil-phase quantities from the separator (which appears to be about 100 gallons per month, per Attachment 2 of KHL's March 26, 2020 letter) to the hydraulic fluid consumption rate of the compressor (i.e. the rate at which fluid is added to the compressor). The department **recommends** that KHL provide this evaluation.

Item 4.b of the NON recommended the submittal of information regarding quantities and management practices for separator oil. No additional information is requested.

Items 4.c and 4.d of the NON discussed the disposal of separator oil and recommended the submittal of information regarding off-site shipments of separator oil and compliance with used oil requirements. This is addressed in Addendum Item 4.1 below.

4.1 Off-site Shipments of Separator Oil (New alleged area of noncompliance)

This is a new alleged area of noncompliance regarding the improper disposal of separator oil, a listed hazardous waste. KHL's March 26, 2020 response letter shows that KHL shipped approximately 5,800 gallons of this listed hazardous waste (mixed with used oil from KHL's machine shop) on 22 occasions as non-hazardous used oil to Safety's Kleen's used oil refinery in East Chicago, Indiana, from January 15, 2005 to January 7, 2020. This facility is not permitted to accept hazardous waste. More specifically, the department alleges noncompliance with four requirements.

4.1.a Failure to arrange for hazardous waste to be treated, stored or disposed at a properly authorized facility in accordance with s. 291.21(9), Wis. Stat.

4.1.b Failure to make a proper waste determination in accordance with s. NR 662.011, Wis. Adm. Code.

4.1.c Failure to prepare and use a manifest in accordance with ss. NR 662.020 to s. NR 662.023, Wis. Adm. Code.

4.1.d Failure to meet the requirements of s. NR 679.10(a), Wis. Adm. Code, by failing to properly manage a mixture of used engine oil and a listed hazardous waste.

The department **recommends** that KHL provide its plan to ensure that compliance with these requirements is achieved.

5. Waste Determination for Contaminated Groundwater

In the NON, the department alleged a failure to make hazardous waste determinations for contaminated groundwater from the 141U extraction system and other collected groundwater affected by the HWU as required by s. NR 662.011.011, Wis. Adm. Code, and recommended KHL submit the waste determination(s). KHL did not provide the waste determinations. Rather, In Attachment 3 of its April 14, 2020 letter, KHL included a legal memorandum dated April 9, 2020, asserting that leachate and contaminated groundwater (and other liquids so discharged) are not and are never listed F039 hazardous waste (and do not carry any other listing) due to the domestic sewer exclusion (DSE) contained in s. NR 661.04(1)(a)2., Wis. Adm. Code, as the liquid is being ultimately discharged under the DSE to the City of Racine's sewer system. If excluded under the DSE, it would mean that KHL would no longer count this liquid as hazardous waste (for example, for reporting purposes) and that these liquids would not be subject to hazardous waste handling and management requirements. As it relates to leachate, this assertion appears to be brand new, changing KHL's long-standing position and reporting approach that leachate from the HWU is F039 hazardous wastes. The department disagrees, as outlined in Attachment C, and concludes that each of these wastes is a derived-from hazardous waste.

Therefore, the department continues to allege that KHL has failed to make proper hazardous waste determinations for this contaminated and collected groundwater, and wastes that result from mixing any of these liquids with other liquids. To demonstrate compliance, the department **recommends** that KHL submit accurate waste determinations for these wastes.

5.1 Waste Determination for Leachate (New alleged area of noncompliance)

This is a new alleged area of noncompliance. Failure to make a proper waste determination as required by s. NR 662.011.011, Wis. Adm. Code for leachate from the HWU and wastes that result from mixing any of these liquids with other liquids. As outlined in Attachment C, the department disagrees with the position that leachate is excluded under the DSE before it enters the public sewer system. To demonstrate compliance, the department **recommends** that KHL develop and submit accurate waste determinations for these wastes.

5.2 Waste Determination for Pipe Condensate (New alleged area of noncompliance)

This is a new alleged area of noncompliance. Failure to make a proper waste determination as required by s. NR 662.011.011, Wis. Adm. Code for gas condensate collected from gas transmission piping for HWU landfill gas and wastes that result from mixing any of these liquids with other liquids. As outlined in Attachment B, the department disagrees with the position that gas condensate collected from gas transmission piping is not a derived-from hazardous waste. To demonstrate compliance, the department **recommends** that KHL develop and submit accurate waste determinations for these wastes.

6. Hazardous Waste Generator Annual Reporting

In the NON, the department alleged a failure to accurately report hazardous waste quantities for several waste streams for calendar years 2015 through 2018 and recommended that KHL submit a report to address all potentially hazardous solid wastes and include accurate hazardous waste quantities. In its June 12, 2020 letter, within the "Hazardous Waste Generator Report" ("HWGR") developed by TRC, KHL discussed and presented

updated hazardous waste quantities. Table 2 of the HWGR included revised hazardous waste quantities for the years 2014 through 2019, based in part on shipment information summarized in Table 1 for parts cleaner and HWU oily wastes, and modified quantities for "hazardous waste sent to the Racine WWTP." Regarding the reported "Racine WWTP" quantities, Table 1 the HWGR asserts that the waste is excluded based on the domestic sewage exclusion (DSE). The HWGR was not complete and did not contain all of the information addressed in the NON. Therefore, the department continues to allege that KHL has failed to submit annual reports for the years 2014 through 2019, as required by s. NR 662.041, Wis. Adm. Code.

To demonstrate compliance, and as previously recommended in the NON, the department **recommends** that KHL revise and submit the HWGR (or a similar report) to consider and account for the following wastes, for 2014 through 2020:

- Discarded equipment or materials contaminated by F039 or other "derived-from" or "mixture rule" hazardous wastes.
- Discarded filters or other components used in hazardous waste liquid pumping or gas processing).
- Wastes removed or exhumed from the HWU.
- Solids or debris removed from the piping, pump station and manhole systems that convey hazardous wastes.
- Hazardous waste from heavy equipment maintenance activities (other than parts cleaner and used oil).
- Unacceptable wastes that are hazardous waste and delivered to the current landfill (and not retrieved by the transporter or generator) that KHL must manage off-site.
- Leachate, gas condensate and collected contaminated groundwater associated with the HWU, and other liquids that mix with these wastes.
- Wastes generated by the landfill gas chiller and compressor equipment, and other liquids that mix with these wastes.

In its letter dated April 14, 2020, KHL suggests that future annual reports would not include leachate and condensate. As indicated earlier in this letter, the department would disagree with this approach.

7. Hazardous Waste Generator Fees

In the NON, the department alleged a failure to pay environmental repair tonnage-based fees as required by s. 289.67(2), Wis. Stat., and recommended that KHL submit a fee reconciliation analysis and pay any unpaid fees. In its June 12, 2020 letter and HWFR (see Section 3.3 and Table 2), KHL claimed that even though KHL has self-reported as a large quantity generator for many years, KHL has not underpaid because it has been and is a small quantity generator (for which lower base fee applies) due to its assertions that its leachate (and other HWU liquids) and biogas system condensate wastes are not hazardous wastes. As noted previously the department disagrees with these assertions. KHL remains a large quantity generator. Also, as discussed in item 6 above, other hazardous wastes may not have been accurately reported in fee computations. Therefore, the department continues to allege that KHL has failed to submit accurate annual report fee computations and payments for the years 2014 through 2019.

To demonstrate compliance, and as previously recommended in the NON, the department **recommends** that KHL submit accurate fee computations for the years 2014 through 2020 and promptly pay any fees that are due.

8. LDR for POTW Discharges and NR 211 Notice

In the NON, the department alleged a failure to maintain a one-time written LDR notification form for hazardous waste discharged to the City of Racine sewer system, as required by s. NR 668.07(1)(g), Wis. Adm. Code, and recommended that KHL develop and provide a copy of this form. KHL did not submit this LDR notification. Rather, as discussed earlier, KHL provided a legal memorandum dated April 9, 2020 asserting that liquids

discharged to the sewer leachate are not hazardous waste due to the domestic sewer exclusion (DSE). The department disagrees. Therefore, the department continues to allege that KHL has failed to comply with this requirement.

To demonstrate compliance, the department **recommends** that KHL provide the LDR notification form to the POTW and provide the department with documentation of this action, along with a copy of the form.

Please note that s. NR 211.17, Wis. Adm. Code, requires notifications to the POTW, the EPA Region V waste management division director and the department's bureau of waste management of the discharge of certain hazardous wastes at certain quantities. The bureau of waste management has no record of such notifications. To demonstrate compliance, the department **recommends** that KHL provide the required agencies with the applicable reports for the past three years.

9. Closure Plan

In the NON, the department alleged a failure to address the closure plan contents required in s. NR 665.0112, Wis. Adm. Code, and recommended that KHL update and submit a closure plan that met these requirements, and that clarified other issues identified in the NON. In its response letter dated June 12, 2020, KHL provided a closure status report (CSR) for corridors 1-6, prepared by TRC and dated June 2020. The CSR appears to contain most of the required information outlined in s. NR 665.0112, Wis. Adm. Code, but failed to include a closure schedule. Therefore, the department continues to allege that KHL has failed to comply with this requirement.

To demonstrate compliance, the department **recommends** that KHL ensure that the closure plan include a schedule for final closure, as required by s. NR 665.0112(2)(f), Wis. Adm. Code, and provide documentation to the department.

(One another note, Section 4.0 of the CSR suggests that the HWU is “closed” because certain capping activities have been previously competed. Is stated earlier, the department does not agree that closure in accordance with s. NR 665.0115, Wis. Adm. Code has occurred. This can be accomplished only when the department approves closure certification for the facility and long-term care begins).

10. Long-Term Care Plan

In the NON, the department alleged a failure to meet the long-term care plan requirements of s. NR 665.0118(3), Wis. Adm. Code, and recommended that KLH develop a hazardous waste long-term care plan that addresses items identified in the NON. In its June 12, 2020 letter KHL provided an updated long-term care plan and cost estimate for the HWU (developed by TRC, dated June 2020). This plan appears to address the minimum content requirements listed in ss. NR 665.0118(3)(a) though (e), Wis. Adm. Code, but should be revised to specifically address the following specific “activities that will be carried on after closure”:

a. A description of the site-specific requirements related to the operations and maintenance for groundwater corrective action program, including the applicable WDNR approval document(s).
b. A description of the site-specific requirements for leachate removal and leachate level criteria (e.g. provisions of KHL’s October 19, 2005 modification, and Condition 1 the December 28, 2009 approval letter), including any applicable WDNR approval document(s), such as the March 21, 1991 approval that is referenced in the 2009 letter.

The department continues to allege that KHL has failed to comply with this requirement. To demonstrate compliance, the department **recommends** that KHL ensure that the long-term care plan describe these activities, and that KHL and submit this revised long-term care plan as a proposed plan of operation modification to supplement its current approved closure/long-term care plan (originally dated May 1996) for department approval.

In this way, the approved long-term care plan would facilitate compliance with both the NR 500-series and NR 600-series long-term care plan requirements.

11. Training

In the NON, the department alleged a failure to maintain the training program and associated documentation as required by ss. NR 665.0016(1) through (5), Wis. Adm. Code. In its June 12, 2020 letter KHL provided a document titled "Hazardous Waste Training Program" (dated June 2020, prepared by TRC) that demonstrated substantial compliance with this requirement. The department considers this alleged area of noncompliance to be resolved.

12. Contingency Plan Distribution and Licensing

In the NON, the department alleged failure to properly distribute and its contingency plan as required by s. NR 665.0053(2), Wis. Adm. Code, and recommended that KHL distribute the plan to local emergency response entities. In its April 29, 2020 letter KHL provided documentation showing that copies of a June 2018 contingency plan for the closed hazardous waste unit were distributed to four local emergency response entities.

In its June 12, 2020 letter KHL provided a document titled "Hazardous Waste Unit Contingency Plan" (dated June 2020, prepared by TRC) which appears to represent a further updated contingency plan. However, no documentation was provided that this updated plan was properly distributed to local emergency response entities. Therefore, the department continues to allege this area of noncompliance.

To demonstrate compliance, the department **recommends** that KHL submit copies of the June 2020 contingency plan to local emergency response officials as required by s. NR 665.0053(2), Wis. Adm. Code, and provide documentation to the department.

Also, the NON had also identified the potential need for a license modification for changes to the contingency plan. For the purposes of this compliance assessment, the department no longer believes this is needed.

13. Operating Record

In the NON, the department alleged a failure to maintain the operating record required by s. NR 665.0073(2), Wis. Adm. Code, and recommended that LHL provide its plan to achieve compliance.

In its April 14, 2020 letter, KHL indicated that the operating record would be addressed after further discussions with the department regarding the closure plan and long-term care plan. The department does not see how these issues are connected.

Section 4.0 of the Closure Status Report submitted with its June 12, 2020 letter states that the operating record requirements are not applicable because the HWU has achieved the closure standard. This is not correct. As discussed earlier, closure has not occurred. The following applicable operating records are specifically identified to be maintained until closure, and have not been provided:

NR 665.0073(2)(a) - for hazardous waste disposed, the waste descriptions, quantities, and dates.
NR 665.0073(2)(b) - location and quantity of each hazardous waste (map or diagram), with references to the manifest numbers.
NR 665.0073(2)(f) - records and results pertaining to groundwater monitoring and cleanup
NR 665.0073(2)(s) - certifications of major repairs of tank systems

The department continues to allege this area of noncompliance. To demonstrate compliance, and as previously recommended on the NON, the department r**ecommends** that KHL provide a plan to properly establish and maintain the operating record.

14. FPOR

The NON alleged a failure to have an FPOR that addresses delayed closure. After further evaluation and for the purposes of this compliance assessment, the department currently believes that this FPOR is not needed. This alleged area of noncompliance is rescinded.

15. Financial Assurance Cost Estimates

The NON alleged a failure to maintain closure and long-term care cost estimates as required by ss. NR 665.0142(1)(b) and NR 665.0144(1)(a), respectively, and recommended that KHL revise and submit these estimates.

Regarding closure costs: No revised closure cost estimate was discussed or provided in KHL's responses. Therefore, the department continues to allege this area of noncompliance. As indicated in the NON, this cost estimate should:

- include all costs related to hiring a third party to do the work,
- properly account for costs that are not appropriate to be included in contingency costs, and
- includes an explanation of the basis for the cost estimate.

Regarding long-term care costs: For long-term care, in its June 12, 2020 letter KHL provided an updated cost estimate as part of the updated long-term care plan for the HWU (developed by TRC, dated June 2020). As recommended in the NON, this plan addressed costs related to hiring a third party to do the work (separate from contingency costs) and provided explanations for many of the cost estimate items. However, the cost estimate requires further revision:

- The costs did not appear to include hazardous waste management costs for the management of condensate from the biogas area r (as discussed in Item 4). This should be corrected.
- Footnote 7 refers to a vendor contract costs "for routine operation of landfill gas system, and routine monthly landfill gas plan maintenance." KHL should ensure that all utility costs (e.g. electrical costs for the chiller and compressor) that may not be borne by the vendor are included.

To demonstrate compliance, the department **recommends** that KHL develop and submit revised closure and long-term care cost estimates to address these issues.

Areas of Concern

16. Tank System Requirements

In the NON, the department expressed concern regarding KHL's compliance with the tank system requirements of subchs. B, J, BB and CC of NR 665, Wis. Adm. Code. After further evaluation, and for the purposes of this compliance assessment, the department concludes that these requirements do not apply. The department considers this area of concern to be resolved.

17. Gas Condensate Volumes; 90-day Storage

In the NON, the Department expressed concern related to KLH's compliance status with generator tank system requirements regarding 90-day storage limits for condensate materials from the oil-water separator. The department requested that KHL provide revisions to a table it had provided, and an explanation regarding future compliance assurance. KHL did not address these recommendations. Rather, KHL asserts that the condensate materials handled in this tank system are not hazardous waste. As discussed earlier, the department disagrees with this assertion. This issue remains an area of concern. To demonstrate compliance, the department again **recommends** that KHL provide the information addressed in Item 17 of the NON; this called for:

- Condensate removal quantities for October, November and December of 2015. Please provide the previous Table 5 updated to include this information. ("Table 5" was included in Attachment 7 of TRC's report dated March 4, 2019).
- A description of how KHL intends to ensure that the 90-day generator storage limit will not be exceeded for any hazardous waste within the Gas Condensate System, including for example the oil generated within the oil-water separator unit, the effluent generated within the oil-water separator unit, and the effluent stored in the underground tank.

18. Emergency Communications

NON Item 16 reiterated the request for information regarding emergency communications. KHL provided this information in its April 14, 2020 response. The department considers this area of concern to be resolved.

19. Hazardous Waste Facility Annual Reporting

In NON Item 19, the department expressed concern regarding KHL's compliance the facility annual report requirements of s. NR 665.0075, Wis. Adm, Code, and recommended that KLH submit the required annual report information for calendar year 2019 by March 30, 2020. In its various responses to the NON, KHL provided the recommended information. The department considers this area of concern to be resolved.

In the future, the department suggests that KHL submit the facility annual report in a letter to the department's hazardous waste program.

20. Solid Waste Program Annual Reports

In NON Item 20, the department expressed concerns regarding to the accuracy of various liquids quantities reported in solid waste annual reports. KHL's letter dated June 12, 2020 included a report titled "Hazardous Waste Generation Report" (June 12, 2020, prepared by TRC); Appendix D contained updated estimates of volumes at various monitoring points for 2014 through 2019. For the purposes of this hazardous waste compliance assessment, no additional information is needed at this time. The department considers this area of concern to be resolved.

21. Transportation of Gas Condensate

In NON Item 20, the department expressed concerns regarding the vacuum truck transport of condensate waste from the biogas processing area to the Landfill Liquid Conveyance System. If the route involves property that are not "on-site" as defined in s. NR 660.10(85), Wis. Adm. Code, the transportation may be subject to the requirements of ch. NR 663, Wis. Adm. Code. The NON recommended that KHL evaluate the route(s) and provide the department with the results. KHL's other responses assert that the condensate is not hazardous waste and did not provide the recommended information. As discussed earlier, the department disagrees with this assertion. This issue remains an area of concern. To demonstrate compliance, the department again **recommends** that KHL provide the information addressed in Item 21 of the NON, which called for the following:

The department recommends that KHL evaluate whether the routes used by the vacuum truck are "on-"site" in order to determine if KHL is arranging or providing for hazardous waste transportation. The department recommends that KHL, within 60 days of this letter, provide a summary of this analysis and its conclusions.

Wrap-up

The department encourages KHL take immediate action to address the unresolved areas of alleged noncompliance and areas of concern identified in the NON dated December 9, 2019 and further clarified in today's Addendum. Please note that the department has provided recommendations in today's letter. These recommendations have been shown in bold and underlined font within this letter. The department requests that KHL address these recommendations and provide the department with the associated information within 60 days of the date of this letter.

Please also note that future submittals should include the authorization and certification statements as required by s. NR 670.011, Wisc. Adm. Code. If the response relies on technical information or data, such as design drawings and specifications, or engineering studies, such information should be certified by a qualified professional engineer in accordance with s. NR 670.014(1), Wisc. Adm. Code.

While we appreciate receiving your written responses by the date(s) specified, please understand that the department alleges that you remain in noncompliance and will remain in noncompliance until all identified areas are addressed. Failure to respond in a timely manner may result in escalated enforcement actions. The alleged violations may also be enforced by the United States Environmental Protection Agency. As part of its hazardous waste regulatory program, the department may perform additional inspections at this facility to ensure compliance with chapters NR 660 to 679, Wisconsin Administrative Code. Please note that Chapters NR 660 to 679 of the Wisconsin Administrative Code are available on the department's website at http://dnr.wi.gov/topic/Waste/Laws.html

If we can provide further assistance on these issues, please contact me at douglas.coenen@wisconsin.gov or 608-264-9258. Thank you for your cooperation.

Sincerely,



Doug Coenen, P.E.
Waste Management Specialist
Waste and Materials Management Program

cc: Facility File – DNR SE Region
Gerald DeMers, DNR
David Buser, DNR
Jason Knutson, DNR
Jonathan Hotstreet, TRC

Attachment A
KHL Responses to the NON

Letter dated Jan. 22, 2020: Noted that the identified NON issues have developed over a long time period.
Letter dated Jan. 30, 2020: Provided a work plan and schedule; list of key documents
Letter dated March 5, 2020: Provided high-level conclusions and an updated document inventory
Letter dated March 12, 2020: Addressed NON items 1 and 4
1: Oil from leachate in HWU is F039 hazardous waste
4: Legal memo asserting that condensate is not a listed hazardous waste
Letter dated March 26, 2020: provided additional information/discussion regarding Item 4 (oil-water separator streams)

- Stated that non-oil (condensate) is non-characteristic
- Stated that oil from separator is hydraulic oil from compressor; determined as non-hazardous using generator knowledge; managed by Safety-Kleen along with machine shop used oil
- Provided oil quantities

Letter dated April 14, 2020: Addressed various NON items:
1,3,6: Profile and LDR for absorbent socks and skimmed oily material
4,6,16,17,23: Condensate testing ("GC Tank") indicates not characteristically hazardous
6,8,16: Legal memo asserting that leachate is not a solid waste due to DSE; KHL does not plan to include leachate in future annual reports.
5,8,16: Refers to legal memo similarly asserting that groundwater is not a solid waste due to DSE
6: Provided table summarizing waste determinations
9,10: Capping summary (to be followed by Closure Status Report); request to discuss updated C/LTC Plan
14: FPOR not necessary to address delayed closure.
18: Emergency communications provided via cell phone.
19: Letter for annual reporting will begin 2021 if needed
20: Solid waste annual reports to be updated
Letter dated April 29, 2020: Addressed various NON items
1,2,3,6: Skimmed oil shipment manifest (April 2020)
12: Copies of contingency plan distribution letters to emergency response entities
Letter dated June 12, 2020: Addressed various NON items
6,7,20: Provided June 12, 2020 Hazardous Waste Generation Report (TRC); KHL plans to update oil manifests; Solid waste annual reports volumes are accurate
9,13,14,15,19: Provided June 2010 Closure Status Report (TRC)
11: Provided June 2020 training program report (TRC)
12: Provided June 2020 Contingency Plan (TRC)
10,15: Provided June 2020 Long-Term Care Plan (TRC)

Attachment B
Landfill Gas Condensate

As a matter of background, it is the department's understanding that KHL pipes landfill gas to its gas processing facility. Some of the landfill gas is generated from the hazardous waste unit that was used for the disposal of non-hazardous and hazardous waste, including listed hazardous waste. The processing facility dewaters the gas using a chiller, compresses the dewatered gas, and injects the compressed gas into a gas pipeline that carries the gas for use by S.C. Johnson in its energy production system. The liquid generated by the dewatering and compression processes is routed to an oil-water separator (pre-separator condensate). The oil from the separator is periodically removed by a vendor and managed off-site (separator oil). The remaining liquid is routed to a nearby underground tank (separator effluent); these liquids are periodically trucked by a vendor to an on-site manhole that drains (along with other liquids such as leachate) to the City of Racine sewer system.

In Item 4 of the NON, the department alleged a failure to make hazardous waste determinations for the three landfill gas condensate wastes generated at the landfill gas chiller/compressor system and recommended that KHL submit specified information. KHL's letter dated March 12, 2020, included a legal memorandum from Jones Day, March 12, 2020 ("March 12 Legal Memo") concluding that the condensate from the landfill gas chiller equipment cannot be a derived-from hazardous waste. The department disagrees, as outlined below, and concludes that each of these wastes in a derived-from hazardous waste bearing the codes of the listed wastes disposed in the hazardous waste unit.

Contained/Uncontained Gases

KHL's letter dated March 12, 2020, included a legal memorandum from Jones Day, March 12, 2020 ("March 12 Legal Memo") concluding that the condensate from the landfill gas chiller equipment is not a hazardous waste. The key to this argument is the preposition that landfill gas is not a solid waste. More specifically, it stated:

> "In order to be a hazardous waste, a material must first be a solid waste. Wisc. Stat. §289.01(12); 42 U.S.C. §6903(5). The definition of "solid waste" requires that the material be in a solid, liquid or contained gaseous form. Wisc. Stat. § 289.01(33); 42 U.S.C. § 6903(27). Here, the landfill gas is not a contained gas at the point of generation when it exits the landfill. Since the landfill gas is not a solid waste and therefore cannot be a hazardous waste, the Condensate is not derived from the treatment of a hazardous waste. Similarly, the mixture rule does not apply because landfill gas is not a listed hazardous waste – indeed, the landfill gas cannot be a hazardous waste at all because it is an uncontained gas that is not a solid waste".

The March 12 Legal Memo also cited a United States District Court for the Northern District of Illinois opinion in 2016, which supported EPA's prior position that uncontained methane gas in a utility pipeline is not hazardous waste. The department does not disagree with this position. The department also agrees that landfill gas is not explicitly listed as a hazardous waste.

The March 12 Legal Memo states that landfill gas is not a contained gas at the point of generation when it exits the landfill. The department agrees that gas in the piping used to remove gas from the landfill is not a solid waste. However, based on EPA's repeated position, the department does not agree that hazardous wastes, or hazardous waste constituents within an uncondensed gas, cannot be regulated by RCRA.

The March 12 Legal Memo refers to EPA RO 12362, dated January 11, 1985 (RO 12362) which states the following:

> "Condensate derived from landfill gas processing from a fill that contains municipal waste or undefined (not listed) hazardous waste is a hazardous waste only if it exhibits one or more of the characteristics of

> hazardous waste (i.e., ignitability, corrosivity, reactivity, or extraction procedure toxicity). On the other hand, condensate derived from a landfill containing listed waste is always a hazardous waste, unless specifically excluded in response to a "delisting" petition. Of course, the other exemption-from-regulation provisions still apply -- those for small quantity generators and recycling." (underline added)

This guidance unambiguously established that condensate from a landfill containing listed waste is a hazardous waste (unless delisted).

The March 12 Legal Memo indicates that in this RO 12362, EPA only "speculates" this position and then cites EPA's subsequent reconsideration in 1989 (54 Fed, Reg. 50967, 50973, Dec. 11, 1989). In this preamble, EPA states "EPA now believes our authority to identify or list a waste as hazardous waste is limited to containerized or condensed gases". Because of this new consideration, EPA chose to not list uncondensed "light ends" generated in the manufacturing of chlorinated aliphatic hydrocarbons. However, EPA maintained the listing of condensed light ends in finalizing the listing of waste F025. EPA further explains that the condensed light ends, if disposed (rather than reused), "would be considered a solid waste and subject to today's listing". This makes it clear that EPA has authority under RCRA to regulate wastes created from the condensation of uncontained gas (condensed gases), even if that gas is created in a manufacturing process.

EPA has not modified or rescinded 1995's RO 12363, and the "reconsideration" in 1989 does not affect its position that condensate from a landfill containing listed waste is a hazardous waste. In fact, the 1989 discussion regarding uncondensed gas appears to support RO 12363.

In KHL's case, the landfill gas (and its entrained condensable constituents) is created by the treatment, storage and disposal of hazardous waste. EPA has consistently used RCRA to regulate such uncontained material. The following is a summary of examples.

a. In RO 11332, dated March 11, 1988 (RO 11332), EPA evaluated wastes contaminated by uncontained gases created by the incineration of a listed waste, including (1) removed refractory material, (2) dismantled pieces of the former scrubber system, (3) departiculate air filters, (4) scrubber wastewater, (5) soil contaminated with scrubber wastewater, and (6) ash. All wastes were determined to be hazardous due to the "derived-from" rule.

b. EPA RO 11684, dated August 11, 1992 (RO 11684) states, "Off-gases from the resource recovery kilns are regulated under RCRA since they originate from treatment of hazardous waste." In Federal Register Vol. 61, No. 28, Friday, February 9, 1996, page 4910 (FR 2/11/96) regarding air emission controls for Subparts AA, BB or CC, EPA states, "Spent carbon deriving from the treatment of listed hazardous waste is considered to be a type of listed waste by virtue of the derived from rule found at § 261.3(c)(2)". These positions support the position that the "derived from" rule can extend beyond an uncontained gas phase.

c. In Federal Register Vol. 54, No. 206, Thursday, Oct. 26, 1989, page 43733 (FR 10/26/89), regarding thermal combustion residues, EPA states, "Under the Agency's existing regulations, wastes that are derived from the treatment of hazardous wastes of listed hazardous wastes are also considered hazardous waste unless they are delisted." Similarly, it is the department's understanding that EPA has consistently interpreted that residues from air pollution control devices at a hazardous waste incinerator meets the "derived from rule." In RO 13491, (RO 13491) EPA bolsters this position, saying, "Residues such as scrubber blowdown, continue to be regulated as hazardous wastes if they result from processing listed hazardous wastes, or if they exhibit a hazardous waste characteristic".

d. In Federal Register Vol. 56, No. 35, Thursday, February 21, 1991, page 7200 (FR 2/21/91), EPA writes:

"Activated carbon units used as air emission control devices of gaseous industrial process emissions will not necessarily be regulated because trapped organics in such columns are not hazardous wastes because the gas originally being treated is not a solid waste (it is an uncontained gas), and therefore any condensed organics do not derive from treatment of a hazardous waste. (The nongas residues from these devices could be hazardous wastes if they are listed or if they exhibit a characteristic, however.) However, regeneration or reactivation of carbon used to control air emissions from hazardous waste treatment, storage, or disposal facilities (e.g., under 40 CFR parts 264 and 265, subpart AA, June 21, 1990, 55 FR 25454) is subject to regulations as a RCRA thermal treatment unit."

This makes it clear that EPA has the authority under RCRA to regulate treatment of uncontained gases from hazardous waste treatment, storage, or disposal facilities and their non-gas residues.

e. As mentioned earlier, in Federal Register Vol. 54, No. 236, Monday, December 11, 1989 (FR 12/11/89), EPA finalized a rule to add, as a RCRA listed waste, waste generated during the manufacture of chlorinated aliphatic hydrocarbons. On page 50972, EPA established that "our authority to identify or list a waste as hazardous under RCRA is limited to containerized or condensed gases." It goes on to state that uncondensed "light ends" of this listed waste are not regulated, but once they are condensed and disposed, they are considered solid waste and subject to the listing. In this case, EPA recognized the listing carries through an uncontained gas phase and applies to the condensate derived from uncontained gas.

f. Federal Register 78 FR 9128, February 7, 2013 (https://www.govinfo.gov/content/pkg/FR-2013-02-07/pdf/2012-31632.pdf) states, "We note, however, that although gases must be ''contained'' to be solid wastes, under RCRA, EPA maintains separate and independent authority under RCRA to regulate certain types of uncontained gases whether or not they themselves are solid wastes (e.g., gases emitted from the management of hazardous waste)". Footnote 8 goes into more detail.

g. EPA's "contained in" policy (see RO 11195, RO 11434, RO 11593, among others) can apply to non-solid wastes (such as environmental media) contaminated by hazardous waste and/or hazardous waste constituents actively managed. This aspect of the contained-in policy generally supports the position that a listing carries through a "non-solid waste" phase (such as an uncontained gas phase).

h. The KHL argument stating that condensate was determined to be free of any listed waste codes only because it was created from an uncontained gas implies that handlers of listed hazardous waste liquids could rid the wastes of its listing simply by evaporating and then condensing the liquid. The department does not accept that this evaluation is consistent with RCRA's derived-from rule.

Previous DNR Correspondence

The March 12 Legal Memo cites (and provides a copy of) a November 13, 1986, WDNR letter that established that landfill gas itself is not a solid waste. The department continues to agree that KHL's landfill gas is not a solid waste. The letter stated that condensate is a solid waste and could be characteristically hazardous, but the letter is silent regarding the subject of whether the condensate could be a listed waste based on the derived-from rule or mixture rule. The letter suggests that KHL contact U.S. EPA for further interpretation.

The March 12, 2020 Legal Memo cites (but does not provide a copy of) a later WDNR letter dated December 1987, that (according to the Legal Memo) "indicated, without any analysis, that the Condensate is a hazardous waste. It is not clear how WDNR reached this conclusion." The department's electronic files indicate that the department issued a draft closure plan approval under a cover letter dated December 16, 1987, provided to KHL for review and comment, and that the licensee and their counsel subsequently provided comments. It appears that the final version of this letter was issued on March 31, 1998, and retained (in Condition F.2.e, page 26) the requirement for the "(c)ollection of all condensate produced by the gas extraction system and treatment of the

condensate as a hazardous waste." The March 31, 1998 approval included a notification of appeal rights, and there is no indication that an appeal was made. Therefore, the department sees nothing in the historical record to suggest that condensate is neither a solid waste nor a hazardous waste; to the contrary, available correspondence suggests that condensate was required to be handled as hazardous waste. The department has not researched whether this approval condition was subsequently modified or superseded.

Summary

The department concurs with various U.S. EPA's position statements outlined above, and maintains the position outlined in previous department approvals that the KHL condensate is a listed hazardous waste.

Attachment C
Domestic Sewage Exclusion

In Item 5 of the NON, the department alleged a failure to make a hazardous waste determination for collected contaminated groundwater. In Attachment 3 of its April 14, 2020 letter, KHL included a legal memorandum dated April 9, 2020, asserting that leachate and contaminated groundwater (and other liquids so discharged) are not and are never listed F039 hazardous waste (and do not carry any other listing) due to the domestic sewer exclusion (DSE) contained in s. NR 661.04(1)(a)2. Wis. Adm. Code, because the liquid is being ultimately discharged under the DSE to the City of Racine's sewer system. As it relates to leachate, this assertion appears to be new, changing KHL's long-standing recognition and reporting that leachate from the HWU is F039 hazardous wastes.

The department disagrees with the assertion that the leachate and contaminated groundwater are not F039 listed hazardous wastes, as discussed below.

For the purposes of the following discussion, the term "leachate" is broadly used below to describe all collected liquids from the HWU or that are affected or contaminated by constituents from the HWU, such as traditional leachate, contaminated groundwater, and gas condensate drained from landfill gas piping.

According to s. NR 661.04(1)(a)1.Wis. Adm. Code, the DSE applies to "domestic sewage and any mixture of domestic sewage and other wastes that passes through a sewer system to a publicly-owned treatment works for treatment. "Domestic sewage" means untreated sanitary wastes that pass through a sewer system." Thus, the DSE generally established that the hazardous waste must mix with domestic sewage to qualify for the exclusion. This mixing of waste with domestic sewage is discussed in the May 19, 1980, federal register [45 FR 33097] which states:

> "The "domestic sewage" exemption is only applicable to non-domestic wastes that mix with sanitary wastes in a sewer system leading to a POTW. An industrial waste stream that never mixes with sanitary wastes in the sewer prior to treatment or storage does not fall within the exemption, regardless of the public or private ownership of the treatment works. Defining the point at which "mixture" occurs may seem to be a relatively straightforward task. Practical problems arise, however, in defining the point at which mixture of sanitary and other wastes occurs in a complex sewer system. Moreover, it is particularly difficult to define this point for regulatory purposes in such a way that all parties understand when RCRA obligations begin and end. EPA has, therefore, decided that a waste falls within the domestic sewage exemption when it first enters a **sewer system** that will mix it with sanitary wastes prior to storage or treatment by a POTW. EPA recognizes that this interpretation brings various wastes within the exemption before they are actually mixed with sanitary wastes. In light of the fact that the wastes will be mixed prior to treatment and that the mixture will be properly, treated by the POTW, EPA believes that the need for administrative clarity in this otherwise complicated regulatory program warrants such an approach". (emphasis added.

Thus, the DSE is only applicable to non-domestic wastes that mix with sanitary wastes in a sewer system leading to a POTW and that this mixing occurs when the waste first enters the sewer system. EPA helps define what constitutes a sewer system in an October 10, 1982, guidance document (RO 12066):

> "Although RCRA does not define "sewer system**",** it is not the Agency's intent to include private sewers or wastewater treatment units up-stream from the point where pretreatment standards (Section 307(b) of CWA) would apply to wastes going by a sewer to a publicly-owned treatment works."

In this August 22, 1986, federal register [51 FR 30166] EPA adds further insight to what constitutes a qualifying sewer system: *"The exclusion thus covers industrial wastes discharged to POTW sewers which contain domestic sewage, even if the industrial wastes would otherwise be considered hazardous wastes."*

In these two documents, EPA makes it clear that the sewer system must be part of the publicly-owned sewer and treatment system. According to the City of Racine [https://www.cityofracine.org/WasteWater/SanitarySewers/], Kestrel Hawk's lateral to the sewer system is a private sewer lateral and therefore is not part of the public sewer system. As such, at the earliest, the DSE takes affect at the point where Kestrel Hawk's private sewer lateral connects to Racine's POTW sewer system.

In addition, there is the point of generation (POG) to consider. When a hazardous waste is generated it becomes subject to RCRA. In Kestrel Hawk's case, the POG for leachate in a landfill is when the leachate is first collected or otherwise actively managed [May 17, 1988; 53 FR 17586 and August 6, 1998; 63 FR 42191]. Leachate being subject to RCRA when it is first collected or otherwise actively managed was upheld by the U. S. Court of Appeals for the District of Columbia in 1989 (Chemical Waste Management vs. EPA, 869 f.2d 1526). The subsequent downstream management of the leachate by disposal in a sewer system does not change the fact that the hazardous waste was generated when collected.

Under s. NR 662.220(2) WAC, all of the following hazardous waste are not counted when making a quantity determination for generator status:

a. Exempt from regulation under s. NR 661.04 (3) to (6), 661.06 (1) (c), 661.07 (1) (a) or 661.08.
b. Managed immediately upon generation only in on−site elementary neutralization units, wastewater treatment units or totally enclosed treatment facilities as defined in s. NR 660.10.
c. Recycled, without prior storage or accumulation, only in an on−site process subject to regulation under s. NR 661.06 (3)(b).
d. Used oil managed under the requirements of s. NR 661.06 (1) (d) and ch. NR 679.
e. Spent lead−acid batteries managed under the requirements of subch. G of ch. NR 666 (spent lead−acid batteries being reclaimed).
f. Universal waste managed under s. NR 661.09 and ch. NR 673.
g. A hazardous waste that is an unused commercial chemical product (listed in subch. D of ch. NR 661 or exhibiting one or more characteristics in subch. C of ch. NR 661) and that is generated solely as a result of a laboratory clean−out conducted at an eligible academic entity according to the requirements of s. NR 662.213. For purposes of this paragraph, the term "eligible academic entity" shall have the meaning as defined in s. NR 662.200.

This list of exceptions does not include F039 leachate. The leachate collected by KHL does not meet any of the above qualifications, and therefore must be counted.

In summary, the department concurs with various U.S. EPA's positions outlined above and maintains that the leachate that KHL collects is an F039 hazardous waste until it enters the public sewer system.

Appendix A.9
Conditional Plan of Operation Approval Modification for Adjusting Owner Financial Responsibility for the Kestrel Hawk Landfill, Racine County, License #0572
August 23, 2024

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State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
141 NW Barstow St. Room 180
Waukesha, WI 53188

Tony Evers, Governor

Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

August 23, 2024

FID #252076990
Racine County
SW/Approval

Mr. Khalid Umer, P.E.,
Area Environmental Manager
Republic Services, Inc., Kestrel Hawk Landfill
1969 Oakes Road Racine, WI 53406

Subject: Conditional Plan of Operation Approval Modification for Adjusting Owner Financial Responsibility for the Kestrel Hawk Landfill, Racine County, License #572

Dear Mr. Umer:

The Department of Natural Resources (department) is approving the requested plan of operation modification for changes to the Kestrel Hawk Landfill's owner financial responsibility (OFR) by reducing the cost estimate for the hazardous waste unit corrective action fund to eliminate redundant costs that have also been accounted for the in the long-term care cost estimate for the Kestrel Hawk Landfill. Please include this approval in the written operating record for the landfill as specified in s. NR 506.17, Wis. Adm. Code.

The changes to the corrective action cost estimate include removing duplicate costs associated with the following: landfill surface care, leachate treatment and disposal, leachate collection system operations and maintenance, gas extraction system operations and maintenance, environmental monitoring, and annual reporting. Table 1 of the attached approval displays updated hazardous waste unit corrective action cost estimate. Table 2 of the attached approval displays the long-term care cost estimate, which was updated to account for changes in the operations and maintenance costs anticipated for the landfill during the 40-year long-term care period.

Please be advised that condition 1 of the attached approval requires Republic Services to establish proof of OFR based on the approved hazardous waste unit corrective action cost estimate contained in Table 1 of the attached approval within 60 days of the date of this approval. Please work with Dustin Sholly, OFR Specialist, regarding the required proof of OFR. Dustin can be reached at dustin.sholly@wisconsin.gov or at (608) 866-0154.

Please note that the long-term care and corrective action cost estimates will need to be re-evaluated as part of the application for a hazardous waste long-term care license for the Kestrel Hawk Landfill, to ensure that the cost estimates reflect the up-to-date scope of work for these activities.

Please keep in mind that this approval does not relieve you of obligations to meet all other applicable federal, state and local permits or regulatory requirements. If you have questions regarding this approval, please contact Tony Peterson at (715) 491-8546 or anthony.peterson@wisconsin.gov.

Sincerely,

James C. Delwiche

James C. Delwiche
Waste and Materials Management Program Supervisor
Southeast Region

cc: Todd Martin – TRC Companies (twmartin@trccompanies.com)
Tony Peterson – WDNR (anthony.peterson@wisconsin.gov)
Dustin Sholly – WDNR (dustin.sholly@wisconsin.gov)
Doug Coenen – WDNR (douglas.coenen@wisconsin.gov)
David Buser – WDNR (david.buser@wisconsin.gov)

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

CONDITIONAL PLAN OF OPERATION APPROVAL MODIFICATION FOR UPDATES TO THE HAZARDOUS WASTE UNIT CORRECTIVE ACTION COST ESTIMATE FOR THE REPUBLIC SERVICES, INC. KESTREL HAWK LANDFILL, LICENSE #572

FINDINGS OF FACT

The Department of Natural Resources (department) finds that:

1. Republic Services, Inc. (Republic Services) owns and operates a municipal solid waste and hazardous waste disposal facility in the North ½ of Section 23, T3N, R22E, City of Racine, Racine County, Wisconsin known as the Kestrel Hawk Landfill (formerly known as Land Reclamation Landfill, LRL).

2. The department initially licensed the LRL on April 20, 1970.

3. The department issued conditional plan of operation approvals for the Kestrel Hawk Landfill on December 19, 1984, and August 30, 1996, for the Kestrel Hawk Park Northwest Expansion Landfill.

4. On September 11, 2023, TRC Companies, on behalf of Republic Services, submitted a request to the department for modifications to owner financial responsibility (OFR) hazardous waste unit corrective action cost estimates. The department received the review fee of $1,650 on October 10, 2023.

5. The information submitted in connection with the plan of operation modification request includes the following:

    a. A report prepared by TRC Companies titled “Plan Modification Request for Kestrel Hawk Landfill – Financial Assurance” and dated September 11, 2023. The department received the report on September 12, 2023.

    b. A report prepared by TRC Companies titled “Plan Modification Request for Kestrel Hawk Landfill – Financial Assurance Addendum 1” and dated received by the department on March 12, 2024.

    c. A report prepared by TRC Companies titled “Plan Modification Request for Kestrel Hawk Landfill – Financial Assurance Addendum 2” and dated and received by the department on May 30, 2024.

    d. A report prepared by TRC Companies titled “Plan Modification Request for Kestrel Hawk Landfill – Financial Assurance Addendum 3” and dated and received by the department on August 20, 2024.

6. Additional documents considered in connection with the review of the plan of operation modification request includes the following:

    a. The department’s August 16, 2024, email requesting additional information for the plan of operation modification request.

b. The department's April 8, 2024, email requesting additional information for the plan of operation modification request.

c. The department's December 5, 2023, email deeming the plan of operation modification incomplete and requesting additional information.

d. The department's May 2, 2018, plan modification approval adjusting the long-term care cost estimates for Kestrel Hawk Landfill.

e. The department's July 6, 2007, plan modification approval adjusting the long-term care cost estimates for Kestrel Hawk Landfill.

f. The department's August 30, 1996, plan of operation approval for the Northwest Expansion of Kestrel Hawk Landfill.

g. The department's files pertaining to the Kestrel Hawk Landfill (License #572).

7. Additional facts relevant to the review of the plan of operation modification request include:

a. The department's August 30, 1996, plan of operation approval established the requirement for Republic Services to have and maintain an owner financial responsibility (OFR) corrective action fund for the hazardous waste unit of the Kestrel Hawk Landfill.

b. The department is approving changes to the Kestrel Hawk Landfill's OFR by reducing the hazardous waste unit corrective action cost estimate to eliminate redundant costs that have also been accounted for in the standard long-term care cost estimate for the Kestrel Hawk Landfill.

8. The special conditions set forth below are needed to assure that the sites are operated and maintained in an environmentally sound manner. If the special conditions are complied with, the proposed modification will not inhibit compliance with the standards set forth in the applicable portions of chs. NR 500-538, Wis. Adm. Code.

CONCLUSIONS OF LAW

1. The department has the authority under s. 289.30(6), Wis. Stats., to modify a plan of operation approval if the modification would not inhibit compliance with the applicable portions of chs. NR 500-538, Wis. Adm. Code.

2. The department has the authority to approve a modification to the plan of operation with special conditions if the conditions are needed to ensure compliance with the applicable portions of chs. NR 500-538, Wis. Adm. Code.

3. The conditions of approval set forth below are needed to ensure compliance with the applicable portions of chs. NR 500-538, Wis. Adm. Code.

4. In accordance with the foregoing, the department has the authority under s. 289.30(6), Wis. Stats., to issue the following conditional plan of operation modification approval.

CONDITIONAL PLAN OF OPERATION APPROVAL MODIFICATION

The department hereby approves the proposed plan of operation modification for the Kestrel Hawk Landfill, subject to compliance with chs. NR 500-538, Wis. Adm. Code and the following condition:

1. Within 60 days of the date of this approval, Republic Services shall establish proof of financial responsibility in accordance with ch. NR 520, Wis. Adm. Code. The amount of proof of financial responsibility shall be determined based upon the approved annual hazardous waste unit corrective action cost estimate contained in Table 1 of this approval.

Unless specifically noted, the conditions of this approval do not supersede or replace any previous conditions of approval for this facility.

This approval is based on the information available to the department as of the date of approval. If additional information, project changes or other circumstances indicate a possible need to modify this approval, the department may ask you to provide further information relating to this activity. Likewise, the department accepts proposals to modify approvals, as provided for in state statutes and administrative codes.

NOTICE OF APPEAL RIGHTS

If you believe you have a right to challenge this decision made by the department, you should know that Wisconsin statutes and administrative codes establish time periods and requirements for reviewing department decisions.

To seek judicial review of the department's decision, sections 227.52 and 227.53, Stats., establish criteria for filing a petition for judicial review. You have 30 days after the decision is mailed or otherwise served by the department to file your petition with the appropriate circuit court and serve the petition on the department. The petition shall name the Department of Natural Resources as the respondent.

Dated: August 23, 2024

DEPARTMENT OF NATURAL RESOURCES
For the Secretary

James C. Delwiche
Waste and Materials Management Program Supervisor
Southeast Region

Tony Peterson
Waste Management Engineer
Southeast Region

Table 1: Kestrel Hawk Hazardous Waste Unit Corrective Action Cost Estimate

Major Cost Item	Unit	Unit/Cost (2023 Dollars)	Quantity	Annual Cost Years 1-4 (4 years)	Annual Cost Years 6-9, 11-14,16-19,21-24,26-29, 31-34, 36-39 (28 years)	Annual Cost Years 5, 10, 15, 25, 30, 35 (6 years)	Annual Cost Years 20 and 40 (2 years)
Operation Labor							
Technician Hour	hour	$ 24.18	1102	$ 26,646.36	$ 26,646.36	$ 26,646.36	$ 26,646.36
Equipment LS	lump sum	$ 3,719.60	0.53	-	-	$ 1,971.39	$ 1,971.39
Land Surface Care							
Fence Repair	linear foot	$ 11.16	77.5	$ 864.90	$ 864.90	$ 864.90	$ 864.90
Leachate Collection System							
Groundwater Treatment	gallon	$ 0.00707	2300000	$ 16,261.00	$ 16,261.00	$ 16,261.00	$ 16,261.00
Leachate Extraction Well Replacement	each	$ 3,719.60	3.8	-	-	$ 14,134.48	$ 14,134.48
Lift Station Pump Replacement	each	$ 7,439.20	1.04	-	-	$ 7,736.77	$ 7,736.77
Header Repair	liner foot	$ 27.90	720	-	-	$ 20,088.00	$ 20,088.00
Environmental Monitoring							
Gas	lump sum	$ 4,054.36	0.49	$ 1,986.64	$ 1,986.64	$ 1,986.64	$ 1,986.64
Subtotal				$ 183,035.59	$ 1,281,249.10	$ 538,137.19	$ 179,379.06
Total 40-Year Corrective Action Cost Estimate				**$**		**2,181,801.00**	

Note:

1) The total 40-year corrective action cost estimate was rounded to the nearest dollar.

Table 2: Kestrel Hawk Long-Term Care Cost Estimate

Major Annual Cost Item	Unit	Unit Cost (2023 Dollars)	Quantity	Average Cost Per Year (1-5 years)	Average Cost Per Year (6-40 years)
Cover System Maintenance/Erosion Control					
Reseeding of erosion damage (5% of 125 acres)	acre	$ 2,417.36	6.25	$ 15,108.00	$ -
Reseeding of erosion damage (1% of 125 acres)	acre	$ 2,417.36	1.25	$ -	$ 3,022.00
Lawn mowing	acre	$ 48.15	125	$ 6,019.00	$ 6,019.00
Road repair & Sed. Basin Cleaning	LS	$ 7,641.58	1	$ 7,642.00	$ 7,642.00
Snow Plowing	LS	$ 289.17	10	$ 2,892.00	$ 2,892.00
Ditches	LS	$ 1,520.61	1	$ 1,521.00	$ 1,521.00
Leachate System					
Leachate disposal/treatment, total 125 acres: 1"/year over 96 acres (composite cover area) + 3"/year over 29 acres (non-composite area) = 4,970,000 gallons per year	gal	$ 0.00707	4,970,000	$ 35,155.00	$ 35,155.00
Leachate system operation and maintenance	LS	$ 4,144.50	1	$ 4,145.00	$ 4,144.50
Leachate collection line cleaning	LS	$ 16,670.02	1	$ 16,670.00	$ 16,670.00
Leachate collection line televising (every 5 years)	LS	$ 240.00	1	$ 240.00	$ 240.00
Leachate pump with controls	LS	$ 3,178.20	1	$ 3,178.00	$ 3,178.00
Gas Extraction System					
Operation and maintenance	LS	$ 106,149.64	1	$ 106,150.00	$ 53,075.00
Blower and flare replacement	LS	$ 3,178.20	1	$ 3,178.00	$ 3,178.00
Header Repair	LS	$ 40.66	50	$ 2,040.00	$ 2,040.00
Gas well replacement	LS	$ 6,478.39	1	$ 6,478.00	$ 6,478.00
Other Environmental Monitoring					
Electrical costs	LS	$ 128,354.21	1	$ 128,354.00	$ 53,184.00
Groundwater (GW) monitoring well maintenance	LS	$ 6,906.43	1	$ 6,906.00	$ 6,906.00
GW/Surface Water/Leachate sampling & analysis: Monthly and Quarterly years 1-5	LS	$ 72,570.97	1	$ 72,571.00	$ -
GW/Surface Water/Leachate sampling & analysis: Monthly and Semi-annual years 6-40	LS	$ 36,285.49	1	$ -	$ 36,286.00
Quarterly Monitoring Reports, years 1-5	LS	$ 24,913.00	1	$ 24,913.00	$ -
Semi-Annual Monitoring Reports, years 6-40	LS	$ 12,456.50	1	$ -	$ 12,457.00
Routine Air Compliance Services	LS	$ 12,545.85	1	$ 12,546.00	$ 12,546.00
Annual report	LS	$ 21,663.10	1	$ 21,663.00	$ 21,663.00
Annual site inspections	LS	$ 2,729.83	1	$ 2,730.00	$ 2,730.00
Hazardous Waste Generator Fees and disposal	LS	$ 3,249.89	1	$ 3,250.00	$ 3,250.00
Condensate removal and disposal	LS	$ 13,322.75	1	$ 13,323.00	$ 6,661.00
Annual Subtotals				$ 496,672.00	$ 300,937.50
Management and Administrative Fees				$ 49,667.13	$ 30,094.00
Contingency (10%)				$ 54,633.91	$ 33,103.15

Total Annual Costs	$ 600,973.04	$ 364,134.65
Total 40-Year Costs	$ 3,004,865.22	$ 12,744,712.75
Overall Total 40-year Long-Term Care Cost Estimate	**$**	**15,749,578.00**

Notes:

1) The average costs per year were rounded to the nearest dollar for the long-term care cost estimate.
2) The overall total 40-year long-term care cost estimate was rounded to the nearest dollar.

Appendix A.10
Plan of Operation Approval for the Northwest Expansion of the Land Reclamation Company Landfill
August 30, 1996

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State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Tommy G. Thompson, Governor
George E. Meyer, Secretary

PO Box 7921
101 South Webster Street
Madison, Wisconsin 53707-7921
DNR TELEPHONE 608-266-2621
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SOLID WASTE MGMT 608-266-2111
SOLID WASTE FAX 608-267-2768

AUG 3 0 1996

Mr. Hank Koch
Land Reclamation Company
1989 Oakes Road
P.O. Box 081220
Racine, WI 53408-1220

FILE REF: FID# 252076990
Racine
SW
Appr

SUBJECT: Plan of Operation Approval for the Northwest Expansion of the Land Reclamation Company Landfill

Dear Mr. Koch:

We have completed our review of your plan of operation for the proposed Northwest Expansion of the Land Reclamation Company Landfill and determined that it is consistent with Wisconsin's solid waste regulations. Therefore, the plan of operation is approved, subject to compliance with NR 500-520, Wis. Adm. Code and the conditions of the attached approval document.

We concur with your request to waive baseline groundwater monitoring at wells 210U and 211U because those wells are being installed to measure inward gradients to corridor 11. However we are requiring baseline groundwater quality at the 5 replacement wells (48TR, 48UR, 48LR, 204TR, and 204URR) because they will not be constructed in close proximity to the wells they replace.

You are reminded that approval by the Bureau of Waste Management does not relieve you of obligations to meet all other applicable federal, state, and local permits, zoning and regulatory requirements.

If you have any questions regarding this approval, please contact Cindy Cook at (608)267-3542, Tim Kessenich at (608)264-6018, or Ken Hein at (414)229-0843.

Sincerely,

Dennis Mack for

Lakshmi Sridharan, Ph.D., P.E., Chief
Bureau of Waste Management

LS:cmc c:\data\wp50\lrc\planofop.app

cc: Dennis Mack - WA/3
Ken Hein - SED
Kate Martin - RMT

PROJECT SUMMARY
LAND RECLAMATION COMPANY NORTHWEST EXPANSION

GENERAL INFORMATION

AUTHORIZED CONTACT:

Henry A. Koch, P.E.
General Manager
Land Reclamation Company
1989 Oakes Road
Racine, WI 53408
(414)884-7080

LICENSEE/PROPERTY OWNER: Land Reclamation Company
A Sanifill of Wisconsin Company

SITE LOCATION: Land Reclamation Company, Inc (LRC) is proposing to vertically and horizontally expand their LRC Landfill located in the S 1/2 of NE 1/4 of Section 23, Township 3N, Range 22E, Racine County, Wisconsin. The site is located 3/4 of a mile south of Highway 20 and 1/4 of a mile west of Highway 31 in Racine, Wisconsin.

ACREAGE AND ACCESS: The total acreage of the existing landfill is 70.1 acres and the Northwest expansion adds an additional 55.3 acres. Access to the expansion will be via the route for the existing site, primarily from Highway 20 onto Oakes Road. The landfill access is off Oakes Road.

CAPACITY AND SITE LIFE: The expansion will provide 7,217,000 cubic yards of waste disposal capacity (design capacity of 7,775,000 cubic yards). The expansion will provide 12 years of additional site life.

WASTE TYPES AND GENERATORS SERVED: The site will accept non-hazardous municipal, commercial, and industrial solid waste. The proposed primary service area includes Milwaukee, Racine, Kenosha, Walworth and Waukesha Counties in Wisconsin, and Lake, Cook, and McHenry Counties in Illinois. Land Reclamation Co. has an existing approved Special Waste Acceptance Plan. The plan is used to screen industrial wastes (referred to as "special wastes"). The program calls for specific testing protocols and disposal procedures based on the waste type. Under this program the landfill is able to accept many specifically categorized special wastes without additional Department review. The program identifies certain waste types which must receive prior Department approval on a case-by case basis.

FACILITY DESIGN

LINER SYSTEM: The horizontal portion of the landfill will be constructed with a composite liner consisting of four feet of recompacted clay overlain with a 60 mil geomembrane. A gradient control system will be constructed below the composite liner to maintain groundwater heads below the overlying liner system. A leachate collection system will be constructed over the composite liner to provide collection and removal of leachate generated within the expansion. Leachate collected at the landfill will continue to be transported to the City of Racine Wastewater Treatment Plant via sanitary sewer.

FINAL COVER: The expansion will have an elevation of approximately 150 feet above the surrounding terrain with sideslopes of the landfill having a 4:1 grade and a top grade of 5 percent. The final cover system will consist of the following from the bottom up: 6 inch grading layer, 24 inch thick recompacted clay layer, 40 mil very flexible polyethylene, 12 inch thick granular drainage layer, geotextile filter layer, 18 inch thick rooting zone and a 6 inch thick topsoil layer. A vegetative cover will be established over the final cover to minimize erosion. Drainage piping will be installed within the drainage layer to direct infiltration of precipitation outside of the final cover. The water collected in these pipes will be directed through 4 inch diameter polyethylene pipe. The pipe will outlet approximately every 200 feet along the perimeter of the landfill.

SURFACE WATER MANAGEMENT: Surface water will be managed at the site through the construction and use of ditches, diversion berms, spillways, culverts and sedimentation basins, all designed to control surface water during both the operational and post-closure care periods of the landfill. Four new sedimentation basins will be constructed to handle runoff from the expansion. Surface water will be discharged to the Gunderson drainage ditch along the north side of the property and to a drainage ditch along the southwest side of the property. Both ditches carry water to the Pike River which is located 1/2 mile west of the LRC site.

The discharge from the surface water sedimentation basins will be monitored quarterly during a discharge event as outlined in the attached conditions. Annual inspections and quarterly visual inspections of the storm water discharge system are required in the attached approval in order to comply with provisions of ch. NR 216, Wis. Adm. Code.

GAS EXTRACTION SYSTEM: A vertical gas extraction system will be constructed within the expansion area to extract landfill gas produced by the decomposition of the waste. Landfill gas collected at the site will be combusted in a pedestal flare, sent to the S.C. Johnson Wax Company as boiler fuel, used at the Payne and Dolan asphalt plant for fuel, and used on-site for electricity generation.

FACILITY OPERATION

DISPOSAL OPERATION: Waste placement will begin in the eastern portion of the expansion and will progress to the west. Daily operations will be confined to as small an area as practicable within the filling limits. Waste will be placed in such a manner as to minimize windblown papers, dust and odors. A comprehensive Odor, Dust and Wind-Blown Debris Control Plan has been approved as part of this letter.

WASTE SCREENING: Incoming waste loads will be weighed at the scale. If the gate attendant identifies unauthorized waste in a load, the load will not be accepted for disposal. The site manager will be consulted in instances when the gate attendant questions the acceptability of a waste load. In conjunction with the landfill's Special Waste Plan, a random load inspection

program will be implemented to check for the presence of detectable hazardous or toxic wastes. The entrance gate will be locked during non-operating hours.

ENVIRONMENTAL MONITORING

The environmental monitoring plan at the Land Reclamation Landfill is designed to monitor the groundwater, gradient control layer, leachate, landfill gas, surface water and air borne particulates.

Groundwater in the area of the inactive hazardous waste unit will be monitored quarterly for inorganic parameters, VOCs and ch. NR 635 Appendix 1 compounds detected. Four monitoring wells designated for Subtitle D compliance will be monitored semi-annually for indicator parameters and VOCs. Additional wells will be monitored semi-annually for indicator parameters and annually for VOCs. Water level monitoring will be conducted in the remaining wells and in 2 sub-base piezometers to ensure that inward gradients to the landfill are being maintained. Field parameters and VOCs will be monitored at wells inside the containment structure south of the inactive hazardous waste unit. The gradient control layer will be monitored monthly for field parameters, TSS, BOD_5, COD and total volume of water pumped.

The leachate collection system will be monitored monthly for quality and volume at various points prior to discharge to the City of Racine sewage system. Additional leachate monitoring will be performed semiannually for the parameters listed in ch. NR 507, Appendix I, Table 4 and annually for base/neutral acid extractable compounds. Leachate head elevations will be monitored quarterly in the existing portion of the landfill and semi-annually in the horizontal expansion area.

The active gas extraction system will be monitored twice monthly at all extraction wells for vacuum, percent methane, percent oxygen, valve setting, flow, stabilized methane levels and temperature. Soil gas probes will be monitored twice monthly for vacuum percent methane, percent oxygen and temperature. The gas compressors will be monitored twice monthly for percent methane, percent oxygen, estimated flow and vacuum; and monitored annually for VOCs and semi-volatiles. Finally, the volume of gas sent to the Johnson's Wax Company and to the Landfill flares will be measured twice monthly.

Surface water will be monitored quarterly for water quality parameters at sedimentation basin outfalls and in the Gunderson Canal and in the southwest drainage ditch.

An Air Pollution Control Construction Permit (#96-EJD-240) issued by the Department's Air Management Program will require monitoring for total suspended particulates at three stations. The initial frequency of monitoring will be every two days, but may be modified during the operation of the landfill.

CLOSURE AND LONG-TERM CARE COSTS

Although LRC will be perpetually responsible for the long-term care of this landfill, proof of financial responsibility for a long-term care period of 40 years is required by law. Actions to be taken during closure and the owner 40 year financial responsibility period, along with the associated cost estimates, are summarized below. Closure costs reflect the most expensive area to close, which is Phase 5 of the expansion. The closure costs include the installation of a multi-layered composite cap and a vertical gas extraction system. Long-term care costs reflect estimated yearly expenses for: groundwater, surface water, gas, leachate, and gradient control system monitoring; leachate collection and treatment; gas extraction system operation and maintenance; site maintenance; and site inspections and erosion repairs. All costs are based on 1996 unit prices. Long-term care costs have been calculated for the entire LRC landfill, the existing site and the expansion.

CLOSURE COSTS:

	ITEM	QUANTITY	UNIT COST	ESTIMATED COSTS
FINAL COVER CONSTRUCTION				
1.	Rooting Zone (1.5 feet) Off-site	33,700 cy	$5/cy	$168,500
	On-site	54,300 cy	$3.5/cy	$190,000
2.	Clay Cap (2 feet)	117,300 cy	$7.2/cy	$844,600
3.	Drainage Layer (1 foot)	58,700 cy	$10.5/cy	$616,400
4.	Pipe Bedding (In drainage layer)	3,200 cy	$10.5/cy	$33,600
5.	Topsoil (6 inch)	29,300 cy	$3.5/cy	$102,600
6.	Geotextile	183,300 sy	$0.60/sy	$110,000
7.	40 mil geomembrane (Includes installation and testing)	176,000 sy	$3.15/sy	$554,400
8.	Seed, fertilizer, mulch	36.4 acre	$1,300/acre	$47,300
9.	Mobilization of Equipment	lump sum	$10,000	$10,000
DRAINAGE LAYER COLLECTION SYSTEM				
10.	4 inch HDPE perforated pipe	10,900 lf	$15/lf	$163,500

11.	4 inch HDPE solid wall pipe	1,200 lf	$15/lf	$18,000
SURFACE WATER				
12.	Diversion berm	8,200 lf	$5/lf	$41,000
13.	Downslope flume	1	$31,000/each	$31,000
GAS SYSTEM				
14.	6" HDPE lateral pipe	3,850 lf	$20/lf	$77,000
15.	10" HDPE header pipe	4,000 lf	$42/lf	$168,000
16.	Gas wells	2,335 lf	$100/lf	$233,500
17.	Gas wellheads	27	$1,500/each	$40,500
18.	Gas monitoring assembly	3	$2,500/each	$7,500
19.	Pipe boots	64	$200/each	$12,800
20.	Dripleg	1	$5,000/each	$5,000
MISCELLANEOUS				
21.	Remove diversion berm	4,300 lf	$2/lf	$8,600
22.	Strip intermediate cover	34,400 cy	$1.4/cy	$48,160
23.	Site Trailer	2	$500/each	$1,000
ENGINEERING FEES				
24.	Plans and specs	lump sum	$30,000	$30,000
25.	Construction assistance	lump sum	$50,000	$50,000
26.	Documentation	lump sum	$25,000	$25,000
	SUBTOTAL			$3,638,000
	Contingency Cost (10%)			$363,800
	TOTAL			$4,002,000

LONG-TERM CARE COSTS:

Item	Quantity	Unit Cost	Cost/Year (Years 1-5)	Cost/Year (Years 6-40)
Land Surface Repair				
Reseed (10%)	12.5 Acre	$1,700/ac	$21,300	
Erosion Damage	2 Events	$200/Event	$400	
Road Repairs	4 Events	$200/Event	$800	
Lawn Mowing	4 Days	$500	$2,000	$2,000
Site Environmental Monitoring	Lump sum		$66,500	$58,300
Monthly Manhole Inspections	Lump sum	$300	$300	$300
Sed. Basin Maintenance	Lump sum	$2,000	$2,000	
Gas System Maintenance				
Operation and Maintenance	Lump sum	$1,000	$1,000	$1,000
Header Repair	15 lf	$100/lf	$1,500	
Blower and Flare Replacement (Replace in Years 20 and 40)	Lump sum	$80,000		**
Leachate Treatment	3,406,000 gal	$0.0036/gal	$12,300	$12,300
Leachate Line Cleaning	23,900 lf	$0.40/lf	$9,600	$9,600
Leachate System O&M	Lump sum	$10,000	$10,000	$10,000
Energy Cost	Lump sum	$9,000	$9,000	$9,000
Annual Inspections	8 hours	$13/hr	$100	$100
Annual Submittal	Lump sum	$2,000	$2,000	$2,000
Reporting	Lump sum	$3,000	$3,000	$3,000
	SUBTOTAL		$141,800	$107,600
	CONTINGENCIES (10%)		$14,200	$11,000
	TOTAL		$156,000	$118,600

** Not included in annual cost.

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

CONDITIONAL PLAN OF OPERATION
APPROVAL FOR THE
NORTHWEST EXPANSION OF THE
LAND RECLAMATION COMPANY LANDFILL (LICENSE # 0572)

FINDINGS OF FACT

The Department finds that:

1. Land Reclamation Company (LRC) owns and operates a hazardous and solid waste disposal facility located in the N 1/2 of S23, T3N, R22E, City of Racine, Racine County, Wisconsin. Prior to May 1, 1989, the owner was known as Land Reclamation, Ltd. (LRL).

2. The Department issued a conditional plan of operation approval for the existing facility on December 19, 1984, under which the landfill is currently operating.

3. The Department issued a determination of need and feasibility approval for the Northwest Expansion on April 11, 1996.

4. On May 31, 1996, RMT, Inc, on behalf of LRC, submitted to the Department a proposed plan of operation report for the expansion of the Land Reclamation Company Landfill.

5. The information submitted as part of the plan of operation review includes the following:

   a. The report and appendices entitled, "Land Reclamation Company Northwest Expansion Plan of Operation," and accompanying plan sheets. The report was submitted by RMT, Inc., on behalf of LRC, and was dated May 31, 1996. The report was received by the Department on May 31, 1996.

   b. A letter sent to the Department from RMT, Inc, dated June 27, 1996. The letter included a revised signed certification page to the Plan of Operation Report.

   c. A report entitled, "Addendum No. 1, Plan of Operation, Northwest Expansion, Sanifill - Land Reclamation Company Landfill," and its associated plan sheets. The report was dated August 13, 1996 and was received by the Department on the same day.

   d. A submittal entitled, "Addendum No. 2, Plan of Operation, Northwest Expansion, Sanifill - Land Reclamation Company Landfill". The report was dated August 26, 1996 and was received by the Department on the same day.

6. Additional documents considered in the review of the plan of operation include the following:

a. The Department's April 11, 1996 Determination of Need and Conditional Feasibility Approval.

b. The Department's September 1, 1995 Bioremediation Plan of Operation Approval for the Land Reclamation Landfill.

c. A letter from the Department to Hank Koch of LRC which requests that additional information be submitted before a determination could be made for the LRC Northwest Expansion plan of operation. The letter was dated August 1, 1996.

7. The $7000 plan of operation review fee was received by the Department on June 5, 1996.

8. Exemptions under s. NR 140.28, Wis. Adm. Code, were granted by the Department in the feasibility determination dated April 11, 1996 and remain in effect.

9. Baseline groundwater monitoring data was submitted with the plan of operation which shows that a preventive action limit or enforcement standard has been exceeded for additional substances and wells at the proposed Land Reclamation Landfill expansion.

10. The Department considered the following information in considering the need for additional exemptions to groundwater standards at this facility:

a. Background groundwater monitoring data provided in the Feasibility Report and Plan of Operation

b. Well construction details and boring logs provided in the Feasibility Report.

c. Well location plan sheets and water table maps provided in the Feasibility Report and Plan of Operation.

d. The landfill design specifications provided in the Feasibility Report and Plan of Operation as conditioned herein.

11. Based on an examination of site conditions, the Department finds the following:

a. Groundwater concentrations of antimony, arsenic, chloride, fluoride and thallium in the site area are found at concentrations exceeding the ch. NR 140, Wis. Adm. Code groundwater standards. These exceedances are due to background groundwater quality associated with natural hydrogeologic conditions or substances released by other human activities on, or near, the proposed expansion area.

b. To minimize the incremental increase in contamination, the proposed expansion has been designed to contain and collect leachate. The horizontal component of the expansion includes a gradient control layer to maintain the water table below the base of the liner, a composite liner system consisting of 4 feet of recompacted clay and a 60 mil HDPE geomembrane and a granular leachate collection layer. The entire expansion includes a composite final cover system, in part composed of 2 feet of compacted clay overlain by a 40 mil HDPE geomembrane. These design features will limit increases of contaminants in the groundwater, including antimony, arsenic, chloride, fluoride and thallium. Therefore, the proposed landfill is designed to achieve the lowest possible concentration of these substances in the groundwater which is technically and economically feasible.

12. Based on an examination of the groundwater quality data for the proposed facility for substances of public health concern, other than nitrate, and the information listed in Findings of Fact 10 and 11 above, the Department finds the following:

a. Background concentrations above the preventive action limit but below the enforcement standard established for the following substances of public health concern, other than nitrate, were observed in groundwater samples from the monitoring wells listed below:

Substance	Wells
Antimony	208U
Arsenic	208T, 209T
Fluoride	47TR, 208T
Thallium	204UR

b. The proposed facility will not cause the concentration of antimony, arsenic, fluoride and thallium to exceed the enforcement standard for these substances at a point of standards application because of the landfill design.

c. The proposed facility is designed to achieve the lowest possible concentrations for antimony, arsenic, fluoride and thallium which are technically and economically feasible.

13. Based on an examination of the groundwater quality data for the proposed facility for nitrate or substances of public welfare concern and the information listed in Findings of Fact 10 and 11 above, the Department finds the following:

a. Background concentration above the enforcement standards established for the following substances of public welfare concern was observed at the monitoring well listed below:

Substance	Well
Chloride	202T

b. The proposed facility is designed to achieve the lowest possible concentrations for chloride which are technically and economically feasible.

c. The anticipated increase in the concentrations of chloride does not present a threat to public health or welfare because of the landfill design.

14. Granting the exemptions that are set forth below will not inhibit compliance with Wisconsin solid waste management standards in chs. NR 500 through 526, Wis. Adm. Code.

15. The applicant has greater than 10% interest in the Land Reclamation Company Landfill located in Wisconsin and is in noncompliance with the plan approval issued by the Department as a plan of operation approval modification for the gas and leachate extraction system, dated March 12, 1991. The Land Reclamation Company has provided the Department with proof of financial responsibility for the Land Reclamation Company Landfill to ensure the availability of funds to comply with the plan using a method under s. 144.443, Stats.

16. With the exception of the Land Reclamation Company Landfill, neither the applicant, nor any person owning a 10% or greater legal or equitable interest in the applicant, or the assets of the applicant:

a. Is in noncompliance with a plan approval or order issued by the Department for a solid or hazardous waste facility in Wisconsin;

b. Owns or previously owned a 10% or greater legal or equitable interest in a person, or in the assets of a person, who is not in compliance with a plan approval or order issued by the Department for a solid waste or hazardous waste facility in Wisconsin.

17. Hazardous waste constituents, including vinyl chloride, have been detected in groundwater adjacent to corridors 1 through 6. Therefore, the Land Reclamation Company Landfill is subject to the requirements of compliance monitoring under s. NR 635.14, Wis. Adm. Code.

18. If the special conditions set forth below are complied with, the proposal will meet the requirements of chs. NR 500-526 and NR 600-685, Wis. Adm. Code.

CONCLUSIONS OF LAW

1. The Department has authority under s. 144.44(3)(c), Stats. to approve a Plan of Operation with special conditions if the conditions are needed to ensure compliance with the ch. NR 500 series and NR 600-685, Wis. Adm. Code.

2. The conditions of approval set forth below are needed to ensure compliance with the ch. NR 500 series and NR 600-685, Wis. Adm. Code.

3. In accordance with the foregoing, the Department has the authority under s. 144.44, Stats., to issue the following conditional approval.

4. The Department has the authority under ss. NR 140.20 and NR 507.18, Wis. Adm. Code to require sampling for baseline water quality and to specify parameters for such sampling.

5. The Department has the authority under s. NR 140.28, Wis. Adm. Code, and ss. 160.19(8), (9) and (10), Stats., to grant exemptions to the Wisconsin groundwater standards for antimony, arsenic, chloride, fluoride and thallium in ch. NR 140, Wis. Adm. Code.

GRANT OF EXEMPTIONS

1. Land Reclamation Company has demonstrated circumstances which warrant an exemption from s. NR 514.05(2), Wis. Adm. Code, to allow a scale of 1 inch=250 feet rather than the required minimum scale of 1 inch=200 feet. The exemption is hereby granted for the existing conditions plan sheet in order to provide a detailed survey of the expansion within 1,500 feet from the proposed limits of filling.

2. Land Reclamation Company has demonstrated circumstances which warrant an exemption to the groundwater standards for antimony, arsenic, chloride, fluoride and thallium in ch. NR 140, Wis. Adm. Code, as specified in s. NR 140.28, Wis. Adm. Code, to allow the expansion of a municipal solid waste landfill in an area where a preventive action limit or enforcement standard has been attained or exceeded. Exemptions are hereby granted for the parameters and wells listed in Findings of Fact 12 and 13. The Department may establish alternative concentration limits for the parameters and wells listed in Findings of Fact 12 and 13 when sufficient rounds of background groundwater quality samples have been collected and analyzed as required in Condition 17 below.

3. An exemption is hereby granted to s. NR 507.26 (3), Wis. Adm. Code, so that environmental monitoring and water elevation data obtained more frequently than quarterly may be submitted to the Department with the subsequent quarterly monitoring report. This exemption does not apply to notification and response requirements when values attain or exceed a standard under s. NR 507.30, Wis. Adm. Code.

4. Land Reclamation Company has demonstrated circumstances which warrant an exemption from s. NR 507.18(4), Wis. Adm. Code, to waive the requirement for obtaining baseline groundwater quality at wells 210U and 211U. An exemption is hereby granted for wells 210U and 211U which will be installed to monitor groundwater elevation adjacent to corridor 11.

5. This facility is exempt from storm water permit requirements under s. NR 216.21(3)(a), Wis. Adm. Code, provided the conditions in the attached approval are followed.

CONDITIONAL PLAN OF OPERATION APPROVAL

The Department hereby approves the Land Reclamation Company Northwest Expansion subject to compliance with the ch. NR 500 series, Wis. Adm. Code, and the following conditions:

1. The total design capacity of the Northwest Expansion (combined refuse, daily and intermediate cover volume) shall not exceed 7,775,000 cubic yards.

2. All aspects of construction and operation of the landfill shall be performed in accordance with the plan of operation, the requirements of the ch. NR 500 series, Wis. Adm. Code, and the conditions of this approval. In the case of any discrepancies between the approval conditions and the plan of operation, the approval conditions shall take precedence.

3. Any proposed changes to the plan or this approval shall be presented to the Department. If the changes are compatible with the desired performance of this landfill, as determined by the Department, an addendum will be added to this approval indicating acceptance of those changes. Written Department approval is necessary prior to implementing any changes with the exception of the provisions of NR 514.09, Wis. Adm. Code, and that field modifications may, at the Department's discretion, be verbally approved.

Operations

4. Random load inspections and record keeping requirements shall be in conformance with the requirements under ss. NR 506.16(1)(a) and NR 506.17.

5. The current wastewater treatment agreement with the City of Racine Wastewater Treatment Plant ends on December 31, 1996. The new agreement for the 1997 calendar year shall be submitted to the Department along with the Phase 1 construction documentation report. Subsequent annual agreements shall be submitted to the Department on January 1 of each calendar year.

6. LRC's Northwest Expansion Plan of Operation report proposes constructing refuse core berms on the North and West perimeter of the expansion to aid in screening the daily operations from nearby residents. Refuse core berms shall also be constructed on the Eastern perimeter of the expansion.

Construction

7. The clay portions of both the liner system and the final cover system shall be constructed in accordance with NR 504.06(2)(f), Wis. Adm. Code.

8. All construction of the LRC Northwest Expansion shall be documented according to NR 516, Wis. Adm. Code.

9. The thickness of the geotextile separating the gradient control layer from the recompacted clay portion of the liner shall be increased to 10 ounces per square yard.

10. The curved portions of leachate cleanout lines, numbers 3, 4, 5, 6, 7, and 8, shall be constructed using the following considerations:

    a. The stone pipe bedding shall be placed up to the pipe haunches and compacted to keep the pipe in place during construction.

    b. Whenever possible, pipe segments shall be constructed longer than required in the curved portions, so that the radii can be constructed at one time avoiding interruptions in construction due to weather or evening periods.

    c. After the survey location of the centerpoint of the curve is set, a tape shall be used to set the pipe location with paint lines on the stone. This is to allow for more accurate placement of the pipe curve within the center of the trench.

11. Construction inspections will be performed at this landfill as indicated below. The Department's environmental engineer assigned to this site shall be notified a minimum of one week prior to beginning each of the construction events listed below for the purpose of allowing the Department to inspect the work. A fee shall be paid to the Department for each required inspection in accordance with s. NR 520.04(5), Wis. Adm. Code. The inspection fees shall be paid at the time the construction documentation review fee is submitted to the Department.

    a. Geomembrane seaming and installation

    b. Geotextile and leachate collection line placement.

    c. Side slope riser and sump installation.

    d. Construction of the geomembrane component of the final cover system.

Environmental Monitoring

12. The Land Reclamation Company shall perform environmental monitoring in accordance with this plan approval and the requirements of chs. NR 500 to 526, NR 600 to 685 and NR 140, Wis. Adm. Code. In the case of any discrepancies between the conditions of this approval and any prior approvals, the conditions of this approval shall take precedence.

13. Air monitoring shall be performed as required by the Air Pollution Control Permit issued by the Department Air Management Program.

14. The following items regarding the storm water pollution prevention plan was not sufficiently addressed in the plan of operation report and shall be included in the initial construction documentation report: 1. A discussion of all potential source areas of storm water contamination which were not part of the plan of operation report including the maintenance building and recycling center areas; 2. Any significant polluting materials or activities associated with the storm water contamination from source areas shall be identified.

15. An annual facility site compliance inspection shall be performed to verify that:

    a. The storm water pollution prevention plan (SWPPP) remains current.

    b. Potential pollution sources at the facility are identified.

    c. The facility site map and drainage map remain accurate.

    d. Best management practices prescribed in the SWPPP are being implemented, properly operated, and adequately maintained.

    Documentation of the inspection shall be submitted in the annual report, which was previously required in the Department's February 7, 1994 plan of Operation Modification. Documentation of the inspection shall include the inspection date, inspection personnel, scope of the inspection, major observations and revisions needed in the SWPPP.

Additional to Annual Report

16. Quarterly visual inspections of storm water discharge quality at each outfall shall be performed and documented. The inspections shall be conducted within the first 30 minutes after runoff begins discharging from the outfall, or as soon as practical, but no later than 60 minutes. The inspections shall include any observations of color, odor, turbidity, floating solids, foam, oil sheen or other obvious indicators of storm water pollution. Documentation of the inspections shall be included in the annual report and include the inspection date, inspection personnel, visual quality of the storm water discharge and probable sources of any storm water contamination.

17. The Land Reclamation company shall provide a minimum of 8 rounds of baseline groundwater sampling data for the substances and wells

requiring an exemption from the groundwater standards of ch. NR 140, Wis. Adm. Code.

18. Within one year from the date of this approval, the Land Reclamation Company shall propose preventive action limits for inorganic monitoring parameters and alternative concentration limits for inorganic public health and welfare parameters for which an exemption has been granted in accordance with ss. NR 507.27 (1) and (2), Wis. Adm. Code.

19. The environmental monitoring requirements contained herein shall commence with the issuance of this approval and shall continue until otherwise modified by the Department in writing.

20. The design management zone (DMZ) for the existing corridors 1 through 6, 7, 8, 9, 10, and 11 shall be the limits of filling. The design management zone for phases 1 through 5 of the horizontal area of the expansion shall be 150 feet horizontally from the limits of filling or the property line, whichever is closer.

21. The designated monitoring wells for Subtitle D compliance shall be 49LR, 204UR, 208U, and 209U.

22. Monitoring wells 49LR, CS8, CS10, CS12, CS14, UB6, UB8 and UB9 shall be sampled according to protocols that fulfill the requirements of ch. NR 635, Wis. Adm. Code.

23. The Land Reclamation Company shall implement an environmental monitoring program in accordance with the following schedules:

GROUNDWATER MONITORING		
Monitoring Wells	Frequency	Parameters
(Unit A) 7U, 40U, 47TR, 109TRR, 134U, 141U, 152U, 153U, 201T, 202T, 204TR, 208T, 209T, CS2, CS6R (Unit B) 109L, 201U, 208U, 209U, UB2, UB4, UB5, UB7	Semiannually	72020 Groundwater Elevation 00010 Field Temperature 00094 Field Conductivity @ 25°C 00400 Field pH 39036 Alkalinity, filtered 00341 COD, filtered 22413 Total Hardness, filtered 00940 Chloride 00950 Fluoride 00930 Sodium, dissolved

GROUNDWATER MONITORING		
Monitoring Wells	Frequency	Parameters
(Unit A) 7U, 40U, 47TR, 109TRR, 201T, 202T, 204TR, 208T, 209T, CS2, CS6R (Unit B) 109L, 201U, 208U, 209U, UB2, UB4, UB5, UB7	Annually	VOCs (Using EPA Solid Waste Method 8021 or 8260)
134U, 141U, 152U, 153U, 204U, 208U, 209U	Semiannually	VOCs (Using EPA Solid Waste Method 8021 or 8260)
49LR, CS8, CS10, CS12, CS14, UB6, UB8, UB9	Quarterly	72020 Groundwater Elevation 00010 Field Temperature 00094 Field Conductivity @ 25°C 00400 Field pH 39036 Alkalinity, filtered 00341 COD, filtered 22413 Total Hardness, filtered 00940 Chloride 00950 Fluoride, dissolved 00930 Sodium, dissolved VOCs (Using EPA Solid Waste Method 8021 or 8260) Plus compounds detected during the annual NR 635 Appendix 1 monitoring.
49LR, CS8, CS10, CS12, CS14, UB6, UB8, UB9	Annually	As listed under ch. NR 635, Appendix 1, Wis. Adm. Code.
5TR, 5UR, 5LRR, 6TR, 6U, 6L, 7T, 17TR, 17UR, 17LR, 46TR, 46U, 47U, 48TR, 48UR, 48LR, 49T, 49U, 108T, 108U, 108L, 109U, 120T, 120U, 120L, 126T, 126U, 126L, 126D, 134T, 141T, 146UR, 202U, 202D, 209D, 210U, 211U, CS 1, CS3, CS4, CS5, UB1, SBPZ1, SBPZ2	Semiannually	72020 Groundwater Elevation

INTERIOR CONTAINMENT STRUCTURE		
Wells	Frequency	Parameters
CS7, CS9, CS11, CS13	Quarterly	00094 Field Conductivity @ 25°C 72020 Groundwater Elevation
CS9, CS13	Annually	VOCs (Using EPA Solid Waste Method 8021 or 8260)

GRADIENT CONTROL STRUCTURE		
Sample Locations	Frequency	Parameters
GCS1, GCS2, GCS3, GCS4, GCS5	Monthly	00010 Field Temperature 00094 Field Conductivity @ 25°C 00150 Total Suspended Solids 00310 BOD_5 00340 COD, Unfiltered 00400 Field pH
GMH1	Monthly	50052 Groundwater Volume Pumped

LEACHATE AND GAS CONDENSATE MONITORING		
Sample Locations	Frequency	Parameters
MH15B, LMP6A	Monthly	00032 Leachate Volume
MH15B, LMP6A, LMP8A, DL2, DL5, DL6, DL7, DL8	Monthly	00410 Alkalinity, total as $CaCO_3$ 00310 BOD_5 00340 COD, unfiltered 00094 Field Conductivity @ 25°C 00556 Oil and Grease 00400 Field pH 00665 Phosphorus, total 00150 Total Suspended Solids 00010 Temperature, field
LHW100 through LHW121, RS1R, LH38	Quarterly	00023 Leachate elevation, feet MSL 00031 Leachate depth in feet
LH1, LH2, LH3, LH4, LH5, LH6, LH7, LH8, LH9, LH10	Semiannually	00023 Leachate elevation, feet MSL 00031 Leachate depth in feet

LEACHATE AND GAS CONDENSATE MONITORING		
Sample Locations	Frequency	Parameters
MH15B, LMP6A, LMP8A, DL2, DL5, DL6, DL7, DL8	Semiannually	00310 BOD_5 00094 Field Conductivity @ 25°C 00400 Field pH 00410 Alkalinity, total as $CaCO_3$ 01027 Cadmium, total 00940 Chloride 00340 COD, unfiltered 00951 Fluoride, total 00900 Hardness, total 74010 Iron, total 01051 Lead, total 01055 Manganese, total 71900 Mercury, total 00610 Nitrogen, Ammonia, total 00625 Nitrogen, Kjeldahl, total 00929 Sodium, total 00945 Sulfate, total 00150 Total Suspended Solids VOCs (Using EPA Solid Waste Method 8021 or 8260)
MH15B, LMP6A, LMP8A, DL2, DL5, DL6, DL7, DL8	Annually	Base/Neutral Extractable Compounds Acid Extractable Compounds

LANDFILL GAS MONITORING		
Sample Locations	Frequency	Parameters
LGW300 through LGW325, LGW326S, LGW326D, LGW327S, LGW327D, LGW328S, LGW328D, LGW329S, LGW329D, LGW36, LGW38, LGW39, LGW40, LGW41, LGW45, LGW46, LGW47, GW21, GW9, GW11, GW12, GT1, GT2, GW200, GW201, GW202, GW203, GMP6A, CO5, CO6, CO7, CO7S, CO7X GW401 through GW451	Twice Monthly	46390 Vacuum 85547 Percent Methane 85550 Percent Oxygen 46386 Gas Flow Rate 46387 Valve Percent Open 46388 Gas Temperature 00021 Ambient Air Temperature 00025 Barometric Pressure 00024 Trend in Barometric Pressure Ground Conditions

LANDFILL GAS MONITORING		
Sample Locations	Frequency	Parameters
Blower house east Blower house west	Twice Monthly	46390 Vacuum 85547 Percent Methane 85550 Percent Oxygen 46386 Gas Flow Rate
Blower house east Blower house west	Annually	VOCs and semivolatiles using methods 0030 for VOCs and 001 for semivolatiles from USEPA Test Methods for Evaluating Solid Waste, SW-846, 3rd Ed., November 1986.
GMW1RA, GMW1RB, GMW2R, GMW4, GMW8, GMW9, GMW22, GMW26A, GMW27A, TP1 through TP9, GP1 through GP4, GP10 through GP16, 17UR, 141U	Twice Monthly	46390 Vacuum 85547 Percent Methane 85550 Percent Oxygen 46388 Gas Temperature 00021 Ambient Air Temperature 00025 Barometric Pressure 00024 Trend in Barometric Pressure Ground Conditions
Johnson Wax Flow Meter	Twice Monthly	46384 Gas Volume
Flare Flow Meter	Twice Monthly	46384 Gas Volume

SURFACE WATER MONITORING		
Monitoring Locations	Frequency	Parameters
Outfall 1, Outfall 2, Outfall 4, Outfall 5, SW1, SW2	Quarterly	00010 Field Temperature 00094 Field Conductivity @ 25°C 00150 Total Suspended Solids 00310 BOD_5 00340 COD, Unfiltered 00400 Field pH 00937 Potassium 00929 Sodium, total 00940 Chloride 00945 Sulfate, total
SG1, SG3	Monthly	Water Surface Elevation

SURFACE WATER MONITORING		
Monitoring Locations	Frequency	Parameters
Outfall 6, Outfall 7	Quarterly	00150 Total Suspended Solids

Financial Responsibility and Long-Term Care

24. Revised proof of financial responsibility for closure and long-term care shall be provided with the Phase 1 construction documentation report, in accordance with ch. NR 520, Wis. Adm. Code. The proof of financial responsibility shall be established based upon the approved costs contained in the attached summary document.

25. The long-term care proof of financial responsibility period for this facility shall begin following final closure of the Northwest Expansion area. LRC shall provide long-term care for this facility in perpetuity.

26. LRC shall obtain a closure and long-term care license for the landfill immediately upon ceasing to accept waste at the landfill.

27. LRC shall continue to collect and treat leachate and landfill gas and remove groundwater from the gradient control system as they are produced until otherwise directed by the Department in writing.

The Department retains the jurisdiction either to require the submittal of additional information or to modify this approval at any time if, in the Department's opinion, conditions warrant further modifications. Unless specifically noted, the conditions of this approval do not supersede or replace conditions of approval for this facility.

NOTICE OF APPEAL RIGHTS

If you believe you have a right to challenge this decision, you should know that Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed.

For judicial review of a decision pursuant to sections 227.52 and 227.53, Stats., you have 30 days after this decision is mailed, or otherwise served by the Department, to file your petition with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial review

shall name the Department of Natural Resources as the respondent. This notice is provided pursuant to section 227.48(2), Stats.,

Dated: AUG 3 0 1996

DEPARTMENT OF NATURAL RESOURCES
For the Secretary,

Lakshmi Sridharan, Ph.D., P.E., Chief
Bureau of Waste Management

Cindy Cook, P.E.
Bureau of Waste Management

Timothy Kessenich, P.G.
Bureau of Waste Management

Appendix A.11
Conditional Close Out – Hazardous Waste Compliance Assessment – Kestrel Hawk Landfill – EPA ID WID076171008
June 4, 2021

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State of Wisconsin
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June 04, 2021

HW CMEL
File Ref: FID 252076990
Racine County

Khalid Umer, P.E.
Republic Services
1969 Oakes Road
Racine, WI 53406

SUBJECT: Conditional Close Out – Hazardous Waste Compliance Assessment
Kestrel Hawk Landfill
EPA ID WID076171008

Dear Mr. Umer:

The department initiated a hazardous waste compliance assessment of the Kestrel Hawk Landfill (KHL) in 2018 and issued a Notice of Noncompliance (NON) dated December 9, 2019. The NON contained alleged areas of non-compliance and areas of concern and requested further information and action. After receiving and reviewing response information from KHL, the department issued an Addendum to the Notice of Noncompliance dated September 16, 2020 (Addendum). The Addendum identified certain issues to be resolved, identified additional alleged areas of non-compliance and requested further information and action. KHL then provided the following responses regarding the Addendum.

- Letter dated November 16, 2020, regarding Addendum items 2,3,4,5,12, 13, 17 and 21.
- Letter dated March 2, 2012, regarding Addendum item 6.
- Letter dated April 7, 2021, regarding Addendum items 2, 4, 6, 7, 8, 9, 10, 13 and 15.

Thank you for these responses and for your cooperation through the course of this compliance assessment effort.

Today's letter is to close-out the compliance assessment, conditioned on remaining actions to be taken by KHL. If KHL takes the actions identified below within 90 days of the date of this letter, this compliance assessment will be considered closed and the department will not pursue further action. These actions are identified below within the subsection regarding A.9 and A.10. The department reserves the right to take further enforcement action if KHL does not take these actions, or if the department becomes aware of additional information that warrants further action.

Each of the 21 issues identified in the Addendum are discussed below in sections A and B. A new area of concern is added in section C as Item 22, although it does not require any action by KHL at this time. Sections D and E provide additional information and a conclusion, respectively.

A. Previously Identified Alleged Areas of Noncompliance

1. Waste Determinations for Absorbent "Socks" – No further action required
   In the Addendum, the department indicated that this issue was resolved.

2. Manifesting of Oil-Absorbent "Socks" – No further action required

KHL's November 16, 2020 and April 7, 2021 letters provided additional information in response to the Addendum. The department considers this issue to be resolved.

3. LDR requirements for Oil-Absorbent "Socks" – No further action required
KHL's November 16, 2020 letter provided additional information in response to the Addendum. The department considers this issue to be resolved.

4. Waste Determinations for Gas Processing Residuals – No further action required
KHL's November 16, 2020 and April 7, 2021 letters provided additional information in response to the Addendum. The department considers this issue to be resolved. Please refer to Item 22 below for a related area of concern regarding the regulatory status of condensate from landfill gas processing.

4.1 Disposal of Separator Oil – No further action required
KHL's November 16, 2020 and April 7, 2021 letters provided additional information in response to the Addendum. The department considers this issue to be resolved. Please refer to Item 22 below for a related area of concern regarding the regulatory status of condensate from landfill gas processing.

5. Waste Determination for Contaminated Groundwater - No further action required
KHL's November 16, 2020 letter provided additional information in response to the Addendum. The department considers this issue to be resolved.

5.1 Waste Determination for Leachate – No further action required
KHL's November 16, 2020 letter provided additional information in response to the Addendum. The department considers this issue to be resolved.

5.2 Waste Determination for Pipe Condensate – No further action required
KHL's November 16, 2020 letter provided additional information in response to the Addendum. The department considers this issue to be resolved.

6. Hazardous Waste Generator Annual Reporting – No further action required
KHL's April 7, 2021 letter provided additional information in response to the Addendum. The department considers this issue to be resolved. Please refer to Item 22 below for a related area of concern regarding the regulatory status of condensate from landfill gas processing.

7. Hazardous Waste Generator Fees – No further action required
KHL's April 7, 2021 letter provided additional information in response to the Addendum. Payment for $80.00 was received on April 29, 2021 for additional generator fees. The department considers this issue to be resolved. Please refer to Item 22 below for a related area of concern regarding the regulatory status of condensate from landfill gas processing.

8. LDR for POTW Discharges and NR 211 Notice – No further action required
KHL's April 7, 2021 letter provided additional information in response to the Addendum. The department considers this issue to be resolved.

9. Closure Plan -and- 10. Long-Term Care Plan
KHL's April 7, 2021 letter provided additional information in response to the Addendum.

Condition: As a condition of this close-out letter, KHL should submit within 90 days of the date of this letter a complete plan approval modification under chs. NR 500 and NR 514, Wis. Adm. Code, to request review and approval of the following:

- The "Closure Report" contained in Attachment 4 of KHL's April 7, 2021 letter, which describes hazardous waste unit (HWU)closure-related controls that were constructed in the 1980s and 1990s.
- The "Long-Term Care Plan" contained in Attachment 5 of KHL's April 7, 2021 letter, which is intended to consolidate long-term care responsibilities and requirements for the HWU and the non-hazardous waste units.

We recommend that regulatory citations in these documents be updated from ch. NR 665, Wis. Adm. Code, to the counterpart provisions of ch. NR 664, Wis. Adm. Code. This is addressed in the later section of this letter titled "Additional Information". See Item D.2 below for additional information,

Page 10 of the Closure Report "The amended feasibility and plan of operation requested under s. NR 665.0113(4) is not applicable because the HWU is separated from the non-hazardous wastes by the barrier wall that separates the nonhazardous waste disposal area from the areas where hazardous wastes were previously disposed". While the barrier wall may have been a contributing factor to continued non-hazardous waste operations after the final receipt of hazardous wastes, this statement is not entirely accurate. We recommend that this statement in the Closure Report be corrected when it is submitted as part of the plan approval modification.

11. Training – No further action required
In the Addendum, the department indicated that this issue was resolved.

12. Contingency Plan Distribution and Licensing – No further action required
KHL's November 16, 2020 letter provided additional information in response to the Addendum. The department considers this issue to be resolved.

13. Operating Record – No further action required
KHL's November 16, 2020 and April 7, 2021 letters provided additional information in response to the Addendum. The department considers this issue to be resolved. Please refer to Item 22 below for a related area of concern regarding the regulatory status of condensate from landfill gas processing.

14. FPOR – No further action required
In the Addendum, the department indicated that this issue was resolved.

15. Financial Assurance Cost Estimates – No further action required
KHL's November 16, 2020 letter provided additional information in response to the Addendum. The department considers this issue to be resolved. Please refer to Item 22 below for a related area of concern regarding the regulatory status of condensate from landfill gas processing.

B. Previously Identified Areas of Concern

16. Tank System Requirements – No further action required
In the Addendum, the department indicated that this issue was resolved.

17. Gas Condensate Volumes; 90-day Storage – No further action required

KHL's November 16, 2020 letter provided additional information in response to the Addendum. The department considers this issue to be resolved. Please refer to Item 22 below for a related area of concern regarding the regulatory status of condensate from landfill gas processing.

18. Emergency Communications – No further action required

In the Addendum, the department indicated that this issue was resolved.

19. Hazardous Waste Facility Annual Reporting– No further action required
In the Addendum, the department indicated that this issue was resolved.

20. Solid Waste Program Annual Reports – No further action required
In the Addendum, the department indicated that this issue was resolved.

21. Transportation of Gas Condensate – No further action required
KHL's November 16, 2020 letter provided additional information in response to the Addendum. The department considers this issue to be resolved. Please refer to Item 22 below for a related area of concern regarding the regulatory status of condensate from landfill gas processing.

C. New Area of Concern

22. Condensate from Landfill Gas Processing; Regulatory Status
KHL operates a biogas plant that dewaters landfill gas prior to off-site shipment via pipeline for use as energy. There has been a question raised about the RCRA status of the liquid generated from the dewatering process (sometimes referred to as "condensate" or "gas processing residuals" in the correspondence). Much of this information is captured in Attachment 5 of KHL's November 16, 2020 letter. Additional information was provided by KHL's counsel in emails dated December 30, 2020 and January 13, 2021. KHL's information has contributed to the positions currently taken by the department in this letter regarding Items 4, 4.1, 6, 7, 13, 15, 17 and 21 in this letter and there are no further actions that KHL needs to take with respect to these issues at this time.

The department intends to seek clarification on this issue from U.S. EPA, including further discussion regarding RO 12362 (January 11, 1985), which generally states that condensate generated from landfill with listed hazardous waste is always a hazardous waste. If additional information is developed that is not consistent with KHL's position, the department reserves the right to revisit the related aspects of today's letter.

D. Additional Information

1. Current Operating License
KHL has operated since 1970 and continues to operate under license #572. The following identifies some key hazardous waste-related aspects of the license history, taken from previous approval documents:
    - License 572 incorporates all plans of operations and approvals since the original licensing for the Land Reclamation Landfill, Inc (LRL) in 1970. Approvals issued in the 1970's allowed for the disposal of solid waste and hazardous waste (as defined prior to RCRA).
    - In November 1980 LRL submitted a Part A application to U.S. EPA in order to continue hazardous waste disposal activities under interim status when the RCRA hazardous waste program first took effect. Hazardous waste disposal occurred in Corridors 1 through 6 (the HWU).
    - LRL's interim license application for continued hazardous waste disposal was denied by the Department on December 10, 1982 based on the absence of sufficient information and detail in LRL's application documents. This required the cessation of hazardous waste disposal by January 1, 1993.
    - U .S . EPA "called in" LRL's RCRA Part B permit application on February 7, 1983 . LRL responded to U. S. EPA in a letter dated August 5, 1983, by stating that LRL had "decided not to pursue, at this time, a federal permit or state license to operate a hazardous waste landfill", and

that the Part B permit application would not be filed. This letter also stated that nonhazardous waste was continuing to be placed in the HWU and that the HWU would be closed when final approved grades were reached.

- On December 19, 1984 was LRL was granted approval to continue and contiguously expand its solid waste disposal operations under license #572 into Corridors 6 through 13. This required construction of containment barriers for the HWU and capping of the HWU prior to contiguous filling in new corridors. Later, on August 30, 1996, the Northwest Expansion was approved to allow for continued solid waste landfilling at the facility under License #572.
- The facility took actions under license #572 to install a number of environmental controls for the HWU. These activities and approvals are described in KHL's Closure Report (contained in Attachment 4 of KHL's April 7, 2021 letter) and include, for example, a barrier wall, containment structure, "RCRA Cover", slope stabilization, drainage trench, and a slurry cutoff wall. These improvements occurred in phases between 1985 and 2001 as required under license #572 to, in part, allow for the continued non-hazardous waste disposal at the facility rather than overall facility closure.
- The plan of operation and long-term care requirements of License #572 have established requirements for ongoing maintenance and monitoring of the HWU.

In summary, the facility (including the HWU) has not achieved facility closure because of continuing non-hazardous solid waste landfill operations. However, as required by License #572, the HWU was capped and has been maintained and monitored in a manner consistent with the long-term care requirements in s. NR 664.0117, Wis. Adm. Code. The imposition of these requirements under License #572 served to represent final administrative disposition of the operating license application under s. NR 670.073(1), Wis, Adm. Code. Accordingly, License #572 serves to function as an enforceable document for long-term care under s. NR 670.001(3)(g), Wis. Adm. Code, until the facility achieves closure under s. NR 664.0113, Wis. Adm. Code, and a long-term care license is issued under ch. NR 670, Wis. Adm. Code.

2. NR 664 Requirements
   As established in s. NR 664.0003, Wis, Adm. Code, because final administrative disposition of the owner or operator's operating license application has occurred under license #572, KHL is subject to the requirements of ch. NR 664, Wis. Adm. Code. In previous correspondence the department had inaccurately referred to certain parallel requirements in ch. NR 665, Wis. Adm. Code. We apologize for this error.

3. Revised Procedures
   In correspondence related to this compliance assessment, including its responses dated November 16, 2020 and April 7, 2021, KHL has informed the department of several changes to its previous procedures intended to demonstrate compliance with the hazardous waste requirements in chs. NR 600 through 679, Wis, Adm. Code. The department recommends that KHL continue to implement these updated procedures. Examples include annual reporting for generators and licensed facilities and operating record maintenance. KHL may also desire to memorialize these sorts of procedures within its Plan of Operation under License #572, perhaps as part of the plan approval modification per Items and 10 above.

E. Conclusion

As previously discussed, the history of compliance requirements and actions for this facility is long and complex. The continued goal of the department is to assist KHL in navigating these issues and to support KHL's continued efforts to achieve compliance. We hope that this compliance assessment process assists KHL in its efforts to

demonstrate compliance with hazardous waste requirements in chs. NR 600 through 679, Wis, Adm. Code, and in preparing to achieve closure and enter long-term care in the future.

The department recommends you take the actions recommended in this letter to address the remaining areas of noncompliance and areas of concern within 90 days of the date of this letter. While we appreciate your response and completion of these actions, please understand that failure to properly respond in a timely manner may result in escalated enforcement actions. Alleged noncompliance may also be enforced by the United States Environmental Protection Agency.

If additional time is needed, please provide a request for a new due date and the reason(s).

Please contact me with any questions at 608-843-2160 (mobile) or douglas.coenen@wisconsin.gov.

Regards,



Douglas W. Coenen, P.E.
Hazardous Waste Engineer
Hazardous Waste Prevention and Management Section
Waste and Materials Management Program

cc: Jerry Demers, WDNR
David Buser, WDNR
Mike Williams, KHL
Jonathan Hotstream, TRC

Appendix A.12
Notice of Non-Compliance – Hazardous Waste Compliance Assessment – Kestrel Hawk Landfill – EPA ID WID076171008
December 9, 2019

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State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
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Madison, WI 53707-7921

Tony Evers, Governor
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Telephone 608-266-2621
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December 9, 2019

HW CMEL
File Ref: FID 252076990
Racine County

Khalil Umer, P.E.
Republic Services
1969 Oakes Road
Racine, WI 53406

SUBJECT: Notice of Non-Compliance (NON)
Hazardous Waste Compliance Assessment
Kestrel Hawk Landfill
EPA ID WID076171008

Dear Mr. Umer:

The department has completed its hazardous waste inspection and compliance assessment for Republic Service's Kestrel Hawk Landfill (KHL), located in Racine County, Wisconsin. The assessment was initiated with an on-site visit on June 14, 2018, which was followed by several records requests. In support of this review, KHL and their consultant, TRC Environmental (TRC) provided a substantial amount of information and records to the department. Attachment A summarized the key information requests and responses. Thank you for your cooperation in this effort.

As background, KHL is a large quantity hazardous waste generator subject to the requirements of Ch. NR 662, Wis. Admin. Code, and a licensed hazardous waste landfill under the interim status provisions of s. ch. NR 665 and NR 670.010(5)(a), Wis. Admin. Code. According to KHL, the landfill unit historically used for interim-licensed hazardous waste disposal generally consists of Corridors 1-6 (which total approximately 30 acres) and is referred to as the hazardous waste unit (HWU). According to KHL, the HWU ceased accepting hazardous waste in 1982. Though much of the HWU is capped with final cover, KHL has not yet obtained closure approval, because non-hazardous solid waste disposal has continued to occur in waste disposal units contiguous with the HWU. Also, a small portion of the HWU (about 2 acres, according to TRC's July 26, 2018 report) has not been capped with approved final cover because KHL plans to add non-hazardous waste above this area prior to capping.

The HWU does not have a base liner and leachate collection system that meets current landfill requirements. KHL is undergoing hazardous waste corrective action due to past releases from the HWU.

The compliance inspection and assessment indicate that KHL is not in compliance with the hazardous waste requirements of Chapters NR 660 to 679, Wis. Adm. Code. Identified below are 15 alleged areas of noncompliance with Chapters NR 660 to 679, Wis. Adm. Code, and the actions you should take to move towards resolution of these issues. Also identified below are 6 areas of concern and recommended actions to address these issues.

This compliance assessment was coupled with a field visit in July 2018 by the department's David Buser and subsequent completion of the groundwater monitoring O&M form. These findings were provided to KHL in a letter dated October 5, 2018. No alleged areas of non-compliance were noted.

This compliance assessment primarily relied on information provided by KHL and its consultant, TRC Environmental Corporation regarding applicable code requirements (Attachment 1). However, in general, it did not involve review of the requirements of past department approval letters.

Alleged Areas of Noncompliance

1. Waste Determinations for Absorbent "Socks": Failure to make a correct hazardous waste determination as required by s. NR 662.011, Wis. Adm. Code, for the oil-absorbent "socks" used to extract floating product from the Hazardous Waste Unit's (HWU) leachate and gas extraction wells. According to the records provided (see Attachment B), KHL has periodically generated these oil-absorbent "socks" and shipped them off-site for disposal as a non-hazardous waste, but improperly determined that they were only TSCA-regulated materials and not hazardous waste. A correct waste determination would conclude that these oil-absorbent "socks" are listed hazardous wastes per ss. NR 661.03(1), (2) and (7), Wis. Adm. Code (commonly referred to as the "mixture rule") and/or ss. NR 661.03(3), (4) and (7), Wis. Adm. Code (commonly referred to as the "derived-from rule"), bearing the codes of the listed wastes that were disposed in the HWU. The oil-absorbent "socks" are be a F039 listed hazardous waste and could be a characteristic hazardous waste. If analytical testing is used to determine if the oil-absorbent "socks" are a characteristic hazardous waste, then a representative sample of the oil-absorbent "socks" should be collected and analyzed. Please feel free to contact the department for assistance in understanding what a meant by a representative sample.

   To comply with this requirement, KHL shall determine perform a waste determination and identify all applicable hazardous waste codes for the oil-absorbent "socks" in accordance with s. NR 662.011, Wis. Adm. Code. The department recommends that KHL provide the department with documentation showing a correct waste determination within 60 days of the date of this letter.

2. Manifesting of Oil-Absorbent "Socks": Failure to properly manifest a hazardous waste shipment, as required by s. NR 662.020(1), Wis. Adm. Code. According to the records provided, KHL generated and shipped off-site for disposal hazardous waste oil-absorbent "socks" (see Attachment B, Section B-1) and improperly manifested them as TSCA-regulated materials but not as hazardous wastes. To comply with this requirement, all shipments of hazardous waste shall be properly manifested.

   This failure to properly manifest wastes requires recordkeeping and reporting updates. For improperly manifested shipments that occurred since Jan. 1, 2015:

   a. The department recommends that KHL update the manifest records. For shipments prior through June 30, 2018, please contact the department's Aggie Cook at (608) 266-2414, or Agnes.Cook@Wisconsin.gov for detailed instructions. For shipments after, June 30, 2018, corrections should be made within U.S. EPA's e-manifest system.
   b. The department recommends that KHL notify the recipient(s) of improperly manifested hazardous waste so they can take appropriate actions, such as the unmanifested waste report

requirements of s. NR 664.0076, Wis. Adm. Code, or for out-of-state facilities, 40 CFR 264.76 or similar destination state requirements.

The department recommends that KHL provide the department with documentation of these recommended actions within 90 days of this letter.

3. LDR requirements for Oil-Absorbent "Socks": Failure to provide a land disposal restriction (LDR) notification, as required by s. NR 668.07(1)(b), Wis. Adm. Code. According to the records provided, KHL generated and shipped off-site for disposal hazardous waste oil-absorbent "socks" since 2015 (see Attachment B, Section B-1) without an LDR notification. To comply with this requirement, the initial LDR written notification shall be retained on-site and provided to the destination facility when it receives the initial shipment of the hazardous waste.

   The department recommend that KLH, within 60 days of this letter, provide the department with a copy of the LDR notification developed for use in future shipments, and documentation that the LDR has been provided to all destination facilities that received shipments of hazardous waste oil-absorbent "socks" since Jan. 1, 2015.

4. Waste Determination for Gas Processing Residuals: Failure to make a hazardous waste determination as required by s. NR 662.011, Wis. Adm. Code, for landfill gas condensate waste generated at the landfill gas blower/flare facility. The department's December 4, 2018, information request (item 5.d) asked for the waste determination for this waste stream. TRC's March 4, 2019, response to Item 5.d referred to analytical results from a different waste which consisted of combined flows of multiple liquid waste streams at manhole 15B. The response did not provide consider or provide any analytical data regarding characteristic waste codes and did not consider that condensate waste from its landfill gas blower/flare facility that handles gas from the HWU is a F039 listed hazardous waste per the "mixture rule" and/or "derived-from rule". U.S. EPA's RO 12363 also establishes that gas condensate derived from a landfill containing listed waste is always a hazardous waste (unless it is delisted).

   It is further noted that TRC's report dated April 30, 2019, item 3.a. discussed an oil-water separator located between the point of generation and a storage tank that generates two waste streams. Separate waste determinations are required for the "oil" component generated at the separator and the remaining condensate wastes that are routed to the tank.

   To comply with this requirement:

   - a waste determination of the landfill gas chiller condensate shall be made at the initial point of generation, and the determination shall consider the waste's characteristics, including but not limited to ignitibility, and its listing under the "mixture rule" and/or "derived-from rule".

   - a waste determination of both wastes generated by the oil-water shall be made at the point of generation, and the determinations shall consider the waste's characteristics, including but not limited to ignitibility, and its listing under the "mixture rule" and/or "derived-from rule".

   The department recommends that, with 60 days of this letter, KHL provide the department with:

   a. copies of these waste determinations and supportive documentation.

b. quantities and dates of oil removed from the separator for each removal event since Jan. 1. 2015, and a description of how the oil was managed.
c. if the oil component is managed off-site, a summary of the dates, quantities and destination facilities (intermediate and final) for shipments initiated since Jan. 1. 2015, including copies of all associated manifests and/or bills of lading.
d. a description of how the management of the oil component has complied with s. NR 679.10(2)(a), Wis. Adm. Code (Used Oil Management Standards).

5. Waste Determination for Contaminated Groundwater: Failure to make a hazardous waste determination for liquids generated in association with the HWU, as required by s. NR 662.011, Wis. Adm. Code. These liquids include, for example, contaminated groundwater collected from the area 141U extraction system and from the groundwater collection pipe/trench along the southern perimeter of the HWU. These liquids are collected as part of corrective actions intended to control releases from the HWU and contain waste constituents or leachate from the HWU and are actively managed as part of corrective actions.

   Item 6 of the department's information request dated December 4, 2018 asked for waste determination information regarding contaminated groundwater generated from these systems (which according to TRC's April 30, 2019, report is discharged to the local sewer system). TRC's March 4, 2019, response (Item 6) asserted that the liquids from area 141U system are exempt under the domestic sewage exclusion. This is incorrect; under s. NR 661.04(1)(a)2., Wis. Adm. Code, the exclusion applies only after the hazardous waste mixes with domestic sewage that is passing through a sewer system to a publicly-owned treatment works (POTW). The point of generation for the contaminated groundwater occurs upon its collection and active management (well prior to any mixing with domestic sewage), at which point it is subject to a hazardous waste determination. If the waste is a hazardous waste, then the waste is subject to all applicable hazardous waste requirements prior to meeting the exclusion. It is also noted that in several RCRA Online documents (e.g. RO 11051, RO 13121, RO 13438, and RO 13509), U.S. EPA has articulated that groundwater contaminated by a listed hazardous waste (e.g. F039 leachate, or constituents derived from the listed hazardous wastes disposed in the HWU) is a hazardous waste when actively managed.

   To comply with this requirement, waste determinations shall be made for contaminated groundwaters at the point of generation and shall consider the "mixture rule" and/or "derived from rule". These groundwaters include:

   - the extracted groundwater from the area 141U system,
   - the groundwater collection pipe/trench along the southern perimeter of the HWU, and
   - any other groundwater that is collected and is potentially affected or contaminated by the HWU or constituents from the HWU.

   The department recommends that KHL provide the department with these waste determinations and associated documentation within 60 days of this letter.

6. Hazardous Waste Generator Annual Reporting: Failure to properly report generated hazardous waste in the annual report as required by s. NR 662.041, Wis. Adm. Code.

a. Adsorbent “Socks”; According to the records provided, KHL generated and shipped off-site for disposal hazardous wastes (oil-absorbent “socks”) since 2015. These wastes were not reported in the annual hazardous waste reports for 2015 through 2018.

   It is also noted that Item 4 of TRC’s March 4, 2019 report states that there have been 3 removal events for this material since July 7, 2015. However, as summarized in Attachment B, Section B-1, there appears to have been at least 5 such removal events.

b. Manifest Records: The department’s manifest records indicate the off-site shipment of three loads of hazardous waste bearing the waste code D039 (Tetrachloroethylene) during 2015. Information on these shipments is summarized in Attachment B, Section B-2. These wastes were not reported in the annual hazardous waste report for 2015 (nor for the other odd-numbered 2017 report).

c. Leachate Volumes: The 2017 annual hazardous waste report indicated a that the total waste quantity and leachate quantity were equal and reported to be 4,140,490 gallons (34,490,282 pounds). TRC’s April 30, 2019, report states that this number is incorrect due to errors in transposing totalizer numbers and should have been reported to be 342,000 gallons (or approximately 2,848,860 pounds).

d. Leachate Volume Variability: Please note that the department’s compliance assessment work to date has not included a detailed analysis of quantities reported in annual hazardous waste annual reports for years other than 2017. However, it is noted that the amounts of amount of hazardous waste and leachate reported for 2015 through 2018 have varied widely (5,770,691 lbs. in 2015, 14,827,650 lbs. in 2016, and 841,030 lbs. in 2018). Such variability is not consistent with the department’s understanding of the facility’s leachate management operations during this period. This could represent additional annual reporting inaccuracies.

e. Non-Leachate Liquids and Mixtures: It is not clear if quantities of hazardous wastes other that “leachate” have been reported in KHL’s past annual hazardous waste reports, including the following examples:

   - According to information provided, KHL generated two condensate wastes (oil/water separator oil and effluent) from its landfill gas chiller and blower/flare facility, which are derived-from listed hazardous waste. According to Table 2 of TRC’s report dated March 4, 2019, there was a total of 50,200 gallons of gas condensate pumped from the tank located at the gas chiller/blower/flare facility and transported for disposal at the Racine sewer manhole
   - No information regarding the disposal of separated oil volumes for the oil-water separator at the gas processing facility has been provided.
   - KHL generated contaminated groundwater from its area 141U extraction system and groundwater collection systems/trenches impacted by the HWU, which is hazardous waste.
   - Figure 11 of KHL’s solid waste annual report dated June 12, 2018 suggests that all leachate and liquids collected throughout the facility for sewer disposal are combined at MH15B prior to discharging to pipe that delivers the mixture to the City of Racine sewer system at manhole within Oakes Road. If leachate, condensate, or other liquids from non-HWU parts of the landfill (such as liquids from or near the old City of Racine Landfill, and Corridors 7-11)

are mixed with hazardous waste prior to mixing with domestic sewage, then the entire mixture is hazardous waste.

f. Waste Generation Information: Item 1 of the department's request, dated December 4, 2018, requested the identification of and waste determinations for solid wastes and hazardous wastes generated for each of the past 3 years and 10 years, respectively, and basic information related to these wastes. KHL's response did not provide a complete response. For example:

- Item 1.a of TRC's March 4, 2019 report identified leachate from the HW and oil-absorbent "socks" as hazardous waste based on generator knowledge. The response added that KHL "does not regularly generate on-site any additional solid wastes other than the normal non-hazardous trash and garbage generated by employee and maintenance shop activities". The department's request was not limited to wastes generated "regularly".
- While Item 1.a of TRC's March 4, 2019 report mentions leachate, it does not discuss landfill gas condensate, contaminated groundwater extracted from the 141U area remediation system, and contaminated groundwater extracted from the groundwater gradient control systems.
- Item 1.a of TRC's March 4, 2019 report mentions solid wastes generated by maintenance shop activities" but does not discuss any waste determination for these waste streams.
- Item 1.a of TRC's March 4, 2019 report refers to Attachment 2 for the oil removal activities. Otherwise, the response did not make any mention of hazardous waste examples identified by the department in its request: old wastes exhumed or taken from the HWU, materials mixed with HWU wastes, and discarded equipment that contacts HWU wastes.
- No mention of waste determinations was made in TRC's March 4, 2019 report, except for wastes associated with HWU oil removal.

To comply with this requirement, KHL shall accurately report all hazardous wastes generated in its annual hazardous waste reports. The annual reports should consider the results of all waste determinations performed per s. NR 662.011, including but not limited to HWU leachate, HWU condensate, HWU contaminated groundwater, and other "derived-from" or "mixture rule" wastes such as:

- oil absorbent materials
- oil-water separator oils and post-separator effluent at the landfill gas processing area
- discarded equipment or materials contaminated by F039 or other "derived-from" or "mixture rule" hazardous wastes
- discarded filters or other components used in hazardous waste liquid pumping or gas processing)
- combined flows of hazardous wastes with other wastes under the "mixture rule" (such as leachate or gas condensate from other landfill units that are mixed with hazardous wastes prior to mixing with domestic sewage)
- wastes removed or exhumed from the HWU
- solids or debris removed from the piping, pump station and manhole systems that convey hazardous wastes.

Annual reports also need to report hazardous wastes generated through other operations at KHL apart from HMU, such as waste from heavy equipment maintenance activities, and unacceptable wastes delivered to the current landfill but not disposed).

The department recommends that KHL provide a report (for the purposed of this letter, the "Hazardous Waste Generation Report") to the department, within 60 days of this letter, with accurate quantities (and other information required in ss. NR 662.041(3)(a) through (d), Wis. Adm. Code) for hazardous waste generated during each of the years 2014, 2015, 2016, 2017 and 2018. The department also recommends the following:

- This report should provide appropriate support/documentation for the quantities, and a table that details the quantities of each different hazardous waste.
- The report should include copies of all of manifests or shipping papers from KHL through final disposal for all off-site shipments of hazardous waste initiated during these years and indicate if off-site management occurred at a RCRA-permitted hazardous waste facility or not.
- The report should identify hazardous wastes and quantities that were disposed in the City of Racine sewer system, by year.
- It may be helpful to include a schematic that identifies and depicts the flows of the various liquid hazardous wastes prior and after to mixing with non-hazardous wastes.
- In order to support its contents and conclusions, the report should include copies of the waste determinations made for each solid waste* generated during the years 2014, 2015, 2016, 2017 and 2018. Please refer to Publication WA1152, Waste Determinations and Recordkeeping, for further information. (*Note that this publication states, "Solid waste streams that do not require a waste determination include wastes that have no potential to be a hazardous waste"). This can be found at: https://dnr.wi.gov/files/PDF/pubs/wa/WA1152.pdf

We recommend that KHL present this information in normal correspondence format; if revisions to previous electronic submittals are necessary, we can then advise KHL of the procedures to do so.

7. Hazardous Waste Generator Fees: Failure to pay environmental repair tonnage-based fees ($20 per ton of hazardous waste generated), as required by 289.67(2), Wisc. Stats. To comply with this requirement, hazardous waste quantities shall be properly reported and applied to fee calculations.

   Based on the findings of Item 6 above, KHL has not included all quantities of generated hazardous waste in its annual hazardous waste reports. The waste quantities in these reports are also used to compute fees required to be paid to the State. The department recommends that:

   a. Within 60 days of the days of this letter, KHL provide a report to the department that calculates, by waste type and in total, the total amount of paid and unpaid fees for 2014, 2015, 2016, and 2017. KHL may choose to include this along with the information provided in response to Item 6 above.

      We recommend that KHL present this information in normal correspondence format; if revisions to previous electronic submittals are necessary, we can then advise KHL of the procedures to do so.

b. Within 90 days of the days of this letter, KHL provide payment for the unpaid fees. The department reserves the right to impose fees for additional amounts due and/or other years of underpayment, and payment of appropriate late fees and/or interest.

Please note that according to 289.67(2)(c), Wisc. Stats., fees are not required for "leachate which contains hazardous waste which is being transported to a wastewater treatment plant or is discharged directly to a sewer pipe" and for "hazardous wastes which are removed from a site or facility to repair environmental pollution."

8. LDR for POTW Discharges: Failure to maintain a one-time written LDR notification form in KHL's on-site file, as required by s. NR 668.07(1)(g), Wis. Adm. Code. This notice shall "describe the generation, subsequent exclusion from the definition of hazardous or solid waste or exemption from ch. 291, Stats., and chs. NR 660 to 673 regulation, and the disposition of the waste", and shall be placed in the on-site files. TRC's March 4, 2019, report, section 6.c., refers to a 1983 leachate testing agreement, which does not contain or reference the required information.

   To comply with this requirement, KHL shall develop and place a one-time written LDR notice form in the facility file. To return to compliance, the department recommends that, within 90 days of the days of this letter, KHL provide a copy of this notice.

9. Closure Plan: Failure to have the required contents in the closure plan, as listed in s. NR 665.0112(2), Wis. Adm. Code.

   On December 4, 2018, the department requested that KHL confirm that all required elements are contained in the approved closure plan. TRC's response (dated March 4, 2019, item 18) asserted that these closure plan requirements do not apply to KHL because KHL ceased accepting hazardous waste in 1982, and all areas of the HWU have been partially or completely closed. This is incorrect; under s. NR 665.0001(2) Wis. Adm. Code, all closure requirements apply to KHL until closure is approved and a long-term care license is issued.

   The department has reviewed KHL's current closure plan (provided as Appendix 13 of TRC's response dated March 4, 2019) and found that the plan does not contain the information required in s. NR 665.0112, Wis. Adm. Code. Also note that the current plan's introductory sections refer to NR 500-series solid waste rules but do not refer to the applicable hazardous waste requirements.

   Item 19 of the department's request dated December 4, 2018, asked for confirmation that the closure plan contains the closure schedule, as required by ss. NR 665.0112(2)(f) and 665.0112(3)(a)2, Wis. Adm. Code. TRC's March 4, 2019, response did not provide this information. The department recommends that the updated HWCP include the expected closure schedule.

   To comply with this requirement, KHL's closure plan shall at a minimum address each of the pieces of information required by ss. NR 665.0112(2)(a) through (h), Wis. Adm. Code.

   More specifically, as provided for in s. NR 665.0112(3)(d), Wis. Adm. Code the department hereby requests that KHL submit a license modification to the department within 90 days of this letter to propose a hazardous waste closure plan (HWCP) that includes the plan contents in s. NR 665. 0112(2), Wis. Adm. Code. In proposing what class this modification would be, KHL should consider the process outlined in s. NR 670.042(4)(a), Wis. Adm. Code. KHL may combine the applicable

requirements of the NR 500-series solid waste rules into this plan. Alternatively, rather than submitting a stand-alone plan, KHL may include the plan as part of the FPOR addressed in Item 14.

If KHL determines that certain elements of information in s. NR 665.0112(2), Wis. Adm. Code, are not applicable, the HWCP should explain the reason. Examples may include those items applicable only to clean-closure of HWU's.

The updated HWCP should consider the following additional comments from the department's review of the information presented by TRC, which identified a 2.04-acre area of the HWU that remains uncapped. The department recommends that the HWCP describe the current cover conditions for this area and the remaining capping that is planned. The department's review of TRC's information regarding current and proposed cover conditions identified the following issues, which the department recommends be clarified in the updated HWCP:

- It appears that the barrier wall does not extend across the entire 2.04-acre uncapped area (see Figure 1 in Attachment 5 of TRC's August 25, 2018 report). Yet TRC's text (see page 2 of the same report) states that the barrier wall separates the HWU from the non-hazardous waste area. This seems inconsistent; are there HWU wastes in this area that are not covered by the barrier wall?
- Per TRC's Figure 2-A, the entire 2.04-acre uncapped area extends into the Corridor 8, 9 and 10 area and the Corridor 11 area. This suggests that portions of the HWU are outside of Corridors 1 through 6. Is this correct?
- Referring to the 2.04-acre area, TRC's August 25, 2018 report states that "Republic will install a "Resource Recovery and Conservation Act (RCRA) final cover over this area" after final grades are achieved through additional landfilling of non-hazardous wastes. However, the design of this cap system (e.g. the cross-sectional layers and the method of tie-in to existing cap) is not described.
- TRC provided a drawing entitled "Figure 1, Constructed Final Cover Locations", dated July 2018, as Attachment 5 to its August 2, 2018 report. It depicts (among other things) previously-placed final cover locations and profile descriptions, the "location of RCRA final cover not yet installed", and the location of the "sloped barrier wall". The HWCP should include this sort of drawing, but the drawing should also show the horizonal boundary of the HBU, along with associated corridor limits.

The department recommends that the updated HWCP address the cover standards of s. NR 665.0310(1), Wis. Adm. Code and the closure performance standards of s. NR 665.0111, Wis. Adm. Code, and that the HWCP incorporate the closure cost estimates addressed in Item 15 below.

10. Long-Term Care Plan: Failure to meet the long-term care plan requirements as established in s. NR 665.0118(3), Wis. Adm. Code.

On December 4, 2018, the department requested that KHL confirm that all required elements are contained in the approved long-term care (LTC) plan. TRC's response (dated March 4, 2019, item 18) asserts that these all LTC plan requirements do not apply to KHL because KHL ceased accepting hazardous waste in 1982, and all areas of the HWU have been partially or completely closed. This is incorrect; under s. NR 665.0001(2) Wis. Adm. Code, all long-term care plan requirements apply to KHL.

The department reviewed KHL's current LTC plan (provided as Appendix 13 of TRC's response dated March 4, 2019) and determined that it does not refer to or contain the information required in NR 665.0118(3), Wis. Adm. Code. Our review noted that the introductory section of this plan refers to the NR 500-series solid waste rules, but do not refer to the applicable hazardous waste requirements.

To comply with this requirement, KHL's long-term care plan shall contain at a minimum each of the pieces of information required by s. NR 665.0118(3), Wis. Adm. Code.

More specifically, as provided for in s. NR 665.0118(4)(d), Wis. Adm. Code the department hereby requests that KHL submit a license modification to the department within 90 days of this letter to propose a hazardous waste long-term care plan (HWLTCP) that includes the plan contents in NR 665. 0118(3), Wis. Adm. Code. In proposing what class this modification would be, KHL should consider the process outlined in s. NR 670.042(4)(a), Wis. Adm. Code. KHL may combine the applicable requirements of the NR 500-series solid waste rules into this plan. Alternatively, rather than submitting a stand-alone plan, KHL may include the plan as part of the FPOR addressed in Item 14.

If KHL determines that certain elements of information in s. NR 665.0118(3), Wis. Adm. Code, are not applicable, the HWCP should explain the reason. An example may include s. NR 665.0118(3)(d), Wis. Adm. Code, which refers to provisions in s. NR 665.0121 regarding enforceable documents in lieu of a license.

The department recommends that the HWLTCP address the long-term care standards of s. NR 665.0310(2), Wis. Adm. Code and the long-term care and property use provisions in s. NR 665.0117, Wis. Adm. Code, and incorporate the long-term care cost estimates addressed in Item 15 below.

11. Training: Failure to maintain a training program and documentation as required by ss. NR 665.0016(1) through (5), Wis. Adm. Code. To comply with this requirement, KHL shall ensure that these code requirements are met.

    a. Training Program: The department's December 4, 2018, request asked for a description of KHL's training program required by ss NR 665.0016(1), Wis. Adm. Code. TRC's response (dated March 4, 2019, item 10) referred to the facility's contingency plan for its training plan. This plan did not address each of the required elements listed in ss. NR 665.0016(1) through (3), Wis. Adm. Code. In particular, the contingency plan does not address the requirements of s. NR 665.0016(1)(a), Wis. Adm. Code, which requires that the training program "ensures the facility's compliance with the requirements of this chapter", and include [by reference to NR 665.0016(4)(c)] "a written description of the type and amount of both introductory and continuing training that will be given".

       The department recommends that, within 60 days of this letter, KHL provide a written description of its training plan that addresses each of the requirements of ss. NR 665.0016(1) through (3), Wis. Adm. Code. Alternatively, rather than submitting a stand-alone document, KHL may include the plan as part of the FPOR addressed in Item 14.

    b. Training Documentation: The department's December 4, 2018, request asked for training documents and records as required by ss. NR 665.0016(4) and (5), Wis. Adm. Code. Attachment 9 of TRC's response (dated March 4, 2019) contained some documentation of annual "HWU

contingency plan" training but did not contain the information required be maintained at the facility, such as job titles and descriptions, names, a description of the type and amount of both introductory and continuing training, and documentation of training completed by assigned personnel.

The department recommends that, within 90 days of this letter, KHL deliver all necessary training defined by the training program requirements of ss. NR 665.0016(1) though (3), Wis. Adm. Code and provide the department with copies of the training documentation and records required in s. NR 665.0016(4), Wis. Adm. Code.

More broadly, in order to address ch. NR 665, Wis. Adm. Code, training program requirements, we recommend that KHL identify in its training plan a list of positions/personnel performing activities needed to properly and safely maintain and monitor the hazardous waste unit to ensure compliance with all applicable NR 665 requirements (rather than just the contingency plan), and the associated a description of the training required for these personnel. For example, such individuals could be those involved in inspections, repairs, monitoring and recordkeeping required by HWU maintenance requirements and corrective action obligations. Note that training for these positions/personnel and activities could involve site employees and vendors/contractors that participate in or perform such tasks.

12. Contingency Plan Distribution and Licensing: Failure to submit copies of the contingency plan to local emergency response officials as required by s. NR 665.0053(2), Wis. Adm. Code. Failure to submit a license modification in accordance with s. NR 670.042, Wis. Adm. Code.

    Attachment 9 of TRC's March 4, 2019, response included provided a copy of KHL's contingency plan, bearing a revision date of June 2018, and a copy of a contingency plan notification and transmittal letter to local municipal entities in Attachment 11. According to TRC's letter report dated April 30, 2018, the correct date of this notification letter was January 2, 2019, rather that the date mistakenly shown as January 2, 2018 in Attachment 11.

    a. The notification and transmittal letter to local municipal entities dated January 2, 2019, did not occur until at least 180 days after the plan was modified. This is later than allowed in s. NR 670.042, Wis. Admin. Code for any class of license modification.

    b. The notification and transmittal letter was not addressed to local hospitals and police departments, as required by s. NR 665.0053, Wis. Adm Code.

    Furthermore, changes to contingency plans represent an alteration as described in s. NR 670.041(1)(a), Wis. Adm. Code, and require a license modification in accordance with s. NR 670.042, Wis. Adm. Code. KHL did not submit a license modification.

    To comply with these requirements, KHL shall submit copies of the contingency plan to all specified local emergency response officials and submit the appropriate license modification when changes to the plan occur. The department makes the following recommendations:

    (i) KHL shall first ensure that the current contingency plan is promptly provided to local hospitals and police departments. The department recommends that KHL, within 60 days of this letter, provide documentation of this correspondence.

(ii) The department recommends that that KHL submit, within 60 days of this letter, a license modification to the department addressing contingency plan changes. In proposing what class this modification would be, KHL should consider the process outlined in s. NR 670.042(4)(a), Wis. Adm. Code. Alternatively, rather than submitting a stand-alone plan, KHL may include the plan as part of the FPOR addressed in Item 14.

13. Operating Record: Failure to maintain the operating record as required by s. NR 665.0073, Wis. Adm. Code. Item 13 of TRC's March 4, 2019, response asserts that the operating record requirements of s. NR 665.0073(2) do not apply to KHL because it "is not a currently active hazardous waste facility and has not accepted hazardous waste since 1982". This is not correct. Per s. NR 665.0001(1), Wis. Adm. Code, the facility is subject to these (and other) requirements until it achieves approved closure under ch. NR 665. To comply with this requirement, KHL shall ensure that the operating record is complete and properly maintained.

    The department recommends that, within 60 days of this letter, KHL provide a description of its plan to properly establish and maintain its operating record. Alternatively, rather than submitting a stand-alone plan, KHL may include this description as part of the FPOR addressed in Item 14.

14. FPOR: Failure to have a feasibility and plan of operation report (FPOR) addressing delayed closure as required by s. NR 665.0113(4), Wis. Adm. Code. Delayed closure of a landfill facility or landfill unit is allowed when the requirements of s. NR 665.0113(4), Wis. Adm. Code are met. These requirements generally address effects and impacts related to the acceptance of non-hazardous wastes after final receipt of hazardous wastes. This requirement specifically relates to KHL's current status as a non-closed facility and the fact that KHL has not closed its HWU within 180 days after receiving the final volume of hazardous waste. Item 16 of TRC's March 4, 2019, response asserts, "This rule does not apply to Kestrel Hawk since it has always been permitted to receive non-hazardous waste. The HWU is now closed and does not accept non-hazardous waste." This is not correct. Until the landfill facility achieves approved closure, it is subject to these code requirements.

    To comply with this requirement, KHL shall submit an FPOR. The department recommends that KHL, within 120 days of this letter, submit an FPOR to the department in the form of a license modification under s. NR 670.042, Wis. Adm. Code. The FPOR should address the currently applicable requirements of ch. NR 665, Wis. Adm. Code, and the relevant content requirements of ch. 670, Wis. Adm. Code. The department is willing to work with KHL to more precisely identify these content requirements.

    KHL may be required to provide public notice when submitting this plan in accordance with s. NR 670.042, Wis. Adm. Code. KHL is required to pay a review fee when submitting this plan, as required in NR 670.010(12), Wis. Adm. Code. Notice requirements and fee requirements depend on the type of submittal. This particular FPOR submittal required by ch. NR 665, Wis. Adm. Code, is not explicitly listed in Appendix I and II of ch. NR 670, Wis. Admin. Code. Preliminarily, the department's staff estimates that the FPOR submittal may represent a Class 2 license modification as described in section D.1.f of Appendix I of ch. NR 670, Wis. Admin. Code, and be subject to a $4,000 review fee per Appendix II of ch. NR 670, Wis. Admin. Code.

    It is recommended that in the manner outlined in NR 670.042(4)(a), that (in advance of or together with the FPOR submittal) KHL submit information to support, and request the department to determine, the classification of the submittal. In this case, after KHL submits this request and the

department makes the determination per s. NR 670.042(4)(b), Wis. Adm. Code, the department will invoice KHL for the applicable review fee and KHL would undertake the applicable public notice actions.

15. Financial Assurance Cost Estimates: Failure to comply with s. NR 665.0142(1)(b) and NR 665.0144(1)(a), Wis. Adm. Code, which require that the closure and long-term care cost estimates be based on the costs to the owner or operator of hiring a third party to perform the work.

    Item 21 of the department's information request (dated December 4, 2018) asked for confirmation that the cost estimates for closure and long-term care are based on the costs to the owner or operator of hiring a third party to close the facility. TRC's March 4, 2019, response states that project management and administrative oversight costs associated with closure and long-term care activities were assumed to be addressed within the contingency amounts. Contingency costs should only be used for unanticipated cost components. Costs for the use of a third party to perform project management and administrative oversight shall be estimated and identified separately. These costs should address design, contract document preparation, procurement, work performance tracking and review, quality assurance, change order development, invoice review and processing, management of insurance and other contract requirements, and the like.

    Furthermore, the cost estimates provided by KHL do not include the facility maintenance costs of managing the hazardous wastes generated in the course of long-term care and corrective action and managed off-site, and associated state generator fees, as required by s. NR 665.0144(1); Wis. Adm. Code

    To comply with this requirement, KHL shall revise closure and long-term care cost estimates to include all required costs.

    The department recommends that KHL provide to the department within 90 days of this letter the revised cost estimates. These should be incorporated in to the updated closure and long-term care plans addressed in Items 9 and 10 above. At a minimum, the revised cost estimates should:

    - include all costs related to hiring a third party to do the work,
    - properly account for costs that are not appropriate to be included in contingency costs
    - include all costs of managing the hazardous wastes generated in the course of long-term care and corrective action and managed off-site.
    - Include an explanation of the basis for the cost estimates.

Areas of Concern

16. Tank System Requirements: The department has identified the following two storage and conveyance systems that may represent potential tank systems at KHL, and that may be subject to hazardous waste tank systems requirements in subchapters B, J, BB and CC of ch. NR 265, Wis. Adm. Code, and the licensing requirements in ch. NR 670, Wis. Admin. Code. Without additional information, the department is unable to confirm compliance with these requirements.

    Gas Condensate System: Item 3 of TRC's report dated April 30, 2019, describes the use of an oil/water separator and a single-walled 5,000-gallon underground tank to store hazardous waste (gas condensate) generated by KHL's landfill gas blower/flare operation, and ancillary

equipment in the form of associated piping and a pump-out system with a riser pipe ("Gas Condensate Tank System"). The report also describes this as a "new tank system" for the purposes of Subchapter J of chapter NR 665, Wis. Adm. Code. According to TRC, the wastes in the 5,000-gallon tank are periodically pumped out by a vacuum truck and hauled to a manhole controlled by KHL; from this manhole, the wastes are routed through KHL piping to the City of Racine's sewer system. KHL has not described how the oil component from the oil/water separator is managed.

Landfill Liquid Conveyance System: TRC's responses describe a conveyance system, generally consisting of piping, manholes and pump stations, that transmits liquid wastes from the HWU and HWU area to the local sewer system ("Landfill Liquid Conveyance System"). These liquid wastes include the following hazardous wastes:

- F039 hazardous waste leachate and gas condensate generated within the HWU
- hazardous waste condensate trucked from the Gas Condensate Tank System
- contaminated extracted groundwaters from the groundwater trench collection system (e.g. along the southern perimeter of the HWU).
- contaminated extracted groundwaters from the 141U area remediation system.
- Gas condensate hauled by truck to the conveyance system (to Lift Station LS4 near the northwest corner of the City of Racine Landfill, according to Figure 11 of the 2017 solid waste annual report dated June 2018).

Note that when other liquid wastes (such as leachate or gas condensate from other landfill units) are mixed with these F039 or "derived-from" hazardous wastes, the other liquid wastes become hazardous wastes under the "mixture rule".

One or both systems may be exempted from hazardous waste tank system requirements by the wastewater treatment unit (WWTU) exemption in s. NR 665.0001(3)(j), Wis. Adm. Code. To qualify for this exemption, the three requisites within the definition of "wastewater treatment unit" in s. NR 660.10(141), Wis. Adm. Code, shall be met. Also note that in the September 2, 1988 Federal Register 53 FR 34079, U.S. EPA establishes that a tank system shall be "part of an on-site wastewater treatment facility"; this creates a fourth requisite. Each of these four requirements is reviewed below, along with the department's preliminary conclusions regarding the two KHL tank systems.

a. s. NR 660.10(141)(a), "Part of a wastewater treatment facility that is subject to regulation under either 33 USC 1317(b) or 1342". It is the department's understanding that Landfill Liquid Conveyance System may meet this criterion because it discharges directly to the City of Racine sewer system. However, it is not clear if this system is "part of a wastewater treatment facility". The department requests that KHL provide supportive information for the position that the Landfill Liquid Conveyance System is "part of a wastewater treatment facility".

   The effluent from the oil-water separator in the Gas Condensate System does not discharge directly to the sewer in this way; rather, its effluent is reportedly loaded into a vacuum truck and hauled to the Landfill Liquid Conveyance System. Available reports identify two locations where the discharge from the truck occurs, after which the effluent mixes with other landfill liquid wastes prior to flowing and discharging to the City of Racine's sewer (presumably at the sewer system manhole within Oakes Road, referred to as the "Existing Sanitary Sewer Manhole" in TRC's July 26, 2018, report, item 7):

- Lift Station LS4, (according to Figure 11 of the 2017 solid waste annual report dated June 2018)
- Manhole MH-14 (according to TRC's March 4, 2019, report, item 4.a.)

In any case, the effluent then flows within a portion of the Landfill Liquid Conveyance System to the City of Racine sewer. The effluent becomes subject to hazardous waste regulation as a hazardous waste, at a new point of generation, while being loaded into a tanker truck for subsequent handling. In effect, 33 USC 1317(b) or 1342 may be regulating the discharge from the truck, not from the Gas Condensate System. The department requests that KHL provide supportive information for the position that the eligibility of the Gas Condensate System to be a wastewater treatment unit is not forfeited by being loaded, handled and hauled in a truck, prior to being discharged to the Landfill Liquid Conveyance System to the City of Racine sewer.

b. s. NR 660.10(141)(b), "Receives and treats or stores an influent wastewater that is a hazardous waste as defined in s. NR 661.03, or that generates and accumulates a wastewater treatment sludge that is a hazardous waste as defined in s. NR 661.03, or treats or stores a wastewater treatment sludge which is a hazardous waste as defined in s. NR 661.03". It is the department's understanding that the Gas Condensate System meets this criterion because it includes both treats (in the oil/water separator) and stores (in the effluent tank) an influent wastewater. However, the department is unable to presently determine if storage or treatment is occurring in Landfill Liquid Conveyance System, as its function appears to be conveyance. The department requests that KHL provide supportive information for the position that treatment and/or storage occurs in the Landfill Liquid Conveyance System.
c. s. NR 660.10(141)(c), "Meets the definition of tank or tank system in this section". It is the department's current understanding that the Gas Condensate System meets this criterion because it contains a tank or tanks. However, the department is unable to presently determine if the Landfill Liquid Conveyance System is a tank system. The department recommends that KHL provide a detailed description of the components of the Landfill Liquid Conveyance System to determine if, or confirm that, the system meet the definition of "tank system" in s. NR 660.10(117), Wis. Adm. Code. Note that, in general, manholes may be "sumps" if used for storage (and not principally for conveyance), and that sumps may be tanks. Also note that, in general, EPA has indicated that devices to protect pumps (such as screens and sediment traps) do not perform treatment.
d. September 2, 1988 Federal Register 53 FR 34079, in which U.S. EPA establishes that a tank system shall be "part of an on-site wastewater treatment facility". The department does not have enough information to determine if the Gas Condensate System meets this criterion. The department requests that KHL provide information that demonstrates that the Gas Condensate System is "on-site".

To assist in determining compliance, the department recommends that KHL provide the department, within 90 days of the date of this letter, with the information requested above to confirm the applicability of the wastewater treatment unit exemption to the two tank systems.

17. Gas Condensate Volumes; 90-day Storage: Attachment 7 of TRC's response dated March 4, 2019 (entitled Table 5), suggests that gas condensate was not removed from the tank for the months of January and February of 2016. 2015 data was not requested, so it is not known if the 90-day generator storage limit of s. NR 662.034(1), Wis. Adm. Code, was met. Also, no information was

available to determine the frequencies of oil removal and effluent removal from the oil-water separator. To demonstrate compliance, the department recommends that, within 60 days of this letter, KHL provide the department with:

- Condensate removal volumes for October, November and December of 2015. Please provide the previous Table 5 updated to include this information.
- A description of how intends to ensure that the 90-day generator storage limit will not be exceeded for any hazardous waste within the Gas Condensate System, including for example the oil generated within the oil-water separator unit, the effluent generated within the oil-water separator unit, and the effluent stored in the underground tank.

18. Emergency Communications: Item 11.a of the department's information request dated December 4, 2018 asked for a description of equipment KHL relies on to provide its personnel with immediate access to an internal alarm or emergency communication device. This is required by s. NR 665.0034(1), Wis. Adm. Code, for areas where hazardous waste is being poured, mixed, spread or otherwise handled. TRC's March 4, 2019, response did not provide this information. The department recommends that within 60 days of this letter, KHL inform the department of how this requirement is met.

19. Hazardous Waste Facility Annual Reporting: s. NR 665.0075 establishes requirements for submittal of annual reports. Item 14(a) of TRC's March 4, 2019, response asserts that these requirements "do not apply to Kestrel Hawk as the facility ceased accepting hazardous waste for co-disposal with non-hazardous solid waste, within the HWU, in 1982." This is incorrect. Under s. NR 665.0001(1), Wis. Adm. Code, until the facility achieves approved closure, it is subject to these requirements.

    The Department recommends that beginning with the March 30, 2020 due date, and annually thereafter, that KHL submit the information required in ss. NR 665.0075(1) through (10), Wis. Adm. Code. Because the department has not developed the "department forms" referred to in this regulation for each item of this information, it is recommended that KHL provide the information in letter format. In cases when the information is provided separately, this annual report letter can make such reference (an example may be monitoring data that is submitted to the department's GEMS database).

20. Solid Waste Program Annual Reports: There appear to be inaccuracies or inconsistencies in Table 5 of KHL's 2017 annual report submitted to the department's solid waste program and dated June 12, 2018. The following are examples.

    a. Table 5 contains a column called MH15B, which for 2017 data totals 7,643,900 gallons. TRC's April 30, 2019 report states that this represents the total volume of liquids associated with the HWU, City of Racine Landfill, and 141U area. Other Table 5 totals show 745,115 gallons as the "volume of leachate collected from the HWU (Corridors 1- 6)", and 419,057 "141U-Area" gallons, which total 1,164,172 gallons. This suggests that 6,479,728 gallons (7,643,900 - 1,164,172 = 6,479,728) were generated from the old City of Racine Landfill, which does not seem correct.

    b. Table 5 indicates a leachate removal volume from the HWU of 745,115 gallons. Item 6 of TRC's April 30, 2019, report states that this number was mis-reported and should have been reported as 342,000 gallons.

c. Table 5 (footnote 2) describes the LMP8A figure as the "volume of leachate collected from the HWU (Corridors 1- 6)". Page 28 of the report's text states, "The volume of liquid at LMP8A, as well as a portion of the LS4 volume, represents the amount of leachate collected from the HWU, Corridors 1 through 6.".

d. Attachment 7 (Table 2) of TRC's March 4, 2019 report shows a total removal volume of 50,200 gallons of gas condensate from the 5,000-gallon tank at the landfill gas processing facility. According to Table 5 of the 2017 solid waste annual report, this volume appears to be reported as 41,700 gallons.

Please note that other information in the 2015, 2016 and 2018 solid waste annual reports regarding quantities of leachate and other liquids generated was not reviewed.

The department recommends that KHL review the data provided to the department in its solid waste annual reports. The department recommends that KHL, within 90 days of this letter, provide a report that identifies the corrections to any past solid waste annual reports for calendar years 2015 through 2018.

21. Transportation of Gas Condensate: TRC's March 4, 2019, report, item 4.a., indicates that condensate effluent from the blower/flare station is loaded into a vacuum truck and hauled to the Landfill Liquid Conveyance System. Available reports identify two locations where the discharge from the truck occurs, after which the effluent mixes with other landfill liquid wastes prior to flowing and discharging to the City of Racine's sewer:

    - Lift Station LS4 (according to Figure 11 of the 2017 solid waste annual report dated June 2018), located near the northwest corner of the former City of Racine Landfill.
    - Manhole MH-14 (according to TRC's March 4, 2019, report, item 4.a.), located along the southern border of the former City of Racine Landfill.

    In any case, s. NR 660.10(125), Wis. Adm. Code defines "transporter" to refer to off-site transportation. Section NR 660.10(85), Wis. Adm. Code defines "on-site". However, the department is unable to presently determine if the hazardous waste transportation is occurring. The department recommends that KHL evaluate whether the routes used by the vacuum truck are "on-site" in order to determine if KHL is arranging or providing for hazardous waste transportation. The department recommends that KHL, within 60 days of this letter, provide a summary of this analysis and its conclusions.

Wrap-up

The department recommends you take immediate action to address the alleged areas of noncompliance and areas of concern identified in this letter. Please note that the department has provided recommendations to help re-establish compliance with each of the identified areas of noncompliance and recommendations to help determine and/or confirm compliance regarding each of the identified areas of concern.

Please also note that your responses to the requirements and recommendations in this letter shall include the authorization and certification required by NR 670.011, Wisc. Adm. Code. If the response

relies on technical information or data, such as design drawings and specifications, or engineering studies, it is recommended that it such information be certified by a qualified professional engineer.

While we appreciate receiving your written responses by the dates specified, please understand that you are currently in noncompliance and will remain in noncompliance until all identified areas are addressed. Failure to respond in a timely manner may result in escalated enforcement actions. The alleged violations may also be enforced by the United States Environmental Protection Agency. As part of its hazardous waste regulatory program, the department may perform additional inspections at this facility to ensure compliance with chapters NR 660 to 679, Wisconsin Administrative Code. Please note that Chapters NR 660 to 679 of the Wisconsin Administrative Code are available on the department's website at http://dnr.wi.gov/topic/Waste/Laws.html

The department recognizes that the actions recommended in this letter may require substantial effort. We have attempted to allow for reasonable timeframes for this work and for responses. If KHL finds that the process would be improved by alternative timeframes for some responses, please provide a written request (via email is acceptable).

If I can help you in meeting these standards, or you have any questions, please contact me at douglas.coenen@wisconsin.gov or 608-264-9258. Thank you for your cooperation.

Sincerely,



Doug Coenen, P.E.
Waste Management Specialist
Waste and Materials Management Program

cc: Facility File – DNR SE Region
Gerald DeMers, DNR
David Buser, DNR
Curt Madsen, P.E., TRC

Attachment A
Information Requests and Responses

1. DNR information request dated July 2, 2018
2. TRC response report dated July 26, 2018
3. DNR information request dated August 20, 2018
4. TRC response report dated August 28, 2018
5. DNR information request dated December 4, 2018
6. TRC response report dated March 4, 2018
7. DNR clarification request regarding contingency plan dated April 15, 2018
8. KHL response dated April 16, 2018
9. DNR information requests dated April 6, 12 and 15, 2018
10. TRC response report dated April 30, 2018

Attachment B
Summary of Waste Shipment Information

Section B-1

The records provided in TRC's report dated March 4, 2019, Attachment 3, include an unorganized assortment of different types of documents. The department's review indicates hazardous wastes generated from the removal of oil-absorbent "socks" from the HWU were shipped offsite in the following five cases since September 13, 2015:

1. Based on a Certificate of Disposal from Clean Harbors dated Nov. 16, 2015, for "date received" of 10/27/15, for manifest 005053298SKS. The manifest was not included in the records provided.
    a. Date removed from service: 9/15/15
    b. Quantity: 3 drums
    c. Material: "High Blu PCB Liquids For Incineration"
    d. Disposal Date: 11/10/18 and 11/12/15
    e. Method of Disposal: Incineration
    f. Disposal Facility: Deer Park, TX Facility
2. Based on a Certificate of Disposal from Clean Harbors dated November 16, 2015, for "date received" of 10/17/15, for manifest 005053209SKS. The manifest was not included in the records provided.
    a. Date removed from service: 9/13/15
    b. Quantity: 1 drum
    c. Material: "PCB Solids For Incineration"
    d. Disposal Date: 11/09/15
    e. Method of Disposal: Incineration
    f. Disposal Facility: Deer Park, TX Facility
3. Based on Manifest 005096377SKS*; no certificate of disposal provided
    a. Generator Date: 3/23/16
    b. Quantity: 1 drum (150 lbs.)
    c. Material Description: "Non-DOT Regulated (Used Oil and Absorbents)"; no waste code
    d. Designated Facility: Spring Grove Resource Recovery, Cincinnati, OH
    e. Date Received: 4/6/16
    f. Management Method: H141
4. Based on a Certificate of Disposal from Clean Harbors dated January 25, 2017, for "date received" of 1/25/17, and based on manifest 005724045SKS*.
    a. Date removed from service, and date shipped: 9/13/15
    b. Quantity: 1 drum
        c. Material: "PCB Solids For Incineration"; "UN2315 Polychlorinated Biphenyls, Liquid"; no waste code
    d. Designated Facility: Spring Grove Resource Recovery, Cincinnati, OH
    e. Date Received: 1/25/17
    f. Disposal Date: 4/91/17
    g. Method of Disposal: Incineration
    h. Disposal Facility: Deer Park, TX Facility
    i. Records also included an LDR form, largely illegible but bearing this manifest number
5. Based on invoice 79321195-1900933823 from Safety-Kleen

a. Service date: 02/27/18
b. Manifest 012275313FLE* (only a blank continuation sheet provided)
c. Profile: 1794978
d. Quantity: 1 drum
e. Apparent waste type: DH2-PCB LQD DECHL/INA 500
f. TSDF: SG

Note: Manifests listed in Safety-Kleen's email dated 1/1/19 as "all manifests dating back though January 2019". Safety-Kleen's 2/11/19 email suggested all shipments were non-hazardous waste.

a. 005724045SKS (listed above in item 4)
b. 005777416SKS (noted as "aqueous parts washer solvent")
c. 005587368SKS (noted as "aqueous parts washer solvent")
d. 006056580SKS (noted as "aqueous parts washer solvent")
e. 006361950SKS (noted as "aqueous parts washer solvent")
f. 006522959SKS (noted as "aqueous parts washer solvent")
g. 006570485SKS (noted as "aqueous parts washer solvent")
h. 006542565SKS (noted as "aqueous parts washer solvent")
i. 006785893SKS (noted as "aqueous parts washer solvent")
j. 006818105SKS (noted as "aqueous parts washer solvent")

*manifest referred to in Safety-Kleen's email dated 2/28/19

Section B-2

A review of the department's manifest records shows that KHL initiated three shipments of hazardous waste since Jan. 1, 2015. All were shipped in the first 7 months of 2015. A waste description was not provided in the data set.

Date Shipped	Quant	Code	TSD	Date Received
Jan. 27, 2015	20 gal	D039	SK-Waukesha	Jan. 27, 2015
Apr. 15, 2015	20 gal	D039	SK-Waukesha	Apr. 15, 2015
Jul. 7, 2015	23 gal	D039	SK-Waukesha	Jul. 7, 2015

Appendix B: Cross-walk

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Feasibility and Plan of Operation Report Application Crosswalk - Attachment A
Kestrel Hawk Landfill (License #0572)
Racine, Racine County, Wisconsin

As requested in Attachment C of the November 29, 2022 Guidance Document, the following "crosswalk" or checklist has been provided to the Reviewer to denote locations within the Application the required components are found. The order the requirements from Attachment A are listed first with Attachment B references to the right.

APPLICATION REQUIREMENT	COMPLETE Y	N	NA	LOCATION	COMMENTS
(1) NR 670.014(2)(a): A general description of the facility	X			Section 1.2 Section 1.3.2	
(2) Security- and inspection-related information:					
(a) NR 670.014(2)(d): A description of security procedures and equipment required by s. NR 664.0014	X			Section 4.1	
(b) NR 670.014(2)(e): A copy of the general inspection schedule required by s. NR 664.0015(2)					
(3) NR 670.014(2)(f): Justification of any request for a waiver of the preparedness and prevention requirements of subch. C of ch NR 664			X		Not applicable
(4) NR 670.014(2)(k): Floodplain information	X			Section 1.3.1	
(5) NR 670.014(2)(m): A copy of the closure plan and, where applicable, the long term care plan required by ss. NR 664.0112, 664.0118, and 664.0197					
(a) A copy of the long-term care plan is required (Closure plan is not needed)	X			Entire Document	
(b) Further closure-related information, not applicable			X		
(c) Activities that will be carried on after closure of each disposal unit the frequency of these activities, which include:					
(i) Description of the existing system that require long-term care (e.g. final cover, leachate collection system, run-on control systems, run-off control systems, monitoring systems, etc.) and describe associated routine and contingent LTC activities	X			Section 2.2-2.6	
(ii) A description of the activities to comply with other applicable requirements of NR 664, including for example:					
NR 664.0014 Security	X			Section 4.1	
NR 664.0015 General Inspection Requirements	X			Section 4.3	
NR 664.0016 Personnel Training	X			Section 4.4	
NR 664, Subchapter C, Preparedness and Prevention	X			Section 4.5	
NR 664, Subchapter D, Contingency Plan and Emergency Procedures	X			Section 4.5	
The operating record requirements of NR 664.007	X			Section 4.8	
Annual reporting requirements of NR 664.0075	X			Section 4.9	
(d) and at least all of the following:					
(i) NR 664.0118(2)(a): regarding monitoring: This should describe the groundwater monitoring and corrective action program and describe how it complies with the requirements of NR 664, Subchapter F			X	Section 3.5.1	Groundwater monitoring program is conducted as approved in previously WDNR approvals.
(ii) NR 664.0118(2)(b): This should include the planned maintenance activities and frequencies to ensure integrity of the cap and final cover or other containment systems (such as leachate collection systems and cut-off wall-related liquid collection systems) and the function of the monitoring equipment	X			Section 2 Section 3	
(iii) NR 664.0118(2)(c): facility contact information	X			Section 1.2	
(iv) NR 664.0118(2)(d): alternate requirements for monitoring and LTC financial assurance (probably not applicable)			X		
(e) NR 664.0197: Contingent long-term care for and cost estimates for tank systems			X	Section 4.7 Section 8.0	

Feasibility and Plan of Operation Report Application Crosswalk - Attachment A
Kestrel Hawk Landfill (License #0572)
Racine, Racine County, Wisconsin

As requested in Attachment C of the November 29, 2022 Guidance Document, the following "crosswalk" or checklist has been provided to the Reviewer to denote locations within the Application the required components are found. The order the requirements from Attachment A are listed first with Attachment B references to the right.

APPLICATION REQUIREMENT	COMPLETE Y	N	NA	LOCATION	COMMENTS
(6) NR 670.014(2)(m): Include, where applicable, as part of the plans, specific requirements in ss. NR 664.0178, 664.0197, 664.0228, 664.0258, 664.0310, 664.0351, 664.0601 and 664.0603". (Note that most of these sections are not applicable because they relate to units other than landfills). NR 664.0310(2) applies to landfill long-term care below (for ease of reference, each of these requirements is labelled below with bold font as 6 and 6.a through 6.f). "After final closure, the owner or operator shall comply with all long-term care requirements contained in ss. NR 664.0117 to 664.0120, including maintenance and monitoring throughout the long-term care period (specified in the operating license under s. NR 664.0117). The owner or operator shall do all of the following:					
(a) Maintain the integrity and effectiveness of the final cover, including making repairs to the cap as necessary to correct the effects of settling, subsidence, erosion, or other events.	X			Section 3.1.2	
(b) Continue to operate the leachate collection and removal system until leachate is no longer detected.	X			Section 2.3 Section 3.2	
(c) Maintain and monitor the leak detection system in accordance with ss. NR 664.0301 (3) (c) 4. and (d) and 664.0303 (3), and comply with all other applicable leak detection system requirements of this chapter.			X		The Hazardous Waste Units of Kestrel Hawk Landfill, Corridors 1 through 6, were all constructed prior to 1995. Therefore leak detection system were not required. Only non-hazardous waste units not covered under NR 664 were developed following 1995.
(d) Maintain and monitor the groundwater monitoring system and comply with all other applicable requirements of subch. F.			X	Section 3.5.1	Groundwater monitoring program is conducted as approved in previously WDNR approvals.
(e) Prevent run-on and run-off from eroding or otherwise damaging the final cover.	X			Section 2.2 Section 2.4 Section 3.1 Section 3.4	
(f) Protect and maintain surveyed benchmarks used in complying with s. NR 664.0309."	X			Section 3.7	
(7) NR 670.014(2)(n): "…documentation that notices required under s. NR 664.0119 have been filed."					
(a) NR 664.0119(1): Submit a record of the type, location and quantity of hazardous wastes disposed of within each cell, to be submitted to the local land use authority.	X			Section 4.10	
(b) NR 664.0119(2)(a): File a notation on the property's deed regarding hazardous waste management, restriction of use, and survey plan information.	X			Section 4.10	
(c) NR 664.0119(2)(b): Certification of the deed notation, to be provided to the department.	X			Section 4.10	
(8) NR 670.014(2)(p): relates to closure costs and is not applicable.			X		
(9) NR 670.014(2)(p): "…the most recent long-term care cost estimate for the facility prepared according to s. NR 664.0144 plus a copy of the documentation required to demonstrate financial assurance under s. NR 664.0145."	X			Section 5.0 Section 6.0	
(10) NR 670.014(2)(s): "A topographic map showing a distance of 1,000 feet around the facility…". This section goes on to establish the specifications and minimum contents of the map.	X			Section 1.5.1	

Feasibility and Plan of Operation Report Application Crosswalk - Attachment A
Kestrel Hawk Landfill (License #0572)
Racine, Racine County, Wisconsin

As requested in Attachment C of the November 29, 2022 Guidance Document, the following "crosswalk" or checklist has been provided to the Reviewer to denote locations within the Application the required components are found. The order the requirements from Attachment A are listed first with Attachment B references to the right.

APPLICATION REQUIREMENT	COMPLETE Y	N	NA	LOCATION	COMMENTS
(11) NR 670.014(3): This establishes the required information regarding protection of groundwater. NR 670.014(3)(b) through (h) identifies the detailed groundwater-related information required to be provided for the regulated unit(s), such as:					
(a) NR 670.014(3)(a): Not applicable.			X		
(b) NR 670.014(3)(b): specifies hydrogeologic information	X			Section 3.5.1.1	
(c) NR 670.014(3)(c): specifies groundwater-related information to be presented in maps	X			Figure 4, Appendix J.2	
(d) NR 670.014(3)(d): specifies groundwater contamination-related information	X			Section 3.5.1.3.2, Appendix F.5, F.6	
(e) NR 670.014(3)(e): requires “Detailed plans and an engineering report describing the proposed	X			Section 3.5.1.3	
(f) NR 670.014(3)(f): requires information regarding the detection monitoring program (if applicable).			X		Hazardous constituents have been detected, the HWU is in compliance monitoring and corrective action monitoring.
(g) NR 670.014(3)(g): requires information regarding the compliance monitoring program (if applicable).	X			Section 3.5.1.3.1	
(h) NR 670.014(3)(h): requires information regarding the corrective action program (if applicable).	X			Section 1.3.3, Section 3.5.1.3.2	
(12) NR 670.014(4): This establishes the required information regarding solid waste management units.					
(a) NR 670.014(4)(a)1. through (a)5: includes information regarding SWMUs.	X			Section 7.1	
(b) NR 670.014(4)(a)6: requires past and future corrective action information (if applicable):	X			Section 7.1	
(c) NR 670.014(4)(b): requires all available information pertaining to any release of hazardous wastes or hazardous constituents from the unit or units.	X			Section 7.1	
(d) NR 670.014(4)(c): refers to completion of a RCRA Facility Assessment. The facility should provide a summary of monitoring-related information that was developed previously and led to the need to enter corrective action, the corrective actions taken to date, and future corrective actions planned.	X			Section 7.2	
(13) The final part of NR 664.028 goes on further to allow the department to determine that additional information related to NR 670.014 (General Requirements), 670.016 (Tanks), 670.017 (Surface Impoundments), 670.018 (Waste Piles) or 670.021 (Landfills) is necessary. The department has currently identified the following additional informational requirements that should be included in a long-term care application:					
(a) From NR 670.014, General Requirements					
(i) NR 670.014(2)(g): a copy of the contingency plan	X			Section 4.5	
(ii) NR 670.014(h)2: runoff controls	X			Section 3.4	
(iii) NR 670.014(h)3: how contamination of water supplies is prevented	X			Sections 3.6, 3.9	
(iv) NR 670.014(h)4: how equipment failure and power outages are mitigated	X			Section 4.2	
(v) NR 670.014 (h)5: how personnel are protected	X			Section 4.6.1	
(vi) NR 670.014(h)6: how releases to atmosphere are prevented	X			Section 4.6.2	
(vii) Per NR 670.014(2)(L): an outline of both the introductory and continuing training programs.	X			Section 4.4	

Feasibility and Plan of Operation Report Application Crosswalk - Attachment A
Kestrel Hawk Landfill (License #0572)
Racine, Racine County, Wisconsin

As requested in Attachment C of the November 29, 2022 Guidance Document, the following "crosswalk" or checklist has been provided to the Reviewer to denote locations within the Application the required components are found. The order the requirements from Attachment A are listed first with Attachment B references to the right.

APPLICATION REQUIREMENT	COMPLETE Y	N	NA	LOCATION	COMMENTS
(b) From NR 670.021, Landfills. Most of these additional informational requirements generally relate to active landfill operations and closure, which do not need to be addressed. However, NR 670.021(5) requires "…a description of how each landfill will be maintained and monitored after closure according to s. NR 664.0310(2)." This is covered in item 6 above.			X		Covered in item 6 above.
(14) Part A Application: NR 670.001(2) states, "A license application consists of two parts, part A (see s. NR 670.013) and a feasibility and plan of operation report (see s. NR 670.014 and applicable sections in ss. NR 670.015 to 670.029". [Note that a feasibility and plan of operation report (FPOR) is generally not needed for closed facilities; rather, the LTC license application; rather, for the purposes of s. NR 670.014, Wis. Adm. Code, the long-term care license application will constitute the facility's FPOR]. The following Part A application information specified in NR 670.013 should be included in the LTC license application:					
(a) NR 670.013(1): The activities conducted by the applicant which require it to obtain a license.	X			Section 1.3.2	
(b) NR 670.013(2): Name, mailing address and location, including latitude and longitude of the facility for which the application is submitted.	X			Section 1.2	
(c) NR 670.013(4): The operator's name, address, telephone number, ownership status and status as federal, state, private, public, or other entity.	X			Section 1.2	
(d) NR 670.013(5): The name, address, and phone number of the owner of the facility.	X			Section 1.2	
(e) NR 670.013(6): Whether the facility is located on Indian lands.	X			Section 1.2	
(f) NR 670.013(8): For existing facilities, all of the following:					
(i) A scale drawing of the facility showing the location of all past, present, and future treatment, storage, and disposal areas.	X			Section 1.5.1	
(ii) Photographs of the facility clearly delineating all existing structures; existing treatment, storage, and disposal areas; and sites of future treatment, storage, and disposal areas.	X			Section 1.5.2	
(g) NR 670.013(9): A description of the processes to be used for treating, storing, and disposing of hazardous waste, and the design capacity of these items.			X		No proposed treating, storage, and disposal of waste. Facility is a closed landfill that is not accepting waste materials onsite.
(h) NR 670.013(10): A specification of the hazardous wastes listed or designated under ch. NR 661 to be treated, stored or disposed of at the facility, an estimate of the quantity of wastes to be treated, stored or disposed annually, and a general description of the processes to be used for the wastes.	X			Section 1.3.2	
(i) NR 670.013(11): A listing of all permits, licenses or construction approvals received or applied for under any applicable federal or state regulations.	X			Section 1.4	
(j) NR 670.013(12): A topographic map (or other map if a topographic map is unavailable) extending one mile beyond the property boundaries of the source, depicting the facility and each of its intake and discharge structures; each of its hazardous waste treatment, storage or disposal facilities; each well where fluids from the facility are injected underground; and those wells, springs, other surface water bodies, and drinking water wells listed in public records or otherwise known to the applicant within ¼ mile of the facility property boundary.	X			Section 1.5.3	
(k) NR 670.013(13): A brief description of the nature of the business.	X			Section 1.0	

Feasibility and Plan of Operation Report Application Crosswalk - Attachment B
Kestrel Hawk Landfill (License #0572)
Racine, Racine County, Wisconsin

As requested in Attachment C of the November 29, 2022 Guidance Document, the following "crosswalk" or checklist has been provided to the Reviewer to denote locations within the Application the required components are found. The Attachment B requirements below include the cross-referenced Attachment A requirements.

APPLICATION REQUIREMENT	COMPLETE Y	N	NA	LOCATION	COMMENTS
(1) General Facility Description					
(a) A brief description of the property, location, and current status of the facility (A.1). The property description information should and briefly describe the history of the development of the facility's various landfill areas. A property map(s) depicting these areas and other key appurtenant improvements (e.g. the landfill gas control units, key leachate management components, corrective action components, office, and maintenance buildings, fencing and access points, etc.) should be included. The location information should include the address, the name of the local municipality in which it is located (and any affected municipalities), and the latitude/longitude (A.14.b). This should also address Indian lands (A.14.e) and floodplain information (A.4).	X			Section 1.2 Section 1.3.1	
(b) Facility owner, operator, and contact information. (A.5.d.iii; A.14.c; A.14.d)	X			Section 1.2	
(c) A brief history of the hazardous waste management activities at the facility that may be relevant to current hazardous waste requirements, such as the types, approximate quantities, locations, and timeframe of hazardous wastes disposed (A.1, A.14.a, A.14.h), the disposal methods used (e.g. the use of trenches dug into previously-landfilled solid wastes) and the different parts of the HWU that were used for hazardous waste disposal.	X			Section 1.3.2	
(d) A summary of capping units and segregation layers that were installed. (A.5.b)	X			Appendix D	
(e) A brief description of any other environmental licenses, permits, or authorizations that relate in any way to the HWU (A.14.i)	X			Section 1.4	
(f) Maps and drawings, which include maps/drawings that are needed to support the general description of the facility and that are:					
(i) required in NR 670.014(2)(s). (A.10) Note that if certain detailed NR 670.014(2)(s) mapping requirements are pertinent or not of value, the applicant should identify them and state the reason they are not needed.	X			Section 1.5.1	
(ii) required as part of the groundwater monitoring plan (A.11.b)				Figures 4, 5	
(iii) required for the Part A application. (A.14.f; A.14.j) Note that if certain NR 670.013 detailed mapping requirements are not of value, the applicant should identify them and state the reason they are not needed			X	Section 1.5.2 Section 1.5.3	Determined not to be of value.
(g) Photos. (A.14.f) Please describe the purpose of the photo, and indicate the date, location from which the photo was taken, and the direction faced	X			Section 1.5.2	
(h) If corrective action requirements in NR 664.0100 and NR 664.0101 are occurring the facility description briefly describe the program.	X			Section 1.3.3	

Feasibility and Plan of Operation Report Application Crosswalk - Attachment B
Kestrel Hawk Landfill (License #0572)
Racine, Racine County, Wisconsin

As requested in Attachment C of the November 29, 2022 Guidance Document, the following "crosswalk" or checklist has been provided to the Reviewer to denote locations within the Application the required components are found. The Attachment B requirements below include the cross-referenced Attachment A requirements.

APPLICATION REQUIREMENT	COMPLETE Y	N	NA	LOCATION	COMMENTS
(2) Long-Term Care Summary					
(a) Identification of the components and systems that require or facilitate long-term care (e.g. final cover, leachate and gas collection, conveyance and control systems, run-on control systems, run-off control systems, monitoring systems and components, etc.) (A.1; A.5.c.i; A.5.d.i; A.5.d.ii; A.6.c)	X			Section 2.0	
(b) A description of long-term leachate management and extraction goals/requirements	X			Section 2.3.1.1	
(c) A general summary of the site maintenance and repair program activities for these systems and components. (A.5.c.i; A.5.d.ii; A.6; A.6.a through e)	X			Section 2.0	
(d) A general description of LTC-related environmental monitoring programs (A.5.d.i; A.6.d)	X			Section 2.5	
(e) The minimum and remaining estimated duration of LTC and corrective action activities	X			Section 2.1	
(3) Long-Term Care Details					
(a) Final Cover (A.5.c.i; A.5.d.ii; A.6.a; A.6.e) This should include a detailed description of the final cover/cap system, and drawings/schematics that depict its key components and location(s). Different caps placed in different areas should be addressed. Separation barriers and cover systems that were left in place to separate and or/create barriers between landfill sections this should be described. This should also address any perimeter berms that provide structural support.	X			Section 3.1.1	
A detailed description of the routine and contingent operational and maintenance activities of the final cover systems should be provided.	X			Section 3.1.2	
(b) Leachate Management (A.5.c.i; A.5.d.ii; A.6.b) This should include a detailed description of leachate containment systems for the facility (such a liners, documented base, cutoff walls, etc. regarding the old east hill, west hill, and saddle area) and the leachate/gas collection systems used for these areas. It should also provide This should include a detailed description of the standards to be met for leachate extraction activities, the rationale for the standards, and associated reporting activities	X			Section 3.2 Section 3.3	
(c) Run-on and Run-off Controls (A.5.c.i; A.5.d.ii; A.6.e; A.13a.ii) This should include a detailed description of the run-on and run-off control system(s), drawings/schematics that depict its key components, and all routine and contingent operational and maintenance activities	X			Section 3.4	

Feasibility and Plan of Operation Report Application Crosswalk - Attachment B
Kestrel Hawk Landfill (License #0572)
Racine, Racine County, Wisconsin

As requested in Attachment C of the November 29, 2022 Guidance Document, the following "crosswalk" or checklist has been provided to the Reviewer to denote locations within the Application the required components are found. The Attachment B requirements below include the cross-referenced Attachment A requirements.

APPLICATION REQUIREMENT	COMPLETE Y	N	NA	LOCATION	COMMENTS
(d) Groundwater Monitoring Program (A.5.d.i; A.6.d; A.11; A.13.a.iii) This should include a detailed description the groundwater monitoring program, drawings/schematics that depict its key components, and all routine and contingent activities.					
The facility has indicated it is currently implementing a detection monitoring program per ss. NR 664.0091(1)(d) and NR 664.0098, Wis. Adm. Code for the HWU, so this should be articulated along with the basis for this status. The plan should then identify and describe how each of the applicable monitoring program requirements in NR 664.0091 through NR 664.0099 are met, including but not limited to requirements for well network/layout, parameters, frequencies, points of compliance, data evaluation, concentration limits, reporting, etc.); more information is presented in subsection C below. The plan should briefly address the triggers for moving into compliance monitoring.	X			Section 3.5.1.3.1	Hazardous constituents have been detected at concentrations exceeding concentration limits (i.e., vinyl chloride in the 141U Area); therefore, the HWU is in corrective action monitoring. Provisions (a) and (b) of NR 664.0090(6) apply to the KHL groundwater monitoring program. Therefore, we request that the department replace the requirements of NR 664.0091 to 664.0100 with the requirements of the current groundwater monitoring program.
(i) We recommend that the groundwater monitoring plan address the applicable requirements of NR 507. The plan may be written and organized in a manner typical of other monitoring plans (such as NR 507 plans) but must and address each of the applicable monitoring program requirements in NR 664.0091 through NR 664.0099.	X			Section 3.5.1.3.1	The groundwater monitoring plan address requirements of NR 507; however, provisions (a) and (b) of NR 664.0090(6) apply to the KHL groundwater monitoring program. Therefore, we request that the department replace the requirements of NR 664.0091 to 664.0100 with the requirements of the current groundwater monitoring program.
(ii) Note that NR 670.014(3) requires information regarding protection of groundwater and the monitoring plan, including for example site hydrogeologic information, a map, and specific details regarding the monitoring program. Please see section 11 of Attachment A (A.11) for more information.	X			See Section 11 of Attachment A Cross Walk	
(iii) The plan should address each of the applicable monitoring program requirements in NR 664.0091 through NR 664.0099. We recommend that the plan include a "crosswalk" that identifies where each of these requirements is addressed. The following is list of examples of these requirements for facilities in detection monitoring	X			Section 3.5.1.3.1	Provisions (a) and (b) of NR 664.0090(6) apply to the KHL groundwater monitoring program. Therefore, we request that the department replace the requirements of NR 664.0091 to 664.0100 with the requirements of the current groundwater monitoring program.
NR 664.0091(1)(a) Compliance monitoring	X			Table 5	
NR 664.0091(1)(b) Corrective action - Groundwater Protection Standard	X			Table 5	
NR 664.0091(1)(c) Corrective action - Concentration Limits	X			Table 5	
NR 664.0091(1)(d) Detection monitoring	X			Table 5	
NR 664.0091(1)(e) Certified lab use	X			Table 5	
NR 664.0091(2) Department shall specify program elements in license	X			Table 5	
NR 664.0092 Department shall specify the groundwater protection standard	X			Table 5	
NR 664.0093 Hazardous constituents	X			Table 5	
NR 664.0094 Concentration limits	X			Table 5	
NR 664.0095 Point of standards application	X			Table 5	
NR 664.0096 Compliance period	X			Table 5	
NR 664.0097(1) Number, location, and depth of wells	X			Table 5	See section 3.5.1.3, Appendix H, and the August 30, 2017 Conditional Plan Modification Approval (Appendix A.5) for monitoring program details.
NR 664.0097(2) Multiple units	X			Table 5	
NR 664.0097(3) Casing	X			Table 5	
NR 664.0097(4) Sampling and analysis procedures	X			Table 5	
NR 664.0097(5) Sampling and analysis methods	X			Table 5	
NR 664.0097(6) GW elevation	X			Table 5	
NR 664.0097(7) Establishment of background	X			Table 5	
NR 664.0097(8) Data evaluation and methods	X			Table 5	
NR 664.0097(9) Data evaluation and methods	X			Table 5	
NR 664.0097(10) Recordkeeping and reporting	X			Table 5	
NR 664.0098 Detection monitoring program	X			Table 5	
NR 664.0099 Compliance monitoring program	X			Table 5	
NR 664.0100 Corrective action program	X			Table 5	

Feasibility and Plan of Operation Report Application Crosswalk - Attachment B
Kestrel Hawk Landfill (License #0572)
Racine, Racine County, Wisconsin

As requested in Attachment C of the November 29, 2022 Guidance Document, the following "crosswalk" or checklist has been provided to the Reviewer to denote locations within the Application the required components are found. The Attachment B requirements below include the cross-referenced Attachment A requirements.

APPLICATION REQUIREMENT	COMPLETE Y	N	NA	LOCATION	COMMENTS
The plan should clearly identify and justify any alternative requirement proposed pursuant to s.NR 664.0090(6), Wis, Adm. Code.					Groundwater monitoring program is conducted as approved in previous WDNR approvals.
(iv) Certain parts of NR 664.0091 through NR 664.0099 refer to requirements to be established in the license and/or by the department. The groundwater monitoring program plan presented by the facility should identify and propose these requirements for the department's consideration in reviewing and approving the plan as part of the re-issued LTC license.	X			Section 3.5.1.3, Table 5	Provisions (a) and (b) of NR 664.0090(6) apply to the KHL groundwater monitoring program. Therefore, we request that the department replace the requirements of NR 664.0091 to 664.0100 with the requirements of the current groundwater monitoring program.
(e) Benchmarks: Please describe the locations of surveyed benchmarks and how they are protected and maintained. (A.6.f)	X			Section 3.7	
(f) Corrective Action: Please describe in detail the corrective actions taken to date, and future corrective actions planned. Include descriptions of equipment, operations, and monitoring related to the corrective action program	X			Section 3.8	
(g) Please address any other facility components and systems identified in section 2 above that require or facilitate long-term care.	X			Section 3	
(4) Other Applicable NR 664 Requirements					
(a) Security procedures and equipment (A.2.a; A.5.c.ii)	X			Section 4.1	
(b) Equipment failures (A.13.a.iv)	X			Section 4.2	
(c) Inspection program (A.2.b; A.5.c.ii; A.6): This should include documentation forms and protocols for maintaining the operating record.				Section 3 Section 4.3	
(i) The inspection program should include all the components fitting within NR 664.0015(2)9(a), which includes "monitoring equipment, safety and emergency equipment, security devices and operating and structural equipment (such as dikes and sump pumps) that are important to preventing, detecting, or responding to environmental or human health hazards". This would also include, for example, monitoring wells, fencing/gates, run-off controls, etc.	X				
(ii) The inspection program should identify the types of problems (e.g., malfunctions or deterioration) which are to be looked for during the inspection, per NR 664.0015(2)(c).	X				
(iii) The inspection program should describe the frequencies of inspections, per NR 664.0015(2)(d).	X				
(iv) In addition to meeting NR 664.0015(4), the inspection forms should match with the LTC plan's inspection program description. clearly identify the item(s) that are inspected.	X				
(v) The inspection forms should provide for documentation of remedies/repairs per NR 664.0015(3).	X				
(d) Personnel training program (A.5.c.ii; A.13.a.vii): This should describe the training program and associated documentation/records. At and minimum, the program should describe training that is necessary or appropriate for proper contingency plan implementation, and necessary for proper inspections and repairs to occur, and awareness training such that key facility components (e.g. the cap and monitoring equipment) are not inadvertently damaged by personnel doing work at the facility. The program should describe who (which positions or roles) receives the training and the training frequency.	X			Section 4.4	
(e) The Contingency Plan (A.5.c.ii; A.13.a.i) which should also address all applicable preparedness and prevention requirements in subch. C of ch. NR 664, Wis. Adm. Code.	X			Section 4.5	

Feasibility and Plan of Operation Report Application Crosswalk - Attachment B
Kestrel Hawk Landfill (License #0572)
Racine, Racine County, Wisconsin

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APPLICATION REQUIREMENT	COMPLETE Y	N	NA	LOCATION	COMMENTS
(f) How personnel are protected (A.13.a.v)	X			Section 4.6.1	
(g) How releases to the atmosphere are prevented (A.13.a.vi)				Section 4.6.2	
(h) The contingent long-term care plan (and cost estimates) for tank systems per NR 664.0197. (A.5.e) Note that this may not apply because of the WWTU exclusion, which exempts certain units from NR 664 and NR 670 requirements; see NR 664.0001(7)(f); if this exclusion applies the facility should assert this, and identify the tank system components to which it applies.			X	Section 4.7	
(i) The operating record requirements of NR 664.0073. This should describe operating record and recordkeeping requirements, such as the following: (i) NR 664.0073(2)(d), contingency plan incident records (ii) NR 664.0073(2)(e), inspection records (iii) NR 664.0073(2)(h), LTC cost estimates (iv) NR 664.0016(4), training records	X			Section 4.8	
(j) The annual reporting requirements per s. NR 664.0075, Wis. Adm Code.	X			Section 4.9	
(k) Documentation that demonstrates compliance with the requirements for long-term care notices per s. NR 664.0119(1) , Wis. Adm. Code (A.7.a) and the deed notice/certification per s. NR 664.0119(1), Wis. Adm. Code (A.7.b and c)	X			Section 4.10	
(5) Long-Term Care Cost Estimate (A.9)					
The long-term care cost estimate should be certified by a qualified professional engineer and/or qualified professional geologist. The cost estimate should be summarized in tabular form showing tasks and subtasks in rows, and units, quantities, unit costs, and extended totals, along with a grand total of all tasks and subtasks, and provide sufficient detail and support to ensure that they:	X			Section 5.0	
(a) estimate LTC and corrective action costs for the duration of the long-term care period;					
(b) are based on and present costs for each of the discreet tasks and subtasks described in the work descriptions contained in the LTC Plan. An example of a task may be groundwater monitoring, with example subtasks for sampling, lab analyses, data review, reporting, etc.;					
(c) for each discrete task and sub-task, include units, quantities, unit costs, and extended totals, along with a grand total of all tasks and subtasks;					
(d) for each quantity and unit cost, provide the source of or basis for the numbers;					
(e) are based on exclusive use of a third parties to perform the work, and include costs to procure, administer and manage the third-party work;					
(f) include a minimum 10% contingency for unforeseen activities;					
(g) clearly show the basis year of the cost estimate (costs “as of” year, e.g. “all costs are in 2021 dollars”); and					
(h) cover all costs until the end of the minimum 40-year long-term care financial assurance period.					
The department recommends that the LTC Plan discuss a minimum “rolling 30-year window” (i.e. to begin during Year 10 of the LTC period) for its LTC cost estimate (and associated financial assurance) that annually maintains financial assurance for the following 30 years, until the facility demonstrates (and the department approves) that a shorter time period is justified.					
(6) Long-Term Care Financial Assurance (A.9) This should address documentation to demonstrate the establishment of LTC and corrective action financial assurance.	X			Section 6.0	

Feasibility and Plan of Operation Report Application Crosswalk - Attachment B
Kestrel Hawk Landfill (License #0572)
Racine, Racine County, Wisconsin

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APPLICATION REQUIREMENT	COMPLETE Y	N	NA	LOCATION	COMMENTS
(7) Solid Waste Management Units and Corrective Action (A.12)					
This should identify and describe all SWMUs (A.12.a - c). Note that NR 670.014(4)(a)1. through (a)5. specifies minimum information to be provided for each SWMU (A.12.a). Also note that that NR 670.014(4)(b) requires all available information pertaining to any release of hazardous wastes or hazardous constituents from the unit or units. Note that the facility may refer to previous reports rather than repeating such information, to the extent the previous reports may provide some of this information. In particular, the facility should consider the waste disposal areas outside of the HWU, as well as any other SWMUs at the facility.	X			Section 7.1	
This section should provide a summary of monitoring-related information that was developed previously and led to the need to enter corrective action, and should describe in detail the corrective actions taken to date, and future corrective actions planned.	X			Section 7.2	
(8) Other Hazardous Waste Requirements in NR 600-679					
To memorialize other hazardous waste compliance details, the LTC Plan should include information assembled by KHL as part of the hazardous waste compliance assessment that concluded with the department's June 4, 2021 Conditional Close-Out letter, such as: • Generator waste determinations • Documentation regarding gas processing residuals, including condensate • WWTU exemption support	X			Section 8.0	

Appendix C: WDNR and EPA Forms

- C.1 – WDNR Form 4400-117 “Solid Waste Facility Closure and Long-Term Care License Application”
- C.2 – EPA Form 8700-12 “Site Identification Form”
- C.3 – EPA Part A Form

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Appendix C.1
WDNR Form 4400-117 “Solid Waste Facility Closure and Long-Term Care License Application”

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State of Wisconsin
Department of Natural Resources
dnr.wi.gov

Solid Waste Facility Closure and Long Term Care License Application

Form 4400-117 (R 1/15)

Notice: Under s. NR 520.04, Wis. Adm. Code, owners or operators of landfills are required to have a long term care license during the closure and long term care period. Failure to comply with that requirement may result in forfeitures of $10-$5000 for each day of violation and injunctive relief. Personally identifiable information provided on this form will be used for program administration and will also be provided to other state and federal agencies as required by law. It will also be available to requesters as required under Wisconsin's open records law [ss. 19.31 - 19.39, Wis. Stats.].

Facility Name	License Number
Kestrel Hawk Landfill	0572

Authorized Representative Name	Title
Matt Healy	Vice President
Address	**Telephone Number (include area code)**
8525 183rd Street, Suite K	(708) 297-3990

City	State	ZIP Code	DNR FID No.
Tinley Park	IL	60487	252076990

Licensee Name	Property Owner Name
Republic Services of Wisconsin, Limited Partnership	Republic Services of Wisconsin, Limited Partnership

A license fee of $6,600.00 is required pursuant to s. NR 520.04(3), Wis. Adm. Code. Make check payable to: Wisconsin Department of Natural Resources. Send application and payment to:

Michael Schmit – WA/5
Wisconsin Department of Natural Resources
Box 7921
Madison WI 53707

Site Location Legal Description

N2	of		¼ of Section	23	, Town	03	N, Range	22	◉E ○W ,	Racine County
	of		¼ of Section		, Town		N, Range		○E ○W ,	County
	of		¼ of Section		, Town		N, Range		○E ○W ,	County
	of		¼ of Section		, Town		N, Range		○E ○W ,	County

Location Address (Road - Highway)

1969 Oakes Road

Township	Size In Acres
Racine	125.6

I certify that the information provided on this application is true and accurate to the best of my knowledge and belief.

Printed Name and Title of Authorized Representative
Matthew Healy

Signature and Title of Authorized Representative — VICE PRESIDENT

Date Signed: 3-17-2025

LEAVE BLANK - WISCONSIN DEPARTMENT OF NATURAL RESOURCES STAFF USE ONLY

Amount of Fee Received	Date Fee Received	Check Number

Date Application Received	Date License Issued	Staff Approval	Date Approved

LE03-AWIN MANAGEMENT INC
REPUBLIC SERVICES

No **20081366**
Check Date: 03/19/2025

WISCONSIN DEPT OF NATURAL RESOURCES PO BOX 78816 ACCOUNTS RECEIVABLE
MILWAUKEE, WI 53278-0816

Vendor Number: 10020082

INVOICE	DATE	DESCRIPTION	GROSS AMOUNT	DISCOUNT	NET AMOUNT
0572-031825	03/14/2025 URG RTD 3063 -	ATTN: STEVE MACK	$6,600.00	$0.00	$6,600.00
Detach at perforation Before Depositing Check		**TOTALS:**	**$6,600.00**	**$0.00**	**$6,600.00**

THIS IS A WATERMARKED PAPER - DO NOT ACCEPT WITHOUT NOTING WATERMARK - HOLD TO LIGHT TO VERIFY WATERMARK

REPUBLIC SERVICES
LE03-AWIN MANAGEMENT INC
18500 NORTH ALLIED WAY
PHOENIX ARIZONA 85054

Bank of America
52-153/112 ME

Check Date
03/19/2025

Number
20081366

Security Features Included. Details on back.

Amount

PAY SIX THOUSAND SIX HUNDRED AND 00/100 DOLLARS*****

$***6,600.00

Void after 180 Days

PAY TO THE ORDER OF
WISCONSIN DEPT OF NATURAL RESOURCES
PO BOX 78816
ACCOUNTS RECEIVABLE
MILWAUKEE, WI 53278-0816

Authorized Signature

⑈0020081366⑈ ⑆011201539⑆ 000080231000⑈

Appendix C.2
EPA Form 8700-12 “Site Identification Form”

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United States Environmental Protection Agency
RCRA SUBTITLE C SITE IDENTIFICATION FORM

1. Reason for Submittal (Select only one.)

☑	Obtaining or updating an EPA ID number for on-going regulated activities (Items 10-17 below) that will continue for a period of time.
☐	Submitting as a component of the Hazardous Waste Report for _____ (Reporting Year)
	☐ Site was a TSD facility, a reverse distributor, and/or generator of ≥ 1,000 kg of non-acute hazardous waste, > 1 kg of acute hazardous waste, or > 100 kg of acute hazardous waste spill cleanup in **one or more months of the reporting year** (or State equivalent LQG regulations)
☐	Notifying that regulated activity is no longer occurring at this Site
☐	Obtaining or updating an EPA ID number for conducting Electronic Manifest Broker activities
☐	Submitting a new or revised Part A (permit) Form

2. Site EPA ID Number

W	I	D	0	7	6	1	7	1	0	0	8

3. Site Name

Kestrel Hawk Landfill

4. Site Location Address

Street Address **1969 Oakes Road**		
City, Town, or Village **Racine**		County **Racine**
State **WI**	Country **USA**	Zip Code **53406**
Latitude **42.708843**	Longitude **-87.864133**	☐ Use Lat/Long as Primary Address

5. Site Mailing Address ☑ Same as Location Street Address

Street Address		
City, Town, or Village		
State	Country	Zip Code

6. Site Land Type

☑ Private ☐ County ☐ District ☐ Federal ☐ Tribal ☐ Municipal ☐ State ☐ Other

7. North American Industry Classification System (NAICS) Code(s) for the Site (at least 5-digit codes)

A. (Primary)	**562212**	C.	**562219**
B.	**562211**	D.	

8. Site Contact Information ☐ Same as Location Address

First Name **Michael**	MI	Last Name **Gilligan**
Title **Environmental Manager**		
Street Address **26W580 Schick Road**		
City, Town, or Village **Hanover Park**		
State **IL**	Country **USA**	Zip Code **60133**
Email **mgilligan@republicservices.com**		
Phone **224-970-1133**	Ext	Fax

9. Legal Owner and Operator of the Site

A. Name of Site's Legal Owner ☐ Same as Location Address

Full Name **Republic Services of Wisconsin LP**		Date Became Owner (mm/dd/yyyy)
Owner Type ☑ Private ☐ County ☐ District ☐ Federal ☐ Tribal ☐ Municipal ☐ State ☐ Other		
Street Address **5353 East City North Drive**		
City, Town, or Village **Phoenix**		
State **AZ**	Country **USA**	Zip Code **85054**
Email **mgilligan@republicservices.com**		
Phone **224-970-1133**	Ext	Fax
Comments		

B. Name of Site's Legal Operator ☐ Same as Location Address

Full Name **Republic Services of Wisconsin LP**		Date Became Operator (mm/dd/yyyy)
Operator Type ☑ Private ☐ County ☐ District ☐ Federal ☐ Tribal ☐ Municipal ☐ State ☐ Other		
Street Address **5353 East City North Drive**		
City, Town, or Village **Phoenix**		
State **AZ**	Country **USA**	Zip Code **85054**
Email **mgilligan@republicservices.com**		
Phone **224-970-1133**	Ext	Fax
Comments		

10. Type of Regulated Waste Activity (at your site)

Mark "Yes" or "No" for all current activities (as of the date submitting the form); complete any additional boxes as instructed.

A. Hazardous Waste Activities

☑ Y ☐ N	1. Generator of Hazardous Waste—If "Yes", mark only one of the following—a, b, c		
	☑	a. LQG	-Generates, in any calendar month, 1,000 kg/mo (2,200 lb/mo) or more of non-acute hazardous waste (includes quantities imported by importer site); or - Generates, in any calendar month, or accumulates at any time, more than 1 kg/mo (2.2 lb/mo) of acute hazardous waste; or - Generates, in any calendar month or accumulates at any time, more than 100 kg/mo (220 lb/mo) of acute hazardous spill cleanup material.
	☐	b. SQG	100 to 1,000 kg/mo (220-2,200 lb/mo) of non-acute hazardous waste and no more than 1 kg (2.2 lb) of acute hazardous waste and no more than 100 kg (220 lb) of any acute hazardous spill cleanup material.
	☐	c. VSQG	Less than or equal to 100 kg/mo (220 lb/mo) of non-acute hazardous waste.
☐ Y ☑ N	2. Short-Term Generator (generates from a short-term or one-time event and not from on-going processes). If "Yes", provide an explanation in the Comments section. *Note: If "Yes", you MUST indicate that you are a Generator of Hazardous Waste in Item 10.A.1 above.*		
☐ Y ☑ N	3. Treater, Storer or Disposer of Hazardous Waste—Note: Part B of a hazardous waste permit is required for these activities.		
☐ Y ☑ N	4. Receives Hazardous Waste from Off-site		
☐ Y ☑ N	5 Recycler of Hazardous Waste		
	☐	a. Recycler who stores prior to recycling	
	☐	b. Recycler who does not store prior to recycling	
☐ Y ☑ N	6. Exempt Boiler and/or Industrial Furnace—If "Yes", mark all that apply.		
	☐	a. Small Quantity On-site Burner Exemption	
	☐	b. Smelting, Melting, and Refining Furnace Exemption	

B. Waste Codes for Federally Regulated Hazardous Wastes. Please list the waste codes of the Federal hazardous wastes handled at your site. List them in the order they are presented in the regulations (e.g. D001, D003, F007, U112). Use an additional page if more spaces are needed.

F039						

C. Waste Codes for State Regulated (non-Federal) Hazardous Wastes. Please list the waste codes of the State hazardous wastes handled at your site. List them in the order they are presented in the regulations. Use an additional page if more spaces are needed.

11. Additional Regulated Waste Activities (NOTE: Refer to your State regulations to determine if a separate permit is required.)

A. Other Waste Activities

☐ Y ☑ N	1. Transporter of Hazardous Waste—If "Yes", mark all that apply.
☐	a. Transporter
☐	b. Transfer Facility (at your site)
☐ Y ☑ N	2. Underground Injection Control
☐ Y ☑ N	3. United States Importer of Hazardous Waste
☐ Y ☑ N	4. Recognized Trader—If "Yes", mark all that apply.
☐	a. Importer
☐	b. Exporter
☐ Y ☑ N	5. Importer/Exporter of Spent Lead-Acid Batteries (SLABs) under 40 CFR 266 Subpart G—If "Yes", mark all that apply.
☐	a. Importer
☐	b. Exporter

B. Universal Waste Activities

☐ Y ☑ N	1. Large Quantity Handler of Universal Waste (you accumulate 5,000 kg or more) - If "Yes" mark all that apply. Note: Refer to your State regulations to determine what is regulated.
☐	a. Batteries
☐	b. Pesticides
☐	c. Mercury containing equipment
☐	d. Lamps
☐	e. Aerosol Cans
☐	f. Other (specify) _____
☐	g. Other (specify) _____
☐ Y ☑ N	2. Destination Facility for Universal Waste Note: A hazardous waste permit may be required for this activity.

C. Used Oil Activities

☐ Y ☑ N	1. Used Oil Transporter—If "Yes", mark all that apply.
☐	a. Transporter
☐	b. Transfer Facility (at your site)
☐ Y ☑ N	2. Used Oil Processor and/or Re-refiner—If "Yes", mark all that apply.
☐	a. Processor
☐	b. Re-refiner
☐ Y ☑ N	3. Off-Specification Used Oil Burner
☐ Y ☑ N	4. Used Oil Fuel Marketer—If "Yes", mark all that apply.
☐	a. Marketer Who Directs Shipment of Off-Specification Used Oil to Off-Specification Used Oil Burner
☐	b. Marketer Who First Claims the Used Oil Meets the Specifications

D. Pharmaceutical Activities

☐ Y ☑ N	1. Operating under 40 CFR Part 266, Subpart P for the management of hazardous waste pharmaceuticals—if "Yes", mark only one. Note: See the item-by-item instructions for definitions of healthcare facility and reverse distributor.
☐	a. Healthcare Facility
☐	b. Reverse Distributor
☐ Y ☑ N	2. Withdrawing from operating under 40 CFR Part 266, Subpart P for the management of hazardous waste pharmaceuticals. Note: You may only withdraw if you are a healthcare facility that is a VSQG for all of your hazardous waste, including hazardous waste pharmaceuticals.

12. Eligible Academic Entities with Laboratories—Notification for opting into or withdrawing from managing laboratory hazardous wastes pursuant to 40 CFR Part 262, Subpart K.

☐ Y ☑ N	A. Opting into or currently operating under 40 CFR Part 262, Subpart K for the management of hazardous wastes in laboratories— If "Yes", mark all that apply. Note: See the item-by-item instructions for definitions of types of eligible academic entities.
☐	1. College or University
☐	2. Teaching Hospital that is owned by or has a formal written affiliation with a college or university
☐	3. Non-profit Institute that is owned by or has a formal written affiliation with a college or university
☐ Y ☑ N	B. Withdrawing from 40 CFR Part 262, Subpart K for the management of hazardous wastes in laboratories.

13. Episodic Generation

☐ Y ☑ N	Are you an SQG or VSQG generating hazardous waste from a planned or unplanned episodic event, lasting no more than 60 days, that moves you to a higher generator category. If "Yes", you must fill out the Addendum for Episodic Generator.

14. LQG Consolidation of VSQG Hazardous Waste

☐ Y ☑ N	Are you an LQG notifying of consolidating VSQG Hazardous Waste Under the Control of the Same Person pursuant to 40 CFR 262.17(f)? If "Yes", you must fill out the Addendum for LQG Consolidation of VSQG hazardous waste.

15. Notification of LQG Site Closure for a Central Accumulation Area (CAA) (optional) OR Entire Facility (required)

☐ Y ☑ N	LQG Site Closure of a Central Accumulation Area (CAA) or Entire Facility.
	A. ☐ Central Accumulation Area (CAA) or ☐ Entire Facility
	B. Expected closure date: _____ mm/dd/yyyy
	C. Requesting new closure date: _____ mm/dd/yyyy
	D. Date closed : _____ mm/dd/yyyy ☐ 1. In compliance with the closure performance standards 40 CFR 262.17(a)(8) ☐ 2. Not in compliance with the closure performance standards 40 CFR 262.17(a)(8)

16. Notification of Hazardous Secondary Material (HSM) Activity

☐ Y ☑ N	Are you notifying under 40 CFR 260.42 that you will begin managing, are managing, or will stop managing hazardous secondary material under 40 CFR 260.30, 40 CFR 261.4(a)(23), (24), (25), or (27)? If "Yes", you must fill out the Addendum to the Site Identification Form for Managing Hazardous Secondary Material.

17. Electronic Manifest Broker

☐ Y ☑ N	Are you notifying as a person, as defined in 40 CFR 260.10, electing to use the EPA electronic manifest system to obtain, complete, and transmit an electronic manifest under a contractual relationship with a hazardous waste generator?

18. Comments (include item number for each comment)

19. Certification I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations. **Note: For the RCRA Hazardous Waste Part A permit Application, all owners and operators must sign (see 40 CFR 270.10(b) and 270.11).**

Signature of legal owner, operator or authorized representative	Date (mm/dd/yyyy) 8/31/2026
Printed Name (First, Middle Initial Last) Matthew Healy	Title Vice President
Email MHeely@republicservices.com	

Signature of legal owner, operator or authorized representative	Date (mm/dd/yyyy)
Printed Name (First, Middle Initial Last)	Title
Email	

Appendix C.3
EPA Part A Form

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United States Environmental Protection Agency

HAZARDOUS WASTE PERMIT PART A FORM

1. Facility Permit Contact

First Name	**Khalid**	MI		Last Name	**Umer**
Title	**Environmental Manager**				
Email	**kumer@republicservices.com**				
Phone	**630-894-1554**	Ext		Fax	

2. Facility Permit Contact Mailing Address

Street Address	**26W580 Schick Road**		
City, Town, or Village	**Hanover Park**		
State **IL**	Country **USA**	Zip Code **60133**	

3. Facility Existence Date (mm/dd/yyyy)

5/16/1975

4. Other Environmental Permits

A. Permit Type	B. Permit Number												C. Description
E	**2**	**5**	**2**	**0**	**7**	**6**	**9**	**9**	**A**	**-**	**P**	**3**	**0**	**Air Pollution Control Operation Permit**
E	**W**	**I**	**-**	**S**	**0**	**6**	**7**	**8**	**5**	**7**	**-**	**5**		**WDPES**
R	**W**	**I**	**D**	**7**	**6**	**1**	**7**	**1**	**0**	**0**	**8**			**RCRA**

5. Nature of Business

Kestrel Hawk Landfill is a solid waste disposal facility in Racine, Racine County, Wisconsin and is owned and operated by Republic Services of Wisconsin, Limited Partnership. The landfill accepted hazardous waste from the early to mid-1970a until 1982. Non-hazardoua waste disposal continued at the landfill and its expansions until 2023 when the landfill ceased accepting waste. Final cover was placed over the landfill throughout ite operations and was completed in 2024. Kestrel Hawk Landfill is proposing to enter into its long-term care period.

6. Process Codes and Design Capacities

Line Number		A. Process Code			B. Process Design Capacity		C. Process Total Number of Units	D. Unit Name
					(1) Amount	(2) Unit of Measure		
X	1	D	8	0	38	acres	1	Corridors 1-6

7. Description of Hazardous Wastes (Enter codes for Items 7.A, 7.C and 7.D(1))

Line No.		A. EPA Hazardous Waste No.				B. Estimated Annual Qty of Waste	C. Unit of Measure	D. Processes								
								(1) Process Codes								(2) Process Description (if code is not entered in 7.D1))
X	1	F	0	3	9	8,544.09	E									Off-site treatment at WWT

8. Map

Attach to this application a topographical map, or other equivalent map, of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all spring, rivers, and other surface water bodies in this map area. See instructions for precise requirements.

9. Facility Drawing

All existing facilities must include a scale drawing of the facility. See instructions for more detail.

10. Photographs

All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment, and disposal areas; and sites of future storage, treatment, or disposal areas. See instructions for more detail.

11. Comments

Refer to Section 1.5 of the Kestrel Hawk Landfill Feasilibity and Plan of Operation Report for discussions relating to requirements 8, 9, and 10.

Appendix D: Closure Report – Corridors 1-6 Closure Status

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Closure Report

Corridors 1-6 Closure Status
Kestrel Hawk Landfill
Racine, Wisconsin

June 2020
Revised August 2021
Revised April 2025

Prepared For:

Kestrel Hawk Landfill
1969 Oakes Road
Racine, Wisconsin 53406

Prepared By:

TRC
999 Fourier Drive, Suite 101
Madison, Wisconsin 53717

Todd Martin
Principal Project Manager

BreAnne Kahnk, PE
Senior Project Engineer



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APPENDICES

Appendix A: WDNR Correspondence
Appendix B: RCRA Cover Plans
Appendix C: Closure Cost Estimate

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ACRONYM LIST

HWU	Hazardous Waste Unit
KHL	Kestrel Hawk Landfill
NON	Notice of Noncompliance
RCRA	Resource Conservation and Recovery Act
USEPA	United States Environmental Protection Agency
WDNR	Wisconsin Department of Natural Resources

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Certification Statement

I, BreAnne Kahnk, hereby certify that I am a registered professional
BreAnne N. Kahnk
engineer in the State of Wisconsin, registered in accordance with the requirements of Chapter A-E 4, Wisconsin Administrative Code; that this document has been prepared in accordance with the Rules of Professional Conduct in Chapter A-E 8, Wisconsin Administrative Code; and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with applicable requirements in Chapters NR 500 to NR 538 and Chapter NR 664, Wisconsin Administrative Code.

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Revision Log

Revision Date	Summary of Revisions
06/12/2020	Initial Issue.
04/05/2021	Updated sections 2.4, 3.1, and 4.0 in response to the Addendum to Notice of Noncompliance.
08/27/2021	Changed references from Wisconsin Administrative Code section NR 665 to the appropriate equivalent in Wisconsin Administrative Code section NR 664. Revised Figure 3 for the 2019 cover construction event. Updated Appendix C closure cost estimate. Added approval letters to Appendix A for final cover construction events in the Northwest Expansion. Added Section 2.5.
04/01/2025	Updated Sections 1.0, 2.3, 2.4, 2.5, 3.0, and 4.0 due to final cover events being completed. Updated Figures 2 and 3 and Appendices A and C.

1.0 Introduction

The Kestrel Hawk Landfill (KHL) is located in Racine, Wisconsin, in the North ½ of Section 23, T3N, R22E, Racine County (**Figure 1**). KHL (License No. 0572) is owned and operated by Republic Services of Wisconsin, Limited Partnership (Republic).

KHL consists of the Old Site Landfill and the Northwest Expansion Landfill (Northwest Expansion). The Old Site Landfill comprises approximately 70.1 acres and consists of an encapsulated Resource Conservation and Recovery Act (RCRA) hazardous waste unit (HWU) (Corridors 1 through 6) and non-hazardous waste units consisting of Corridors 7 and 7A, the former City of Racine Landfill, and Corridors 8, 9, and 10, and Corridor 11. Final cover construction for KHL was completed in 2024. **Figure 2** depicts the layout of the KHL.

The landfill was formerly known as the City of Racine Landfill, Land Reclamation, Ltd, and the Land Reclamation Company Landfill, before being acquired by Republic in 1998. The majority of the regulatory determinations, design, and implementation of closure activities for the KHL HWU was performed when the landfill was owned by a different entity occurring between the late 1980s and mid-1990s.

The Wisconsin Department of Natural Resources (WDNR) issued a Notice of Noncompliance, Hazardous Wasted Compliance Assessment (NON) on December 9, 2019. In response to the NON, Republic has been providing requested information in a series of letter responses. A Conditional Close-out related to the NON was issued by the WDNR on June 4, 2021.

This document presents the history of construction, construction documentation, and Wisconsin Department of Natural Recourses (WDNR) approvals of construction.

1.1 Objective

This report has been developed to present the items that have been implemented according to the approved closure plan for the HWU and demonstrate the HWU meets the closure performance standard per NR 664. This report is being developed to address items 9 and 14 of the Notice of Noncompliance issued by the WDNR on December 9, 2019 and the Addendum to Notice of Noncompliance issued by the WDNR on September 16, 2020.

1.2 Closure Plan Requirements

The closure plan approved for the HWU was approved by the WDNR on March 31,1988 (**Appendix A**). This approval required construction of the following items for closure of the HWU:

- Barrier Wall
- Containment Structure
- Slope Stabilization of the South Slope
- Final Cover System
- Landfill Gas and Leachate Extraction System

The above items have been constructed at KHL and previously approved by the WDNR.

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2.0 History of Closure Implementation

The actions that have been implemented by Republic and previous owners of KHL to satisfy the closure of the HWU are presented in the following sections.

The required closure features for the HWU were defined in the WDNR's March 31, 1988 Plan of Operation Approval for the modifications to the hazardous waste closure and long-term care plan. The description of these features as defined in the plan modification are reproduced below with the tense updated:

1. ***Barrier Wall.*** The term "barrier wall" refers to the structure that separates the existing HWU from future contiguous nonhazardous areas used for solid waste disposal. This structure consists of a minimum 7-foot-thick clay separation barrier which is keyed into the existing recompacted clay liner of corridor 6 and into the native clay soils along the perimeter of the HWU. It also includes granular drainage layers and leachate collection piping on both sides of the clay barrier. The barrier wall along the western end of the HWU also includes a slurry cut off-wall and drainage trench below the compacted clay separation barrier.

2. ***Containment Structure.*** The term "containment structure" refers to the structure constructed along the southern boundary of the hazardous waste unit and the southern and western sides of the City of Racine site. This structure consists of a trench excavation into unit 1 soils, installation of a two-foot thick bentonite slurry cutoff wall extending from the base of the excavation to a minimum of 3 feet into geologic unit 3 and a drainage trench located at the base of unit 2. The excavation into unit 1 is to be lined with a two-foot thick recompacted clay liner.

3. ***RCRA Cover.*** The term "RCRA cover," refers to a composite final cover required by United States Environmental Protection Agency (USEPA) for the HWU. This multi-component cover consists of a recompacted clay layer, a synthetic flexible membrane liner, drainage layer, a needle punched geotextile, a soil rooting zone and a layer of topsoil. The final cover is to be seeded, fertilized and mulched. The RCRA cover must cover the entire HWU as well as the portion of corridor 7 which lies vertically above the barrier wall. The RCRA cover will cover approximately 27 acres over corridors 1 through 7.

4. ***Slope Stabilization.*** The term "slope stabilization" refers to the requirements necessary to properly close the exterior slopes of HWU in such a manner as to minimize maintenance. As required by chs.NR 180 and NR 181, Wis. Adm. Code, and in past correspondence, this is reflected as a maximum slope of 3 horizontal to 1 vertical (3:1).

5. ***Drainage Trench.*** The term "drainage trench" refers to the trench excavation in which a perforated PVC pipe is laid and backfilled with gravel. The drainage trenches were designed to intercept, collect, and transport contaminated groundwater and leachate.

6. ***Slurry Cutoff Wall.*** The term "slurry cutoff wall" refers to the excavation through subsurface permeable soil which was backfilled with a bentonite/soil slurry mixture. The cutoff wall was keyed into underlying clay soils."

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2.1 Barrier Walls – North and West Installations

The WDNR's letter on March 31, 1988, "Modifications to the Hazardous Waste Closure and Long-Term Care Plan," required construction of Barrier Walls between the Hazardous Waste Unit and the municipal solid waste portions of the Landfill. A Barrier Wall Design Report was submitted to the WDNR on May 31, 1988 (Foth & Van Dyke and Associates, Inc., 1988) and subsequently approved by the WDNR on September 20, 1988 (**Appendix A**).

The barrier walls consist of 7-foot-thick (measured perpendicular to the slope) compacted clay layers constructed on a 3:1 slope. The barrier wall is keyed into the existing compacted clay liner of Corridor 6 and into the native clay soils along the perimeter of the HWU. The composite liner system for Corridors 8, 9, 10 ties into the side slope of the barrier wall (refer to March 31, 1995 correspondence in **Appendix A**). The approximate locations of the barrier walls are shown on **Figure 3** and **Figure 4** demonstrates how the barrier wall isolates the HWU from the other solid waste units. The subbase consists of a 1-foot–thick layer of sand placed above the waste in the HWU and below the bottom of the clay barrier. The barrier walls were constructed during several construction events starting in 1987 and completed in 1996. Approvals were received for barrier wall construction events, from the WDNR, starting in 1987 and ending in 1996. Documentation was provided to the WDNR at the time of construction as follows:

North Barrier Wall – Along Corridor 7

- Construction of the first phase of the North Barrier Wall was performed in conjunction with construction of the base liner and leachate collection system for Corridor 7. The WDNR approved the Phase I of the North Barrier Wall construction on June 15, 1987 (**Appendix** A).
- Construction of the Phase II of the North Barrier Wall began in March of 1987 and was completed in December 1987. The WDNR verbally approved the construction of Phase II in February 1988 (**Appendix A**).
- Construction of the Phase III of the North Barrier Wall began in November 1987 and was completed in May 1988. The WDNR approved Phase III of the North Barrier Wall construction on November 17, 1989 (**Appendix A**).
- Construction of the Phase IV of the North Barrier Wall began in 1988 and was completed in early 1989. Documentation of this construction work was submitted in 1991, along with the documentation report for the Phase V North Barrier Wall construction work. The WDNR approved this construction on March 14, 1994 (**Appendix A**).
- Construction of the Phase V of the North Barrier Wall was performed from September through December of 1990 and July of 1991. A documentation report for Phase V, which included the work performed for Phase IV construction, was submitted to the WDNR in February of 1991 and 1992. The WDNR approved this construction on March 14, 1994 (**Appendix A**).

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West Barrier Wall – Along Corridors 8, 9, and 10

- Construction of the Phase I of the West Barrier Wall was performed in conjunction with the base liner and leachate collection system for the interior manhole area. The documentation report for this construction was submitted to the WDNR in December 1991. The WDNR approved the construction of the Phase I of the West Barrier Wall on May 11, 1992 (**Appendix A**).
- Construction of the Phase II of the West Barrier Wall began in September 1992 and ended in August 1993. The documentation report for this construction was submitted to the WDNR in August 1993. The WDNR approved construction of the Phase II West Barrier Wall in November of 1993. Construction of the Phase III West Barrier Wall was performed in three construction events: between July and September of 1994, between May and July of 1995, and between May and June of 1996. The WDNR approved construction of the Phase III West Barrier Wall in August of 1996 (**Appendix A**).

2.2 Containment Structure

In June 1988, Foth & Van Dyke, on behalf of KHL, submitted to the WDNR a report entitled, "Containment Structure Design for the Hazardous Waste Unit" (1988b). This report addressed paragraph C of the March 31, 1988 Plan Modification; including drilling of additional soil borings, design of the groundwater collection trench, design of the slurry wall, detailed soil-bentonite mixing procedures, and conveyance piping from the three proposed lift stations to the City of Racine sanitary sewer system. The WDNR approved the design of the Containment Structure in a letter dated December 14, 1988 (**Appendix A**).

As required in the WDNR's March 31, 1988 Closure Plan Modification letter, a groundwater containment structure was constructed. It consists of a bentonite slurry wall, extending along the southern and western portions of the HWU. The portion of the containment structure along the western perimeter of the HWU is below the Corridors. 8, 9, and 10. In addition the containment structure extends along the southern perimeter of the City of Racine landfill and along the western perimeter of the City of Racine landfill. Interior to the slurry wall there is a gravel-filled groundwater collection trench with perforated corrugated piping in the trench to collect and convey groundwater to removal points. The purpose of the containment structure is to prevent possible migration of leachate from the unlined portion of the HWU. The structure is also designed to help prevent the migration of landfill gas from the HWU.

Construction began on the groundwater containment structure in the summer of 1988 and continued through the end of 1989. The construction observation report was submitted by Foth & Van Dyke, on behalf of LRC, and was received by the WDNR on August 9, 1991. The WDNR provided conditional approval of the containment structure on September 13, 1993 (**Appendix** A).

2.3 Final Cover System over the Hazardous Waste Unit

RCRA Cover

Design reports were submitted to the WDNR for the RCRA final cover (Foth & Van Dyke, 1988; Geosyntec Consultants, 1991) and were approved by the WDNR on September 16, 1991 (**Appendix A**). The HWU final cover system consists of three components: the RCRA

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cap, the Southern Slope cap, and the Eastern Slope cap (**Figure 3**). The northern and western barrier walls described previously also act as the cover over the waste in the HWU and are also a portion of the liner system for Corridors 7, 8, 9, and 10, which overlap the HWU.

The RCRA cap consists of the following layers:

- 6-inches of topsoil
- 18-inches of rooting zone (general fill)
- Geotextile
- 1-foot of sand drainage
- Geomembrane
- 3-feet of compacted clay

The South and East Slope cap consist of the following layers:

- 6-inches of topsoil
- 4-feet of compacted clay

RCRA Cover System

- Phase I of the RCRA composite cover consisted of 9.8 acres and was completed in 1991. The construction documentation of the Phase I RCRA cover was approved by the WDNR on April 13, 1993 (**Appendix A**).
- Phase II of the RCRA composite cover consisted of 6.7 acres and was completed in 1994. The construction documentation report was submitted on December 1994 (Montgomery Watson Americas, Inc., 1994).
- Phase III of the RCRA composite cover consisted of 10.7 acres and was completed in 2001. The construction documentation was approved by the WDNR on September 8, 2004 (**Appendix A**).

As documented in the July 2, 2004 letter from the WDNR regarding the remaining Old Site Final Cover, the remaining portion of RCRA cover is above the barrier containment wall and the WDNR only considered the Northwest Expansion to be active at the time of the letter (**Appendix A**).

A plan modification for the remaining portion of the RCRA final cover to be installed above the Barrier Wall in Corridors 7, 8, 9, and 10 was submitted in 2011 (CQM, Inc.) and approved by the WDNR on August 17, 2011 (**Appendix A**). This plan modification replaces 2 feet of the compacted clay with a geosynthetic clay liner (GCL) in the cover system, provides final grades for this area, and provides details of the tie in for the different final cover systems. **Appendix B** provides the plan sheets submitted by CQM, Inc. for this plan modification.

The final RCRA final cover area (approximately 2.1 acres), which is located over Corridors 8, 9, and 10 and Corridor 11 was completed in 2024. The construction documentation report was submitted to the WDNR on July 24, 2024 and approved by the WDNR on November 8, 2024 (**Appendix A**). The RCRA area final cover consisted of, from bottom to top, 2 feet of compacted clay cover, GCL, 40 mil LLDPE geomembrane, geocomposite, 2.5 feet of rooting zone, and 6 inches of topsoil.

East Slope Final Cover System

Construction of the final cover on the East Slope of the HWU was performed during several construction events starting in July 1985 and ending in 1991. The WDNR approved final cover documentation submittals on July 29, 1991, and again on April 19, 1994 (**Appendix A**).

South Slope Final Cover System

In June 1988, Foth & Van Dyke, on behalf of KHL, submitted to the WDNR a report entitled, "Containment Structure Design for the Hazardous Waste Unit" (1988a). This report addressed paragraph E of the March 31, 1988 Plan Modification. Construction of the final cover for the South Slope was completed in August 1991, with a construction observation report submitted to the WDNR in January 1992. Construction repairs on the south slope final cover system were performed to fulfill an agreement made with the WDNR during a site inspection performed by the WDNR on February 4, 1993. This construction took place from 1991 to 1992 to address the areas of erosion identified in a Facility Inspection Form from the WDNR. An addendum to the previous construction observation report was submitted to the WDNR in March 1993 and approved May 22, 1996 (**Appendix A**).

2.4 Landfill Gas and Leachate Extraction System

In August 1988, a report titled Leachate and Gas Extraction System Design (Foth and Van Dyke, 1988c), was submitted to satisfy Condition F – Landfill Gas and Leachate Extraction Systems of the March 31, 1988 WDNR plan modification. There have been several construction events for the gas and leachate extraction system as detailed below. In addition, routine maintenance is regularly performed on the system, but not called out in these listed events.

- Construction Observation Report, 1990 & 1991 Temporary/Permanent Construction, Gas and Leachate Extraction System, Warzyn, November 1991.
- Construction Observation Report - Addendum, Permanent Gas and Leachate Piping Construction, Hazardous Waste Unit, Warzyn, April 1992.
- Construction Observation Report, East Slope and Corridor 7, Gas and Leachate Extraction System, Warzyn, December 1993.
- Construction Observation Report, Corridor 7 Gas and Leachate Extraction System, Montgomery Watson, August 1995.
- Gas Collection and Control System Improvements Construction Quality Assurance, EMCON/OWT Solids Waste Services, December 2001.
- Construction Documentation Report Gas Management System improvements/Expansion 2003, Earth Tech, Inc., August 2001.

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- 2008 Landfill Gas System Improvements, December 2008, 2008 Annual Report, TRC, 2009.
- Construction Documentation Report, 2010 Landfill Gas System Improvements, CQM, Inc., August 2010.
- Landfill gas header pipe was constructed in October 2011 along the access road on the West side of the former City of Racine Landfill and Corridor 11, 2011 Annual Report, TRC, 2012.
- Landfill gas and leachate pipe system along the East side of Corridors 1-6 was replaced with ten-inch landfill gas pipe and six-inch leachate pipe. The landfill gas and leachate pipe laterals to LGW-321 through LGW-326, LGW-317, LGW-47, and GW-12 were also replaced, 2014 Annual Report, TRC, 2015.
- Eight vertical landfill gas extraction wells and associated piping were installed including two condensate sumps in Phase 5, 2017 Annual Report, TRC, 2018.
- Construction Documentation Report, 2019 Landfill Gas System Improvements, Tetra Tech, December 2019.
- Construction Documentation Report, 2022-2023 Landfill Gas System Construction, Weaver Consultants Group, November 2023.

A detailed assessment of the performance of the leachate extraction system was performed for the Old Site Hydrogeologic Evaluation (RMT, 2005). This evaluation developed a set of four criteria used to evaluate the effectiveness of the extraction system. These evaluations are being performed for KHL on an annual basis in the solid waste annual reports.

2.5 Northwest Expansion Final Cover Events

Final cover has been installed over portions of the Northwest Expansion as shown on **Figure 3**. These cover construction events were performed following the 1996 Plan of Operation Modification for the Northwest Expansion. The final cover system meets the requirements of ch. NR 504 and is composed of from top to bottom of:

- 6" topsoil
- 2.5' general fill
- drainage layer
- 40 mil LLDPE geomembrane
- geosynthetic clay liner (GCL) or compacted clay barrier
- 2' soil barrier layer

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The below final cover installation events include those within the Northwest Expansion (and its vertical overlay) along with concurrently closed areas within the Old Site. These final cover installation events include:

- 2002 – 5.9 acres final cover constructed, Documentation report by STS, October 2002
- 2005 – 2.8 acres final cover constructed, Documentation report by CQM Inc., October 2005
- 2005 – 1.1 acres final cover constructed, Documentation report by CQM Inc., October 2005
- 2008 – 3.0 acres final cover constructed, Documentation Report by Earth Tech, August 2008
- 2009 – 5.0 acres final cover constructed, Documentation report by CQM Inc., January 2010
- 2010 – 5.2 acres final cover constructed, Documentation report by CQM, Inc., December 2010
- 2019 – 8.3 acres final cover constructed, Documentation report by CQM, Inc., October 2019 (approximately 1.1 acres are located outside of the vertical overlay and cover portions of Corridor 11 and the Former City of Racine Landfill)
- 2023 – 15 acres final cover constructed, Documentation report by Weaver Consultants Group, July 2023
- 2024 – 24.8 acres final cover constructed, Documentation report by Weaver Consultants Group, July 2024 (approximately 5.2 acres are located outside of the vertical overlay and cover portions of Corridors 1-11 and the Former City of Racine Landfill)

Other final cover events, outside the HWU and Northwestern Expansion areas, are depicted on **Figure 3**.

3.0 Closure Performance Standard

KHL has been historically managed by the WDNR under NR 500 code after the WDNR became the lead regulatory agency for the HWU. The previous approvals for construction events at KHL were administered per NR 500.

Closure requirements for interim license hazardous waste disposal facilities are defined under NR 664.0111, NR 664.0112, NR 664.0310.

Section NR 664.011 presents the closure performance standard that closure provides the following: minimizes the need for further maintenance; controls, minimizes, or eliminates post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated run-off or hazardous waste decomposition products to the ground or surface water or to the atmosphere; and complies with the standards of chapter NR 140 and chapter NR 720.

Section NR 664.0310 applies to landfills and requires that the final cover is designed and constructed to perform the following:

- Provide long-term minimization of migration of liquids through the closed landfill
- Function with minimal maintenance
- Promote drainage and minimize erosion or abrasion of the cover
- Accommodate settling and subsidence so that the cover's integrity is maintained
- Have a permeability less than or equal to the permeability of any bottom liner system.

The existing final cover, barrier wall, containment structure, and leachate and gas extraction systems satisfy the performance requirements of the NR 664.011 and NR 664.0310.

- The final cover system is vegetated and was constructed with slopes that promote storm water drainage in a manner that controls erosion of the final cover.
- The final cover system provides a low permeability barrier that eliminates post-closure escape of hazardous waste and leachate; and minimizes the migration of liquids through the closed landfill. The barrier wall provides hydraulic and physical containment of the HWU from the other solid waste units.
- The final cover and barrier wall were constructed of materials with sufficient properties and thicknesses to accommodate anticipated settlement of the final cover. Settlement of the final cover within the HWU is monitored annually.
- The RCRA final cover includes a geomembrane and the cover on the side slopes are constructed of a compacted clay of sufficient thickness to provide permeabilities less than or equal to the permeability of underlying soils or liner systems.

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3.1 Schedule for Completion of Final Cover System over the Hazardous Waste Unit

Waste acceptance at KHL ceased on December 31, 2022. Final cover construction, including the remaining section over the HWU was completed in July 2024. The documentation report was submitted to the WDNR for approval on July 24, 2024.

3.2 Closure Costs

The most recent closure cost estimates are included in **Appendix C**; however, as of July 2024 the remaining open areas of the Kestrel Hawk Landfill were closed with final cover placed.

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4.0 Conclusions

The information presented in this report demonstrates that the HWU has been closed in accordance with the March 31, 1988 closure plan except for an area of RCRA final cover above the barrier wall that will be installed in conjunction with the closure of a non-hazardous area of the KHL. The HWU is isolated physically and hydraulically by the existing barrier wall and final cover system. The current closure items achieve the performance standard of NR 664.

The following conclusions are made based on the information presented in this report:

- The HWU certifications of closure according to s. NR 664.0115 were submitted with each closure construction documentation report.
- In response to Notice of Noncompliance Item 9: This report provides the items required for a closure plan, including a closure schedule.
- In response to Notice of Noncompliance Item 14: The barrier wall separates the non-hazardous waste disposal area from the areas where hazardous wastes were previously disposed. The 2011 plan modification for the final cover modifications approved final grades for non-hazardous waste placement above the portion of the HWU without final cover.

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5.0 References

CQM, Inc. 2011. Plan Modification Request to the Approved Plan of Operation, Kestrel Hawk recycling & Disposal Facility, Racing, Wisconsin (License #0572). June 2011.

Foth & Van Dyke and Associates, Inc (Foth and Van Dyke). 1988. Barrier Wall Design for the Hazardous Waste Unit, Land Reclamation, Ltd. May 31,1988.

Foth & Van Dyke. 1988a. South Slope Modification for the Hazardous Waste Unit, Land Reclamation, Ltd. June 17.

Foth & Van Dyke. 1988b. Containment Structure Design for the Hazardous Waste Unit, Land Reclamation, Ltd. June 28.

Foth & Van Dyke. 1988c. Leachate & Gas Extraction System Design for the Hazardous Waste Unit, Land Reclamation, Ltd. August 23.

Montgomery Watson Americas, Inc. Construction Observation Report: RCRA Phase II Final Cover, Land Reclamation Company Landfill, City of Racine, Racine County, Wisconsin, WDNR License No. 572. December

Geosyntec Consultants. 1991. Hazardous Waste Unit RCRA Final Cover Modifications Report, Land Reclamation Company Landfill. May 1991.

RMT, Inc. 2005. Old Site Hydrogeologic Evaluation Phase I Summary Report, Kestrel Hawk Landfill. October 2005.

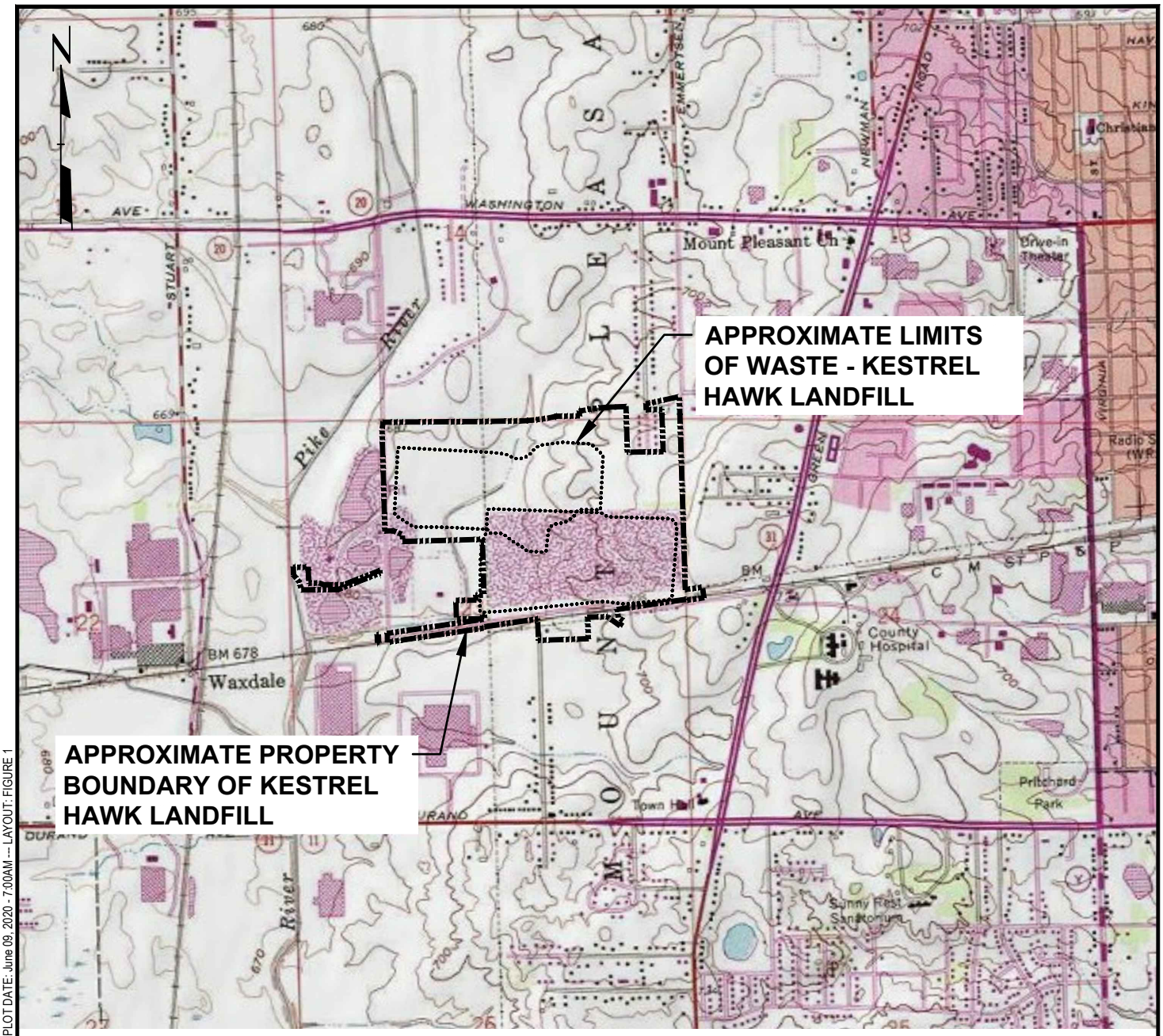
TRC Environmental Corporation (TRC). 2012. Year 2011 Annual Report, Kestrel Hawk Recycling and Disposal Facility. June 2012.

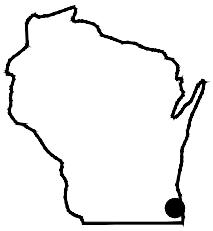
TRC. 2014. Year 2013 Annual Report, Kestrel Hawk Landfill. June 2014.

TRC. 2017. Year 2016 Annual Report, Kestrel Hawk Landfill. October 2017.

United States Environmental Protection Agency. 1987. “Conditional Approval of Barrier Wall Construction.”

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STATE LOCATION

SOURCE: BASE MAP FROM RACINE SOUTH, WISCONSIN 7.5 MIN. USGS QUADRANGLE.

TRC
708 Heartland Trail
Suite 3000
Madison, WI 53717
Phone: 608.826.3600

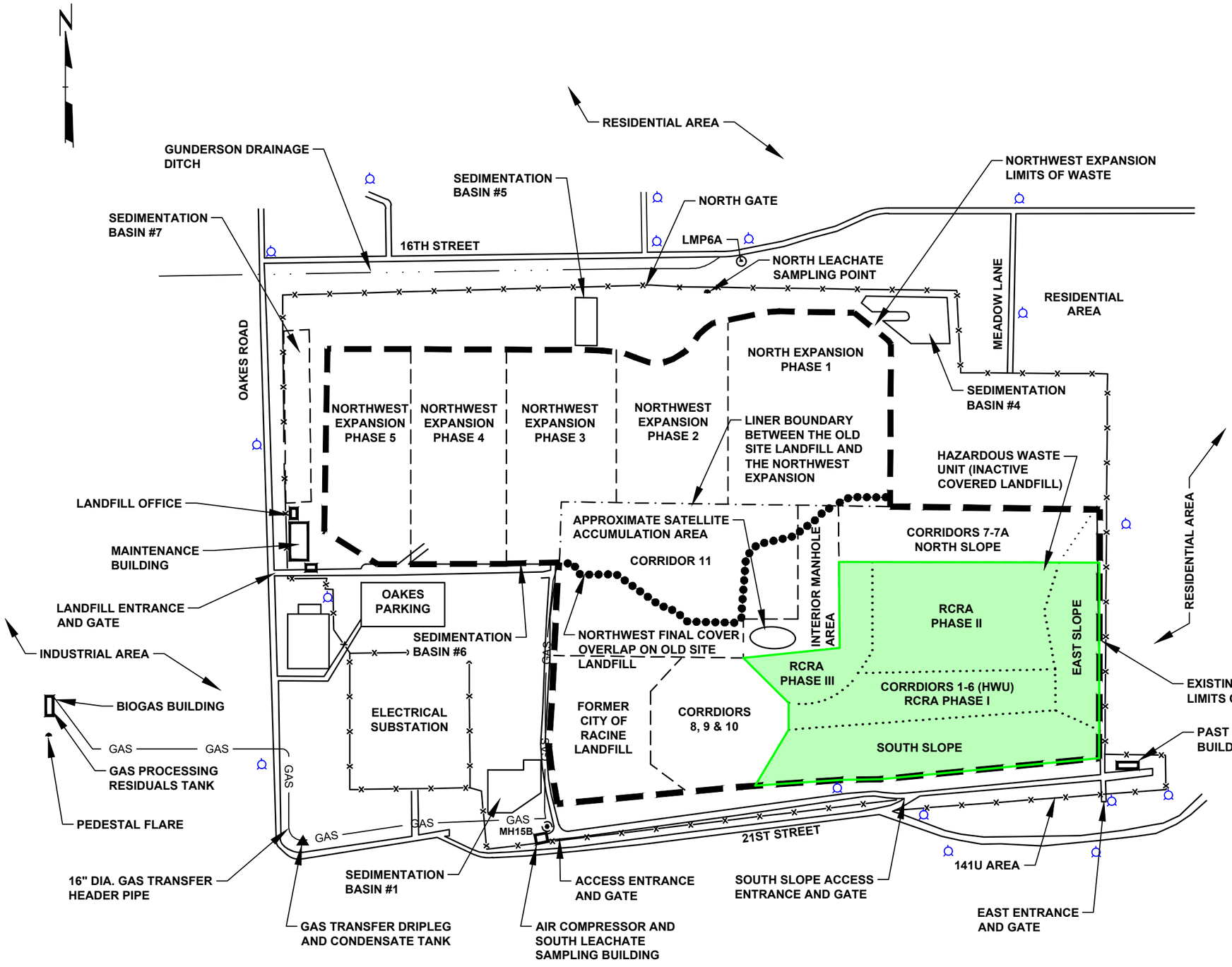
PROJECT:
KESTREL HAWK LANDFILL
CLOSURE REPORT - CORRIDORS 1 - 6
RACINE, WISCONSIN

TITLE:
SITE LOCATION MAP

DRAWN BY:	T. FIEBRANZ
CHECKED BY:	S. EDWARDS
APPROVED BY:	J. HOTSTREAM
DATE:	JUNE 2020
PROJ. NO.:	326037.0005
FILE:	326037.0005.01.dwg

FIGURE 1

8.5x11 --- ATTACHED XREFS: Site Data --- ATTACHED IMAGES: USA Topo:
DRAWING NAME: J:\Republic\Kestrel Hawk\326037 - 2019 Annual Report\0005\326037.0005.01.dwg --- PLOT DATE: June 09, 2020 - 7:00AM --- LAYOUT: FIGURE 1



LEGEND

- APPROXIMATE CORRIDOR AND PHASING LINER BOUNDARIES
- APPROXIMATE LIMITS OF WASTE BOUNDARY FOR OLD-SITE LANDFILL AND THE NORTHWEST EXPANSION LANDFILL
- EXISTING FENCE LINE
- EXISTING ROADS
- NORTHWEST EXPANSION FINAL COVER OVERLAY ON TO OLD-SITE LANDFILL
- FIRE HYDRANT
- LINER BOUNDARY BETWEEN THE OLD-SITE AND THE NORTHWEST EXPANSION LANDFILLS
- GAS — 16" DIA. GAS TRANSFER HEADER PIPE
- APPROXIMATE EXTENTS OF HAZARDOUS WASTE UNIT (INACTIVE COVERED LANDFILL)

PROJECT:
KESTREL HAWK LANDFILL
CLOSURE REPORT
RACINE, WISCONSIN

TITLE:
SITE PLAN

DRAWN BY:	T. FIEBRANZ	PROJ NO.:	557496.0000
CHECKED BY:	B. KAHNK		
APPROVED BY:	T. MARTIN		FIGURE 2
DATE:	APRIL 2025		

TRC
999 Fourier Drive
Suite 101
Madison, WI 53717
Phone: 608.826.3600

FILE NO.: 557496.0000.03 - Site Plan.dwg

11x17 -- ATTACHED XREFS: -- ATTACHED IMAGES:
DRAWING NAME: J:\Republic\Kestrel Hawk\557496 - Closure Process\0000\557496.0000.03 - Site Plan.dwg -- PLOT DATE: April 01, 2025 - 6:27AM -- LAYOUT: FIGURE 2