
**Operations Plan
K&W Landfill, Inc.
Ontonagon, Michigan**

Prepared for:

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Section I

Operation Plan

A. INTRODUCTION

This Operation Plan has been prepared at the K&W Landfill (K&W), located in Greenland, Michigan, Ontonagon County. The plan was prepared in accordance with the Michigan Department of Environmental Quality (MDEQ) Rule 299, Promulgated pursuant to Part 115 of Act 451. The format of this plan follows the requirements set forth in Rules 299.4426 (Rule 426) through 299.4438 (Rule 438), and Rule 299.4911(2) (Rule 911.2).

B. LANDFILL OPERATIONS (Rule 426)

B.1. Equipment (Rule 426.1)

Landfill operating equipment shall be properly maintained in-place to assure that operational procedures can be accomplished. Currently landfill equipment includes the following:

- CAT 826C compactor
- CAT D8N dozer
- CAT D25D dump truck
- CAT 325L excavator
- CASE 850C track-type tractor
- JOHN DEERE 758A track loader
- INTERNATIONAL S1800 dump truck
- WESTINGHOUSE road grade
- FRUEHAUF tanker trailer
- TRAILMOBILE tanker trailer

Equipment may be added or deleted from this list; however, adequate equipment will be maintained at the facility for proper operations. Backup equipment will be available through suitable arrangements with a local contractor to provide such equipment during equipment breakdown or peak loads. Additional equipment may be used for site construction projects.

B.2. Landfill Personnel (Rule 426.2)

The landfill manager is responsible for the operation of the site. If the manager is not on-site, a designated person shall be responsible for ensuring proper site management. Acceptable loads of solid waste are directed to the working area of the landfill by the scale clerk. The equipment operators at the working area shall direct where waste is to be unloaded.

B.3. Dust and Blowing Paper (Rule 426.3)

Fugitive dust shall be controlled using a water truck when necessary. Temporary and permanent litter fences will be utilized to contain litter within the immediate area of the working face. Litter that escapes this area is to be collected as necessary. The entire area will be kept clean and orderly.

B.4. Waste Compaction (Rule 426.4)

Waste shall be compacted when placed in the daily cell to minimize post-closure settlement.

B.5. On-Site Roads (Rule 426.5)

Access roads are designed to allow for smooth traffic flow and not interrupted by ordinary inclement weather. The access roads will be operated to prevent the creation of nuisance conditions from fugitive dust.

B.6. Active Work Area (Rule 426.6)

The active work area shall be sloped, graded, and provide drainage to prevent the collection of standing water.

C. ACCESS REQUIREMENTS (Rule 427)

The landfill maintains proper security and signage, including hours of operation at the landfill gate to prevent unauthorized access. Cyclone fencing is maintained along the northern property boundary and the landfill gate is locked during non-business hours. A scale clerk will be on duty during business hours. Vehicles entering the landfill must stop at the gate area and check-in with the scale clerk. The contents of the load are ascertained by the scale clerk and properly weighed. Anyone utilizing the public drop off must use the roll-off container near the scale area.

D. RECYCLING MATERIAL (Rule 428)

No separation of recyclable materials will occur at the active cell. White goods will be accepted if delivered separately from waste. Refrigerant containing white goods shall be acceptable if certification of proper freon removal is provided (where applicable). White goods shall be stored in the westernmost portion of the maintenance building until sufficient volume is accumulated for shipment. Scavenging will not be permitted.

E. DAILY AND INTERMEDIATE COVER AND DISEASE VECTOR CONTROL (Rule 429)

Vectors will be primarily controlled through the application of daily cover. Should nuisance vectors become a problem, supplemental vector control measures will be implemented.

At least 6 inches of daily soil cover, or an approved alternate cover, will be applied at the end of each working day. Daily (or intermediate) cover may be spread and stripped.

Two types of alternate daily cover are currently approved for use at this site:

- 1) Papermill sludge from the Niagara of Wisconsin Papermill
- 2) Petroleum impacted soil from the removal of underground storage tanks

Approval of additional alternate daily cover material is requested.

- 1) Woven geotextile
- 2) Woven-coated polyethylene

Both meet the following requirements:

- provides matting/cover over waste
- allows free movement of liquids and gases
- is not hazardous
- is not flammable
- does not produce emissions

Specifications for the above are provided in Attachment 6.

Any papermill materials stockpiled at the site (in excess of what will be used at the end of the day) will be covered with a tarp. For the petroleum-impacted soils, no other type of petroleum-impacted soils are allowed for use as daily cover and their use must be in accordance with the Michigan Department of Natural Resources' letter of March 14, 1995 (Attachment 5).

A minimum of 1 foot of interim cover consisting of compacted soil, will be applied to any area that waste will not be placed for 3 months. This 1 foot may include the 6-inch daily cover.

To minimize infiltration, interim cover may be placed on the landfill surface meeting the requirements specified in Rule 299.4429.7.

F. PROHIBITED WASTE (Rule 430)

K&W is currently authorized under License No. 8086, to accept waste classified as Type II by the State of Michigan which includes asbestos-containing waste, petroleum-impacted soils, and non-hazardous special wastes. The waste types must be accompanied by a signed manifest and which must be acceptable on a case-by-case basis. The landfill is not authorized to accept bulk liquids or wastes that exhibit free liquids; regulated hazardous wastes; PCBs or PCB items, as defined in 40 CFR § 761.3; bulk or noncontainerized liquid waste; containers that hold liquid waste; sewage; materials that would adversely affect a liner or leachate collection and removal system; asbestos wastes; empty drums; used lead acid batteries; and yard clippings.

Prohibited or special waste shall be identified and handled in accordance with the Prohibited Waste Exclusion and Special Waste Handling Plan (SW Plan) included as Attachment 1.

The compactor operator shall randomly inspect incoming loads, at a frequency of at least one every two weeks, and shall complete an inspection report to be submitted to the landfill manager for inclusion in the operating record. Any suspicious load shall be inspected upon identification according to the stormwater plan. Training of landfill personnel in prohibited and special waste procedures will be conducted as described in the SW Plan.

Asbestos waste is acceptable for disposal at this landfill; however, the landfill will be operated in accordance with 40 CFR § 61.154.

G. NOISE (Rule 431)

No undue noise shall be created at the landfill. Any complaints of excessive noise shall be forwarded to the landfill manager for evaluation and action. The landfill limits are set back at least 100 feet from the property line. The landfill continuously maintains equipment utilized on-site. There are no adjacent residential or commercial properties surrounding the landfill.

H. LEACHATE HANDLING (Rule 432)

H.1. Leachate Depth

Leachate will be removed by dedicated pumps having sensors for automated pump operation. The system is designed to maintain the leachate depth on the liner not more than 1 foot for more than 7 days after a significant storm event (~~1.0~~ inches or more of rainfall in 24 hours).

0.1 per MDEQ Rule 432

H.2. Leachate Monitoring

The leachate depth will be monitored regularly to ensure compliance with leachate depth. The leachate volumes will also be monitored regularly.

Leachate water quality monitoring is discussed in the approved Hydrogeologic Monitoring Plan (HMP) contained in Attachment 2.

Monitoring frequency for Primary Inorganic Indicators and Primary Volatile Organic Constituents will be reduced from quarterly to annually for leachate from closed portions of the landfill, provided the criteria in Act 451 are met and MDEQ has issued approval.

H.3. Secondary Collection System Monitoring (Rules 432.3, 432.4)

Liquids will be removed from secondary collection system on a weekly basis during the active life and closure period to minimize head on the bottom liner. Storage and disposal of these liquids will be handled in the manner described previously for leachate. Average daily flow rate of each sump shall also be recorded on a weekly basis. Following installation of final cover, the frequency of monitoring will be reduced as described in Rule 299.4432. Following the results of the weekly/monthly monitoring, the average daily-to-monthly flow rate shall be calculated.

The water quality of liquids removed from the secondary collection system is discussed in the approved HMP (Attachment 2).

Monitoring frequency for Primary Inorganic Indicators and Primary Volatile Organic Constituents may be reduced from quarterly to annually for leachate generated from closed portions of the landfill. Also, if there are no Primary Volatile Organics detected in two consecutive leachate monitoring events, monitoring may be discontinued for as long as the constituents remain non-detectable in the leachate. Similarly, monitoring of secondary Organic Constituents may also be discontinued if they are not detected in the leachate for two consecutive events.

H.4. Leachate Collection Pipe Maintenance (Rule 432.5)

The leachate collection system shall be maintained in proper working order, including cleaning or flushing of collection pipes, if necessary.

H.5. Leachate Disposal (Rules 432.64 and 432.7)

Leachate will be pumped from the sumps through a forcemain to the storage tank where it will be stored. Leachate will be transferred into a tanker truck and transported to a licensed treatment facility. Written permission from the facility will be obtained prior to disposal and a copy of

approval shall be kept in the operating record. A copy of the current treatment facility, Gogebic-Iron Wastewater Treatment Facility's Trucked Waste Acceptance Policy, is included as Attachment 3.

If the leachate level in the sump should rise faster than the ability to haul it off-site, leachate will be pumped from the storage tank back onto the active cell as an emergency measure, and only to ensure that leachate does not overflow the tank.

H.6. Leachate Recirculation (Rule 432.8)

Approval of leachate recirculation is being requested as part of this application. The recirculation will consist of either spraying leachate over the waste or discharging leachate directly into the waste.

I. EXPLOSIVE GAS MANAGEMENT (Rule 433)

K&W currently has a Gas Management Plan for the site (Attachment 4). This plan will be followed to ensure the following:

- Concentration of methane gas is less than 25 percent of the LEL in facility structures and leachate collection system.
- Concentration of methane gas are less than the LEL at or beyond the property boundary.
- Gases do not create nuisance.

The Plan consists of quarterly monitoring along the property line and quarterly monitoring of facility structures, both with a combustible gas indicator. Horizontal migration of gas is not expected at this facility as there are no unlined disposal areas at this site, surrounding soils are of relatively low permeability, and the passive, vertical vent systems installed at closure provide a preferential path for vertical migration of landfill gas rather than horizontal. If monitoring results indicate the lower explosive limit (LEL) for methane has been exceeded (over 5 percent methane) at the property boundary or that a facility structure's interior exceeds 25 percent of the LEL for methane, the following steps will be taken:

1. The site manager will be notified.
2. Site personnel will be informed of the danger.
3. Site personnel will be instructed to extinguish any open flame and warned to avoid creating electrical sparks such as turning equipment or lights on or off.
4. Telephones will be removed from wall jacks to avoid the ringer creating a spark.
5. The MDEQ director (or designee) will be notified of the occurrence and of the action taken.
6. Documentation of the event will be placed in operating record within 7 days of detection.
7. A remediation plan for the methane gas releases will be implemented within 60 days of detection and a copy of this plan will be placed in the operating record. The director (or designee) will be notified upon implementation of the plan.

J. AIR CRITERIA (Rule 434)

Open burning will be prohibited on the landfill site, except for the infrequent burning of agricultural wastes, silvicultural wastes, land-clearing debris, diseased trees, or debris from emergency cleanup operations. This type of burning shall only be conducted under approval of the solid waste control agency (and other appropriate authorities) and shall only be conducted in designated areas away from the active fill area.

K. RUN-ON AND RUN-OFF (Rule 435)

Stormwater will be diverted from the working face through the use of temporary berms and contouring. Stormwater that comes in contact with waste at the working face (e.g., precipitation falling on the working face) will be confined to working area and managed as leachate.

Run-on and run-off control shall be conducted to divert stormwater from the active cell and also to avoid creating areas of ponded water. To prevent soil erosion, ditches, sediment traps, and berms used to control storm water shall be stabilized by seeding and mulching by utilizing check dams, or by other appropriate means. Inactive areas of the landfill shall also be stabilized to prevent soil erosion.

The run-on and run-off control systems have been designed for the 24-hour, 25-year storm event and are discussed in the Design Report.

L. SURFACE AND GROUNDWATER PERFORMANCE (Rule 436)

A Notice of Intent for Coverage used for National Pollutant Discharge Elimination System (NPDES) is currently being prepared for K&W and will be submitted shortly.

M. ACTION FLOW RATES - SECONDARY COLLECTION SYSTEMS (Rule 437)

Action flow rates (AFR) for secondary collection systems, as defined in Rule 299.4437 for monitorable units, is the maximum design flowrate that the system can remove without the fluid

head on the bottom liner exceeding 1 foot. AFR for the different landfill (phases or cells) are as follows:

- Current AFR: 20 gal/acre/day
- Proposed Design AFR: 20 gal/acre/day

If an AFR is exceeded during any week, the water quality of the liquids in the secondary collection system shall be evaluated as described in Rule 299.4437.

N. RECORDKEEPING REQUIREMENTS (Rule 438)

The operating record kept at the landfill or authorized location shall be carefully maintained and shall include the following items:

- 1) Locational restriction demonstrations
- 2) Inspection records, training procedures, and notification procedures related to prohibited wastes
- 3) Gas monitoring results
- 4) Design documentation for placement of leachate or gas condensate
- 5) Groundwater monitoring results
- 6) Records of waste quantities
- 7) Closure and post-closure plans
- 8) Financial assurance and cost estimates

Upon request by the MDEQ director (or designee), information in the Operating Record shall be furnished or made available for inspection.