

Commonwealth of Kentucky
Division for Air Quality
STATEMENT OF BASIS / SUMMARY

Title V, Operating
Permit: V-26-025

Republic Services of Kentucky, LLC d/b/a Tri-K Landfill
1905 KY Highway 3249
Stanford, KY 40484-9163

July 2, 2026
Ryan Anderson, Reviewer

SOURCE ID:	21-137-00014
AGENCY INTEREST:	2726
ACTIVITY:	APE20230005, APE20240002

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SECTION 1 – SOURCE DESCRIPTION

SIC Code and description: 4953, Refuse Systems (solid waste landfills)

Single Source Det. ☒ Yes ☐ No If Yes, Affiliated Source AI: 180239

Source-wide Limit ☐ Yes ☒ No If Yes, See Section 4, Table A

28 Source Category ☐ Yes ☒ No If Yes, Category:

County: Lincoln

Nonattainment Area ☒ N/A ☐ PM₁₀ ☐ PM_{2.5} ☐ CO ☐ NO_x ☐ SO₂ ☐ Ozone ☐ Lead

If yes, list Classification:

PTE* greater than 100 tpy for any criteria air pollutant ☒ Yes ☐ No

If yes, for what pollutant(s)?

☐ PM₁₀ ☐ PM_{2.5} ☒ CO ☐ NO_x ☐ SO₂ ☐ VOC

PTE* greater than 250 tpy for any criteria air pollutant ☐ Yes ☒ No

If yes, for what pollutant(s)?

☐ PM₁₀ ☐ PM_{2.5} ☐ CO ☐ NO_x ☐ SO₂ ☐ VOC

PTE* greater than 10 tpy for any single hazardous air pollutant (HAP) ☐ Yes ☒ No

If yes, list which pollutant(s):

PTE* greater than 25 tpy for combined HAP ☐ Yes ☒ No

*PTE does not include self-imposed emission limitations.

Description of Facility:

Tri-K Landfill located in Lincoln County, KY is a municipal solid waste landfill that commenced construction in 1974 and was modified in 1995. The landfill has a design capacity of 25,689,043 cubic meters and a calculated emission rate of more than 50 megagrams per year of non-methane organic compounds (NMOC). The landfill submitted an initial Gas Collection and Control System (GCCS) plan on May 24, 2006, and installed a GCCS to comply with 40 CFR 60, Subpart WWW in 2007.

The landfill consists of Unit 1 and Unit 2, which accepted waste from 1974 to the present.

The landfill has the ability to send the landfill gas to an open flare or the associated renewable natural gas (RNG) facility Lightning Renewables, LLC – Tri-K RNG (AI 180239). The RNG plant processes raw landfill gas from the GCCS owned and operated by Tri-K Landfill through separation and adsorption processes to refine the methane concentration and remove contaminants to achieve pipeline-grade specifications for natural gas. The final product is injected into an existing natural gas pipeline.

The source is required to obtain a Title V permit by 401 KAR 52:020, Section 1(4) and 40 CFR 60.31f(c). The source includes a landfill and associated equipment including a Gas Collection and Control System (GCCS), flare, fuel (propane and diesel) tanks, haul roads, site construction, emergency generator, leachate storage tanks, an industrial liquid waste solidification process, a composting facility, and a leachate evaporator.

The facility also has several listed trivial activities such as space heaters for human comfort and oil and fluids tanks, water pump, and portable compressors related to maintenance activities. The trivial activities at the facility are all included under items #3, #12, and #13 of the trivial activities list.

In the absence of an approved state plan implementing 40 CFR Part 60, Subpart Cf, the landfill is subject to the federal plan under 40 CFR Part 62, Subpart OOO. Upon approval of Kentucky's state plan, the 40 CFR 60, Subpart Cf requirements implemented via 401 KAR 61:036 will apply in lieu of the federal plan.

SECTION 2 – CURRENT APPLICATION AND EMISSION SUMMARY FORM

Permit Number: V-26-025

Activities: APE20230005; APE20240002

Received: 7/19/2023; 1/30/2024

Application Complete Date(s): 9/15/2023; 3/30/2024

Permit Action: ☐ Initial ☒ Renewal ☐ Significant Rev ☒ Minor Rev ☐ Administrative

Construction/Modification Requested? ☐ Yes ☒ No NSR Applicable? ☐ Yes ☒ No

Previous 502(b)(10) or Off-Permit Changes incorporated with this permit action ☐ Yes ☒ No

Description of Action:

Tri-K Landfill submitted an application to renew the current Title V permit. With this renewal, the following changes have been made:

- The throughput for Emission Unit 002 – Paved and Unpaved Haul Roads was updated. The maximum capacity for unpaved haul roads was changed to 22,957 miles/year. The maximum capacity for paved roads was changed to 14,348 miles/year.
- A Propane Tank (1,000 gallon), listed as insignificant activity 11 in permit V-18-034, was removed from the facility and Section C of the permit.
- Three insignificant activities, two 500 gallon propane tanks and one 5,000 gallon leachate storage tanks, were added to the Insignificant Activities list in Section C of the permit.
- The applicable regulatory language for 40 CFR 63, Subpart ZZZZ and 40 CFR 60, Subpart JJJJ was updated to reflect revisions made to this regulation since the previous permit was issued.
- Emission calculations for the landfill and flare (EP 001 and 004) were updated to use the current version of AP-42, Chapter 2.4 (May 2025), as well as worst-case site-specific data for H₂S.
- Tri-K Landfill also submitted a minor revision application on January 30, 2024, requesting the addition of a leachate evaporator (Emission Unit 009). The application was deemed complete on March 30, 2024. This emission unit has been included in Section B of the renewed permit.
- Updated permit language to be consistent and clear, and corrected emission unit numbering to match KYEIS.
- Added the requirements of 40 CFR 60, Subpart Cf and 40 CFR 63, Subpart AAAA, while removing the requirements of 40 CFR 60, Subpart WWW, which are no longer applicable. The requirements from 40 CFR 60, Subpart Cf that are predicated on the approval of the state plan are included in Section I of the permit. The rest of the requirements are included in Section B and co-cited with the corresponding requirements from 40 CFR 63, Subpart AAAA where appropriate.

V-26-025 Emission Summary			
Pollutant	2025 Actual (tpy) ³	PTE V-26-025 (tpy) ²	Combined Facility PTE (tpy) ¹
CO	18.78	155.19	155.36
NO _x	3.45	35.18	35.78
PT	14.63	18.76	18.83
PM ₁₀	7.14	31.90	31.97
PM _{2.5}	3.21	31.90	31.97
SO ₂	1.05	15.12	15.27
VOC	13.72	2.24	2.31
Lead	-- ⁴	0.000028	0.000031
Greenhouse Gases (GHGs)			
Carbon Dioxide	21,501	94,576	95,520
Methane	2,965	360	360
Nitrous Oxide	0.08	0.97	0.97
CO ₂ Equivalent (CO ₂ e)	104,542	104,898	105,843
Hazardous Air Pollutants (HAPs)			
2,4,5-Trichlorophenol	-- ⁴	4.17	4.17
Chlorobenzene	0.18	1.05	1.05
Cresol	0.34	2.09	2.09
Hydrochloric Acid	0.35	3.04	3.04
Pentachloro-Phenol	0.17	1.04	1.04
Toluene	1.48	1.39	1.39
Xylenes (Total)	-- ⁴	0.49	0.49
Combined HAPs:	2.52	16.47	17.26

¹**Note:** The combined facility PTE includes both emissions from Tri-K Landfill and Tri-K RNG (AI 180239). Because they are considered a “single source” their emissions must be counted together. The worst-case emissions for the combined facility PTE occur when the RNG facility does not operate and all landfill gas emissions are destroyed in Tri-K Landfill’s flare. Therefore, the flare and RNG plant at Tri-K RNG are not counted toward the combined facility PTE because the landfill can only generate a set quantity of gas.

²**Note:** This is the individual PTE for Tri-K Landfill and does not include Tri-K RNG (AI 180239).

³**Note:** The actual reported emissions include emissions from fugitive sources not otherwise counted toward the Title V PTE.

⁴**Note:** Pollutant was not tracked in EIS for the 2025 inventory.

SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS

Emission Unit 001 - Municipal Solid Waste (MSW) Landfill

Initial Construction and Modification Date: 1974, modified in March 1995

Process Description:

A MSW landfill that has accepted waste since November 8, 1987, commenced construction, reconstruction, or modification before July 17, 2014, having a design capacity equal to or greater than 2.5 million megagrams by mass or 2.5 million cubic meters by volume, and an NMOC emission rate (Calculated according to 40 CFR 63.1959) greater than 50 Mg/yr.

This landfill submitted an initial Gas Collection and Control System (GCCS) plan for approval on May 24, 2006. This landfill installed a GCCS to comply with 40 CFR 60, Subpart WWW in 2007. The GCCS plan was approved by the Division as part of the renewal process for permit V-18-034. The system may send gas to EU 004 or to the adjacent Lightning Renewables, LLC – Tri-K RNG (AI 180239) facility.

The landfill consists of Unit 1 and Unit 2, which accepted waste from 1974 to the present.

Permitted Design Capacity: 33,600,000 cubic yards (25,689,043 cubic meters)

Applicable Regulations:

401 KAR 53:010, *Ambient air quality standards.* This regulation contains the primary and secondary Ambient Air Quality Standards for sulfur oxides, particulate matter, carbon monoxide, ozone, nitrogen dioxide, lead, hydrogen sulfide, gaseous fluorides, total fluorides, and odors are specified in Appendix A of 401 KAR 53:010.

401 KAR 61:036, *Emission guidelines and compliance times for municipal solid waste (MSW) landfills,* applies to each MSW landfill that commenced construction, modification, or reconstruction on or before July 17, 2014. This regulation requires compliance with **40 CFR 60, Subpart Cf, *Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills.***

401 KAR 63:002, Section 2(4)(hhh), 40 C.F.R. 63.1930 through 63.1990, Table 1 (Subpart AAAA), *National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills,* applies to each municipal solid waste (MSW) landfill that has accepted waste since November 8, 1987 or has additional capacity for waste deposition and has a design capacity equal to or greater than 2.5 million megagrams (Mg) and 2.5 million cubic meters (m³) and has estimated uncontrolled emissions equal to or greater than 50 megagrams per year (Mg/yr) NMOC as calculated according to 40 CFR 63.1959.

401 KAR 63:010, *Fugitive emissions,* applies to each affected facility which emits or could emit fugitive emissions not elsewhere subject to an opacity standard within 401 KAR Chapters 50 through 68.

401 KAR 63:015, *Flares,* applies to each affected facility which means flares as defined in 401 KAR 63:015, Section 2.

40 CFR 60.18, *General control device and work practice requirements* applies to control devices (flare) used to comply with applicable subparts of 40 CFR part 60.

40 CFR 61, Subpart M, *National Emission Standard for Asbestos,* applies to each active asbestos waste disposal site.

40 CFR 63.11, *Control device and work practice requirements* applies to control devices (flare) used to

Emission Unit 001 - Municipal Solid Waste (MSW) Landfill

comply with applicable subparts of 40 CFR part 63.

Comments:

Emission factors from AP 42 Chapter 2.4 (May 2025) and site-specific data, including worst-case site specific H₂S concentration of 115.33 ppm. H₂S monitoring for the landfill gas collection system has been included in the permit and is used for accurate quantification of fugitive H₂S emissions and SO₂ emissions produced by the flare.

Monitoring of liquid levels for gas wells is included in the permit to ensure adequate gas collection, which is dependent on the availability of well perforations. Excessive liquid in wells can also inhibit proper methane production and degrade monitored well parameters causing excessive oxygen intrusion and high temperatures.

The permit also includes alternate operating scenarios for GCCS Removal, Requests for Higher Operating Values (HOV), Requests for Decommissioning of Gas Collectors, and a Hydrogen Well Monitoring Plan.

If Tri-K Landfill receives (From the Division of Waste Management) an increase in the permitted volume design capacity of the landfill by either lateral or vertical expansion based on its permitted design capacity as of July 17, 2014, the landfill must submit an application to the Division incorporating into the permit the requirements of 40 CFR 60, Subpart XXX with a specified date that construction on the lateral or vertical expansion is expected to occur. Pursuant to 40 CFR 60, Subpart XXX, modification does not occur until the permittee commences construction on the lateral or vertical expansion.

Emission Unit 004 - Landfill Flare

Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
Opacity	< 20%	401 KAR 63:015, Section 3	-	Weekly qualitative observations and recordkeeping.

Initial Construction Date: 2007

Process Description:

Open landfill flare which combusts landfill gas.
Maximum Capacity: 3000 scfm of landfill gas

Applicable Regulations:

401 KAR 61:036, *Emission guidelines and compliance times for municipal solid waste (MSW) landfills*, applies to each MSW landfill that commenced construction, modification, or reconstruction on or before July 17, 2014. This regulation requires compliance with **40 CFR 60, Subpart Cf**, *Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills*.

401 KAR 63:002, Section 2(4)(hhh), **40 C.F.R. 63.1930 through 63.1990, Table 1 (Subpart AAAA)**, *National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills*, applies to each municipal solid waste (MSW) landfill that has accepted waste since November 8, 1987 or has additional capacity for waste deposition and has a design capacity equal to or greater than 2.5 million

Emission Unit 004 - Landfill Flare

megagrams (Mg) and 2.5 million cubic meters (m³) and has estimated uncontrolled emissions equal to or greater than 50 megagrams per year (Mg/yr) NMOC as calculated according to 40 CFR 63.1959.

401 KAR 63:015, *Flares*, applies to each affected facility which means flares as defined in 401 KAR 63:015, Section 2.

40 CFR 60.18, *Control device and work practice requirements general control device and work practice requirements* applies to control devices (flare) used to comply with applicable subparts of 40 CFR Part 60.

40 CFR 63.11, *Control device and work practice requirements control device and work practice requirements* applies to control devices (flare) used to comply with applicable subparts of 40 CFR part 63.

Comments:

This flare is a control device installed to meet the requirements of 40 CFR 60.33f(c)(1) and 40 CFR 63.1959(b)(2)(iii)(A). Emission factors from AP-42 Chapter 2.4, Table 2.4-1, AP-42 Chapter 13.5, Table 13.5-1, and worst-case site specific H₂S concentration of 115.33 ppm. Control efficiency for Non-Methane Organic Compounds (NMOC) is 98%.

Emission Unit 002 - Paved and Unpaved Haul Roads

Initial Construction Date: 1977

Process Description:

Paved haul roads and unpaved haul roads.

Maximum Capacity: 14,348 VMT paved, 22,957 VMT unpaved

Control Devices: Water trucks

Applicable Regulation:

401 KAR 63:010, *Fugitive emissions*, applies to each affected facility which emits or could emit fugitive emissions not elsewhere subject to an opacity standard within 401 KAR Chapters 50 through 68.

Comments:

Emission factors from AP-42 Chapter 13.2.1 and AP-42 Chapter 13.2.2. Potential emissions are calculated using the "maximum capacity" listed, however, roads at landfills change often, and the maximum capacity does not reflect the usage of the roads at any given time. The maximum capacity represents the maximum that the PTE was calculated with, and a permit revision application should be submitted if this maximum is not adequate to estimate the potential emissions of the activity in the future.

Emission Unit 008 - Site Construction

Initial Construction Date: 1977

Process Description:

Material handling including equipment operations of bulldozer(s), compactor(s), excavator(s) and loader(s), soil material and soil covering operations.

Maximum Capacity: 330,000 ton/yr waste processed

Control Devices: Wetting of Material

Applicable Regulation:

401 KAR 63:010, *Fugitive emissions*, applies to each affected facility which emits or could emit fugitive emissions not elsewhere subject to an opacity standard within 401 KAR Chapters 50 through 68.

Comments:

Emission factors from AP 42 - 13.2.3 and AP 42 - 13.2.4.

Calculations based on 330,000 tons of waste processed/yr. Emissions are calculated using the “maximum capacity” listed. However, the maximum capacity does not reflect the permitted (via DWM) waste acceptance rate. The maximum capacity simply represents the maximum that the PTE was calculated with, and a permit revision application must be submitted if this maximum is not adequate to estimate the potential emissions of the activity in the future.

Emission Unit 006 - Industrial Waste Solidification Process

Initial Construction Date: 2004

Process Description: Mixing of liquid industrial wastes from various sources with dry mediums to form a solid to be landfilled.

Maximum Capacity: 2,500,000 gallons/yr of liquid waste

Applicable Regulation:

401 KAR 63:010, *Fugitive emissions*, applies to each affected facility which emits or could emit fugitive emissions not elsewhere subject to an opacity standard within 401 KAR Chapters 50 through 68.

State-Origin Requirement:

401 KAR 63:020, *Potentially hazardous matter or toxic substances*, applies to each affected facility which emits or may emit potentially hazardous or toxic substances provide such emissions are not elsewhere subject to provisions of the administrative regulations of the Division for Air Quality.

Comments:

Emissions from source based on Toxicity Characteristic Leaching Procedure (TCLP) maximum values for listed HAPs and assumption of 100% VOC emission. If more refined data becomes available for each waste, the more refined data should be used by the source for HAP calculations to ensure all HAPs are accounted for.

Emission Unit 007 - Emergency Generator

Initial Construction Date: 2010

Process Description:

Propane fueled emergency generator for emergency electrical power.

Model: Generac Guardian Series Emergency Generator

Maximum Capacity: 25 HP/17 kW

Primary Fuel: Propane

Controls: None

Applicable Regulations:

401 KAR 63:002, Section 2(4)(eeee), 40 C.F.R. 63.6580 through 63.6675, Tables 1a through 8, and Appendix A (Subpart ZZZZ), *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines* is applicable, however, pursuant to 40 CFR 63.6590(c), a new stationary RICE located at area source may comply with requirements of Subpart ZZZZ by meeting the requirements of 40 CFR 60, Subpart JJJJ. No further requirements apply to this engine under 40 CFR 63.

401 KAR 60:005, Section 2(2)(pppp), 40 C.F.R. 60.4230 through 60.4248, Tables 1 through 4 (Subpart JJJJ), *Standards of Performance for Stationary Spark Ignition Internal Combustion Engines*, applies to stationary spark ignition (SI) internal combustion engines (ICE) that commence construction after June 12, 2006.

Comments:

Emissions calculated using 500 hours/yr to account for emergency operation. Emission factors based on Manufacturer data, AP-42 Chapter 3.2 Table 3.2-3 and 40 CFR 98 Tables C-1 and C-2.

Emission Unit 009 – Leachate Evaporator				
Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
PM	$P \leq 0.5 \text{ ton/hr:}$ $E = 2.34 \text{ lb/hr}$ $P \leq 30 \text{ tons/hr:}$ $E = 3.59P^{0.62}$	401 KAR 59:010, Section 3(2)	207.3 lb/MMscf; Manufacturer Data	Monitoring and recordkeeping
Opacity	20% opacity	401 KAR 59:010, Section 3(1)(a)	N/A	Daily qualitative observations, monitoring, recordkeeping
Initial Construction Date: 2025 Process Description: Evaporator unit used to evaporate leachate from the landfill. Model: Faering 1200 Series Maximum Capacity: 50,000 gallons leachate/day, 209 scfm natural gas combusted Fuel: Natural Gas/Residual Heat from RNG Plant Controls: None Applicable Regulation: 401 KAR 53:010, <i>Ambient air quality standards</i>, This regulation contains the primary and secondary Ambient Air Quality Standards for sulfur oxides, particulate matter, carbon monoxide, ozone, nitrogen dioxide, lead, hydrogen sulfide, gaseous fluorides, total fluorides, and odors are specified in Appendix A of 401 KAR 53:010. 401 KAR 59:010, <i>New process operations</i>, applies to each affected facility or source, associated with a process operation, with is not subject to another emission standard with respect to particulates in 401 KAR Chapter 59, commenced on or after July 2, 1975. State Origin Requirements: 401 KAR 63:020, <i>Potentially hazardous matter or toxic substances</i>, applies to each affected facility which emits or may emit potentially hazardous or toxic substances provided such emissions are not elsewhere subject to provisions of the administrative regulations of the Division for Air Quality. Comments: Emission factors for natural gas combustion based on AP-42 Chapter 1.4 Tables 1.4-2 through 1.4-4, 40 CFR 98 Tables C-1 and C-2, and Manufacturer data. Emission factors for leachate evaporation based on leachate sample data from October 2023.				

SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS (CONTINUED)

Testing Requirements\Results										
Emission Unit(s)	Control Device	Parameter	Regulatory Basis	Frequency	Test Method	Permit Limit	Test Result	Thruput and Operating Parameter(s) Established During Test	Activity Graybar	Date of last Compliance Testing
001	None	C _{NMOC} M _{NMOC}	40 CFR 60.754(a)(3)	Once every 5 years until >50 Mg	U.S. EPA Method 25C	50 Mg	20.77 Mg/yr (1996)	244 ppmv as Hexane; 194,000 tpy waste accepted	N/A	1996
001	None	C _{NMOC} M _{NMOC}	40 CFR 60.754(a)(3)	Once every 5 years until >50 Mg	U.S. EPA Method 25C	50 Mg	36.78 Mg/yr (2001)	313 ppmv as Hexane; 320,000 tpy waste accepted	N/A	9/18,2001, 9/19/2001, 11/1/2001
001	None	C _{NMOC} M _{NMOC}	40 CFR 60.754(a)(3)	Once every 5 years until >50 Mg	U.S. EPA Method 25C	50 Mg	41.63 Mg/yr (2002) Projected >50 Mg/yr in 2004	No retest; Increased Design Capacity required recalculation	N/A	Notification of increase and recalculation submitted 6/9/2003
001	None	H ₂ S ppm	401 KAR 50:045, Section 1	Initial & Annual	ASTM D5504	N/A	79.63 ppm	None provided	CMN20190003	6/5/2019
001	None	H ₂ S ppm	401 KAR 50:045, Section 1	Annual	ASTM D5504	N/A	15 ppm ¹	None provided	CMN20200003	8/5/2020

Testing Requirements\Results

Emission Unit(s)	Control Device	Parameter	Regulatory Basis	Frequency	Test Method	Permit Limit	Test Result	Thruput and Operating Parameter(s) Established During Test	Activity Graybar	Date of last Compliance Testing
001	None	H ₂ S ppm	401 KAR 50:045, Section 1	Annual	ASTM D5504	N/A	Invalid Result ²	None provided	CMN20200007	12/9/2020
001	None	H ₂ S ppm	401 KAR 50:045, Section 1	Annual	ASTM D5504	N/A	6.7 ppm	941 scfm	CMN20210004	8/12/2021
001	None	H ₂ S ppm	401 KAR 50:045, Section 1	Annual	ASTM D5504	N/A	2.19 ppm	1,015 scfm	CMN20220004	8/18/2022
001	None	H ₂ S ppm	401 KAR 50:045, Section 1	Annual	ASTM D5504	N/A	36.67 ppm	1,064 scfm	CMN20220008	12/8/2022
001	None	H ₂ S ppm	401 KAR 50:045, Section 1	Annual	ASTM D5504	N/A	30.01 ppm	730 scfm	CMN20230005	8/10/2023
001	None	H ₂ S ppm	401 KAR 50:045, Section 1	Annual	ASTM D5504	N/A	14.51 ppm	458 scfm	CMN20240005	8/8/2024
001	None	H ₂ S ppm	401 KAR 50:045, Section 1	Annual	ASTM D5504	N/A	115.33 ppm	427 scfm	CMN20250005	6/10/2025
001	None	H ₂ S ppm	401 KAR 50:045, Section 1	Annual	ASTM D5504	N/A	TBD	TBD	CMN20260004	TBD

Testing Requirements/Results

Emission Unit(s)	Control Device	Parameter	Regulatory Basis	Frequency	Test Method	Permit Limit	Test Result	Thruput and Operating Parameter(s) Established During Test	Activity Graybar	Date of last Compliance Testing
004	Flare	Net heating value	40 CFR 60.18(f)(3)	Initial	US EPA Method 18	> 7.45 MJ/scm	17.95 MJ/scm	518 scfm	CMN20080002	5/30/2008
004	Flare	Actual Exit Velocity	40 CFR 60.18(f)(4)	Initial	US EPA Method 1 & 2	< 37.2 m/s	2.46 m/s	518 scfm	CMN20080002	5/30/2008
004	Flare	Visible Emissions	40 CFR 60.18(f)(1)	Initial	US EPA Method 22	No visible emissions ³	No visible emissions	N/A	CMN20080004	10/22/2008
008	Leachate Evaporator	NMHC ppm	401 KAR 50:045, Section 1	Initial ⁴	US EPA Method 25A	N/A	3.04 ppm	488 scfm	CMN20250001	1/21/2025

Footnotes:

¹Note: Two out of three H₂S sample results for deemed invalid. The listed test result is from the one H₂S sample result that was deemed valid.

²Note: The sample was analyzed after the acceptable hold time.

³Note: No visible emission to exceed total of 5 minutes during any consecutive 2 hours.

⁴Note: Test conducted on the trial leachate evaporator.

SECTION 4 – SOURCE INFORMATION AND REQUIREMENTS

Table A - Group Requirements:

Emission and Operating Limit	Regulation	Emission Unit
N/A	N/A	N/A

Table B - Summary of Applicable Regulations:

Applicable Regulations	Emission Unit
401 KAR 53:010 , <i>Ambient air quality standards</i>	Site-wide
401 KAR 59:010 , <i>New process operations</i>	EU 009
401 KAR 60:005 , Section 2(2)(pppp), 40 C.F.R. 60.4230 through 60.4248 , Tables 1 through 4 (Subpart JJJJ), <i>Standards of Performance for Stationary Spark Ignition Internal Combustion Engines</i>	EU 007
401 KAR 61:036 , <i>Emission guidelines and compliance times for municipal solid waste (MSW) landfills</i> , requiring compliance with 40 CFR 60, Subpart Cf , <i>Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills</i>	EU 001 & 004
401 KAR 63:002 , Section 2(4)(hhh), 40 C.F.R. 63.1930 through 63.1990 , Table 1 (Subpart AAAA), <i>National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills</i>	EU 001 & 004
401 KAR 63:002 , Section 2(4)(eeee), 40 C.F.R. 63.6580 through 63.6675 , Tables 1a through 8, and Appendix A (Subpart ZZZZ), <i>National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines</i>	EU 007
401 KAR 63:010 , <i>Fugitive emissions</i>	EU 001, 002, 006 & 009
401 KAR 63:015 , <i>Flares</i>	EU 004
40 CFR 60.18 , <i>General control device and work practice requirements</i>	EU 004
40 CFR 61, Subpart M , <i>National Emission Standard for Asbestos</i>	EU 001
40 CFR 63.11 , <i>General control device and work practice requirements</i>	EU 004
401 KAR 63:020 , <i>Potentially hazardous matter or toxic substances</i>	EU 006 & 009

Table C - Summary of Precluded Regulations:

Precluded Regulations	Emission Unit
N/A	N/A

Table D - Summary of Non Applicable Regulations:

Non Applicable Regulations	Emission Unit
N/A	N/A

Air Toxic Analysis

401 KAR 63:020, *Potentially Hazardous Matter or Toxic Substances*

The Division for Air Quality (Division) performed AERMOD on October 16, 2017 of potentially hazardous matter or toxic substances that may be emitted by the facility based upon the process

rates, material formulations, stack heights and other pertinent information provided by the applicant. Based upon this information, the Division has determined that the conditions outlined in this permit will assure compliance with the requirements of 401 KAR 63:020.

Single Source Determination

Tri-K Landfill, Source ID #: 21-137-00014 (A.I. #2726), and the adjacent Lightning Renewables, LLC – Tri-K RNG, Source ID #: 21-137-00034 (A.I. #180239), are considered by the Cabinet and the United States Environmental Protection Agency to be a “single source” in determining applicability under 401 KAR 51:017, Prevention of significant deterioration of air quality (PSD) and 401 KAR 52:020, Title V permits. Each source is subject to 401 KAR 52:020 and will be issued individual Title V operating permits. Pursuant to the respective Title V permits, each permittee is responsible and liable for their own violations unless there is a joint cause for the violations.

SECTION 5 – COMPLIANCE ASSURANCE MONITORING

40 CFR 64, *Compliance assurance monitoring* (CAM) applies to a pollutant-specific emissions unit at a major source that is required to obtain a part 70 or 71 permit if the unit satisfies all of the following criteria:

- (1) The unit is subject to an emission limitation or standard for the applicable regulated air pollutant (or a surrogate thereof), other than an emission limitation or standard that is exempt under 40 CFR 64.2(b)(1);
- (2) The unit uses a control device to achieve compliance with any such emission limitation or standard; and
- (3) The unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source.

Emission Unit	Criteria 1 (Y/N)	Criteria 2 (Y/N)	Criteria 3 (Y/N)	Does CAM apply? If Y for criteria 1, 2, AND 3, then Yes, Otherwise, No.
001	N	N	N	No
002	N	N	N	No
004	N	N	N	No
005	N	N	N	No
006	N	N	N	No
007	N	N	N	No
008	N	N	N	No

* If Yes, CAM applies for any of the emission units above, then see further clarification for each listed emission unit in **Section 3**.

SECTION 6 – PERMITTING HISTORY

Permit	Permit Type	Activity #	Complete Date	Issuance Date	Summary of Action	PSD/Syn Minor
G-02-001	Operating	Unknown	2/12/2000	7/11/2002	Initial	N/A
G-07-001	Operating	APE20170001	3/11/2017	10/16/2018	Renewal	N/A
G-12-001	Operating	APE20120002	10/2/2012	2/9/2013	Renewal	N/A
V-18-034	Operating	APE20170008	9/21/2017	1/26/2019	Change from General permit to individual permit	N/A

SECTION 7 – PERMIT APPLICATION HISTORY

N/A

APPENDIX A – ABBREVIATIONS AND ACRONYMS

AAQS	– Ambient Air Quality Standards
BACT	– Best Available Control Technology
Btu	– British thermal unit
CAM	– Compliance Assurance Monitoring
CO	– Carbon Monoxide
Division	– Kentucky Division for Air Quality
ESP	– Electrostatic Precipitator
GHG	– Greenhouse Gas
HAP	– Hazardous Air Pollutant
HF	– Hydrogen Fluoride (Gaseous)
MSDS	– Material Safety Data Sheets
mmHg	– Millimeter of mercury column height
NAAQS	– National Ambient Air Quality Standards
NESHAP	– National Emissions Standards for Hazardous Air Pollutants
NO _x	– Nitrogen Oxides
NSR	– New Source Review
PM	– Particulate Matter
PM ₁₀	– Particulate Matter equal to or smaller than 10 micrometers
PM _{2.5}	– Particulate Matter equal to or smaller than 2.5 micrometers
PSD	– Prevention of Significant Deterioration
PTE	– Potential to Emit
SO ₂	– Sulfur Dioxide
TF	– Total Fluoride (Particulate & Gaseous)
VOC	– Volatile Organic Compounds

APPENDIX B – GCCS PLAN HISTORY AND REQUESTED ALTERNATIVES

Tri-K Landfill submitted an initial GCCS plan on May 24, 2006, and installed a GCCS to comply with 40 CFR 60, Subpart WWW in 2007, after the landfill exceeded the 50 Mg/yr threshold, and became subject to the requirement to install and operate a GCCS according to 40 CFR 60, Subpart WWW.

A revised GCCS plan was approved by the Division in the renewal process for V-18-034 (APE20170008), issued on January 26, 2019.

The Division approved of the submitted GCCS design plan as outlined in Sections I and III.

Additionally, the Division approved of the majority of Section II, with the exception of two statements that the Division did not grant approval of.

Statement #1: *Well Placement (Page II-3): “...Connections to the landfill leachate collection system are anticipated to be installed in the future to enhance odor control at Tri-K landfill, but these connects are not required to be part of the GCCS and will not be subject to the NSPS operating restrictions.”*

Statement #2: *Well Construction (Page II-4): “...It should be noted that not all gas wells installed at the facility are necessarily part of the network of wells required for NSPS compliance. The site may chose [sic] to delete or abandon certain non-gas producing wells from the NSPS network. As long as the site passes its routine surface emission monitoring requirements, this will demonstrate that the wells are installed at sufficient density. The wells that should be considered for NSPS compliance will be identified in the landfill’s annual NSPS report.”*

Division’s Response: The Division disapproves of these statements. Tri-K Landfill may formally propose alternative monitoring procedures or alternative operating parameters for subject collection systems but the source cannot be exempt from the operating parameter requirements altogether. Leachate cleanout riser, leachate sump extraction points, and any other gas collectors will be subject to the control and monitoring requirements in Subpart WWW if they are collecting gas from areas where waste has been in place for five years or more in active areas or where waste has been in place for two years or more either in closed areas or in areas that are at final grade. The operational requirements apply both to extraction points that must be connected to the NMOC control system and to extraction points that are connected to the NMOC system at the discretion of the landfill owner/operator. (See ADI No. 0800018, 0600096, and a letter dated 11/7/2008 from EPA Region 4 to Ronald Gore)

Additionally, requests for decommissioning or abandonment and design changes are to be approved by the Division, pursuant to 40 CFR 60.753(b)(3). Re-drilling of wells does not require prior approval from the Division, provided that the re-drilled well is consistent with the GCCS design plan. The process for decommissioning well or requesting revised standard operating procedures (in the case of low- or non-gas producing wells) must be done on an individual basis and is specified in Section H of the permit.

Tri-K Landfill also requested several alternative monitoring/recordkeeping/reporting scenarios in Section IV of the design plan. Below is a detailed response for each one. For the sake of brevity, only the relevant sentences from the source have been included in this letter.

Request #1: *General control device requirements: “The Tri-K Landfill proposes to use USEPA Method 3C or ASTM D3588 in place of Method 18 and ASTM D1946 to determine landfill gas components for calculating new heating value referenced under Section 60.18(c)(3).”*

Division’s Response: The Division approves of the request to use Method 3C as it is the required method in 40 CFR 60.754(e).

Request #2: *Operational Standards for Collection and Control Systems: “The Tri-K Landfill is proposing to only install permanent wells once final grades are reached and they area has been active for 5 years or more or closed or at final grade for 2 years or more. For cells that have been active for 5 years or more and are not yet to final grades, the leachate collection system or temporary gas extraction wells will be used for gas extraction until the wells can be installed (i.e., final grades have been reached).”*

Division’s Response: In areas that have been active for 5 years or more and are not yet to final grades, Tri-K landfill is still required to collect and control gas using a collection system meeting the requirements of 40 CFR 60.759 and the approved design plan. Tri-K landfill may use a temporary collection system, leachate collection system, and leachate recirculation system until final grades are achieved, however, these components should be installed according to the design plan and operated such that they meet all pressure, temperature, and oxygen/nitrogen requirements in Subpart WWW for gas collectors in NSPS areas. Tri-K landfill may submit a revised GCCS plan to the Division for approval if such a situation makes it necessary.

Request #3: *Operational Standards for Collection and Control Systems: “For clarification, the Tri-K Landfill is proposing to use an on-site analyzer, in lieu of a laboratory method, for determining the oxygen content of the landfill gas at each well and monitoring point. The site will be using a portable meter, such as GEM-500, GEM-2000, or equivalent, calibrated to the manufacturer’s specifications, to determine the oxygen content of the gas.”*

Division’s Response: The Division approves of the use of portable gas composition analyzers in conjunction with Method 3A to monitor the oxygen level at a wellhead. The portable gas composition analyzer may be used to monitor the oxygen level at a wellhead provided that the analyzer is calibrated and meets all QA/QC requirements according to Method 3A. ASTM D6522-11 may be used as an alternative to Method 3A for wellhead monitoring as long as all the quality assurance is conducted as required by ASTM D6522-11.

Request #4: *Operational Standards for Collection and Control Systems: “The Tri-K Landfill is proposing to exclude dangerous areas such as roads, the active waste fill area, active construction areas, truck traffic areas, and slopes steeper than 4:1 from surface testing.”*

Division’s Response: 40 CFR 60.753(d) already provides for exclusion of dangerous areas, so Division approval of exclusion of dangerous areas is unnecessary.

Request #5: *Compliance Provisions: “During the first 180 days of collection and control system operations, where either nitrogen or oxygen and/or temperature exceedances are monitored, Tri-*

K Landfill proposes to apply corrective measures to achieve operating standards. However, no expansion of the collection system to address the exceedances will occur within 120 days. In addition, for new individual wells installed at the Tri-K Landfill, the facility proposes to not expand the wellfield during the first 180 days of operation for any individual well which pressure, temperature and/or either oxygen or nitrogen exceedances are monitored.”

Division’s Response: The Division denies this request. The Tri-K Landfill may request alternative procedures to measure Nitrogen, Oxygen, and/or Temperature or request Higher Operating Value limits. If the facility is unable to correct exceedances within 15 days of well installation or replacement, an alternative timeline request must be made (See ADI No. 0800018). In addition, 40 CFR 60.755(a)(5) states that action shall be initiated to correct exceedances of temperature and nitrogen or oxygen within 5 calendar days. If correction cannot be achieved within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial exceedance.

Request #6: Compliance Provisions: *“The Tri-K Landfill is proposing to place the probe inlet as close as possible to the 5 to 10 centimeters range above ground surface, but will not place the probe below the top of the existing vegetation if it interferes with the surface monitoring.”*

Division’s Response: The Division denies this request. 40 CFR 60.755(c)(3) specifically requires that the probe be placed 5 to 10 centimeters above the ground. (See ADI No. 0400033)

Request #7: Monitoring of Operations: *“The Tri-K Landfill is proposing to potentially exclude surface monitoring at the landfill during times of winter weather when weather conditions are not favorable for monitoring.”*

Division’s Response: The Division denies this request. The concern is that the flame ionization detector will not work unless the ambient air is above freezing. There are days during each quarter that are warm enough to do surface monitoring and Tri-K Landfill has not proposed any alternative monitoring. (See ADI No. 0400033)

Request #8: Alternative Operating/Monitoring and Record Keeping for Non-Producing Wells: *“As such, the Tri-K Landfill, is proposing an alternative operating and monitoring plan for those LFG extraction wells that are unable to obtain the NSPS performance requirements due to poor gas production or composition.”*

Division’s Response: The Division denies this request. The Division cannot approve blanket Revised Standard Operating Procedures (RSOPs). Determinations must be made on a case-by-case basis. Each RSOP request must be supported by data and the affected well should be indicated on a map when submitted. Section H of the permit specifies the procedure for requesting an RSOP for a particular well.