2024 Annual Engineering Inspection Report

City of Little Rock

Yard Waste Compost Facility

Prepared for:

CITY OF LITTLE ROCK

City of Little Rock – Dept of Public Works
Division of Solid Waste Services
10803 Ironton Cutoff
Little Rock, AR 72206

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1.0 INTRODUCTION

The City of Little Rock (CLR) owns and operates a municipal solid waste management facility at 10803 Ironton Cutoff Road in Pulaski County, Arkansas. Facilities at this complex include a Class 1 landfill, Class 4 landfill, and yard waste composting site, all permitted on April 27, 1993, by the Arkansas Department of Energy and Environment's Division of Environmental Quality (DEQ) under Permit No. 0266-S. The complex also includes an administration building, shop building, records storage building, scale house, solid waste collection section building, vehicle wash site, fuel station, leachate pretreatment system, and a cart maintenance facility. The solid waste management facility is operated by the Solid Waste Services Division of the CLR Department of Public Works. On October 17, 2008, a separate permit for the yard waste compost facility, Permit No. 0031-SCYW, was issued to CLR. The permit was renewed for an additional 5-year period on May 31, 2023 (Document ID #83480).

DEQ policy requires that all permitted compost facilities prepare an annual report that addresses the quantity of compost produced. This report documents findings of a site inspection by the Engineer on March 6, 2025, and compliance with annual reporting requirements. **APPENDIX A** presents correspondence with DEQ during the year. **APPENDIX B** shows photos from the inspection.

2.0 OPERATIONS SUMMARY

The composting facility is a 20-acre, asphalt-paved site where yard waste is aerobically composted using the windrow composting method. The service area is the city of Little Rock. Incoming yard waste is weighed at the scale house and the source and tonnage recorded in electronic and paper records. The composting process consists of a four-step process as described in the sections below.

2.1 Preliminary Processing

Incoming yard waste is unloaded at a designated receiving area. Unacceptable items or oversized items such as large tree trunks are sorted out and disposed at the landfill. The remaining yard waste is then processed by grinding for size reduction.

2.2 Active Composting

The active compost process begins by constructing windrows of ground yard waste with front-end loaders. As the compost process progresses, windrows are periodically turned using a windrow turning machine or front-end loaders. Water is added as needed and pile temperature is monitored during the process.

2.3 Curing

As the active composting process progresses, windrows are gradually combined until finally, a large curing pile is constructed for final compost curing. The curing process allows time for the compost process to progress to maturity.

2.4 Final Screening

As the curing process is complete the compost is screened to reduce particle size and screen out plastic bag remnants and oversized materials. Final screening produces a uniform, high-quality material suitable for use as a soil amendment. Screen rejects are disposed of in the Class 1 landfill.

3.0 PROCESSED QUANTITIES

In addition to compost, this facility produces mulch (ground hard and soft wood). The scale house tracks the total tons of finished products (compost and mulch) removed from the site, the inert reject material that is sorted out and disposed of in the Class 1 landfill, and the yard and tree waste received at the facility. In addition, CLR tracks the tons of ground yard waste utilized as alternate daily cover (ADC) at the Class 1 landfill. The Facility received 25,624.86 tons of yard waste for the 2024 calendar year. The table in **APPENDIX D** shows the tonnage handled for the 2024 calendar year, including the Class 1 Landfill, Class 4 Landfill, and the Yard Waste Compost Facility. **APPENDIX D** also includes the total processed yard waste removed from the facility for the 2024 calendar year.

4.0 COMPLIANCE WITH OPERATING REQUIREMENTS

Based on quarterly inspections by DEQ, the yard waste compost site is taking corrective measures to maintain compliance with the operating requirements of Regulation No. 22 and permit conditions. Correspondence with DEQ is included in **APPENDIX A**.

4.1 Blowing Litter

Yard waste including leaves, grass, and shrubbery pruning’s are typically collected in plastic bags. During the composting process, some blowing litter problems are generated due to the grinding of the above plastic bags. To address blowing litter problems, CLR installed a perimeter fence in January 2002. Removal of ground plastic trapped by the perimeter fence is carried out regularly at the facility.

4.2 Site Inventory

Site inventory is the comparison between the amount of incoming material (yard and tree waste) and the amount of material leaving the composting site, which is composed of finished products (compost and mulch), compost rejects, and ground yard waste utilized as alternate daily cover material at the Class 1 landfill. The facility had several piles of unprocessed waste, ground waste and compost. The materials were well-segregated. Processed material was being hauled to the Class 1 landfill for use as Alternative Daily Cover (ADC) during the inspection.

4.3 Pond Maintenance

City crews perform ongoing maintenance activities on the compost runoff pond such as mowing of the cover vegetation of the pond's banks. The pond and perimeter swales were in good condition at the time of the inspection. Minor amounts of litter were present in the east swale from traffic to the Class 1 and Class 4 landfills. The facility routinely collects and disposes of this litter.

5.0 PROPOSED CHANGES TO THE OPERATING PLAN

An NOI for a permit renewal was submitted on 8/26/2024. No changes in the current method of operations were required.

6.0 STORMWATER CONTROLS

Stormwater controls are in place and functioning. On October 25, 2006, DEQ issued NPDES Industrial Stormwater General Permit (IGP) No. ARR000220, and the most recent permit renewal was issued April 24, 2020. The IGP Stormwater Pollution Prevention Plan (SWPPP), facility inspections, discharge monitoring results and reports, including the Stormwater Annual Report (SWAR), are included in the facility operating record to be made available to DEQ upon request.

The NPDES permit allows the discharge of the CLR composting runoff pond into "waters of the United States." On November 7, 2006, CLR began discharging the compost runoff pond into a ditch located just north of the pond. As a backup system, stormwater from the compost runoff pond can be diverted to the leachate pond or directly to the city's sewer line.

7.0 CLOSURE COST

The Closure Cost for the Yard Waste Compost Facility is shown in Table 5.7 of Section 5.5 of the **APPENDIX C**. The Closure Cost is estimated to be $220,124.41. This cost includes a unit cost to process and distribute the remaining yard waste of $24.46 per ton.

8.0 CORRECTIVE ACTIONS

The yard waste and compost facility have been taking the following corrective measures to ensure compliance with ADEQ. Correspondence can be found in **APPENDIX A:**

1st Quarter Inspection (1/2/2024)

- **Category 1, Regulation 805(b)(2); (c)(6)** – The western half of the asphalt pad is no longer present and operations had to be moved to the eastern portion of the pad.

2nd Quarter Inspection (5/7/2024)

- **Category 1, Regulation 804** – The permit has expired. An NOI was not received by 4/30/2023.
- **Category 1, Regulation 805(b)(2)** – Updated Operating Plan is required.
- **Category 2, Regulation 806(a)(2)** – Ponding water was observed on the southeast side of the compost yard.

2nd Quarter Inspection Response

- **Category 1, Regulation 804** – An NOI was submitted on 8/26/2024.
- **Category 1, Regulation 805(b)(2)** – An NOI was submitted on 8/26/2024.

3rd Quarter Inspection (7/11/2024)

- **Category 1, Regulation 804** – The permit has expired.
- **Category 1, Regulation 805(b)(2); (c)(6)** – Updated Operating Plan is required.

3rd Quarter Inspection Response

- **Category 1, Regulation 804** – An NOI was submitted on 8/26/2024.
- **Category 1, Regulation 805(b)(2); (c)(6)** – An NOI was submitted on 8/26/2024.

4th Quarter Inspection (11/26/2024)

- **Category 1, Regulation 804** – The permit has expired.
- **Category 1, Regulation 805(b)(2); (c)(6)** – Updated Operating Plan is required.

4th Quarter Inspection Response

- **Category 1, Regulation 804** – An NOI was submitted on 8/26/2024.
- **Category 1, Regulation 805(b)(2); (c)(6)** – An NOI was submitted on 8/26/2024.

Appendix A:

Department Correspondence/Inspections

DIVISION OF
ENVIRONMENTAL QUALITY

Sarah Huckabee Sanders
GOVERNOR

Shane E. Khoury
SECRETARY

6/11/2024

Bernard Owens
Solid Waste Service Manager
10803 Ironton Cutoff Road
City of Little Rock Disposal Facility
Little Rock, AR 72206

RE: Inspection conducted on May 7, 2024
AFIN 60-01071
Permit Number 0031-SCYW

Dear Mr. Owens,

The Arkansas Division of Environmental Quality Office of Land Resources (DEQ) conducted a routine inspection of your facility pursuant to the Arkansas Solid Waste Management Act (Arkansas Code, Annotated, § 8-6-201 *et seq*.), of 1971, as amended, the Arkansas Pollution Control & Ecology Commission Regulation 22 (Solid Waste Management), and the above-referenced permit. The inspection identified conditions at your facility which the DEQ alleges are violations. A copy of the inspection report is attached.

You should immediately initiate actions to correct the alleged violations cited. A written response of the corrective actions taken, or to be taken, must be submitted within thirty (30) calendar days from the date on this letter to the attention of Casey Jackson. The response may include, but is not limited to, photographs, copies of disposal receipts, records, or analytical results, as applicable. If you have any questions regarding the alleged violations, please do not hesitate to contact me at (501) 682-0832 or casey.jackson@adeq.state.ar.us.

Sincerely,

Casey Jackson
Solid Waste Inspector

cc: Ryan Hayden, Senior Compliance Manager, Office of Land Resources

Division of Environmental Quality
Office of Land Resources
Compost Inspection Form

Site Name	City of Little Rock	**County**	Pulaski	**AFIN**	60-01071
Facility Address	10803 Ironton Cutoff Rd., Little Rock, AR	**Phone #**	501-888-6751	**Permit #**	0031-SCYW
Permittee Address	10803 Ironton Cutoff Rd., Little Rock, AR	**Email Address**	sowens@littlerock.gov	**PDS #**	130694
Date	5/7/2024	**Entry Time**	1330	**Exit Time**	1530

Classification	X	**Y – Yard Waste**		**O – Source Separated Organic Waste**		**S – Mixed Solid Waste**	

Operational Standards

Category 1

	Regulation	Item Description	Comments
X	804	Application Requirements	Permit expired. An NOI was not received by April 30, 2023. Refer to Doc # 83480.
	805(b)(1); (c)(5)	Operating Records Maintained	
X	805(b)(2)	Conforms to Operating Plan	An updated operating plan describing current operations is required.
	806(a)(4); (b)(9)	Site Access & Security Measures	
	808(a)(b)(c)	Record Keeping & Reporting	

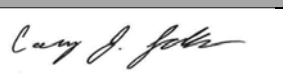
Category 2

	Regulation	Item Description	Comments
	805(a)(2)	Operations Follow Acceptable Methods	
	805(a)(3)	Operations Performed by Licensed Operator	
	805(a)(4); (b)(2)	Monitoring Types of Waste Received	
	805(c)(2) Type O&S	Daily Temperature Readings Recorded	
	805(c)(4) Type O&S	Finished Compost not Sold Within 6 Months	
	805(c)(3) Type O&S	Processing of Incoming Waste Within 3 Days	
X	806(a)(2)	Adequate Composting Area Surface	Ponding water observed on the southeast side of the compost yard. (Refer to photos #1-#3)
	806(a)(5); (b)(10)	Odor, Noise, Dust, Vector & Litter Control	
	806(a)(6); (b)(11)	Handle and Remove Unacceptable Waste	
	807(a)(b)(c); 808(b)(9) Type O&S	Testing of Run-off and Compost	

Category 3

	Regulation	Item Description	Comments
	805(a)(1)	Operations Preclude Pollution	
	805(c)(1) Type O&S	Compost Process Meets PFRP	
	805(c)(3) Type O&S	Adequate Leachate and NPDES Control Measures	
	806(a)(3); (b)(7)	Control for Stormwater, Run-off & NPDES	
	806(b)(8) Type O&S	Leachate Collection and Removal System	
	809(a)(b)(c)	Compost Utilization	

Records

Date of Last Annual Report	3/29/2024	**Previous Month's Waste Received**			2674.75 Tons			
Operator Name & Number	Robert T. Lewis - 004578	**Signature of Inspector**						
Exit Interview Conducted with	Robert T. Lewis	**Method**	On-Site	**Date**	5/7/2024	**Time**	1520	

Division of Environmental Quality
Official Photograph Sheet

Location	City of Little Rock Compost Yard			**Permit**	0031-SCYW	**AFIN**	60-01071
Photographer	Casey Jackson CSS			**Witness**	N/A		
Photo #	1	**Of**	4	**Date**	5/7/2024	**Time**	1422
Description	Ponded water was observed on southeast side of the compost yard.						

Location	City of Little Rock Compost Yard			**Permit**	0031-SCYW	**AFIN**	60-01071
Photographer	Casey Jackson CSS			**Witness**	N/A		
Photo #	2	**Of**	4	**Date**	5/7/20204	**Time**	1422
Description	Ponded water was observed on southeast side of the compost yard.						

Division of Environmental Quality
Official Photograph Sheet

Location	City of Little Rock Compost Yard			**Permit**	0031-SCYW	**AFIN**	60-01071
Photographer	Casey Jackson			**Witness**	N/A		
Photo #	3	**Of**	4	**Date**	5/7/20204	**Time**	1422
Description	Ponded water was observed on southeast side of the compost yard.						

Location	City of Little Rock Compost Yard			**Permit**	0031-SCYW	**AFIN**	60-01071
Photographer	Casey Jackson			**Witness**	N/A		
Photo #	4	**Of**	4	**Date**	5/7/20204	**Time**	1425
Description	Grass observed growing across the west side of the 20-acre compost yard, looking west to east.						

DIVISION OF
ENVIRONMENTAL QUALITY

Sarah Huckabee Sanders
GOVERNOR

Shane E. Khoury
SECRETARY

7/31/2024

Bernard Owens
Solid Waste Service Manager
10803 Ironton Cutoff Road
City of Little Rock Disposal Facility
Little Rock, AR 72206

RE: Inspection conducted on July 11, 2024
AFIN 60-01071
Permit Number 0031-SCYW

Dear Mr. Owens,

The Arkansas Division of Environmental Quality Office of Land Resources (DEQ) conducted a routine inspection of your facility pursuant to the Arkansas Solid Waste Management Act (Arkansas Code, Annotated, § 8-6-201 *et seq*.), of 1971, as amended, the Arkansas Pollution Control & Ecology Commission Regulation 22 (Solid Waste Management), and the above-referenced permit. The inspection identified conditions at your facility which the DEQ alleges are violations. A copy of the inspection report is attached.

The City of Little Rock should immediately initiate actions to correct the alleged violations cited. A written response of the corrective actions taken, or to be taken, must be submitted within thirty (30) calendar days from the date on this letter to the attention of Casey Jackson. The response may include, but is not limited to, photographs, copies of disposal receipts, records, or analytical results, as applicable. If you have any questions regarding the alleged violations, please do not hesitate to contact me at (501) 682-0832 or casey.jackson@arkansas.gov.

Sincerely,

Casey Jackson
Solid Waste Inspector

cc: Ryan Hayden, Senior Compliance Manager, Office of Land Resources

Division of Environmental Quality
Office of Land Resources
Compost Inspection Form

Site Name	City of Little Rock	**County**	Pulaski	**AFIN**	60-01071
Facility Address	10803 Ironton Cutoff Rd., Little Rock, AR	**Phone #**	501-888-6751	**Permit #**	0031-SCYW
Permittee Address	10803 Ironton Cutoff Rd., Little Rock, AR	**Email Address**	sowens@littlerock.gov	**PDS #**	131285
Date	7/11/2024	**Entry Time**	0934	**Exit Time**	1245

Classification	X	**Y – Yard Waste**		**O – Source Separated Organic Waste**		**S – Mixed Solid Waste**	

Operational Standards

Category 1

	Regulation	Item Description	Comments
	804	**Application Requirements**	Permit expired. An NOI was submitted via eportal and is awaiting signature. Electronic signature approval was hand delivered 7/3/2024.
	805(b)(1); (c)(5)	**Operating Records Maintained**	
X	**805(b)(2); (c)(6)**	**Conforms to Operating Plan**	An updated operating plan describing current operations is required.
	806(a)(4); (b)(9)	**Site Access & Security Measures**	
	808(a)(b)(c)	**Record Keeping & Reporting**	

Category 2

	Regulation	Item Description	Comments
	805(a)(2)	**Operations Follow Acceptable Methods**	
	805(a)(3)	**Operations Performed by Licensed Operator**	
	805(a)(4); (b)(2)	**Monitoring Types of Waste Received**	
	805(c)(2) Type O&S	**Daily Temperature Readings Recorded**	
	805(c)(4) Type O&S	**Finished Compost not Sold Within 6 Months**	
	805(c)(3) Type O&S	**Processing of Incoming Waste Within 3 Days**	
	806(a)(2	**Adequate Composting Area Surface**	
	806(a)(5); (b)(10)	**Odor, Noise, Dust, Vector & Litter Control**	
	806(a)(6); (b)(11)	**Handle and Remove Unacceptable Waste**	
	807(a)(b)(c); 808(b)(9) Type O&S	**Testing of Run-off and Compost**	

Category 3

	Regulation	Item Description	Comments
	805(a)(1)	**Operations Preclude Pollution**	
	805(c)(1) Type O&S	**Compost Process Meets PFRP**	
	805(c)(3) Type O&S	**Adequate Leachate and NPDES Control Measures**	
	805(a)(3); (b)(7)	**Control for Stormwater, Run-off & NPDES**	
	806(b)(8) Type O&S	**Leachate Collection and Removal System**	
	809(a)(b)(c)	**Compost Utilization**	

Records

Date of Last Annual Report	3/29/2024	**Previous Month's Waste Received**			2,498.74 Tons			
Operator Name & Number	Bernard Owens - 004434	**Signature of Inspector**						
Exit Interview Conducted with	Bernard Owens	**Method**	On-Site	**Date**	7/11/2024	**Time**	1240	

DIVISION OF
ENVIRONMENTAL QUALITY

Sarah Huckabee Sanders
GOVERNOR

Shane E. Khoury
SECRETARY

12/30/2024

Bernard Owens
Solid Waste Service Manager
10803 Ironton Cutoff Road
City of Little Rock Disposal Facility
Little Rock, AR 72206

RE: Inspection conducted on November 26, 2024
AFIN 60-01071
Permit Number 0031-SCYW

Dear Mr. Owens,

The Arkansas Division of Environmental Quality Office of Land Resources (DEQ) conducted a routine inspection of your facility pursuant to the Arkansas Solid Waste Management Act (Arkansas Code, Annotated, § 8-6-201 *et seq*.), of 1971, as amended, the Arkansas Pollution Control & Ecology Commission Regulation 22 (Solid Waste Management), and the above-referenced permit. The inspection identified conditions at your facility which the DEQ alleges are violations. A copy of the inspection report is attached.

The City of Little Rock should immediately initiate actions to correct the alleged violations cited. A written response of the corrective actions taken, or to be taken, must be submitted within thirty (30) calendar days from the date on this letter to the attention of Casey Jackson. The response may include, but is not limited to, photographs, copies of disposal receipts, records, or analytical results, as applicable. If you have any questions regarding the alleged violations, please do not hesitate to contact me at (501) 682-0832 or casey.jackson@arkansas.gov.

Sincerely,

Casey Jackson
Solid Waste Inspector

cc: Ryan Hayden, Senior Compliance Manager, Office of Land Resources

Division of Environmental Quality
Office of Land Resources
Compost Inspection Form

Site Name	City of Little Rock	**County**	Pulaski	**AFIN**	60-01071
Facility Address	10803 Ironton Cutoff Rd., Little Rock, AR	**Phone #**	501-888-6751	**Permit #**	0031-SCYW
Permittee Address	10803 Ironton Cutoff Rd., Little Rock, AR	**Email Address**	sowens@littlerock.gov	**PDS #**	132722
Date	11/26/2024	**Entry Time**	0900	**Exit Time**	1119

Classification	X	**Y – Yard Waste**		**O – Source Separated Organic Waste**		**S – Mixed Solid Waste**	

Operational Standards

Category 1

	Regulation	Item Description	Comments
	804	**Application Requirements**	Permit expired. An NOI was submitted via eportal on 8/26/2024 and is awaiting approval.
	805(b)(1); (c)(5)	**Operating Records Maintained**	
X	**805(b)(2); (c)(6)**	**Conforms to Operating Plan**	An updated operating plan describing current operations is required.
	806(a)(4); (b)(9)	**Site Access & Security Measures**	
	808(a)(b)(c)	**Record Keeping & Reporting**	

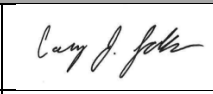
Category 2

	Regulation	Item Description	Comments
	805(a)(2)	**Operations Follow Acceptable Methods**	
	805(a)(3)	**Operations Performed by Licensed Operator**	
	805(a)(4); (b)(2)	**Monitoring Types of Waste Received**	
	805(c)(2) Type O&S	**Daily Temperature Readings Recorded**	
	805(c)(4) Type O&S	**Finished Compost not Sold Within 6 Months**	
	805(c)(3) Type O&S	**Processing of Incoming Waste Within 3 Days**	
	806(a)(2); (b)(3)	**Adequate Composting Area Surface**	
	806(a)(5); (b)(10)	**Odor, Noise, Dust, Vector & Litter Control**	
	806(a)(6); (b)(11)	**Handle and Remove Unacceptable Waste**	
	807(a)(b)(c); 808(b)(9) Type O&S	**Testing of Run-off and Compost**	

Category 3

	Regulation	Item Description	Comments
	805(a)(1)	**Operations Preclude Pollution**	
	805(c)(1) Type O&S	**Compost Process Meets PFRP**	
	805(c)(3) Type O&S	**Adequate Leachate and NPDES Control Measures**	
	805(a)(3); (b)(7)	**Control for Stormwater, Run-off & NPDES**	
	806(b)(8) Type O&S	**Leachate Collection and Removal System**	
	809(a)(b)(c)	**Compost Utilization**	

Records

Date of Last Annual Report	3/29/2024	**Previous Month's Waste Received**			4,707.99		
Operator Name & Number	Raymond Bell - 000561	**Signature of Inspector**					
Exit Interview Conducted with	Raymond Bell	**Method**	On-Site	**Date**	11/26/2024	**Time**	1110

DIVISION OF
ENVIRONMENTAL QUALITY

Sarah Huckabee Sanders
GOVERNOR

Shane E. Khoury
SECRETARY

1/9/2024

Bernard Owens
Solid Waste Service Manager
10803 Ironton Cutoff Road
City of Little Rock Disposal Facility
Little Rock, AR 72206

RE: Inspection conducted on January 2, 2024
AFIN 60-01071
Permit Number 0031-SCYW

Dear Mr. Owens,

The Arkansas Division of Environmental Quality Office of Land Resources (DEQ) conducted a routine inspection of your facility pursuant to the Arkansas Solid Waste Management Act (Arkansas Code, Annotated, § 8-6-201 *et seq*.), of 1971, as amended, the Arkansas Pollution Control & Ecology Commission Regulation 22 (Solid Waste Management), and the above-referenced permit. The inspection identified conditions at your facility which the DEQ alleges are violations. A copy of the inspection report is attached.

You should immediately initiate actions to correct the alleged violations cited. A written response of the corrective actions taken, or to be taken, must be submitted within thirty (30) calendar days from the date on this letter to the attention of Casey Jackson. The response may include, but is not limited to, photographs, copies of disposal receipts, records, or analytical results, as applicable. If you have any questions regarding the alleged violations, please do not hesitate to contact me at (501) 682-0832 or casey.jackson@adeq.state.ar.us.

Sincerely,

Casey Jackson
Solid Waste Inspector

cc: Nicholas Jones P.E., Senior Operations Manager, Office of Land Resources

Division of Environmental Quality
Office of Land Resources
Compost Inspection Form

Site Name	City of Little Rock	**County**	Pulaski	**AFIN**	60-01071
Facility Address	10803 Ironton Cutoff Rd., Little Rock, AR	**Phone #**	501-888-6751	**Permit #**	0031-SCYW
Permittee Address	10803 Ironton Cutoff Rd., Little Rock, AR	**Email Address**	sowens@littlerock.gov	**PDS #**	128796
Date	1/2/2024	**Entry Time**	10:20	**Exit Time**	12:30

Classification	X	**Y – Yard Waste**		**O – Source Separated Organic Waste**		**S – Mixed Solid Waste**	

Operational Standards

Category 1

	Regulation	Item Description	Comments
	804	**Application Requirements**	
	805(b)(1); (c)(5)	**Operating Records Maintained**	
X	**805(b)(2); (c)(6)**	**Conforms to Operating Plan**	Document #81838 describes the compost yard as a 20-acre asphalt paved site where aerobic compost occurs. This document also states, in part, no changes in the current method of operations were required. Comment: The western half of the asphalt pad is no longer present and operations have had to be moved to the eastern portion of the pad.
	806(a)(4); (b)(9)	**Site Access & Security Measures**	
	808(a)(b)(c)	**Record Keeping & Reporting**	

Category 2

	Regulation	Item Description	Comments
	805(a)(2)	**Operations Follow Acceptable Methods**	
	805(a)(3)	**Operations Performed by Licensed Operator**	
	805(a)(4); (b)(2)	**Monitoring Types of Waste Received**	
	805(c)(2) Type O&S	**Daily Temperature Readings Recorded**	
	805(c)(4) Type O&S	**Finished Compost not Sold Within 6 Months**	
	805(c)(3) Type O&S	**Processing of Incoming Waste Within 3 Days**	
	806(a)(2); (b)(3)	**Adequate Composting Area Surface**	
	806(a)(5); (b)(10)	**Odor, Noise, Dust, Vector & Litter Control**	
	806(a)(6); (b)(11)	**Handle and Remove Unacceptable Waste**	
	807(a)(b)(c); 808(b)(9) Type O&S	**Testing of Run-off and Compost**	

Category 3

	Regulation	Item Description	Comments
	805(a)(1)	**Operations Preclude Pollution**	
	805(c)(1) Type O&S	**Compost Process Meets PFRP**	
	805(c)(3) Type O&S	**Adequate Leachate and NPDES Control Measures**	
	805(a)(3); (b)(7)	**Control for Stormwater, Run-off & NPDES**	
	806(b)(8) Type O&S	**Leachate Collection and Removal System**	
	809(a)(b)(c)	**Compost Utilization**	

Records								
Date of Last Annual Report	8/21/2023	**Previous Month's Waste Received**			6,343.45			
Operator Name & Number	Bernard Owens - 004434	**Signature of Inspector**						
Exit Interview Conducted with	Bernard Owens	**Method**	On-Site	**Date**	1/2/2024	**Time**	12:20	

Notice of Intent (NOI) for Coverage under General Permit for Yard Waste Composting Facility - Type Y

version 1.18

(Submission #: HQ4-MH5J-WW355, version 2)

Details

Submitted	8/26/2024 (79 days ago) by Matthew Joseph Acree
AFIN	60-01071
Reference #	0031-SCYW
Submission ID	HQ4-MH5J-WW355
Submission Assigned Staff	Michael Marchman
Status	Submitted

Form Input

Applicant Identification

Legal Name of Applicant
City of Little Rock Yard Waste Composting Facility

Applicant's Contact Information and Legal Address (Mailing Address)

Phone Type	Number	Extension
Business	5018884492	

Email
sowens@littlerock.gov

Address
10803 Ironton Cutoff
Little Rock, AR 72206

Responsible Official

First Name	Last Name
Bernard	*Owens*

Title
Solid Waste Services Manager

Phone Type	Number	Extension
Business	5018884492	

Engineer or Consultant

First Name	Last Name
Dave	*McCormick*

Title
Solid Waste Manager

Phone Type	Number	Extension
Business	5019431018	

Facility Identification

Name of Facility
City of Little Rock Yard Waste Composting Facility

Arkansas DEQ Facility Identification Number (AFIN), If Applicable
60-01071

Facility Contact and Physical Location (Site Address)

First Name	Last Name
Bernard	*Owens*

Title
Solid Waste Services Manager

Phone Type	Number	Extension
Business	5018884492	

Email
sowens@littlerock.gov

Address
10803 IRONTON CUT OFF RD
LITTLE ROCK, AR 72206
Pulaski

Facility Latitude and Longitude (Enter in decimal degrees)
34.64914408214068,-92.3011028892243

Facility Section/Township/Range
Section 09Township 1 South, Range 12 West

Application Type

Select the Application Type
Renewal

Classification

Classification
0000-SCYW >50 tons or 500 cu yds annually

Regional Solid Waste Management District (RSWMD) Notification

Has the facility notified the appropriate Regional Solid Waste Management District? [See Rule 22.803(C)]
Yes

RSWMD Notification Attachment
RSWMD Notification.pdf - 07/01/2024 11:34 AM
Comment
NONE PROVIDED

Current Permit Status

Is the site currently Permitted by the Division as a Solid Waste Yard Waste Compost Facility?
Yes

Solid Waste Yard Waste Compost Facility Permit Number
0031-SCYW

Does the Facility Have Any Other DEQ Permits? Stormwater Permitting is Required.
Yes

Enter the Other DEQ Permit Number(s)

Permit Number
0266-S1
0266-S4
1781-AOP-R4
ARG160036
ARR000220

Location Restrictions and Siting Requirements Demonstration

Does the Applicant Own or Control the Site?
Yes

Is the Applicant Responsible for Facility Operation and Maintenance?
Yes

Is Site Located in the 100-Year Flood Plain?
No

Is Site Designed and Operated to Not Restrict Flow of Base Flood, Reduce Water Storage Capacity of Flood Plain, or Result in Washout of Solid Waste?
Yes

Is the Site Located in a Jurisdictional Wetland?
No

Has the Site Obtained All Necessary Geographic Site Approval from Government(s) of Jurisdiction?
Yes

Was the Site in Existence Prior to May 7, 1995?
Yes

Are Site Active Areas Located Within 50 Feet of Property Boundary?
No

Are Site Active Areas Located Within 100 Feet of a Naturally Occurring Water Body?
No

Site Active Areas Located Within 200 Feet of an Existing Residence, Place of Business or Drinking Water Supply Not Owned or Leased by Applicant?
No

Additional Required Attachments

Site and 1/2 Mile Surrounding Land Use, Zoning, and Existing Features Map [See Rule 22.804(b)(3)]
SWMD Reference ID

Site and 1/2 Mile Surrounding Land Use, Zoning, and Existing Features SWMD Reference ID
35499

Map Depicting Wetlands and Floodplains [See Rule 22.804(b)(4)]
SWMD Reference ID

Map Depicting Wetlands and Floodplains SWMD Reference ID
35499

Site Plan [See Rule 22.804(b)(5)]
SWMD Reference ID

Site Plan SWMD Reference ID
35499

Operating Narrative [See Rule 22.804(b)(8)(i) and Conform to 22.805]
SWMD Reference ID

Operating Narrative SWMD Reference ID
35499

Closure Plan [See Rule 22.804(b)(9)]
SWMD Reference ID

Closure Plan SWMD Reference ID
53152

Does the Facility Have Design Plans and Operating Specifications [See Rule 22.806]?
Yes

Industrial and/or Special Waste Material

Describe All Waste or Recovered Material or Otherwise All Material Accepted at the Site. Include All Material Whether Processed by Composting or Simply Processed and Store for Re-Distribution or Re-Use.
Yard waste including leaves, mulch, trees and limbs are accepted at the site and placed through a four-step composting process. The process includes (1) preliminary processing and sorting, (2) active composting of ground yard waste, (3) curing in piles, and (4) final screening to reduce particle size and screen out plastic remnants. Unacceptable or oversized items are disposed in the onsite Class 1 landfill.

Will the Facility Accept Any Industrial Wastes or Special Materials? See Rule 22.102 - Definitions.
No

Permit Fees

Fee Amount ($)
$0

For Existing Permitted Facilities, the Current Annual Billing Cycle will Remain Unchanged and There Are No Additional Fees. Simply Continue Paying the $450 Annual Fee When It is Billed by DEQ.

All Facilities - Are All DEQ Invoices Paid to Date (For All Permits or Licenses)?
Yes

Financial Assurance (FA) Requirement [22.810(c)]

Has a Detailed Closure Cost Estimate Been Completed? [See Rule 22.810(b)]
Yes

Does the Closure Cost Estimate Include the Maximum Permitted Amount of Waste and Compost Ever Stored Onsite at One Time?
Yes

Discuss Basis for Cost Estimates, Loading, Hauling, Disposal, Other Clean-Up or Other Removal of Items or Materials.
Closure is based upon (1) hauling and redistribution of completed compost material to City parks and (2) processing and distribution of remaining yard waste by a private contractor. Any additional materials may be taken to the onsite Class 1 landfill.

Cost Estimate Summary Form

Description	Explain Other	Quantity (Max. Permitted Tons)	Third-Party Closure Cost ($)
Yard Waste Stored Onsite		9000	214,337.30
Yard Waste in Composting Process (Incl. Production and Curing Amounts)		0	0
Stored Finished Compost Onsite		36000	0
Unprocessed Finished Compost Onsite		0	0
Processed Wood Waste Stored Onsite		0	0
Non-compostable Material for Recycling		0	0
Non-compostable Waste Residual Materials for Disposal		0	0
Other	If Additional Items, Enter Explanation Here and Enter Quantity and Cost in the Next Two Columns	0	0
Other	If Additional Items, Enter Explanation Here and Enter Quantity and Cost in the Next Two Columns	0	0
Other	If Additional Items, Enter Explanation Here and Enter Quantity and Cost in the Next Two Columns	0	0
Other	If Additional Items, Enter Explanation Here and Enter Quantity and Cost in the Next Two Columns	0	0
Other	If Additional Items, Enter Explanation Here and Enter Quantity and Cost in the Next Two Columns	0	0
			Sum: 214,337

Sub-Total of Closure Cost Estimate Summary ($)
214,337

Total - Contingency 150% of Closure Cost Estimate Summary (Rule 22.810(c)(2))
321,506

Disclosure Statement

In Accordance with A.C.A. 8-1-106 a Disclosure Statement is Required to be Maintained on Forms Provided by DEQ. Exemption to this Requirement Exists for Federal, State, Municipal, County or Solid Waste Management District Owned Sites. The Exemption Does Not Extend to Improvement District or Other Extensions of Government that are Not Instituted by an Act of the General Assembly. Publicly Held Companies Which File Reports Under the Securities and Exchange Act are Not Required to File DEQ Disclosure Forms, but They Must Submit the Most Recent Report Which Provides Information Regarding the Legal Proceedings of the Applicant.
Click Here to Download the DEQ Disclosure Statement Form

Disclosure Statement or SEC Report
Exempt Federal, State, City, County or RSWMD

Attachments

Date	Attachment Name	Context	User
8/27/2024 11:40 AM	Certification Form.pdf	Submission	Haley Griffith

Date	Attachment Name	Context	User
8/26/2024 12:41 PM	CertificationForm.pdf	Unknown	Matthew Acree
7/1/2024 11:34 AM	RSWMD Notification.pdf	Attachment	Matthew Acree

Status History

	User	Processing Status
8/26/2024 12:37:36 PM	Matthew Joseph Acree	Draft
8/26/2024 12:38:07 PM	Matthew Joseph Acree	Submitting
8/26/2024 12:39:32 PM	Matthew Joseph Acree	Submitted

Revisions

Revision	Revision Date	Revision By
Revision 1	6/24/2024 3:08 PM	Matthew Joseph Acree
Revision 2	8/26/2024 12:37 PM	Matthew Joseph Acree

This is an existing facility. A copy of previous notifications to the Pulaski County SWMD was not readily available for attachment.

RECEIVED
AUG 26 2024
AR 2:57 pm

ENVIRONMENTAL QUALITY

Certification of ePortal Submission

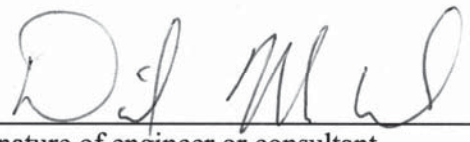
This form is to be used to certify electronic ePortal submissions. Please check with the appropriate section for who has the authority to sign this form. A hardcopy of this form with original signature must be sent to DEQ, 5301 Northshore Drive, North Little Rock, AR 72118. Please do **not** send a hardcopy of the ePortal submission with this form. **All fields are required**.

1. Section to which the ePortal Submission was Submitted:	Solid Waste Management Section
2. Form Name:	Notice of Intent (NOI) for Coverage under General Permit for Yard Waste Composting Facility - Type Y
3. Arkansas DEQ Facility Identification Number (AFIN), if available:	60-01071
4. Facility Name:	City of Little Rock Yard Waste Composting Facility
5. Facility Physical Address:	10803 IRONTON CUT OFF RD LITTLE ROCK, AR 72206

I certify under penalty of law that the ePortal submission with Submission ID# HQ4-MH5J-WW355 and revision # 1 which was submitted electronically on 8/26/2024 12:35:47 PM 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. To the best of my knowledge and belief, I certify the information provided in this submission is true and accurate.

Bernard Owens	Solid Waste Services Manager
typed/printed name of applicant	title
Bernard Owens	8/26/2024
signature of applicant	date

I certify that I am aware that statements made in the ePortal submission with Submission ID# HQ4-MH5J-WW355 and revision # 1 which was submitted electronically on 8/26/2024 12:35:47 PM and all attachments are true, correct, and complete to the best of my knowledge and belief.

Dave Mccormick	Solid Waste Manager
typed/printed name of engineer or consultant	title
	8/26/24
signature of engineer or consultant	date

Appendix B:

Photographic Log

Standing at NE corner of Compost area / Looking south

Standing at NE corner of Compost area / Looking west

Looking west over stormwater pond on north end of Compost area

Standing at SE corner of Compost area / Looking west

Standing near SW corner of Compost area / Looking NW

Standing near SW corner of Compost area / Looking NE

Appendix C:

Updated Financial Assurance Report

2024 Financial Assurance Report

City of Little Rock

Class 1 Landfill / Class 4 Landfill / Yard Waste Compost Facility

Prepared for:

CITY OF LITTLE ROCK

City of Little Rock – Dept of Public Works
Division of Solid Waste Services
10803 Ironton Cutoff
Little Rock, AR 72206

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1 Introduction

1.1 Terms of Reference

Terracon Consultants, Inc. (Terracon) prepared this 2024 Financial Assurance Report (Report) for the active municipal solid waste (MSW) landfills at the City of Little Rock Landfill Facility (CLRLF) in Little Rock, Arkansas.

1.2 Project Background

The City of Little Rock (City) owns and operates the landfill facility located at 10803 Ironton Cutoff Rd. in Little Rock, Arkansas with Global Position System coordinates latitude N 34° 38' 57.02514" and longitude 92° 18' 06.42839". The facility includes an active Class 1 landfill (Permit No. 0266-S1), an active Class 4 landfill (Permit No. 0266-S4J), and a yard waste composting facility (Permit No. 0031-SCYW). The most recent financial assurance report for the MSW facility was prepared by Terracon in March 2024. The general geographic location of the site is shown in **Figure 1.1**. The general layout and site orientation is shown in **Figure 1.2**.

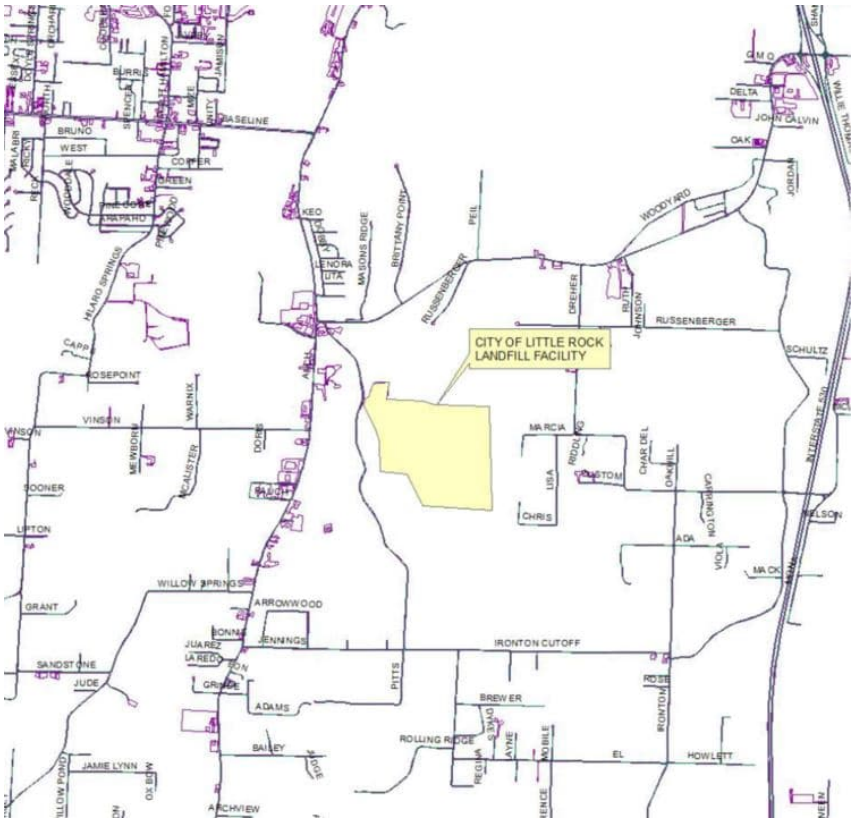

Figure 1.1 – Site Location Map

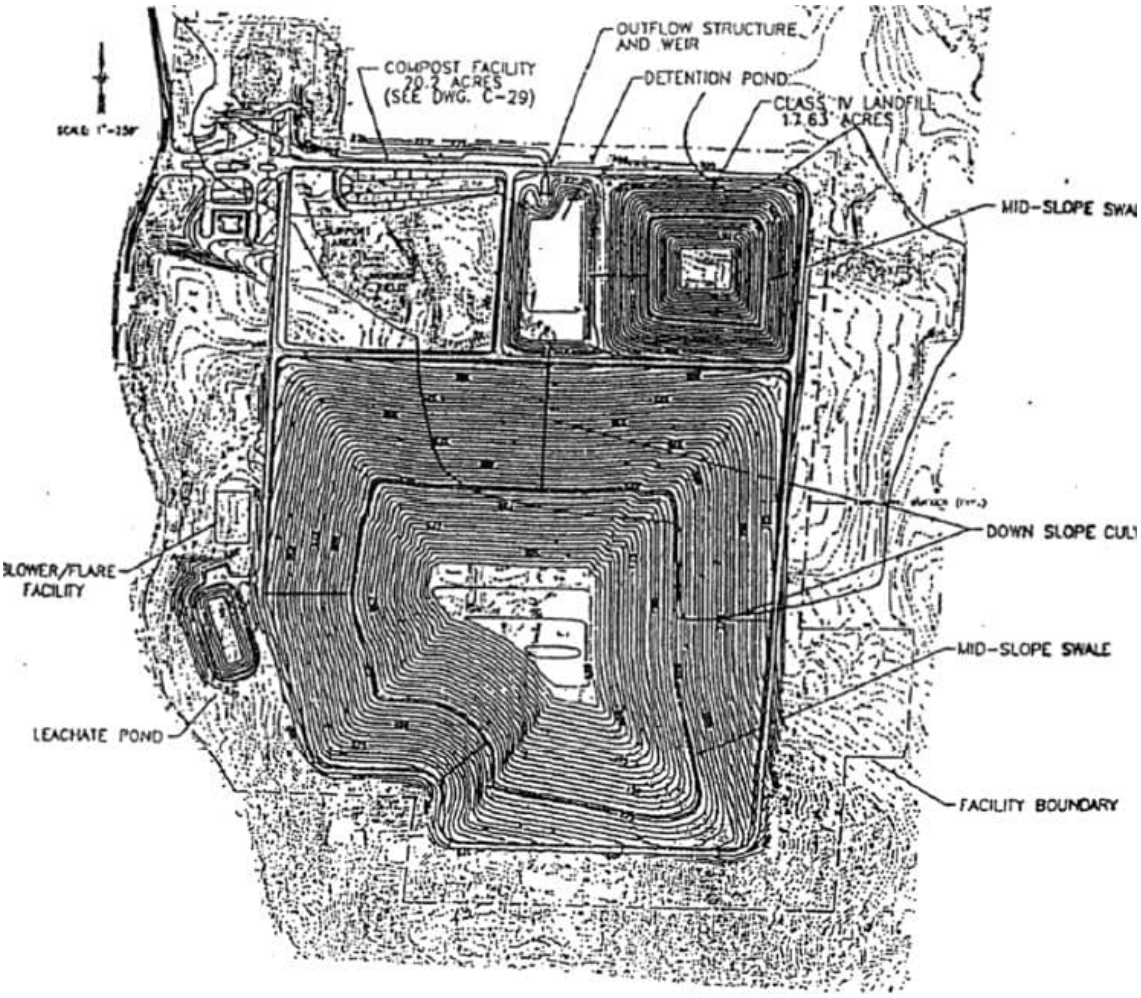

Figure 1.2 – General Site Layout

1.3 Purpose and Scope

This report was prepared to assist the City with financial assurance at the landfill facility for both the active MSW and C&D landfills. The scope of this report includes the closure plan, post-closure plan, calculations for the overall and remaining airspace volumes, in-place waste density (i.e. airspace utilization factor), tonnage data provided by the City, and overall and remaining site life for each landfill. The assumptions and the limits used to calculate the airspace volume are also presented in this report.

1.4 Organization of Report

The remainder of this report is organized as follows:

- Section 2 presents the airspace volume calculations for the MSW landfill;
- Section 3 presents the airspace volume calculations for the C&D landfill; and
- Section 4 provides a summary of the airspace management report.

2 Design and Operation Considerations

Class 1 landfills can accept all types of household waste including putrescible waste, non-hazardous industrial waste, and commercial waste. Due to the nature of the waste materials received, specific siting, design, and operating standards must be considered when developing Class 1 landfills. These standards assist in minimizing the potential for environmental impact associated with the waste disposal operations.

Class 4 landfills, as defined by Regulation No. 22, are eligible to receive non-hazardous C&D waste, furniture, appliances, and other materials that are considered inert. These materials are generally considered “non-putrescible” because they degrade very slowly or not at all. Due to the nature of the waste stream, less-stringent environmental controls are required for Class 4 landfills.

Composting facilities, as defined by Regulation No. 22, are eligible to receive yard waste and other vegetative materials such as grass clippings, leaves, and shredded or chipped brush and tree limbs.

At the CLR solid waste facility, the Class 1, Class 4, and composting operations are managed in separate areas. The Class 1 and Class 4 landfills are divided into cells of varying capacity in order to effectively control the incoming waste stream while managing the separation of leachate and stormwater runoff. For the Class 1 landfill, cell construction generally involves clearing, excavation to established subgrade, preparation of a clay liner, installation of geomembrane (60-mil high-density polyethylene [HDPE]), construction of a leachate collection system, construction of a road for landfill operations, and construction of related drainage improvements. A Class 4 waste disposal cell is similar in design but generally does not include a geomembrane and a leachate collection system. Once a cell or isolated waste disposal area has been prepared, the construction must be certified by an Arkansas-licensed professional engineer and approved by the DEQ Regulated Waste Program, formerly the Solid Waste Management Division.

As waste is deposited in a prepared cell, interim cover soil or an approved alternate daily cover material must be installed on a regular basis to control blowing litter, fires, and disease vectors. During the utilization of a cell, waste is confined to the smallest practical area using heavy compaction equipment. In addition, measures are employed to divert, collect, and manage leachate derived from the waste disposal operations (Class 1 landfill only).

As a portion of a landfill cell is filled to the designed and permitted capacity, that portion of the cell or area of the landfill unit is “closed” in accordance with state and federal regulations. Depending on the landfill unit, closure may consist of placing an impermeable final layer on the landfill, providing topsoil, seeding, constructing drainage or erosion control improvements, installing gas collection systems, and constructing other environmental controls.

After the final cell of the landfill is filled to permitted capacity, and final closure work is completed, there is a mandatory post-closure care period that varies from 30 years for the Class 1 landfill to 2 years for the Class 4 landfill. During this time, CLR must maintain the site by repairing erosion and settlement associated with the Class 1 and Class 4 waste disposal areas. In addition, all systems and environmental controls at the site, including the groundwater monitoring system, leachate collection and treatment systems, and landfill gas control systems, must be maintained.

The CLR composting facility was built in accordance with Regulation No. 22 to include a surface that can withstand heavy equipment loads as well as stormwater management controls to prevent ponding and run-on to the work area. Incoming yard waste materials are processed to produce boiler fuel, mulch, and compost.

2.1 Landfill Operations

In Arkansas, each landfill is required to have a written operating plan that identifies, among other things, the operating sequence of the landfill. CLR has developed operating plans for both the Class 1 and Class 4 waste disposal areas.

The Class 1 landfill is to be developed in nine landfill cells or units. Cells 1 through 8 require bottom liner and leachate collection system construction. Cell 9 expands the height of the landfill by filling over Cells 1 through 8. As portions of each landfill cell are filled to capacity, portions of those areas of the landfill are closed. These areas are designated in the original permit and operating plan as “closure areas.” It should be noted that closure areas do not correspond in size with cell areas. As the landfill is developed, closure work is done only on those areas of the landfill that will not receive waste in the future, primarily completed outer slopes.

To date, Cells 1, 2 and 4 of the Class 1 landfill have been filled to the capacities listed in the original permit, and partial closure of Cells 1 and 2 has been completed. A permanent grass cover has been established on portions of Cells 1 and 2. Partial closure of the east slope of Cell 4 was completed in 2021.

As the footprint of the landfill expands, waste can be placed at higher elevations. During 2016, waste in Cells 1, 2 and 4 reached levels within Cell 9, the upper cell covering Cells 1 through 8. Operationally, it is more cost effective to maximize the height of the open area before expanding horizontally by constructing a new cell.

Originally, the Class 1 cells were to be developed in sequence from one through nine. Due to the cost of rock excavation in Cell 3, the planned utilization sequence has changed. In the future, disposal operations will move to the western, remaining portion of Cell 5, and progress to Cells 3, 6, 7, and 8. Waste will continue to be placed within Cell 9 as the landfill develops.

For the Class 4 landfill, the unit is divided into four operating cells that are to be developed in sequence from Cells 1 through 4. As of the date of this report, Cells 1 and 2 are at capacity and filling operations have moved to Cell 3. The next cell to be developed at the Class 4 landfill will be Cell 4. Figure 2.1 illustrates the revised general layout and orientation of the Class 1 and Class 4 waste disposal areas.

2.2 Final Cover System Design

According to applicable state (DEQ) and federal (EPA) solid waste management regulations, municipal solid waste landfills (Class 1, as defined by Regulation No. 22) must be designed and constructed with a final cover system that will minimize infiltration of surface water while controlling drainage and preventing erosion of soils. The final cover system also serves to reduce landfill gas emissions that can adversely affect air quality.

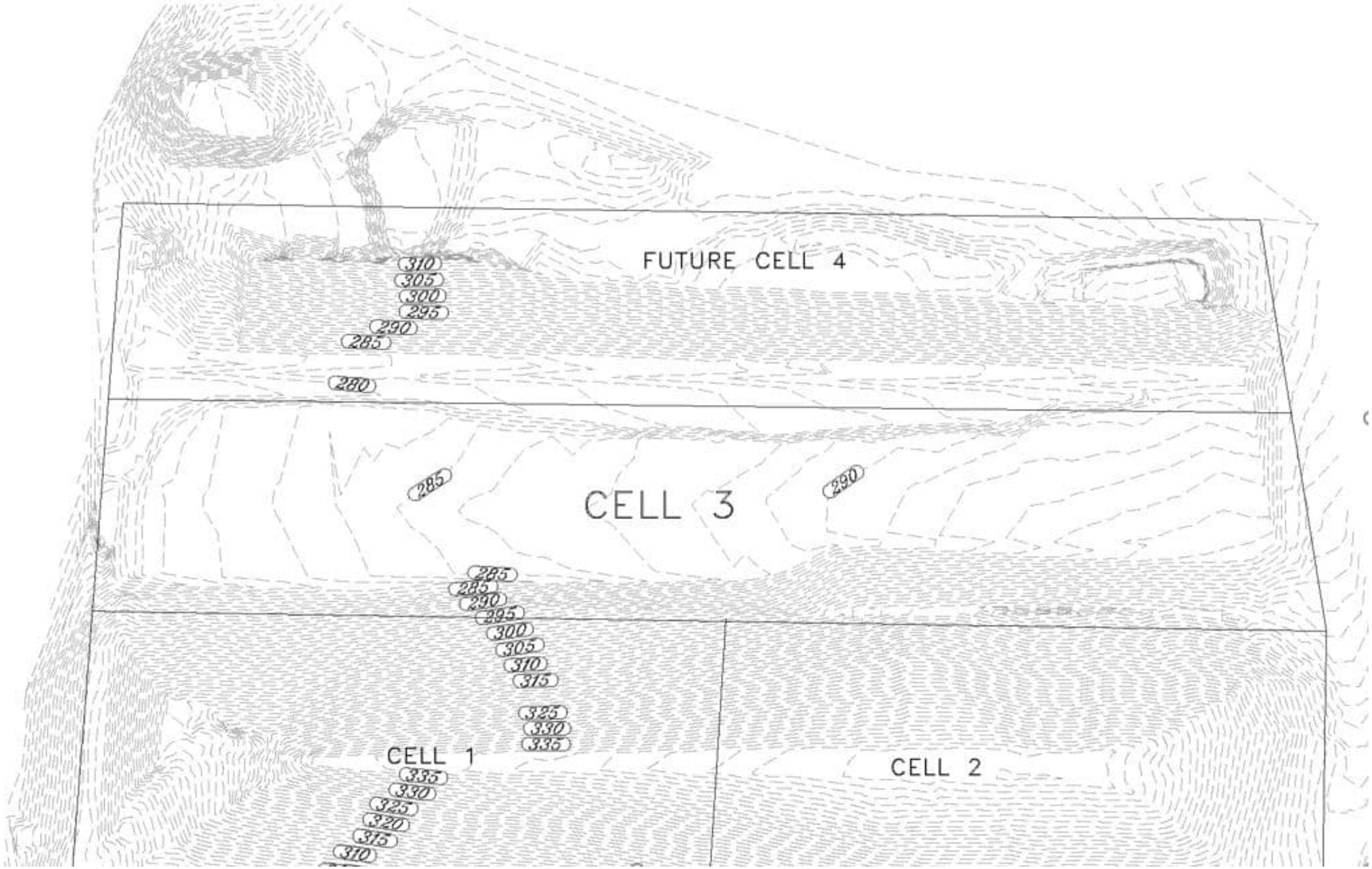

Figure 2.1 – Revised General Layout of Class 4 Waste Disposal Areas

The final cover system design for the Class 1 landfill includes the following general cross-section from top to bottom:

- A 6-inch topsoil layer;
- A 12-inch protective cover layer (onsite sandy, silty soil);
- A 12-inch drainage layer of sand, or a geocomposite, or geotextile;
- A geomembrane layer (40-mil very-low-density polyethylene [VLDPE]);
- A compacted clay cover (24-inch minimum thickness, k < 1.0x10-7 cm/s); and
- A 12-inch foundation layer (onsite sandy, silty soil).

On March 29, 2004, DEQ approved an alternative final cover system for the closure of Cells 2 through 9. The alternative final cover system design includes the following general cross-section from top to bottom:

- A vegetative cover/erosion layer with a minimum thickness of 18 inches,
- A protective cover with a minimum thickness of 18 inches,
- A drainage geocomposite layer,
- A low-permeability geosynthetic clay liner (GCL), and
- Daily and intermediate cover layers over the waste (with a minimum thickness of
- 18 inches).

The Class 4 waste disposal area will receive a final cover system that includes at least 24 inches of compacted clay cover and 6 inches of topsoil. The compacted clay cover for the Class 4 waste disposal area must demonstrate a maximum hydraulic conductivity of 1.0x10-5 cm/s.

The final cover systems for both the Class 1 and Class 4 waste disposal areas will be placed over the entire surface of the completed portions of the landfill as soon as practicable once final contours are achieved. Once the final cover layers have been placed, the completed areas will be graded and hydroseeded. Erosion control measures will be employed as needed and required to control soil loss from the area.

2.3 Closure Requirements

Each landfill owner or operator must have a written closure plan, as required by Regulation No. 22, describing the steps necessary to close all facility operations at any point during its active life, and an estimate of the cost to hire a third party to conduct closure activities. The plan is developed as part of the initial permitting of the facility and updated as necessary.

2.4 Post-Closure Care Requirements

Each landfill owner or operator must have a written post-closure care plan, as required by Regulation No. 22, that describes the monitoring and maintenance that will be performed during the post-closure care period, a description of planned land uses, and the person or office responsible for post-closure activities. This plan is also developed as part of the initial permitting of the facility and updated as necessary.

3 Municipal Solid Waste Landfill

3.1 Introduction

The CLRLF has been serving the disposal needs of the City since 1993, utilizing the Class 1 landfill. The landfill is permitted to comply with Subtitle D of Title 40 Code of Federal Regulations (CFR) Part 258. The landfill accepts household waste and non-hazardous industrial waste (NHIW). The landfill has a permitted volume of 19,860,298 cubic yards over an area of approximately 110 acres. The landfill will hold approximately 8,003,987 tons of waste.

3.2 Estimated Volumes

Table 3.1 presents the acreage, estimated volume, and estimated tonnage data of MSW accepted and disposed in Cells 1 - 9.

TABLE 3.1
CELL AREAS AND ASSOCIATED WASTE DISPOSAL CAPACITIES
CLASS 1 LANDFILL

Cell/ Area	Cell Acreage [1][4] (Acres)	Partial Closure Area [4] (Acres)	Estimated Volume [2][4] (CY)	Estimated Waste [3][5] (Tons)
1	12.30	4.22	821,527	331,942
2	12.60	4.41	1,269,075	527,340
3	12.00	7.82	865,800	338,203
4	18.86	16.61	2,280,617	1,094,284
5 EAST	6.36	0.00	1,676,654	654,943
5 WEST	9.80	0.00	2,728,831	1,065,950
6	11.00	7.00	2,146,200	838,359
7	17.08	23.04	4,507,970	1,760,926
8	10.00	25.50	2,131,300	832,539
9	0.00	21.40	1,432,324	559,502
TOTAL	**110.00**	**110.00**	**19,860,298**	**8,003,987**

Notes:
[1] Cells 1 and 2 updated in 1999 to reflect actual surveyed area of the completed cells
[2] Volumes for Cell 1 and 2 are final measured volumes
[3] Cell 1 and Cell 2 tonnage is actual amount recorded
[4] Closure Area and Estimated Volume and Waste reflect the 2001 size increase of Cells 4 and 5 and the corresponding decrease in size of Cell 7.
[5] Estimated tons for Cells 3 and 5 through 9 calculated as Estimated Volume/2.56

3.3 Airspace Volume Calculations

AutoCAD® Civil 3D® [Autodesk, 2020] was used to compute the airspace volumes. Civil 3D® calculates volumes from a digital terrain model that represents each surface of interest (i.e., base surface and comparison surface). From these surfaces, Civil 3D® calculates the respective difference in elevations and generates isopachous (isopach) maps (i.e., contour lines of equal thickness over an area). The volume is then calculated by integrating the isopachs over the area being considered.

3.3.1 Consumed Operating Airspace

An aerial survey was completed by Terracon in March 2025 to measure the total volume of waste that had been placed in open cells between March 2024 and March 2025. To maintain consistency between reporting periods, a factor of approximately 0.986 was used to adjust for the aerial survey being taken on March 6, 2025 as opposed to March 1, 2025. The consumed operating airspace as of March 2025 was 7,034,648 cubic yards and encompassed Cells 1, 2, 4, 5, & 9 of the landfill. According to the most recent financial assurance report, the total consumed operating airspace as of March 2024 was 6,842,847 cubic yards. From March 2024 to March 2025, approximately 191,801 cubic yards was placed in the active cells of the landfill, with 5,842 cubic yards being removed form Cell 1, 38,869 cubic yards being filled in Cell 2, 7,518 cubic yards being removed from Cell 4, and 166,292 cubic yards being placed in Cell 5. All cut and fill volumes for Cells 1, 2, and 4 included as Cell 9 volumes. These volumes are shown in **Table 3.2**.

3.3.2 Effective In-Place Density

Table 3.2 presents the summary of the gross fill volumes, tonnages, landfill utilization, effective in-place densities, and daily/ intermediate cover based on survey data ranging from March 2024 & March 2025 and also based on information provided by the City. The effective waste density is a measure of the tons of waste disposed divided by the overall (gross) airspace consumed during the period in question. The volume includes waste, cover soil, construction materials, gas system materials and anything else that consumes landfill space. As shown in **Table 3.2**, the airspace utilization rate for 2024 was 1.44 cubic yards per ton and the effective waste density was 1,386 pounds per cubic yard.

3.3.3 Remaining Operational Airspace

Based on the recent aerial survey, the remaining useable airspace as of March 2025 was 2,342,759 cubic yards, with Cell 5 having 1,582,484 cubic yards of useable airspace and Cell 9 having 760,276 cubic yards of remaining useable airspace. These volumes were obtained by comparing the existing contours to an intermediate surface developed for Cells 1 – 5 and Cell 9. The overall remaining permitted airspace for the entire Class 1 landfill as of March 2025 was 6,597,085 cubic yards with the remaining permitted airspace in Cell 5 of 2,868,370 cubic yards and remaining permitted airspace in Cell 9 of 3,728,715 cubic yards.

TABLE 3.2
UTILIZATION RATE SUMMARY - CLASS 1 LANDFILL

Year	Gross Fill Volume [1]		Waste Tonnage		Landfill Utilization [2]		Effective Waste Density [3]		Daily/Intermediate Cover		
	This Year (CY)	To Date (CY)	This Year (TONS)	To Date (TONS)	This Year (CY/TON)	To Date (CY/TON)	This Year (LBS/CY)	To Date (LBS/CY)	This Year (CY)	To Date (CY)	Percent of Fill (%/YEAR)
1993	17,920	17,920	3,122	3,122	5.74	5.74					
1994	215,036	232,956	83,793	86,915	2.57	2.68	779	746	48,945	48,945	23%
1995	211,731	444,687	118,890	205,805	1.78	2.16	1,123	926	89,290	138,235	42%
1996	242,590	687,277	76,222	282,027	3.18	2.44	628	821	61,109	199,344	25%
1997	264,366	951,643	93,993	376,020	2.81	2.53	711	790	71,560	270,904	27%
1998	230,140	1,181,783	87,695	463,715	2.62	2.55	762	785	78,681	349,585	34%
1999	174,950	1,356,733	85,270	548,985	2.05	2.47	975	809	90,566	440,151	52%
2000	202,920	1,559,653	84,557	633,542	2.40	2.46	833	812	93,461	533,612	46%
2001	225,293	1,784,946	86,118	719,660	2.62	2.48	764	806	77,957	611,569	35%
2002	157,269	1,942,215	79,584	799,244	1.98	2.43	1,012	823	70,006	681,575	45%
2003	187,610	2,129,825	75,047	874,291	2.50	2.44	800	821	97,895	779,470	52%
2004	192,998	2,322,823	76,257	950,548	2.53	2.44	790	818	70,784	850,254	37%
2005	206,062	2,528,885	71,518	1,022,066	2.88	2.47	694	808	83,818	934,072	41%
2006	232,333	2,761,218	97,770	1,119,836	2.38	2.47	842	811	84,083	1,018,155	36%
2007	261,334	3,022,552	113,311	1,233,147	2.31	2.45	867	816	86,606	1,104,761	33%
2008	228,998	3,251,550	106,942	1,340,089	2.14	2.43	934	824	67,325	1,172,086	29%
2009	159,997	3,411,547	97,346	1,437,435	1.64	2.37	1,217	843	51,207	1,223,293	32%
2010	162,109	3,573,656	87,406	1,524,841	1.85	2.34	1,078	853	61,270	1,284,563	38%
2011	250,402	3,824,058	93,131	1,617,972	2.69	2.36	744	846	92,454	1,377,017	37%
2012	221,129	4,045,187	97,699	1,715,671	2.26	2.36	884	848	98,687	1,475,704	45%
2013	211,617	4,256,804	131,758	1,847,429	1.61	2.30	1,245	868	117,821	1,593,525	56%
2014	272,415	4,529,219	106,137	1,953,566	2.57	2.32	779	863	82,340	1,675,865	30%
2015	263,673	4,792,892	124,617	2,078,183	2.12	2.31	945	867	92,556	1,768,421	35%
2016	254,940	5,047,832	118,704	2,196,887	2.15	2.30	931	870	118,892	1,887,313	47%
2017	261,030	5,308,862	115,074	2,311,961	2.27	2.30	882	871	88,371	1,975,684	34%
2018	274,980	5,583,842	123,796	2,435,757	2.22	2.29	900	872	99,725	2,075,409	36%
2019	221,670	5,805,512	129,706	2,565,463	1.71	2.26	1,170	884	90,014	2,165,423	41%
2020	153,610	5,959,122	77,985	2,643,448	1.97	2.25	1,015	887	58,132	2,223,555	32%
2021	311,820	6,270,942	132,439	2,775,887	2.35	2.26	849	885	140,322	2,363,877	37%
2022	242,246	6,513,188	131,442	2,907,329	1.84	2.24	1,085	893	109,884	2,473,762	52%
2023	329,659	6,842,847	170,878	3,078,207	1.93	2.22	1,037	900	158,176	2,631,938	42%
2024	191,801	7,034,648	132,879	3,211,086	1.44	2.19	1,386	913	177,219	2,809,157	92%
Cell Estimates [4]: **Total Cell 1:**	-5,842	1,024,130	--	423,260	--	--	--	--	--	--	--
Total Cell 2:	38,869	1,514,380	--	625,873	--	--	--	--	--	--	--
Total Cell 4:	-7,518	2,959,023	--	1,222,926	--	--	--	--	--	--	--
Total Cell 5:	166,292	1,537,115	--	635,270	--	--	--	--	--	--	--
5-Year Average:	**249,994**	--	**130,668**	--	**1.96**	**2.25**	**1,031**	**890**	**113,192**	--	41%
Planned Average:	--	--	--	--	--	2.25	--	1,042	--	--	--

[1] Total in-place landfill volume utilized for waste and earthen/grindings berms and cover, in cubic yards.

[2] Cubic yard volume of landfill space utilized per ton of waste.

[3] Effective density of compacted waste in landfill with soil berms, roads and interim cover.

3.4 Life Expectancy

Table 3.3 presents the life expectancy for the entire landfill based on the calculated remaining airspace discussed in Section 3.3.3. Life expectancy is calculated adding the estimated yearly airspace depleted to the total airspace depleted to date.

TABLE 3.3
PROJECTIONS OF REMAINING LIFE - CLASS 1 LANDFILL [1]

Scenario	Projected 2025 Waste (CY)	Estimated Site Life (Years)
Current Utilization Rate, No Growth	191,801	66
Current Utilization Rate Plus 1% Annual Growth	193,719	55
5-Year Historical Average Utilization Rate Plus 1% Annual	252,494	40
5-Year Historical Average Utilization Rate Plus 3% Annual	257,494	30

[1] As of March 2025.

The lifetime is calculated for no growth, an average of 1% annual growth, a 5-year historical average plus 1% annual growth, and a 5-year historical average plus 3% annual growth. For purposes of annual financial projections, it is recommended that the 5-year historical average landfill utilization rate plus and a 1% annual growth rate used for this year and years after. Under this scenario, the timing of cell construction, closure, and post-closure care would be approximately as described in **Table 3.4**.

TABLE 3.4 PROJECTION OF USEFUL LIFE BASED ON 5-YEAR AVERAGE UTILIZATION RATE, 1% GROWTH					
End of Year	**Operation in Cell**	**Volume Added in New Construction**	**Volume Depleted**	**Total Depleted To Date**	**Constructed Volume Remaining**
1993	1	821,527	17,920	17,920	803,607
1994	1		215,036	232,956	588,571
1995	1		211,731	444,687	376,840
1996	1		242,590	687,277	134,250
1997	1&2	1,260,019	264,366	951,643	1,129,903
1998	2		230,140	1,181,783	899,763
1999	2		174,950	1,356,733	724,813
2000	2		202,920	1,559,653	521,893
2001	2		225,293	1,784,946	296,600
2002	2		157,269	1,942,215	139,331
2003	2&4	2,239,718	187,610	2,129,825	2,191,439
2004	4		192,998	2,322,823	1,998,441
2005	4		206,062	2,528,885	1,792,379
2006	4		232,333	2,761,218	1,560,046
2007	4		261,334	3,022,552	1,298,712
2008	4		228,998	3,251,550	1,069,714
2009	4		159,997	3,411,547	909,717
2010	4		162,109	3,573,656	747,608
2011	4		250,402	3,824,058	497,206
2012	4		221,129	4,045,187	276,077
2013	4		211,617	4,256,804	64,460
2014	4 & 5 E	1,676,654	272,415	4,529,219	1,468,699
2015	5 EAST		263,673	4,792,892	1,205,026
2016	5 EAST		254,940	5,047,832	950,086
2017	5 EAST		261,030	5,308,862	689,056
2018	5 EAST		274,980	5,583,842	414,076
2019	5 EAST		221,670	5,805,512	192,406
2020	5E & 5W	2,728,831	153,610	5,959,122	2,767,627
2021	5 WEST		311,820	6,270,942	2,455,807
2022	5 WEST		242,246	6,513,188	2,213,561
2023	5 WEST		329,659	6,842,847	1,883,902
2024	**5 WEST**		**249,994**	**7,092,841**	**1,633,908**
2025	5 WEST		252,494	7,345,335	1,381,414
2026	5 WEST		255,019	7,600,353	1,126,396
2027	5 WEST		257,569	7,857,922	868,827
2028	5 WEST		260,144	8,118,067	608,682
2029	5 WEST		262,746	8,380,813	345,936
2030	5 WEST		265,373	8,646,186	80,563

TABLE 3.4
PROJECTION OF USEFUL LIFE BASED ON 5-YEAR AVERAGE UTILIZATION RATE, 1% GROWTH

End of Year	Operation in Cell	Volume Added in New Construction	Volume Depleted	Total Depleted To Date	Constructed Volume Remaining
2031	5 W & 3/6	3,012,000	268,027	8,914,213	2,824,536
2032	3/6		270,707	9,184,921	2,553,828
2033	3/6		273,414	9,458,335	2,280,414
2034	3/6		276,149	9,734,484	2,004,265
2035	3/6		278,910	10,013,394	1,725,355
2036	3/6		281,699	10,295,093	1,443,656
2037	3/6		284,516	10,579,609	1,159,140
2038	3/6		287,361	10,866,970	871,779
2039	3/6		290,235	11,157,205	581,544
2040	3/6		293,137	11,450,343	288,406
2041	3/6 & 7	4,507,970	296,069	11,746,411	4,500,308
2042	7		299,029	12,045,441	4,201,278
2043	7		302,020	12,347,461	3,899,258
2044	7		305,040	12,652,500	3,594,219
2045	7		308,090	12,960,591	3,286,128
2046	7		311,171	13,271,762	2,974,957
2047	7		314,283	13,586,045	2,660,674
2048	7		317,426	13,903,470	2,343,249
2049	7		320,600	14,224,070	2,022,649
2050	7		323,806	14,547,876	1,698,843
2051	7		327,044	14,874,920	1,371,799
2052	7		330,314	15,205,235	1,041,484
2053	7		333,618	15,538,853	707,866
2054	7		336,954	15,875,806	370,913
2055	7		340,323	16,216,130	30,589
2056	7 & 8	2,131,300	343,727	16,559,856	1,818,163
2057	8		347,164	16,907,020	1,470,999
2058	8		350,635	17,257,656	1,120,363
2059	8		354,142	17,611,797	766,222
2060	8		357,683	17,969,481	408,538
2061	8		361,260	18,330,741	47,278
2062	8 & 9	1,482,279	364,873	18,695,613	1,164,685
2063	9		368,521	19,064,135	796,163
2064	9		372,207	19,436,341	423,957
2065	9		375,929	19,812,270	48,028
2066	9		379,688	20,191,958	-331,660
Totals		19,860,298	19,860,298		
Final Closure:		2/17/2066			

Table 3.5 presents the useable life expectancy and the permitted life expectancy for the permitted cells of the landfill (Cells 1 - 5, & 9).

TABLE 3.5
PERCENTAGE OF CLASS 1 LANDFILL DEPLETION [1]

Cell	Permitted Total Volume (CY)	Estimated Volume Used to Date (CY)	Estimated Utilization To Date (%)	Usable Remaining Volume [2] (CY)	Usable Remaining Life [3] (Years)	Permitted Remaining Volume (CY)	Permitted Remaining Life [3] (Years)
Constructed Cells:							
Cell 1	821,527	821,527	100.0%	0	0.0	0	0
Cell 2	1,269,075	1,269,075	100.0%	0	0.0	0	0
Cell 4	2,280,617	2,280,617	100.0%	0	0.0	0	0
Cell 5	4,405,485	1,537,115	34.9%	1,582,484	6.3	2,868,370	11
Cell 9	1,432,324	1,126,313	78.6%	760,276	3.0	3,728,715	14
TOTAL	**8,776,704**	**7,034,647**	**80.2%**	**2,342,759**	**9.3**	**6,597,085**	**25**
All Cells:							
Cells 1-9	19,860,298	7,034,647	35.4%			12,825,651	40
Depreciation of Capital Improvements:							
Construction Cost for Cell 1			100.0%				
Construction Cost for Cell 2			100.0%				
Construction Cost for Cell 4			100.0%				
Construction Cost for Cell 5			100.0%				
General Class 1 Landfill Capital Improvements			35.4%				
Depreciation of Capital Improvements:							
Cell 1 Phased Closure Cost			100.0%				
Cell 2 Phased Closure Cost			100.0%				
Cell 4 Phased Closure Cost			27.7%	(4.6 acres closed)			
Cell 5 Phased Closure Cost			N/A	(Internal cell)			
Class 1 Closure Cost (Area Closed / Total Area)			13.6%				

[1] As of March 2025.
[2] Usable remaining volume/life based upon estimated maximum fill elevation before a new cell must be constructed.
[3] Estimated. Based on 5-year historical average utilization rate plus 1%.

4 Construction & Demolition Landfill

4.1 Introduction

The Class 4 landfill has been receiving waste since 1993 and is permitted to comply with Subtitle D of Title 40 Code of Federal Regulations (CFR) Part 258. The landfill accepts construction and demolition (C&D) waste. The landfill has a permitted volume of 1,217,800 cubic yards over an area of approximately 18 acres. The landfill will hold approximately 900,052 tons of waste.

4.2 Estimated Volumes

Table 4.1 presents the acreage, estimated volume, and estimated tonnage data of C&D waste accepted and disposed in Cells 1 - 4.

TABLE 4.1
LANDFILL CAPACITY SUMMARY - CLASS 4 LANDFILL

Cell	Total Area (Ac)	Phased Closure Area (Ac)	Gross Volume (CY)	Total Waste Capacity (Tons)
1	4.5	2.1	181,860	127,925
2	4.5	2.1	229,100	195,812
3	4.3	2.3	351,534	251,095
4	4.7	11.5	455,306	325,220
TOTAL	**18.0**	**18.0**	**1,217,800**	**900,052**

4.3 Airspace Volume Calculations

AutoCAD® Civil 3D® [Autodesk, 2020] was used to compute the airspace volumes. Civil 3D® calculates volumes from a digital terrain model that represents each surface of interest (i.e., base surface and comparison surface). From these surfaces, Civil 3D® calculates the respective difference in elevations and generates isopachous (isopach) maps (i.e., contour lines of equal thickness over an area). The volume is then calculated by integrating the isopachs over the area being considered.

4.3.1 Consumed Operating Airspace

An aerial survey was completed by Terracon in March 2025 to measure the total volume of waste that had been placed in open cells between March 2024 and March 2025. To maintain consistency between reporting periods, a factor of approximately 0.986 was used to adjust for the aerial survey being taken on March 6, 2025 as opposed to March 1, 2025. The consumed operating airspace as of March 2025 was 637,620 cubic yards and encompassed Cells 1, 2, & 3 of the landfill. According to the most recent financial assurance report, the total consumed operating airspace as of March 2024 was 630,922 cubic yards. From March 2024 to March 2025, approximately 6,697 cubic yards was placed in the active cells of the landfill, with all waste being placed in Cell 3.

4.3.2 Effective In-Place Density

Table 4.2 presents the summary of the gross fill volumes, tonnages, landfill utilization, effective in-place densities, and daily/ intermediate cover based on survey data ranging from March 2024 & March 2025 and also based on information provided by the City. The effective waste density is a measure of the tons of waste disposed divided by the overall (gross) airspace consumed during the period in question. The volume includes waste, cover soil, construction materials, gas system materials and anything else that consumes landfill space. As shown in **Table 4.2**, the airspace utilization rate for 2023 was 0.67 cubic yards per ton and the effective waste density was 3,006 pounds per cubic yard.

TABLE 4.2
UTILIZATION RATE SUMMARY - CLASS 4 LANDFILL

Year	Gross Fill Volume [1]		Waste Tonnage		Landfill Utilization [2]		Effective Waste Density [3]		Daily/Intermediate Cover	
	This Year (CY)	To Date (CY)	This Year (TONS)	To Date (TONS)	This Year (CY/TON)	To Date (CY/TON)	This Year (LBS/CY)	To Date (LBS/CY)	This Year (CY)	Percent of Fill (%/YEAR)
1993	1,524	1,524	343	343	4.44	4.44	450	450		
1994	18,284	19,808	3,675	4,018	4.97	4.93	402	406		
1995	18,284	38,092	16,030	20,049	1.14	1.90	1,753	1,053		
1996	47,896	85,988	20,053	40,101	2.39	2.14	837	933		
1997	71,411	157,399	73,161	113,262	0.98	1.39	2,049	1,439		
1998	24,555	181,954	10,775	124,037	2.28	1.47	878	1,363		
1999	33,489	215,443	36,430	160,467	0.92	1.34	2,176	1,490		
2000	20,135	235,578	17,937	178,403	1.12	1.32	1,782	1,515		
2001	25,348	260,926	37,197	215,600	0.68	1.21	2,935	1,653		
2002	33,550	294,476	15,002	230,602	2.24	1.28	894	1,566		
2003	17,424	311,900	9,253	239,855	1.88	1.30	1,062	1,538		
2004	13,582	325,482	11,879	251,735	1.14	1.29	1,749	1,547		
2005	16,904	342,386	10,249	261,984	1.65	1.31	1,213	1,530		
2006	15,160	357,546	10,612	272,596	1.43	1.31	1,400	1,525		
2007	32,200	389,746	22,950	295,546	1.40	1.32	1,425	1,517		
2008	3,108	392,854	2,220	297,766	1.40	1.32	1,429	1,516		
2009	3,570	396,424	2,550	300,316	1.40	1.32	1,429	1,515		
2010	8,879	405,303	15,051	315,367	0.59	1.29	3,390	1,556		
2011	3,500	408,803	8,150	323,517	0.43	1.26	4,657	1,583		
2012	2,100	410,903	6,526	330,043	0.32	1.24	6,215	1,606		
2013	20	410,923	14	330,057	1.42	1.25	1,409	1,606		
2014	24,706	435,629	12,813	342,870	1.93	1.27	1,037	1,574		
2015	27,523	463,152	16,481	359,351	1.67	1.29	1,198	1,552		
2016	44,658	507,810	16,400	375,751	2.72	1.35	1,042	1,480	13,173	29%
2017	18,655	526,465	19,678	395,429	0.95	1.33	2,659	1,502	3,855	21%
2018	19,370	545,835	12,463	407,892	1.55	1.34	1,555	1,495	3,343	17%
2019	27,592	573,427	13,314	421,206	2.07	1.36	1,111	1,469	3,622	13%
2020	17,270	590,697	8,420	429,626	2.05	1.37	1,313	1,455	4,445	22%
2021	20,299	610,996	9,081	438,707	2.24	1.39	1,124	1,436	4,140	18%
2022	9,888	620,884	8,563	447,270	1.15	1.39	3,661	1,441	5,210	46%
2023	10,038	630,922	6,685	453,956	1.50	1.39	2,389	1,439	4,441	38%
2024	6,697	637,620	10,065	464,021	0.67	1.37	3,006	1,455	0	0%
Total Cell 1:	0	181,860		127,925		1.42		1,407		
Total Cell 2:	0	229,100		202,132		1.13		1,765		
Total Cell 3:	6,697	226,660		123,899		1.83		1,093		
3-Year Average:	**8,635**		**8,679**			**1.38**	**3,019**			

[1] Total in-place landfill volume utilized for waste and earthen berms and cover, in cubic yards.

[2] Cubic yard volume of landfill space utilized per ton of waste.

4.3.3 Remaining Operational Airspace

Based on the recent aerial survey, the remaining permitted airspace as of March 2025 was 131,572 cubic yards, with all remaining airspace being in Cell 3. The overall remaining permitted airspace for the entire Class 1 landfill as of January 2023 was 586,878 cubic yards with the remaining permitted airspace in Cell 3 of 131,572 cubic yards and remaining permitted airspace in Cell 4 of 455,306 cubic yards. Note that Cell 4 has not yet been constructed. These volumes were obtained by comparing the topographic map generated from the January 2023 aerial survey with the March 2024 aerial survey. The March 2024 quantities were adjusted for January 2024.

4.4 Life Expectancy

Table 4.3 presents the life expectancy for the entire landfill based on the calculated remaining airspace discussed in Section 4.3.3.

TABLE 4.3
PROJECTION OF USEFUL LIFE BASED ON 3-YEAR AVERAGE UTILIZATION RATE, 1% GROWTH

End of Year	Operation in Cell	Volume Added in New Construction	Volume Depleted	Total Depleted To Date	Constructed Volume Remaining
1993	1	181,860	1,524	1,524	180,336
1994	1		18,284	19,808	162,052
1995	1		18,284	38,092	143,768
1996	1		47,896	85,988	95,872
1997	1		71,411	157,399	24,461
1998	1&2	229,100	24,555	181,954	229,006
1999	2		33,489	215,443	195,517
2000	2		20,135	235,578	175,382
2001	2		25,348	260,926	150,034
2002	2		33,550	294,476	116,484
2003	2		17,424	311,900	99,060
2004	2		13,582	325,482	85,478
2005	2		16,904	342,386	68,574
2006	2		15,160	357,546	53,414
2007	2		32,200	389,746	21,214
2008	2		3,108	392,854	18,106
2009	2		3,570	396,424	14,536
2010	2		8,879	405,303	5,657
2011	2		3,500	408,803	2,157
2012	2		2,100	410,903	57
2013	2		20	410,923	37
2014	3	351,534	24,706	435,629	326,865
2015	3		27,523	463,152	299,342
2016	3		44,658	507,810	254,684
2017	3		18,655	526,465	236,029
2018	3		19,370	545,835	216,659
2019	3		27,592	573,427	189,067
2020	3		17,270	590,697	171,797
2021	3		20,299	610,996	151,498
2022	3		9,888	620,884	141,610

TABLE 4.3 PROJECTION OF USEFUL LIFE BASED ON 3-YEAR AVERAGE UTILIZATION RATE, 1% GROWTH					
End of Year	Operation in Cell	Volume Added in New Construction	Volume Depleted	Total Depleted To Date	Constructed Volume Remaining
2023	3		10,038	630,922	131,572
2024	**3**		**8,635**	**639,557**	**122,937**
2025	3		8,721	648,278	114,216
2026	3		8,808	657,086	105,408
2027	3		8,896	665,983	96,511
2028	3		8,985	674,968	87,526
2029	3		9,075	684,043	78,451
2030	3		9,166	693,209	69,285
2031	3		9,258	702,467	60,027
2032	3		9,350	711,817	50,677
2033	3		9,444	721,260	41,234
2034	3		9,538	730,798	31,696
2035	3		9,633	740,432	22,062
2036	3		9,730	750,162	12,332
2037	3		9,827	759,989	2,505
2038	3&4	455,306	9,925	769,914	447,886
2039	4		10,025	779,939	437,861
2040	4		10,125	790,064	427,736
2041	4		10,226	800,290	417,510
2042	4		10,328	810,618	407,182
2043	4		10,432	821,050	396,750
2044	4		10,536	831,586	386,214
2045	4		10,641	842,227	375,573
2046	4		10,748	852,975	364,825
2047	4		10,855	863,830	353,970
2048	4		10,964	874,794	343,006
2049	4		11,073	885,867	331,933
2050	4		11,184	897,051	320,749
2051	4		11,296	908,347	309,453
2052	4		11,409	919,756	298,044
2053	4		11,523	931,279	286,521
2054	4		11,638	942,917	274,883
2055	4		11,755	954,672	263,128
2056	4		11,872	966,544	251,256
2057	4		11,991	978,535	239,265
2058	4		12,111	990,646	227,154
2059	4		12,232	1,002,878	214,922
2060	4		12,354	1,015,232	202,568
2061	4		12,478	1,027,710	190,090
2062	4		12,603	1,040,312	177,488
2063	4		12,729	1,053,041	164,759
2064	4		12,856	1,065,897	151,903
2065	4		12,984	1,078,881	138,919
2066	4		13,114	1,091,996	125,804
2067	4		13,245	1,105,241	112,559
2068	4		13,378	1,118,619	99,181
2069	4		13,512	1,132,131	85,669
2070	4		13,647	1,145,777	72,023
2071	4		13,783	1,159,561	58,239
2072	4		13,921	1,173,482	44,318
2073	4		14,060	1,187,542	30,258
2074	4		14,201	1,201,743	16,057
2075	4		14,343	1,216,086	1,714
2076	4		14,486	1,230,572	-12,772
Totals		**1,217,800**	**1,132,131**		
			Final Closure:	2/13/2076	

Life expectancy is calculated adding the estimated yearly airspace depleted to the total airspace depleted to date. The lifetime is calculated for a 3-year average plus 1% annual growth.

Table 4.4 presents the useable life expectancy and the permitted life expectancy for the permitted cells of the landfill (Cells 1 - 4).

TABLE 4.4
PERCENTAGE OF CLASS 4 LANDFILL DEPLETION [1]

Cell	Permitted Total Volume (CY)	Estimated Volume Used to Date (CY)	Estimated Utilization To Date (%)	Permitted Remaining Volume (CY)	Permitted Remaining Life (Years)[2]
Constructed Cells:					
Cell 1	181,860	181,860	100.0%	0	0
Cell 2	229,100	229,100	100.0%	0	0
Cell 3	351,534	226,660	64.5%	124,874	12.8
TOTAL	**762,494**	**637,620**	**83.6%**	**124,874**	**12.8**
All Cells:					
Cells 1-4	1,217,800	637,620	52.4%	580,180	51
Depreciation of Capital Improvements:					
	Construction Cost for Cell 1				100.0%
	Construction Cost for Cell 2				100.0%
	Construction Cost for Cell 3				64.5%
	General Class 4 Landfill Capital Improvements				52.4%
Depreciation of Capital Improvements:					
	Cell 1 Closure Cost				100.0%
	Cell 2 Closure Cost				100.0%
	Cell 3 Closure Cost				0.0%
	Class 4 Closure Cost				52.4%

[1] As of January 2024.
[2] Based on 3-year historical average utilization rate plus 1% annual growth (Table 4.3)

5 Closure/ Post-Closure

The following information provides cost estimates for the closure of the composting facility, and cell preparation, closure, and post-closure care associated with the Class 1 and Class 4 landfills. Unit costs for the estimates are based on actual construction/maintenance costs associated with similar operations in Arkansas.

5.1 Closure Liability of the Class 1 Landfill

The costs for landfill closure associated with the Class 1 landfill are summarized in T**able 5.1**. These costs are based on the design considerations outlined in Section 2 and the facility closure plan. The current estimated cost per acre for landfill closure is shown below. According to Regulation No. 22, estimates involving closure for the purpose of establishing financial assurance are to be updated at least annually to consider inflation, design changes, etc.

TABLE 5.1
ESTIMATED CLOSURE CONSTRUCTION COSTS PER ACRE - CLASS 1 LANDFILL

Item Description	Unit Cost for Closure Areas with Acreage Between:		
	0 and 10 Acres [1]	10 and 20 Acres [1]	20 and 30 Acres [1]
Top soil/Compost Layer [2]	$11,424.35	$10,284.95	$9,256.46
Soil Cover Layer	$27,798.40	$25,025.94	$22,523.37
Geocomposite	$23,770.81	$21,400.05	$19,260.06
Geosynthetic Clay Liner (GCL)	$25,914.50	$23,329.94	$20,996.96
Subgrade preparation (foundation by CLR)	$3,083.74	$2,776.19	$2,498.57
Seeding	$2,950.38	$2,656.13	$2,390.52
Gas Collection Wells	$10,749.59	$9,677.49	$8,709.75
Drainage Improvements	$16,715.26	$15,048.17	$13,543.37
Erosion Control	$3,025.48	$2,723.74	$2,451.37
Mobilization	$17,702.29	$15,936.77	$14,343.10
Preparation of Plans and Specifications	$5,900.76	$5,312.26	$4,781.03
Construction Quality Assurance	$13,487.46	$12,142.30	$10,928.08
Contingencies - 5%	$8,126.15	$7,315.70	$6,584.13
TOTAL CLOSURE COST PER ACRE	**$170,649.18**	**$153,629.62**	$138,266.76
Largest area (acres) ever needing final cover (Area 7):			69.26
Largest area unit closure cost ($/acre):			$138,266.76
TOTAL FINANCIAL ASSURANCE CLOSURE COST:			**$9,576,355.51**

[1] Cost per acre, as estimated based on 2020 bid unit prices.
Adjusted by DEQ Inflation factor (2021: 1.016, 2022: 1.062, 2023: 1.065, 2024: 1.027)
[2] Includes letdowns, swales, toe drains, culverts, ditches.
[3] Includes permitting, pre- and post-construction BMPs, and maintenance.

The estimated costs associated with each Class 1 landfill closure area are summarized in **Table 5.2**. To satisfy state and federal regulations (Regulation No. 22 and Subtitle D of 40 CFR 258), the largest area of the landfill that will need final cover at one time must be determined. This area will not correspond to the largest closure area identified in **Table 5.2**, but rather would be the largest open (unclosed) area that would have to be

closed should state or federal regulators order the landfill to close before it reaches the end of its operating life. This is a worst-case scenario.

TABLE 5.2
CLOSURE SEQUENCE AND ASSOCIATED COST ESTIMATES - CLASS 1 LANDFILL

Event	Acreage Closed	Acreage Closed	Total Acreage Needing Final Cover	Approximate Year [1]	Estimated Closure Cost [2]
Construction of Cell 1	12.30	0.00	12.30	1993	
Construction of Cell 2	12.60	0.00	24.90	1997	
Closure of Area 1		4.22	20.68	2000	COMPLETED
Construction of Cell 4	18.86	0.00	39.54	2002	
Closure of Area 2		4.41	35.13	2004/2005	COMPLETED
Construction of Cell 5 EAST 40%	6.36	0.00	41.49	2014	
Closure of Area 4		5.50	35.99	2021	COMPLETED
Construction of Cell 5 WEST 60%	9.80	0.00	45.79	2020	
Construction of Cell 3/6[3]	23.00	0.00	68.79	2031	
Closure of Area 5		16.61	52.18	2033	N/A [4]
Construction of Cell 7	17.08	0.00	69.26	2041	
Closure of Area 3/6 [2]		14.82	54.44	2043	$2,276,791.01
Construction of Cell 8	10.00	0.00	64.44	2056	
Closure of Area 7		23.04	41.40	2058	$3,185,666.05
Filling in Area 9, No Construction	0.00	0.00	41.40	2060	
Closure of Area 8		25.50	15.90	2064	$3,525,802.27
Final Closure, Area 9		15.90	0.00	2066	$2,442,711.00
TOTAL	**110**	**110**			**$11,430,970.34**

[1]Based on 5-year historical average LF utilization plus 1% annual growth (see Table 3.4)
[2]Cell 3 and Cell 6 will be constructed together and are hereby noted as Cell 3/6
[3]See Table 4.1 for Estimated Closure Costs per Acre.
[4]Cell 5 is internal cell. No closure required.

As can be seen from **Table 5.2**, the largest area needing final cover during the operating life of the landfill (69.26 acres) occurs when Cell 7 is placed in service but before the partial closure designated for Cells 3 and 6 is completed. This is projected to potentially occur in 2041 (see **Table 5.2**). The projected cost for this closure in December 2024 dollars would be $2,276,791.01 (see **Table 5.1**). After Cells 3 and 6 are closed, financial assurance liability would be reduced for the remainder of the operating life. The final closure liability is projected to occur around 2066 when Cell 9 is filled to capacity (**Table 3.4).** At that time, $2,442,711.00 (in December 2024 dollars) would be needed to perform closure activities (**Table 5.2**).

5.2 Post-Closure Liability of the Class 1 Landfill

The current post-closure liability is estimated to be $10,096,680.08 (see **Table 5.3**) and post-closure is projected to begin in 2067. Because so many costs are fixed, this liability will remain substantially the same regardless of the actual year final closure occurs or the number of landfill cells that are actually constructed and filled. However, the estimated post-closure care cost is reviewed and adjusted each year (if needed) to consider inflation as required by the regulations.

TABLE 5.3
POST-CLOSURE COST ESTIMATE - CLASS 1 LANDFILL

Item Description	Basis of Cost	Units	Estimated Quantity	Unit Cost [1]	Total Cost
Site Inspection	Includes site inspection and summary report, quarterly for 30 years	each	4	$1,416.18	$5,664.73
Groundwater Monitoring	Semiannual sampling, analysis, and report writing for 12 GW wells	$/well	24	$3,992.85	$95,828.42
Groundwater Well Maintenance	Twelve GW wells, maintenance and occasional replacement as needed	$/well	12	$489.76	$5,877.16
Gas Monitoring	Eight locations tested quarterly for monitoring	$/well	32	$413.05	$13,217.71
Gas Probe & Gas Meter	Eight gas probes, general maintenance and replacement as needed	$/well	8	$6,496.74	$51,973.93
Leachate Collection System	Annual O&M of leachate collection and recirculation systems	each	1	$20,298.63	$20,298.63
Leachate Treatement	Leachate Treatment cost at Little Rock Wastewater Utility	gallons	100,000	$0.00	$472.06
Leachate Pretreatement	Costs associated with pumping then aerobically treating leachate	gallons	100,000	$0.00	$472.06
Pump Station Maintenance	Pump Station Maintance, Including pumps and electrical	each	6	$4,720.61	$28,323.67
Electrical Power	Electrical power costs	kilowatts	175,000	$0.14	$24,783.21
Gas System Operation & Maintenance	O&M Costs for gas extraction and methane flaring system	system	1	$50,156.50	$50,156.50
Site Maintenance	Site Maintenance. Assumes one acre of surface repair each year	acre	1	$4,130.54	$4,130.54
Site Mowing	Site Mowing. Assumes four mowings per year	acre	117	$165.22	$19,330.90
Administration	General expenses for administration and supervision	lump sum	1	$0.00	$16,026.48
				Total Annual Cost for Post-Closure Care:	**$336,556.00**
				Total Post-Closure Cost for 30 Years:	**$10,096,680.08**

[1] Cost per acre, as estimated based on 2020 actual unit prices.
Adjusted by DEQ Inflation factor (2021: 1.016, 2022: 1.062, 2023: 1.065, 2024: 1.027)

Liability associated with certain landfill fixed costs such as pump station and force main construction, treatment facilities, leachate injection systems, roads, and drainage improvements should be depreciated throughout the operating life of the landfill. Also,

the financial capability of CLR to cover this cost must be demonstrated and assured with an acceptable financial assurance mechanism as required by the regulations.

5.3 Closure Liability of the Class 4 Landfill

The current estimated cost per acre for closure of the Class 4 landfill is shown in **Table 5.4**. Each year these costs are updated based on the current inflation rate or actual current costs. This report shows current costs as of December 2024. It should be noted that the Class 4 landfill does not have to meet the same stringent closure criteria as the Class 1 landfill.

TABLE 5.4
ESTIMATED CLOSURE COSTS PER ACRE - CLASS 4 LANDFILL

Item Description	Cost / Acre [1]
Clay Liner	$55,253.50
Soil Cover Layer	$18,144.93
Subgrade Preparation	$3,083.74
Seeding	$2,950.38
Mobilization	$1,770.23
Preparation of Plans and Specifications	$2,478.32
Construction Quality Assurance	$6,018.78
Contingencies - 5%	$4,484.99
Total Closure Cost per Acre:	$94,184.88
Total Finnancial Assurance Closure Cost:	**$1,299,751.28**

[1] Cost per acre, as estimated based on 2020 bid unit prices.
Adjusted by DEQ Inflation factor (2021: 1.016, 2022: 1.062, 2023: 1.065, 2024: 1.027)

To satisfy state and federal regulations, a worst-case scenario must be determined using the largest area of the Class 4 landfill that will ever need final cover, should state regulators order the landfill to close before it reaches the end of its operating life.

As can be seen from **Table 5.5**, the largest area ever needing final cover during the operating life of the landfill (13.8 acres) occurs when Cell 4 is placed in service but before partial closure of Cell 3 is completed. This is projected to occur around 2038 (see **Table 5.5**). The projected cost for closure of this area in December 2024 dollars would be $216,625.21 (see **Table 5.5**).

After Cell 3 is closed, financial assurance liability is reduced for the remainder of the operating life. The final closure liability is projected to occur around 2076 when Cell 4 is filled to capacity (**Table 4.3**). At that time, $1,083,126.06 would be needed to perform closure activities (**Table 5.5**).

TABLE 5.5 CLOSURE AREA SEQUENCE AND ASSOCIATED COST - CLASS 4 LANDFILL					
Event	Acreage Added to Landfill	Acreage Closed	Total Acreage Needing Final Cover	Approximate Year	Estimated Closure Cost
Construction of Cell 1	4.5	0.0	4.5	1993	--
Construction of Cell 2	4.5	0.0	9.0	1998	--
Construction of Cell 3	4.3	0.0	13.3	2015	--
Closure of Area 1	0.0	2.1	11.2	2023	$197,788.24
Closure of Area 2	0.0	2.1	9.1	2023	$197,788.24
Construction of Cell 4	4.7	0.0	13.8	2038	--
Closure of Area 3	0.0	2.3	11.5	2042	$216,625.21
Closure of Area 4	0.0	11.5	0.0	2076	$1,083,126.06
TOTAL	18	18			$1,695,327.75
2024 Closure Cost per Acre: **$94,184.88**					

5.4 Post-Closure Liability of the Class 4 Landfill

The current post-closure liability is projected to be $26,638.41 (see **Table 5.6**) and post-closure is projected to begin around 2077. This liability will remain substantially the same regardless of the actual year final closure occurs. The financial capability of CLR to cover this cost must be demonstrated and assured with an acceptable financial assurance mechanism as required by regulation.

TABLE 5.6 POST-CLOSURE COST ESTIMATE - CLASS 4 LANDFILL					
Item	Basis of Cost	Units	Estimated Quantity	Unit Cost [1]	Total Cost per Year
Site Inspection	Site insp.and summary report, quarterly for 2 years	each	4	$1,416.18	$5,664.73
Site Maintenance	Assumes one acre of surface needs repair each year	acre	1	$4,130.54	$4,130.54
Site Mowing	Assumes four mowing per year	acre	14	$165.22	$2,313.10
Administration	General exp. for administrative and supervision (10%)	LS	1	--	$1,210.84
				Total Annual Cost for Closure Care:	**$13,319.21**
				Total Post-Closure Cost for 2 Years:	**$26,638.41**

[1] Cost per acre, as estimated based on 2020 actual unit prices.
Adjusted by DEQ Inflation factor (2021: 1.016, 2022: 1.062, 2023:1.065, 2024: 1.027)

5.5 Closure Liability of the Composting Facility

The current estimated closure cost for the composting facility, in December 2024 dollars, is $220,124.41, as shown in **Table 5.7**. As required by DEQ, the cost is calculated by multiplying the maximum design storage capacity of 36,000 tons by 150% (45,000 tons), subtracting 36,000 tons that would be distributed to other CLR agencies, and multiplying the remainder (9,000 tons) by the cost to process and remove the remaining materials ($23.89 per ton).

TABLE 5.7
ESTIMATED CLOSURE COSTS - YARD WASTE COMPOSTING FACILITY

Item Description	Units	Estimated Quantity	Unit Cost (1)	Total Cost
Hauling & redistribution of compost material to parks	ton	36,000	$0.00	$0.00
Processing and distribution of remaining yard waste by private contractor	ton	9,000	$24.46	$220,124.41
Total Financial Assurance Closure Cost:				**$220,124.41**

(1) Cost per acre, as estimated by Edwards Engineering, P.A. on January 2008 adjusted annually for inflation.

6 Requirements for Financial Assurance

Under state and federal regulations, each facility owner or operator must provide financial assurance to the state permitting authority. The purpose is to show that the owner or operator has the financial ability to close the composting facility and, for the Class 1 and Class 4 landfills, to close the largest open area of each landfill and to conduct post-closure care. A financial assurance mechanism must be in place throughout the operating life of the facilities, and the instrument must be updated annually.

Originally, CLR used a “contract of obligation” as the mechanism to satisfy financial assurance. A contract of obligation is essentially a resolution from the City Board recognizing the liability associated with landfill operations, a pledge to meet that obligation, and an agreement to allow the state to garnish turn-back money if CLR fails to fully meet the obligations. However, since that time, changes in state law removed the contract of obligation from the list of acceptable financial assurance mechanisms.

In 2002, CLR decided to utilize a financial test as the financial assurance mechanism. Under this option, an accounting demonstration is used to show that sufficient funds are available to meet all needs for closure and post-closure care. If a successful demonstration can be made, the governing body can use that demonstration to guarantee financial assurance through a formal resolution.

According to DEQ, the total amount to be placed in the financial assurance instrument is calculated as 100% of the combined closure cost estimates plus 20% of the combined post-closure cost estimates. **Table 6.1** provides a summary of closure and post-closure costs for all three facilities.

The total financial assurance amount for the whole facility is the sum of the financial assurance for the Class 1 landfill, the Class 4 landfill, and the composting facility. Therefore, $13,120,895 must be guaranteed by the financial assurance instrument utilized by CLR.

TABLE 6.1
ESTIMATED CLOSURE COSTS - CLASS 1, CLASS 4, & COMPOST FACILITY

Item Description	Source	Cost
100% of Closure Cost Estimates of Class 1 LF	From Table 5.1	$9,576,356
20% of Post-Closure Cost Estimates of Class 1	From Table 5.3	$2,019,336
Total Financial Assurance of Class 1		**$11,595,692**
100% of Closure Cost Estimates of Class 4 LF	From Table 5.4	$1,299,751
20% of Post Closure Estimates of Class 4	From Table 5.6	$5,328
Total Financial Assurance of Class 4		**$1,305,079**
100% of Closure Cost Estimate of Compost	From Table 5.7	$220,124
Total Financial Assurance of Composting Facility		**$220,124**
TOTAL FINANCIAL ASSURANCE		**$13,120,895**

Appendix D:

Monthly Tonnages / Yard Waste Removed

2024

CITY OF LITTLE ROCK - LANDFILL

MONTHLY AND YEARLY TONNAGE TOTALS

MNTH	CLASS I TOTAL TONS	CLASS 4 TOTAL TONS	YW TOTAL TONS	TIRES REC'D (COLL.)	TIRE TONS (COLL.)	TIRES W/RIMS & RIMS REC'D	NEW PLST GRBG CRT	PLT GRB CRTS W/ LIDS	BRKN DOWN GRB CRTS	SCRP TIN	RECYC PAP/CANS CRDBRD PLST	ELET TONS	APP TONS	CROSS TIES (FOR SALE)	TOTAL TONS
JAN.	12,242.28	322.45	1,051.24	90	2.18	29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	13,618.15
FEB.	13,046.09	1,021.15	1,714.21	0	0.00	0	27.34	0.00	0.00	6.81	0.00	10.83	0.00	0	15,826.43
MAR.	12,192.85	983.63	2,674.75	422	14.00	16	17.09	0.00	0.00	0.00	0.00	9.81	11.68	0	15,903.81
APR.	11,443.74	707.61	3,471.58	174	0.00	60	0.00	0.00	0.00	5.15	0.00	15.43	12.77	0	15,656.28
MAY	10,907.09	448.52	3,327.14	175	2.79	50	0.00	0.00	0.00	0.00	0.00	9.65	13.20	0	14,708.39
JUN.	9,746.29	776.71	2,498.74	273	6.13	0	16.93	0.25	0.00	0.00	0.00	9.34	8.87	0	13,063.26
JUL.	10,542.60	533.53	1,699.72	0	6.81	0	10.99	0.00	0.00	0.00	0.00	8.99	2.49	0	12,805.13
AUG.	9,738.60	1,829.11	1,096.39	410	1.63	22	7.42	0.00	0.00	18.36	0.00	8.94	10.01	0	12,710.46
SEPT.	10,839.78	2,207.88	1,911.88	0	4.68	0	11.01	0.00	0.00	8.55	0.00	11.59	16.20	0	15,011.57
OCT.	12,075.60	505.56	1,581.95	285	11.02	0	0.00	0.00	0.00	4.75	0.00	9.22	19.99	0	14,208.09
NOV.	9,648.21	400.28	2,213.05	0	2.95	0	0.00	0.00	0.00	6.30	0.00	9.40	6.60	0	12,286.79
DEC.	10,455.84	329.05	2,384.21	424	1.27	4	0.00	0.00	0.00	12.74	0.00	6.25	9.18	0	13,198.54
TOTALS	132,878.97	10,065.48	25,624.86	2,253	53.46	181	90.78	0.25	0.00	62.66	0.00	109.45	110.99	0	168,996.90