



LA CROSSE COUNTY
Exceptional services. Extraordinary place.

2021 Annual Report

La Crosse County Landfill Complex and Disposal Facility

La Crosse County Solid Waste Department

La Crosse, Wisconsin

Submitted March 2022

Mission Statement –

La Crosse Disposal System

A publicly managed, integrated solid waste disposal system provided through public/private partnerships, and committed to a responsible and sustainable approach to solid waste management.



Solid Waste Department

A Responsible Resource

WDNR



GREEN TIER



LA CROSSE COUNTY
Exceptional services. Extraordinary place.

Department of Solid Waste
County of La Crosse, Wisconsin

3200 Berlin Drive
La Crosse, Wisconsin 54601
Telephone: (608) 785-9572 Fax: (608) 785-6160
www.lacrossecounty.org/solidwaste



Solid Waste Department
A Responsible Resource

March 15, 2022

Dear Wisconsin Department of Natural Resources:

Re: 2021 Annual Report
La Crosse County Landfill Complex and Disposal Facility, La Crosse, Wisconsin
WDNR License Nos. 2637, 3253, 3846, and 4317

The La Crosse County Solid Waste Department is submitting this annual report to the Wisconsin Department of Natural Resources (WDNR) for your review and approval. This report summarizes the following:

- ◆ 2021 Beneficially Reused Materials Report (Appendix A)
- ◆ 2021 Leachate Volumes, Recirculation Report and Organic Stability Plan Information (Appendix B)
- ◆ 2021 Solid Waste Tonnages Report (Appendix C)
- ◆ 2021 Reporting Requirements for Biopiles for Contaminated Soil (Appendix D)
- ◆ 2021 MSW Landfill Gas Information Report (Appendix E)
- ◆ Anticipated Construction Events for 2021 (Appendix F)
- ◆ 2021 Special Waste Report (Appendix G)
- ◆ 2021 Residential Asphalt Shingle Processing & Beneficial Use (Appendix H)

This information is being provided in general conformance with the following WDNR Plan of Operation Approval Letters for each facility and NR500 of the Wisconsin Administrative Code:

- ◆ Condition No. 11 of the February 10, 2006 Plan of Operation Approval from the WDNR;
- ◆ Condition No. 2 of the January 15, 2015 Plan Modification for Ash Disposal from the WDNR;
- ◆ The Special Waste Management Plan presented as Appendix Z of the Plan of Operation Report for the La Crosse County Landfill North Expansion, dated September 2005, and amended May 2018, and Condition No. 3 of the August 14, 1996 Waste Acceptance Plan Modification Approval from the WDNR; and
- ◆ Treatment of Contaminated Soil Approval, dated August 14, 1996.

Wisconsin Department of Natural Resources
March 15, 2022
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- ◆ Condition No. 10 in the January 24, 2008 Low Hazard Exemption and Condition No. 9 in the February 4, 2008 Approval for Exemption from Solid Waste processing rules pertaining to residential asphalt shingles. Note: Both of these conditions are identical.
- ◆ Conditional Approval of the Organic Stability Plan Dated September 10, 2012.
- ◆ Conditional Approval of the Research, Development and Demonstration Plan Dated April 15, 2016. Updated 8/8/2019.
- ◆ Conditions of approval from the January 15, 2015 Conditional Plan Modification approval to place RDF fly ash in Phases III, IV and V.
- ◆ Conditions of the WDNR's February 27, 2017 concurrence to utilize fly ash as grading overlay for areas of final or intermediate cover.
- ◆ Conditional Modification to the Exemption from Solid Waste Processing Rules for Recycling Asphalt Shingles dated January 17, 2013.

Please contact the undersigned if you have any questions regarding this report.

Sincerely,



Jadd Stilwell, Director
La Crosse County Landfill

Enclosures

cc: Lanae Nickelotti, La Crosse County
Brian Kent, SEH

2021 Annual Report
La Crosse County Landfill Complex and Disposal Facility
WDNR License Nos. 2637, 3253, 3846, and 4317

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1	Lanae Nickelotti La Crosse County 212 6 th Street North La Crosse, WI 54601

2021 Annual Report
La Crosse County Landfill Complex and Disposal Facility
WDNR License Nos. 2637, 3253, 3846, and 4317

Prepared by
La Crosse County Solid Waste Department

3200 Berlin Drive
La Crosse, WI 54601

March 2022

Appendices

- Appendix A 2021 Beneficially Reused Materials Report
 - Appendix B 2021 Leachate Volumes, Recirculation Report and Organic Stability Plan Information
 - Appendix C 2021 Solid Waste Tonnages Report
 - Appendix D 2021 Reporting Requirements for Biopiles for Contaminated Soil
 - Appendix E 2021 MSW Landfill Gas Information Report
 - Appendix F Anticipated Construction Events for 2022
 - Appendix G 2021 Special Waste Report
 - Appendix H 2021 Residential Asphalt Shingle Processing and Beneficial Use
-

Appendix A

2021 Beneficially Reused Materials Report

La Crosse County Landfill Complex and Disposal Facility

MSW Landfill (Active – License No. 3253)

Prepared by

La Crosse County Solid Waste Department

La Crosse County, Wisconsin

March 2022

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Attachment A-1	Street Sweepings, Foundry Sand, Car Wash Grit, and Ash
Attachment A-2	Contaminated Soil Used Directly as Daily Cover

1 Purpose

This report summarizes the quantities of approved beneficially reused materials used in landfill construction and operation at the La Crosse County Municipal Solid Waste Landfill (License No. 3253) during 2021, and includes:

- ◆ The types of materials applied and the respective generators;
- ◆ The volumes and tonnages used;
- ◆ Estimated density of the daily cover materials;
- ◆ Coverage ratio;
- ◆ Alternate applications such as dikes, berms, or other structures in the landfill;
- ◆ The ratio of waste to alternative daily cover (ADC) by volume for 2021;
- ◆ Discussion of problems encountered and recommendations.

This report has been prepared to satisfy Condition No. 11 of the February 10, 2006 Plan of Operation Approval from the WDNR.

2 Quantities of Approved Beneficially Reused Materials Used in Landfill Construction and Operation

In addition to those items listed below, a minimal amount of (<100 cubic yards) course ground shingles were used in the landfill roads.

2.1 Types of Materials and Respective Generators

- ◆ Street Sweepings. See Attachment A-1.
- ◆ Foundry Sand. See Attachment A-1.
- ◆ Car Wash Grit. See Attachment A-1.
- ◆ Ash. See Attachment A-1.
- ◆ Petroleum Impacted Soil. See Attachment A-2.
- ◆ Other Approved ADC. See Attachment A-2.

2.2 Volumes and Tonnages Used

◆ Street Sweepings	4,030.14 tons	(2,982.3036 cubic yards)
◆ Foundry Sand	5,692.59 tons	(4,212.5166 cubic yards)
◆ Bottom Ash	2,412.60 tons	(1,785.3240 cubic yards)
◆ Car Wash Grit	547.30 tons	(405.0020 cubic yards)
◆ Other Approved ADC	7,700.89 tons	(5,698.6586 cubic yards)
◆ Coal/wood Ash	78.84 tons	(58.3416 cubic yards)

Totals: 20,462.36 tons 15,142.1464 (cubic yards)

2.3 Estimated Density of the Daily Cover Materials

- ◆ 0.74 cubic yard/ton

2.4 Coverage Ratio for 2021

- ♦ Waste (MSW + C&D + Category 4, 5&6)/(Daily cover + Alternative Daily cover)
= cover ratio.

- ♦ 129,684.63 cubic yards Waste / (DC* + 15,142.15 cubic yards ADC)

$$= 129,684.63 \text{ cubic yards} / 15,142.15 \text{ cubic yards}$$

$$= \mathbf{8.56:1 \text{ or } 11.68\%^{**}}$$

*No clean material was used for DC in 2021.

** % Does include Petroleum Impacted Soil from Biopile 18A.

***% Does not include Petroleum Impacted Soil for Bio-pile remediation which was staged in 19A. See Appendix D.

2.5 Alternate Applications of Cover Type Soils

The alternative daily cover materials were used for daily and temporary intermediate cover internal to the landfill, construction of containment berms, dikes to confine working areas, road base for internal access roads, and sub-base for turnaround and unloading areas.

2.6 Ratio of Waste to Alternative Daily Cover by Volume for 2021

The total tonnage of waste disposed in the site in 2021 was 86,456.42 tons. Assuming a waste conversion figure of 1.5 CY/ton, the total volume of waste disposed in 2021 was approximately *129,684.63 CY. The total amount of ADC (by volume) used in 2021 was 15,142.15 CY. Therefore, the waste to ADC ratio was approximately 8.56:1 or 11.68%.

*Category 4 material uses a conversion figure of 0.74 CY/ton; however, no category 4 material was received in 2021.

2.7 Problems Encountered and Recommendations

No significant problems occurred during use of approved beneficially reused materials in landfill construction and operations at the La Crosse County Landfill during 2021.

**Attachment A-1
Generators/Haulers of Beneficially Reused Material**

Street Sweepings

City of La Crosse	City of Onalaska
Property Cleanings	Town of Shelby
La Crosse County Highway Department	Town of Campbell

Foundry Sand

Alliant Casting	Midwest Metal Products
NRB Metal Products	Torrance Casting Inc.
Katz Metals	

Car Wash Grit

A-1 Advanced Pumping	Bill's Pumping Service
City of La Crosse	City of Onalaska
Holmen Pumping	Hoffman Construction Company
Northern Pipe, Inc.	

Ash

Xcel Energy	Gundersen Health System
-------------	-------------------------

Attachment A-2
Contaminated Soil Used Directly as Daily Cover

Kwik Trip	CHS Inc
Xcel Energy	Town of Campbell
MNDNR	Village of Bangor
United States Army-Fort McCoy	JJAWC, LLC

Appendix B

2021 Leachate Volumes, Recirculation Report and Organic Stability Plan Information

La Crosse County Landfill Complex and Disposal Facility

MSW Landfill (Active – License No. 3253)
C & D Landfill (License No. 3846), and
Ash Monofill (License No. 4317)

Prepared by
La Crosse County Solid Waste Department
La Crosse County, Wisconsin

March 2022

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4 Summary of Inspections, Jetting and Televising	3
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Attachments

Attachment B-1	2021 Leachate Totals by Station
Attachment B-2	2021 Leachate Line Jetting Reports
	2021 Leachate Televising Reports - Video File-WDNR & Onsite File Only

1 Purpose

This report summarizes the volumes of leachate removed or added for recirculation and the volumes sent to treatment by the La Crosse County Landfill during 2021. This report has been prepared to satisfy Condition No. 11 of the February 10th, 2006 Plan of Operation Approval from the WDNR which requires the following:

- ◆ Volumes of leachate removed or added for recirculation: listed by month and the liner phase where recirculation was performed
- ◆ Volumes of leachate sent to treatment (by month).

Additionally, based on a March 30th, 2009 telephone conversation between Mr. Marty Herrick previously of the WDNR and Foth, leachate jetting and televising information is included herein.

Information in Section 5 addresses approval of the organic stability plan and annual reporting requirements. The Plan start date is April 2012 and the required 5-year evaluation will take place in 2022.

2 Leachate Volumes

2.1 Volumes of Leachate Removed or Added for Recirculation

The Solid Waste Department accepted approximately 382,180 gallons of leachate, provided by Vernon County, in 2021. Primary area leachate recirculation during 2021 was over Phase VII.

2.2 Volumes of Leachate Sent to Treatment

The quantity of leachate produced and sent to treatment in 2021 was 8,547,985 gallons.

3 Leachate Line Jetting and Televising

Leachate lines were jetted in May of 2021 and are reported in Attachment B-2 -showing direction and distances for each access point.

Required televising of the leachate lines was last performed as indicated in the below table and in accordance with NR 506.07(5)(e), required televising of the leachate lines at 5-year intervals, the next televising event will be performed as shown.

Site	Date of Latest Televising of Lines	Due Date of Next Line Televising Event
MSW Site (License No. 3253):	2019	2024
Phase V	2020	2025
Phase VI	2017	2022
Phase VII	2019	2022
Phase VIII	2019	2023
C & D Landfill	Not Applicable	Not Applicable
Ash Monofill (License No. 4317)	2020	2025

4 Summary of Inspections, Jetting and Televising

4.1 Inspections

No new issues were identified in the 2021 manhole inspections.

4.2 Issues

In 2020, the Solid Waste Department (Department) initiated the process of redesigning the leachate management system for the La Crosse County Landfill after routine maintenance revealed corrosion issues with the current underground storage tank (UST). The 40,000-gallon UST is a dual-walled steel tank with protective coatings. During 2020, liquid was measured in the interstitial space following tank cleaning activities. Further inspection indicated corrosion and pitting had developed in the lower third of the interior wall of the tank. Thickness testing of the exterior tank wall suggested the exterior wall had not been compromised.

The Department evaluated both repair and replacement options. The option that was determined to be the most cost effective and environmentally sound was to discontinue use of the large underground storage tank and move to a direct connection with the City of La Crosse sewer system. Approvals for this program change were received from the City of La Crosse WWTP and the Wisconsin Department of Natural Resources in 2021.

The project was bid in May of 2021. A local company was awarded the bid and groundbreaking on the project took place on October 4th with excavation on the new flow metering and autosampler manhole vault. Primary earthwork and piping were completed from mid-October to mid-November. After installation of the new direct connect system was completed, decommissioning of the old tank and surrounding infrastructure took place. Removal of the UST occurred on November 23rd, 2021 following removal of liquid and sludge from the tank. The soil around the tank was carefully excavated before the tank was removed from the bed of pea gravel underneath. The exterior of the tank was inspected and was found to be intact and in good condition. There were also no signs of discharge into the surrounding soils. Due to the size of the tank, the exterior shell was cracked due to buckling during removal. The area was then backfilled, and a layer of topsoil added. The tank was disposed of in the Active Phase VII Module 2 portion of the landfill. Records and photographs of the project are available at the Department upon request.

No other issues were identified.

4.3 Jetting

In 2020, La Crosse County completed an RFP process and contracted Speedy Clean for leachate line jetting, televising and tank cleaning services until 2024. Additional jetting, maintenance and tank cleaning services were also provided by RCT Sewer & Vac, Bills Pumping and Crane Engineering.

4.4 Televising

When Televising is required, Speedy Clean works with a unit called the Jet-cam. This unit can travel up to 800' in lines as small as 2" and lines up to 12". The water jet will propel the camera down the line providing safer travel in landfill atmospheres. Flash drive of all televising will be provided to WDNR.

4.5 Next Steps for 2022

At the start of 2022 the Leachate Direct Connect project was at 95% completion with only a few programming items and the installation of an autosampler left. The County will be finalizing work on the Leachate Direct Connect Project with an expected final completion date of 4/30. The County will then continue to focus on maintenance requirements of the system. Due to some historical issues with freezing, additional countermeasures will be added to the C&D lift station including new floats, level transducer and SCADA programming for better controls and monitoring. The C&D Lift Station Manhole will need recoating in the next four years.

5 Organic Stability Plan

As part of the organic stability plan, as stated in Section 2.1, La Crosse County initiated leachate recirculation in 2012. In order to improve efficiency, reduce cost and increase recirculation volumes sufficient enough to help achieve organic stability, the Solid Waste Department added leachate from Vernon County starting in 2016, with approval from the WDNR.

Attachment B-1

La Crosse County Solid Waste Department											
2021 Leachate Quantities by Station											
Month	Construction & Demolition	MSW Exfiltrate (MH-7)	MSW Phase I,II,III	MSW Phase IV	MSW Phase V	MSW Phase VI	MSW Phase VII	Ash Monofill	MSW Phase VIII	Total	Re-circ
	(#3846 / 420)	(#3253 / 557)	(#3253 / NR)	(#3253 / 456)	(#3253 / 458)	(#3253 / 460)	(#3253 / 462)	(#4317 / 460)	(#3253 / 000)		
January	3,165	0	91,164	20,205	10,413	54,143	65,282	96,267	115,451	456,090	39,741
February	39,168	0	2,224	15,297	10,093	42,427	56,742	78,280	83,186	327,417	39,741
March	3,168	0	81,218	19,323	10,590	59,816	62,835	86,258	124,374	447,582	39,741
April	3,456	0	108,500	22,437	10,800	57,963	60,767	80,760	105,222	449,905	35,697
May	3,168	5,624	52,631	21,493	10,678	60,752	68,844	74,762	112,331	410,283	35,697
June	2,304	0	87,339	13,911	9,975	60,628	102,008	75,217	161,307	512,689	35,697
July	3,168	0	120,819	24,997	10,901	95,647	175,911	84,252	266,794	782,489	30,989
August	7,171	0	418,716	39,607	14,914	189,676	431,438	140,202	698,499	1,940,223	30,989
September	3,715	0	236,413	28,507	12,636	195,944	176,301	147,973	457,841	1,259,330	30,989
October	2,301	0	107,987	16,989	10,975	127,460	102,617	129,854	207,738	705,921	20,967
November	2,589	0	130,701	13,572	11,863	99,712	80,447	133,028	192,542	664,454	20,967
December	2,589	0	130,701	12,624	11,167	81,887	64,322	119,458	168,854	591,602	20,967
Total	75,962	5,624	1,568,413	248,962	135,005	1,126,055	1,447,514	1,246,311	2,694,139	8,547,985	382,180

* MSW Exfiltrate total in May 2021 due to Jetting.

Attachment B-2
2021 Leachate Line Jetting Reports

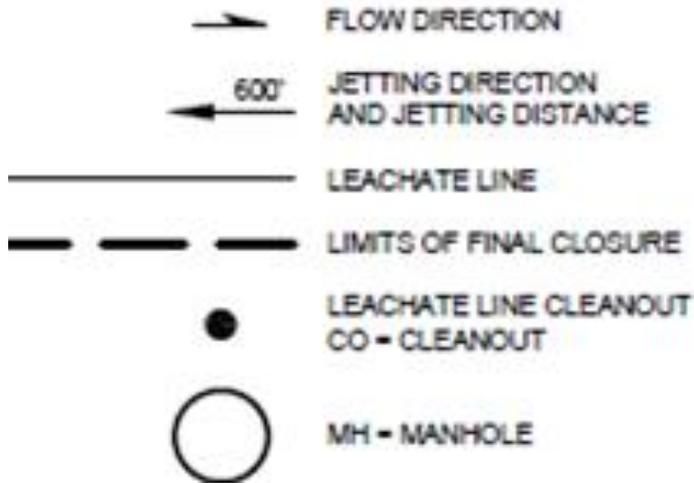
The below information applies to all line jetting completed in 2021.

Company: Speedy Clean

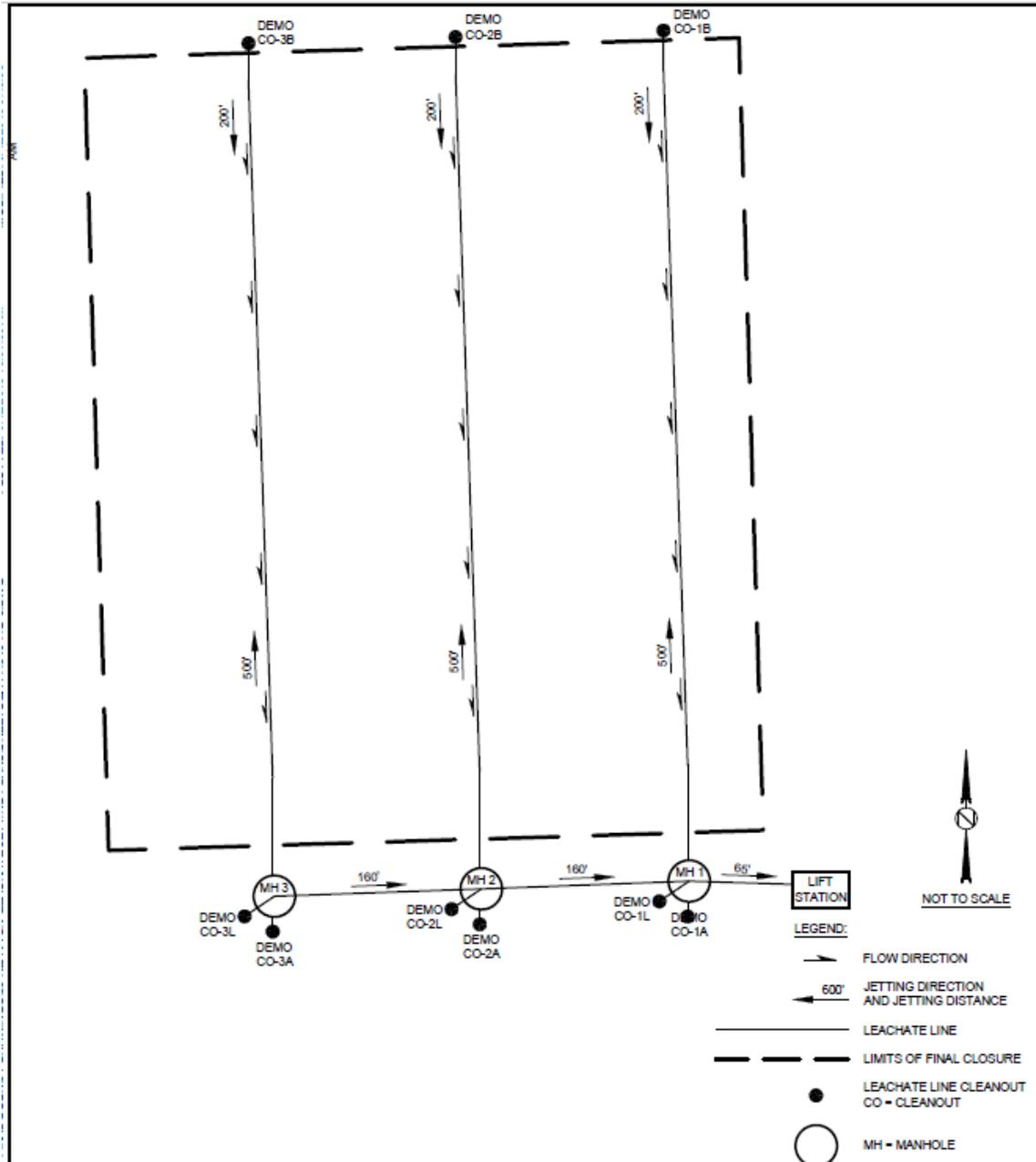
Equipment: US Jet Trailer Jet using ½" hose at 4,000 PSI at 18 GPM

Monitored by: Jackie Davis

Legend:

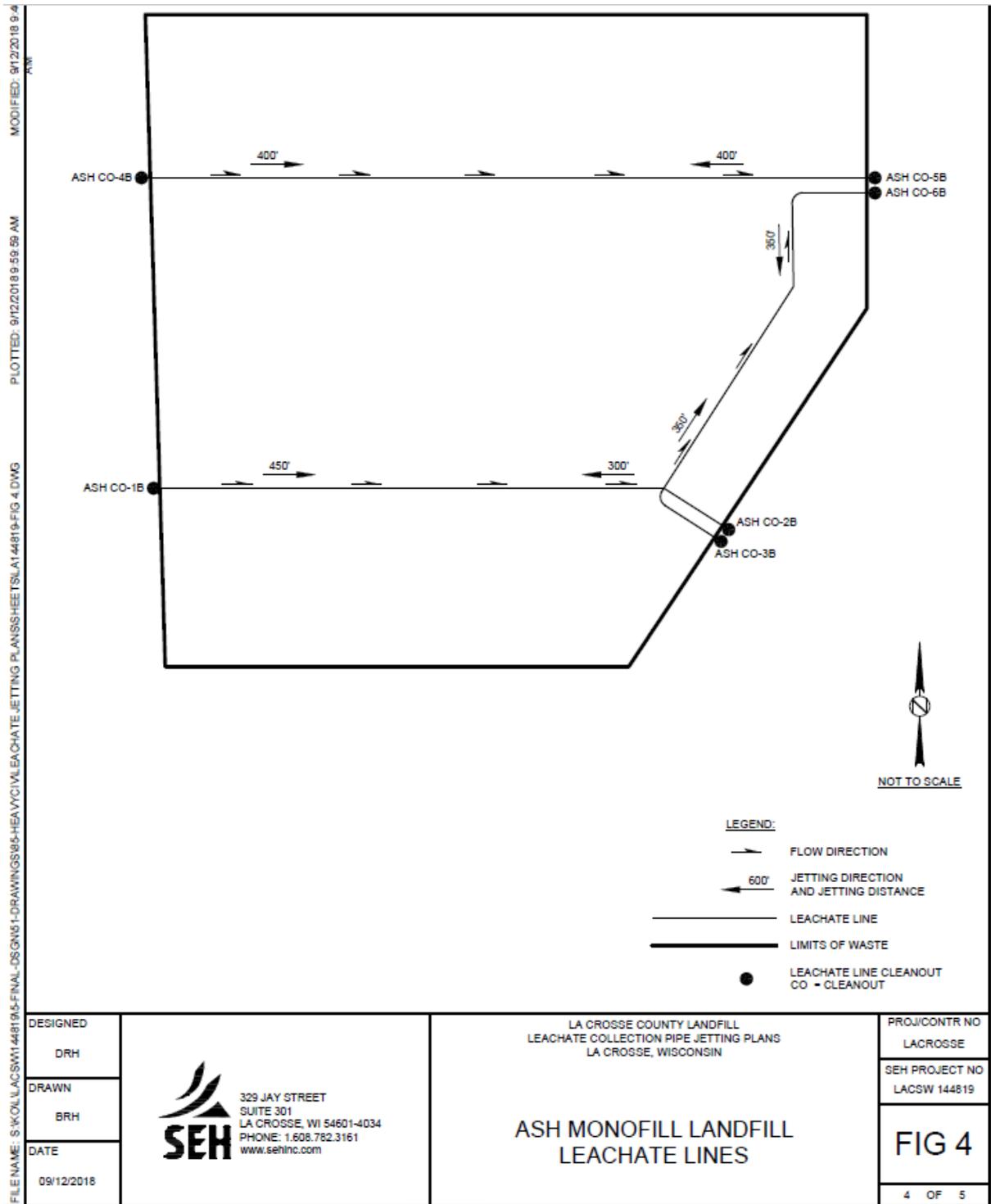


Attachment B-2 2021 Leachate Line Jetting Reports

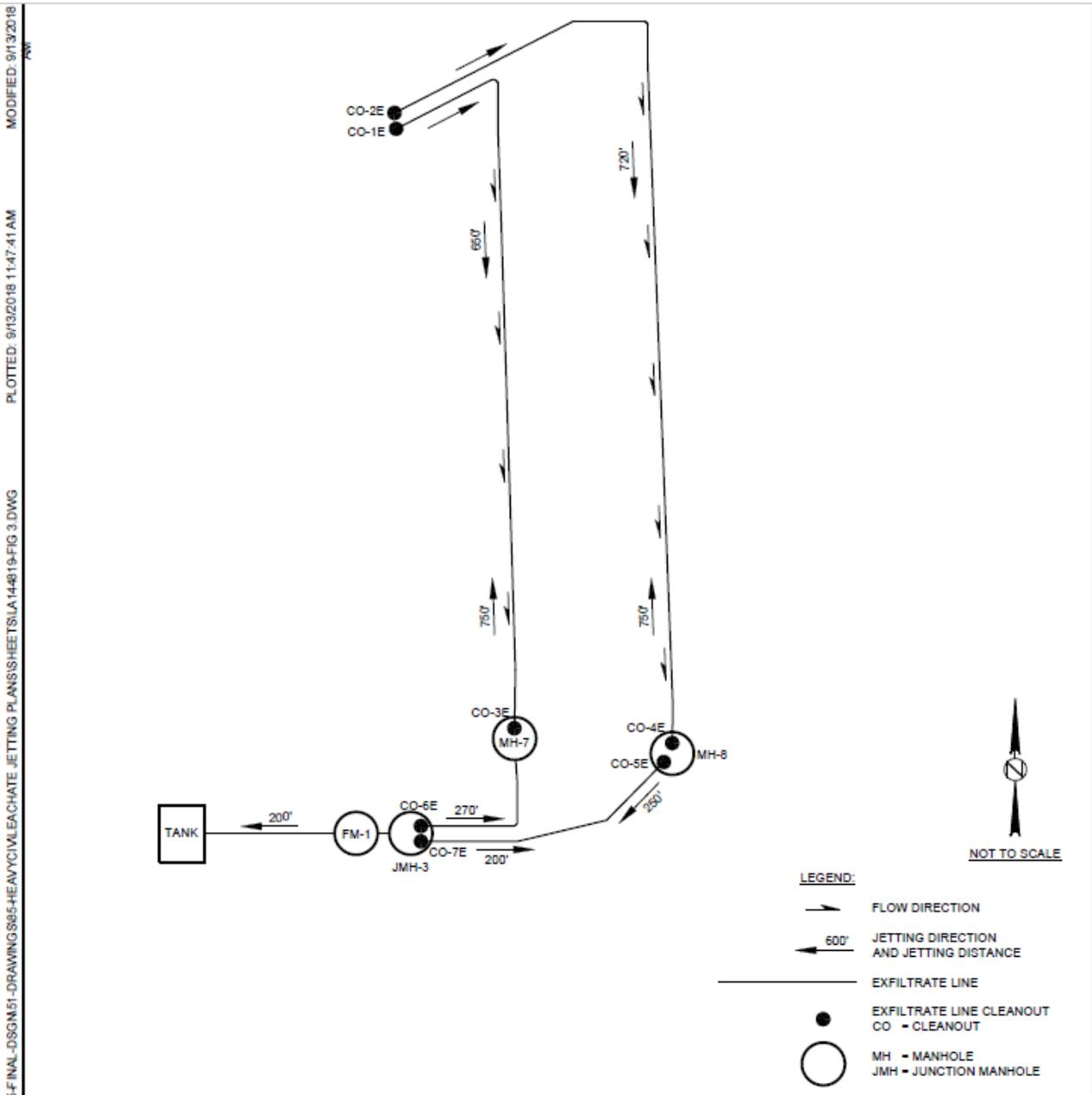


DESIGNED DRH	 329 JAY STREET SUITE 301 LA CROSSE, WI 54601-4034 PHONE: 1.608.782.3151 www.sehinc.com	LA CROSSE COUNTY LANDFILL LEACHATE COLLECTION PIPE JETTING PLANS LA CROSSE, WISCONSIN	PROJ/CONTR NO LACROSSE
DRAWN BRH		DEMOLITION LANDFILL LEACHATE LINES	SEH PROJECT NO LACSW 144819
DATE 09/12/2018		FIG 5	5 OF 5

Attachment B-2 2021 Leachate Line Jetting Reports



Attachment B-2 2021 Leachate Line Jetting Reports



FILE NAME: S:\KOLLACSW144819\5-FINAL-D\50N51-DRAWINGS\85-HEAVY\CIVIL\LEACHATE_JETTING_PLANS\85HEETS\LA144819-FIG 3.DWG
 PLOTTED: 9/13/2018 11:47:41 AM
 MODIFIED: 9/13/2018

DESIGNED	DRH
DRAWN	BRH
DATE	09/12/2018



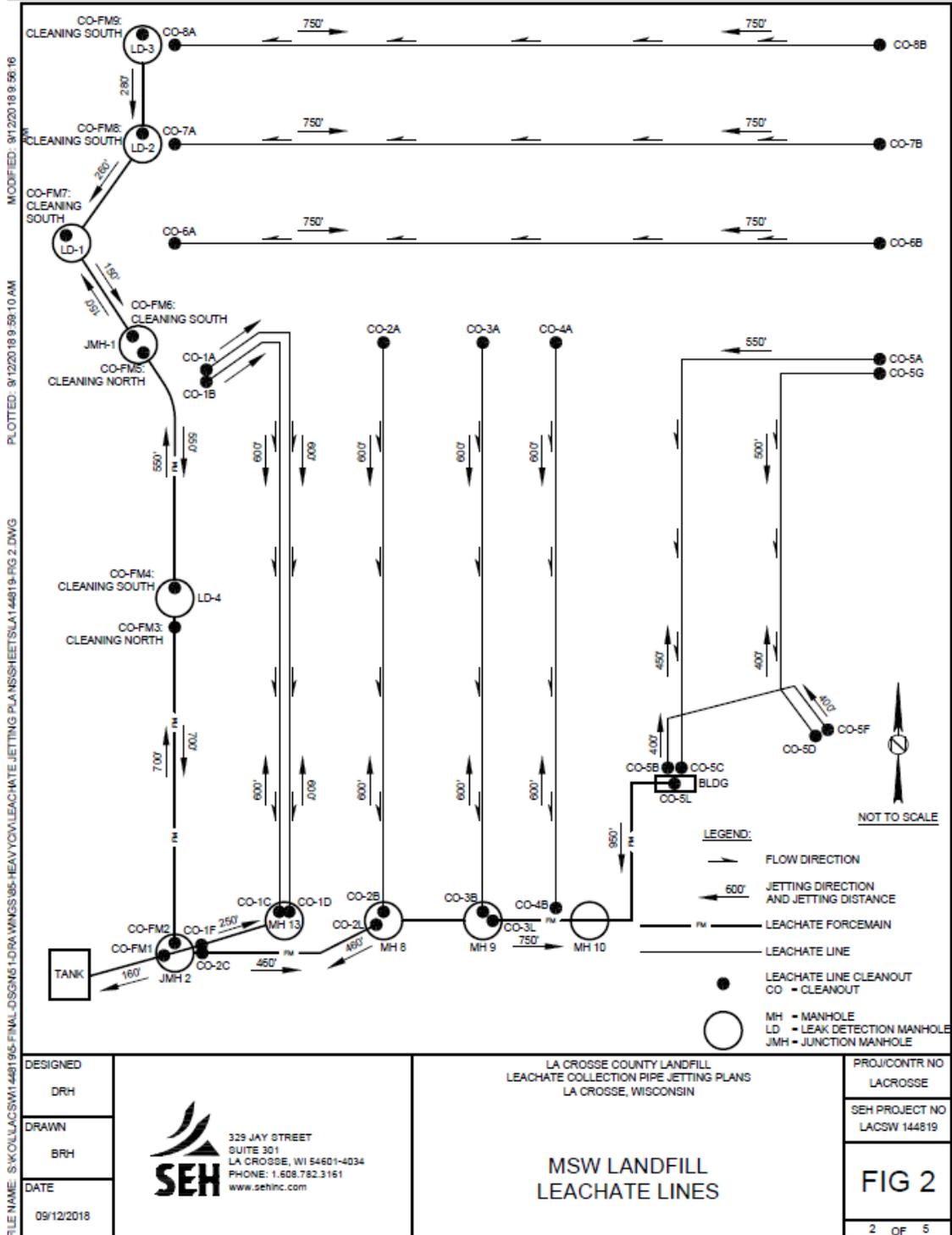
329 JAY STREET
 SUITE 301
 LA CROSSE, WI 54601-4034
 PHONE: 1.608.782.3161
 www.sehinc.com

LA CROSSE COUNTY LANDFILL
 LEACHATE COLLECTION PIPE JETTING PLANS
 LA CROSSE, WISCONSIN

**MSW LANDFILL
 PHASES I & II EXFILTRATE LINES**

PROJ/CONTR NO LACROSSE
SEH PROJECT NO LACSW 144819
FIG 3
3 OF 5

Attachment B-2 2021 Leachate Line Jetting Reports



Appendix C

2021 Solid Waste Tonnages Report

La Crosse County Landfill Complex and Disposal Facility

MSW Landfill (License No. 3253)

Ash Monofill (License No. 4317)

Prepared by

La Crosse County Solid Waste Department

La Crosse County, Wisconsin

March 2022

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Attachments

Attachment C-1	La Crosse County Landfill Tonnages (2 pages)
Attachment C-2	Supplemental Data Table A
Attachment C-3	Annual Air Space Calculation

1 Purpose

This report summarizes the tonnages of solid waste received for disposal at the La Crosse County Landfill during 2021. This report has been prepared to satisfy Condition No. 11 of the February 10, 2006 Plan of Operation Approval from the WDNR. Also attached is Tonnage Information for 2021 (Attachment C-1).

Additionally, based off a January 15, 2015 conditional plan modification, a figure showing areas of ash placement and the quantities of ash placed shall be provided in each annual report required as Condition 11 of the 2006 Conditional Plan of Operation Approval.

Sanitary Landfill – License No. 3253

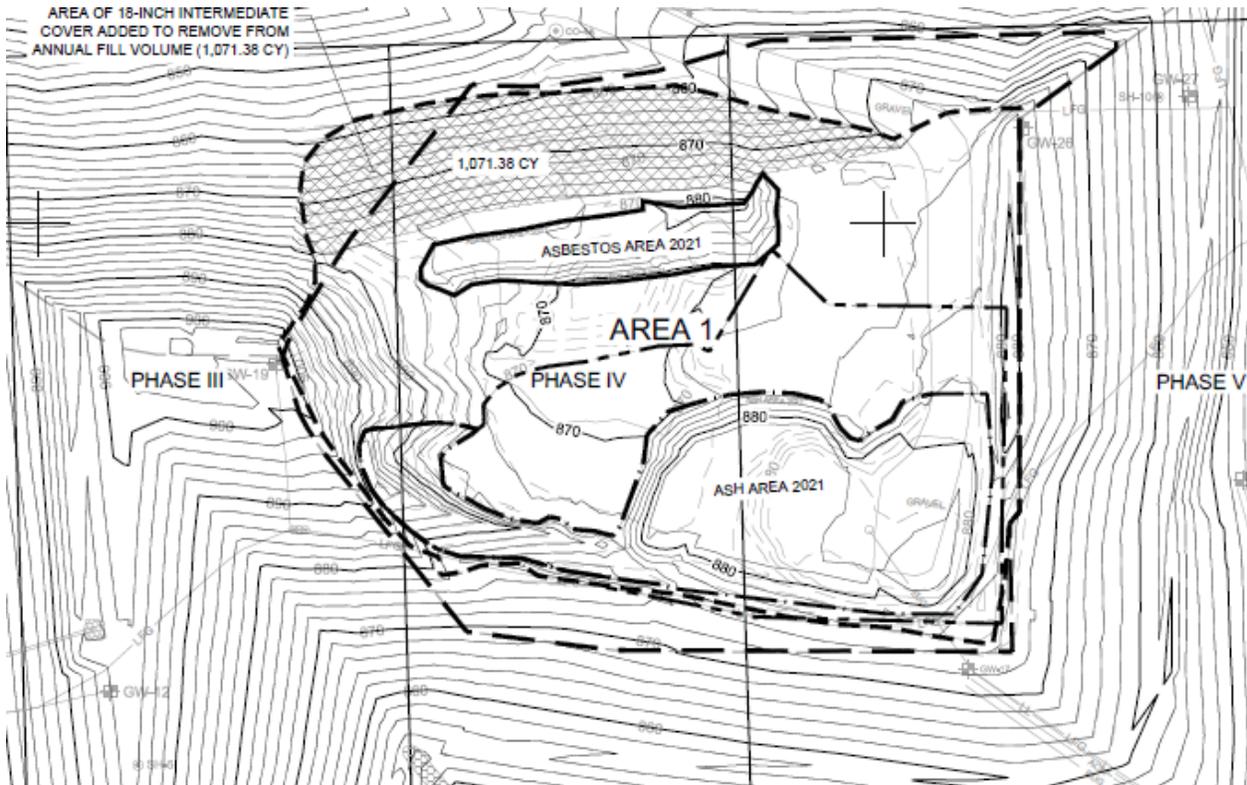
Waste Category	Type of Waste	Tons
1	Municipal Waste	45,014.22
2	Utility Ash/Sludges	78.84
3	Pulp/Papermill Mfg. Waste	0.00
4	Foundry Waste	0.00
5	POTW Sludges	2,453.10
6	All other SW (Not HW)	2,382.27
19	Fee Exempt waste used for dikes, berms, etc	14,473.63
20	Energy Recovery Incinerator Ash	2,653.00
21	High Volume Industrial used for daily cover, etc	5,692.59
22	Shredder Fluff used for daily cover	0.00
23	Treated Contaminated soil used for daily cover	50.79
24	Exempt Unusable Paper Making Materials	0.00
25	Construction & Demolition	25,284.98
28	Solid Waste /Natural Disaster	0.00
27	MSW-Non-Profit	714.90
30	MSW-MRF	8.31
31	MSW-Residue	10,598.64
Total Waste Tons:		109,405.27

Ash Monofill – License No. 4317

Waste Category	Type of Waste	Tons
20	Energy Recovery Incinerator Ash	7,138.00
Total Waste Tons:		7,138.00

2 Placement of Ash in MSW Landfill-License No. 3253

During 2021, 7,138 tons of ash was placed in the Ash Monofill. The total quantity of ash placed in the MSW Landfill, License No. 3253, during 2021 was 2,653 tons. Ash received at the landfill was placed in in the Ash Overlay Area outlined as Area 1 below.



La Crosse County Landfill
2021 Tonnages
All Sites

Attachment C-1

CATEGORY *	MUNICIPAL SOLID WASTE				OTHER WASTE		MSW LANDFILL	ASH MONOFILL	COMBINED LANDFILLS	RECYCLING & OTHER	ALTERNATIVE DAILY COVER (ADC) RATIO				
	1	25	27	30	31	19					19	20	0.74	1.5	0.74
MONTH	DIRECT LANDFILL	CONST & DEMO	MSW-NON- PROFIT	LANDFILL- MRF	XCEL (LANDFILL)	XCEL BOTTOM ASH	SPECIAL WASTE	SUBTOTAL	XCEL WTE ASH **	TOTAL	TOTAL ADC IN CUBIC YARDS CATs 2,19,21-23	TOTAL ADC RATIO TO MSW	PETRO IMPACT SOIL CUBIC YDS	PETRO IMPACT SOIL DC TO MSW	
JANUARY	2,118.98	1,487.10	39.84	0.00	1,084.40	188.58	444.01	5,362.91	796.24	6,159.15	369.58	5.07%	0.00	0.00%	
FEBRUARY	1,793.52	1,133.96	48.58	0.00	1,129.53	167.46	660.01	4,933.06	713.11	5,646.17	409.81	6.24%	0.22	0.00%	
MARCH	2,767.49	3,101.78	54.16	0.00	1,482.40	229.71	855.82	8,491.36	992.59	9,483.95	665.12	5.84%	0.26	0.00%	
APRIL	3,073.91	2,685.38	75.79	0.00	1,302.20	237.75	4,112.28	11,487.31	936.81	12,424.12	2,926.77	25.90%	9.94	0.06%	
MAY	3,033.16	1,960.11	73.21	0.00	1,395.50	179.44	1,036.93	7,678.35	832.93	8,511.28	810.26	8.21%	2.34	0.02%	
JUNE	3,307.08	1,887.53	73.18	0.00	2,144.60	195.59	2,788.86	10,396.84	841.21	11,238.05	2,040.14	17.80%	0.84	0.01%	
JULY	3,762.33	2,083.81	51.83	0.00	1,924.30	193.69	3,727.22	11,743.18	841.72	12,584.90	887.85	5.61%	9.68	0.05%	
AUGUST	3,660.12	2,894.67	55.65	8.31	1,803.60	211.65	3,699.16	12,333.16	702.90	13,036.06	2,817.69	22.06%	8.63	0.05%	
SEPTEMBER	3,237.95	1,926.43	57.33	0.00	1,963.60	228.77	1,810.41	9,224.49	802.73	10,027.22	1,406.24	12.80%	5.68	0.04%	
OCTOBER	3,231.08	2,055.34	73.41	0.00	1,827.60	199.06	846.63	8,233.12	730.55	8,963.67	687.47	6.27%	0.00	0.00%	
NOVEMBER	3,232.02	2,368.82	56.05	0.00	1,580.54	159.87	1,365.71	8,763.01	730.08	9,493.09	967.84	8.65%	0.00	0.00%	
DECEMBER	3,257.95	1,700.05	55.87	0.00	1,499.00	221.03	1,371.58	8,105.48	869.44	8,974.92	1,030.18	10.23%	0.00	0.00%	
Actual YTD Tonnage	36,475.59	25,284.98	714.90	8.31	19,137.27	2,412.60	22,718.62	106,752.27	9,790.31	116,542.58	15,018.93	11.92%	37.58	0.03%	
% MSW Landfill	34.17%	23.69%	0.67%	0.08%	17.93%	2.26%	21.28%	100%			198.39	0.16%	198.39	0.16%	
% Combined Landfills	31.30%	21.70%	0.61%	0.06%	16.42%	2.07%	19.49%	91.60%	8.40%	100%	15,018.93	12.02%	235.97	0.19%	
											Carry-over Petro Impacted Soil from 2018-2020 in tons:				268.09

January-June 30, 2021 WDNR code 1 as the exemption was effective July 1, 2021

**La Crosse County Landfill
2021 Special Waste Tonnages**

Attachment C-1

CATEGORY	2	4	5	6	6	6	6	6	6	19	19	19	21	23
MONTH	COAL/ WOOD ASH	FOUNDRY WASTE	POTW SLUDGES	ASBESTOS (FRIABLE)	ASBESTOS (NON- FRIABLE)	ASBESTOS TOTAL	SLUDGE	MISC. SPECIAL WASTE	CATCH BASIN- DC	OTHER APPROVED DC	STREET SWEEPINGS- DC	HV IND WASTE- DC	PETROLEUM IMPACTED SOIL-BIO	SPECIAL WASTE TOTAL
JANUARY	6.21	0.00	0.00	3.99	0.22	4.21	63.93	65.02	42.96	0.00	0.00	261.68	0.00	444.01
FEBRUARY	5.82	0.00	0.00	0.07	0.05	0.12	89.79	183.76	49.81	0.00	0.00	330.41	0.30	660.01
MARCH	4.02	0.00	0.00	14.80	74.24	89.04	70.87	26.81	50.43	0.00	296.97	317.33	0.35	855.82
APRIL	12.05	0.00	0.00	1.61	188.37	189.98	65.70	139.26	69.49	0.00	3,246.22	376.15	13.43	4,112.28
MAY	7.04	0.00	0.00	1.73	13.90	15.63	52.56	53.24	42.66	318.44	191.01	353.19	3.16	1,036.93
JUNE	4.55	0.00	0.00	11.49	2.35	13.84	89.64	124.03	16.08	1,897.85	46.47	595.27	1.13	2,788.86
JULY	4.73	0.00	2,453.10	2.54	5.43	7.97	62.78	197.26	25.66	271.44	51.94	639.26	13.08	3,727.22
AUGUST	11.16	0.00	0.00	0.70	18.93	19.63	50.44	33.05	154.11	2,692.81	18.64	707.66	11.66	3,699.16
SEPTEMBER	3.76	0.00	0.00	24.22	32.37	56.59	54.87	27.40	5.20	909.16	22.00	723.75	7.68	1,810.41
OCTOBER	7.49	0.00	0.00	41.25	10.26	51.51	47.12	18.05	12.65	190.80	123.29	395.72	0.00	846.63
NOVEMBER	2.81	0.00	0.00	72.77	15.97	88.74	68.57	60.38	20.15	634.06	26.84	464.16	0.00	1,365.71
DECEMBER	9.20	0.00	0.00	52.28	22.3	74.58	86.58	39.32	58.10	569.03	6.76	528.01	0.00	1,371.58
Actual YTD Tonnage	78.84	0.00	2,453.10	227.45	384.39	611.84	802.85	967.58	547.30	7,483.59	4,030.14	5,692.59	50.79	22,718.62

% Special Waste	0.35%	0.00%	10.80%	1.00%	1.69%	3.53%	4.26%	2.41%	32.94%	17.74%	25.06%	0.22%	100%
			% Asbestos	37%	63%	100%							

DC=Daily
Cover

Misc Special waste includes ML1-Other solid Waste-Non MSW

**Calendar Year 2021 Waste Disposal Tonnage/Capacity Certification Report
Supplemental Data Table A**

Attachment C-2

Name of Landfill: La Crosse MSW/Landfill/Ash Monofill
Landfill License Number:3253
Landfill FID Number: 632063630

Category Number	Waste Type – Category Name	Total 2020 Tonnages	Est. Capacity Jan. 2021: Conv. Factor (See Instructions for Conversion Factors)	Volume-CU Yds
1	Municipal solid waste (MSW)	45,014	1.500	67,521.33
2	Utility ash that meets the definition of high-volume industrial waste in s. 289.01(17), Wis. Stats. Refer to s. 289.645(3), Wis. Stats. for recycling fee exemption. Refer to s. 289.67(1)(cm), Wis. Stats. for environmental repair fee.	79	0.740	58.34
3	Papermill sludge/ash that meets the definition of high-volume industrial waste in s. 289.01(17), Wis. Stats. Refer to s. 289.645(3), Wis. Stats. for recycling fee exemption. Refer to s. 289.67(1)(cm), Wis. Stats. for environmental repair fee.	0	0	0.00
4	Foundry process waste that meets the definition of high-volume industrial waste in s. 289.01(17), Wis. Stats. Refer to s. 289.645(3), Wis. Stats. for recycling fee exemption. Refer to s. 289.67(1)(cm), Wis. Stats. for environmental repair fee.	0	0	0.00
5	Publicly owned treatment works (POTW) sludges	2,453	1.500	3,679.65
6	All other solid waste (non-hazardous waste) - Non MSW	2,382	1.500	3,573.41
19	Waste approved by the DNR for use as lining, daily cover, dikes, berms, or roads within the landfill. Refer to s. 289.63(6)(a), Wis. Stats. for groundwater and well comp fee exemptions, s. 289.64(4)(a) for siting board fee exemption, s. 289.645(4)(a) for recycling fee exemption, and s. 289.67(1)(d) for environmental repair fee exemption.	14,474	0.740	10,710.49
20	Energy recovery incinerator ash that meets the definition of high-volume industrial waste in s. 289.01(17), Wis. Stats. Refer to s. 289.645(3), Wis. Stats. for recycling fee exemption. Refer to s. 289.67(1)(cm), Wis. Stats. for environmental repair fee.	9,790	1.215	11,895.23
21	High volume industrial waste approved by the DNR for use as lining, daily cover, dikes, berms, etc. or roads within the landfill. Refer to s. 289.63(6)(a), Wis. Stats. for groundwater and well comp fee exemptions, s. 289.64(4)(a) for siting board fee exemption, s. 289.645(4)(a) for recycling fee exemption, and s. 289.67(1)(d) for environmental repair fee exemption.	5,693	0.740	4,212.52
22	Shredder fluff approved by the DNR for use as lining, daily cover, dikes, berms, or roads within the landfill. Refer to s. 289.63(6)(a), Wis. Stats. for possible exemption from groundwater and well comp fees, s. 289.64(4), Wis. Stats. for possible exemption from siting board fee, s. 289.645(4)(a) for possible exemption from the recycling fee and 2. 289.67.1)(f) for possible exemption from environmental repair fee.	0	0	0.00
23	Treated contaminated soil approved by the DNR for use as lining, daily cover, dikes, berms, or roads within the landfill. Refer to s. 289.63(6)(a), Wis. Stats. for groundwater and well comp fee exemptions, s. 289.64(4)(a) for siting board fee exemption, s. 289.645(4)(a) for recycling fee exemption, and s. 289.67(1)(d) for environmental repair fee exemption.	51	0.740	37.58
24	Unusable papermaking materials that meet the criteria in s. 289.645(4)(c), Wis. Stats.	0	0	0.00
25	Construction & demolition (C&D) waste - subject to all the same fees as Category 1 waste	25,285	1.500	37,927.47
26	Sediments contaminated with PCBs that meet the criteria in s. 289.645(4)(d) & s. 289.67(1)(cv), Wis. Stats.	0	0	0.00
27	Waste generated by a nonprofit organization that meets the criteria in s. 289.645(4)(b), Wis. Stats.	715	1.500	1,072.35
28	Solid waste materials generated as a result of a natural disaster that meet the criteria in s. 289.63(6)(b), 289.64(4)(d), 289.645(4)(d) & 289.67(1)(fm), Wis. Stats. (Effective July 1, 2011)	0	0	0.00
29	Waste removed at the request of the DNR in order to mitigate potential environmental impacts in accordance with s. 289.675, Wis. Stats. (Effective April 25, 2014)	0	0	0.00
30	Solid waste materials generated by a qualified materials recovery facility (QMRF) as described in s. 289.63(6)(1.a.), s. 289.64(4)(b)1.a. and s. 289.67(f)1.a. in an amount equal to the weight of the residue generated by the QMRF or 10% of the total weight of material accepted by the QMRF, whichever is less. (Effective January 1, 2015)	8	1.500	12.47
31	Solid waste materials generated by a qualified materials recovery facility (QMRF) as described in s. 289.63(6)(1.b.), s. 289.64(4)(d)1.b., s. 289.645(4)(b)1.b. and s. 289.67(f)1.b. in an amount equal to the weight of the residue generated by the QMRF or 30% of the total weight of material accepted by the QMRF, whichever is less. (Effective January 1, 2015)	10,599	1.500	15,898.50
Totals		116,542.58		140,700.83

Were topographic surveys used to calculate remaining capacity? if so, please provide the survey date. 12/28/2021
Est. Remaining Site Life in Years: 11.5 **Est. Capacity Jan. 2022:** 1,584,065.00

Topographic True-Up Survey performed 12/28/21 by Paregon Associates, Inc., under supervision of Short Elliot Hendrickson, Inc. (SEH) with the above adjustment.
 *SEH 2021 Landfill Capacity Calculations report dated February 9, 2022 available if necessary.



Building a Better World
for All of Us®

February 10, 2022

RE: La Crosse County - Solid Waste
Department
2021 Landfill Capacity Calculations
SEH No. LACSW 165204 14.00

Mr. Jadd Stilwell
Solid Waste Director
3200 Berlin Drive
La Crosse, WI 54601

Dear Mr. Stilwell:

We have completed an evaluation of the remaining air space in the Ash Monofill and Phase I through Phase VIII of the municipal solid waste (MSW) landfill as of December 31, 2021. The purpose of this letter is to present this information which will assist with solid waste management planning and reporting by the County.

Following is a summary of the calculated effective density for ash and MSW waste as measured between surveys conducted on December 28, 2020 and December 28, 2021, and the remaining permitted air space as of January 1, 2022:

Waste Type	Density ¹	Remaining Permitted Air Space and Site Life ²
Ash Monofill	2,036 lb./CY	10,276 CY / 1.1years ⁽³⁾
MSW Landfill	1,734 lb./CY	1,584,065 CY/ 11.5 – 12.6 years ⁽⁴⁾

Notes:

¹= Density is separated by waste type and not collectively for the landfill.

²= Remaining permitted site life depends on ongoing annual waste receipt volume and density assumptions- see following for more detail.

³= Remaining air space in monofill as of December 31, 2021; however, ash is being placed in select area of MSW Landfill. Remaining life calculation assumes all ash volume usage of 9,533 CY in 2021 would be placed in Ash Monofill.

⁴=Remaining permitted site life depends on ongoing waste receipt and density assumptions, and status of practice of placing Ash in MSW Landfill- see following for more detail.

The La Crosse County Landfill is contracted to manage ash waste from the Xcel French Island refuse derived fuel (RDF) facility through the year 2030. Due to a projected air space shortage for the Ash Monofill the County obtained approval from the Wisconsin Department of Natural Resources (WDNR) to utilize the ash for a final grading overlay in the MSW Landfill. Beginning September 1, 2015 ash disposal transitioned from the ash monofill landfill to a specific overlay area of the MSW landfill, which includes the northern portions of Phase III, Phase IV, and Phase V. However, ash was placed both in the Ash Monofill and MSW ash overlay area during 2021.

The “2021 MSW Landfill Ash Overlay Air Space Consumption and Density” subsection below presents the volume of ash placed in the MSW Landfill during 2021 and its density. The “2021 Ash Monofill Air Space Consumption and Density” subsection below presents the volume of ash placed in the Ash Monofill

during 2021. The “Ash Monofill Remaining Lifespan” subsection below provides the remaining volume of air space in the Ash Monofill. The remaining volume for ash in the MSW landfill is a function of remaining MSW air space and duration of the term of ash disposal. Based on average fill volumes and remaining life span of the Ash Monofill and MSW Ash Overlay, it is determined that the ash overlay footprint within the MSW landfill will not have sufficient airspace to continue ash placement through 2030. This information is presented in the “MSW Landfill” Section under the “MSW Landfill Ash Overlay Remaining Lifespan” subheading.

The MSW Landfill section below summarizes the volume and effective density of MSW and XCEL RDF Ash waste placed during 2021 within the MSW Landfill. This section includes the ash placed in the ash overlay area. The “Remaining Constructed and Permitted Air Space for MSW and Ash Overlay Waste” subsection summarizes the remaining permitted air space volume for life of the landfill. This calculation includes ash volumes assuming all Xcel RDF ash will continue to be placed in the MSW Landfill. As long as the ash is placed in the MSW Landfill, the volume required for ash placement will need to be incorporated with the remaining volume for MSW waste. The remaining life for the MSW Landfill, assuming ash placement in the MSW location, is presented in this section.

ASH WASTE

2021 MSW Landfill Ash Overlay Air Space Consumption and Density

Topographic survey of the ash disposal area in the MSW landfill was completed by Paragon Associates, Inc. (Paragon) on December 28, 2021 to calculate the volume of ash placed in the MSW Landfill overlay. Topographic data obtained from the 2021 survey in the ash overlay area is provided in Figure 4. Using Civil 3D software, and subtracting intermediate cover added in 2021, the volume of ash fill placed in the MSW Landfill between December 28, 2020 and December 28, 2021 was calculated as 2,579.47 CY. Volume calculations for the ash placed in the MSW Landfill during the survey period are shown on Figure 4.

To determine the amount of ash placed from January 1, 2021 through December 31, 2021, three adjustments were made:

1. According to the landfill scale records, 169 tons of ash was placed from December 29, 2020 to December 31, 2020. Using last year’s density of 2,920 lb./CY, this weight equates to 116 CY. This volume was subtracted from the volume generated by Civil 3D.
2. Landfill scale records show that 98 tons of ash was placed from December 29, 2021 to December 31, 2021. Using a density of 2,072 lb./CY (calculated using 2021 scale records), this weight equates to 95 CY of material. This volume was added to the volume generated by Civil 3D.
3. Landfill scale records show that 9,692 tons of ash was received between January 1, 2021 through December 28, 2021. In order to derive an ash waste density for 2021, the tonnage from December 29-31, 2021 of 98 tons was added for a total tonnage of 9,790 tons. The total tonnage placed in the Ash Overlay in 2021 was determined by multiplying the total tonnage by the ash overlay fraction to get 2,653 tons ($9,790 \times 0.271$). The density was calculated by dividing 2,653 tons by 2,490 CY for a density of 2,131 lb/CY.

The amount of air space consumed by ash waste in the MSW ash overlay between January 1, 2021 and December 31, 2021 was 2,490 CY. The tonnage of ash placed between January 1, 2021 and December 31, 2021 was 2,653 tons, and ash density was calculated to be 2,131 lb/cy.

2021 Ash Monofill Air Space Consumption and Density

Topographic survey of the Ash Monofill was completed by Paragon Associates, Inc. (Paragon) on December 28, 2021 to calculate the volume of ash placed. Topographic data obtained from the 2021 survey in the Ash Monofill is provided in Figure 1. Using Civil 3D software, and adding intermediate cover removed in 2021, the volume of ash fill placed in the Ash Monofill Landfill between December 28, 2020 and December 28, 2021 was calculated as 6,941 CY. Volume calculations for the ash placed in the Ash Monofill during the survey period are shown on Figure 1.

The amount of air space consumed in the Ash Monofill between January 1, 2021 and December 31, 2021 is 7,264 CY. To determine the amount of ash placed during this time period, three adjustments were made:

1. Since ash tonnages placed in the Ash Monofill and Ash Overlay area were not distinguished, the survey volumes were used to determine what fraction of ash was placed in the Ash Monofill during 2021. This was calculated to be 0.73 (6,941/9,520).
2. Landfill scale records show that 98 tons of ash was placed from December 29, 2021 to December 31, 2021. Using a density of 2,072 lb./CY (calculated using 2021 scale records), this weight equates to 95 CY of material. To determine the amount placed in the Ash Monofill this volume was multiplied by the ash fraction to get 69 CY (0.73 x 95). The volume of 69 CY was added to the volume generated by Civil 3D.
3. Landfill scale records show that 9,692 tons of ash was received between January 1, 2021 through December 28, 2021. In order to derive an ash waste density for 2021, the tonnage from December 29-31, 2021 of 98 tons was added to 9,692 tons. The total tonnage placed in the Ash Monofill in 2021 was determined by multiplying the total tonnage by the Ash monofill fraction to get 7,138 tons (9,790 x 0.73 (6,941/9,520)). The density was calculated by dividing 7,138 tons by 7,010 CY for a density of 2,036 lb/CY.

The amount of air space consumed by ash waste in the Ash Monofill between January 1, 2021 and December 31, 2021 is 7,010 CY. The tonnage of ash placed between January 1, 2021 and December 31, 2021 is 7,138 tons, and ash density was calculated to be 2,036 lb/cy.

Ash Monofill Remaining Lifespan

A survey of the ash monofill was completed in 2021 because ash was placed in the Ash Monofill during 2021. Figures 1 and 2 include the topography from the December 28, 2021 survey performed by Paragon which was used to calculate the amount of ash placed between December 28, 2015 and December 28, 2021 in the ash monofill. Figure 2 shows the existing grades and the approved top of waste grades based on the Plan of Operations drawings. Figure 2 also identifies the area which currently has 12 inches of intermediate cover. The remaining airspace, calculated using Civil 3D software, as of December 28, 2021 is 10,370 CY. This volume assumes that approximately 982 CY of intermediate cover will be removed with waste filling to create waste air space, see volume calculation on Figure 2. In order to determine the remaining life as of December 31, 2021 the ash fill volume from December 28-31, 2021 was subtracted from 10,370 CY for a remaining fill volume of 10,301 CY. If all ash waste were placed in the ash monofill, with an annual filling rate of 9,499 CY based on the 2021 ash densities, the remaining site life is approximately 1.1 years. If the prior active five years filling rates based on historic filling rates of 6,520 CY, 7,759 CY, 11,729 CY, 10,415 CY and 11,476 CY are averaged with this year's rate; the remaining site life remains at 1.1 years.

MSW Landfill Ash Overlay Remaining Lifespan

The current filling approach is to separate Ash and MSW disposal areas. When considering remaining life for combined waste flows of MSW and ash, it is important to consider that there is only approximately 1.1 years of life remaining in the Ash Monofill based on an average of previous years fill rates. However, in order to maintain the ash disposal location within the MSW landfill, a certain volume needs to be set aside for ash filling through 2030. If this year's ash fill volume of 9,499 CY is used, then a total of 85,797 CY of ash volume capacity is needed through 2030. If the remaining volume in the Ash Monofill of 10,370 CY is subtracted, a volume of 75,427 CY of additional air space for ash would be needed through 2030 within the MSW Landfill.

Figure 5 shows the existing grades and the proposed top of waste grades for ash fill within the designated ash overlay area within the MSW Landfill. This area has been receiving ash since September 1, 2015 and has been approved for ash fill to the proposed top of waste grades as presented on Figure 5. The remaining air space in this area, calculated using Civil 3D software, as of December 28, 2021 is 59,258 CY. In order to determine the remaining life as of December 31, 2021 the ash fill volume from December 28-31, 2021 was subtracted from 59,258 CY for a remaining fill volume of 59,233 CY. If all ash waste were placed in the proposed overlay footprint, with an annual filling rate of 9,499 CY, the remaining site life is approximately 6.2 years. If the prior active five years filling rates of 6,520, 7,759 CY, 11,729 CY, 10,415 CY and 11,476 CY are averaged with this year's rate; approximately 6.2 years of site life remain.

If the life remaining in the Ash Monofill of 1.1 years are added to the life remaining in the MSW Ash Overlay location of 6.2 years, approximately 7.3 years of life are currently dedicated to ash disposal at the La Crosse Facility. Nine years of site life are required to fulfill the Xcel contract through 2030, meaning there is insufficient remaining ash capacity to fulfill the contract.

Ash can also be placed as a grading layer in outboard slopes throughout the facility as a grading layer during final closure construction, however this only provides a disposal volume of approximately 800 CY per acre of final closure. Longer term disposal options for Xcel RDF ash should be considered at this time. Longer term storage options should also consider the possibility that storage may be required past 2030. Expansion of the current ash overlay to the north or creation of a different location will need to consider the current permit stipulation not allowing placement of MSW above the ash and resulting locational constraints of ash placement on outboard slopes. A phasing plan should be prepared to maximize disposal volumes in the existing overlay and to provide ongoing ash disposal in the MSW Landfill. Figure 4 presents the current maximum Ash Overlay extents.

MSW LANDFILL

2021 Air Space Consumption and Density for MSW Waste

A topographic survey of the MSW Landfill was completed by Paragon Associates, Inc. on December 28, 2021 to document the existing grades. For purposes of this letter, references to MSW include construction and demolition waste, landfilled special waste and RDF Ash. Topographic data obtained from this survey is provided in Figures 3 through 6. Figure 3 presents filling in Phase VI through Phase VIII between the period from December 28, 2020 and December 28, 2021. After correction for 9,499 CY of new intermediate cover placed and 4,038 CY of stripped intermediate cover in Phase VI through Phase VIII Module 2 over the area shown on Figure 3 during the 2021 survey period, the amount of MSW placed in Phase VI through Phase VIII during the 2021 survey period is 118,919 CY.

The total volume placed in the MSW landfill, which includes only MSW in the Ash Overlay location, between December 28, 2020 and December 28, 2021 in Phases VI through VIII was calculated as 122,782 CY. To determine the amount of fill placed from January 1, 2021 through December 31, 2021, four adjustments were made:

1. According to the landfill scale records, 655 tons of MSW was placed from December 29, 2020 to December 31, 2020. Using an average with last year's density; 1,596 lb./CY, this weight equates to 821 CY. This volume was subtracted from the volume generated by Civil 3D.
2. Landfill scale records show that 1004 tons of MSW was placed from December 29, 2021 to December 31, 2021. Using a density of 1,733 lb./CY (calculated using 2021 scale records), this weight equates to 1,159 CY of material. This volume was added to the volume generated by Civil 3D.
3. Volume of ash placed within the MSW Ash Overlay was subtracted from the total fill volume over the Phase IV and V waste placement limits as shown in FIG 4. This waste volume totaled 2,579 CY and was previously added to the total MSW volume placed during the survey period.
4. Landfill scale records show that 105,748 tons was received between January 1, 2021 through December 28, 2021. In order to derive a waste density for 2021, the tonnage from December 29-31, 2021 of 1,004 tons is added to 106,752 tons and divided by 123,120 CY for a density of 1,734 lb./CY.

The amount of air space consumed in the MSW landfill by MSW waste between January 1, 2021 and December 31, 2021 is 123,120 CY. Given scale records showing 106,752 tons of MSW placed from January 1, 2020 to December 31, 2020, a MSW compaction density of 1,734 lbs./CY is achieved. As this density does not include air space consumed by ash, it will not be used in remaining life and other density calculations.

Remaining Constructed and Permitted air space for MSW and Ash Overlay Waste

The amount of air space consumed in the MSW landfill by MSW and ash wastes between January 1, 2021 and December 31, 2021 is 125,609 CY (123,120 CY + 2,489 CY). Densities for previous years are presented in the table below. With scale records showing 109,405 tons of ash and MSW waste placed in 2021, the density is approximately 1,742lb./CY.

Year	MSW Landfill Volume Used (CY)	Density (lb./CY)
2016	122,077	1,770
2017	141,635	1,581
2018	148,819	1,429
2019	145,949	1,643
2020	140,096	1,657
2021	125,609	1,742
Average	137,364	1,637

Constructed air space is that portion of the fill volume that is within the existing constructed footprint. At this time, the constructed air space is the same as that currently permitted. Figure 6 shows the existing grades and the top of waste grades based on the maximum fill grades and areas which do not have intermediate cover.

Mr. Jadd Stilwell
February 10, 2022
Page 6

Remaining capacities within the remaining constructed air space are also presented for fill phase planning purposes. Figure 5 shows 59,258 CY of remaining air space designated for ash filling in Phases I through V.

The remaining MSW Landfill permitted and constructed air space, calculated using Civil 3D software, as of December 28, 2021 is 1,585,259 CY. This assumes that areas outside current waste filling locations as shown on Figure 6 have 18 inches of intermediate cover, equating to 61,656 CY which was added to the remaining volume since it will be removed prior to placing waste. After subtracting the volume of fill added between December 29, 2021 through December 31, 2021 1,185 CY (1,159 CY MSW and 26 CY ash), the remaining constructed and permitted air space in the constructed MSW Landfill as of December 31, 2021 is 1,584,074 CY. Using the average fill volumes of the prior five years and current year; the remaining permitted site life for Phases I through VIII is 11.5 years. At this year's MSW and ash filling rate of 125,609 CY/yr. the remaining constructed air space provides approximately 12.6 years of remaining life from December 31, 2021 contingent on accessibility for waste placement.

If you have any questions about the information presented herein, please call me at 651.490.2163 or Brian Kent at 608.498.4844.

Sincerely,

SHORT ELLIOTT HENDRICKSON INC.

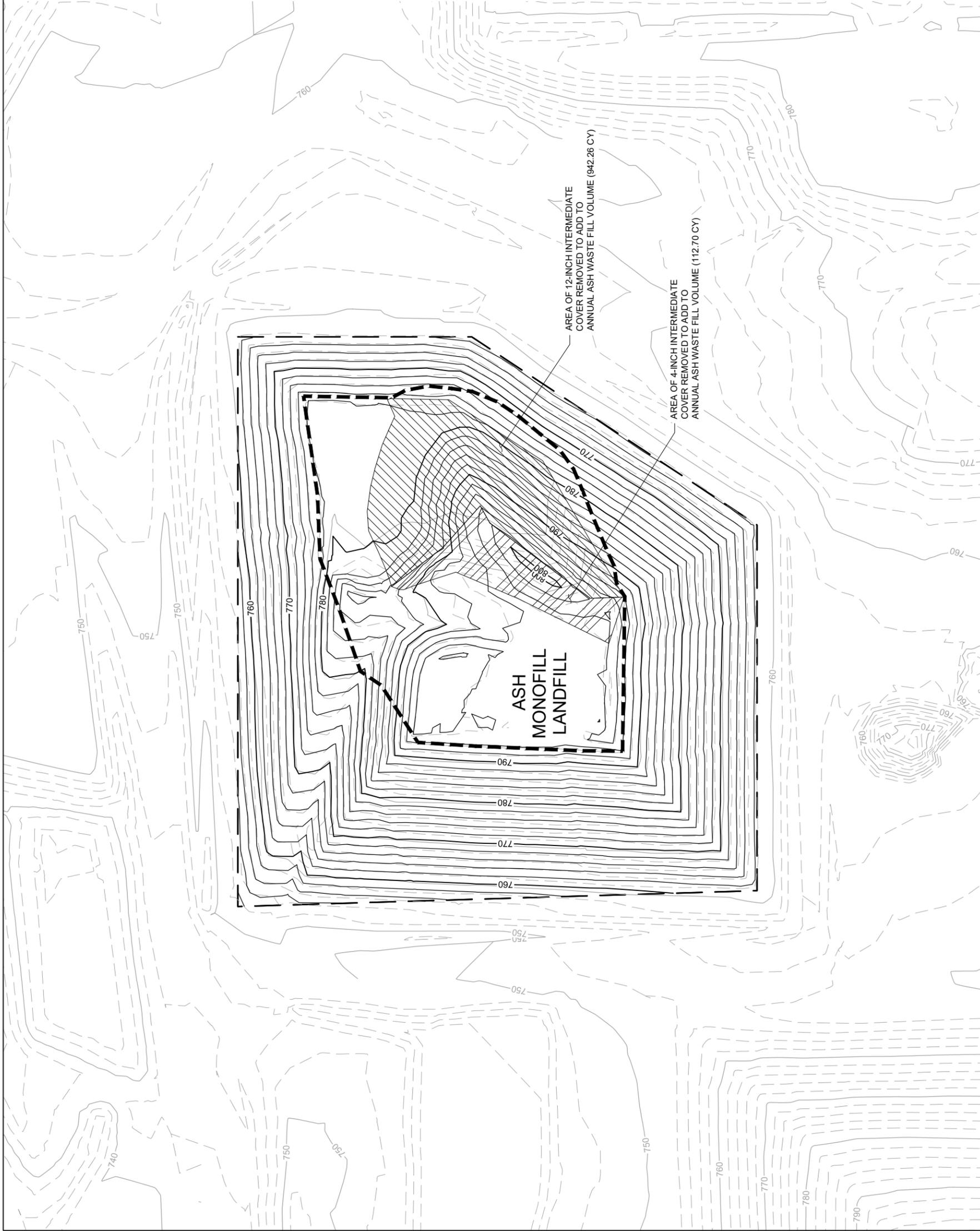


Darryl R. Heaps, PE, CHMM
Senior Project Manager

nrp

Attachment

c: Lanae Nickelotti, La Crosse County Finance Director
Brian Kent, SEH



LEGEND

- 810 — DECEMBER 2020 EXISTING GRADE
- 810 — DECEMBER 2021 EXISTING GRADE
- - - BOUNDARY USED FOR VOLUME CALCULATION
- - - LANDFILL WASTE LIMITS
- [Hatched Box] APPROXIMATE AREA OF 2021 12-INCH INTERMEDIATE COVER REMOVAL
- [Hatched Box] APPROXIMATE AREA OF 2021 4-INCH INTERMEDIATE COVER REMOVAL

ACTIVE AREA

Volume Surface: 2020 - 2021 ASH WASTE FILL VOLUME
 Description: 2020 TO 2021 ASH WASTE FILL VOLUME
 Volume Cut: 506.97 CY
 Volume Fill: 6,392.67 CY
 Volume Total: 5,885.70 CY (+) 1,054.96 CY = 6,940.66 CY
 NET FILL VOLUME: 6,940.66 CY ASH WASTE FILL

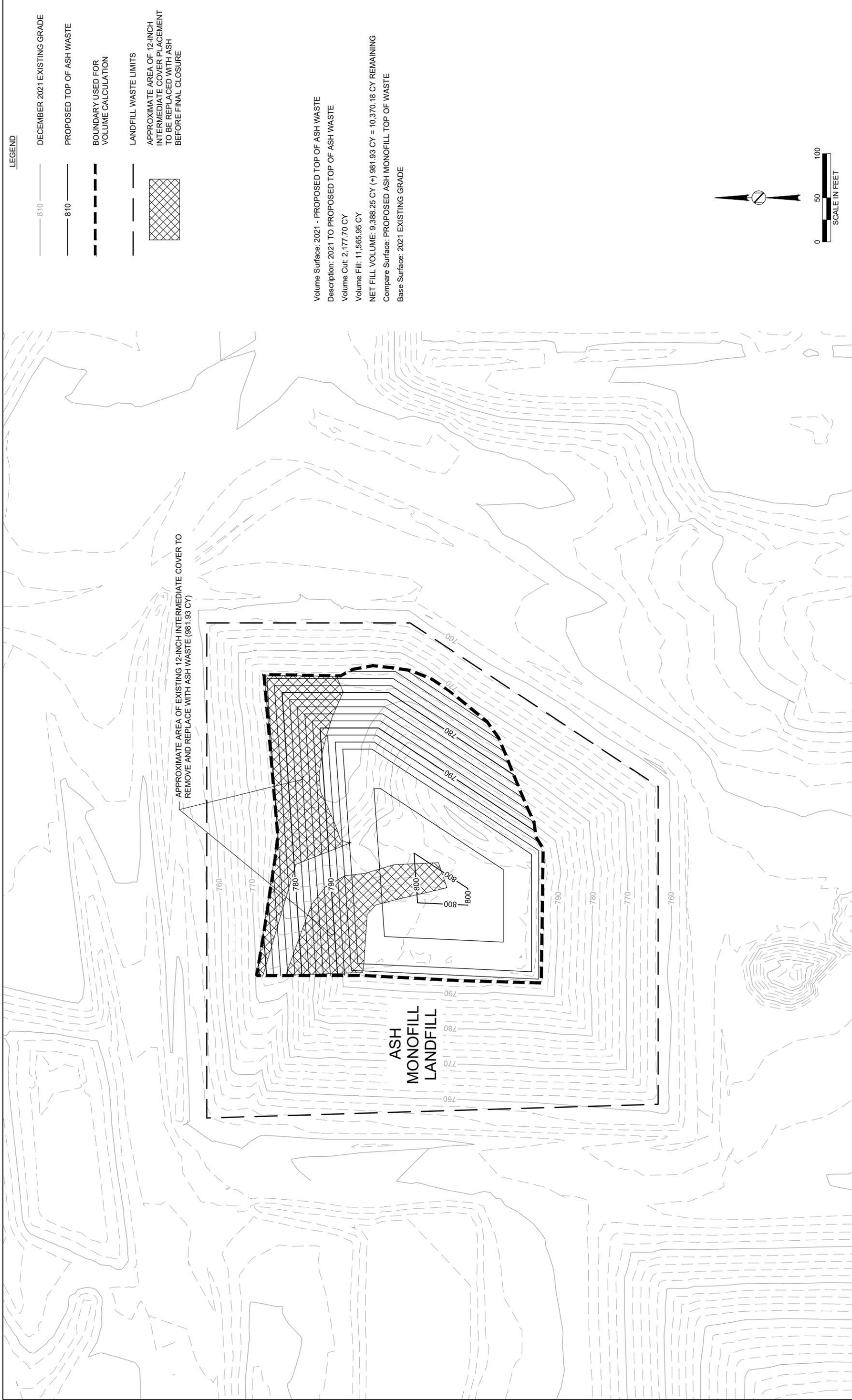


DESIGNED		CMC	DRH	CHECKED		CMC	DRH
DRAWN		CMC	TTR	CHECKED		CMC	TTR
DATE		01/31/22	BY	APPROVED		01/31/22	DRH
NO	DATE	BY	DATE	NO	DATE	BY	REVISIONS
01/31/2022		DRH					ISSUED FOR REPORTING
							REVISIONS

PLANS PREPARED BY:
 SEH
 329 JAY STREET
 SUITE 301
 LA CROSSE, WI 54601-4034
 PHONE: 1.608.782.3161
 www.sehinc.com

PLANS PREPARED FOR:
 LA CROSSE SOLID WASTE DEPT
 3200 BERLIN DRIVE
 LA CROSSE, WI 54601

PROJECT/CONTRACT NO
 LA CROSSE
 SEH PROJECT NO
 LACSW 165204
 FILE NAME
 LA165204FIG1



LEGEND

- 810 — DECEMBER 2021 EXISTING GRADE
- 810 — PROPOSED TOP OF ASH WASTE
- - - BOUNDARY USED FOR VOLUME CALCULATION
- - - LANDFILL WASTE LIMITS
- [Cross-hatch pattern] APPROXIMATE AREA OF 12-INCH INTERMEDIATE COVER PLACEMENT TO BE REPLACED WITH ASH BEFORE FINAL CLOSURE

Volume Surface: 2021 - PROPOSED TOP OF ASH WASTE
 Description: 2021 TO PROPOSED TOP OF ASH WASTE
 Volume Cut: 2,177.70 CY
 Volume Fill: 11,565.95 CY
 NET FILL VOLUME: 9,388.25 CY (+) 981.93 CY = 10,370.18 CY REMAINING
 Compare Surface: PROPOSED ASH MONOFILL TOP OF WASTE
 Base Surface: 2021 EXISTING GRADE

DESIGNED		CMC	DRH	CHECKED		CMC	DRH	PLANS PREPARED BY:		PLANS PREPARED FOR:		PROJECT/CONTRACT NO		LA CROSSE COUNTY LANDFILL 2021 ANNUAL REPORT LA CROSSE, WISCONSIN		FIG 2 2 OF 6
DRAWN		CMC	TTR	CHECKED		CMC	TTR	329 JAY STREET SUITE 301 LA CROSSE, WI 54601-4034 PHONE: 1.608.782.3161 www.sehinc.com		LA CROSSE SOLID WASTE DEPT 3200 BERLIN DRIVE LA CROSSE, WI 54601		SER/PROJECT NO		LACSW 165204		
DATE		01/31/22	DRH	APPROVED		DRH	DRH	REVISIONS		REVISIONS		FILE NAME		LA165204FIG2		
NO	DATE	BY	ISSUED FOR REPORTING	DRH	01/31/2022	DRH	ISSUED FOR REPORTING	REVISIONS		REVISIONS		REVISIONS		REVISIONS		

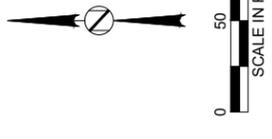


LEGEND

- 810 — DECEMBER 2020 EXISTING GRADE
- 810 — DECEMBER 2021 EXISTING GRADE
- BOUNDARY USED FOR VOLUME CALCULATION
- LANDFILL WASTE LIMITS
- [Cross-hatched box] APPROXIMATE AREA OF 2021 18-INCH INTERMEDIATE COVER PLACEMENT
- [Diagonal hatched box] APPROXIMATE AREA OF 2021 18-INCH INTERMEDIATE COVER REMOVAL

ACTIVE AREA

Volume Surface: 2020 - 2021 WASTE FILL VOLUME
 Description: 2020 TO 2021 WASTE FILL VOLUME
 Volume Cut: 5,740.14 CY
 Volume Fill: 130,120.72 CY
 Volume Total: 124,380.58 CY (+) 4,037.83 CY (-) 9,499.16 CY
 = 118,919.25 CY
 NET FILL VOLUME: 118,919.25 CY WASTE FILL



LA CROSSE COUNTY LANDFILL
 2021 ANNUAL REPORT
 LA CROSSE, WISCONSIN

DECEMBER 2020 - DECEMBER 2021 WASTE FILL
 VOLUME - 1

PLANS PREPARED FOR:
 LA CROSSE SOLID WASTE DEPT
 3200 BERLIN DRIVE
 LA CROSSE, WI 54601

PLANS PREPARED BY:
SEH
 329 JAY STREET
 SUITE 301
 LA CROSSE, WI 54601-4034
 PHONE 1.608.782.3161
 www.sehinc.com

DESIGNED	CHECKED	DATE	REVISIONS
CMC	DRH	01/13/22	

DRAWN	CHECKED	DATE	REVISIONS
CMC	TTR	01/13/22	

ISSUED FOR REPORTING	DATE	BY	REVISIONS
DRH	01/13/2022		

NO.	DATE	BY	REVISIONS

SEE FIG 4

AREA OF 18-INCH INTERMEDIATE COVER REMOVED TO ADD TO ANNUAL FILL VOLUME (4,037.83 CY)

AREA OF 18-INCH INTERMEDIATE COVER ADDED TO REMOVE FROM ANNUAL FILL VOLUME (9,499.16 CY)

PHASE VIII - MODULE 1

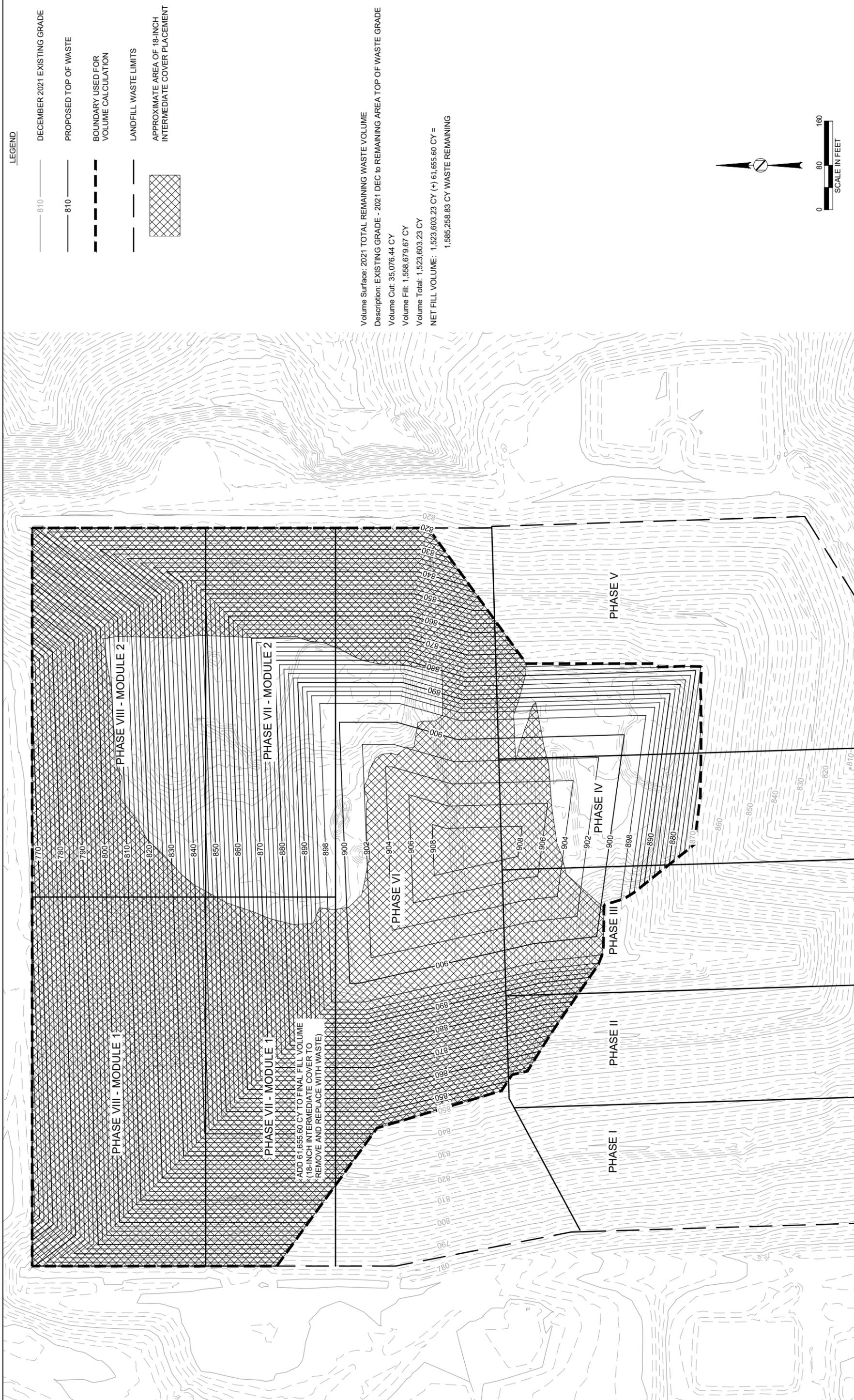
PHASE VII - MODULE 1

PHASE VI

PHASE VIII - MODULE 2

PHASE VII - MODULE 2

ACTIVE AREA



Volume Surface: 2021 TOTAL REMAINING WASTE VOLUME
 Description: EXISTING GRADE - 2021 DEC to REMAINING AREA TOP OF WASTE GRADE
 Volume Cut: 35,076.44 CY
 Volume Fill: 1,558,679.67 CY
 Volume Total: 1,523,603.23 CY
 NET FILL VOLUME: 1,523,603.23 CY (+ 61,655.60 CY = 1,585,258.83 CY WASTE REMAINING)

LEGEND

	810	DECEMBER 2021 EXISTING GRADE
	810	PROPOSED TOP OF WASTE
		BOUNDARY USED FOR VOLUME CALCULATION
		LANDFILL WASTE LIMITS
		APPROXIMATE AREA OF 18-INCH INTERMEDIATE COVER PLACEMENT

NO		DATE	BY	REVISIONS	ISSUED FOR REPORTING	DRH	01/31/2022	DRH
NO		DATE	BY	REVISIONS	REMARKS			
DESIGNED	CMC	DRH						
DRAWN	CMC	TTR						
DATE	01/31/22	APPROVED	DRH					
PLANS PREPARED BY: SEH 329 JAY STREET SUITE 301 LA CROSSE, WI 54601-4034 PHONE: 1.608.782.3161 www.sehinc.com								
PLANS PREPARED FOR: LA CROSSE SOLID WASTE DEPT 3200 BERLIN DRIVE LA CROSSE, WI 54601								
PROJECT/CONTRACT NO		LA CROSSE						
SER/PROJECT NO		LACSW 165204						
FILE NAME		LA165204FIG6						
LA CROSSE COUNTY LANDFILL 2021 ANNUAL REPORT LA CROSSE, WISCONSIN								
DECEMBER 2021 - TOP OF PROPOSED WASTE								
FIG 6								
6 OF 6								

Appendix D

2021 Reporting Requirements for Biopiles for Contaminated Soil

La Crosse County Landfill Complex and Disposal Facility

MSW Landfill (Active – License No. 3253)

Prepared by

La Crosse County Solid Waste Department

La Crosse County, Wisconsin

March 2022

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2 Report Requirements for Annual Bioremediation Activities	2
2.1 Analysis of Data.....	2
2.2 Description of Source and Tonnage of Soils	3
2.3 Record of Operation	3
2.4 Description of the Disposition of Soil Used in the Processing Operation	3
2.5 Tabulation of Gas Concentration and Ambient Air Data	4
2.6 Carbon Canister Data	4
2.7 Tabulation of Soil Pile Grids	4
2.8 Summary of Problems Encountered/Deviations from the Approved Plan	5
2.9 Source and Tonnage of Oil Dry Materials	5
2.10 Summary of Operational Changes	5
3 5-Year Reporting Requirements	5

Attachments

None

1 Purpose

This report summarizes the annual bioremediation activities conducted at the La Crosse County Landfill during 2021. Condition No. 10 of the August 14, 1996 Plan of Operation for the Solid Waste Processing Facility Approval, Treatment of Contaminated Soil, outlines the requirements for annual reporting of bioremediation activities that are required to be included in the annual report.

Petroleum contaminated soils that were received in 2021 were separated in an area located in the Southeastern portion of Phase VII in the MSW landfill. This area of Phase VII was designated and prepared for bioremediation in the Spring of 2021 using berms and drainage sumps to control contact water. The acceptance of those materials and their bioremediation will be contained within this report. For the remainder of the report this material will be referred to as Biopile 19A.

The sections below address the analysis of data, a record of operation, tabulation of gas concentration data, etc.

2 Report Requirements for Annual Bioremediation Activities

Condition No. 10 of the August 14, 1996 Plan of Operation for the Solid Waste Processing Facility Approval, Treatment of Contaminated Soil, requires reporting of the following information. Additionally, Condition No. 11d of the February 10, 2006 Plan of Operation Approval for the North Expansion, requires reporting requirements for biopiles; however, these requirements are redundant with the 1996 approval requirements and therefore will be fully addressed under the 1996 approval.

2.1 Analysis of Data

This sub-condition requires analyses of data from pretreatment and post-treatment samples of each soil pile, assessment of the reduction of concentration of contaminants in the soil, and length of time used in the processing of each pile.

Pretreatment information is detailed in Section 2.2.

Biopile 18A

<u>Pretreatment</u>	<u>Post Treatment</u>
GRO 0-1,310	<4.7 ppm
DRO 0-62,600 PPM	43.5-162 ppm

Total time in active and passive processing = 6-40 months (20-month average)

Biopile 19A

<u>Pretreatment</u>	<u>Post Treatment</u>
GRO 0	N/A
DRO 0-2,190 PPM	N/A

Total time in active and passive processing = 0-9 months (five-month average)

2.2 Description of Source and Tonnage of Soils

This sub-condition requires a description of the source and tonnage of soils contributed to each pile, nature of contamination and causative activity for the contamination in soil from each source, and concentrations of petroleum contaminants and contaminants other than petroleum contaminants. All soils accepted for bioremediation were the result of clean-up of contaminated soils.

**Table 2.2
Contaminated Soil Inventory Biopile**

Material Below is Biopile 19A

Year	Generator	Tons	DRO	GRO
2021	John Bissen	0.3	Local spill assumed >2,000	
2021	Ku-le Region Forestry, INC	0.35	Local spill assumed >2,000	
2021	Hartland Chemical and Lubricants	8.21	2190	
2021	U.S. Army Corps of Engineers	0.33	Local spill assumed >2,000	
2021	DairyLand Power Cooperative	4.89	Local spill assumed >2,000	
2021	Joe Bragger	3.16	Local spill assumed >2,000	
2021	Kwik Trip #623	0.4	Local spill assumed >2,000	
2021	J.F. Brennan Marine Company	0.73	Local spill assumed >2,000	
2021	St. Joseph Construction Company	13.08	Local spill assumed >2,000	
2021	Milestone Materials	11.66	Local spill assumed >2,000	
2021	Zellmer Excavating	7.09	Local spill assumed >2,000	
2021	Kwik Trip	0.59	Local spill assumed >2,000	
Sub-total 2021		50.79		
Total		50.79		

2.3 Record of Operation

This sub-condition requires a record of operation of each soil pile, including total tonnage treated, total time of active operation, and any noticeable effects of temperature and seasonal conditions on the time period used for processing.

Total tons accepted and year soil was received by La Crosse County Solid Waste Department can be viewed in Section 2.2.

Biopile 19A was started in Spring 2021 and continues to accept soils.

2.4 Description of the Disposition of Soil Used in the Processing Operation

This sub-condition requires a description of the disposition of the soil used in the processing operation, whether by disposal or reuse, including any soil sent to an alternative disposal or

treatment facility and disposition of any material rejected from the processing operation or subjected to additional treatment.

Accepted soil currently being processed, and initial treatment started. No materials were rejected.

2.5 Tabulation of Gas Concentration and Ambient Air Data

This sub-condition requires a tabulation of gas concentration data, tabulation of ambient air data, summary of the amount of time soil air was handled by recycle mode and by direct discharge to the atmosphere, and tabulation of any data from testing air discharged to the carbon canisters and atmosphere.

System was operated in recycle mode in 2021.

2.6 Carbon Canister Data

This sub-condition requires information on service life and disposal of spent carbon from the carbon canisters

Carbon canisters are not fully utilized.

2.7 Tabulation of Soil Pile Grids

This sub-condition requires tabulation of soil pile grids selected randomly for post treatment sampling and tabulation of post treatment soil testing data.

On April 12th, 2021, staff at the facility sampled Biopile18A and submitted two composite soil samples from the stockpile at the rate of one sample for every 1,000 tons. Total sample tonnage was 1,214.91. The stockpile consists of soils treated through the Biopile process and are located in a north central portion of Phase VI.

For the purpose of representative sample collection, the stockpile pile was visually divided into two equal separate areas. The two areas were subdivided on a grid system with each grid block's dimensions approximately 15 feet x 15 feet x 6 feet thick. Four grid blocks from each separate area were selected at random in order to prepare a representative composite soil sample from each area. A backhoe was used to excavate into each of the four selected grid blocks at each of the separate areas. Representative soil from each of the four selected grid blocks was placed in a zipper locking plastic bag and homogenized. One composite sample from each of the two divided area was collected utilizing this process. A duplicate sample of composite Sample-1 was also collected and analyzed for the required analytical parameters.

Each homogenized soil sample was placed in laboratory clean analytical bottles, labeled, preserved as necessary, and placed on ice. The samples were submitted to Pace Analytical Services, LLC (Pace) in Green Bay, Wisconsin (WI Certification #405132750) for analysis of volatile organic compounds (VOCs), polynuclear aromatic hydrocarbons (PAHs), gasoline range organics (GRO), and diesel range organics (DRO). Standard chain-of-custody documentation was maintained during sample collection and shipment.

2.8 Summary of Problems Encountered/Deviations from the Approved Plan

This sub-condition requires a summary of any problems encountered with the soil processing equipment or operation, proposed or implemented solutions to the problems, and any deviations from the approved plan.

No problems were encountered or were any deviations from the plan required.

2.9 Source and Tonnage of Oil Dry Materials

This sub-condition requires a description of the source and tonnage of oil dry materials accepted for treatment and a description of the petroleum products which the oil dry materials were applied to.

A small amount of oil dry material was accepted into Biopile 19A; less than 2 tons.

2.10 Summary of Operational Changes

This sub-condition requires a summary of any changes to the mechanical equipment, operating controls, or methods of operation due to operator experience and technical advance and any plan modifications necessary to incorporate long-term or permanent changes to the plan of operation or approval conditions.

None required in 2021.

3 5-Year Reporting Requirements

Condition No. 11 of the aforementioned 1996 approval requires that every fifth annual report shall assess the bioremediation process in comparison to recent technical literature regarding aerobic degradation of petroleum hydrocarbons, list the relevant technical references, summarize experience and data from operation of this facility, and propose any changes necessary to incorporate changes into the plan of operation. This information will be presented in the next 5-year reporting period, which is 2022; therefore, no information regarding this requirement is included in the 2021 Annual Report.

Appendix E

2021 MSW Landfill Gas Information Report

La Crosse County Landfill Complex and Disposal Facility

MSW Landfill (Active – License No. 3253)

Prepared by

La Crosse County Solid Waste Department

La Crosse County, Wisconsin

March 2022

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1 Purpose.....	2
1.1 Landfill Gas Volume	2
1.2 Landfill Gas Re-Use	2
1.3 Monitoring of Additional Gas Wells.....	2

Attachments

Attachment E-1	2021 Monthly Landfill Gas Flow Summary
Attachment E-2	Drawing of Gas Wells 1-10, 13-17, 20-22 & 33
Attachment E-3	Drawing of STOC's

1 Purpose

This report summarizes the volumes of landfill gas extracted from the MSW landfill (License No. 3253), as recorded at the blower or compressor. These volumes are converted from recorded flow rates on a monthly basis, and volumes of landfill gas beneficially used. This report has been prepared to satisfy Condition No. 11 of the February 10, 2006 Plan of Operation Approval from the WDNR.

1.1 Landfill Gas Volume

The landfill gas extraction systems extracted gas volumes for 2021 averaged 8,946,424 cf/month, and a total annual landfill gas volume of 108,137,147 cf (See Attachment E-1). Of this volume 4,131,912 cf was sent to the flare and 104,005,235 cf was used to power the gas-to-energy (G2E) and thermal recovery project with Gundersen Health System.

1.2 Landfill Gas Re-use

La Crosse County Solid Waste, in partnership with Gundersen Health System, continues operation of the joint G2E and thermal recovery project which began in January of 2012. Attachment E-1 shows total landfill gas used per month and the G2E system percent runtime.

1.3 Monitoring of Additional Gas Wells

La Crosse County Solid Waste continues to monitor and control the landfill gas field to maximize gas collection while maintaining environmental requirements. The gas field consists of 24 vertical wells, 4 connections to the leachate clean out system, 15 temporary horizontal gas collection systems and 1 temporary vertical well as identified in attachments E-2 and E-3.

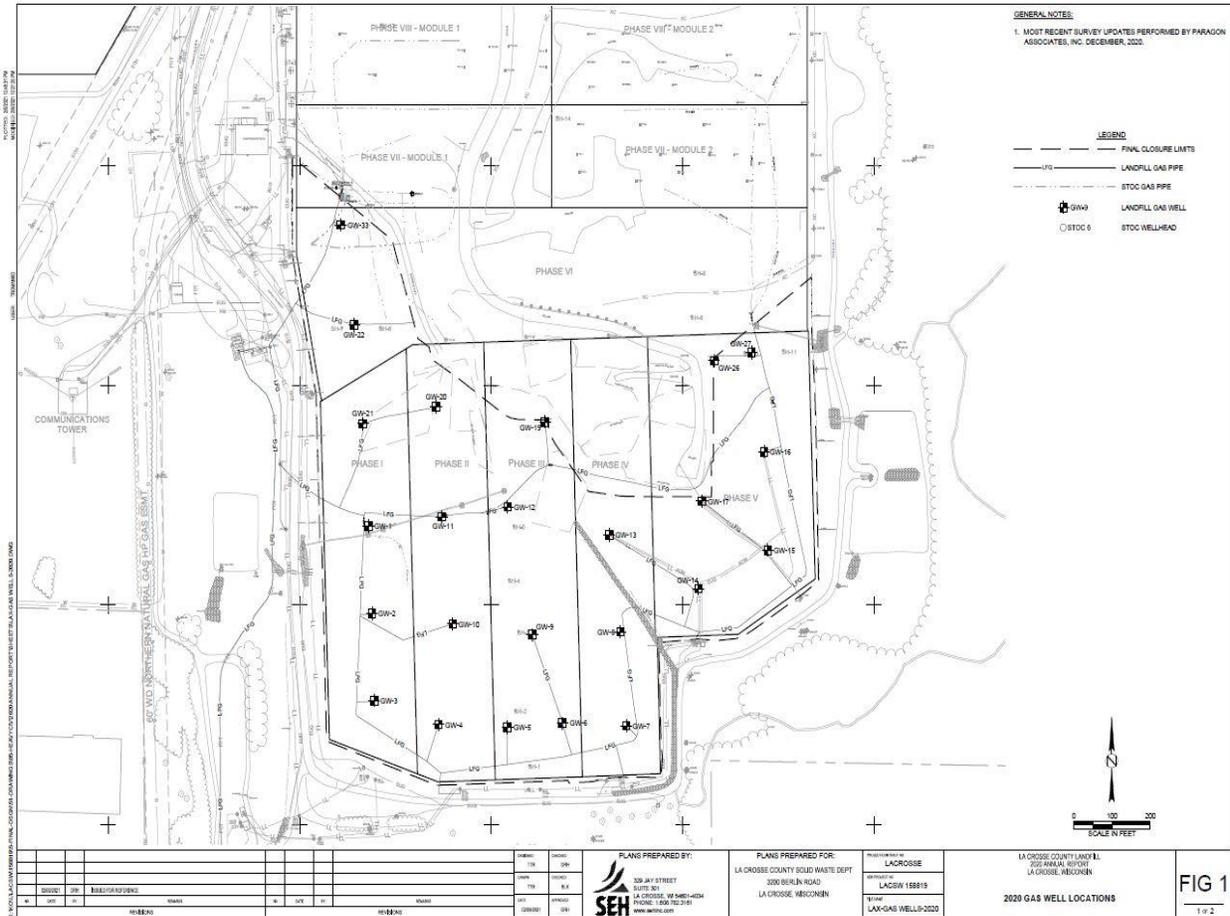
Attachment E-1
2021 Monthly Landfill Gas Flow Summary

	LFG			*G2e System
Date	Collected	SCF to Flare	SCF to Pipeline	% Run Time
January Total	9,238,419	945,675	8,292,744	85.21%
February Total	9,581,582	164,226	9,417,356	98.00%
March Total	10,156,883	966,419	9,190,464	89.76%
April Total	10,305,006	47,559	10,257,447	98.83%
May Total	7,412,868	1,313,719	6,099,149	60.82%
June Total	8,218,261	408,282	7,809,979	83.79%
July Total	8,574,237	12,375	8,561,862	89.38%
August Total	9,229,035	34,759	9,194,276	93.95%
September Total	7,785,931	105,148	7,680,783	80.50%
October Total	8,600,646	96,687	8,503,959	87.18%
November Total	9,307,792	3,734	9,304,058	98.98%
December Total	9,726,487	33,329	9,693,158	98.62%
2021 Totals	108,137,147	4,131,912	104,005,235	

2021 Average Gas-to-Energy Runtime **88.75%**

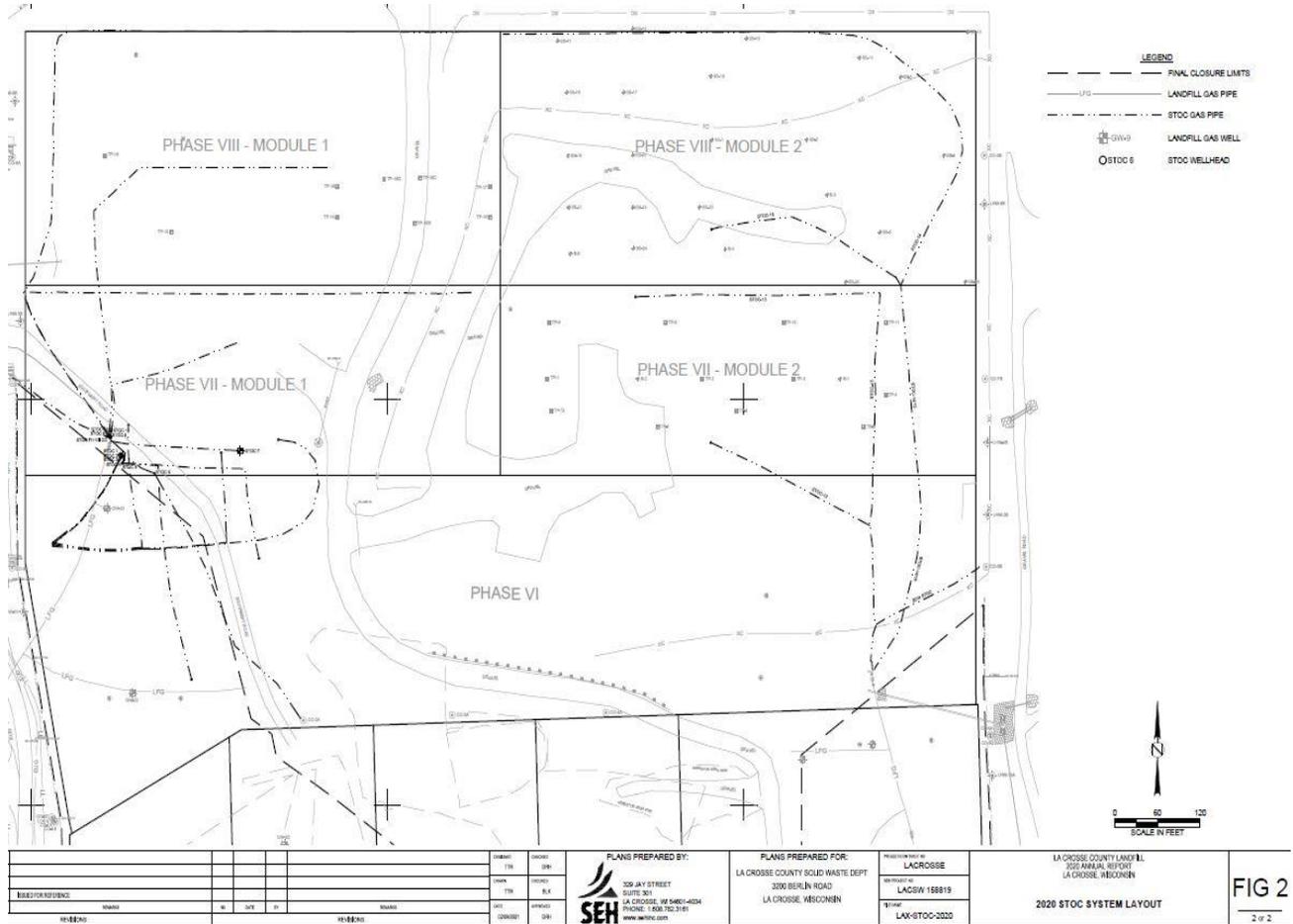
Attachment E-2

Drawing of Gas Wells 1-11, 13-17, 20-22 & 33



Attachment E-3

STOC's (Horizontal Wells)



		PROJECT: 176 SHEET: 014 DATE: 1/15/19		SEH PLANS PREPARED BY: 300 JAY STREET SUITE 301 LA CROSSE, WI 54601-4024 PHONE: 1 808 792 3141 WWW.SEHINC.COM	PLANS PREPARED FOR: LA CROSSE COUNTY SOLID WASTE DEPT 300 BERLIN ROAD LA CROSSE, WISCONSIN	PROJECT NUMBER: LACROSSE DRAWING NUMBER: LACSW 155619 SHEET NUMBER: LAX-STOC-2020	LA CROSSE COUNTY LANDFILL 2020 ANNUAL REPORT LA CROSSE, WISCONSIN 2020 STOC SYSTEM LAYOUT	FIG 2 2 of 2
REVISIONS:		REVISIONS:						

Appendix F

Anticipated Construction Events for 2022

La Crosse County Landfill Complex and Disposal Facility

MSW Landfill (Active – License No. 3253)
Old Landfill (License No. 2637)

Prepared by
La Crosse County Solid Waste Department
La Crosse County, Wisconsin

March 2022

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Attachments

- Attachment – F1 Summary of 2021 site activities
- Attachment – F2 Summary of Tasks Relating to Expansion (2019-2022)

Purpose

This report summarizes the anticipated liner and final cover construction events for the La Crosse County Complex during 2022. This report has been prepared to satisfy Condition No. 11(f) of the February 10, 2006 Plan of Operation Approval from the WDNR.

There are no anticipated liner or final cover construction events scheduled for 2022. Minor construction projects that are anticipated at the landfill complex in 2022 are as follows:

- ◆ Installation of additional supplemental temporary odor control piping in the next lift of Phase VII and VIII.
- ◆ Additional placement of intermediate cover to facilitate the fill phasing plan
- ◆ Completion of Leachate Direct Connect system
- ◆ Completion of walking trail repairs

Attachment F1

La Crosse County Solid Waste Department 2021 Facility Update

The La Crosse County Solid Waste Department has accomplished numerous improvements for our customers, stakeholders, municipalities, and partners in every area and all programs.

2021 Construction Events:

The Department had minimal construction projects in 2021. Interim cover was completed over portions of Phase VIII Mod B and additional litter fence was installed. A new road and unloading lift for the ash area was constructed and the preliminary layout and construction of a new MSW and demolition unloading areas in Phase VII Mod B and Phase VIII Mod B were completed.

Sedimentation basin and walking trail modifications: On August 7th, La Crosse experienced severe flooding with over five inches of rain reported in a 24-hr period. This resulted in the substrate that supports the walking trail being eroded away. After the erosion, high temperatures caused the pavement to soften and eventually collapse. Approximately 500 ft of the trail is currently unusable. Initial repairs were completed in the Fall. Items included: sedimentation basin improvements and associated earthwork, the removal of damaged trail, trail elevation changes, culverts, along with sub-base replacement and vegetative restoration. Because of the cooler weather, Phase two paving, will take place in the summer of 2022.

Annual Meeting:

The 32nd Annual Meeting was held on June 29th. For the second year in a row the meeting was held in virtual format. Presentations were given by Solid Waste staff; Xcel Energy; and two guest speakers discussed the status of regional recycling. Summary: 2020 was a unique year due to the many impacts from the Covid-19 pandemic. Overall waste tonnages were well above budgeted values with revenues at 108% of budget and expenses at 101% of budget. With this +7% difference, we were able to advance our long-term goal of continuing to build our cash reserve fund in preparation of future expansion/construction activities.

Household Hazardous Material Facility:

In 2021, 8,420 household customers utilized the La Crosse County Hazardous Materials (HHM) program. This represents an 8.5% increase in usership from the previous year. The average weight of materials brought in by each household customer declined from 56 pounds to 49 pounds. 413,993 pounds of household materials were collected by the HHM program accounting for 16.5% of La Crosse County households utilizing the facility. This is considered exceptional among comparable programs.

Small business utilization of the HHM program declined slightly from 223 to 217. Nevertheless, 58,175 pounds of materials were brought into the facility which is comparable to recent years. Fees paid by small business users are an important program revenue stream.

In 2021, the HHM program did not participate in offsite Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) Clean Sweep events. However, two mobile collection events were completed in Houston County, MN serving an additional 168 customers. E-waste continues to represent the greatest quantity of waste received at the HHM facility accounting for 34% of the total weight. This is followed by hazardous waste (24%) and latex paint (13%).

Waste diversion is a key component of the HHM program. 83% of the materials collected were diverted from landfilling by primarily being recycled, directly reused or blended into an industrial fuel. Included in the diversion quantities, are 80,671 pounds of quality materials that were provided back to the community at no cost via the HHM facility's popular product Reuse Room.

Since late 2020, the HHM program has operated under expanded weekday customer service hours. The facility is open to the public Monday through Friday, from 10 a.m. to 4 p.m. year-round. As a convenience, it is also open, the 1st and 3rd Saturdays during the months of April through October. This has resulted in more consistent weekly usage as compared to previous peaks that occurred on Mondays and Thursdays.

Financial Assurance:

There were no significant changes to our funding during the period year of 2021.

Xcel:

Xcel received 80,737 tons of waste in 2021, a record total for the system and more than 7,000 tons above historical three-year averages. For all waste processed 73.48%, was converted to refuse derived fuel (RDF). Market prices for the recovery of non-ferrous materials maintained steady recovery in 2021. Average price for Non-ferrous was \$0.27/per pound while ferrous material pricing averaged \$198.18/ton. Due to significant process changes ferrous recovery was almost double historical averages with a total of 2,114.21 tons recovered. Average BTU value for RDF increased 6.76% to 5114 compared to 2020 averages.

Landfill Phasing and Operations:

Interim Cover/Phasing

- Interim cover was placed three times during 2021 (Spring, Summer, and Late Fall)
 - o Major areas covered were Phase VIII Mod B North and East Slopes.
 - o Minor areas included additional work in Phases VI, Asbestos/Ash area and the ash monofill.
- Interim cover removal coincided with phasing plans and waste placement
- Phasing during 2021
 - o Asbestos continues to be placed into the site near the area reserved for ash within the MSW landfill.

- The majority of waste placement occurred across Phase VII Mod 2 and Phase VIII Mod 2.
- RDF Fly Ash – the Department initiated the process of placing RDF ash into the Monofill during 2021. This is with the intent of reaching final waste grades in 2023 and the projected closure of the Monofill in 2024. Additional RDF ash continues to be disposed of in the ash overlay during the Winter.

Gas-to-Energy Operation:

In 2021, 104,005,235 Standard Cubic Feet (SCF), averaging 8,667,103 SCF per month, of landfill gas was sent to Gundersen Health with a total system runtime of 88.75%. MMBTU's (Metric Million British Thermal Unit) totaled 50,155.34 for the year with a total revenue only slightly below our budgeted projections. The reason for the lower monthly average MMBTU total was due to a programming change in the system to stabilize and better balance collection across the gas field. The gas field currently consists of 24 vertical wells, 4 connections to the leachate clean out system, 15 temporary horizontal gas collection systems and 1 temporary vertical well with two additional temporary horizontal wells scheduled to be installed in 2022.

Compliance/Monitoring:

Numerous environmental monitoring events occurred over the year. Areas tested include groundwater, leachate, gas probes, surface air emissions and stormwater.

Surface Emission Monitoring

- Completed in the fall of 2021 with no issues.
 - All readings were below our self-imposed target of 250 PPM and below the WDNR limit of 500 PPM. An independent contractor was utilized for this testing.

Groundwater Sampling Data

- The analytical data for 2021 is similar to the past. As part of the Expansion process the Department completed additional expanded sampling on the five new wells and several existing wells.

Organic Stability Plan

- The Solid Waste Department continues to work with Vernon County on leachate recirculation. Primary area leachate recirculation during 2021 was over Phase VII and VIII.

Air Program:

The Department has requested a revision to our operational air permit due to the recent updates to federal emission standards for municipal solid waste landfills. Our emissions generation has not changed, however the requirements for reporting and the applicable USEPA Subpart categories have.

Landfill Operation:

- Annual Compliance Inspections with the Public Service Commission, WDNR (Waste Program) and others were performed in 2021 with no issues reported.

Leachate:

In 2021 the Department initiated the process of removal of the large capacity underground storage tank (UST's) that held leachate. This process included working with our host communities, collaboration with the City of La Crosse WWTP on an Industrial Discharge Permit and approval of a Dual Plan Modification from the Wisconsin Department of Natural Resources. At the end of 2021, the Leachate Direct Connect project was 95% complete with the installation of double-walled high density polyurethane discharge pipe, flume and pipe access manholes, sampling buildings, a loadout structure and SCADA programming along with decommissioning and removal of original equipment and UST. Due to some equipment delays, we have a few minor programming items and the installation of an autosampler remaining for 2022.

The Department also entered into a Memorandum of Understanding between La Crosse County and the City of Onalaska regarding maintenance of the South Kinney Coulee Lift Station and associated piping.

Pending Submittals/Approvals:

- Plan of Operations and Plan Set (Target June 30, 2022 submittal)
- Tier 2 Stormwater SWPPP
- Air Construction/Operation Permit (approval may extend into 2023)
- Leachate Direct Connect Construction As-Built

Outreach and Education:

The Department continues to add to its Virtual Video Library to encourage interest and access to the Facility as the pandemic continues. We completed four additional videos (Three on the Household Hazardous Materials Facility and one on Shingle Recycling) that are all available on our website. The videos were also sent directly to local schools and organizations. Historically, the landfill has had over 1,000 people tour the facility, in person, every year.

Additional Items:

- 10th Anniversary of inclusion into the Green Tier Program
- Revised Host Agreements with the Cities of La Crosse and Onalaska
- Initiated the RFP process for Consulting Services

Expansion Update:

Feasibility: Late in 2021, the Department was notified that the Department of Natural Resources had reviewed and determined the proposed La Crosse County Landfill Phase 2 North Expansion was feasible and would provide for satisfactory solid waste disposal. The proposed expansion includes an 18-acre horizontal expansion due north and contiguous with the existing municipal solid waste landfill and a 14-acre vertical expansion over the northern portion of the

existing landfill. The additional 3,085,865 cubic yards of airspace will provide 13-15 years of operation beyond the current proposed design.

Clay Borrow/Purchase: A critical component of the Expansion process is the identification and securing of suitable NR 504 quality clay. For the past 2 years the Department has worked to identify suitable clay sources, through the RFQ/RFP processes. Through these processes the Department identified one site with the ability to meet our 2021 purchase requirements and the potential to meet our long-term clay needs. After the identification of a site, the Department completed and submitted a Clay Borrow Study and the necessary land use approvals. Hauling began on October 26th and ended on December 2nd. The facility received 76,685 tons or approximately 51,123 cubic yards of clay during this period. The clay purchased in 2021 will meet the short-term closure and construction needs of the facility over the next 4-5 years. An additional ~250,000 cubic yards will be needed, over the life of the facility, to cover the approved expansion.

Updated Summary of Tasks Relating to Expansion (2019 – 2022)

2019

- Initial Site Inspection (ISI) Request, Meeting and Report to WDNR (COMPLETED)
- Initial Site Report (ISR), meeting and report to WDNR (COMPLETED)
- Preliminary Design and volume calculations (cell footprint boundaries) (COMPLETED)
- Public/Community Outreach (COMPLETED)
- Alternative Geotechnical Program Request and Report to WDNR (COMPLETED)
- Pre-Feasibility correspondence with WDNR (COMPLETED)
- Initiate Feasibility Report data collection. Will extend into 2020 (COMPLETED)

2020

- Local approval notification and siting resolution, negotiation (arbitration only if necessary) (COMPLETED)
- Pre-Feasibility correspondence with WDNR (COMPLETED)
- Geotechnical investigation (COMPLETED)
- Proposed expansion design and operations (COMPLETED)
- Public/Community Outreach (COMPLETED)
- Environmental Review, Needs Analysis, Alternatives Analysis (COMPLETED)
- Clay borrow source/study evaluation (COMPLETED)
- Feasibility Report preparation. Likely extend into 2021 (COMPLETED)

2021

- Environmental Review, Needs Analysis, Alternatives Analysis (COMPLETED)
- Feasibility Report (COMPLETED)
- Public/Community Outreach (COMPLETED)
- Clay Borrow Report and Approval (COMPLETED)
- Clay Borrow Excavation (@50,000 CY) (COMPLETED)

2022

- Plan of Operations and Plan Set (Target June 30, 2022 submittal)
- Tier 2 Stormwater SWPPP
- Air Construction/Operation Permit (approval may extend into 2023)
- Wrap up Leachate Direct Connect Construction

Appendix G

2021 Special Waste Report

La Crosse County Landfill Complex and Disposal Facility

MSW Landfill (Active – License No. 3253)

Prepared by

La Crosse County Solid Waste Department

La Crosse County, Wisconsin

March 2022

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1 Purpose

This report has been prepared to address the Special Waste Management Plan (Appendix Z of the Plan of Operation Report for the La Crosse County Landfill North Expansion, dated September 2005, updated May 3rd, 2018) containing information that is required to be included in the annual report regarding special waste reporting. Although the Special Waste Management Plan was not addressed by a specific approval condition, it was submitted as Appendix Z of the September 2005 Plan of Operation Report for the La Crosse County Landfill North Expansion, which was approved by the WDNR's February 10, 2006 Plan of Operation Approval. Therefore, the information as presented in Appendix Z is approved, including the annual reporting requirements described in Section 7 of Appendix Z.

The special waste reporting information to be included in the annual report follows:

- ◆ Total volume and tonnage by waste category and name for each type of special waste accepted for disposal accepted during 2021.
- ◆ Computation of the quantities by volume and weight of waste disposal and proportion of special waste to total quantities of waste landfilled.
- ◆ List of wastes failing to meet the acceptance criteria, but which were accepted for disposal (include reason(s) for acceptance).
- ◆ List of wastes rejected and the reasons for each rejection.
- ◆ Deviations from the approved acceptance criteria and disposal methods and reasons for deviation.
- ◆ Problems encountered when implementing this Special Waste Management Plan and their resolutions.

1.1 Total Volume and Tonnage of Special Waste

Category Number	Waste Type	Tonnage	Volume (cubic yards)
2	Coal/Wood Ash	79	58
4	Foundry Waste	0	0
5	Wastewater Sludge	2453	3680
6	Asbestos (Friable/Non-Friable)	612	918
6	Sludge	803	1204
6	Miscellaneous Special Waste	968	1451
19	Car Wash Grit	547	405
19	Other Approved ADC	7484	5538
19	Street Sweepings	4030	2982
19	Bottom Ash	2413	1785
21	Foundry Sand - DC	5693	4213
23	Petroleum Impacted Soils (biopile)	51	38
Totals:		25,131	22,272

1.2 Proportions of Special Wastes to Total Municipal Waste

This section provides computations of the quantities by volume and weight of waste disposal and proportion of special waste to total quantities of waste landfilled:

- ◆ By volume:
 - Special Waste (cy) / Total Waste (cy) =
$$22,272/144,666 \text{ CY} = 15\%$$
- ◆ By weight:
 - Special Waste (tons) / Total Waste (tons) =
$$25,131/106,701 \text{ tons} = 24\%$$

Note: 2,653 tons of Category 20 ash was placed in Landfill 3253. 7,138 tons was placed into the ash monofil 4317. Neither is included in the above totals.

1.3 Waste Failing to Meet Acceptance Criteria Disposed of at Site

None delivered to the landfill.

1.4 Rejected Wastes

Three waste disposal applications were rejected in 2021. A waste from an industry was rejected due to the free liquids and percent solids content. Another waste was rejected due to high pH levels. A third waste was rejected due to high metals levels and a need for immediate disposal that we could not facilitate without additional analytical information.

1.5 Deviations from Acceptance Criteria

None

1.6 Problems Encountered Implementing Special Waste Management Plan

No problems were encountered when implementing the plan.

1.7 Training

The following internal employee training was conducted as required by NR 524.07 1(f). Reviews of the special waste and general landfill operational procedures constitute internal training in accordance with this requirement.

1. Worked with SEH Consulting to develop waste approval requirements and knowledge.
2. Worked with staff to develop an understanding of impacts to operational activities based on special waste characterizations.
3. Worked with site contractor to improve special waste identification and reporting.

Appendix H

2021 Residential Asphalt Shingle Processing and Beneficial Use

La Crosse County Landfill Complex and Disposal Facility

Prepared by

La Crosse County Solid Waste Department

La Crosse County, Wisconsin

March 2022

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Attachments

Attachment H-1	Locations of Paving Projects or Aggregate Processing 2021
Attachment H-2	Summary Report of Shingle Testing 2021

1 Purpose

This report has been prepared to address annual reporting requirements associated with the processing and beneficial use of residential asphalt shingles. Reporting and record keeping requirements were identified as Item No. 10 in the WDNR January 24, 2008 Low Hazard Exemption for the storage processing and beneficial use of waste residential asphalt shingles. An identical condition was included as Condition No. 9 in the WDNR February 4th, 2008 WDNR Approval for Exemption for Solid Waste Processing for Recycling of Asphalt Shingles. These reporting requirements required the submittal of the following information to the WDNR by April 1st of each year:

- Reference this grant of exemption.
- Summarize total tonnages of recycled asphalt shingles used as an additive in hot mix asphalt plant operations under this approval, and separately tabulate tonnages of shingles from roofing tear-off jobs.
- Describe the asbestos testing program including specific sampling and testing methods.
- Summarize test results of ground recycled asphalt shingles.
- Discuss the positive aspects of the program along with any difficulties encountered or complaints received during all aspects of collection, storage, processing and reuse of the materials and measures taken to modify the program to address difficulties or complaints.

1.1 Item a – Reference this Grant of Exemption

See above text. Additionally, WDNR Plan Mod Approval for RAS 8/13/2019.

1.2 Item b – Summary of Tonnages of Recycled Asphalt Shingles and Shingles Received

A total of 7,030.13 of recycled asphalt shingles were received in 2021.

1.3 Item c - Tabulate the Location and Amount of Shingles Used by Individual Paving Project

Processed shingles also include asphalt shingles accepted and processed in 2021. During 2021 a total of 7,257.89 tons were processed and prepared to be sent out for incorporation into hot mix asphalt or aggregate. Mathy Construction received 5,396.01 tons of processed shingles, produced at the La Crosse County Landfill, from St. Joseph construction. The material was incorporated into aggregate material at two separate locations and is shown on attachment H-1. Including 244.70 tons of processed shingles left over from 2020, approximately 7,502.59 tons of processed shingles still remain on the site and will be utilized in 2022.

1.4 Item d - Describe the Asbestos Testing Program

In 2021, 7,030.13 of residential asphalt shingles were accepted and stockpiled in the shingle processing area. Samples were collected monthly by operations staff at the La Crosse County landfill. Samples taken were based off of tonnage subtotals, at the rate of one sample per one hundred tons. Periodically, samples were prepared and shipped by the landfill scale attendant to Micro Analytical Incorporated for asbestos testing. The bulk asbestos analytical report and testing was prepared utilizing PLM and dispersion stain technique.

1.5 Item e - Summarized Test Results of Ground Recycled Asphalt Shingles

Attached in Appendix H-2 are the results of asbestos testing from Micro Analytical Inc. of the 71 samples submitted, none were detected as containing asbestos. Additional information is provided on test reports regarding shingle fibrous components, texture, color and non-fibrous components.

1.6 Item f - Discuss the Positive Aspects of the Program

In 2019 La Crosse County received approval to incorporate processed RAS into aggregate materials. Processed shingles will be used as an unbonded base course material for driveways, roads, parking lots and general fill applications when mixed with native aggregates or recycled concrete and/or bituminous if the mixture contains less than 15% by weight of RAS. The purpose of the RAS is to provide a fines replacement in the aggregate base course. This application will provide an additional technical and economically feasible option for RAS material.

The two most significant beneficial aspects of the residential asphalt shingle recycling program have been to minimize materials placed in the landfill and to provide a product that has been incorporated into hot mix or substituted for gravel road sub-base. Since the shingles weigh approximately one ton per yard after processing, approximately 7,030 cubic yards of air space use will be avoided. The use of the ground shingles as a substitute for road base has minimized fuel consumption associated with the transport of materials from quarries and resulted in a product that produces less dust, less tracking of mud on roads and saved the County significant costs. Some additional benefits of the recycling program have been increased public acceptance of waste diversion concepts and the reduced cost to customers. Shingles suitable for recycling are charged at a rate of \$40/ton in 2021.

In January of 2013, the La Crosse County Solid Waste Department requested and was granted approval by the WDNR West Central Region, for the storage of preprocessed and post processed shingles of up to 15,000 tons, with a maximum windrow height of 20 feet.

ATTACHMENT H-1

La Crosse County Solid Waste

Milestone Materials Swanson Pit
Milestone Materials Isle La Plume

ATTACHMENT H-2

La Crosse County Solid Waste Report of Shingles 2021

Shingle Site Samples Sent 2021								
DATE	# OF LOADS	TONS	TOTAL SAMPLES REQUIRED	TOTAL SAMPLES SENT	TOTAL SAMPLES NON-ASBESTOS	TOTAL SAMPLES W/ASBESTOS	Date Shipped and Quantity	
January	7	7.25	0	0	0	0		
February	5	16.18	0	0	0	0		
March	111	382.47	4	4	0	0	04-05-2021 4 samples	
April	257	931.17	9	9	0	0	05-06-2021 9 samples	
May	200	701.90	7	7	0	0	06-03-2021 7 samples	
June	196	656.63	6	6	0	0	07-09-2021 6 samples	
July	245	803.70	8	8	0	0	08-10-2021 8 samples	
August	276	966.44	9	9	0	0	09-10-2021 9 samples	
September	338	1191.19	12	12	0	0	10-06-2021 12 samples	
October	255	872.74	8	8	0	0	11/3/2021 8 samples	
November	144	445.26	5	5	0	0	12-02-2021 5 samples	
December	30	55.20	3	3	0	0	12-31-2021 3 samples	
TOTALS	2064	7030.13	71	71	0	0		

**Analytical analysis reports are on file at the La Crosse County Solid Waste Department and available for review upon request.