

April 25, 2019

Mr. Michael Smith, P.E.
Iowa Department of Natural Resources
Land Quality Bureau
Wallace State Office Building
502 East 9th Street
Des Moines, Iowa 50319-0034

**Re: Monthly Inspection Report for Sac County Landfill Closure
(November 2018 through April 2019)
Sac County Sanitary Landfill
Permit No. 81-SDP-01-75
Project No. SACSX 19001**

Dear Mike:

This report documents the monthly inspections required by the facility's Iowa Department of Natural Resources Sanitary Disposal Project Closure Permit and the Iowa Administrative Code. The inspections were made to evaluate the site's general conformance with the closure permit and the approved plans and specifications. A map of the municipal solid waste landfill (MSWLF) unit is attached for reference (Figure 1). Copies of the inspection checklist used during the inspections are included in Attachment A.

Monthly inspections of the site are required after substantial completion of the final cover construction project for Cells 5 through 7C, which occurred on June 6, 2018. Inspections of the closure cap were completed on November 15, 2018, December 13, 2018, February 14, 2019, March 21, 2019, and April 9, 2019. It should be noted that it was approved in email correspondence dated January 25, 2019 to not complete the January 2019 inspection due to snow cover. The following was noted during the monthly inspections.

Summary of Inspection Observations

- Final grading and seeding have been completed and substantial completion of the final cover occurred on June 6, 2018.
- Terraces along the north side of Cells 7A, 7B, and 7C exhibited erosion due to lack of vegetation and overtopping due to excessive sediment. The contractor that performed the closure construction project regraded the terraces, removed the sediment, and re-seeded the bare areas on October 23, 2018. Vegetation has not established at this time. Landfill personnel are coordinating with the contractor for additional seeding of the bare areas.
- Turf reinforcement matting was not installed correctly in Letdown A and erosion along the letdown was evident. The contractor that performed the closure construction project installed additional turf reinforcement mat in Letdown A as well as the terraces that discharge into Letdown A on October 23, 2018. Erosion was still present along Letdown A. Further repairs are necessary.

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MAY 01 2019

Summary of Non-Conformance with Permit Conditions

No items of non-conformance were noted during the inspections. Items not considered non-conformance, but should continue to be monitored included the following:

- It is recommended to implement a routine mowing and tree removal program to control deep rooted vegetation.
- It is recommended that landfill personnel continue to remove accumulated sediment from the terraces and letdowns and re-seed bare spots as necessary.

General Comments

The observations presented in this report are based upon data obtained from the field observations made at the site, interviews with the site operator, and from information sources discussed in this report. This report provides a snapshot in time of the conditions present at the time of the inspection and does not reflect variations in conditions that may occur throughout the year.

BARKER LEMAR has prepared this report for the exclusive use of our client. This report is meant for the specific application discussed and has been prepared in accordance with generally accepted engineering practices. No warranties, expressly stated or implied, are intended or made.

If you have any questions regarding this report, please contact us at (515) 256-8814.

Sincerely,



BARKER LEMAR ENGINEERING CONSULTANTS

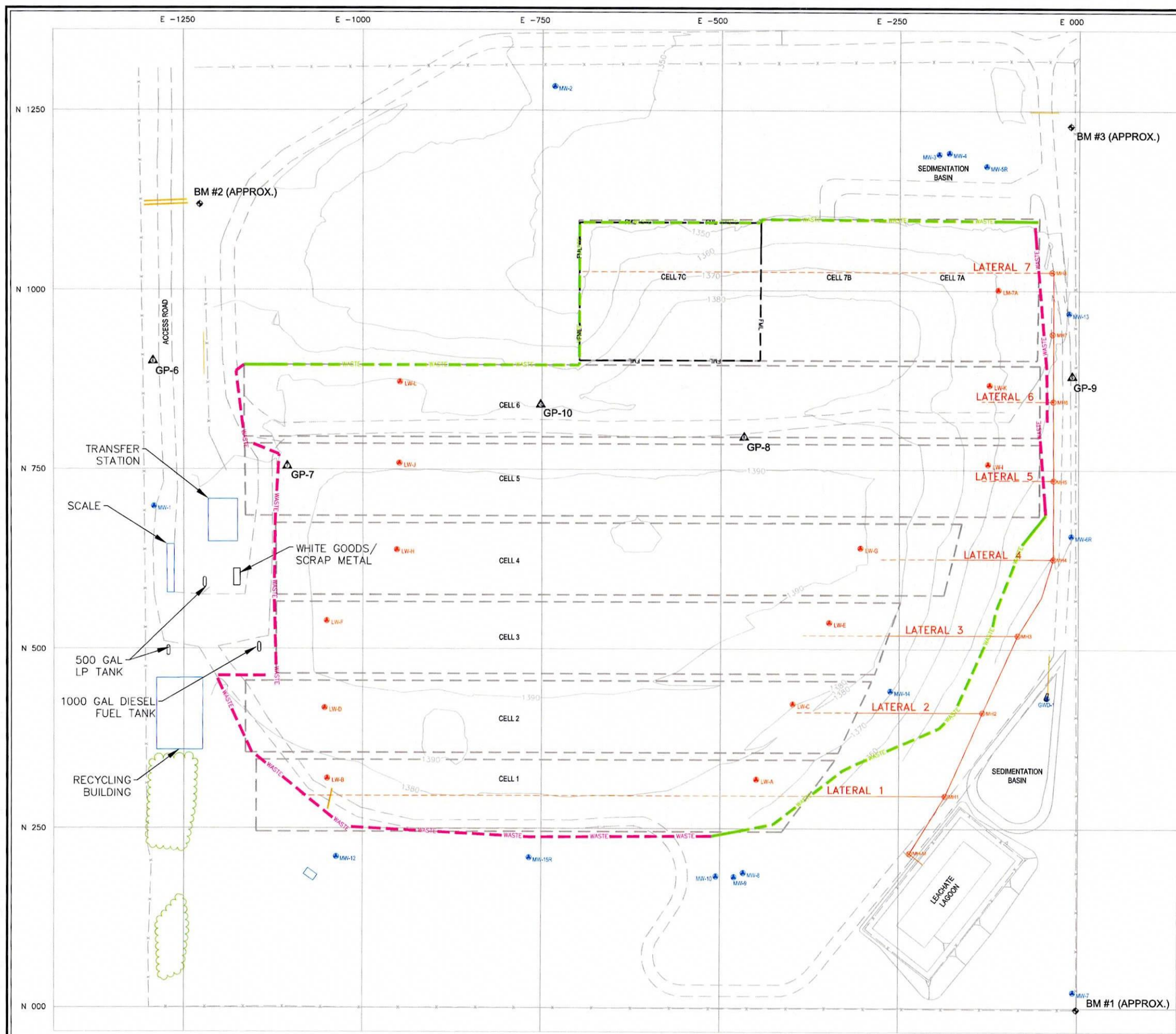

Lauren P. Norland, P.E.
Project Engineer

 For
David G. Phillips, P.E.
Design Engineer

cc: Addressee
Mr. Jim Wissler, Sac County Solid Waste Agency
Mr. Cliff Frohardt, Sac County Sanitary Landfill
Electronic File

Engineer's Certification

	I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.	
		Date: <u>4/25/19</u>
	Lauren P. Norland, P.E.	
	License No. 25064	
	My license renewal date is December 31, 2019.	
Pages or sheets covered by this seal: All.		



SCALE

0 70 140

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- LEGEND
- EXISTING GROUND SURFACE
(2 FT. CONTOUR INTERVAL)

BUILDING/STRUCTURE

PAVED ROAD

GRAVEL ROAD

FENCELINE

CULVERT

WASTE BOUNDARY (APPROXIMATE)

WASTE BOUNDARY (LOCATED)

FML BOUNDARY (APPROXIMATE)

EXISTING CELL BOUNDARY (APPROXIMATE)

LEACHATE PIPING - SOLID

LEACHATE PIPING - PERFORATED

GROUNDWATER UNDERDRAIN PIPING

MH1 MANHOLE

CONTROL POINT

BENCHMARK

MW MONITORING WELL

LW LEACHATE WELL

TREE LINE

SURVEY BENCHMARKS AND CONTROL POINTS

NUMBER	BENCHMARK/ CONTROL POINT	NORTHING	EASTING	ELEVATION	MARKER
BM #1	BENCHMARK	N/A	N/A	1319.85	60d SPIKE, TOP CORNER POST
BM #2	BENCHMARK	N/A	N/A	1363.73	E SIDE MH RING SW #1
BM #3	BENCHMARK	N/A	N/A	1340.50	E SIDE MH RING
GP-6	CONTROL POINT	900.31	-1292.76	1375.478	IRON BAR
GP-7	CONTROL POINT	753.876	-1105.31	1383.713	IRON BAR
GP-8	CONTROL POINT	795.122	-467.40	1382.292	IRON BAR
GP-9	CONTROL POINT	880.041	-8.987	1347.129	IRON BAR
GP-10	CONTROL POINT	840.01	-751.687	1379.797	HUB

NOTE: LOCATION AND ELEVATION INFORMATION FOR CONTROL POINTS AND BENCHMARKS WAS PROVIDED BY I&S GROUP, INC. ON 09/28/2016.

BARKER LEMAR

ENGINEERING CONSULTANTS

1801 Industrial Circle - West Des Moines, Iowa - 50265

Phone: 515.256.8814 - Fax: 515.256.0152 - www.barkerlemar.com

REVISION: DATE: DESCRIPTION:

1 2 3 4

SAC COUNTY SANITARY LANDFILL
SAC CITY, IOWA
PROJECT NO. SACS.W.19001
DRAWING DATE: APRIL 2019

CURRENT SITE MAP

FIGURE 1

ATTACHMENT A
OBSERVATION CHECKLIST

Sanitary Landfill Inspection - Closed Facility

Permit #: 81-SDP-01-75 Date this Inspection: 11/15/2018 Previous Inspection Date: 10/23/2018

Facility: Sac County Sanitary Landfill Weather Condition at Time of Visit: 50° F, Sunny

Person(s) Contacted: JB Huster

Were deficiencies noted or significant observations made during this inspection?

Yes - See Comments Sec., No - No deficiencies noted, Blank - Not applicable or observed, PND - Previously Noted Deficiency

Observations

Yes	No	PND	Item	Yes	No	PND	Item
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1. Fill Cover: daily; intermediate; final	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10. Special Waste Handling
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2. Control of Face: slope; width; location	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11. Recycling Activities
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3. Compaction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12. Operator Certification
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	4. Cover erosion; Ponding	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	13. Staffing
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5. Drainage into fill	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	14. Equipment Backup/Maintenance
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	6. Leachate Mgmt. & Control	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	15. Interior Roads
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7. Litter	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16. Perimeter fence, gate, signs, mon. wells
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8. Wet Weather Area	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	17. Photos taken
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9. Construction & Demolition Area	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	18. Follow-up needed

Comments:

Required Activities:


4. Erosion/rutting of erosion layer was repaired and re-seeded by closure construction Contractor in October 2018. Bare areas and areas of erosion are still present. These areas should be monitored and reseeded, if necessary.

General Comments:

Closure project Contractor repaired erosion, installed turf reinforcement mat, and re-seeded bare spots in October 2018. These areas should continue to be monitored

Inspector Lauren Norland
Printed Name

11/16/2018
Date


Signature

Sanitary Landfill Inspection - Closed Facility

Permit #: 81-SDP-01-75 Date this Inspection: 12/13/2018 Previous Inspection Date: 11/15/2018

Facility: Sac County Sanitary Landfill Weather Condition at Time of Visit: 35° F, Cloudy

Person(s) Contacted: Site Representative

Were deficiencies noted or significant observations made during this inspection?

Yes - See Comments Sec., No - No deficiencies noted, Blank - Not applicable or observed, PND - Previously Noted Deficiency

Observations

Yes	No	PND	Item	Yes	No	PND	Item
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1. Fill Cover: daily; intermediate; final	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10. Special Waste Handling
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2. Control of Face: slope; width; location	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11. Recycling Activities
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3. Compaction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12. Operator Certification
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	4. Cover erosion; Ponding	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	13. Staffing
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5. Drainage into fill	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	14. Equipment Backup/Maintenance
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	6. Leachate Mgmt. & Control	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	15. Interior Roads
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7. Litter	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16. Perimeter fence, gate, signs, mon. wells
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8. Wet Weather Area	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	17. Photos taken
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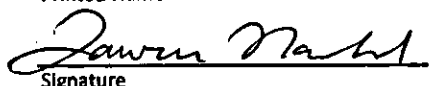
Comments:

Required Activities:

4. Erosion/rutting of erosion layer was repaired and re-seeded by closure construction Contractor in October 2018. Bare areas and areas of erosion are still present. These areas should be monitored and reseeded, if necessary.

General Comments:

Closure project Contractor repaired erosion, installed turf reinforcement mat, and re-seeded bare spots in October 2018. These areas should continue to be monitored

Inspector Lauren Norland 12/14/2018
 Printed Name Date

 Signature

Sanitary Landfill Inspection - Closed Facility

Permit #: 81-SDP-01-75 **Date this Inspection:** 02/14/2019 **Previous Inspection Date:** 12/13/2018

Facility: Sac County Sanitary Landfill **Weather Condition at Time of Visit:** 27 F, Cloudy

Person(s) Contacted: Site Representative

Were deficiencies noted or significant observations made during this inspection?
Yes - See Comments Sec., No - No deficiencies noted, Blank - Not applicable or observed, PND - Previously Noted Deficiency

				Observations			
Yes	No	PND	Item	Yes	No	PND	Item
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1. Fill Cover: daily; intermediate; final	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10. Special Waste Handling
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2. Control of Face: slope; width; location	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11. Recycling Activities
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3. Compaction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12. Operator Certification
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<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5. Drainage into fill	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	14. Equipment Backup/Maintenance
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	6. Leachate Mgmt. & Control	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	15. Interior Roads
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<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8. Wet Weather Area	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	17. Photos taken
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9. Construction & Demolition Area	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	18. Follow-up needed

Comments:

Required Activities:

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General Comments:

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Inspector Chad Dentlinger 02/14/2019
Printed Name Date

for Lawrence Mark
Signature

Sanitary Landfill Inspection - Closed Facility

Permit #: 81-SDP-01-75 **Date this Inspection:** 03/21/2019 **Previous Inspection Date:** 02/14/2019

Facility: Sac County Sanitary Landfill **Weather Condition at Time of Visit:** 36 F, Sunny

Person(s) Contacted: Site Representative

Were deficiencies noted or significant observations made during this inspection?
Yes - See Comments Sec., No - No deficiencies noted, Blank - Not applicable or observed, PND - Previously Noted Deficiency

Observations

Yes	No	PND	Item	Yes	No	PND	Item
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1. Fill Cover: daily; intermediate; final	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10. Special Waste Handling
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2. Control of Face: slope; width; location	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11. Recycling Activities
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<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	4. Cover erosion; Ponding	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	13. Staffing
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5. Drainage into fill	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	14. Equipment Backup/Maintenance
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	6. Leachate Mgmt. & Control	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	15. Interior Roads
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7. Litter	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16. Perimeter fence, gate, signs, mon. wells
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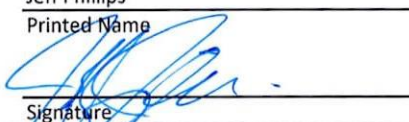
Comments:

Required Activities:

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General Comments:

Closure project Contractor repaired erosion, installed turf reinforcement mat, and re-seeded bare spots in October 2018. These areas should continue to be monitored

Inspector Jeff Phillips 03/21/2019
 Printed Name Date

 Signature

Sanitary Landfill Inspection - Closed Facility

Permit #: 81-SDP-01-75 Date this Inspection: 04/09/2019 Previous Inspection Date: 03/21/2019

Facility: Sac County Sanitary Landfill Weather Condition at Time of Visit: 55 F, Cloudy

Person(s) Contacted: Site Representative

Were deficiencies noted or significant observations made during this inspection?
Yes - See Comments Sec., No - No deficiencies noted, Blank - Not applicable or observed, PND - Previously Noted Deficiency

Observations

Yes	No	PND	Item	Yes	No	PND	Item
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1. Fill Cover: daily; intermediate; final	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10. Special Waste Handling
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Required Activities:

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Inspector Lauren Norland
Printed Name

Signature

04/09/2019
Date