OWL Landfill Services, LLC
(dba) Northern Delaware Basin Landfill
8201 Preston Rd. Suite 520
Dallas, Texas 75225
(214) 292-2011

Date: December 8, 2022

Mr. Brad Jones
EMNRD Oil Conservation Division
1220 S. Saint Francis Dr.
Santa Fe, NM 87505

RE: Landfill Cell Development and Construction Plan

Dear Mr. Jones:

Pursuant to your e-mail of August 10, 2022, please accept the below to address the concern of waste slope and height limits not to be exceeded prior to completing the tie-in to the next landfill cell. This also includes a protocol for immediate notification to the OCD in the event any shifting of waste occurs.

OWL Northern Delaware Basin Landfill Cell Development and Construction Plan

The OWL Northern Delaware Basin Landfill (OWL) is currently operating in Cells 1A, 2AB and 3AB. Ongoing Cell development is currently active in Cell 4AB. As part of the overall fill sequence and operational strategy, OWL has reviewed current fill sequence strategies and has created a plan to improve fill integrity and prevent shifting waste.

1. **Background – Shifting Waste / Cause:**

   OWL experienced a slide in the middle of the slope of the West side of landfill cell 1 during the construction of landfill cell 2. At the time, the rain flap and tie in point appeared to be intact and at the direction of the engineering firm, PSC, a buttress was constructed on the west landfill slope to prevent future movement of the waste material. A call was placed to the OCD and through discussions, it was determined there was not a release and construction could continue until such time the buttress could be pulled back and the area investigated.

   Upon further investigation, it was determined the slide was caused by three main factors, 1) waste from the drying was placed in the landfill that, while it passed the paint filter test, was a little wetter than optimal, 2) there was a 3:1 slope on the west side of the landfill which was steeper, than the 4:1 slope approved in the operating permit, and 3) lift thickness was such that proper compaction of waste was not achieved; there were places where lifts exceeded 2 feet.

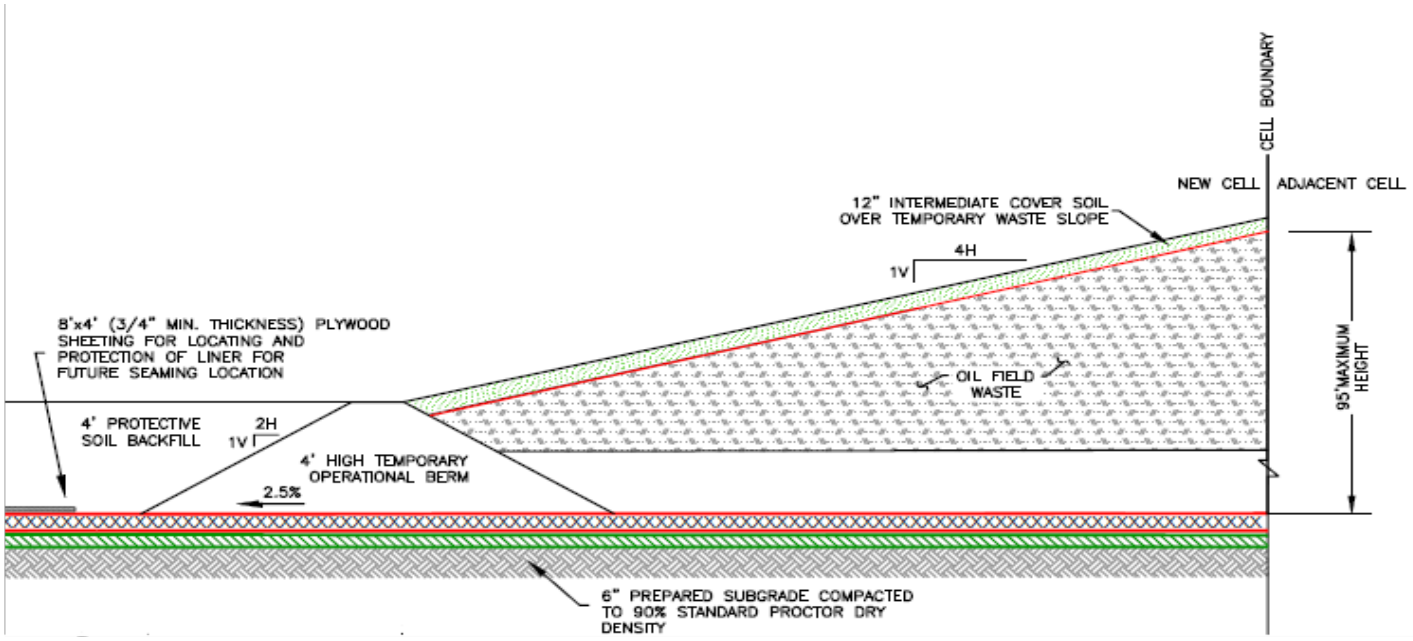
2. **Fill Slope Height and Slope Ratio:**

   OWL will utilize a slope ratio for controlling fill progression on intermediate fill slopes adjacent to future cell development areas. A slope ratio approved in our operating permit of four horizontal feet for every one vertical foot, or a 4:1 slope will be utilized in these areas. Since the landfill cells are developed four hundred (400) foot wide, and to prevent over stacking, the maximum height of the slope will be in the range 85-to-95 feet in height. When the height meets the fifty (50) foot range, excavation will begin on the next adjacent landfill cell and the tie in completed before the maximum height requirement of the 85-to-95-foot range is met. The existing phased cell

development plan at OWL utilizes four-hundred-foot-wide cells, the peak of a fifty (50) foot tall slope would be in the center of the cell. The theoretical maximum height that can be achieved in a four hundred (400) foot wide cell is one hundred (100) feet at a 4:1 slope. Since OWL is limiting the maximum height that can be achieved, the potential for a future slide will be eliminated. This maximum height would be achieved before the interface of two constructed and operational cells and not along the open edge of the geosynthetics system. Additionally, this height would not be achieved because of the offsets discussed below in Section 3.0.

3. Edge of Liner Offset and Protection

To protect and preserve the edge of liner at the open end of the cell that is to be tied into, OWL also employs a double offset system. On the outermost edge of the geosynthetics system a stormwater diversion berm is utilized to protect the edge of liner as well as prevent stormwater intrusion into the active cell. To limit waste placement near the edge of liner, an operational berm is then placed approximately thirty-two (32) feet further towards the inside of the operating cell. This limits waste placement to a boundary that is approximately forty-four (44) feet inside the edge of liner. These offsets further limit the slope height achieved in the highest part of the cell when following a 4:1 slope ratio by moving the toe of slope back into the cell and not on the edge of the liner system. The diagram below illustrates the edge of liner offset and protection design for Cell 4AB which is currently under construction:



While this does not prevent the shifting of waste, it does give the site personnel and area of reference of where waste can be placed in the cell, thereby protecting the tie in point from heavy equipment working in the cell

4. Slope maintenance, monitoring and operator training

OWL has also changed the operational procedures and provided better training to the operators to improve slope stability, maintenance and to monitoring of the slopes for potential movement. For example, visual inspections of waste material mixed on the drying pad such as:

a) Waste from the drying pad is mixed and dried in such a manner that is compactable or stackable. Since moisture meters are not used, operators are trained to look at the waste material being moved from the drying pad to the landfill by its inability to hold shape. For

example, operators have been trained throughout the day to pick up a handful of the waste material being mixed. Then close the material tightly in their hands and then open their hand back up. If the soil remains in a loose pile, it would be considered dry. They then drop the material from their hands and brush the material off their palm. If their hand looks relatively clean, it is a further indication that the material is dry and is suitable for compacting in the landfill cell.

b) Dozer operators have been trained to continually watch the soils as they are being spread out or lifted into the landfill cell. If the tracks of the dozer have not sunk down more than a couple of inches into the waste material, the waste is dry for compaction into the landfill cell. When the operators see that the consistency of the waste has changed to the point the dozer tracks sink more than a couple of inches, the operators on the drying pad are notified to adjust the mixing process.
c) ADT trucks are used to move waste from the drying pad to the landfill. These trucks are heavy and can weigh more than 50 tons loaded. These trucks move in and out of the fill area as waste material is being placed in the landfill. If the operators notice the trucks are sinking or struggling to get the material delivered, operations on the drying pad is adjusted to further dry the waste material.

While simplistic in nature, doing these things assure that operators are communicating and only placing suitable stable stackable waste material in the landfill cell.

Other training of personnel to aid in the prevention of further movement includes:

d) Waste material is spread in the landfill cell at 6-to-8-inch lifts instead of one foot or more. This assures the material is stable and compacted in the cell. Thinner lifts provide better compaction and assist in the prevention of mass movement.
e) Dozers are equipped with in-cab slope and grade meters. These meters provide continuous real-time feedback to the operators as fill progresses. As part of OWL's ongoing operating plan in the maintenance of 4:1 operational slopes adjacent to future cell development areas, operators have been retrained to utilize this technology while placing waste in the landfill cell.
f) For each lift of five (5) feet, OWL will reinforce the slope with a caliche berm or buttress to aid in the prevention of shifting waste This buttress should provide additional stabilization of the slope. When the tie-in to the next adjacent cell is finished, this berm will be evaluated, and a decision made to leave the berm in place or remove it. It is likely we can remove the berm since the next cell construction would be complete and the process repeats in the new landfill cell.
g) Waste will not be stockpiled at the top of any landfill cell. Stockpiling of waste on the top of a cell could cause slope failures. Operators will maintain the 4:1 slope grade as specified to prevent mass movement of waste material.
h) As part of daily operations, Operators have been trained to spot indicators of potential or impending slope failures. These indicators include:
    i. Bulges or cracks appearing on the toe or bottom of the slope, indicating unusual stresses from above. This could be a sign of mass movement
    ii. Seeps or leakage in slopes that have not typically been wet before
    iii. Managing erosion of the slopes
    iv. Staking the edge of the of the caliche berms to monitor movement of waste material
i) Slopes will be maintained, and any areas of erosion or "dry cracking" will be fixed immediately. Upon completion of any erosion or cracking repairs, the facility Manager will inspect the slope to assure the area is secure.
j) Once the work is completed, OWL will bring the cell to grade. To control litter and mitigate potential odors, the active working face will be covered with six (6) inches of soil cover, or an approved alternate cover as needed. OWL will place an intermediate cover at least six (6) inches thick, in addition to daily cover, over areas of the landfill that will not receive further oil field waste for one month or more but have not reached final elevation. Areas of intermediate cover will be properly sloped to promote clean run-off and minimize leachate generation and may be used for temporary cover stockpiles. Intermediate cover may be seeded with

temporary grasses such as rye if the area will not be subject to additional landfilling within 12 months.

k) In the unlikely event moving or shifting waste is observed at OWL, The OCD will be immediately notified. This will be completed by following the established communications chain of command established at OWL. If an operator notices this, he will contact the operations supervisor (currently Zach Ramos) who will subsequently contact the Director of Landfill Operations (currently Tim Shreve). The Director of Landfill Operations will conduct an inspection of the area of concern and implement any required safety protocols if it is determined the waste has shifted. Once the inspection is completed and it is determined that a shift in the waste has occurred, notification to the OCD via phone or e-mail will be made within 24 hours.

OWL Landfill Services. LLC remains committed to the safety of the public, our employees, and the environment and will operate in a productive, responsible manner.

If you have any further questions or feel this letter does not serve its intended purpose of providing the information requested, please feel free to contact me at (281) 802-2038 or by e-mail at tshreve@ndblandfill.com. On behalf of OWL Landfill Services, LLC, I want to thank you in advance for your continued support of this facility.

Sincerely,

Tim Shreve

Tim Shreve
Director of Landfill Operations
OWL Landfill Services, LLC

From: Jones, Brad, EMNRD
To: tshreve@ndblandfill.com
Subject: NM1-63 OWL Landfill Services LLC - Landfill Cell Development and Construction Plan approval
Date: Thursday, March 28, 2024 8:37:00 AM
Attachments: 2024 0328 NM1-64 OWL Landfill Services LLC Landfill Cell Development and Construction Plan approval signed.pdf

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Tim,

Please see the attached. OCD has completed the review of the December 8, 2022, Landfill Cell Development and Construction Plan. If you have any questions regarding this matter, please do not hesitate to contact me.

Sincerely,

Brad A. Jones

Brad A. Jones Environmental Scientist Specialist - Advanced
Environmental Bureau
EMNRD - Oil Conservation Division
1220 S. Saint Francis Drive | Santa Fe, New Mexico 87505
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State of New Mexico
Energy, Minerals and Natural Resources Department

Michelle Lujan Grisham
Governor

Dylan M. Fuge
Deputy Secretary

Dylan Fuge, Division Director (Acting)
Oil Conservation Division

BY ELECTRONIC MAIL

March 28, 2024

Mr. Tim Shreve
OWL Landfill Services LLC
dba Northern Delaware Basin Landfill
8201 Preston Road, Suite 520
Dallas, Texas 75225
tshreve@ndblandfill.com

RE: Landfill Cell Development and Construction Plan
OWL Landfill Services LLC – OGRID 371820
Permit NM1-63
Section 23, Township 24 South, Range 33 East NMPM, Lea County, New Mexico

Mr. Shreve:

The Oil Conservation Division (OCD) has completed our review of OWL Landfill Services LLC's (OWL) Landfill Cell Development and Construction Plan to improve fill integrity and prevent shifting waste, dated December 8, 2022, for the existing commercial surface waste management facility under Permit NM1-63. The OCD hereby grants OWL approval of the December 8, 2022, Landfill Cell Development and Construction Plan, with the following understandings and conditions:

1. OWL shall comply with all applicable requirements of the Oil and Gas Act (Chapter 70, Article 2 NMSA 1978), the existing permit NM1-63, the transitional provisions of 19.15.36.20 NMAC, and all conditions specified in this approval;

2. OWL shall implement the written protocols and training specified in the December 8, 2022, Landfill Cell Development and Construction Plan; and

3. OWL shall obtain written approval from OCD prior to implementing any changes to the December 8, 2022, Landfill Cell Development and Construction Plan.

Please be advised that approval of this request does not relieve OWL of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve OWL of its responsibility to comply with any other applicable governmental authority's rules and regulations.

If there are any questions regarding this matter, please do not hesitate to contact me at (505) 469-7486 or brad.a.jones@state.nm.us.

Respectfully,

Brad A. Jones
Environmental Specialist - Advanced

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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 166223

CONDITIONS

Operator:	OGRID:
OWL LANDFILL SERVICES, LLC 4143 Maple Avenue Dallas, TX 75219	371820
	Action Number: 166223
	Action Type: [C-137] Non-Fee SWMF Submittal (SWMF NON-FEE SUBMITTAL)

CONDITIONS

Created By	Condition	Condition Date
bjones	OCD emailed the approval of the Landfill Cell Development and Construction Plan, for the Northern Delaware Basin Landfill under NM1-63, to Tim Shreve (OWL) on March 28, 2024. OCD's emailed approval is attached to this request as OCD's Response. If you have any questions regarding this matter, please do not hesitate to contact me.	3/28/2024