GORDON ENVIRONMENTAL PSC

213 S. Camino del Pueblo
Bernalillo, New Mexico 87004
505.867.6990
team-psc.com

December 21, 2016

Mr. Jim Griswold, Bureau Chief
Environmental Bureau
Oil Conservation Division
New Mexico Energy, Minerals and
Natural Resources Department
1220 South St. Francis Drive
Santa Fe, NM 87505

Re: OWL Landfill Services, LLC
Surface Waste Management Facility [560.02.01]
Addendum No. 1 to Application for Permit

Dear Mr. Griswold:

On behalf of our client, Oilfield Water Logistics, Gordon Environmental/PSC. (Gordon/PSC) is pleased to submit this Addendum to the Application for Permit (the Application) for the proposed OWL Landfill Services, LLC (OWL) Surface Waste Management Facility to the Oil Conservation Division (OCD). Based on our meeting with you on 12/19/2016, we understand that the Division would like clarification regarding three items:

1. Provide clarification for the hydraulic conductivity (K) of the geosynthetic clay liner (GCL).
   Response: Table III.4.1 (**Attachment 1**) from Volume III, Section 4 (HELP Model) was updated to reflect the correct GCL K_{sat} of 3.0×10^{-9}, consistent with the remainder of the HELP Model document. Please replace Table III.4.1 with the updated version, attached.

2. Provide clarification for the components of the final cover system.
   Response: The text on page II.4-10 (**Attachment 2**) of the Closure/Post-Closure (C/PC) Plan was updated for consistency with Figure II.4.3. The final cover configuration consists of 24-inches of vegetative layer, and 6-inches of barrier layer, as modeled in the HELP Model. As noted in the updated text, and on the notes for the C/PC Cost Estimate (Attachment II.4.D), final cover installation costs assume that a 12-inch intermediate cover layer has already been installed. Please replace page II.4.10 with the updated version, attached.

3. Revise the Phase I Closure/Post-Closure Cost Estimate to reflect the final cover configuration requested in the Application.
   Response: The Phase I C/PC Cost Estimate provided as Attachment II.4.D to Volume II, Section 4 (C/PC Plan) of the Application has been updated to reflect 24-inches of vegetative layer and 6-inches of barrier layer. Costs for intermediate cover installation are not included in the table as the intermediate cover is assumed to have already been installed prior to closure, as part of routine operations. Please replace the first page of Attachment II.4.D with the attached update.

We hope this provides clarification regarding these items, and appreciate your ongoing review of the Application for Permit for OWL Landfill Services, LLC. Please contact us with any questions or comments at 505.867.6990.

Sincerely,

GORDON ENVIRONMENTAL / PSC

By _____
Charles W. Fiedler, P.E.
Senior Practice Leader

By _____
Dacia R. Tucholke
Project Manager

Attachments:

1. Replacement Page for Table III.4.1 (Volume III, Section 4, HELP Model; p. III.4-10)
2. Replacement Page II.4-10 (Volume II, Section 4, C/PC Plan)
3. Replacement Page for first page of Attachment II.4.D (Volume II, Section 4, C/PC Plan)

cc: Mr. Roger Johnson, OWL Landfill Services, LLC

Attachment 1

Replacement Page for Table III.4.1 (Volume III, Section 4, HELP Model; p. III.4-10)

TABLE III.4.1
Alternative Liner System
OWL Landfill Services, LLC

Simulation	Protective Drainage Layer			Primary FML			Leak Detection Layer			Secondary FML			Geocomposite Clay Liner		
	HELP Model Soil Type	Layer Thickness (in)	K_{sat} (cm/s)	HELP Model Soil Type	FML	K_{sat} (cm/s)	HELP Model Soil Type	Layer Thickness (in)	K_{sat} (cm/s)	HELP Model Soil Type	Layer Thickness (in)	K_{sat} (cm/s)	HELP Model Soil Type	Layer Thickness (in)	K_{sat} (cm/s)
Alternative Liner System	12	24	4.2×10^{-5}	35	60-mil HDPE	2.0×10^{-13}	20	200-mil Geonet	10	35	60-mil HDPE	2.0×10^{-13}	17	0.23	3.0×10^{-9}

Attachment 2
Replacement Page II.4-10 (Volume II, Section 4, C/PC Plan)

2.9 Final Site Closure - Solid Waste Disposal Area

It is anticipated that the OWL Landfill will be the final area closed at the OWL Facility due to the need for disposal of wastes from other on-site process units under premature or planned final closure conditions. Final cover will be installed within one year of achieving the final waste elevations, or an intermediate grading plan approved by OCD under early closure. The overall final grading contours for the Landfill are provided in the **Permit Plans, Sheet 5**. The final cover proposed for the OWL Landfill includes an alternative crown and sideslope evaporation/transpiration ("ET") cap configuration.

The alternative ET cap configuration will consist of a 24-inch vegetative (erosion) layer and a 6-inch barrier (infiltration) layer ($k \leq 4.2 \times 10^{-5}$ cm/sec) as shown on **Figure II.4.3**. Final cover installation cost estimates (**Attachment II.4.D**) assume that a 12-inch intermediate cover layer is already installed. Based on the results provided in **Volume III.4** (HELP Model), the proposed alternative final cover is proven to provide superior performance in preventing liquid migration through the cover when compared to the prescriptive cap outlined in the regulations.

Final slopes will be constructed in accordance with the Final Grading Plan (**Permit Plans, Sheet 5**). The sideslopes will be no greater than 16% and the top crown will be constructed at a design grade of 2.0%. Details for the final cover design are shown on the **Permit Plans, Sheet 10**. The final cover, as well as other disturbed areas of the site, will be seeded with native vegetation. Vegetation on the site will be planted during the optimum planting period, whenever possible. Examples of seed types identified and recommended by the Natural Resource Conservation Service (NRCS) as acceptable cover for the local climate and precipitation are provided in **Table II.4.3**:

Attachment 3

Replacement Page for first page of Attachment II.4.D (Volume II, Section 4, C/PC Plan)

ATTACHMENT II.4.D.1
PHASE I CLOSURE/POST-CLOSURE
COST ESTIMATE SUMMARY
OWL Landfill Services, LLC

TASK	COST ESTIMATE
1.0 LANDFILL CLOSURE CONSTRUCTION	**$539,873**
2.0 LANDFILL MAINTENANCE	**$389,400**
3.0 ENVIRONMENTAL MONITORING	**$75,900**
4.0 POND AND PROCESSING AREA CLOSURE (see Att. II.4.D.5)	**$416,194**
5.0 POND AND PROCESSING AREA MAINTENANCE	**$62,040**
TOTAL COST ESTIMATE	**$1,483,407**

ATTACHMENT II.4.D.2
PHASE I LANDFILL CLOSURE CONSTRUCTION
CLOSURE COST ESTIMATE
OWL Landfill Services, LLC Landfill (Unit 1 - 34.8 acres ±)

TASK 1.0	Unit Quantity	Unit	Unit Cost	**Total Cost**
1.1 Final Cover Installation				
1.1.1 Install and compact 6" Barrier Layer	28,044	CY	$3.50	$98,154
1.1.2 Install 24" Vegetative Layer	112,176	CY	$2.50	$280,440
1.1.3 Vegetative Layer Seeding (Class A)	34.8	AC	$1,500.00	$52,200
			Task Subtotal	**$430,794**
1.2 Final Cover CQA				
1.2.1 Inspection and Testing	1	LS	$50,000	$50,000
1.2.2 Certification	1	LS	$10,000	$10,000
			Task Subtotal	**$60,000**
			TASK TOTALS	**$490,794**
Independent Project Manager and Contract Administration Cost (10% of Task Totals)				$49,079
			TOTAL COST	**$539,873**

Notes:

1. Phase I closure costs are based on contracting with a qualified third party to complete and certify closure. The activities included in this cost estimate are based on current dollars, previous experience with landfills located in arid climates, and current subcontractor costs.
2. Final cover installation costs assume that:
   - The greatest area requiring final cover is 34.8 acres ± (Unit 1).
   - 12" of intermediate cover is already installed.
   - All soils necessary for closure are available on-site.
3. CY = Cubic Yard
   AC = Acre
   LS = Lump Sum