

NM1-63

**Permit
Application
Vol 1**

10/12/16

**STATE OF NEW MEXICO
DIRECTOR OF OIL CONSERVATION DIVISION**

**IN THE MATTER OF THE
APPLICATION OF OWL
LANDFILL SERVICES, LLC FOR A
SURFACE WASTE MANAGEMENT
FACILITY PERMIT**

**APPLICATION FOR PERMIT
OWL LANDFILL SERVICES, LLC**

OCTOBER 2016

VOLUME I: PERMIT APPLICATION TEXT

Prepared For:

**OWL Landfill Services, LLC
8214 Westchester Driver, Suite 850
Dallas, TX 75225
214.206.3940**

Submitted To:

**New Mexico Energy, Minerals, and Natural Resources Department
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, NM 87505
505.476.3440**

Prepared By:

**Gordon Environmental, Inc.
213 S. Camino del Pueblo
Bernalillo, NM 87004
505.867.6990**



October 13, 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 (OWL)
Surface Waste Management Facility Application for Permit [560.01.02]**

Dear Mr. Griswold:

On behalf of our client, OWL Landfill Services, LLC (OWL), Gordon Environmental, Inc. (GEI) is pleased to submit the enclosed Application for Permit (the Application) for the proposed OWL Surface Waste Management Facility to the Oil Conservation Division (OCD). This Application addresses the requirements of the New Mexico (NM) Oil and Gas Rules, specifically the Surface Waste Management Facility standards in 19.15.36 NMAC.

As you know, OCD's third-party reviewer, Mr. Jim Jordan, P.E. representing the New Mexico Junior College, performed a detailed technical review of the "Draft" OWL Application submitted to OCD on 02/24/2016. GEI has implemented updates to the OWL Application based on Mr. Jordan's comments, and the enclosed Application reflects those updates. In addition, GEI had the opportunity to meet with OCD on 06/15/2016, including yourself and Mr. Glenn von Gonten (Senior Hydrologist), along with Jim Jordan, P.E. to discuss the OWL Application. At that time, Mr. von Gonten had completed his review of the OWL Volume IV (Siting & Hydrogeology). Our discussion included the proposed Ochoa Mine facilities; as well as the potential for perched water in the region. Mr. von Gonten identified no fatal flaws with the siting and hydrogeology.

The OWL Facility is designed in compliance with 19.15.36 NMAC, and will be constructed and operated in compliance with a Surface Waste Management Facility Permit issued by the OCD. The OWL Facility will accept oil field waste for processing and disposal from oil and gas exploration and production operations in southeastern New Mexico (NM) and west Texas. The proposed OWL site is located approximately 22 miles northwest of Jal, adjacent and to the south of NM 128 in Lea County, NM. The OWL site is comprised of a 560-acre ± tract of land located within a portion of Section 23, Township 24 South, Range 33 East, Lea County, NM. Site access will be provided on the south side of NM 128.

The OWL Surface Waste Management Facility will comprise approximately 500 acres ± of the 560-acre ± site, and will include two main components: an oil field waste Processing Area (81 acres ±) and an oil field waste Landfill (224 acres ±), as well as related infrastructure (195 acres ±). At full build-out, the Processing Area may include an oil treatment facility consisting of an estimated 8 produced water load-out points, 45 produced water tanks, 12 evaporation ponds, 3

crude oil recovery tanks, and 2 oil sales tanks; as well as 1 stabilization and solidification area; and a customer jet wash (6 bays). The Landfill disposal footprint is 224 acres ± with a waste capacity (airspace) of approximately 38.3 million cubic yards. Design and operating refinements are likely, particularly in the number and type of processing units, in response to market conditions; evolving technologies; etc. The plans for actual installations will be the subject of future submittals to the OCD (e.g., Construction Plans and Technical Specifications) in advance of construction.

To facilitate your review, the Application is organized consistent with the regulatory requirements listed in 19.15.36 NMAC, and is subdivided into four Volumes:

- Volume I: Application Text
- Volume II: Facility Management Plans
- Volume III: Engineering Design and Calculations
- Volume IV: Siting and Hydrogeology

The OCD “Part 36 Checklist” is also included with this submittal. We look forward to working with you and the OCD on the final approval of the OWL Application for Permit. Please contact GEI at 505.867.6990 or dtucholke@gordonenvironmental.com with your comments and questions.

Very truly yours,
Gordon Environmental, Inc.



I. Keith Gordon, P.E.
Principal



Dacia Tucholke
Project Manager



Charles W. Fiedler
Sr. Project Director

cc: Mr. Roger Johnson, OWL

Attachments:

- OCD Part 36 Checklist (included as the frontispiece of Volume I)
- Permit Plan Set (one 24” x 36” hard copy, 15 sheets)
- CD containing PDF of the OWL Application for Permit (Volumes I-IV; and the Permit Plan Set is also included in Volume III.1)

15. Attach a closure and post closure plan, including a responsible third party contractor's cost estimate, sufficient to close the surface waste management facility in a manner that will protect fresh water, public health, safety and the environment (the closure and post closure plan shall comply with the requirements contained in Subsection D of 19.15.36.18 NMAC).

16. Attach a contingency plan that complies with the requirements of Subsection N of 19.15.36.13 NMAC and with NMSA 1978, Sections 12-12-1 through 12-12-30, as amended (the Emergency Management Act).

17. Attach a plan to control run-on water onto the site and run-off water from the site that complies with the requirements of Subsection M of 19.15.36.13 NMAC.

18. In the case of an application to permit a new or expanded landfill, attach a leachate management plan that describes the anticipated amount of leachate that will be generated and the leachate's handling, storage, treatment and disposal, including final post closure options.

19. In the case of an application to permit a new or expanded landfill, attach a gas safety management plan that complies with the requirements of Subsection O of 19.15.36.13 NMAC

20. Attach a best management practice plan to ensure protection of fresh water, public health, safety and the environment.

21. Attach a demonstration of compliance with the siting requirements of Subsections A and B of 19.15.36.13 NMAC.

22. Attach geological/hydrological data including:

- (a) a map showing names and location of streams, springs or other watercourses, and water wells within one mile of the site;
- (b) laboratory analyses, performed by an independent commercial laboratory, for major cations and anions; benzene, toluene, ethyl benzene and xylenes (BTEX); RCRA metals; and total dissolved solids (TDS) of ground water samples of the shallowest fresh water aquifer beneath the proposed site;
- (c) depth to, formation name, type and thickness of the shallowest fresh water aquifer;
- (d) soil types beneath the proposed surface waste management facility, including a lithologic description of soil and rock members from ground surface down to the top of the shallowest fresh water aquifer;
- (e) geologic cross-sections;
- (f) potentiometric maps for the shallowest fresh water aquifer; and
- (g) porosity, permeability, conductivity, compaction ratios and swelling characteristics for the sediments on which the contaminated soils will be placed.

23. In the case of an existing surface waste management facility applying for a minor modification, describe the proposed change and identify information that has changed from the last C-137 filing.

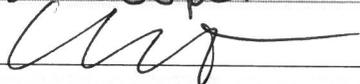
24. The division may require additional information to demonstrate that the surface waste management facility's operation will not adversely impact fresh water, public health, safety or the environment and that the surface waste management facility will comply with division rules and orders

25. CERTIFICATION

I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.

Name: Chris Cooper

Title: CEO

Signature: 

Date: 10-12-16

E-mail Address: ccooper@owlintl.com

ATTACHMENT TO FORM C-137
OWL Landfill Services, LLC
Surface Waste Management Facility

Applicant:

OWL Landfill Services, LLC
8214 Westchester, Suite 850
Dallas, TX 75225
Phone: (214) 206-3940

Owner:

OWL Landfill Services, LLC is 100% owned by OWL Permian, LLC

There are not any officers of OWL Landfill Services, LLC, and it is member-managed by its sole-member, OWL Permian, LLC. OWL Permian, LLC is manager-managed by the following officers:

T. Chris Cooper, Chief Executive Officer and President
Nevin D. Bannister, Chief Operating Officer
Roger F. Johnson, Chief Investment Officer and Vice President
Matthew R. Thiel, Vice President

No individual directly or indirectly owns 25% or more of OWL Landfill Services, LLC.

OWL LANDFILL SERVICES, LLC

**WRITTEN CONSENT OF THE SOLE MEMBER
IN LIEU OF SPECIAL MEETING**

OWL Permian, LLC, a Texas limited liability company (the “*Company*”), being the sole member of OWL Landfill Services, LLC, a Texas limited liability company, hereby waives any and all requirements for calling, giving notice of, and holding a special meeting of the managers of the Company and, in lieu of such special meeting and pursuant to Section 6.201(b) of the Texas Business Organizations Code, hereby consents to the adoption of the following resolutions attached hereto as Exhibit A.

IN WITNESS WHEREOF, the undersigned have executed this consent to be effective as of the 4th day of October, 2016.

SOLE MEMBER:

OWL PERMIAN, LLC,
a Texas limited liability company

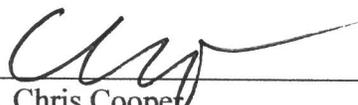
By: 
Name: T. Chris Cooper
Title: Manager

EXHIBIT A

Relating to the Applications and Permits

WHEREAS, the Company is the owner of all of the membership interests of OWL Landfill Services, LLC, a Texas limited liability company that is managed by its sole member (“*OWL Landfill*”);

WHEREAS, it has been proposed that OWL Landfill execute all applications and perform all duties related to permits and other authorizations required by the State of New Mexico in connection with the operation of a salt water disposal well or a landfill in the State of New Mexico (the “*Applications and Permits*”); and

WHEREAS, the Company deems it advisable and in the best interests of OWL Landfill Services to authorize and approve the execution, delivery, and performance of the Applications and Permits and all of the terms and provisions therein;

NOW, THEREFORE, BE IT RESOLVED, that the Company, in its capacity as the sole member of OWL Landfill, authorizes and approves the execution, delivery, and performance of the Applications and Permits and all of the terms and provisions therein.

FURTHER RESOLVED, that T. Chris Cooper, in his capacity as an Authorized Agent of OWL Landfill (the “*Authorized Agent*”), be and hereby is authorized and empowered, for and on behalf of OWL Landfill, to execute, acknowledge and deliver the Applications and Permits in the name of OWL Landfill.

FURTHER RESOLVED, that the Company hereby approves and adopts any and all additional resolutions of OWL Landfill required by the State of New Mexico or the Applications and Permits to facilitate the consummation of the foregoing resolutions.

FURTHER RESOLVED, that the Authorized Agent is authorized to certify to the State of New Mexico that resolutions in the particular form required by the State of New Mexico related to the Applications and Permits were duly adopted and approved by the Company on the date of this instrument, or any date subsequent thereto.

Further Authorization and Ratification

FURTHER RESOLVED, that the Authorized Agent be and hereby is authorized and empowered, for and on behalf of OWL Landfill, as its authorized agent, to do and perform all such lawful acts, deeds and things as may be necessary or appropriate for the full and complete accomplishment of the transactions contemplated by the foregoing resolutions, all without further action of the undersigned.

FURTHER RESOLVED, that all lawful actions of the Authorized Agent heretofore taken in connection with the matters described in the foregoing resolutions are hereby approved, ratified and confirmed.

OCD Part 36 Checklist
OWL Landfill Services, LLC Surface Waste Management Facility

No.	Permit Application Requirements	OCD Comments	Location in Application
PART 1 19.15.36.8 NMAC - SURFACE WASTE MANAGEMENT FACILITY PERMITS AND APPLICATION REQUIREMENTS:			
1	36.8C. Application requirements for new facilities, major modifications and permit renewals. 'An applicant or operator shall file an application, form C-137 , for a permit for a new surface waste management facility, to modify an existing surface waste management facility or for permit renewal with the environmental bureau in the division's Santa Fe office. The application shall include:		Volume I
2	(1) the names and addresses of the applicant and principal officers and owners of 25 percent or more of the applicant;		Form C-137
3	(2) a plat and topographic map showing the surface waste management facility's location in relation to governmental surveys (quarter-quarter section, township and range); highways or roads giving access to the surface waste management facility site; watercourses; fresh water sources, including wells and springs; and inhabited buildings within one mile of the site's perimeter;	Topographic Map: Landfill: 36.13.B(1-6) Landfarm: 36.13.B(1-6) Ponds/Pits: 36.13.B(1-6) Plat: Landfill: 36.13.C Landfarm: 36.13.C Ponds/Pits: 36.13.C	Site Location Map, Figure I.1; Site Topograph, Figure I.3; Survey Plat, Attachment I.C; Aerial Photograph, Figure IV.1.10; Surface Terrain, Figure IV.2.12
4	(3) the names and addresses of the surface owners of the real property on which the surface waste management facility is sited and surface owners of the real property within one mile of the site's perimeter;	Landfill: 36.13.C Landfarm: 36.13.C Ponds/Pits: 36.13.C	Public Notification, Attachment I.A
5	(4) a description of the surface waste management facility with a diagram indicating the location of fences and cattle guards, and detailed construction/installation diagrams of pits, liners, dikes, piping, sprayers, tanks, roads, fences, gates, berms, pipelines crossing the surface waste management facility, buildings and chemical storage areas;	Written Description: Map/Diagram: 36.13.I fencing; Construction/Installation Diagrams: Landfill: 36.13.I fencing; 36.14.C(10) external piping Landfarm: 36.13.I fencing; 36.15.C(1) berms; Ponds/Pits: 36.13.I fencing; 36.17.A dike protection and integrity and fluid collection and removal system; 36.17.C(3) fencing and netting;	Permit Plans, Sheets 2, 3 and 11
6	(5) engineering designs, certified by a registered professional engineer, including technical data on the design elements of each applicable treatment, remediation and disposal method and detailed designs of surface impoundments;	Engineered Drawings: Landfill: 36.14.C; D; E; F; Landfarm: 36.15.C(1) berms; 36.15.C(10) Ponds/Pits: 36.17.A design plan, leak detection system; 36.17.B(1-12); 36.17.B(4); 36.17.C(4) spray system; 36.17.C(5) skimmer pit or tank; 36.17.D; Technical Data/Specifications: Landfill: 36.14.C; D; E; F; Landfarm: 36.15.C(10) Ponds/Pits: 36.17.A leak detection system, liner specifications; 36.17.B(1-12); 36.17.B(4); 36.17.C(4) spray system; 36.17.C(5) skimmer pit or tank; 36.17.D;	Permit Plans, Sheets 1-15

OCD Part 36 Checklist
OWL Landfill Services, LLC Surface Waste Management Facility

No.	Permit Application Requirements	OCD Comments	Location in Application
7	(6) a plan for management of approved oil field wastes that complies with the applicable requirements contained in 19.15.36.13 NMAC (Siting and Operational Requirements – See Part 2 below), 19.15.36.14 NMAC (Landfills – See Part 3 below), 19.15.36.15 NMAC (Landfarms – See Part 4 below), and 19.15.36.17 NMAC (Ponds – See Part 5 below);	Waste Management Plan: Landfill: 36.13.D; E; F; G; H; 36.14.A; Landfarm: 36.13.D; E; F; G; H; 36.15.A; B; C(1-10); D; E; F; G; H; Ponds/Pits: 36.13.D; F; G; H; 36.17.A waste streams and chemical analysis; 36.17.C(5) skimmer pit or tank;	Oil Field Waste Management Plan, Volume II.2
8	(7) an inspection and maintenance plan that complies with the requirements contained in Subsection L of 19.15.36.13 NMAC; <i>36.13L. Each operator shall have an that includes the following:</i> <i>(1) monthly inspection of leak detection sumps including sampling if fluids are present with analyses of fluid samples furnished to the division; and maintenance of records of inspection dates, the inspector and the leak detection system's status;</i> <i>(2) semi-annual inspection and sampling of monitoring wells as required, with analyses of ground water furnished to the division; and maintenance of records of inspection dates, the inspector and ground water monitoring wells' status; and</i> <i>(3) inspections of the berms and the outside walls of pond levees quarterly and after a major rainfall or windstorm, and maintenance of berms in such a manner as to prevent erosion.</i>	Inspection and Maintenance Plan; Landfill: 36.14.B; 36.14.G.(7); Landfarm: 36.15.C(1) berms Ponds/Pits: 36.17.A freeboard and overtopping, monitoring and inspection plan; and erosion control; 36.17.C(1-2) <i>36.8C(7) adopts 36.13L (items 1 -3 in italics).</i>	Operations, Inspection, and Maintenance Plan, Volume II.1
9	(8) a hydrogen sulfide prevention and contingency plan that complies with those provisions of 19.15.11 NMAC that apply to surface waste management facilities;	Hydrogen Sulfide Prevention and Contingency Plan: 19.15.11.2; 19.15.11.9-10; 19.15.11.12-14; 19.15.11.16 <i>36.8C(8) requires Operator to Comply with Part 11 (H2S).. Does not apply unless Operators tests for >100 ppm H2S.</i>	Hydrogen Sulfide Prevention and Contingency Plan, Volume II.3
10	(9) a closure and post closure plan, including a responsible third party contractor's cost estimate, sufficient to close the surface waste management facility in a manner that will protect fresh water, public health, safety and the environment (the closure and post closure plan shall comply with the requirements contained in Subsection D of 19.15.36.18 NMAC); (See Part 6 below).	Closure and Post Closure Plan: Landfill: 36.13.O; 36.14.A.(8); 36.18.A; 36.18.D(2-3); 36.18.G; Landfarm: 36.13.N; 36.15.F; G; H; 36.18.A; 36.18.D(4); 36.18.F; 36.18.G; Ponds/Pits: 36.13.N; 36.17.A closure plan; 36.17.E; 36.18.A; 36.18.E; 36.18.F; 36.18.G; Oil Treating Plant: 36.18.A; 36.18.D(1); 36.18.G; <i>36.8C(9) adopts 36.18. See Part 6 below.</i>	Closure/Post-Closure Plan, Volume II.4
11	(10) a contingency plan that complies with the requirements of Subsection N of 19.15.36.13 NMAC and with NMSA 1978, Sections 12-12-1 through 12-12-30, as amended;	Contingency Plan: Landfill: 36.13.N Landfarm: 36.13.N Ponds/Pits: 36.13.N; 36.17.A emergency response plan; <i>36.8C(10) adopts 36.13N. See Part 2 below.</i>	Contingency Plan, Volume II.5
12	(11) a plan to control run-on water onto the site and run-off water from the site that complies with the requirements of Subsection M of 19.15.36.13 NMAC;	Stormwater Run-on/off Control Plan: Landfill: 36.13.M; Landfarm: 36.13.M; 36.15.C(1); Ponds/Pits: 36.13.M; <i>36.8C(11) adopts 36.13M. See Part 2 below.</i>	Drainage Calculations, Volume III.3; Operations, Inspection, and Maintenance Plan, Volume II.1; Permit Plans, Sheet 6

OCD Part 36 Checklist
OWL Landfill Services, LLC Surface Waste Management Facility

No.	Permit Application Requirements	OCD Comments	Location in Application
13	(12) in the case of an application to permit a new or expanded landfill, a leachate management plan that describes the anticipated amount of leachate that will be generated and the leachate's handling, storage, treatment and disposal, including final post closure options;	Leachate Collection/Management Plan: Landfill: 36.18.D(3)(a); 36.8C(12) adopts 36.14C(5), (6), & (10) and 36.14F. See Part 3 below.	Leachate Management Plan, Volume II.8
14	(13) in the case of an application to permit a new or expanded landfill, a gas safety management plan that complies with the requirements of Subsection O of 19.15.36.13 NMAC;	Landfill Gas Safety Management Plan: Landfill: 36.13.O; 36.14.G; H; 36.8C(13) adopts 36.13O. See Part 2 below.	Operations, Inspection, and Maintenance Plan, Volume II.1 (pg. II.1-24)
15	(14) a best management practice plan to ensure protection of fresh water, public health, safety and the environment;		Operations, Inspection, and Maintenance Plan, Volume II.1
16	(15) geological/hydrological data including:	Ponds/Pits: 36.17.A hydrologic report	Hydrogeology, Volume IV.2
17	(a) a map showing names and location of streams, springs or other watercourses, and water wells within one mile of the site;	Landfill: 36.13.B(1-2); Landfarm: 36.13. B(1-2); Ponds/Pits: 36.13. B(1-2);	Surface Terrain, Figure IV.2.12
18	(b) laboratory analyses, performed by an independent commercial laboratory, for major cations and anions; BTEX; RCRA metals; and TDS of ground water samples of the shallowest fresh water aquifer beneath the proposed site;		Hydrogeology, Volume IV.2, Attachment IV.2.E
19	(c) depth to, formation name, type and thickness of the shallowest fresh water aquifer;	Landfill: 36.13.A.(1); Landfarm: 36.13.A.(2); 36.13.A.(3); Ponds/Pits: 36.13.A.(5);	Hydrogeology, Volume IV.2
20	(d) soil types beneath the proposed surface waste management facility, including a lithologic description of soil and rock members from ground surface down to the top of the shallowest fresh water aquifer;		Hydrogeology, Volume IV.2, Attachments IV.2.D and Table IV.2.4
21	(e) geologic cross-sections;		Geological Cross Sections: Figures IV.2.7 and IV.2.10
22	(f) potentiometric maps for the shallowest fresh water aquifer; and		Potentiometric Surface, Figure IV.2.9
23	(g) porosity, permeability, conductivity, compaction ratios and swelling characteristics for the sediments on which the contaminated soils will be placed;		Soils Laboratory Analyses Summary, Tables II.9.2 and IV.2.4
24	(16) certification by the applicant that information submitted in the application is true, accurate and complete to the best of the applicant's knowledge, after reasonable inquiry; and		Volume I
25	(17) other information that the division may require to demonstrate that the surface waste management facility's operation will not adversely impact fresh water, public health, safety or the environment and that the surface waste management facility will comply with division rules and orders.		"Other information" will be provided upon request from OCD.

OCD Part 36 Checklist
OWL Landfill Services, LLC Surface Waste Management Facility

No.	Permit Application Requirements	OCD Comments	Location in Application
PART 2 19.15.36.13 NMAC - SITING AND OPERATIONAL REQUIREMENTS APPLICABLE TO ALL PERMITTED SURFACE WASTE MANAGEMENT FACILITIES:			
26	36.13 A. Depth to ground water. (1) No landfill shall be located where ground water is less than 100 feet below the lowest elevation of the design depth at which the operator will place oil field waste. (2) No landfarm that accepts soil or drill cuttings with a chloride concentration that exceeds 500 mg/kg shall be located where ground water is less than 100 feet below the lowest elevation at which the operator will place oil field waste. See Subsection A of 19.15.36.15 NMAC for oil field waste acceptance criteria. (3) No landfarm that accepts soil or drill cuttings with a chloride concentration that is 500 mg/kg or less shall be located where ground water is less than 50 feet below the lowest elevation at which the operator will place oil field waste. (4) No small landfarm shall be located where ground water is less than 50 feet below the lowest elevation at which the operator will place oil field waste. (5) No other surface waste management facility shall be located where ground water is less than 50 feet below the lowest elevation at which the operator will place oil field waste.	19.15.36.8.C(15)(c) depth to, formation name, type and thickness of the shallowest fresh water aquifer;	<i>Volume I;</i> <i>Siting, Volume IV.1 (pg. IV.1-2);</i> <i>Hydrogeology, Volume IV.2 (pg. 16)</i>
27	36.13 B. Siting Requirements: No surface waste management facility shall be located: (1) within 200 feet of a watercourse, lakebed, sinkhole or playa lake; (2) within an existing wellhead protection area or 100-year floodplain; (3) within, or within 500 feet of, a wetland; (4) within the area overlying a subsurface mine; (5) within 500 feet from the nearest permanent residence, school, hospital, institution or church in existence at the time of initial application; or (6) within an unstable area, unless the operator demonstrates that engineering measures have been incorporated into the surface waste management facility design to ensure that the surface waste management facility's integrity will not be compromised.	19.15.36.8.C(2) topographic map 19.15.36.8.C(15)(a) a map showing names and location of streams, springs or other watercourses, and water wells within one mile of the site;	<i>Volume I;</i> <i>Siting, Volume IV.1 (pg. IV.1-4 through IV.1-8), Figures IV.1.1 through IV.1.13</i>
28	36.13 C. Size: No surface waste management facility shall exceed 500 acres .	19.15.36.8.C(2) plat	<i>Volume I;</i> <i>Siting, Volume IV.1 (pg. IV.1-12)</i>
29	36.13 D. Form C-133: The operator shall not accept oil field wastes transported by motor vehicle at the surface waste management facility unless the transporter has a form C-133 , authorization to move liquid waste, approved by the division.	19.15.36.8.C(6) waste management plan	<i>Volume I (pg. I-35);</i> <i>Oilfield Waste Management Plan, Volume II.2 (pg. II.2-4)</i>
30	36.13 E. The operator shall not place oil field waste containing free liquids in a landfill or landfarm cell. The operator shall use the paint filter test , as prescribed by the EPA (EPA SW-846, method 9095) to determine conformance of the oil field waste to this criterion.	19.15.36.8.C(6) waste management plan	<i>Volume I (pg. I-35);</i> <i>Oilfield Waste Management Plan, Volume II.2 (pg. II.2-4), Attachment II.2.C</i>
31	36.13 F. Surface waste management facilities shall accept only exempt or non-hazardous waste , except as provided in Paragraph (3) of Subsection F of 19.15.36.13 NMAC. The operator shall not accept hazardous waste at a surface waste management facility. The operator shall not accept wastes containing NORM at a surface waste management facility except as provided in 19.15.35 NMAC.	19.15.36.8.C(6) waste management plan	<i>Volume I (pg. I-36);</i> <i>Oilfield Waste Management Plan, Volume II.2 (pg. II.2-5)</i>
32	(1) Exempt oil field wastes. The operator shall require a certification on form C-138 , signed by the generator or the generator's authorized agent, that represents and warrants that the oil field wastes are generated from oil and gas exploration and production operations, are exempt waste and are not mixed with non-exempt waste. The operator shall have the option to accept such certifications on a monthly, weekly or per load basis. The operator shall maintain and shall make the certificates available for the division's inspection.		<i>Volume I (pg. I-35);</i> <i>Oilfield Waste Management Plan, Volume II.2 (pg. II.2-4), Attachment II.2.A</i>

OCD Part 36 Checklist
OWL Landfill Services, LLC Surface Waste Management Facility

No.	Permit Application Requirements	OCD Comments	Location in Application
33	(2) Non-exempt, non-hazardous, oil field wastes. The operator shall require a form C-138 , oil field waste document, signed by the generator or its authorized agent. This form shall be accompanied by acceptable documentation to determine that the oil field waste is non-hazardous.		Volume I (pg. I-37); Oilfield Waste Management Plan, Volume II.2 (pg. II.2-4), Attachment II.2.A
34	(3) Emergency non-oil field wastes. The operator may accept non-hazardous, non-oil field wastes in an emergency if ordered by the department of public safety. The operator shall complete a form C-138 , oil field waste document, describing the waste, and maintain the same, accompanied by the department of public safety order, subject to division inspection.		Volume I (pg. I-37); Oilfield Waste Management Plan, Volume II.2 (pg. II.2-4), Attachment II.2.A
35	36.13 G. Records: The operator of a commercial facility shall maintain records reflecting the generator, the location of origin, the location of disposal within the commercial facility, the volume and type of oil field waste, the date of disposal and the hauling company for each load or category of oil field waste accepted at the commercial facility. The operator shall maintain such records for a period of not less than five years after the commercial facility's closure, subject to division inspection.	19.15.36.8.C(6) waste management plan	Volume I (pg. I-37); Oilfield Waste Management Plan, Volume II.2 (pg. II.2-8)
36	36.13 H. Disposal at a commercial facility shall occur only when an attendant is on duty unless loads can be monitored or otherwise isolated for inspection before disposal. The surface waste management facility shall be secured to prevent unauthorized disposal.		Volume I (pg. I-37); Oilfield Waste Management Plan, Volume II.2 (pg. II.2-3)
37	36.13 I. To protect migratory birds, tanks exceeding eight feet in diameter, and exposed pits and ponds shall be screened, netted or covered. Surface waste management facilities shall be fenced in a manner approved by the division.		Volume I (pg. I-38); Migratory Bird Protection Plan, Volume II.6
38	36.13 J. Sign: Surface waste management facilities shall have a sign , readable from a distance of 50 feet and containing the operator's name; surface waste management facility permit or order number; surface waste management facility location by unit letter, section, township and range; and emergency telephone numbers.		Volume I (pg. I-38), Figure I.4; Operations, Inspection, and Maintenance Plan, Volume II.1, Figure II.1.3A
39	36.13 K. The operators shall comply with the spill reporting and corrective action provisions of 19.15.30 NMAC or 19.15.29 NMAC.		Volume I (pg. I-40); Operations, Inspection, and Maintenance Plan, Volume II.1 (pg. II.1-15); Contingency Plan, Volume II.5
40	36.13 L. Each operator shall have an inspection and maintenance plan that includes the following: (1) monthly inspection of leak detection sumps including sampling if fluids are present with analyses of fluid samples furnished to the division; and maintenance of records of inspection dates, the inspector and the leak detection system's status; (2) semi-annual inspection and sampling of monitoring wells as required, with analyses of ground water furnished to the division; and maintenance of records of inspection dates, the inspector and ground water monitoring wells' status; and (3) inspections of the berms and the outside walls of pond levees quarterly and after a major rainfall or windstorm, and maintenance of berms in such a manner as to prevent erosion.	19.15.36.8.C(7) inspection and maintenance plan <i>This requirement is duplicative of C7 above.</i>	Volume I (pg. I-40); Operations, Inspection, and Maintenance Plan, Volume II.1
41	36.13 M. Each operator shall have a plan to control run-on water onto the site and run-off water from the site, such that: (1) the run-on and run-off control system shall prevent flow onto the surface waste management facility's active portion during the peak discharge from a 25-year storm ; and (2) run-off from the surface waste management facility's active portion shall not be allowed to discharge a pollutant to the waters of the state or United States that violates state water quality standards.	19.15.36.8.C(11) stormwater run on/off management plan	Volume I (pg. I-40); Operations, Inspection, and Maintenance Plan, Volume II.1; Drainage Calculations, Volume III.3; Permit Plans, Sheet 6

OCD Part 36 Checklist
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No.	Permit Application Requirements	OCD Comments	Location in Application
42	36.13 N. Contingency plan. Each operator shall have a contingency plan. The contingency plan for emergencies shall:	19.15.36.8.C(10) contingency plan <i>For Admin Completeness Determination (ACD), accept any attachment labeled Contingency Plan. Details will be part of Technical Review.</i>	<i>Contingency Plan, Volume II.5</i>
43	(1) describe the actions surface waste management facility personnel shall take in response to fires, explosions or releases to air, soil, surface water or ground water of contaminants or oil field waste containing constituents that could threaten fresh water, public health, safety or the environment;		<i>Contingency Plan, Volume II.5</i>
44	(2) describe arrangements with local police departments, fire departments, hospitals, contractors and state and local emergency response teams to coordinate emergency services;		<i>Contingency Plan, Volume II.5 (pg. II.5-25)</i>
45	(3) list the emergency coordinator's name ; address; and office, home and mobile phone numbers (where more than one person is listed, one shall be named as the primary emergency coordinator);		<i>Contingency Plan, Volume II.5 (pg. II.5-8), Table II.5.4</i>
46	(4) include a list, which shall be kept current, of emergency equipment ... containing a physical description of each item on the list and a brief outline of its capabilities;		<i>Contingency Plan, Volume II.5 (pg. II.5-23), Table II.5.5</i>
47	(5) include an evacuation plan		<i>Contingency Plan, Volume II.5 (pg. II.5-13), Figure II.5.3</i>
48	(6) include an evaluation of expected contaminants, expected media		<i>Contingency Plan, Volume II.5, Table II.5.10</i>
49	(7) list where copies of the contingency plan will be kept, which shall include the surface waste management facility; local police departments, fire departments and hospitals; and state and local emergency response teams;		<i>Contingency Plan, Volume II.5 (pg. II.5-5)</i>
50	(8) indicate when the contingency plan will be amended , which shall be within five working days whenever: (a) the surface waste management facility permit is revised or modified; (b) the plan fails in an emergency; (c) the surface waste management facility changes design, construction, operation, maintenance or other circumstances in a way that increases the potential for fires, explosions or releases of oil field waste constituents that could threaten fresh water, public health, safety or the environment or change the response necessary in an emergency; (d) the list of emergency coordinators or their contact information changes; or (e) the list of emergency equipment changes;		<i>Contingency Plan, Volume II.5 (pg. II.5-26)</i>
51	(9) describe how the emergency coordinator or the coordinator's designee, whenever there is an imminent or actual emergency situation, will immediately; (a) activate internal surface waste management facility alarms or communication systems , where applicable, to notify surface waste management facility personnel; and (b) notify appropriate state and local agencies with designated response roles if their assistance is needed;		<i>Contingency Plan, Volume II.5, Table II.5.6</i>
52	(10) describe how the emergency coordinator, whenever there is a release, fire or explosion, will immediately identify the character, exact source, amount and extent of released materials and describe how the emergency coordinator will concurrently assess possible hazards to fresh water, public health, safety or the environment that may result from the release, fire or explosion;		<i>Contingency Plan, Volume II.5</i>
53	(11) describe how , if the surface waste management facility stops operations in response to fire, explosion or release, the emergency coordinator will monitor for leaks, pressure buildup, gas generation or rupture in valves, pipes or the equipment, wherever this is appropriate;		<i>Contingency Plan, Volume II.5, Table II.5.9</i>
54	(12) describe how the emergency coordinator, immediately after an emergency, will provide for treating, storing or disposing of recovered oil field waste , or other material that results from a release, fire or explosion at a surface waste management facility;		<i>Contingency Plan, Volume II.5 (pg. II.5-23)</i>
55	(13) describe how the emergency coordinator will ensure that no oil field waste, which may be incompatible with the released material, is treated, stored or disposed of until cleanup procedures are complete; and		<i>Contingency Plan, Volume II.5 (pg. II.5-23)</i>
56	(14) provide that the emergency coordinator may amend the plan during an emergency as necessary to protect fresh water, public health, safety or the environment.		<i>Contingency Plan, Volume II.5 (pg. II.5-26)</i>

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No.	Permit Application Requirements	OCD Comments	Location in Application
57	36.13 O. Gas safety management plan. Each operator ... a landfill shall have a gas safety management plan The plan shall also include final post closure monitoring and control options.	19.15.36.8.C(13) gas safety management plan <i>For ACD, accept any attachment labeled Gas Safety Management Plan.</i>	<i>Volume I (pg. I-43); Operations, Inspection, and Maintenance Plan, Volume II.1 (pg. II.1-24); Hydrogen Sulfide Prevention and Contingency Plan, Volume II.3; Contingency Plan, Volume II.5</i>
58	36.13 P. Training program. Each operator shall conduct an annual training program for key personnel that includes general operations, permit conditions, emergencies proper sampling methods and identification of exempt and non-exempt waste and hazardous waste. The operator shall maintain records of such training, subject to division inspection, for five years.	<i>For ACD, accept any attachment labeled Training Program</i>	<i>Operations, Inspection, and Maintenance Plan, Volume II.1 (pg. II.1-13)</i>
PART 3			
19.15.36.14 NMAC - SPECIFIC REQUIREMENTS APPLICABLE TO LANDFILLS			
59	36.14A. General operating requirements.		
60	(1) The operator shall confine the landfill's working face to the smallest practical area and compact the oil field waste to the smallest practical volume. The operator shall not use equipment that may damage the integrity of the liner system in direct contact with a geosynthetic liner.		<i>Volume I (pg. I-44); Operations, Inspection, and Maintenance Plan, Volume II.1 (pg. II.1-20)</i>
61	(2) The operator shall prevent unauthorized access by the public and entry by large animals to the landfill's active portion through the use of fences, gates, locks or other means that attain equivalent protection.		<i>Volume I (pg. I-44); Operations, Inspection, and Maintenance Plan, Volume II.1 (pg. II.1-7)</i>
62	(3) The operator shall prevent and extinguish fires.	<i>These are Permit Conditions, but not required to be ACD.</i>	
63	(4) The operator shall control litter and odors.		
64	(5) The operator shall not excavate a closed cell or allow others to excavate a closed cell except as approved by the division.		
65	(6) The operator shall provide adequate cover for the landfill's active face as needed to control dust, debris, odors or other nuisances, or as otherwise required by the division.		<i>Volume I (pg. I-47); Operations, Inspection, and Maintenance Plan, Volume II.1 (pg. II.1-23)</i>
66	(7) For areas of the landfill that will not receive additional oil field waste for one month or more, but have not reached the final waste elevation, the operator shall provide intermediate cover		<i>Volume I (pg. I-48); Operations, Inspection, and Maintenance Plan, Volume II.1 (pg. II.1-23)</i>
67	(8) Landfill cell closure: When the operator has filled a landfill cell, the operator shall close it pursuant to the conditions contained in the surface waste management facility permit and the requirements of Paragraph (2) of Subsection D of 19.15.36.18 NMAC. The operator shall notify the division's environmental bureau at least three working days prior to a landfill cell's closure.		<i>Volume I (pg. I-49); Closure/Post-closure Plan, Volume II.9 (pg. II.4-10)</i>
68	36.14B. Ground water monitoring program. the operator shall establish a ground water monitoring program ... which shall include a ground water monitoring work plan , a sampling and analysis plan , a ground water monitoring system and a plan for reporting ground water monitoring results. The ground water monitoring system shall consist of a sufficient number of wells, installed at appropriate locations and depths, to yield ground water samples from the uppermost aquifer that: (1) represent the quality of background ground water that leakage from a landfill has not affected; and (2) represent the quality of ground water passing beneath and down gradient of the surface waste management facility.	19.15.36.8.C(7) inspection and maintenance plan	<i>Volume I (pg. I-49); Vadose Zone Monitoring Plan, Volume II.9; Hydrogeology, Volume IV.2</i>

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No.	Permit Application Requirements	OCD Comments	Location in Application
69	<p>36.14C. Landfill design specification. New landfill design systems shall include a base layer and a lower geomembrane liner (e.g., composite liner), a leak detection system, an upper geomembrane liner, a leachate collection and removal system, a leachate collection and removal system protective layer, an oil field waste zone and a top landfill cover.</p>	<p>19.15.36.8.C(5) technical data and design drawings For ACD, accept any plan that refers to Landfill Design that has all of the required elements shown in bold. Details will be part of Technical Review. This is duplicative of 36.8C(xx) above.</p>	<p>Volume I (pg. I-50); Liner CQA Plan, Volume II.7; Engineering Design, Volume III.1; HELP Model, Volume III.4; Geosynthetic Application and Compatibility Documentation, Volume III.6; Permit Plans</p>
70	<p>(1) Base layer: The base layer shall, at a minimum, consist of two feet of clay soil compacted to a minimum 90 percent standard proctor density (ASTM D-698) with a hydraulic conductivity of 1 x 10⁻⁷ cm/sec or less. In areas where no ground water is present, the operator may propose an alternative base layer design, subject to division approval.</p>		<p>Volume I (pg. I-50); Engineering Design, Volume III.1; HELP Model, Volume III.4; Permit Plans</p>
71	<p>(2) Lower geomembrane liner: The lower geomembrane liner shall consist of a 30-mil flexible PVC or 60-mil HDPE liner, or an equivalent liner approved by the division.</p>		<p>Volume I (pg. I-51); Liner CQA Plan, Volume II.7; Engineering Design, Volume III.1; HELP Model, Volume III.4; Geosynthetic Application and Compatibility Documentation, Volume III.6; Permit Plans</p>
72	<p>(3) Leak detection system: The operator shall place the leak detection system, which shall consist of two feet of compacted soil with a saturated hydraulic conductivity of 1 x 10⁻⁵ cm/sec or greater, between the lower and upper geomembrane liners. The leak detection system shall consist of a drainage and collection system placed no more than six inches above the lower geomembrane liner in depressions and sloped so as to facilitate the earliest possible leak detection at designated collection points. Drainage piping shall be designed to withstand chemical attack from oil field waste and leachate and structural loading and other stresses and disturbances from overlying oil field waste, cover materials, equipment operation, expansion or contraction, and to facilitate clean-out maintenance. The material placed between the pipes and laterals shall be sufficiently permeable to allow the transport of fluids to the drainage pipe. The slope of the landfill sub-grade and drainage pipes and laterals shall be at least two percent grade; i.e., two feet of vertical drop per 100 horizontal feet. The piping collection network shall be comprised of solid and perforated pipe having a minimum diameter of four inches and a minimum wall thickness of schedule 80. The operator shall seal a solid drainage pipe to convey collected liquids to a corrosion-proof sump or sumps located outside the landfill's perimeter for observation, storage, treatment or disposal. The operator may install alternative designs as approved by the division.</p>		<p>Volume I (pg. I-51); Engineering Design, Volume III.1; HELP Model, Volume III.4; Permit Plans</p>
73	<p>(4) The operator shall place the upper geomembrane liner, which shall consist of a 30-mil flexible PVC or 60-mil HDPE liner, or an equivalent liner approved by the division, over the leak detection system.</p>		<p>Volume I (pg. I-53); Liner CQA Plan, Volume II.7; Engineering Design, Volume III.1; HELP Model, Volume III.4; Geosynthetic Application and Compatibility Documentation, Volume III.6; Permit Plans</p>

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No.	Permit Application Requirements	OCD Comments	Location in Application
74	<p>(5) The operator shall place the leachate collection and removal system, which shall consist of at least two feet of compacted soil with a saturated hydraulic conductivity of 1 x 10⁻² cm/sec or greater, over the upper geomembrane liner to facilitate drainage.</p> <p>The leachate collection and removal system shall consist of a drainage and collection and removal system placed no more than six inches above the upper geomembrane liner in depressions and sloped so as to facilitate the maximum leachate collection.</p> <p>Piping shall be designed to withstand chemical attack from oil field waste or leachate and structural loading and other stresses and disturbances from overlying oil field waste, cover materials, equipment operation, expansion or contraction and to facilitate clean-out maintenance.</p> <p>The material placed between the pipes and laterals shall be sufficiently permeable to allow the transport of fluids to the drainage pipe.</p> <p>The slope of the upper geomembrane liner and drainage lines and laterals shall be at least two percent grade; i.e., two feet of vertical drop per 100 horizontal feet.</p> <p>The piping collection network shall be comprised of solid and perforated pipe having a minimum diameter of four inches and a minimum wall thickness of schedule 80.</p> <p>The operator shall seal a solid drainage pipe to convey collected fluids outside the landfill's perimeter for storage, treatment and disposal. The operator may install alternative designs as approved by the division.</p>		<p>Volume I (pg. I-53); Engineering Design, Volume III.1; HELP Model, Volume III.4; Permit Plans</p>
75	<p>(6) The operator shall place the leachate collection and removal system protection layer, which shall consist of a soil layer at least one foot thick with a saturated hydraulic conductivity of 1 x 10⁻² cm/sec or greater, over the leachate collection and removal system.</p>		<p>Volume I (pg. I-54); Engineering Design, Volume III.1; HELP Model, Volume III.4; Permit Plans</p>
76	<p>(7) The operator shall place oil field waste over the leachate collection and removal system protective layer.</p>		<p>Volume I (pg. I-55); Engineering Design, Volume III.1; HELP Model, Volume III.4; Permit Plans</p>
77	<p>(8) The top landfill cover design shall consist of the following layers (top to bottom): a soil erosion layer composed of at least 12 inches of fertile topsoil re-vegetated in accordance with the post closure provisions of Subparagraph (b) of Paragraph (2) of Subsection D of 19.15.36.18 NMAC; a protection or frost protection layer composed of 12 to 30 inches of native soil; a drainage layer composed of at least 12 inches of sand or gravel with a saturated hydraulic conductivity of 1 x 10⁻² cm/sec or greater and a minimum bottom slope of four percent, a hydraulic barrier-layer-geomembrane (minimum of a 30-mil flexible PVC or 60-mil HDPE liner, or an equivalent liner approved by the division); and a gas vent or foundation layer composed of at least 12 inches of sand or gravel above oil field waste with soils compacted to the minimum 80 percent Standard Proctor Density. The operator shall install the top landfill cover within one year of achieving the final landfill cell waste elevation. ...</p>		<p>Volume I (pg. I-55); Engineering Design, Volume III.1; HELP Model, Volume III.4; Permit Plans</p>
78	<p>(9) Alternatively, the operator may propose a performance-based landfill design system using geosynthetics or geocomposites, including geogrids, geonets, geosynthetic clay liners, composite liner systems, etc., when supported by EPA's "hydrologic evaluation of landfill performance" (HELP) model or other division- approved model.</p> <p>The operator shall design the landfill to prevent the "bathtub effect".</p> <p>The bathtub effect occurs when a more permeable cover is placed over a less permeable bottom liner or natural subsoil.</p>		<p>Volume I (pg. I-56); Engineering Design, Volume III.1; HELP Model, Volume III.4; Permit Plans</p>
79	<p>(10) External piping, e.g., leachate collection, leak detection and sump removal systems shall be designed for installation of a sidewall riser pipe.</p> <p>Pipes shall not penetrate the liner with the exception of gas vent or collection wells where the operator shall install a flexible clamped pipe riser through the top landfill cover liner that will accommodate oil field waste settling and will prevent tears.</p>		<p>Volume I (pg. I-56); Engineering Design, Volume III.1; HELP Model, Volume III.4; Permit Plans</p>

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No.	Permit Application Requirements	OCD Comments	Location in Application
80	<p>36.14 D. Liner specifications and requirements.</p>	<p>19.15.36.8.C(5) technical data and design drawings For ACD, accept any plan that refers to Liner Specs. Details will be part of Technical Review.</p>	<p>Volume I (pg. I-56); Liner CQA Plan, Volume II.7; Geosynthetic Application and Compatibility Documentation, Volume III.6; Permit Plans</p>
81	<p>(1) General requirements. (a) Geomembrane liner specifications. Geomembrane liners shall consist of a 30-mil flexible PVC or 60-mil HDPE liner, or an equivalent liner approved by the division. Geomembrane liners shall have a hydraulic conductivity no greater than 1×10^{-9} cm/sec. Geomembrane liners shall be composed of impervious, geosynthetic material that is resistant to petroleum hydrocarbons, salts and acidic and alkaline solutions. Liners shall also be resistant to ultraviolet light, or the operator shall make provisions to protect the material from sunlight. Liner compatibility shall comply with EPA SW-846 method 9090A. (b) Liners shall be able to withstand projected loading stresses, settling and disturbances from overlying oil field waste, cover materials and equipment operations. (c) The operator shall construct liners with a minimum of two percent slope to promote positive drainage and to facilitate leachate collection and leak detection.</p>		<p>Volume I (pg. I-56); Liner CQA Plan, Volume II.7; Geosynthetic Application and Compatibility Documentation, Volume III.6; Settlement Calculations, Volume III.7; Permit Plans</p>
82	<p>(2) Additional requirements for geomembranes. (a) Geomembranes shall be compatible with the oil field waste to be disposed. Geomembranes shall be resistant to chemical attack from the oil field waste or leachate. The operator shall demonstrate this by means of the manufacturer's test reports, laboratory analyses or other division-approved method. (b) Geosynthetic material the operator installs on a slope greater than 25 percent shall be designed to withstand the calculated tensile forces acting upon the material. The design shall consider the maximum friction angle of the geosynthetic with regard to a soil-geosynthetic or geosynthetic-geosynthetic interface and shall ensure that overall slope stability is maintained. (c) The operator shall thermally seal (hot wedge) field seams in geosynthetic material with a double track weld to create an air pocket for non-destructive air channel testing. In areas where double-track welding cannot be achieved, the operator may propose alternative thermal seaming methods. A stabilized air pressure of 35psi, plus or minus one percent, shall be maintained for at least five minutes. The operator shall overlap liners four to six inches before seaming, and shall orient seams parallel to the line of maximum slope; i.e., oriented along, not across, the slope. The operator shall minimize the number of field seams in corners and irregularly shaped areas. The operator shall use factory seams whenever possible. The operator shall not install horizontal seams within five feet of the slope's toe. Qualified personnel shall perform all field seaming.</p>		<p>Volume I (pg. I-58); Liner CQA Plan, Volume II.7; Engineering Design, Volume III.1; Geosynthetic Application and Compatibility Documentation, Volume III.6; Settlement Calculations, Volume III.7; Permit Plans</p>
83	<p>36.14E. Requirements for the soil component of composite liners. (1) The operator shall place and compact the base layer to 90 percent standard proctor density on a prepared sub-grade. (2) The soil surface upon which the operator installs a geosynthetic shall be free of stones greater than one half inch in any dimension, organic matter, local irregularities, protrusions, loose soil and abrupt changes in grade that could damage the geosynthetic. (3) The operator shall compact a clay soil component of a composite liner to a minimum of 90 percent standard proctor density, which shall have, unless otherwise approved by the division, a plasticity index greater than 10 percent, a liquid limit between 25 and 50 percent, a portion of material passing the no. 200 sieve (0.074 mm and less fraction) greater than 40 percent by weight; and a clay content greater than 18 percent by weight.</p>	<p>19.15.36.8.C(5) technical data and design drawings For ACD, accept any plan that refers to Soil component of Composite Liners. Details will be part of Technical Review.</p>	<p>Volume I (pg. I-59); Liner CQA Plan, Volume II.7; Engineering Design, Volume III.1; HELP Model, Volume III.4; Permit Plans</p>

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84	<p>36.14F. The leachate collection and removal system protective layer and the soil component of the leak detection system shall consist of soil materials that shall be free of organic matter, shall have a portion of material passing the no. 200 sieve no greater than five percent by weight and shall have a uniformity coefficient (Cu) less than 6, where Cu is defined as D60/D10.</p> <p>Geosynthetic materials or geocomposites including geonets and geotextiles, if used as components of the leachate collection and removal or leak detection system, shall have a hydraulic conductivity, transmissivity and chemical and physical qualities that oil field waste placement, equipment operation or leachate generation will not adversely affect.</p> <p>These geosynthetics or geocomposites, if used in conjunction with the soil protective cover for liners, shall have a hydraulic conductivity designed to ensure that the liner's hydraulic head never exceeds one foot.</p>	<p>19.15.36.8.C(5) technical data and design drawings For ACD, accept any plan that refers to Leachate Collection and removal system protective layer. Details will be part of Technical Review.</p>	<p>Volume I (pg. I-60); Liner CQA Plan, Volume II.7; HELP Model, Volume III.4</p>
85	<p>36.14G. Landfill gas control systems. If the gas safety management plan or requirements of other federal, state or local agencies require the installation of a gas control system at a landfill, the operator shall submit a plan for division approval, which shall include the following:</p>	<p>19.15.36.8.C(13) gas safety management plan</p>	<p>Volume I (pg. I-61); Operations, Inspection, and Maintenance Plan, Volume II.1; Hydrogen Sulfide Prevention and Contingency Plan, Volume II.3; Contingency Plan, Volume II.5</p>
86	<p>(1) the system's design, indicating the location and design of vents, barriers, collection piping and manifolds and other control measures that the operator will install (gas vent or collection wells shall incorporate a clamped and seamed pipe riser design through the top cover liner);</p>	<p>For ACD, accept any plan that refers to Landfill Gas Control System. Details will be part of Technical Review.</p>	<p>Volume I (pg. I-61); Operations, Inspection, and Maintenance Plan, Volume II.1; Hydrogen Sulfide Prevention and Contingency Plan, Volume II.3; Contingency Plan, Volume II.5</p>
87	<p>(2) if gas recovery is proposed, the design of the proposed gas recovery system and the system's major on-site components, including storage, transportation, processing, treatment or disposal measures required in the management of generated gases, condensates or other residues;</p>		<p>Volume I (pg. I-62); Operations, Inspection, and Maintenance Plan, Volume II.1; Hydrogen Sulfide Prevention and Contingency Plan, Volume II.3; Contingency Plan, Volume II.5</p>
88	<p>(3) if gas processing is proposed, a processing plan designed in a manner that does not interfere or conflict with the activities on the site or required control measures or create or cause danger to persons or property;</p>		<p>Volume I (pg. I-62); Operations, Inspection, and Maintenance Plan, Volume II.1; Hydrogen Sulfide Prevention and Contingency Plan, Volume II.3; Contingency Plan, Volume II.5</p>
89	<p>(4) if gas disposal is proposed, a disposal plan designed: (a) in a manner that does not interfere or conflict with the activities on the site or with required control measures; (b) so as not to create or cause danger to persons or property; and (c) with active forced ventilation, using vents located at least one foot above the landfill surface at each gas vent's location;</p>		<p>Volume I (pg. I-62); Operations, Inspection, and Maintenance Plan, Volume II.1; Hydrogen Sulfide Prevention and Contingency Plan, Volume II.3; Contingency Plan, Volume II.5</p>
90	<p>(5) physical and chemical characterization of condensates or residues that are generated and a plan for their disposal;</p>		<p>Volume I (pg. I-62); Operations, Inspection, and Maintenance Plan, Volume II.1; Hydrogen Sulfide Prevention and Contingency Plan, Volume II.3; Contingency Plan, Volume II.5</p>

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No.	Permit Application Requirements	OCD Comments	Location in Application
91	(6) means that the operator will implement to prevent gas generation and lateral migration such that (a) the concentration of the gases the landfill generates does not exceed 25 percent of the lower explosive limit for gases in surface waste management facility structures (excluding gas control or recovery system components); and (b) the concentration of gases does not exceed the lower explosive limit for gases at the surface waste management facility boundary; and		Volume I (pg. I-63); Operations, Inspection, and Maintenance Plan, Volume II.1; Hydrogen Sulfide Prevention and Contingency Plan, Volume II.3; Contingency Plan, Volume II.5
92	(7) a routine gas monitoring program providing for monitoring at least quarterly; the specific type and frequency of monitoring to be determined based on the following: (a) soil conditions; (b) the hydrogeologic and hydraulic conditions surrounding the surface waste management facility; and (c) the location of surface waste management facility structures and property lines.		Volume I (pg. I-63); Operations, Inspection, and Maintenance Plan, Volume II.1; Hydrogen Sulfide Prevention and Contingency Plan, Volume II.3; Contingency Plan, Volume II.5
93	36.14H. Landfill gas response. If gas levels exceed the limits specified in Paragraph (6) of Subsection G of 19.15.36.14 NMAC, the operator shall:	19.15.36.8.C(13) gas safety management plan	Volume I (pg. I-64); Hydrogen Sulfide Prevention and Contingency Plan, Volume II.3; Contingency Plan, Volume II.5
94	(1) immediately take all necessary steps to ensure protection of fresh water, public health, safety and the environment and notify the division;	For ACD, accept any plan that refers to Landfill Gas Response. Details will be part of Technical Review.	Volume I (pg. I-64); Hydrogen Sulfide Prevention and Contingency Plan, Volume II.3; Contingency Plan, Volume II.5
95	(2) within seven days of detection, record gas levels detected and a description of the steps taken to protect fresh water, public health, safety and the environment;		Volume I (pg. I-64); Hydrogen Sulfide Prevention and Contingency Plan, Volume II.3; Contingency Plan, Volume II.5
96	(3) within 30 days of detection, submit a remediation plan for gas releases that describes the problem's nature and extent and the proposed remedy; and		Volume I (pg. I-64); Hydrogen Sulfide Prevention and Contingency Plan, Volume II.3; Contingency Plan, Volume II.5
97	(4) within 60 days after division approval, implement the remediation plan and notify the division that the plan has been implemented.		Volume I (pg. I-64); Hydrogen Sulfide Prevention and Contingency Plan, Volume II.3; Contingency Plan, Volume II.5
PART 4			
19.15.36.15 NMAC - SPECIFIC REQUIREMENTS APPLICABLE TO LANDFARMS			
98	36.15A. Oil field waste acceptance criteria. Only soils and drill cuttings predominantly contaminated by petroleum hydrocarbons shall be placed in a landfarm. The division may approve placement of tank bottoms in a landfarm if the operator demonstrates that the tank bottoms do not contain economically recoverable petroleum hydrocarbons. Soils and drill cuttings placed in a landfarm shall be sufficiently free of liquid content to pass the paint filter test , and shall not have a chloride concentration exceeding 500 mg/kg if the landfarm is located where ground water is less than 100 feet but at least 50 feet below the lowest elevation at which the operator will place oil field waste or exceeding 1000 mg/kg if the landfarm is located where ground water is 100 feet or more below the lowest elevation at which the operator will place oil field waste. The person tendering oil field waste for treatment at a landfarm shall certify, on form C-138 , that representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content, and that the samples have been found to conform to these requirements. The landfarm's operator shall not accept oil field waste for landfarm treatment unless accompanied by this certification.	19.15.36.8.C(6) waste management plan 36.15A is mostly Permit Conditions. Check for commitments to meet these requirements.	Not Applicable.

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No.	Permit Application Requirements	OCD Comments	Location in Application
99	36.15B. Background testing. Prior to beginning operation of a new landfarm or to opening a new cell at an existing landfarm at which the operator has not already established background, the operator shall take, at a minimum, 12 composite background soil samples, with each consisting of 16 discrete samples from areas that previous operations have not impacted at least six inches below the original ground surface, to establish background soil concentrations for the entire surface waste management facility. The operator shall analyze the background soil samples for TPH, as determined by EPA method 418.1 or other EPA method approved by the division; BTEX, as determined by EPA SW-846 method 8021B or 8260B; chlorides; and other constituents listed in Subsections A and B of 20.6.2.3103 NMAC, using approved EPA methods.		<i>Not Applicable.</i>
100	36.15C. Operation and oil field waste treatment.		<i>Not Applicable.</i>
101	(1) The operator shall berm each landfarm cell to prevent rainwater run-on and run-off.	19.15.36.8.C(6) waste management plan 19.15.36.8.C(11) stormwater run on/off management plan 19.15.36.8.C(4) detailed construction/ installation diagrams	<i>Not Applicable.</i>
102	(2) The operator shall not place contaminated soils received after the effective date of 19.15.36 NMAC within 100 feet of the surface waste management facility's boundary.	19.15.36.8.C(6) waste management plan	<i>Not Applicable.</i>
103	(3) The operator shall not place contaminated soils received at a landfarm after the effective date of 19.15.36 NMAC within 20 feet of a pipeline crossing the landfarm.	19.15.36.8.C(6) waste management plan	<i>Not Applicable.</i>
104	(4) With 72 hours after receipt , the operator shall spread and disk contaminated soils in eight-inch or less lifts or approximately 1000 cubic yards per acre per eight-inch lift or biopile.	19.15.36.8.C(6) waste management plan	<i>Not Applicable.</i>
105	(5) The operator shall ensure that soils are disked biweekly and biopiles are turned at least monthly .	19.15.36.8.C(6) waste management plan	<i>Not Applicable.</i>
106	(6) The operator shall add moisture, as necessary, to enhance bioremediation and to control blowing dust.	19.15.36.8.C(6) waste management plan	<i>Not Applicable.</i>
107	(7) The application of microbes for the purposes of enhancing bioremediation requires prior division approval.	19.15.36.8.C(6) waste management plan	<i>Not Applicable.</i>
108	(8) Pooling of liquids in the landfarm is prohibited. The operator shall remove freestanding water within 24 hours.		<i>Not Applicable.</i>
109	(9) The operator shall maintain records of the landfarm's remediation activities in a form readily accessible for division inspection.		<i>Not Applicable.</i>
110	(10) The division's environmental bureau may approve other treatment procedures if the operator demonstrates that they provide equivalent protection for fresh water, public health, safety and the environment.	19.15.36.8.C(6) waste management plan 19.15.36.8.C(5) technical data and design drawings	<i>Not Applicable.</i>

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No.	Permit Application Requirements	OCD Comments	Location in Application
111	<p>36.15D. Treatment zone monitoring. The operator shall spread contaminated soils on the surface in eight- inch or less lifts or approximately 1000 cubic yards per acre per eight-inch lift. The operator shall conduct treatment zone monitoring to ensure that prior to adding an additional lift the TPH concentration of each lift, as determined by EPA SW-846 method 8015M or EPA method 418.1 or other EPA method approved by the division, does not exceed 2500 mg/kg and that the chloride concentration, as determined by EPA method 300.1, does not exceed 500 mg/kg if the landfarm is located where ground water is less than 100 feet but at least 50 feet below the lowest elevation at which the operator will place oil field waste or 1000 mg/kg if the landfarm is located where ground water is 100 feet or more below the lowest elevation at which the operator will place oil field waste. The operator shall collect and analyze at least one composite soil sample, consisting of four discrete samples, from the treatment zone at least semi-annually using the methods specified below for TPH and chlorides. The maximum thickness of treated soils in a landfarm cell shall not exceed two feet or approximately 3000 cubic yards per acre. When that thickness is reached, the operator shall not place additional oil field waste in the landfarm cell until it has demonstrated by monitoring the treatment zone at least semi-annually that the contaminated soil has been treated to the standards specified in Subsection F of 19.15.36.15 NMAC or the contaminated soils have been removed to a division approved surface waste management facility.</p>	19.15.36.8.C(6) waste management plan	Not Applicable.
112	<p>36.15E. Vadose zone monitoring.</p>	Permit condition, but not needed for ACD.	Not Applicable.
113	<p>(1) Sampling. The operator shall monitor the vadose zone beneath the treatment zone in each landfarm cell. The operator shall take the vadose zone samples from soils between three and four feet below the cell's original ground surface.</p>		Not Applicable.
114	<p>(2) Semi-annual monitoring program. The operator shall collect and analyze a minimum of four randomly selected, independent samples from the vadose zone at least semi-annually using the methods specified below for TPH, BTEX and chlorides and shall compare each result to the higher of the PQL or the background soil concentrations to determine whether a release has occurred.</p>		Not Applicable.
115	<p>(3) Five year monitoring program. The operator shall collect and analyze a minimum of four randomly selected, independent samples from the vadose zone, using the methods specified below for the constituents listed in Subsections A and B of 20.6.2.3103 NMAC at least every five years and shall compare each result to the higher of the PQL or the background soil concentrations to determine whether a release has occurred.</p>		Not Applicable.
116	<p>(4) Record keeping. The operator shall maintain a copy of the monitoring reports in a form readily accessible for division inspection.</p>		Not Applicable.
117	<p>(5) Release response. If vadose zone sampling results show that the concentrations of TPH, BTEX or chlorides exceed the higher of the PQL or the background soil concentrations, then the operator shall notify the division's environmental bureau of the exceedance, and shall immediately collect and analyze a minimum of four randomly selected, independent samples for TPH, BTEX, chlorides and the constituents listed in Subsections A and B of 20.6.2.3103 NMAC. The operator shall submit the results of the re-sampling event and a response action plan for the division's approval within 45 days of the initial notification. The response action plan shall address changes in the landfarm's operation to prevent further contamination and, if necessary, a plan for remediating existing contamination.</p>		Not Applicable.

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No.	Permit Application Requirements	OCD Comments	Location in Application
118	36.15F. Treatment zone closure performance standards. After the operator has filled a landfarm cell to the maximum thickness of two feet or approximately 3000 cubic yards per acre, the operator shall continue treatment until the contaminated soil has been remediated to the higher of the background concentrations or the following closure performance standards. The operator shall demonstrate compliance with the closure performance standards by collecting and analyzing a minimum of one composite soil sample, consisting of four discrete samples.	19.15.36.8.C(9) closure and post-closure care plan <i>Permit condition, but not needed for ACD</i>	<i>Not Applicable.</i>
119	(1) Benzene, as determined by EPA SW-846 method 8021B or 8260B, shall not exceed 0.2 mg/kg.		<i>Not Applicable.</i>
120	(2) Total BTEX, as determined by EPA SW-846 method 8021B or 8260B, shall not exceed 50 mg/kg.		<i>Not Applicable.</i>
121	(3) The GRO and DRO combined fractions, as determined by EPA SW-846 method 8015M, shall not exceed 500 mg/kg. TPH, as determined by EPA method 418.1 or other EPA method approved by the division, shall not exceed 2500 mg/kg.		<i>Not Applicable.</i>
122	(4) Chlorides, as determined by EPA method 300.1, shall not exceed 500 mg/kg if the landfarm is located where ground water is less than 100 feet but at least 50 feet below the lowest elevation at which the operator will place oil field waste or 1000 mg/kg if the landfarm is located where ground water is 100 feet or more below the lowest elevation at which the operator will place oil field waste.		<i>Not Applicable.</i>
123	(5) The concentration of constituents listed in Subsections A and B of 20.6.2.3103 NMAC shall be determined by EPA SW-846 methods 6010B or 6020 or other methods approved by the division. If the concentration of those constituents exceed the PQL or background concentration, the operator shall either perform a site specific risk assessment using EPA approved methods and shall propose closure standards based upon individual site conditions that protect fresh water, public health, safety and the environment, which shall be subject to division approval or remove pursuant to Paragraph (2) of Subsection G of 19.15.36.15 NMAC.		<i>Not Applicable.</i>
124	36.15G. Disposition of treated soils.	19.15.36.8.C(6) waste management plan 19.15.36.8.C(9) closure and post-closure care plan	<i>Not Applicable.</i>
125	(1) If the operator achieves the closure performance standards specified in Subsection F of 19.15.36.15 NMAC, then the operator may either leave the treated soils in place, or, with prior division approval, dispose or reuse of the treated soils in an alternative manner.	<i>Permit condition, but not needed for ACD.</i>	<i>Not Applicable.</i>
126	(2) If the operator cannot achieve the closure performance standards specified in Subsection F of 19.15.36.15 NMAC within five years or as extended by the division, then the operator shall remove contaminated soils from the landfarm cell and properly dispose of it at a division-permitted landfill, or reuse or recycle it in a manner approved by the division.		<i>Not Applicable.</i>
127	(3) If the operator cannot achieve the closure performance standards specified in Subsection F of 19.15.36.15 NMAC within five years or as extended by the division, then the division may review the adequacy of the operator's financial assurance, as provided in Subsection G of 19.15.36.11 NMAC. In that event, the division may require the operator to modify its financial assurance to provide for the appropriate disposition of contaminated soil in a manner acceptable to the division.		<i>Not Applicable.</i>
128	(4) The operator may request approval of an alternative soil closure standard from the division, provided that the operator shall give division-approved public notice of an application for alternative soil closure standards in the manner provided in 19.15.36.9 NMAC. The division may grant the request administratively if no person files an objection thereto within 30 days after publication of notice; otherwise the division shall set the matter for hearing.		<i>Not Applicable.</i>
129	36.15H. Environmentally acceptable bioremediation endpoint approach.	19.15.36.8.C(6) waste management plan 19.15.36.8.C(9) closure and post-closure care plan	<i>Not Applicable.</i>
130	(1) A landfarm operator may use an environmentally acceptable bioremediation endpoint approach to landfarm management in lieu of compliance with the requirements of Paragraph (3) of Subsection F of 19.15.36.15 NMAC....	<i>Permit condition, but not needed for ACD.</i>	<i>Not Applicable.</i>

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No.	Permit Application Requirements	OCD Comments	Location in Application
131	<p>(2) In addition to the requirements specified in Subsection C of 19.15.36.8 NMAC, an operator who plans to use an environmentally acceptable bioremediation endpoint approach shall submit for the division's review and approval a detailed landfarm operation plan for those landfarm cells exclusively dedicated to the use of the environmentally acceptable bioremediation endpoint approach. At a minimum, the operations plan shall include detailed information on the native soils, procedures to characterize each lift of contaminated soil, operating procedures and management procedures that the operator shall follow.</p>		Not Applicable.
132	<p>(3) In addition to other operational requirements specified in 19.15.36.15 NMAC, the operator using an environmentally acceptable bioremediation endpoint approach shall comply with the following.</p> <p>(a) Native soil information required. The operator shall submit detailed information on the soil conditions present for each of its landfarm cells immediately prior to the application of the petroleum hydrocarbon-contaminated soils, including: treatment cell size, soil porosity, soil bulk density, soil pH, moisture content, field capacity, organic matter concentration, soil structure, SAR, EC, soil composition, soil temperature, soil nutrient (C:N:P) (calcium, nitrogen and phosphate) concentrations and oxygen content.</p> <p>(b) Characterization of contaminated soil. The operator shall submit a description of the procedures that it will follow to characterize each lift of contaminated soil or drill cuttings, prior to treating each lift of contaminated soil or drill cuttings, for petroleum hydrocarbon loading factor, TPH, BTEX, chlorides, constituents listed in Subsections A and B of 20.6.2.3103 NMAC, contaminated soil moisture, contaminated soil pH and API gravity of the petroleum hydrocarbons.</p> <p>(c) Operating procedures. The operator shall submit a description of the procedures, including a schedule, that it shall follow to properly monitor and amend each lift of contaminated soil in order to maximize bioremediation, including tilling procedures and schedule; procedures to limit petroleum hydrocarbon loading to less than five percent; procedures to maintain pH between six and eight; procedures to monitor and apply proper nutrients; procedures to monitor, apply and maintain moisture to 60 to 80 percent of field capacity; and procedures to monitor TPH concentrations.</p> <p>(d) Management procedures. The operator shall submit a description of the management procedures that it shall follow to properly schedule landfarming operations, including modifications during cold weather, record keeping, sampling and analysis, statistical procedures, routine reporting, determination and reporting of achievement of the environmentally acceptable bioremediation endpoint and closure and post-closure plans.</p>		Not Applicable.

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PART 5 19.15.36.17 NMAC - SPECIFIC REQUIREMENTS APPLICABLE TO EVAPORATION, STORAGE, TREATMENT AND SKIMMER PONDS:			
133	<p>36.17A. Engineering design plan. An applicant for a surface waste management facility permit or modification requesting inclusion of a skimmer pit; an evaporation, storage or treatment pond; or a below-grade tank shall submit ... a detailed engineering design plan, certified by a registered profession engineer, including operating and maintenance procedures; 19.15.36.8.C(5) technical data and design drawings a closure plan; 19.15.36.8.C(9) closure and post-closure care plan and a hydrologic report that provides sufficient information and detail on the site's topography, soils, geology, surface hydrology and ground water hydrology to enable the division to evaluate the actual and potential effects on soils, surface water and ground water. 19.15.36.8.C(15) geological/ hydrological data The plan shall include detailed information on dike protection and structural integrity; leak detection, including an adequate fluid collection and removal system; 19.15.36.8.C(5) technical data and design drawings liner specifications and compatibility; 19.15.36.8.C(5) technical data and design drawings freeboard and overtopping prevention; 19.15.36.8.C(7) inspection and maintenance plan prevention of nuisance and hazardous odors such as H2S; 19.15.36.8.C(8) hydrogen sulfide prevention and contingency plan; 19.15.36.8.C(7) inspection and maintenance plan an emergency response plan, unless the pit is part of a surface waste management facility that has an integrated contingency plan; 19.15.36.8.C(10) contingency plan type of oil field waste stream, including chemical analysis; 19.15.36.8.C(6) waste management plan climatological factors, including freeze-thaw cycles; a monitoring and inspection plan;</p>	<p><i>For ACD, accept any plan that refers to Engineering Design Plan and that has all of the required elements shown in bold. Details will be part of Technical Review.</i></p>	<p><i>Volume I (pg. I-64); Facility Management Plans, Volume II; Engineering Design and Calculations, Volume III; Siting and Hydrogeology, Volume IV; Permit Plans</i></p>
134	<p>36.17B. Construction, standards.</p>	<p>19.15.36.8.C(5) technical data and design drawings</p>	<p><i>Volume I (pg. I-66); Liner CQA Plan, Volume II.7; Permit Plans</i></p>
135	<p>(1) In general. The operator shall ensure each pit, pond and below-grade tank is designed, constructed and operated so as to contain liquids and solids in a manner that will protect fresh water, public health, safety and the environment.</p>	<p><i>For ACD, accept any plan that refers to Construction Standards and that has all of the required elements shown in bold. Details will be part of Technical Review</i></p>	<p><i>Volume I (pg. I-66); Liner CQA Plan, Volume II.7; Permit Plans</i></p>
136	<p>(2) Liners required. Each pit or pond shall contain, at a minimum, a primary (upper) liner and a secondary (lower) liner with a leak detection system appropriate to the site's conditions.</p>		<p><i>Volume I (pg. I-66); Engineering Design, Volume III.1; Permit Plans</i></p>

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No.	Permit Application Requirements	OCD Comments	Location in Application
137	<p>(3) Liner specifications. Liners shall consist of a 30-mil flexible PVC or 60-mil HDPE liner, or an equivalent liner approved by the division. Synthetic (geomembrane) liners shall have a hydraulic conductivity no greater than 1×10^{-9} cm/sec. Geomembrane liners shall be composed of an impervious, synthetic material that is resistant to petroleum hydrocarbons, salts and acidic and alkaline solutions. Liner materials shall be resistant to ultraviolet light, or the operator shall make provisions to protect the material from sunlight. Liner compatibility shall comply with EPA SW-846 method 9090A.</p>		<p>Volume I (pg. I-66); Liner CQA Plan, Volume II.7; Geosynthetic Application and Compatibility Documentation, Volume III.6; Permit Plans</p>
138	<p>(4) Alternative liner media. The division may approve other liner media if the operator demonstrates to the division's satisfaction that the alternative liner protects fresh water, public health, safety and the environment as effectively as the specified media.</p>	<p><i>Optional</i> 19.15.36.8.C(5) technical data and design drawings</p>	<p>Volume I (pg. I-67); Liner CQA Plan, Volume II.7; Engineering Design and Calculations, Volume III; Permit Plans</p>
139	<p>(5) Each pit or pond shall have a properly constructed foundation or firm, unyielding base, smooth and free of rocks, debris, sharp edges or irregularities, in order to prevent rupture or tear of the liner and an adequate anchor trench; and shall be constructed so that the inside grade of the levee is no steeper than 2H:1V. Levees shall have an outside grade no steeper than 3H:1V. The levees' tops shall be wide enough to install an anchor trench and provide adequate room for inspection and maintenance. The operator shall minimize liner seams and orient them up and down, not across a slope. The operator shall use factory seams where possible. The operator shall ensure field seams in geosynthetic material are thermally seamed (hot wedge) with a double track weld to create an air pocket for non-destructive air channel testing. A stabilized air pressure of 35 psi, plus or minus one percent, shall be maintained for at least five minutes. The operator shall overlap liners four to six inches before seaming, and orient seams parallel to the line of maximum slope, i.e., oriented along, not across, the slope. The operator shall minimize the number of field seams in corners and irregularly shaped areas. There shall be no horizontal seams within five feet of the slope's toe. Qualified personnel shall perform field seaming.</p>		<p>Volume I (pg. I-67); Liner CQA Plan, Volume II.7; Engineering Design, Volume III.1; Geosynthetic Application and Compatibility Documentation, Volume III.6; Permit Plans</p>
140	<p>(6) At a point of discharge into or suction from the lined pit, the liner shall be protected from excessive hydrostatic force or mechanical damage, and external discharge lines shall not penetrate the liner.</p>		<p>Volume I (pg. I-68); Permit Plans</p>
141	<p>(7) Primary liners shall be constructed of a synthetic material.</p>		<p>Volume I (pg. I-68); Engineering Design and Calculations, Volume III</p>
142	<p>(8) A secondary liner may be a synthetic liner or an alternative liner approved by the division. Secondary liners constructed with compacted soil membranes, i.e., natural or processed clay and other soils, shall be at least three feet thick, placed in six-inch lifts and compacted to 95 percent of the material's standard proctor density, or equivalent. Compacted soil membranes used in a liner shall undergo permeability testing in conformity with ASTM standards and methods approved by the division before and after construction. Compacted soil membranes shall have a hydraulic conductivity of no greater than 1×10^{-8} cm/sec. The operator shall submit results of pre-construction testing to the division for approval prior to construction.</p>		<p>Volume I (pg. I-68); Engineering Design, Volume III.1</p>

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143	<p>(9) Leak detection system: The operator shall place a leak detection system between the lower and upper geomembrane liners that consists of two feet of compacted soil with a saturated hydraulic conductivity of 1 x 10⁻⁵ cm/sec or greater to facilitate drainage.</p> <p>The leak detection system shall consist of a properly designed drainage and collection and removal system placed above the lower geomembrane liner in depressions and sloped so as to facilitate the earliest possible leak detection. Piping used shall be designed to withstand chemical attack from oil field waste or leachate; structural loading from stresses and disturbances from overlying oil field waste, cover materials, equipment operation or expansion or contraction; and to facilitate clean-out maintenance.</p> <p>The material placed between the pipes and laterals shall be sufficiently permeable to allow the transport of fluids to the drainage pipe.</p> <p>The slope of the interior sub-grade and of drainage lines and laterals shall be at least a two percent grade, i.e., two feet vertical drop per 100 horizontal feet.</p> <p>The piping collection system shall be comprised of solid and perforated pipe having a minimum diameter of four inches and a minimum wall thickness of schedule 80.</p> <p>The operator shall seal a solid sidewall riser pipe to convey collected fluids to a collection, observation and disposal system located outside the perimeter of the pit or pond.</p> <p>The operator may install alternative methods as approved by the division.</p>		<p>Volume I (pg. I-69); Pipe Loading Calculations, Volume III.5; Permit Plans</p>
144	<p>(10) The operator shall notify the division at least 72 hours prior to the primary liner's installation so that a division representative may inspect the leak detection system before it is covered.</p>	<p>Permit Condition, not ACD. Note if included in application.</p>	<p>Volume I (pg. I-69); Liner CQA Plan, Volume II.7 (pg. II.7-1)</p>
145	<p>(11) The operator shall construct pits and ponds in a manner that prevents overtopping due to wave action or rainfall, and maintain a three foot freeboard at all times.</p>		<p>Volume I (pg. I-70); Evaporation Pond Calculations, Volume III.8; Wave Action Calculations, Volume III.9</p>
146	<p>(12) The maximum size of an evaporation or storage pond shall not exceed 10 acre-feet.</p>	<p>19.15.36.8.C(5) technical data and design drawings</p>	<p>Volume I (pg. I-70); Evaporation Pond Calculations, Volume III.8; Wave Action Calculations, Volume III.9</p>
147	<p>36.17C. Operating standards.</p>	<p>19.15.36.8.C(7) inspection and maintenance plan Permit Condition, not ACD. Note if included in application.</p>	<p>Volume I (pg. I-70); Operations, Inspection, and Maintenance Plan, Volume II.1; Oil Field Waste Management Plan, Volume II.2</p>
148	<p>(1) The operator shall ensure that only produced fluids or non-hazardous waste are discharged into or stored in a pit or pond; and that no measurable or visible oil layer is allowed to accumulate or remain anywhere on a pit's surface except an approved skimmer pit.</p>	<p>19.15.36.8.C(7) inspection and maintenance plan</p>	<p>Volume I (pg. I-70); Operations, Inspection, and Maintenance Plan, Volume II.1; Oil Field Waste Management Plan, Volume II.2</p>
149	<p>(2) The operator shall monitor leak detection systems pursuant to the approved surface waste management facility permit conditions, maintain monitoring records in a form readily accessible for division inspection and report discovery of liquids in the leak detection system to the division within 24 hours.</p>		<p>Volume I (pg. I-70); Operations, Inspection, and Maintenance Plan, Volume II.1;</p>
150	<p>(3) Fencing and netting. The operator shall fence or enclose pits or ponds to prevent unauthorized access and maintain fences in good repair. Fences are not required if there is an adequate perimeter fence surrounding the surface waste management facility. The operator shall screen, net, cover or otherwise render non-hazardous to migratory birds tanks exceeding eight feet in diameter and exposed pits and ponds. Upon written application, the division may grant an exception to screening, netting or covering requirements upon the operator's showing that an alternative method will adequately protect migratory birds or that the tank or pit is not hazardous to migratory birds.</p>		<p>Volume I (pg. I-70); Operations, Inspection, and Maintenance Plan, Volume II.1; Migratory Bird Protection Plan, Volume II.6; Permit Plans</p>

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151	(4) Spray systems: The division may approve spray systems to enhance natural evaporation. The operator shall submit engineering designs for spray systems to the division's environmental bureau for approval prior to installation. The operator shall ensure that spray evaporation systems are operated so that spray-borne suspended or dissolved solids remain within the perimeter of the pond's lined portion.	19.15.36.8.C(5) technical data and design drawings	Volume I (pg. I-71); Operations, Inspection, and Maintenance Plan, Volume II.1; Evaporation Pond Calculations, Volume III.8
152	(5) Skimmer Pits Or Tanks: The operator shall use skimmer pits or tanks to separate oil from produced water prior to water discharge into a pond. The operator shall install a trap device in connected ponds to prevent solids and oils from transferring from one pond to another unless approved in the surface waste management facility permit.	<i>Depending on the design, this may be an application requirement.</i> 19.15.36.8.C(6) waste management plan 19.15.36.8.C(5) technical data and design drawings	Volume I (pg. I-72); Operations, Inspection, and Maintenance Plan, Volume II.1
153	36.17D. Below-grade tanks and sumps.		Volume I (pg. I-72)
154	(1) Secondary containment and leak detection: The operator shall construct below-grade tanks with secondary containment and leak detection. The operator shall not allow below-grade tanks to overflow. The operator shall install only below-grade tanks of materials resistant to the tank's particular contents and to damage from sunlight.	19.15.36.8.C(5) technical data and design drawings	Volume I (pg. I-72)
155	(2) The operator shall test sumps' integrity annually , and shall promptly repair or replace a sump that does not demonstrate integrity. The operator may test sumps that can be removed from their emplacements by visual inspection. The operator shall test other sumps by appropriate mechanical means. The operator shall maintain records of sump inspection and testing and make such records available for division inspection.		Volume I (pg. I-72); Operations, Inspection, and Maintenance Plan, Volume II.1
156	E. Closure required. The operator shall properly close pits, ponds and below-grade tanks within six months after cessation of use.	19.15.36.8.C(9) closure and post-closure care plan	Volume I (pg. I-72); Closure/Post-closure Plan, Volume II.4
PART 6 19.15.36.18 NMAC - CLOSURE AND POST CLOSURE:			
157	36.18A. Surface waste management facility closure by operator.	19.15.36.8.C(9) closure and post-closure care plan	Volume I (pg. I-73); Closure/Post-closure Plan, Volume II.4
158	(1) The operator shall notify the division's environmental bureau at least 60 days prior to cessation of operations at the surface waste management facility and provide a proposed schedule for closure. Upon receipt of such notice and proposed schedule, the division shall review the current closure plan for adequacy and inspect the surface waste management facility.		Volume I (pg. I-73); Closure/Post-closure Plan, Volume II.4
159	(2) The division shall notify the operator within 60 days after the date of cessation of operations specified in the operator's closure notice of modifications of the closure plan and proposed schedule or additional requirements that it determines are necessary for the protection of fresh water, public health, safety or the environment.	<i>A(2) through A(5) are permit conditions or regulatory requirements, but not application requirements.</i>	Volume I (pg. I-73) Closure/Post-closure Plan, Volume II.4
160	(3) If the division does not notify the operator of additional closure requirements within 60 days as provided, the operator may proceed with closure in accordance with the approved closure plan; provided that the director may, for good cause, extend the time for the division's response for an additional period not to exceed 60 days by written notice to the operator.		Volume I (pg. I-73) Closure/Post-closure Plan, Volume II.4
161	(4) The operator shall be entitled to a hearing concerning a modification or additional requirement the division seeks to impose if it files an application for a hearing within 10 days after receipt of written notice of the proposed modifications or additional requirements.		Volume I (pg. I-73) Closure/Post-closure Plan, Volume II.4
162	(5) Closure shall proceed in accordance with the approved closure plan and schedule and modifications or additional requirements the division imposes. During closure operations the operator shall maintain the surface waste management facility to protect fresh water, public health, safety and the environment.		Volume I (pg. I-73) Closure/Post-closure Plan, Volume II.4

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OWL Landfill Services, LLC Surface Waste Management Facility

No.	Permit Application Requirements	OCD Comments	Location in Application
163	<p>(6) Re-vegetate: Upon completion of closure, the operator shall re-vegetate the site unless the division has approved an alternative site use plan as provided in Subsection G of 19.15.36.18 NMAC. Re-vegetation, except for landfill cells, shall consist of establishment of a vegetative cover equal to 70 percent of the native perennial vegetative cover (un-impacted by overgrazing, fire or other intrusion damaging to native vegetation) or scientifically documented ecological description consisting of at least three native plant species, including at least one grass, but not including noxious weeds, and maintenance of that cover through two successive growing seasons.</p>		<p>Volume I (pg. I-74); Closure/Post-closure Plan, Volume II.4</p>
164	<p>36.18D. Surface waste management facility and cell closure and post closure standards. The following minimum standards shall apply to closure and post closure of the installations indicated, whether the entire surface waste management facility is being closed or only a part of the surface waste management facility.</p>		<p>Volume I (pg. I-77); Closure/Post-closure Plan, Volume II.4</p>
165	<p>(1) Oil treating plant closure. The operator shall ensure that: (a) tanks and equipment used for oil treatment are cleaned and oil field waste is disposed of at a division-approved surface waste management facility (the operator shall reuse, recycle or remove tanks and equipment from the site within 90 days of closure); (b) the site is sampled, in accordance with the procedures specified in chapter nine of EPA publication SW-846, test methods for evaluating solid waste, physical/chemical methods, for TPH, BTEX, major cations and anions and RCRA metals, in accordance with a gridded plat of the site containing at least four equal sections that the division has approved; and (c) sample results are submitted to the environmental bureau in the division's Santa Fe office.</p>		<p>Volume I (pg. I-77); Closure/Post-closure Plan, Volume II.4</p>
166	<p>(2) Landfill cell closure. (a) The operator shall properly close landfill cells, covering the cell with a top cover pursuant to Paragraph (8) of Subsection C of 19.15.36.14 NMAC, with soil contoured to promote drainage of precipitation; side slopes shall not exceed a 25 percent grade (four feet horizontal to one foot vertical), such that the final cover of the landfill's top portion has a gradient of two percent to five percent, and the slopes are sufficient to prevent the ponding of water and erosion of the cover material. (b) The operator shall re-vegetate the area overlying the cell with native grass covering at least 70 percent of the landfill cover and surrounding areas, consisting of at least two grasses and not including noxious weeds or deep rooted shrubs or trees, and maintain that cover through the post closure period.</p>		<p>Volume I (pg. I-77); Closure/Post-closure Plan, Volume II.4 Permit Plans</p>
167	<p>(3) Landfill post closure. Following landfill closure, the post closure care period for a landfill shall be 30 years. (a) A post closure care and monitoring plan shall include maintenance of cover integrity, maintenance and operation of a leak detection system and leachate collection and removal system and operation of gas and ground water monitoring systems. (b) The operator or other responsible entity shall sample existing ground water monitoring wells annually and submit reports of monitoring performance and data collected within 45 days after the end of each calendar year. The operator shall report any exceedance of a ground water standard that it discovers during monitoring pursuant to 19.15.29 NMAC.</p>		<p>Volume I (pg. I-78); Closure/Post-closure Plan, Volume II.4 Permit Plans</p>

OCD Part 36 Checklist
OWL Landfill Services, LLC Surface Waste Management Facility

No.	Permit Application Requirements	OCD Comments	Location in Application
168	<p>(4) Landfarm closure. The operator shall ensure that:</p> <p>(a) disking and addition of bioremediation enhancing materials continues until soils within the cells are remediated to the standards provided in Subsection F of 19.15.36.15 NMAC, or as otherwise approved by the division;</p> <p>(b) soils remediated to the foregoing standards and left in place are re-vegetated in accordance with Paragraph (6) of Subsection A of 19.15.36.18 NMAC;</p> <p>(c) landfarmed soils that have not been or cannot be remediated to the standards in Subsection F of 19.15.36.15 NMAC are removed to a division-approved surface waste management facility and the landfarm remediation area is filled in with native soil and re-vegetated in accordance with Paragraph (6) of Subsection A of 19.15.36.18 NMAC;</p> <p>(d) if treated soils are removed, the cell is filled in with native soils and re-vegetated in accordance with Paragraph (6) of Subsection A of 19.15.36.18 NMAC;</p> <p>(e) berms are removed;</p> <p>(f) buildings, fences, roads and equipment are removed, the site cleaned-up and tests conducted on the soils for contamination;</p> <p>(g) annual reports of vadose zone and treatment zone sampling are submitted to the division's environmental bureau until the division has approved the surface waste management facility's final closure; and</p> <p>(h) for an operator who chooses to use the landfarm methods specified in Subsection H of 19.15.36.15 NMAC, that the soil has an ECs of less than or equal to 4.0 mmhos/cm (dS/m) and a SAR of less than or equal to 13.0.</p>		Not Applicable.
169	<p>36.18E. Pond and pit closure. The operator shall ensure that:</p>		Volume I (pg. I-79); Closure/Post-closure Plan, Volume II.4
170	<p>(1) liquids in the ponds or pits are removed and disposed of in a division-approved surface waste management facility;</p>		Volume I (pg. I-79); Closure/Post-closure Plan, Volume II.4
171	<p>(2) liners are disposed of in a division-approved surface waste management facility;</p>		Volume I (pg. I-79); Closure/Post-closure Plan, Volume II.4
172	<p>(3) equipment associated with the surface waste management facility is removed;</p>		Volume I (pg. I-79); Closure/Post-closure Plan, Volume II.4
173	<p>(4) the site is sampled, in accordance with the procedures specified in chapter nine of EPA publication SW-846, test methods for evaluating solid waste, physical/chemical methods for TPH, BTEX, metals and other inorganics listed in Subsections A and B of 20.6.2.3103 NMAC, in accordance with a gridded plat of the site containing at least four equal sections that the division has approved; and</p>		Volume I (pg. I-79); Closure/Post-closure Plan, Volume II.4
174	<p>(5) sample results are submitted to the environmental bureau in the division's Santa Fe office.</p>		Volume I (pg. I-79); Closure/Post-closure Plan, Volume II.4
175	<p>36.18F. Landfarm and pond and pit post closure. The post-closure care period for a landfarm or pond or pit shall be three years if the operator has achieved clean closure. During that period the operator or other responsible entity shall regularly inspect and maintain required re-vegetation. If there has been a release to the vadose zone or to ground water, then the operator shall comply with the applicable requirements of 19.15.30 NMAC and 19.15.29 NMAC.</p>		Volume I (pg. I-79); Closure/Post-closure Plan, Volume II.4

OCD Part 36 Checklist
 OWL Landfill Services, LLC Surface Waste Management Facility

No.	Permit Application Requirements	OCD Comments	Location in Application
176	<p>G. Alternatives to re-vegetation. If the landowner contemplates use of the land where a cell or surface waste management facility is located for purposes inconsistent with re-vegetation, the landowner may, with division approval, implement an alternative surface treatment appropriate for the contemplated use, provided that the alternative treatment will effectively prevent erosion. If the division approves an alternative to re-vegetation, it shall not release the portion of the operator's financial assurance reserved for post-closure until the landowner has obtained necessary regulatory approvals and begun implementation of such alternative use.</p>		Volume I (pg. I-79)

**APPLICATION FOR PERMIT
OWL LANDFILL SERVICES, LLC**

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<u>Section</u>	<u>Title</u>
1	Operations, Inspection, and Maintenance Plan
2	Oil Field Waste Management Plan
3	Hydrogen Sulfide (H ₂ S) Prevention and Contingency Plan
4	Closure/Post-Closure Plan
5	Contingency Plan
6	Migratory Bird Protection Plan
7	Liner Construction Quality Assurance (CQA) Plan
8	Leachate Management Plan
9	Vadose Zone Monitoring Plan

VOLUME III: ENGINEERING DESIGN AND CALCULATIONS

<u>Section</u>	<u>Title</u>
1	Engineering Design
2	Volumetrics Calculations
3	Drainage Calculations
4	HELP Model
5	Pipe Loading Calculations
6	Geosynthetic Application and Compatibility Documentation
7	Settlement Calculations
8	Evaporation Pond Calculations
9	Wave Action Calculations

VOLUME IV: SITING AND HYDROGEOLOGY

<u>Section</u>	<u>Title</u>
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2	Hydrogeology

**APPLICATION FOR PERMIT
OWL LANDFILL SERVICES, LLC**

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LIST OF PERMIT PLANS**

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3	Site Development Plan
4	Landfill Base Grading Plan
5	Landfill Final Grading Plan
6	Landfill Completion Drainage Plan
7	Unit I Intermediate Grading Plan
8	Landfill Cross-Sections
9	Engineering Details
10	Liner System and Cover Details
11	Leachate Collection System Details
12	Processing & Stabilization Area
13	Evaporation Ponds
14	Evaporation Pond Details
15	Tank Management Area Cross-Sections

**APPLICATION FOR PERMIT
OWL LANDFILL SERVICES, LLC**

**VOLUME I: PERMIT APPLICATION TEXT
PART 36: SURFACE WASTE MANAGEMENT FACILITIES**

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**APPLICATION FOR PERMIT
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**VOLUME I: PERMIT APPLICATION TEXT
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Attachment No.	Title
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I.B	FINANCIAL ASSURANCE
I.C	SURVEY PLAT (JOHN WEST SURVEYING COMPANY, 08/31/2015)

**APPLICATION FOR PERMIT
OWL LANDFILL SERVICES, LLC**

**VOLUME I: PERMIT APPLICATION TEXT
PART 36: SURFACE WASTE MANAGEMENT FACILITIES**

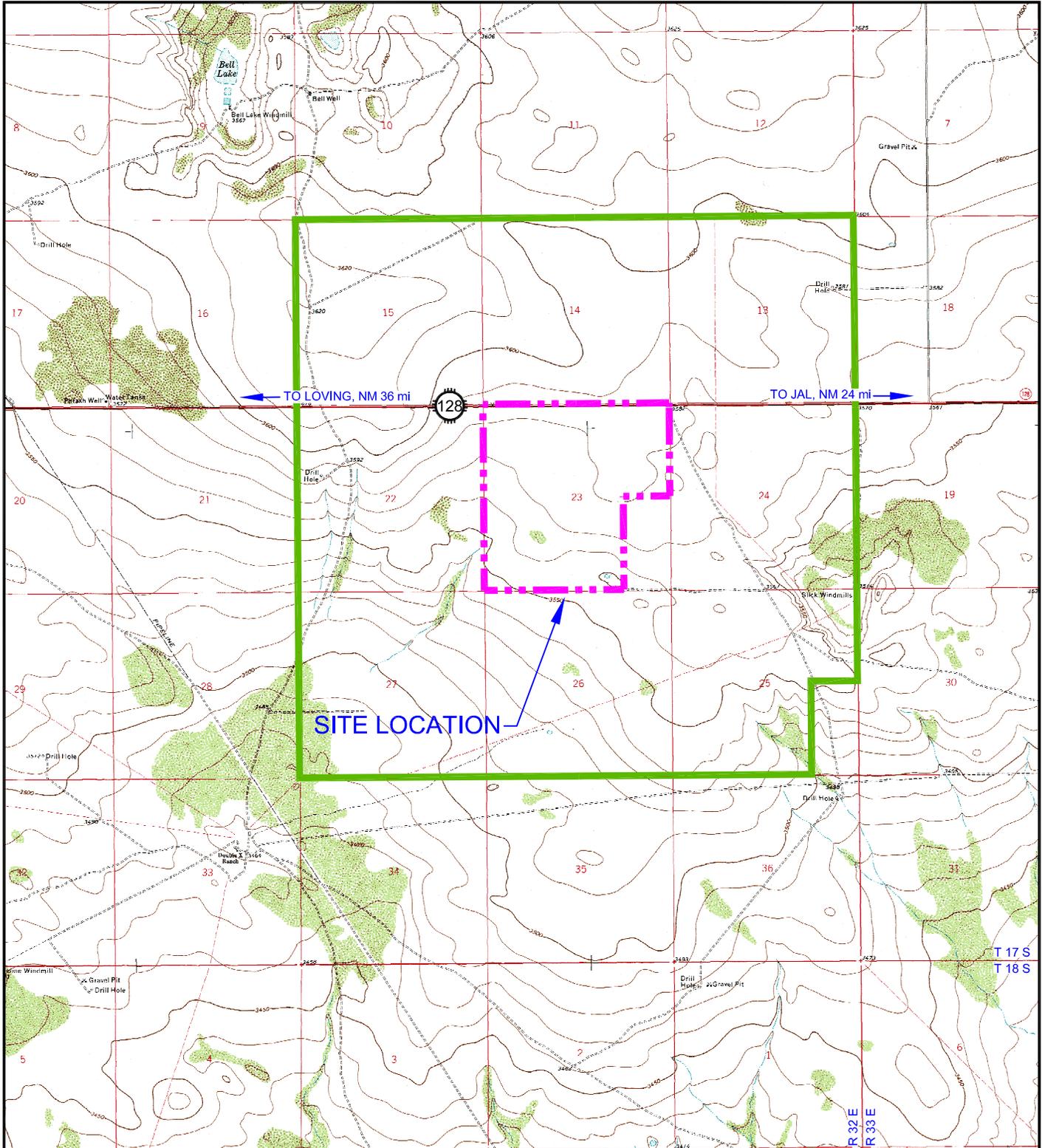
1.0 INTRODUCTION

OWL Landfill Services, LLC (OWL Facility) is a proposed Surface Waste Management Facility for oil field waste processing and disposal services. The proposed OWL Facility is subject to regulation under the New Mexico Oil and Gas Rules, specifically 19.15.36 NMAC, administered by the Oil Conservation Division (OCD). The Facility is designed in compliance with 19.15.36 NMAC, and will be constructed and operated in compliance with a Surface Waste Management Facility Permit issued by the OCD. The Facility is owned by, and will be constructed and operated by, OWL Landfill Services, LLC.

OWL Landfill Services, LLC herein submits this Application for Permit (Application) for the proposed OWL Facility. This Application has been developed in order to address the specific standards of 19.15.36 NMAC. As a Surface Waste Management Facility per 19.15.2.7.S.11 NMAC, OWL will meet the siting, design, and operating requirements of 19.15.36 NMAC, as detailed in this Application. More specifically, the proposed OWL Facility is a “*commercial facility*” as defined in Section 19.15.36.7.A(2) NMAC: “... *a surface waste management facility that is not a centralized facility*”, more specifically a landfill and a processing area.

1.1 Site Location

The OWL site is located approximately 22 miles northwest of Jal, adjacent to the south of NM 128 in Lea County, NM. The OWL site is comprised of a 560-acre ± tract of land located within a portion of Section 23, Township 24 South, Range 33 East, Lea County, NM (**Figure I.1.1**). Site access will be provided on the south side of NM 128. The coordinates for the approximate center of the OWL site are Latitude 32.203105577 and Longitude - 103.543122319 (surface coordinates).



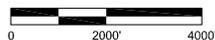
LEGEND

- - - - - SITE BOUNDARY
- 1 MILE OFFSET FROM SITE

NOTES:

- 1) SITE IS LOCATED WITHIN A PORTION OF SECTION 23, TOWNSHIP 24 SOUTH RANGE 23 EAST, LEA COUNTY, NEW MEXICO
- 2) MAP REFERENCE:
BELL LAKE, NM. 1973 USGS 7.5 MINUTE SERIES TOPOGRAPHIC MAP

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 Date/Time: Sep. 20, 2016-08:15:55 ; LAYOUT: A (P)
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SITE LOCATION MAP

OWL LANDFILL SERVICES, LLC
 LEA COUNTY, NEW MEXICO



Gordon Environmental, Inc.
 Consulting Engineers

213 S. Camino del Pueblo
 Bernalillo, New Mexico, USA
 Phone: 505-867-6990
 Fax: 505-867-6991

DATE: 09/20/2016

CAD: SITE LOCATION.dwg

PROJECT #: 560.01.02

DRAWN BY: DMI

REVIEWED BY: DRT

APPROVED BY: IKG

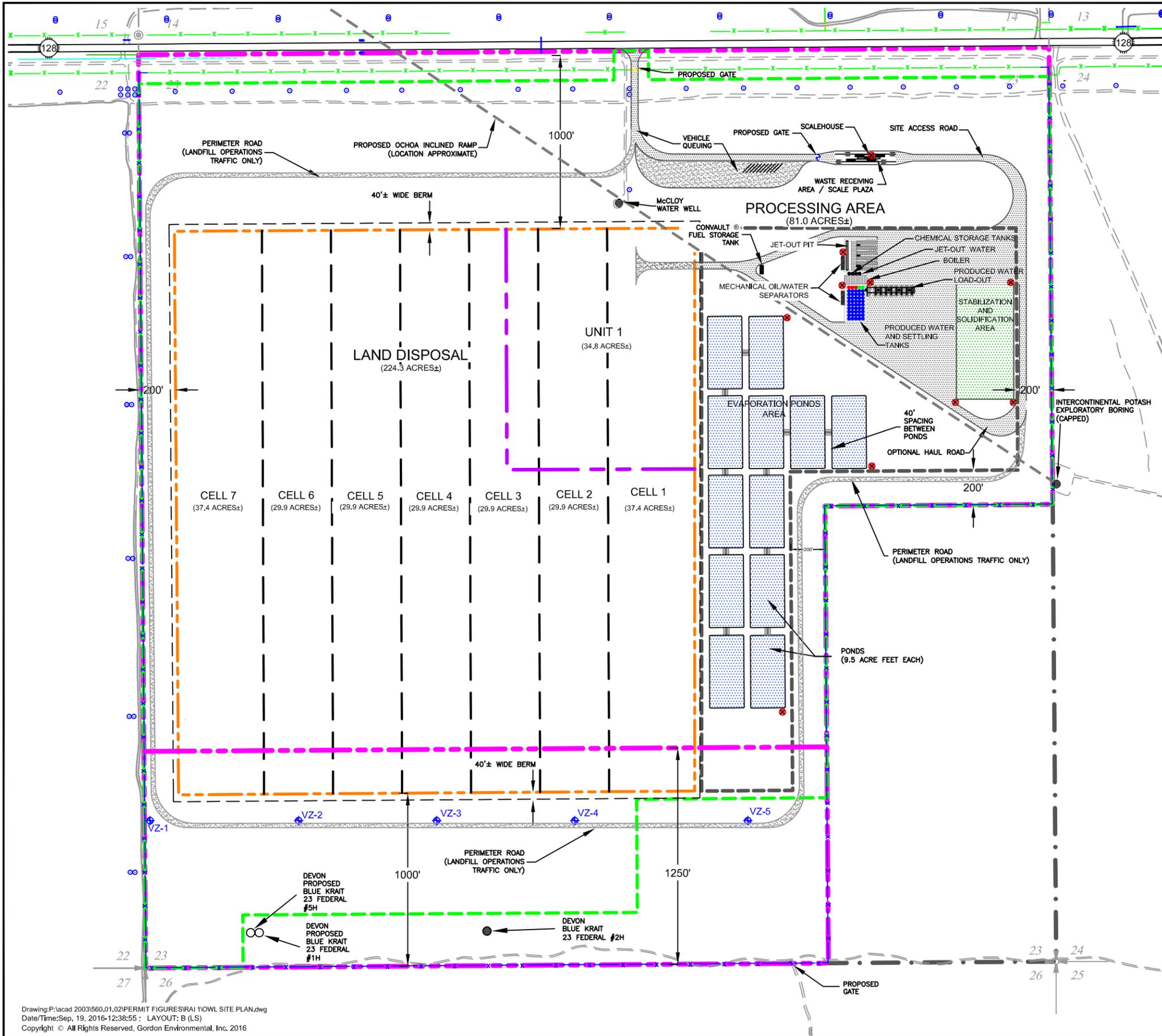
gei@gordonenvironmental.com

FIGURE I.1

1.2 Site Description

The OWL Facility comprises approximately 500 acres of the 560-acre site, and will include two main components: an oil field waste Processing Area and an oil field waste landfill, as well as related infrastructure. Oil field wastes are anticipated to be delivered to the OWL Facility from oil and gas exploration and production operations in southeastern NM and west Texas. The Site Plan provided as **Figure I.2** identifies the locations of the Processing Area and Land Disposal facilities and **Table I.1** provides a description of site acreages. Extensive perimeter setbacks are provided for surface water management and site access, as well as a buffer zone to adjacent properties. Setbacks to the Land Disposal footprint are established at 1,000 feet (ft) to the south to accommodate potential oil explorations and extraction activities; and 1,000 ft to the north to provide screening from Highway 128. The minimum setback to adjacent properties is 200 ft on the east and west perimeters.

The OWL surface waste management facility has been specifically designed to address potential aesthetic, environmental, and health and safety ramifications. These design features include a 20-foot perimeter screening berm on the north end of the facility constructed as part of initial operations to shield activities from public view (particularly along Highway 128) and inhibit dust, odors, diesel fumes, etc. Potential odors and environmental impacts are precluded by the wind direction. The wind blows from the southeast (see Wind Rose, **Figure III.7.2**) and land uses downwind of the OWL facility are limited to oil and gas exploration and cattle grazing. In addition overspray from the evaporators in the evaporation basins is contained by a lined downgradient berm that runs the length of the proposed basin configuration from north to south.



LEGEND	
	SITE BOUNDARY (559.5 ACRES±)
	FACILITY BOUNDARY (500.0 ACRES)
	DISPOSAL AREA (224.3 ACRES±)
	PROCESSING AREA (81.0 ACRES±)
	UNIT 1 BOUNDARY (34.8 ACRES±)
	CELL BOUNDARY
	EXISTING PAVED ROAD
	EXISTING UNPAVED ROAD
	EXISTING FENCE
	EXISTING POWER POLE
	EXISTING CULVERT
	PROPOSED 3-STRAND BARBED WIRE FENCE
	PROPOSED UNPAVED ROAD (GRAVEL)
	PROPOSED UNPAVED ROAD (SOIL)
	PROPOSED VADOSE ZONE MONITORING WELL
	PPE AND EMERGENCY EQUIPMENT



SITE PLAN

OWL LANDFILL SERVICES, LLC
LEA COUNTY, NEW MEXICO

		213 S. Camino del Pueblo Bernalillo, New Mexico, USA Phone: 505-867-6990 Fax: 505-867-6991
DATE: 09/16/2016	CAD: SITE PLAN.dwg	PROJECT #: 560.01.02
DRAWN BY: DMI	REVIEWED BY: DRT	FIGURE I.2
APPROVED BY: IKG	gei@gordonenvironmental.com	

Drawing: P:\acad 2003\560.01.02\PERMIT FIGURES\RA1 1\OWL SITE PLAN.dwg
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TABLE I.1
Site Acreages
OWL Landfill Services, LLC

Description	Acres (±)
OWL Site: Total Tract	560
Surface Waste Management Facility Boundary (Total)	500
Landfill: Disposal Footprint	224
Processing Area: Operations Footprint	81
Infrastructure	195

A Site Plan which identifies the layout of the proposed OWL Facility is provided as **Figure I.2**. Operations at the proposed OWL Facility will be constructed in phases over a period of several years, as dictated by demand. The estimated Facility operational rates are presented in **Table I.2**, and the phased development sequence is described in Section 1.3 and **Table I.4**.

TABLE I.2
Estimated Operational Rates^{1,2,3}
OWL Landfill Services, LLC

Average Daily Liquid Operational Rate	10,000 bbl/day
Maximum Daily Liquid Operational Rate	12,000 bbl/day
Average Daily Solid Waste Acceptance Rate	2,500 cy/day
Maximum Daily Solid Waste Acceptance Rate	5,000 cy/day
Liquid Receiving and Storage Capacity	949,400 bbl

Notes:

¹*Subject to change. The estimated operational rates are based on familiarity with local oil and gas industry operations; therefore this list may be modified in response to changes in waste streams, market conditions, technology, etc.*

²*bbl = barrels of oil*

³*cy = cubic yards*

The proposed OWL surface waste management facilities are listed in **Table I.3**, and identified on the Site Plan provided as **Figure I.2**.

TABLE I.3
Proposed Facilities¹
OWL Landfill Services, LLC

Description	No.
Oil field waste disposal landfill	1
Produced water load-out points	9
Produced water receiving tanks	12
Produced water settling tanks	48
Mechanical oil/water separation unit	4
Evaporation ponds	12
Stabilization and Solidification Area	1
Oil treatment plant	1
Crude oil recovery tanks	5
Oil sales tanks	5
Customer jet wash – bays	6

Note:

¹*Subject to change. The proposed facilities are based on projected waste types and volumes; therefore this list may be modified in response to changes in waste streams, market conditions, technology innovations, etc.*

The improvements identified in **Table I.3** are discussed in detail in this Application. In addition, various support facilities, may include: an office, scale(s), waste acceptance/security, maintenance building, roads, break room, emergency shower & eyewash station, and stormwater detention basins are proposed for the new Facility (see **Engineering Design, Volume III.1**).

1.3 Development Sequence

The development sequence for the OWL Facility is proposed to be conducted in four primary phases (**Table I.4**). This phased Processing Area sequence is estimated to take place over a period of approximately four years from the issuance of the Permit, depending on the demand for the services provided by the Facility. However, different combinations of these improvements may be constructed to any time. The phased development is projected as follows:

TABLE I.4
OWL Development Sequence¹
OWL Landfill Services, LLC

Description	Summary	Year No. ²
Phase I - Initial Landfill & Produced Water Processing Operation.		
<ul style="list-style-type: none"> • Initial Landfill Cell (13.5-acres) • Produced water load-out points (4) • Tank farm berm (complete) • Boiler (75 HP) running a heat transfer fluid tank farm • Produced Water Receiving Tanks (4), 1,000 bbl capacity³ • Settling Tanks (16), 1,000 bbl capacity • Crude Oil Recovery Tank (1), 1,000 bbl capacity • Oil Sale Tank (1), 1,000 bbl capacity • Mechanical Oil/Water Separation Unit • Ponds (4) capable of evaporating 4,000 bbl of liquid per day 	<p>The oil recovered from the Produced Water Processing Operations process is anticipated to be 6 bbl per day. This material will be pumped to the heated Crude Oil Recovery Tank for further processing before being pumped to the Oil Sale Tank.</p>	1
Phase II - Jet-Out Pit Operation.		
<ul style="list-style-type: none"> • Jet-Out Pit (six-station) for handling basic sediment and water (BS&W), tank bottoms, oily drilling muds and tank wash-outs • Additional crude oil recovery tank (1), 1,000 bbl capacity • Install 5-acre Stabilization and Solidification Area 	<p>The oil recovered from the top of the Jet-Out Pit will be pumped to a heated Crude Oil Recovery Tank installed in the Tank Farm. Oil recovered from the Produced Water Tanks will also be pumped to this tank. Water recovered from the Pit will be pumped to the Produced Water Receiving Tanks. Sediments from the Pit will be bucket-loaded out of the Pit and transferred to the Stabilization and Solidification Area for processing prior to landfilling.</p>	2
Phase III - Expanded Produced Water Processing Operation.		
<ul style="list-style-type: none"> • Produced water load-out points (4) • Additional Produced Water Receiving Tanks (4), 1,000 bbl capacity • Additional Settling Tanks (16), 1,000 bbl capacity • Additional Crude Oil Recovery Tanks (3), 1,000 bbl capacity • Additional Oil Sales Tanks (2), 1,000 bbl capacity • Additional (2) Mechanical Oil/Water Separation Units • Additional ponds (4) capable of evaporating an additional 4,000 bbl per day of liquid 	<p>The additional oil recovered from the expanded Produced Water Processing Operation process, anticipated to be 6 bbl per day (for a total of 12 bbls per day), will be pumped to the Crude Oil Recovery tanks for further processing.</p>	3
Phase VI - Ultimate Produced Water Processing Facility.		
<ul style="list-style-type: none"> • Additional Produced Water Receiving Tank (4), 1,000 bbl capacity • Additional Settling Tanks (16), 1,000 bbl capacity • Additional Oil Sales Tanks (1), 1,000 bbl capacity • Additional Mechanical Oil/Water Separation Unit • Additional ponds (4) capable of evaporating an additional 4,000 bbl per day of liquid 	<p>The additional oil recovered from the ultimate Produced Water Processing Facility will be pumped to the Crude Oil Recovery Tank for further processing.</p>	4

Notes:

¹The OWL site development sequence is subject to change. Different combinations of these improvements may be constructed at any time. OCD will be notified in advance of construction.

² Estimated number of years after OCD Surface Waste Management Facility Permit issued

³ bbl = barrels of oil

Phase I - Initial Landfill and Produced Water Processing Operation. This Phase will include an initial 34.8-acre cell (**Figure I.2**) of the Land Disposal Area where landfilling of materials will be conducted. This Phase will also include:

- The installation of four Produced Water Load-Out points
- The complete tank farm berm
- The 75 horsepower (HP) boiler circulating a heat transfer fluid to the four 1,000 barrel (bbl) heated Produced Water Receiving Tanks
- Sixteen 1,000 bbl Produced Water Settling Tanks
- A heated 1,000 bbl Crude Oil Recovery Tank
- A 1,000 bbl Oil Sale Tank
- A mechanical oil/water separation unit
- Four Evaporation Ponds with a capacity of 9.5 acre-feet each, capable of evaporating 4,000 bbl per day of liquid.
- The Stabilization and Solidification area

It is estimated that this Phase may be completed within approximately one year of permitting.

Phase II - Jet-Out Pit Operation. This Phase of the operation will include installation of the six-station Jet-Out Pit for managing bottom sediment and water (BS&W), Tank Bottoms, Oily Drilling Muds and Tank Wash-Outs. A heated 1,000 bbl Crude Oil Recovery Tank may also be installed in the Tank Farm. It is estimated that this Phase will be completed within approximately two years of permitting.

Phase III - Expanded Produced Water Processing Operation. This Phase will include the installation of an additional four Produced Water Load-Out points, four additional 1,000 bbl heated Produced Water Receiving Tanks, sixteen additional 1,000 bbl Produced Water Settling Tanks, three additional Crude Oil Recovery Tanks, an additional mechanical oil/water separator unit and four additional 9.5 acre-foot ponds capable of evaporating an additional 4,000 bbl per day of liquid. It is estimated that this Phase will be completed within approximately three years of permitting.

Phase IV- Ultimate Produced Water Processing Facility. This Phase will include the installation of two additional Produced Water Load-Out points, four additional 10,000 bbl heated Produced Water Receiving Tanks, sixteen additional 1,000 bbl Produced Water Settling Tanks, an additional mechanical oil/water separator unit, and four additional Evaporation Ponds capable of evaporating an additional 4,000 bbl per day of liquid. It is estimated that this Phase will be completed within approximately four years of permitting.

1.4 Permit Application Format

For ease of review and reference, this Application for Permit has been organized into a four-volume set, in the same order and format as the current Rules for Surface Waste Management Facilities (19.15.36 NMAC). OCD Form C-137 (*Application for Surface Waste Management Facilities*) is provided as a preface to this **Volume**. The Permit Application Text provided in **Volume I** addresses the applicable requirements of 19.15.36 NMAC, by restating each requirement (**in bold**) followed by the appropriate response (*in italics*).

The Facility Management Plans provided in **Volume II** address the development, operation and closure of storage tanks, evaporation ponds, solid waste landfill and supporting infrastructure (i.e., stormwater drainage). Design data and supporting calculations in accordance with the applicable sections of 19.15.36 NMAC are presented in **Volume III**. **Volume IV** of this Application provides the results of focused environmental site characterization studies and hydrogeological investigations for the entire 560 acre ± site.

In many cases, the technical response to a particular item is so sufficiently detailed or complex that a separate graphic, table, report, plan, or calculation has been prepared. The applicable technical documents in this Application are cross-referenced in the narrative responses to each of the individual regulatory requirements as delineated in **Volume I**. Each section of each volume also includes, as applicable:

- Table of Contents
- List of Figures
- List of Tables
- List of Attachments

The Table of Contents for the entire four-volume (I-IV) Application is also included in each volume in order to assist in cross-referencing, along with the List of **Permit Plans (Table I.5)**. The four-volume Application is provided in binders. Each binder is divided by tabs which identify the Volume and Section as referenced in the master Table of Contents. **Table I.6** is a “List of Acronyms and Definitions” pertinent to the terminology used in this Application.

TABLE I.5
List of Permit Plans
OWL Landfill Services, LLC

Sheet No.	Title
1.	Cover Sheet and Drawing Index
2.	Site Plan - Existing Conditions
3.	Site Development Plan
4.	Landfill Base Grading Plan
5.	Landfill Final Grading Plan
6.	Landfill Completion Drainage Plan
7.	Unit I Intermediate Grading Plan
8.	Landfill Cross-Sections
9.	Engineering Details
10.	Liner System and Cover Details
11.	Leachate Collection System Details
12.	Processing & Stabilization Area
13.	Evaporation Ponds
14.	Evaporation Pond Details
15.	Tank Management Area Cross-Sections

TABLE I.6
List of Acronyms and Definitions
OWL Landfill Services, LLC

<i>ASTM</i>	<i>American Society for Testing and Materials</i>
<i>BBL</i>	<i>Barrels; 42 gallons (oil)</i>
<i>BLM</i>	<i>Bureau of Land Management</i>
<i>BTEX</i>	<i>Benzene, Toluene, Ethylbenzene, and Xylenes</i>
<i>C/PC</i>	<p><i>Closure/Post-Closure:</i> C/PC refers to two independent steps following completion of facility operations:</p> <ul style="list-style-type: none"> • Closure typically refers to regrading the surface and repositioning of infrastructure to accommodate the post-closure. • Post-closure care refers to maintenance and monitoring after completion of closure.
<i>cm/sec</i>	<i>Centimeters per second</i>
<i>CQA</i>	<p><i>Construction Quality Assurance:</i> CQA is the process of applying field and laboratory testing, and construction observation to confirm that environmental control systems (e.g., liners and covers) are installed according to the design, regulatory requirements, and current industry standards.</p>
<i>FEMA</i>	<i>Federal Emergency Management Agency</i> , which administers the Flood Insurance Rate Map (FIRM) program.
<i>FML</i>	<p><i>Flexible Membrane Liner (or geomembrane):</i> Geosynthetic plastic liners are the standard design for the primary (upper) containment layer of the composite liner system, which in a RCRA Subtitle D (solid waste) Landfill is underlain by a compacted clay liner (CCL) or a geosynthetic clay liner (GCL).</p>
<i>GCL</i>	<p><i>Geosynthetic Clay Liner:</i> These are composite materials with geotextiles (fabrics) used in conjunction with dense bentonite clays, and are commonly used as the secondary lower liner in the landfill liner system.</p>
<i>HDPE</i>	<p><i>High Density Polyethylene:</i> This geomembrane (plastic) is the preferred material for FML landfill liners, and is typically installed in 60 – 100 mil thicknesses. HDPE is also used for leachate collection system piping and landfill gas management systems.</p>
<i>H₂S</i>	<i>Hydrogen Sulfide</i>

<i>LEL</i>	<i>Lower Explosive Limit</i> is the lowest percent by volume of a mixture of explosive gases in air that will propagate a flame at 77 degrees Fahrenheit and atmospheric pressure.
<i>mcf</i>	<i>Thousand Cubic Feet</i>
<i>mg/l</i>	<i>Milligrams Per Liter</i>
<i>NMAC</i>	<i>New Mexico Administrative Code</i>
<i>NMDOT</i>	<i>New Mexico Department of Transportation:</i> The NMDOT is committed to providing safe and reliable transportation systems to the state of New Mexico. NMDOT also works closely with other state agencies on transportation related issues.
<i>NMPM</i>	<i>New Mexico Principal Meridian</i>
<i>NOI</i>	<i>Notice of Intent:</i> Application to USEPA for stormwater discharges associated with industrial activity under the NPDES program. <i>Notice of Inspection:</i> The written record of a compliance inspection by a regulatory agency.
<i>NORM</i>	<i>Naturally Occurring Radioactive Material</i>
<i>NPDES</i>	<i>National Pollutant Discharge Elimination System:</i> The federal permit program which requires point sources discharging pollutants to waters of the United States to obtain a permit.
<i>NRCS</i>	<i>Natural Resources Conservation Service:</i> The federal agency with local offices that provide guidance on seeding of the final cover.
<i>OCD</i>	<i>Oil Conservation Division;</i> a division of the New Mexico Energy, Minerals, and Natural Resources Department
<i>OSE</i>	<i>Office of the State Engineer</i>
<i>OWL</i>	<i>OWL Landfill Services, LLC</i>
<i>PE</i>	<i>Professional Engineer</i>
<i>PSL</i>	<i>Protective Soil Layer:</i> Liners typically shall have a protective cover of at least two feet of granular soil. This protective cover shall, in addition to providing physical protection for the liner, facilitate the collection of leachate in the leachate collection system.
<i>PVC</i>	<i>Polyvinyl Chloride</i>

RAI	<i>Request for Additional Information;</i> typically issued by a regulatory agency to an Applicant in response to an Application.
RCRA	<i>Resource Conservation and Recovery Act;</i> the program administered by USEPA that sets national standards for solid waste management and disposal.
SLO	<i>State Land Office</i>
SWPPP	<i>Stormwater Pollution Prevention Plan:</i> Sites subject to the federal National Pollutant Discharge Elimination System (NPDES) regulations must prepare and implement a SWPPP. The Plan identifies potential pollutant sources and plans to mitigate/eliminate these sources.
TDS	<i>Total Dissolved Solids;</i> a measure of water quality
TPH	<i>Total Petroleum Hydrocarbons</i>
USEPA	<i>United States Environmental Protection Agency:</i> The federal entity responsible for administering the RCRA program. USEPA also sets national standards for air quality (NSPS) and stormwater quality (NPDES) protection.
USGS	<i>United State Geological Survey</i>
µm	<i>Micrometers</i>
UV	<i>Ultra-violet light;</i> one component of sunlight
WQCC	<i>Water Quality Control Commission (NMWQCC);</i> responsible for the protection of groundwater and surface water in New Mexico.

19.15.36.8 SURFACE WASTE MANAGEMENT FACILITY PERMITS AND APPLICATION REQUIREMENTS:

- A. Permit required. No person shall operate a surface waste management facility (other than a small landfarm registered pursuant to Paragraph (1) of Subsection A of 19.15.36.16 NMAC) except pursuant to and in accordance with the terms and conditions of a division-issued surface waste management facility permit.**

OWL proposes to operate a new Surface Waste Management Facility, pursuant to and in accordance with the terms and conditions of a Surface Waste Management Facility Permit issued by the Oil Conservation Division (OCD) of the New Mexico Energy, Minerals and Natural Resources Department.

- B. Permitting requirements. Except for small landfarms registered pursuant to Paragraph (1) of Subsection A of 19.15.36.16 NMAC, new commercial or centralized facilities prior to commencement of construction, and existing commercial or centralized facilities prior to modification or permit renewal, shall be permitted by the division in accordance with the applicable requirements of Subsection C of 19.15.36.8 NMAC and 19.15.36.11 NMAC.**

OWL is requesting a new commercial Surface Waste Management Facility Permit in accordance with the applicable requirements of 19.15.36.8.C NMAC and 19.15.36.11 NMAC. The purpose of this Application is to detail the Facility design, capacity, and operational practices in accordance with the Rules. For ease of regulatory review, this Application provides the information required in applicable sections of 19.15.36 NMAC as delineated in this Volume.

- C. Application requirements for new facilities, major modifications and permit renewals. An applicant or operator shall file an application, form C-137, for a permit for a new surface waste management facility, to modify an existing surface waste management facility or for permit renewal with the environmental bureau in the division's Santa Fe office. The application shall include:**
- (1) the names and addresses of the applicant and principal officers and owners of 25 percent or more of the applicant;**

The purpose of this Application is to request a Permit for a new surface waste management facility, and to document Facility design, capacity, and proposed operational activities. The completed form C-137, provided for informational purposes, is located as the preface to this Volume. The names and addresses of the Applicant and principal officers and owners of 25 percent or more of the Applicant are listed on C-137.

- (2) **a plat and topographic map showing the surface waste management facility's location in relation to governmental surveys (quarter-quarter section, township and range); highways or roads giving access to the surface waste management facility site; watercourses; fresh water sources, including wells and springs; and inhabited buildings within one mile of the site's perimeter;**

*A Site Location Map that shows the OWL Facility plotted on the most current United States Geological Survey (USGS) Quadrangle map is provided as **Figure I.1**. The Site Location Map shows the Facility and the surrounding area, and **Figure I.3** is a detailed Site Topograph. A more detailed discussion of site characteristics and land use is provided in **Volume IV.1** (Siting Criteria). A Survey Plat of the OWL site is provided as **Attachment I.C**, and the Permit Plans (**Volume III.1**) provide more detailed topographic data at the 2 ft contour level.*

- (3) **the names and addresses of the surface owners of the real property on which the surface waste management facility is sited and surface owners of the real property within one mile of the site's perimeter;**

The owner of the real property on which the Surface Waste Management Facility is sited is:

*OWL Landfill Services, LLC
8214 Westchester Drive, Suite 850
Dallas, TX 75225*

*OWL Landfill Services, LLC recently acquired the property for their use as a Surface Waste Management Facility. **Attachment I.A** (Public Notification) includes a list of the names and addresses of real surface owners of the real property within one mile of the site's perimeter based on the most recent data available from the Lea County Assessor's Office.*

- (4) **a description of the surface waste management facility with a diagram indicating the location of fences and cattle guards, and detailed construction/installation diagrams of pits, liners, dikes, piping, sprayers, tanks, roads, fences, gates, berms, pipelines crossing the surface waste management facility, buildings and chemical storage areas;**

*Volume III.1 (Engineering Design) includes a set of **Permit Plans** which are listed on **Table I.4**. The **Permit Plans, Sheet 3** (Site Development Plan) indicates the location of existing and proposed roads, pipeline crossings, fences and gates. The **Permit Plans, Sheet 10** provides construction and installation details on the landfill liner, and **Sheet 11** provides these details for the leachate collection system. Layout details for the processing area, which includes the produced water loadout tank farm, ponds, tanks, jet out pit and stabilization/solidification area is depicted on the **Permit Plans, Sheet 12** (Processing & Stabilization Area). The **Permit Plans, Sheets 13 and 14** (Evaporation Ponds) provides construction and installation details for the evaporation ponds including the mechanical evaporator locations. **Sheet 15** (Tank Management Area Cross-Sections) provides additional details on the construction and installation of the Jet-Out Facility.*

- (5) **engineering designs, certified by a registered professional engineer, including technical data on the design elements of each applicable treatment, remediation and disposal method and detailed designs of surface impoundments;**

*The **Permit Plans** included in **Volume III.1** are provided at a reduced scale and establish the engineering design criteria for the Facility. The same drawings are submitted to the OCD with this Application as a full-size (24 x 36-inch) plan set. The List of **Permit Plans** is provided with the master Table of Contents and included as **Table I.4**. These **Permit Plans**, and the Certification Statement that prefaces this volume, have been signed and sealed by a Professional Engineer registered in the State of New Mexico. That engineer, who is a specialist in geotechnical engineering and waste containment design, is identified as follows:*

*I. Keith Gordon, P.E.
New Mexico Professional Engineer #10984
Principal, Gordon Environmental, Inc.
213 South Camino del Pueblo
Bernalillo, NM 87004
(505) 867-6990 Phone
(505) 867-6991 Fax*

- (6) **a plan for management of approved oil field wastes that complies with the applicable requirements contained in 19.15.36.13 NMAC, 19.15.36.14 NMAC, 19.15.36.15 NMAC and 19.15.36.17 NMAC;**

The Oil Field Waste Management Plan included as Volume II.2 provides the applicable information required in 19.15.36.13.A through H, 19.15.36.14, 19.15.35.15, and 19.15.36.17 NMAC.

- (7) an inspection and maintenance plan that complies with the requirements contained in Subsection L of 19.15.36.13 NMAC;**

The Operations, Inspection, and Maintenance Plan included as Volume II.1 provides the applicable information required in 19.15.36.13.L.(1) and (3) and 19.15.9.711.B.(1).(g) NMAC.

- (8) a hydrogen sulfide prevention and contingency plan that complies with those provisions of 19.15.11 NMAC that apply to surface waste management facilities;**

The Hydrogen Sulfide Prevention and Contingency Plan included as Volume II.3 provides information to ensure that the regulatory thresholds in 19.15.11 NMAC are not exceeded. In addition, the Contingency Plan provided as Volume II.5 addresses the requirements of 19.15.36.13.N NMAC to respond to potential issues in order to minimize hazards to fresh water, public health, safety or the environment.

- (9) a closure and post closure plan, including a responsible third party contractor's cost estimate, sufficient to close the surface waste management facility in a manner that will protect fresh water, public health, safety and the environment (the closure and post closure plan shall comply with the requirements contained in Subsection D of 19.15.36.18 NMAC);**

The Closure/Post-closure (C/PC) Plan is provided as Volume II.4. The C/PC Plan addresses the information required in this section as well as 19.15.36.18.D NMAC; and provides the estimated third-party C/PC cost estimate (Attachment II.4.A) to address the requirements in this section.

- (10) a contingency plan that complies with the requirements of Subsection N of 19.15.36.13 NMAC and with NMSA 1978, Sections 12-12-1 through 12-12-30, as amended;**

A Contingency Plan prepared in compliance with 19.15.36.13.N NMAC and the NMSA 1978 as referenced, is provided as Volume II.5.

- (11) a plan to control run-on water onto the site and run-off water from the site that complies with the requirements of Subsection M of 19.15.36.13 NMAC;**

Volume III.1 provides the design for berms, conveyance channels, and detention ponds to control run-on/run-off during the peak discharge from a 25-year, 24-hour storm; and Volume III.3 provides the supporting calculations. If required after consultation with New Mexico Environment Department (NMED), OWL will obtain a permit under the Multi-Sector General Permit for Stormwater Discharges (promulgated June 4, 2015). OWL through adherence to the Operations, Inspection, and Maintenance Plan (Volume II.1) and construction of the detention structures described in this Application (Volume III.1), will prevent discharge of pollutants to the waters of the State or United States in compliance with state water quality standards.

- (12) in the case of an application to permit a new or expanded landfill, a leachate management plan that describes the anticipated amount of leachate that will be generated and the leachate's handling, storage, treatment and disposal, including final post closure options;**

The Leachate Management Plan included as Volume II.8 provides details including the anticipated volume of leachate that will be generated; and the leachate management, storage, treatment and disposal technologies that will be employed during operations and following closure. Leachate management details are also described in Volume II.1 as well as the Permit Plans.

- (13) in the case of an application to permit a new or expanded landfill, a gas safety management plan that complies with the requirements of Subsection O of 19.15.36.13 NMAC;**

In compliance with 19.15.36.13.O NMAC, landfill gas safety management is addressed in Section 6.6 of Volume II.1. The Hydrogen Sulfide (H₂S) Prevention and Contingency Plan is provided as Volume II.3.

- (14) a best management practice plan to ensure protection of fresh water, public health, safety and the environment;**

Best management practices to ensure the protection of fresh water, public health, safety, and the environment, are described in detail in the Operations, Inspection, and Maintenance Plan (Volume II.1) as well as on the Permit Plans.

(15) geological/hydrological data including:

The OWL site is located in a hydrogeologic setting that is ideally selected for waste processing and disposal. The absence of shallow groundwater (i.e., > 160 feet (ft) below ground surface) and the presence of a massive aquitard (i.e., the red bed formation consisting of the Chinle) minimize the potential for groundwater contamination. Regional and site-specific hydrogeologic data were compiled by Golder Associates (Golder) and are presented in Volume IV.2 (Hydrogeology). Gordon Environmental, Inc. (GEI) conducted an on-site hydrogeologic site investigation in November 2014. This investigation is described in Volume IV.2.

(a) a map showing names and location of streams, springs or other watercourses, and water wells within one mile of the site;

As described in Volume IV.2, the map provided as Figure IV.2.12 shows terrain, wells and drainages, for the region within a one mile radius of the OWL property. No perennial streams or springs are present within one mile of the proposed OWL site. One small local depression encompassing approximately 1.7 acres is present on the OWL tract. There are two water wells within one mile of the proposed OWL site. Locations of water wells in the vicinity of the OWL site are shown in Figure IV.2.12; a summary of vicinity wells is also included in Table IV.2.1.

(b) laboratory analyses, performed by an independent commercial laboratory, for major cations and anions; BTEX; RCRA metals; and TDS of ground water samples of the shallowest fresh water aquifer beneath the proposed site;

As described in Volume IV.2, a groundwater sample was collected from the on-site McCloy well (C3662-1), completed in the Santa Rosa Sandstone aquifer at a depth of approximately 393 ft below ground surface at the OWL site on May 13, 2015. Laboratory analyses for analytes set forth in 19.15.36.8.C.15(b) are described in detail in Volume IV.2. Analytical

*data from this test is included in **Table IV.2.2a** and **Table IV.2.2.b**, along with summary data from other nearby wells tested in April 2013 (Intera, 2013). Copies of laboratory reports for tests listed in **Table IV.2.2a** and **Table IV.2.2b** are included in **Attachment IV.2.E**.*

(c) depth to, formation name, type and thickness of the shallowest fresh water aquifer;

*The Santa Rosa Sandstone is considered to be the shallowest fresh water aquifer in the vicinity of the OWL site with water-bearing zones at a depth of approximately 500 ft below ground surface. A detailed description of this aquifer, including depth and thickness, is provided in **Volume IV.2**.*

(d) soil types beneath the proposed surface waste management facility, including a lithologic description of soil and rock members from ground surface down to the top of the shallowest fresh water aquifer;

*A summary of the soil data obtained during GEI's site investigations is provided in **Table IV.2.4**. This table summarizes the standard engineering index properties (i.e., USCS soil classification; grain size distribution; natural dry density, Atterberg limits; and gravimetric moisture content) for selected soil samples obtained during the drilling program at OWL. **Table IV.2.4** also summarizes lab test results for Standard Proctor density and permeability. The soils laboratory testing was conducted in accordance with guidance provided by OCD and industry standards. The site geology is described in detail in **Volume IV.2** including lithologic descriptions of the soil borings installed at the site.*

(e) geologic cross-sections;

*As detailed in **Volume IV.2**, a hydrogeologic cross section depicting stratigraphy and geometry of the Santa Rosa Sandstone and its potentiometric surface is included in **Figure IV.2.10**.*

- (f) **potentiometric maps for the shallowest fresh water aquifer; and**

As described in Volume IV.2, a potentiometric surface map was prepared using water level data from vicinity wells that penetrate water-bearing zones in the Triassic bedrock section and is included in Figure IV.2.9.

- (g) **porosity, permeability, conductivity, compaction ratios and swelling characteristics for the sediments on which the contaminated soils will be placed;**

A detailed description of porosity, permeability, conductivity, compaction ratios, and swelling characteristics is provided in Volume IV.2. The calculated porosities and permeabilities are summarized in Table IV.2.4. Table IV.2.4 also summarizes the standard proctor densities and optimum moistures; and summarizes the swell/collapse characteristics of the onsite soils.

- (16) **certification by the applicant that information submitted in the application is true, accurate and complete to the best of the applicant's knowledge, after reasonable inquiry; and**

The certification is located in the preface to this Volume of the Application (i.e., Form C-137), and the "Certification of Application".

- (17) **other information that the division may require to demonstrate that the surface waste management facility's operation will not adversely impact fresh water, public health, safety or the environment and that the surface waste management facility will comply with division rules and orders.**

OWL will provide other applicable information reasonably requested by the OCD in order to demonstrate that the surface waste management facility's operation will not adversely impact fresh water, public health, safety or the environment. In addition, OWL will comply with applicable Rules and Orders issued by OCD.

- D. Application requirements for minor modifications. An existing surface waste management facility applying for a minor modification shall file a form C-137 with the environmental bureau in the division's Santa Fe office describing the proposed change and identifying information that has changed from its last C-137 filing.**

At this time, OWL is not seeking a minor modification. OWL will comply with this requirement when applicable.

- E. Determination that an application is administratively complete. Upon receipt of an application for a surface waste management facility permit or modification or renewal of an existing surface waste management facility permit, the division shall review the application for administrative completeness. To be deemed administratively complete, the application shall provide information required by Subsection C or D (as applicable) of 19.15.36.8 NMAC. The division shall notify the applicant in writing when it deems the application administratively complete. If the division determines that the application is not administratively complete, the division shall notify the applicant of the deficiencies in writing within 30 days after the application's receipt and state what additional information is necessary.**

No response required.

19.15.36.9 NOTICE REQUIREMENTS FOR NEW SURFACE WASTE MANAGEMENT FACILITIES, MAJOR MODIFICATIONS OR RENEWALS AND ISSUANCE OF A TENTATIVE DECISION:

- A. Upon receipt of notification of the division's determination that the application is administratively complete, the applicant for a new surface waste management facility permit, permit renewal or major modification shall give written notice of the application, by certified mail, return receipt requested, to the surface owners of record within one-half mile of the surface waste management facility, the county commission of the county where the surface waste management facility site is located, the appropriate city officials if the surface waste management facility site is within city limits or within one-half mile of the city limits, and affected federal, tribal or pueblo governmental agencies. The notice shall contain the information in Paragraphs (1) through (4) of Subsection F of 19.15.36.9 NMAC. The division may extend the distance requirements for notice if the division determines that the proposed surface waste management facility has the potential to adversely impact fresh water, public health, safety or the environment at a distance greater than one-half mile. The applicant shall furnish proof that it has given the required notices.**

Draft Public Notification language is provided in Attachment I.A. The Draft Public Notification was prepared in accordance with 19.15.36.9.F(1) through (4) NMAC. Following OCD approval, Public Notification will be provided in compliance with 19.15.36.9.A NMAC, to the surface owners of record located within one-half mile of the

Facility. Owners of record, as determined by the Lea County Assessor's Office, are listed in **Attachment I.A**, and include the State Land Office (SLO) and Bureau of Land Management (BLM). Additionally, the Public Notification will be provided to the Lea County Commission. The Facility is not located within one-half mile of any city limit, and no additional federal, tribal or pueblo governmental agencies are affected.

- B. The division shall distribute notice of its determination that an application for a new surface waste management facility or for a renewal or major modification of an existing surface waste management facility is administratively complete to persons who have requested notification of division and commission hearing dockets within 30 days following the date that the division determines the application to be administratively complete.**

No response required.

- C. A person wishing to comment on an application prior to the division's preliminary consideration of the application may file comments within 30 days, or as extended by the director, after the later of the date when the applicant mails the notice required by Subsection A of 19.15.36.9 NMAC or the date when the division distributes the notice provided in Subsection B of 19.5.36.9 NMAC.**

No response required

- D. Within 60 days after the end of the public comment period provided in Subsection C of 19.15.36.9 NMAC, the division shall issue a tentative decision concerning the application, renewal or modification, including proposed conditions for approval or reasons for disapproval, as applicable. The division shall mail notice of the tentative decision, together with a copy of the decision, by certified mail, return receipt requested, to the applicant and shall post notice on the division's website, together with a copy of the tentative decision.**

No response required

- E. Within 30 days after receiving the division's tentative decision, the applicant shall provide notice of the tentative decision by:**
- (1) publishing a display ad in English and Spanish, in a form approved by the division, in a newspaper of general circulation in this state and in a newspaper of general circulation in the county where the surface waste management facility is or will be located; the display ad shall be at least three inches by four inches and shall not be published in the newspaper's legal or classified sections;**

- (2) mailing notice by first class mail or e-mail to persons, as identified to the applicant by the division, who have requested notification of applications generally, or of the particular application, including persons who have filed comments on the particular application during the initial public comment period, and who have included in such comments a legible return address or e-mail address; and
- (3) mailing notice by first class or e-mail to affected local, state, federal or tribal governmental agencies, as determined and identified to the applicant by the division.

OWL will, upon receiving OCD's tentative decision, comply with the notification requirements identified in 19.15.39.9.E NMAC. It is proposed that the display ad be published in the Albuquerque Journal and the Hobbs News-Sun, both of which are newspapers in general circulation in the State of New Mexico and Lea County.

F. This notice issued pursuant to Subsection E of 19.15.36.9 NMAC shall include:

- (1) the applicant's name and address;
- (2) the surface waste management facility's location, including a street address if available, and sufficient information to locate the surface waste management facility with reference to surrounding roads and landmarks;
- (3) a brief description of the proposed surface waste management facility;
- (4) the depth to, and TDS concentration of, the ground water in the shallowest aquifer beneath the surface waste management facility site;
- (5) a statement that the division's tentative decision is available on the division's website, or, upon request, from the division clerk, including the division clerk's name, address and telephone number;
- (6) a description of alternatives, exceptions or waivers that may be under consideration in accordance with Subsection G of 19.15.36.18 NMAC or 19.15.36.19 NMAC;
- (7) a statement of the comment period and of the procedures for requesting a hearing on the application; and
- (8) a brief statement of the procedures the division shall follow in making a final decision.

OWL will, upon receiving OCD's tentative decision, issue Public Notification in compliance with this section.

19.15.36.10 COMMENTS AND HEARING ON APPLICATION:

- A. A person, whether or not such person has previously submitted comments, may file comments or request a hearing on the application by filing their comments or, in accordance with 19.15.4.9 NMAC, a hearing request with the division clerk within 30 days after the date that the applicant issued public notice of the

division's tentative decision. A request for a hearing shall be in writing and shall state specifically the reasons why a hearing should be held. The division shall schedule a public hearing on the application if, in addition to the requirements in 19.15.4.9 NMAC:

- (1) the division has proposed to deny the application or grant it subject to conditions not expressly required by rule, and the applicant requests a hearing;
 - (2) the director determines that there is significant public interest in the application;
 - (3) the director determines that comments have raised objections that have probable technical merit; or
 - (4) determination of the application requires that the division make a finding, pursuant to Paragraph (3) of Subsection F of 19.15.2.7 NMAC, whether a water source has a present or reasonably foreseeable beneficial use that contamination would impair.
- B. If the division schedules a hearing on an application, the hearing shall be conducted according to 19.15.14.1206 through 19.15.14.1215 NMAC.

No response required.

19.15.36.11 FINANCIAL ASSURANCE REQUIREMENTS:

- A. **Centralized facilities.** Upon notification by the division that it has approved a permit but prior to the division issuing the permit, an applicant for a new centralized facility permit shall submit acceptable financial assurance in the amount of \$25,000 per centralized facility, or a statewide "blanket" financial assurance in the amount of \$50,000 to cover all of that applicant's centralized facilities, unless such applicant has previously posted a blanket financial assurance for centralized facilities.

No response required, as OWL is a proposed "Commercial Facility" per 19.15.36.7.A(2) NMAC.

- B. **New commercial facilities or major modifications of existing commercial facilities.** Upon notification by the division that it has approved a permit for a new commercial facility or a major modification of an existing commercial facility but prior to the division issuing the permit, the applicant shall submit acceptable financial assurance in the amount of the commercial facility's estimated closure and post closure cost, or \$25,000, whichever is greater. The commercial facility's estimated closure and post closure cost shall be the amount provided in the closure plan the applicant submitted unless the division determines that such estimate does not reflect a reasonable and probable closure and post closure cost, in which event, the division shall determine the estimated closure and post closure cost and shall include such determination in its tentative

decision. If the applicant disagrees with the division's determination of estimated closure and post closure cost, the applicant may request a hearing as provided in 19.15.36.10 NMAC. If the applicant so requests, and no other person files a request for a hearing regarding the application, the hearing shall be limited to determination of estimated closure and post closure cost.

Once OCD has approved the OWL Application for Permit, OWL will submit financial assurance for \$1,906,974, as detailed in the C/PC Cost Estimate Tables provided as Attachment II.4.A. The C/PC Cost Estimate will be reviewed prior to issuance of the Permit, and also prior to each new Phase of site development (see Table I.4). This amount represents the closure costs and post closure care requirements that will be required for Phase I of the development.

- C. Terms of financial assurance. The financial assurance shall be on division-prescribed forms, payable to the state of New Mexico and conditioned upon the surface waste management facility's proper operation, site closure and post closure monitoring in compliance with state of New Mexico statutes, division rules and the surface waste management facility permit terms. The applicant shall notify the division of a material change affecting the financial assurance within 30 days of discovery of such change.**

OWL will comply with this requirement.

- D. Forfeiture of financial assurance. The division shall give the operator 20 days notice and an opportunity for a hearing prior to forfeiting financial assurance.**

No response required.

- E. Forms of financial assurance. The division may accept the following forms of financial assurance.**
- (1) Surety bonds. A surety bond shall be executed by the applicant and by a corporate surety licensed to do business in the state, and shall be non-cancelable.**
 - (2) Letters of credit. A letter of credit shall be issued by a bank organized or authorized to do commercial banking business in the United States, shall be irrevocable for a term of not less than five years and shall provide for automatic renewal for successive, like terms upon expiration, unless the issuer has notified the division in writing of non-renewal at least 90 days before its expiration date. The letter of credit shall be payable to the state of New Mexico in part or in full upon receipt from the director or the director's authorized representative of demand for payment accompanied by a notice of forfeiture.**

- (3) **Cash accounts.** An applicant may provide financial assurance in the form of a federally insured or equivalently protected cash account or accounts in a financial institution, provided that the operator and the financial institution shall execute as to each such account a collateral assignment of the account to the division, which shall provide that only the division may authorize withdrawals from the account. In the event of forfeiture pursuant to Subsection C of 19.15.36.18 NMAC, the division may, at any time and from time to time, direct payment of all or part of the balance of such account (excluding interest accrued on the account) to itself or its designee for the surface waste management facility's closure.

Once the Permit is approved and prior to issuance, OWL will elect a financial assurance mechanism pursuant to 19.15.36.11.E NMAC. Documentation will be included in Attachment I.B following OCD approval of the Application for Permit. The amount of the mechanism will represent the closure costs and post-closure care requirements that will be required for Phase I of the development, as identified in the C/PC Cost Estimate Summary provided as Attachment II.4.A. The C/PC Cost Estimate will be reviewed prior to issuance of the Permit, and also prior to each new Phase of site development (see Table I.4).

F. Replacement of financial assurance.

- (1) **The division may allow an operator to replace existing forms of financial assurance with other forms of financial assurance that provide equivalent coverage.**
- (2) **The division shall not release existing financial assurance until the operator has submitted, and the division has approved, an acceptable replacement.**

OWL will comply with this requirement.

G. Review of adequacy of financial assurance. The division may at any time not less than five years after initial acceptance of financial assurance for a commercial facility, or whenever the operator applies for a major modification of the commercial facility's permit, initiate a review of such financial assurance's adequacy. Additionally, whenever the division determines that a landfarm operator has not achieved the closure standards specified in Paragraph (3) of Subsection G of 19.15.36.15 NMAC, the division may review the adequacy of the landfarm operator's financial assurance, without regard to the date of its last review. Upon determination, after notice to the operator and an opportunity for a hearing, that the financial assurance is not adequate to cover the reasonable and probable cost of a commercial facility's closure and post closure monitoring, the division may require the operator to furnish additional financial assurance sufficient to cover such reasonable and probable cost, provided that the financial

assurance required of a commercial facility permitted prior to the effective date of 19.15.36 NMAC shall not exceed \$250,000 except in the event of a major modification of the commercial facility. If such a commercial facility applies for a major modification, the division shall determine the applicable financial assurance requirement based on the total estimated closure and post closure cost of the commercial facility as modified, without regard to the \$250,000 limit.

OWL will comply with this requirement.

19.15.36.12 PERMIT APPROVAL, DENIAL, REVOCATION, SUSPENSION, MODIFICATION OR TRANSFER:

A. Granting of permit.

- (1) The division may issue a permit for an new surface waste management facility or major modification upon finding that an acceptable application has been filed, that the conditions of 19.15.36.9 NMAC and 19.15.36.11 NMAC have been met and that the surface waste management facility or modification can be constructed and operated in compliance with applicable statutes and rules and without endangering fresh water, public health, safety or the environment.**

OWL will comply with the public notice requirements of 19.15.36.9 NMAC and the financial assurance requirements of 19.15.36.11 NMAC, as necessary to achieve Permit approval. Attachment I.A includes the current list of property owners within one-half mile of the Facility, which will be updated prior to formal notice. Following OCD review and approval of the Application, OWL will distribute the public notice in accordance with 19.15.36.9 NMAC. Attachment I.B provides the proposed C/PC Cost Estimate that will be the basis for the financial assurance mechanism to be put into place in accordance with 19.15.36.11 NMAC upon approval of the Permit. This Application provides the required plans and engineering calculations to construct and operate the Facility in compliance with applicable statutes and Rules that ensure fresh water, public health, safety, or the environment will be protected.

- (2) Each permit the division issues for a new surface waste management facility shall remain in effect for 10 years from the date of its issuance. If the division grants a permit for a major modification of a surface waste management facility, the permit for that surface waste management facility shall remain in effect for 10 years from the date the division approves the major modification.**

This Application requests a Permit in accordance with 19.15.36.8 NMAC. A new Application for Permit Renewal will be submittal to OCD at least 120 days prior to the expiration of the Permit granted in response to this Application (i.e., 10 years).

- (a) **A surface waste management facility permit may be renewed for successive 10-year terms. If the holder of a surface waste management facility permit submits an application for permit renewal at least 120 days before the surface waste management facility permit expires, and the operator is not in violation of the surface waste management facility permit on the date of its expiration, then the existing surface waste management facility permit for the same activity shall not expire until the division has approved or denied an application for renewal. If the division has not notified the operator of a violation, if the operator is diligently pursuing procedures to contest a violation or if the operator and the division have signed an agreed compliance order providing for remedying the violation, then the surface waste management facility permit shall continue in effect as above provided notwithstanding the surface waste management facility permit violation's existence. A surface waste management facility permit continued under this provision remains fully effective and enforceable.**

This Application requests a Permit in accordance with 19.15.36.8 NMAC.

- (b) **An application for permit renewal shall include and adequately address the information necessary for evaluation of a new surface waste management facility permit as provided in Subsection C of 19.15.36.8 NMAC. Previously submitted materials may be included by reference provided they are current, readily available to the division and sufficiently identified so that the division may retrieve them.**

This Application requests a Permit in accordance with 19.15.36.8 NMAC.

- (c) **The operator shall give public notice of the renewal application in the manner prescribed by 19.15.36.9 NMAC. The division shall grant an application for renewal if the division finds that an acceptable application has been filed, that the conditions of 19.15.36.9 NMAC and 19.15.36.11 NMAC have been met and that the surface waste management facility can be operated in compliance with applicable statutes and rules and without endangering fresh water, public health, safety or the environment.**

OWL will continue to comply with the public notice requirements of 19.15.36.9 NMAC and the financial assurance requirements of 19.15.36.11 NMAC, as necessary to achieve Permit renewal. This Application provides the required plans and engineering calculations to construct and operate the Facility in compliance with applicable statutes and Rules that ensure fresh water, public health, safety, and the environment will be protected.

- (3) The division shall review each surface waste management facility permit at least once during the 10-year term, and shall review surface waste management facility permits to which Paragraph (2) of Subsection A of 19.15.36.12 NMAC does not apply at least every five years. The review shall address the operation, compliance history, financial assurance and technical requirements for the surface waste management facility. The division, after notice to the operator and an opportunity for a hearing, may require appropriate modifications of the surface waste management facility permit, including modifications necessary to make the surface waste management facility permit terms and conditions consistent with statutes, rules or judicial decisions.**

OWL will make available all necessary operational, compliance, financial assurance and other technical documents to OCD at any time during the 10 year permit period for the completion of a mid-term review. OWL will respond to OCD requests for updates to address changes in regulatory standards.

- B. Denial of permit. The division may deny an application for a surface waste management facility permit or modification of a surface waste management facility permit if it finds that the proposed surface waste management facility or modification may be detrimental to fresh water, public health, safety or the environment. The division may also deny an application for a surface waste management facility permit if the applicant, an owner of 25 percent or greater interest in the applicant or an affiliate of the applicant has a history of failure to comply with division rules and orders or state or federal environmental laws; is subject to a division or commission order, issued after notice and hearing, finding such entity to be in violation of an order requiring corrective action; or has a penalty assessment for violation of division or commission rules or orders that is unpaid more than 70 days after issuance of the order assessing the penalty. An affiliate of an applicant, for purposes of Subsection B of 19.15.36.12 NMAC, shall be a person who controls, is controlled by or under is common control with the applicant or a 25 percent or greater owner of the applicant.**

No response required.

- C. Additional requirements.** The division may impose conditions or requirements, in addition to the operational requirements set forth in 19.15.36 NMAC, that it determines are necessary and proper for the protection of fresh water, public health, safety or the environment. The division shall incorporate such additional conditions or requirements into the surface waste management facility permit.

OWL will comply with any reasonable additional requirements or conditions imposed by OCD intended to protect fresh water, public health, safety or the environment, and comply with any applicable permit conditions.

- D. Revocation, suspension or modification of a permit.** The division may revoke, suspend or impose additional operating conditions or limitations on a surface waste management facility permit at any time, for good cause, after notice to the operator and an opportunity for a hearing. The division may suspend a surface waste management facility permit or impose additional conditions or limitations in an emergency to forestall an imminent threat to fresh water, public health, safety or the environment, subject to the provisions of NMSA 1978, Section 70-2-23, as amended. If the division initiates a major modification it shall provide notice in accordance with 19.15.36.9 NMAC. Suspension of a surface waste management facility permit may be for a fixed period of time or until the operator remedies the violation or potential violation. If the division suspends a surface waste management facility's permit, the surface waste management facility shall not accept oil field waste during the suspension period.

No response required.

- E. Transfer of a permit.** The operator shall not transfer a permit without the division's prior written approval. A request for transfer of a permit shall identify officers, directors and owners of 25 percent or greater in the transferee. Unless the director otherwise orders, public notice or hearing are not required for the transfer request's approval. If the division denies the transfer request, it shall notify the operator and the proposed transferee of the denial by certified mail, return receipt requested, and either the operator or the proposed transferee may request a hearing with 10 days after receipt of the notice. Until the division approves the transfer and the required financial assurance is in place, the division shall not release the transferor's financial assurance.

OWL will comply with this requirement.

19.15.36.13 SITING AND OPERATIONAL REQUIREMENTS APPLICABLE TO ALL PERMITTED SURFACE WASTE MANAGEMENT FACILITIES: EXCEPT AS OTHERWISE PROVIDED IN 19.15.36 NMAC.

Siting documentation is detailed in Volume IV.1 to demonstrate that the operation of the Facility will protect public health and the environment. This section confirms the remote location, absence of any residential housing within over one mile of the Facility boundary, and absence of churches, schools, parks or other unrelated business in the area. With open pasture and oil field production facilities surrounding the OWL Facility, the location is ideally suited for development as a surface waste management facility.

A. Depth to ground water.

- (1) No landfill shall be located where ground water is less than 100 feet below the lowest elevation of the design depth at which the operator will place oil field waste.**

Groundwater is demonstrated to be more than 100 ft below the lowest elevation of the design depth of the landfill where oil field waste will be placed. Extensive detail is provided in Volume IV.1 (Siting) and in Volume IV.2 (Hydrogeology).

- (2) No landfarm that accepts soil or drill cuttings with a chloride concentration that exceeds 500 mg/kg shall be located where ground water is less than 100 feet below the lowest elevation at which the operator will place oil field waste. See Subsection A of 19.15.36.15 NMAC for oil field waste acceptance criteria.**

Not Applicable. OWL does not propose to operate a landfarm permitted under 19.15.36.15 NMAC.

- (3) No landfarm that accepts soil or drill cuttings with a chloride concentration that is 500 mg/kg or less shall be located where ground water is less than 50 feet below the lowest elevation at which the operator will place oil field waste.**

Not Applicable. OWL does not propose to operate a landfarm permitted under 19.15.36.15 NMAC.

- (4) **No small landfarm shall be located where ground water is less than 50 feet below the lowest elevation at which the operator will place oil field waste.**

Not Applicable.

- (5) **No other surface waste management facility shall be located where ground water is less than 50 feet below the lowest elevation at which the operator will place oil field waste.**

*Groundwater is not located less than 50 ft below the lowest elevation of the processing area where oil field waste will be placed. Extensive detail is provided in **Volume IV.1** (Siting) and in **Volume IV.2** (Hydrogeology).*

B. No surface waste management facility shall be located:

- (1) **within 200 feet of a watercourse, lakebed, sinkhole or playa lake;**

*The Facility is **not located within 200 feet of a watercourse, lakebed, sinkhole or playa lake.** Documentation regarding the locations of watercourses, lakebeds, sinkholes and playa lakes with respect to the OWL site is provided in **Volume IV.1**, including on-site reconnaissance by qualified experts.*

- (2) **within an existing wellhead protection area or 100-year floodplain;**

*The Facility is **not located within an existing wellhead protection area or 100-year floodplain.** Documentation regarding wellhead protection areas and 100-year floodplains is provided in **Volume IV.1**.*

- (3) **within, or within 500 feet of, a wetland;**

*The Facility is **not located within 500 ft of a wetland.** Documentation regarding wetlands in the vicinity of the OWL site is provided in **Volume IV.1**.*

- (4) **within the area overlying a subsurface mine;**

*The Facility is **not located in an area overlying an existing subsurface mine, although a portion of the infrastructure for the proposed Ochoa Mine, an inclined ramp, may traverse a portion of the OWL Processing Area.** Documentation of mines, mills, and quarries is*

provided in Volume IV.1, along with a discussion of the impacts of the proposed Ochoa Mine Project.

- (5) within 500 feet from the nearest permanent residence, school, hospital, institution or church in existence at the time of initial application; or**

The Facility is not located within 500 ft of the nearest permanent residence, school, hospital, institution, or church. Land use setback documentation is provided in Volume IV.1.

- (6) within an unstable area, unless the operator demonstrates that engineering measures have been incorporated into the surface waste management facility design to ensure that the surface waste management facility's integrity will not be compromised.**

As documented in Volume IV.1, the OWL Facility is not located in an unstable area.

C. No surface waste management facility shall exceed 500 acres.

Although the total acreage for the OWL site is 560 acres ±, the OWL Facility does not exceed 500 acres within the footprint. The OWL Facility will include two main components; a liquid oil field waste Processing Area (81 acres ±), and an oil field waste Landfill (224 acres ±); as well as other site infrastructure (roads, drainage, etc.). A copy of the Survey Plat for the OWL site is provided in Attachment I.C, and Table I.1 provides details regarding site facilities and acreages.

D. The operator shall not accept oil field wastes transported by motor vehicle at the surface waste management facility unless the transporter has a form C-133, authorization to move liquid waste, approved by the division.

OWL will comply with this requirement. The Oil Field Waste Management Plan provided as Volume II.2 requires that, prior to acceptance of any liquid waste, the transporter must provide the Facility with a Division-approved Form C-133.

E. The operator shall not place oil field waste containing free liquids in a landfill or landfarm cell. The operator shall use the paint filter test, as prescribed by the EPA (EPA SW-846, method 9095) to determine conformance of the oil field waste to this criterion.

OWL will comply with this requirement. The Oil Field Waste Management Plan (Volume II.2) requires that, prior to acceptance of any oil field waste in the landfill portion of the Facility, the material will pass the paint filter test. Solidification, if necessary, will be accomplished in the Mixing/Solidification Area located in the lined stabilization and solidification area and described in Operation, Inspection, and Maintenance Plan (Volume II.1) and detailed in the Permit Plans (Volume III.1).

- F. Surface waste management facilities shall accept only exempt or non-hazardous waste, except as provided in Paragraph (3) of Subsection F of 19.15.36.13 NMAC. The operator shall not accept hazardous waste at a surface waste management facility. The operator shall not accept wastes containing NORM at a surface waste management facility except as provided in 19.15.35 NMAC. The operator shall require the following documentation for accepting oil field wastes, and both the operator and the generator shall maintain and make the documentation available for division inspection.**

OWL will comply with this requirement. The Oil Field Waste Management Plan (Volume II.2) provides a detailed description of oil field waste acceptance protocol. Included in this Plan are Form C-138 certification, certification frequency; and naturally occurring radioactive materials (NORM) acceptance requirements. OWL will maintain and make documentation of this available for OCD inspection.

- (1) Exempt oil field wastes. The operator shall require a certification on form C-138, signed by the generator or the generator's authorized agent, that represents and warrants that the oil field wastes are generated from oil and gas exploration and production operations, are exempt waste and are not mixed with non-exempt waste. The operator shall have the option to accept such certifications on a monthly, weekly or per load basis. The operator shall maintain and shall make the certificates available for the division's inspection.**

OWL will comply with this requirement. The Oil Field Waste Management Plan (Volume II.2) provides a detailed description of oil field waste acceptance protocol. Included in this Plan is the Form C-138 certification and additional documentation that the oil field waste is Resource Conservation and Recovery Act (RCRA) exempt.

- (2) **Non-exempt, non-hazardous, oil field wastes.** The operator shall require a form C-138, oil field waste document, signed by the generator or its authorized agent. This form shall be accompanied by acceptable documentation to determine that the oil field waste is nonhazardous.

OWL will comply with this requirement. The Oil Field Waste Management Plan (Volume II.2) provides a detailed description of oil field waste acceptance protocol. Included in this Plan is the Form C-138 certification and additional documentation that any non-exempt oil field waste is non-hazardous.

- (3) **Emergency non-oil field wastes.** The operator may accept non-hazardous, non-oil field wastes in an emergency if ordered by the department of public safety. The operator shall complete a form C-138, oil field waste document, describing the waste, and maintain the same, accompanied by the department of public safety order, subject to division inspection.

OWL will comply with this requirement, including completion of Form C-138.

- G. The operator of a commercial facility shall maintain records reflecting the generator, the location of origin, the location of disposal within the commercial facility, the volume and type of oil field waste, the date of disposal and the hauling company for each load or category of oil field waste accepted at the commercial facility. The operator shall maintain such records for a period of not less than five years after the commercial facility's closure, subject to division inspection.**

OWL will comply with this requirement. The Oil Field Waste Management Plan (Volume II.2) provides a detailed description of oil field waste acceptance recordkeeping forms. The forms in this Plan include the information required in this subsection and will be maintained and retained for a period of not less than five years following Facility closure. OWL will make these records available for OCD inspection upon request.

- H. Disposal at a commercial facility shall occur only when an attendant is on duty unless loads can be monitored or otherwise isolated for inspection before disposal. The surface waste management facility shall be secured to prevent unauthorized disposal.**

Disposal operations at OWL will only be conducted when an attendant is on duty. OWL plans to conduct Facility operations 24 hours a day, 7 days a week if market conditions warrant. The Facility will be secured with barbed wire fencing, cattle guards, and locking gates to prevent any unauthorized access or disposal when an attendant is not on duty. A vehicle with an acceptable load of oil field waste that may arrive while the OWL Facility is closed may park in a designated area outside the fence until a qualified inspection can take place upon the arrival of an attendant. In this case, the temporarily parked load will be inspected for any leakage and will be required to have any valves or access ports secured and locked to prevent spillage or tampering.

- I. To protect migratory birds, tanks exceeding eight feet in diameter, and exposed pits and ponds shall be screened, netted or covered. Upon the operator's written application, the division may grant an exception to screening, netting or covering upon the operator's showing that an alternative method will protect migratory birds or that the surface waste management facility is not hazardous to migratory birds. Surface waste management facilities shall be fenced in a manner approved by the division.**

*OWL herein requests an exception to 19.15.36.13.I NMAC. The Migratory Bird Protection Plan presented as **Volume II.6** describes an alternate methodology to the screening requirement of the storage ponds. This Plan describes visual inspections and migratory bird retrieval and clean-up procedures should bird(s) require decontamination. In addition, the Engineering Design (**Volume III.1**) provides a process design for produced waters and other liquids that will remove the oils present in these materials prior to discharge through the evaporation ponds. Solid oil field wastes to be disposed of in the landfill are not an attractant to water fowl.*

- J. Surface waste management facilities shall have a sign, readable from a distance of 50 feet and containing the operator's name; surface waste management facility permit or order number; surface waste management facility location by unit letter, section, township and range; and emergency telephone numbers.**

*A template for the proposed Site Entrance Sign is provided as **Figure I.4**. The sign is designed in compliance with the requirements of 19.15.36.13.J NMAC. A 4-ft by 8-ft sign with 3-inch lettering will identify the Facility operator as OWL, and will include the Facility permit number, location and emergency phone numbers.*

OWL LANDFILL SERVICES, LLC

SURFACE WASTE MANAGEMENT FACILITY
 OIL CONSERVATION DIVISION PERMIT NO. NM-_____
 SECTION 23, TOWNSHIP 24 SOUTH RANGE 33 EAST

HOURS OF OPERATION: 24 HOURS PER DAY - 7 DAYS PER WEEK

SITE RESTRICTIONS:

- NO Hazardous Waste
- NO Scavenging
- NO Smoking
- NO Fires
- NO Disposal When Attendant not on Duty
- NO Trespassing – Authorized Personnel Only
- NO Children or Animals

FOLLOW SITE RULES:

- Check-in at Scalehouse
- OBEY Posted Speed Limits
- OBEY Signs and Traffic Barriers
- OBEY Instructions by Site Staff
- Loads Subject to Inspection
- Unload Only as Directed
- Untarped Loads May Be Penalized

EMERGENCY CONTACT (24 HOURS): 575.XXX.XXX OR 911
 OCD: 575.393.6161 OCD EMERGENCY LINE: 575.370.3186

Handwritten signature

Handwritten signature

SITE ENTRANCE SIGN (TYPICAL)

OWL LANDFILL SERVICES, LLC
 LEA COUNTY, NEW MEXICO



Gordon Environmental, Inc.
 Consulting Engineers

213 S. Camino del Pueblo
 Bernalillo, New Mexico, USA
 Phone: 505-867-6990
 Fax: 505-867-6991

DATE: 08/29/2016	CAD: ENTRANCE SIGN.dwg	PROJECT #: 560.01.02
DRAWN BY: DMI	REVIEWED BY: DRT	FIGURE I.4
APPROVED BY: IKG	gei@gordonenvironmental.com	

- K. The operators shall comply with the spill reporting and corrective action provisions of 19.15.30 NMAC or 19.15.29 NMAC.**

The OWL Facility is specifically designed to prevent pollutants from entering surface and groundwater, as demonstrated through the Facility Management Plans (Volume II), the Engineering Design and Calculations (Volume III), and the Permit Plans (Volume III.1) presented in this Application. Successful implementation of the engineering design and operational programs will ensure compliance with 19.15.30 NMAC. The OWL Contingency Plan (Volume II.5) is designed to comply with the notification and corrective action as required in 19.15.29 NMAC.

- L. Each operator shall have an inspection and maintenance plan that includes the following:**

- (1) monthly inspection of leak detection sumps including sampling if fluids are present with analyses of fluid samples furnished to the division; and maintenance of records of inspection dates, the inspector and the leak detection system's status;**
- (2) semi-annual inspection and sampling of monitoring wells as required, with analyses of ground water furnished to the division; and maintenance of records of inspection dates, the inspector and ground water monitoring wells' status; and**
- (3) inspections of the berms and the outside walls of pond levees quarterly and after a major rainfall or windstorm, and maintenance of berms in such a manner as to prevent erosion.**

The Operations, Inspection, and Maintenance Plan for the OWL Facility is provided as Volume II.1. The Plan describes in detail the methods and frequency for inspections, sampling, recordkeeping, and maintenance for the leak detection sumps, and containment berms.

- M. Each operator shall have a plan to control run-on water onto the site and run-off water from the site, such that:**

- (1) the run-on and run-off control system shall prevent flow onto the surface waste management facility's active portion during the peak discharge from a 25-year storm; and**
- (2) run-off from the surface waste management facility's active portion shall not be allowed to discharge a pollutant to the waters of the state or United States that violates state water quality standards.**

Volume III (Engineering Design and Calculations) provides the design for berms, conveyance channels, and detention capacity to control run-on/run-off for at least the peak discharge from a 25-year 24-hour storm. OWL will prevent discharge of pollutants to the waters of the State or United States in compliance with state water quality standards through adherence to the Operations, Inspection, and Maintenance Plan (Volume II.1), and future construction of the detention ponds described in this Application. If required after consultation with New Mexico Environment Department (NMED), OWL will obtain a permit under the Multi-Sector General Permit for Stormwater Discharges (promulgated June 4, 2015).

- N. Contingency plan. Each operator shall have a contingency plan. The operator shall provide the division's environmental bureau with a copy of an amendment to the contingency plan, including amendments required by Paragraph (8) of Subsection N of 19.15.36.13 NMAC; and promptly notify the division's environmental bureau of changes in the emergency coordinator or in the emergency coordinator's contact information. The contingency plan shall be designed to minimize hazards to fresh water, public health, safety or the environment from fires, explosions or an unplanned sudden or non-sudden release of contaminants or oil field waste to air, soil, surface water or ground water. The operator shall carry out the plan's provisions immediately whenever there is a fire, explosion or release of contaminants or oil field waste constituents that could threaten fresh water, public health, safety or the environment; provided that the emergency coordinator may deviate from the plan as necessary in an emergency situation. The contingency plan for emergencies shall:**
- (1) describe the actions surface waste management facility personnel shall take in response to fires, explosions or releases to air, soil, surface water or ground water of contaminants or oil field waste containing constituents that could threaten fresh water, public health, safety or the environment;**
 - (2) describe arrangements with local police departments, fire departments, hospitals, contractors and state and local emergency response teams to coordinate emergency services;**
 - (3) list the emergency coordinator's name; address; and office, home and mobile phone numbers (where more than one person is listed, one shall be named as the primary emergency coordinator);**
 - (4) include a list, which shall be kept current, of emergency equipment at the surface waste management facility, such as fire extinguishing systems, spill control equipment, communications and alarm systems and decontamination equipment, containing a physical description of each item on the list and a brief outline of its capabilities;**
 - (5) include an evacuation plan for surface waste management facility personnel that describes signals to be used to begin evacuation,**

- evacuation routes and alternate evacuation routes in cases where fire or releases of wastes could block the primary routes;
- (6) include an evaluation of expected contaminants, expected media contaminated and procedures for investigation, containment and correction or remediation;
 - (7) list where copies of the contingency plan will be kept, which shall include the surface waste management facility; local police departments, fire departments and hospitals; and state and local emergency response teams;
 - (8) indicate when the contingency plan will be amended, which shall be within five working days whenever:
 - (a) the surface waste management facility permit is revised or modified;
 - (b) the plan fails in an emergency;
 - (c) the surface waste management facility changes design, construction, operation, maintenance or other circumstances in a way that increases the potential for fires, explosions or releases of oil field waste constituents that could threaten fresh water, public health, safety or the environment or change the response necessary in an emergency;
 - (d) the list of emergency coordinators or their contact information changes; or
 - (e) the list of emergency equipment changes;
 - (9) describe how the emergency coordinator or the coordinator's designee, whenever there is an imminent or actual emergency situation, will immediately:
 - (a) activate internal surface waste management facility alarms or communication systems, where applicable, to notify surface waste management facility personnel; and
 - (b) notify appropriate state and local agencies with designated response roles if their assistance is needed;
 - (10) describe how the emergency coordinator, whenever there is a release, fire or explosion, will immediately identify the character, exact source, amount and extent of released materials (the emergency coordinator may do this by observation or review of surface waste management facility records or manifests, and, if necessary, by chemical analysis) and describe how the emergency coordinator will concurrently assess possible hazards to fresh water, public health, safety or the environment that may result from the release, fire or explosion (this assessment shall consider both the direct and indirect hazard of the release, fire or explosion);
 - (11) describe how, if the surface waste management facility stops operations in response to fire, explosion or release, the emergency coordinator will monitor for leaks, pressure buildup, gas generation or rupture in valves, pipes or the equipment, wherever this is appropriate;
 - (12) describe how the emergency coordinator, immediately after an emergency, will provide for treating, storing or disposing of recovered oil

- field waste, or other material that results from a release, fire or explosion at a surface waste management facility;
- (13) describe how the emergency coordinator will ensure that no oil field waste, which may be incompatible with the released material, is treated, stored or disposed of until cleanup procedures are complete; and
 - (14) provide that the emergency coordinator may amend the plan during an emergency as necessary to protect fresh water, public health, safety or the environment.

The Contingency Plan included as Volume II.5 provides detailed information in response to each required element of 19.15.36.13.N.1 through 14 NMAC.

- O. **Gas safety management plan. Each operator of a surface waste management facility that includes a landfill shall have a gas safety management plan that describes in detail procedures and methods that will be used to prevent landfill-generated gases from interfering or conflicting with the landfill's operation and protect fresh water, public health, safety and the environment. The plan shall address anticipated amounts and types of gases that may be generated, an air monitoring plan that includes the vadose zone and measuring, sampling, analyzing, handling, control and processing methods. The plan shall also include final post closure monitoring and control options.**

OWL does not believe that this Section applies to the proposed Facility. Landfill Gas (LFG) is typically produced when there is a significant supply of readily putrescible organic material, moisture; and a lack of oxygen in the fill. Oil field wastes do not contain significant amounts of putrescible wastes and will not provide a suitable environment for LFG production. Typical oil field wastes will not generate significant quantities of LFG, nor the requisite pressure to promote migration. Conventional LFG monitoring and control systems would not be necessary or effective; and the waste matrix itself would inhibit migration or collection if it contained primarily soils and <5% degradable organics.

However, a gas monitoring program consisting of testing incoming vehicles during unloading will be utilized to ensure that hydrogen sulfide (H₂S) gas concentrations do not exceed 10 parts per million (ppm) on-site or at the property boundary. Areas around the landfill disposal cells, treating plant, liquid solidification, and evaporation ponds will utilize monitors that issues a visual and audible signal at 10 ppm H₂S to ensure compliance with regulatory alert levels. Routine gas monitoring of the proposed vadose zone monitoring wells will also be conducted. Monitoring points may be added or replaced as necessary.

Gas safety management details are presented in Volume II.1, Volume II.5, and the H2S Prevention and Contingency Plan (Volume II.3).

- P. Training program.** Each operator shall conduct an annual training program for key personnel that includes general operations, permit conditions, emergencies proper sampling methods and identification of exempt and non-exempt waste and hazardous waste. The operator shall maintain records of such training, subject to division inspection, for five years.

OWL will comply with this requirement. The Operation, Inspection, and Maintenance Plan (Volume II.1) describes in detail the training programs for site personnel. Training records will be maintained by OWL for OCD inspection for a period of not less than five years.

19.15.36.14 SPECIFIC REQUIREMENTS APPLICABLE TO LANDFILLS:

A. General operating requirements.

- (1) The operator shall confine the landfill's working face to the smallest practical area and compact the oil field waste to the smallest practical volume. The operator shall not use equipment that may damage the integrity of the liner system in direct contact with a geosynthetic liner.**

OWL will follow accepted principles of landfill engineering for waste placement, compaction and covering methods. Operations will be conducted to maintain a confined working face so that it is sufficiently wide to provide for the safe unloading of trucks, but no greater than necessary. It is estimated that the typical thickness of each daily cell will be approximately 10 to 15 ft, with working slopes not greater than 2:1, and an unloading platform width of 50 to 100 ft. In order to compact the waste to the smallest practical volume, the lifts will be spread in layers approximately 2 ft thick and worked by a high ground-pressure bulldozer or equivalent. The Engineering Design (Volume III.1) and the Liner Construction Quality Assurance (CQA) Plan (Volume II.7) mandate a 2 ft thick protective soil layer over the geosynthetic liner. The Operations, Inspection, and Maintenance Plan (Volume II.1) addresses daily fill face activities in detail provided to protect the liners during operations.

- (2) The operator shall prevent unauthorized access by the public and entry by large animals to the landfill's active portion through the use of fences, gates, locks or other means that attain equivalent protection.**

The OWL Processing Area will be enclosed with barbed wire fencing, cattle guards, and locking gates, as will the OWL Landfill (Figure I.2). This will prevent unauthorized access by the public or entry by large animals (Engineering Design, Volume III.1).

(3) The operator shall prevent and extinguish fires.

OWL will provide adequate means to prevent and extinguish fires. Fire protection measures are described in detail in the Contingency Plan (Volume II.5). Measures to prevent and control fires are listed in Table I.7, which are augmented by focused employee training.

**TABLE I.7
Fire Prevention and Control
OWL Landfill Services, LLC**

1. Fire Prevention Measures

- *Routine cleaning of debris from equipment, particularly radiators.*
- *Random inspections of incoming loads at the Facility Scalehouse to prevent acceptance of waste that may present a fire threat.*
- *Training of equipment operators to identify suspect (“hot”) loads and measures for mitigation (e.g., covering smoldering waste with stockpiled soil).*
- *Coordination with local fire response professionals for input on fire prevention and control.*
- *Incompatible waste.*

2. Fire Control Procedures

- *The placement and maintenance of fire extinguishers in all mobile equipment and on-site structures.*
- *Locating cover material or borrow areas near the working face that can be used to smother fires.*
- *Ensuring water availability from the water truck and/or detention basins.*
- *Implementation of a site-wide communication network to optimize mobilization of appropriate response personnel and equipment.*
- *Employee training.*
- *Well established emergency contact and response procedures.*

(4) The operator shall control litter and odors.

As described in the Operations, Inspection, and Maintenance Plan (Volume II.1), OWL will be operated using proven disposal practices to minimize and control litter and odor. The waste stream will consist primarily of contaminated soils, which are not prone to wind-blown dispersion. The size of the actual working face will be minimized to facilitate compacting and covering the waste. Also, depending on wind direction and/or velocity, portable litter fences may be used to control blowing debris, in addition to the perimeter fencing; and most operations can be conducted below the grade of the perimeter berms as necessary.

Staff members will closely monitor the area adjacent to the working face for waste and litter. Litter will be removed and disposed of on a regular basis and within 24-hours if the waste has a potential for diversion or being transported by vectors. In order to control litter mitigate and potential odors, the active working face will typically be covered at the end of each operating day with at least 6 inches of daily cover, or an approved alternative daily cover material, when the solid waste contains significant amounts of waste prone to become windblown. The prevailing wind is from the south and southeast, and adjacent land uses to the north and northwest are open pasture/oil exploration.

*The OWL surface waste management facility has been specifically designed to address potential aesthetic, environmental, and health and safety ramifications. These design features include a 20-foot perimeter screening berm on the north end of the facility constructed as part of initial operations to shield activities from public view (particularly along Highway 128) and inhibit dust, odors, diesel fumes, etc. Potential odors and environmental impacts are precluded by the wind direction. The wind blows from the southeast (see Wind Rose, **Figure III.8.1**) and land uses downwind of the OWL facility are limited to oil and gas exploration and cattle grazing. In addition overspray from the evaporators in the evaporation basins is contained by a lined downgradient berm that runs the length of the proposed basin configuration from north to south.*

- (5) **The operator shall not excavate a closed cell or allow others to excavate a closed cell except as approved by the division.**

Excavation of permanently closed cells is not anticipated; however, if a permanently closed cell needs to be excavated, such excavation will be conducted only after prior approval has been obtained from OCD.

- (6) **The operator shall provide adequate cover for the landfill's active face as needed to control dust, debris, odors or other nuisances, or as otherwise required by the division.**

*Soil cover, or an approved alternate cover, will be applied to the active face as needed. Approximately 6,400,000 cy equivalent to 15% of the gross airspace, has been devoted to cover operations. In addition to the activities described in the response to 19.15.36.14.A(4) NMAC above regarding debris, odors, or other nuisances, OWL will implement dust control measures as outlined in **Table I.8**.*

TABLE I.8
Dust Control
OWL Landfill Services, LLC

A water truck will be available to apply water or approved recycled waters to the access roads and active areas within the Facility, as needed to reduce dust. In addition, the posted speed limit will be 15 mph inside the property. Listed below are routine operations that are the most likely sources of dust, along with recommended primary and secondary control measures:

- **Disposal Operations -**
 - Primary Control Measure: *Pave high-traffic areas, apply water to unpaved roads as necessary, enforce speed limit posted on site.*
 - Secondary Control Measure: *Apply dust surfactant to unpaved portions of the Facility, provide additional pavement.*
- **Excavations -**
 - Primary Control Measure: *Pre-water areas prior to and during excavation. Water areas of excavation and haul roads during and at the end of each day to form a dust-binding soil crust.*
 - Secondary Control Measure: *Phase work to reduce the amount of disturbed surfaces, apply additional water, work at lower elevations (i.e., below-grade) and when wind velocity is high.*
- **Stockpiles -**
 - Primary Control Measure: *Pre-water areas prior to excavation. Apply water to short-term stockpiles and when transporting soils.*
 - Secondary Control Measure: *Control vehicle access to the area. Apply dust surfactant to long-term stockpiles and apply seed/mulch to prevent erosion.*

- **Track out extending onto public roadways –**
 - *Primary Control Measure: Pave on-site entrance road, sweep as necessary.*
 - *Secondary Control Measure: Apply recycled asphalt, gravel pads or similar materials at the transition from unpaved to paved roadways.*
 - **Unpaved roadways and parking areas –**
 - *Primary Control Measure: Limit vehicle speed via posting speed limits; apply water, use aggregate or caliche.*
 - *Secondary Control Measure: Apply water and surfactants to unpaved roads and parking lots, as needed, provide additional pavement.*
- (7) **For areas of the landfill that will not receive additional oil field waste for one month or more, but have not reached the final waste elevation, the operator shall provide intermediate cover that shall be:**
- (a) **approved by the division;**
 - (b) **stabilized with vegetation; and**
 - (c) **inspected and maintained to prevent erosion and manage infiltration or leachate during the oil field waste deposition process.**

OWL will place an intermediate cover at least 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. Adequate volumes of excavated soils are dedicated to this purpose (Table III.2.2). 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. When weather conditions are favorable, intermediate cover may be vegetated with temporary grasses such as rye if the area will not be subject to additional landfilling within 12 months. Alternative stabilization methods for intermediate cover may be deployed as described in Attachment II.4.A. If long-term re-vegetation is required, native grass will be applied after consultation with the local Natural Resources Conservation Service (NRCS) representative (see Closure/Post-closure Plan, Volume II.4), or other proven cover stabilization technologies such as erosion control matting, alternative stabilization options (see Attachment II.4.A). OWL is requesting an exception to intermediate cover stabilization requirements as outlined in Attachment II.4.A. Areas of intermediate cover will be inspected periodically for erosion and settlement, and prompt regrading and maintenance action will be initiated as required. An Intermediate Cover Inspection and Maintenance Plan is provided as Attachment II.1.G.

- (8) **When the operator has filled a landfill cell, the operator shall close it pursuant to the conditions contained in the surface waste management facility permit and the requirements of Paragraph (2) of Subsection D of 19.15.36.18 NMAC. The operator shall notify the division's environmental bureau at least three working days prior to a landfill cell's closure.**

*OWL will close a landfill cell when it has been filled to final grade in accordance with the conditions established in the Surface Waste Management Permit, 19.15.36.18.D(2) NMAC, and the Closure/Post-closure Plan provided in **Volume II.4** of this Application. OWL will install an alternative final cover system in accordance with 19.15.36.14.C(8) NMAC (see **Permit Plans, Volume III.1**). OWL will notify OCD at least three working days prior to the landfill cell closure.*

- B. Ground water monitoring program. If fresh ground water exists at a site, the operator shall, unless otherwise approved by the division, establish a ground water monitoring program, approved by the division's environmental bureau, which shall include a ground water monitoring work plan, a sampling and analysis plan, a ground water monitoring system and a plan for reporting ground water monitoring results. The ground water monitoring system shall consist of a sufficient number of wells, installed at appropriate locations and depths, to yield ground water samples from the uppermost aquifer that:**
- (1) represent the quality of background ground water that leakage from a landfill has not affected; and**
 - (2) represent the quality of ground water passing beneath and down gradient of the surface waste management facility.**

*OWL presents information in **Volume IV.2** (Hydrogeology) relating to the confirmed absence of groundwater resources beneath the proposed Facility. Justification for monitoring the most appropriate depth at the Chinle formation interface vs. uppermost aquifer, approximately 500 ft below the site, is specifically outlined in **Volume IV.2**. As an alternative to groundwater monitoring OWL has proposed to monitor the vadose zone strategically located at the redbed (aquitar) interface approximately 60 ft bgs. The Vadose Zone Monitoring Plan, prepared by Golder, is presented as **Volume II.9** of this Application. The Plan includes the locations and construction details for five potential vadose zone wells; as well as procedures for routine monitoring, and sampling and analysis, should this be required.*

- C. Landfill design specification. New landfill design systems shall include a base layer and a lower geomembrane liner (e.g., composite liner), a leak detection system, an upper geomembrane liner, a leachate collection and removal system, a leachate collection and removal system protective layer, an oil field waste zone and a top landfill cover.**

*OWL will construct a liner designed consistent with the requirements of 19.15.36.14.C NMAC at the proposed Facility. The liner design is described in **Volume III.1** (Engineering Design) and will be installed on a compacted subgrade and employ the prescriptive 60-mil high-density polyethylene (HDPE) liner as both the lower and upper components of the double-liner system (see **Permit Plans, Volume III.1**). The leak detection system will consist of a 200-mil geonet installed between the upper and lower geosynthetic liner system that will drain to the sump areas and confirm the integrity of the liner system. A 2-ft layer of uncompacted soil with a minimum saturated hydraulic conductivity (k_{sat}) of 4.2×10^{-5} cm/sec (i.e., drainage layer; protective soil layer; PSL) will be installed above the upper geosynthetic liner system to collect leachate for conveyance to the leachate piping system in order to reduce any potential for hydrostatic head on the primary liner. The proposed alternative liner system was evaluated with the HELP Model (**Volume III.4**) and confirmed to be more than equivalent to the prescriptive liner system.*

*The liner system is detailed in the **Permit Plans (Volume III.1), Sheet 10**; and in the Liner CQA Plan (**Volume II.7**) provides geosynthetics specifications; and compatibility documentation is demonstrated in **Volume III.6**.*

- (1) The base layer shall, at a minimum, consist of two feet of clay soil compacted to a minimum 90 percent standard proctor density (ASTM D-698) with a hydraulic conductivity of 1×10^{-7} cm/sec or less. In areas where no ground water is present, the operator may propose an alternative base layer design, subject to division approval.**

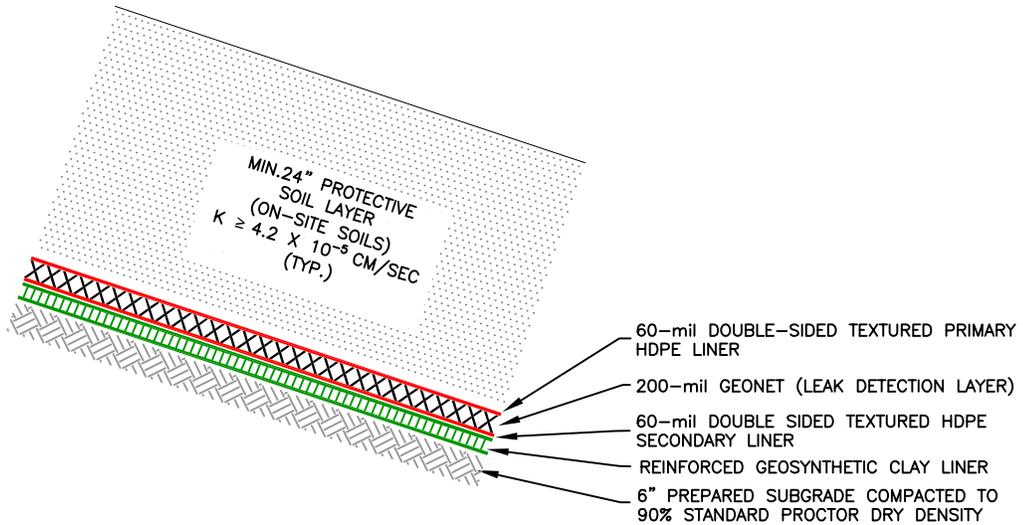
*OWL is proposing to install the primary synthetic liner on a 6-inch-thick prepared subgrade, compacted to 90% standard proctor density followed by a geosynthetic clay liner (GCL) with a hydraulic conductivity of 2×10^{-13} centimeters per second (cm/sec) or less as the alternative base layer design. Calculations and technical properties of the compacted subgrade system and GCL are included in **Volume III**. The **Permit Plans (Volume III.1)** provide design elements of the subgrade component of the composite liner. The proposed*

alternative liner subgrade was evaluated with the HELP Model (Volume III.4) in conjunction with the proposed liner system and confirmed to provide protection equivalent or greater as to the prescriptive liner system.

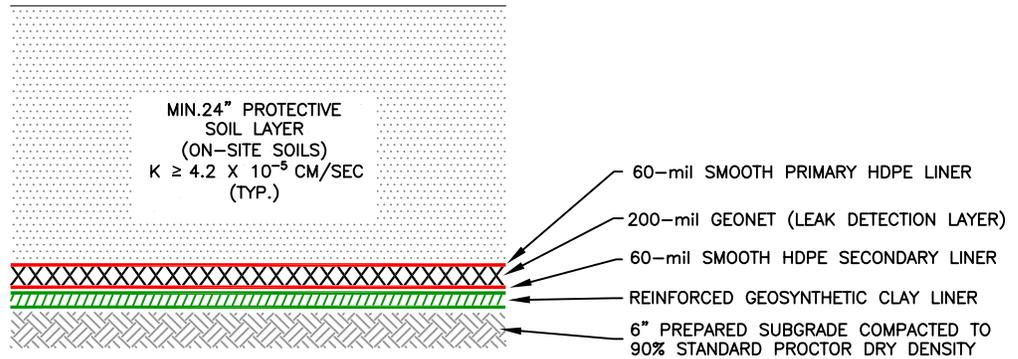
- (2) The lower geomembrane liner shall consist of a 30-mil flexible PVC or 60-mil HDPE liner, or an equivalent liner approved by the division.**

*The proposed liner design for the OWL Landfill will employ the prescriptive 60-mil high-density polyethylene (HDPE) liner as the lower component of the secondary liner system, placed atop the GCL layer. HDPE has proven itself over numerous years to provide vastly superior performance to the 30-mil flexible polyvinylchloride (PVC) material that is also prescribed. The ease of seaming and testing HDPE also enhance its use in this application. The liner system is shown on **Figure I.5** and in the **Permit Plans (Volume III.1)**. The Liner CQA Plan (**Volume II.7**) provides geosynthetics specifications; and compatibility documentation is demonstrated in **Volume III.6**.*

- (3) The operator shall place the leak detection system, which shall consist of two feet of compacted soil with a saturated hydraulic conductivity of 1×10^{-5} cm/sec or greater, between the lower and upper geomembrane liners. The leak detection system shall consist of a drainage and collection system placed no more than six inches above the lower geomembrane liner in depressions and sloped so as to facilitate the earliest possible leak detection at designated collection points. Drainage piping shall be designed to withstand chemical attack from oil field waste and leachate and structural loading and other stresses and disturbances from overlying oil field waste, cover materials, equipment operation, expansion or contraction, and to facilitate clean-out maintenance. The material placed between the pipes and laterals shall be sufficiently permeable to allow the transport of fluids to the drainage pipe. The slope of the landfill sub-grade and drainage pipes and laterals shall be at least two percent grade; *i.e.*, two feet of vertical drop per 100 horizontal feet. The piping collection network shall be comprised of solid and perforated pipe having a minimum diameter of four inches and a minimum wall thickness of schedule 80. The operator shall seal a solid drainage pipe to convey collected liquids to a corrosion-proof sump or sumps located outside the landfill's perimeter for observation, storage, treatment or disposal. The operator may install alternative designs as approved by the division.**



SIDEWALL LINER SYSTEM



FLOOR LINER SYSTEM

LINER SCHEMATIC

OWL LANDFILL SERVICES, LLC
LEA COUNTY, NEW MEXICO



Gordon Environmental, Inc.
Consulting Engineers

213 S. Camino del Pueblo
Bernalillo, New Mexico, USA
Phone: 505-867-6990
Fax: 505-867-6991

OWL proposes to install a leak detection system consisting of a 200-mil geonet between the lower (primary) and upper (secondary) liners, as the preferred alternative to the prescriptive 2-ft of compacted soil with a saturated hydraulic conductivity (k_{sat}) of 1×10^{-5} cm/sec. The geonet will have a minimum hydraulic conductivity (k) of 10 cm/sec. Calculations, compatibility, demonstrations and technical properties of the leak detection system are included in **Volume III** which document superior performance vs. the prescriptive design. The **Permit Plans (Volume III.1)** provide design elements of the leak detection system including:

- Minimum design 2.8% slope on the liner and leak detection system vs. $\geq 2\%$ standard
- Sump and riser pipe details
- Composite liner (i.e., FML/GCL) beneath the entire double-lined footprint

The **Engineering Design (Volume III.1)** and the **Permit Plans** provide detailed specifications demonstrating that the performance of the materials exceed the prescriptive standards. This use of the geonet in this alternative liner cross-section was evaluated with the **HELP Model (Volume III.4)** and confirmed to provide protection superior to the prescriptive liner system.

- (4) The operator shall place the upper geomembrane liner, which shall consist of a 30-mil flexible PVC or 60-mil HDPE liner, or an equivalent liner approved by the division, over the leak detection system.**

OWL will construct a liner design that will employ the prescriptive 60-mil high-density polyethylene (HDPE) liner as the upper component of the primary liner system. The liner system is shown on **Figure I.5** and the **Permit Plans (Volume III.1)**; and the **Liner CQA Plan (Volume II.7)** provides geosynthetics specifications; and compatibility documentation is demonstrated in **Volume III.6**.

- (5) The operator shall place the leachate collection and removal system, which shall consist of at least two feet of compacted soil with a saturated hydraulic conductivity of 1×10^{-2} cm/sec or greater, over the upper geomembrane liner to facilitate drainage. The leachate collection and removal system shall consist of a drainage and collection and removal system placed no more than six inches above the upper geomembrane liner in depressions and sloped so as to facilitate the maximum leachate collection. Piping shall be designed to withstand chemical attack from oil field waste or leachate and structural loading and other stresses and disturbances from overlying oil field waste, cover materials, equipment**

operation, expansion or contraction and to facilitate clean-out maintenance. The material placed between the pipes and laterals shall be sufficiently permeable to allow the transport of fluids to the drainage pipe. The slope of the upper geomembrane liner and drainage lines and laterals shall be at least two percent grade; i.e., two feet of vertical drop per 100 horizontal feet. The piping collection network shall be comprised of solid and perforated pipe having a minimum diameter of four inches and a minimum wall thickness of schedule 80. The operator shall seal a solid drainage pipe to convey collected fluids outside the landfill's perimeter for storage, treatment and disposal. The operator may install alternative designs as approved by the division.

This collection zone will consist of a 2-ft thick uncompacted soil layer consisting of on-site material with a hydraulic conductivity of at least 4.2×10^{-5} cm/sec. This component of the alternative liner cross-section was evaluated with the HELP Model (Volume III.4) and confirmed to provide protection and performance superior to the prescriptive liner system. Drainage piping consisting of minimum 6 inch dia. SDR 13.5 HDPE piping will be installed to collect fluids from the liner surface. Calculations, compatibility, demonstrations and technical properties of the leak detection system are provided in Volume III. The Permit Plans (Volume III.1) provides design elements of the leachate collection and removal system including:

- *Minimum 2.8% slope on the primary liner and leak detection system*
- *Solid (risers) and perforated pipe details*
- *Sump and riser pipe configuration*
- *Composite liner (i.e., FML/GCL) as the secondary liner system*

The Engineering Design (Volume III.1) and the Permit Plans provide detailed specifications for the piping collection systems demonstrating that the materials exceed the prescriptive standards.

- (6) The operator shall place the leachate collection and removal system protection layer, which shall consist of a soil layer at least one foot thick with a saturated hydraulic conductivity of 1×10^{-2} cm/sec or greater, over the leachate collection and removal system.**

OWL is proposing to install 2-ft of uncompacted soil with a minimum k_{sat} of 4.2×10^{-5} cm/sec, or greater, as the protection layer over the leachate collection and removal system. This component of the alternative liner cross-section was evaluated with the HELP Model

(Volume III.4) and confirmed to provide protection and performance superior to the prescriptive liner system. HELP Modeling results indicate the nominal head on the primary liner is 0.0 inches vs. the design standard of ≤ 12 inches.

- (7) The operator shall place oil field waste over the leachate collection and removal system protective layer.**

OWL proposes to place oil field waste over the PSL for the leachate collection and removal system. The first lift, up to 5 ft in thickness, will consist of select uncompacted materials screened for items that could damage the liner (i.e., pipes, metal, etc.).

- (8) The top landfill cover design shall consist of the following layers (top to bottom): a soil erosion layer composed of at least 12 inches of fertile topsoil re-vegetated in accordance with the post closure provisions of Subparagraph (b) of Paragraph (2) of Subsection D of 19.15.36.18 NMAC; a protection or frost protection layer composed of 12 to 30 inches of native soil; a drainage layer composed of at least 12 inches of sand or gravel with a saturated hydraulic conductivity of 1×10^{-2} cm/sec or greater and a minimum bottom slope of four percent, a hydraulic barrier-layer-geomembrane (minimum of a 30-mil flexible PVC or 60-mil HDPE liner, or an equivalent liner approved by the division); and a gas vent or foundation layer composed of at least 12 inches of sand or gravel above oil field waste with soils compacted to the minimum 80 percent Standard Proctor Density. The operator shall install the top landfill cover within one year of achieving the final landfill cell waste elevation. The operator shall ensure that the final landfill design elevation of the working face of the oil field waste is achieved in a timely manner with the date recorded in a field construction log. The operator shall also record the date of top landfill cover installation to document the timely installation of top landfill covers. The operator shall provide a minimum of three working days notice to the division in advance of the top landfill cover's installation to allow the division to witness the top landfill cover's installation.**

OWL proposes an alternative final cover system for the crown and sideslopes as described in 19.15.36.14.C(9) NMAC. The crown and sidewall final cover design is an evapotranspiration (ET) cap consisting of on-site soils. This is a more sustainable design than the prescriptive standard, as it does not require importation of off-site materials (i.e., HDPE from Houston) or extensive maintenance due to potential slippage (Figure I.6).

- (9) **Alternatively, the operator may propose a performance-based landfill design system using geosynthetics or geocomposites, including geogrids, geonets, geosynthetic clay liners, composite liner systems, etc., when supported by EPA’s “hydrologic evaluation of landfill performance” (HELP) model or other division-approved model. The operator shall design the landfill to prevent the “bathtub effect”. The bathtub effect occurs when a more permeable cover is placed over a less permeable bottom liner or natural subsoil.**

OWL has undertaken an evaluation of the materials and climate of the Facility based on the United States Environmental Protection Agency’s (USEPA) HELP Model and is proposing an alternative final cover system for the crown and sideslopes (Figure I.6) based on the ET technology. The proposed crown and sideslope final cover will include 24-inches of vegetation (erosion) cover on top of a 6-inch barrier layer as demonstrated in Volume III.4.

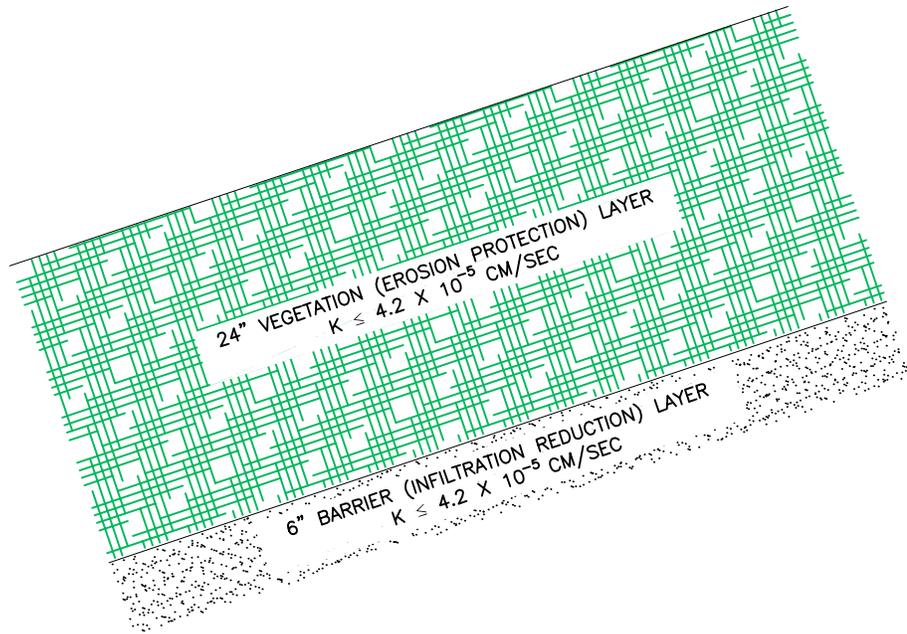
- (10) **External piping, e.g., leachate collection, leak detection and sump removal systems shall be designed for installation of a sidewall riser pipe. Pipes shall not penetrate the liner with the exception of gas vent or collection wells where the operator shall install a flexible clamped pipe riser through the top landfill cover liner that will accommodate oil field waste settling and will prevent tears.**

OWL proposes to install the necessary piping to transfer liquids collected in the leak detection and leachate collection sumps up the sideslope and through the proposed alternative final cover system on the sideslope. This will allow for the measurement and removal of liquids that accumulate in either system. Risers for both systems will be constructed of 12 in dia. HDPE; and there are no pipe penetrations of either the primary or secondary liners.

D. Liner specifications and requirements.

(1) General requirements.

- (a) **Geomembrane liner specifications. Geomembrane liners shall consist of a 30-mil flexible PVC or 60-mil HDPE liner, or an equivalent liner approved by the division. Geomembrane liners shall have a hydraulic conductivity no greater than 1×10^{-9} cm/sec. Geomembrane liners shall be composed of impervious, geosynthetic material that is resistant to petroleum hydrocarbons, salts and acidic and alkaline solutions. Liners shall also be resistant to ultraviolet light, or the operator shall make provisions to protect the material from sunlight. Liner compatibility shall comply with EPA SW-846 method 9090A.**



LANDFILL FINAL COVER SECTION

FINAL COVER PROFILE

OWL LANDFILL SERVICES, LLC.
LEA COUNTY, NEW MEXICO



Gordon Environmental, Inc.
Consulting Engineers

213 S. Camino del Pueblo
Bernalillo, New Mexico, USA
Phone: 505-867-6990
Fax: 505-867-6991

DATE: 08/29/2016	CAD: FINAL COVER.dwg	PROJECT #: 560.01.02
DRAWN BY: DMI	REVIEWED BY: DRT	FIGURE I.6
APPROVED BY: IKG	gei@gordonenvironmental.com	

*OWL proposes a landfill liner design that will employ the prescriptive 60-mil HDPE liner as the upper component (i.e., primary) and the lower component (i.e., secondary) of the liner system. The liner system design is shown on the **Permit Plans (Volume III.1)**; the **Liner CQA Plan (Volume II.7)** provides geosynthetics specifications and installation standards; and compatibility documentation is demonstrated in **Volume III.6**.*

- (b) Liners shall be able to withstand projected loading stresses, settling and disturbances from overlying oil field waste, cover materials and equipment operations.**

Liner slopes have been designed to be less than or equal to 25 percent (per 19.15.36.14.D(2)(b) NMAC). Therefore, no further demonstration is necessary.

- (c) The operator shall construct liners with a minimum of two percent slope to promote positive drainage and to facilitate leachate collection and leak detection.**

*OWL will construct the liner with a 2.8% slope to promote positive drainage and to facilitate leachate collection and leak detection. The liner system design is shown on the **Permit Plans (Volume III.1)**.*

(2) Additional requirements for geomembranes.

- (a) Geomembranes shall be compatible with the oil field waste to be disposed. Geomembranes shall be resistant to chemical attack from the oil field waste or leachate. The operator shall demonstrate this by means of the manufacturer's test reports, laboratory analyses or other division-approved method.**

*The liner system geosynthetics specifications are provided in the **CQA Plan (Volume II.7)**; and compatibility documentation is demonstrated in **Volume III.6**.*

- (b) Geosynthetic material the operator installs on a slope greater than 25 percent shall be designed to withstand the calculated tensile forces acting upon the material. The design shall consider the maximum friction angle of the geosynthetic with regard to a soil-geosynthetic or geosynthetic-geosynthetic interface and shall ensure that overall slope stability is maintained.**

There are no liner systems designed for slopes greater than 25%. The liner system will be able to withstand calculated forces acting upon the material as demonstrated in the Settlement Calculations (Volume III.7).

- (c) **The operator shall thermally seal (hot wedge) field seams in geosynthetic material with a double track weld to create an air pocket for non-destructive air channel testing. In areas where double-track welding cannot be achieved, the operator may propose alternative thermal seaming methods. A stabilized air pressure of 35psi, plus or minus one percent, shall be maintained for at least five minutes. The operator shall overlap liners four to six inches before seaming, and shall orient seams parallel to the line of maximum slope; i.e., oriented along, not across, the slope. The operator shall minimize the number of field seams in corners and irregularly shaped areas. The operator shall use factory seams whenever possible. The operator shall not install horizontal seams within five feet of the slope's toe. Qualified personnel shall perform all field seaming.**

The Engineering Design (Volume III.1) and Liner CQA Plan (Volume II.7) provide detailed specifications for the installation of geosynthetics in compliance with this section, including:

- *Foundation (i.e., subgrade) preparation*
- *Maximum (4:1) and minimum slopes (3.8%)*
- *Thermal seaming and testing procedures*
- *Field seams that will be oriented parallel to the line of maximum slope.*
- *Minimizing the number of field seams in corners and irregularly shaped areas.*
- *No horizontal seams within 10 ft (minimum) of the toe of slope.*

All liner systems will be installed by qualified contractors with a least 10 million square ft of geosynthetic installation experience.

E. Requirements for the soil component of composite liners.

- (1) **The operator shall place and compact the base layer to 90 percent standard proctor density on a prepared sub-grade.**

OWL is proposing to place and compact the base layer to 90% Standard Proctor Density on a prepared subgrade of in situ soils per the CQA Plan (Volume II.7). Calculations and technical properties of the subgrade are included in Volume III, the Permit Plans provides design elements of the subgrade component of the composite liner.

- (2) **The soil surface upon which the operator installs a geosynthetic shall be free of stones greater than one half inch in any dimension, organic matter, local irregularities, protrusions, loose soil and abrupt changes in grade that could damage the geosynthetic.**

OWL will install the geosynthetic liner on a surface that is free of angular stones (maximum ½-inch), organic matter, local irregularities, protrusions, loose soil or abrupt changes in grade that could potentially damage the geosynthetic (Volume II.7). Technical properties of the geosynthetic are provided in the CQA Plan, Volume II.7. The Permit Plans (Volume III.1) provide installation guidance for the geosynthetic component of the composite liner.

- (3) **The operator shall compact a clay soil component of a composite liner to a minimum of 90 percent standard proctor density, which shall have, unless otherwise approved by the division, a plasticity index greater than 10 percent, a liquid limit between 25 and 50 percent, a portion of material passing the no. 200 sieve (0.074 mm and less fraction) greater than 40 percent by weight; and a clay content greater than 18 percent by weight.**

OWL proposes to install a “GCL” below the synthetic liner. The soil subgrade below the GCL will be in situ materials with superior foundation characteristics to the fine-grained soils specified. Calculations and technical properties of the GCL and compacted soil subgrade system are included in Volume III. The Permit Plans (Volume III.1) provide design elements of this component of the composite liner. This component of the alternative liner system was evaluated with the HELP Model (Volume III.4) and confirmed to provide protection and performance equivalent to the prescriptive liner system.

- F. The leachate collection and removal system protective layer and the soil component of the leak detection system shall consist of soil materials that shall be free of organic matter, shall have a portion of material passing the no. 200 sieve no greater than five percent by weight and shall have a uniformity coefficient (Cu) less than 6, where Cu is defined as D60/D10. Geosynthetic materials or geocomposites including geonets and geotextiles, if used as components of the leachate collection and removal or leak detection system, shall have a hydraulic conductivity, transmissivity and chemical and physical qualities that oil field waste placement, equipment operation or leachate generation will not adversely affect. These geosynthetics or geocomposites, if used in conjunction with the soil protective cover for liners, shall have a hydraulic conductivity designed to ensure that the liner’s hydraulic head never exceeds one foot.**

*OWL proposes to install a leak detection system consisting of a 200-mil geonet between the primary and secondary liners. The geocomposite has a minimum k value of 10 cm/sec. Calculations, compatibility, demonstrations and technical properties of the leak detection system are included in **Volume III**. The **Permit Plans** provide design elements of the leak detection system including:*

- *Minimum 2.8% slope on the liner and leak detection system*
- *Sump and riser pipe detail*
- *Composite liner (i.e., FML/GCL) under each leak detection sump*

*This component of the alternative liner cross-section was evaluated with the HELP Model (**Volume III.4**) and confirmed to provide protection and performance superior to the prescriptive liner system.*

G. Landfill gas control systems. If the gas safety management plan or requirements of other federal, state or local agencies require the installation of a gas control system at a landfill, the operator shall submit a plan for division approval, which shall include the following:

- (1) the system's design, indicating the location and design of vents, barriers, collection piping and manifolds and other control measures that the operator will install (gas vent or collection wells shall incorporate a clamped and seamed pipe riser design through the top cover liner);**

Not Applicable. LFG is generated from the decomposition of readily degradable organic material, such as paper and other organic household and commercial wastes. The primary by-products, typically comprising over 99% of LFG by volume, are methane and carbon dioxide as stated in USEPA's AP-42 "Emission Factor Documentation" (08/19/97):

AP 42 – 2.4 Municipal Solid Waste Landfills

2.4.4 Emissions

Methane (CH₄) and CO₂ are the primary constituents of landfill gas, and are produced by microorganisms within the landfill under anaerobic conditions. Transformations of CH₄ and CO₂ are mediated by microbial populations that are adapted to the cycling of materials in anaerobic environments.

LFG is produced when there is a significant supply of readily putrescible organic material and moisture; plus a lack of oxygen. Oil field wastes do not provide a suitable environment for LFG production, and over 95% of the projected waste types would be subtracted from the

decomposition equation used to demonstrate compliance with air quality requirements. Typical oil field wastes will not generate significant quantities of LFG, or the requisite pressure to promote migration. Conventional landfill gas monitoring and control systems are not necessary or effective, and the waste matrix itself would inhibit migration or collection if it contained < 5% degradable organics.

In addition, the New Mexico Environment Department (NMED) and USEPA do not mandate the installation of LFG controls until the landfill reaches a design capacity of over 3.2 million cubic yards (cy); or if migration is confirmed. Of this volume, typically over 75% is assumed to be organic waste subject to decomposition (as opposed to <5% of oil field waste). A surface waste management facility would need a design capacity of 64 million cy to qualify for landfill gas controls under NMED and USEPA standards, and OWL has a design capacity of 38.3 million ± cubic yards.

- (2) if gas recovery is proposed, the design of the proposed gas recovery system and the system's major on-site components, including storage, transportation, processing, treatment or disposal measures required in the management of generated gases, condensates or other residues;**

OWL does not propose to conduct gas recovery or processing, as it will not be practical.

- (3) if gas processing is proposed, a processing plan designed in a manner that does not interfere or conflict with the activities on the site or required control measures or create or cause danger to persons or property;**
- (4) if gas disposal is proposed, a disposal plan designed:**
 - (a) in a manner that does not interfere or conflict with the activities on the site or with required control measures;**
 - (b) so as not to create or cause danger to persons or property; and**
 - (c) with active forced ventilation, using vents located at least one foot above the landfill surface at each gas vent's location;**
- (5) physical and chemical characterization of condensates or residues that are generated and a plan for their disposal;**

Not Applicable.

- (6) means that the operator will implement to prevent gas' generation and lateral migration such that
- (a) the concentration of the gases the landfill generates does not exceed 25 percent of the lower explosive limit for gases in surface waste management facility structures (excluding gas control or recovery system components); and
 - (b) the concentration of gases does not exceed the lower explosive limit for gases at the surface waste management facility boundary; and

Not Applicable. The following factors inhibit the potential generation of other explosive gases (i.e., CH₄):

- *The oil field waste proposed to be accepted by OWL is primarily non-putrescible (i.e., < 5%).*
- *The semi-arid climate characteristics of Lea County (low precipitation e.g., 11.75 inches (Ochoa, NM) of annual rainfall) (Volume IV.1).*
- *Low potential for moisture contribution from other sources, due to the installation of engineered control systems that divert run-on away from the disposal area.*
- *Waste is encapsulated by multilayered liner and cover systems.*
- *The vadose zone monitoring wells will be tested for the potential presence of gases, as described in Vadose Zone Monitoring Plan (Volume II.9). These wells are capable of detecting gas in the flow zone before it reaches the property line.*

- (7) a routine gas monitoring program providing for monitoring at least quarterly; the specific type and frequency of monitoring to be determined based on the following:
- (a) soil conditions;
 - (b) the hydrogeologic and hydraulic conditions surrounding the surface waste management facility; and
 - (c) the location of surface waste management facility structures and property lines.

OWL will implement a routine gas monitoring program for H₂S as outlined in Volume II.3; Hydrogen Sulfide Prevention and Contingency Plan and Volume II.1; Operations, Inspection, and Maintenance Plan. Vadose Zone Monitoring Plan (Volume II.9) describes LFG monitoring in the vadose zone wells.

H. Landfill gas response. If gas levels exceed the limits specified in Paragraph (6) of Subsection G of 19.15.36.14 NMAC, the operator shall:

- (1) immediately take all necessary steps to ensure protection of fresh water, public health, safety and the environment and notify the division;**
- (2) within seven days of detection, record gas levels detected and a description of the steps taken to protect fresh water, public health, safety and the environment;**
- (3) within 30 days of detection, submit a remediation plan for gas releases that describes the problem's nature and extent and the proposed remedy; and**
- (4) within 60 days after division approval, implement the remediation plan and notify the division that the plan has been implemented.**

OWL will comply with this section in the event that landfill gas is detected in the vadose zone monitoring system; and emergency response to elevated H₂S levels is addressed in Volume II.3; Hydrogen Sulfide Prevention and Contingency Plan.

19.15.36.15 SPECIFIC REQUIREMENTS APPLICABLE TO LANDFARMS:

Not Applicable. OWL does not propose to operate an OCD regulated landfarm.

19.15.36.16 SMALL LANDFARMS:

Small landfarms as defined in Paragraph (5) of Subsection A of 19.15.36.7 NMAC are exempt from 19.15.36 NMAC except for the requirements specified in 19.15.36.16 NMAC.

Not Applicable.

19.15.36.17 SPECIFIC REQUIREMENTS APPLICABLE TO EVAPORATION, STORAGE, TREATMENT AND SKIMMER PONDS:

- A. Engineering design plan. An applicant for a surface waste management facility permit or modification requesting inclusion of a skimmer pit; an evaporation, storage or treatment pond; or a below-grade tank shall submit with the surface waste management facility permit application a detailed engineering design plan, certified by a registered profession engineer, including operating and maintenance procedures; a closure plan; and a hydrologic report that provides sufficient information and detail on the site's topography, soils, geology, surface hydrology and ground water hydrology to enable the division to evaluate the actual and potential effects on soils, surface water and ground water. The plan**

shall include detailed information on dike protection and structural integrity; leak detection, including an adequate fluid collection and removal system; liner specifications and compatibility; freeboard and overtopping prevention; prevention of nuisance and hazardous odors such as H₂S; an emergency response plan, unless the pit is part of a surface waste management facility that has an integrated contingency plan; type of oil field waste stream, including chemical analysis; climatological factors, including freeze-thaw cycles; a monitoring and inspection plan; erosion control; and other pertinent information the division requests.

*The proposed OWL Facility includes both a Processing Area and a Landfill. The Processing Area design includes (at full build-out) 12 evaporation ponds. **Volume III** (Engineering Design and Calculations) and the **Permit Plans**, certified by I. Keith Gordon, P.E., provides the detailed engineering design plan for the proposed surface waste management facility, including:*

- *liner details*
- *calculations detailing dike protection and structural integrity*
- *leak detection system*
- *liner specifications and compatibility documentation*
- *freeboard and overtopping (wave action) analysis*
- *erosion control*
- *fluid collection and removal system*

Volume II (Facility Management Plans) describes:

- *operation and maintenance procedures*
- *Closure/Post-closure Plan*
- *H₂S Prevention and Contingency Plan*
- *emergency response plan*
- *monitoring and inspection plan*
- *oil field waste management plan*
- *Contingency Plan*
- *chemical analysis*

Volume IV (Siting and Hydrogeology) describes:

- *site topography*
- *soils characteristics*
- *geology*
- *surface hydrology*
- *groundwater hydrology*
- *climatology*

B. Construction, standards.

- (1) In general. The operator shall ensure each pit, pond and below-grade tank is designed, constructed and operated so as to contain liquids and solids in a manner that will protect fresh water, public health, safety and the environment.**

The Liner CQA Plan (Volume II.7) provides detailed procedures for the proper construction of the berms and liner system in compliance with the Permit Plans (Volume III.1). The Processing Area, including pits and ponds, is designed and will be constructed and operated so as to protect fresh water, safety, and the environment.

- (2) Liners required. Each pit or pond shall contain, at a minimum, a primary (upper) liner and a secondary (lower) liner with a leak detection system appropriate to the site's conditions.**

OWL will comply with this requirement. Volume III.1 provides the detail for the primary liner, secondary liner, and leak detection system that will be installed for each evaporation pond in compliance with these requirements.

- (3) Liner specifications. Liners shall consist of a 30-mil flexible PVC or 60-mil HDPE liner, or an equivalent liner approved by the division. Synthetic (geomembrane) liners shall have a hydraulic conductivity no greater than 1×10^{-9} cm/sec. Geomembrane liners shall be composed of an impervious, synthetic material that is resistant to petroleum hydrocarbons, salts and acidic and alkaline solutions. Liner materials shall be resistant to ultraviolet light, or the operator shall make provisions to protect the material from sunlight. Liner compatibility shall comply with EPA SW-846 method 9090A.**

The liner system design for the Processing Area ponds has been designed consistent with Section 19.15.36.17.B.(3) NMAC. The liner design will employ the prescriptive 60-mil HDPE liner as the upper component and the lower component of the liner system. The leak detection system will consist of a 200-mil HDPE geonet installed between the upper and secondary liner system that will drain to the sump areas. HDPE is the preferred material for waste containment based on over 30 years of successful applications.

The liner system is shown on the *Permit Plans (Volume III.1)*; and the *Liner CQA Plan (Volume II.7)* provides geosynthetics specifications; and compatibility documentation is demonstrated in *Volume III.6*.

- (4) **Alternative liner media.** The division may approve other liner media if the operator demonstrates to the division's satisfaction that the alternative liner protects fresh water, public health, safety and the environment as effectively as the specified media.

The liner design will employ the prescriptive 60-mil HDPE liner as the upper component and lower component of the liner system. The alternative leak detection system will consist of a 200-mil geonet installed between the upper and secondary liner system draining towards the sump areas. The proposed GCL is the base layer for the secondary liner and has proven qualities vs. the 2 ft thick compacted clay liner.

- (5) **Each pit or pond shall have a properly constructed foundation or firm, unyielding base, smooth and free of rocks, debris, sharp edges or irregularities, in order to prevent rupture or tear of the liner and an adequate anchor trench; and shall be constructed so that the inside grade of the levee is no steeper than 2H:1V. Levees shall have an outside grade no steeper than 3H:1V. The levees' tops shall be wide enough to install an anchor trench and provide adequate room for inspection and maintenance. The operator shall minimize liner seams and orient them up and down, not across a slope. The operator shall use factory seams where possible. The operator shall ensure field seams in geosynthetic material are thermally seamed (hot wedge) with a double track weld to create an air pocket for non-destructive air channel testing. A stabilized air pressure of 35 psi, plus or minus one percent, shall be maintained for at least five minutes. The operator shall overlap liners four to six inches before seaming, and orient seams parallel to the line of maximum slope, i.e., oriented along, not across, the slope. The operator shall minimize the number of field seams in corners and irregularly shaped areas. There shall be no horizontal seams within five feet of the slope's toe. Qualified personnel shall perform field seaming.**

The *Engineering Design (Volume III.1)* and *Liner CQA Plan (Volume II.7)* provide detailed specifications for the installation of geosynthetics in compliance with this section, including:

- *Foundation (i.e., subgrade) preparation*
- *Maximum (4:1) and minimum slopes (2.8%)*
- *Thermal seaming and testing procedures*
- *Field seams that will be oriented parallel to the line of maximum slope*

- *Minimizing the number of field seams in corners and irregularly shaped areas*
- *No horizontal seams within five ft of the toe of slope*

All liner systems will be installed by qualified contractors with a least 10 million square ft of geosynthetics installation experience.

- (6) At a point of discharge into or suction from the lined pit, the liner shall be protected from excessive hydrostatic force or mechanical damage, and external discharge lines shall not penetrate the liner.**

*The liner details shown on the **Permit Plans (Volume III.1)** indicate the methods used to protect the liner. To address the hydrostatic forces and potential mechanical damage to the primary liner as a result of pumping into or suction out of the lined ponds; an additional sheet of 60-mil HDPE liner will be welded ovetop of the primary liner in the areas that these activities are expected to be conducted. The **Permit Plans, Sheet 3** shows the location of the additional 60-mil HDPE layer. There are no liner pipe penetrations in the facility design with the exception of the leak detection riser at the top of the slope.*

- (7) Primary liners shall be constructed of a synthetic material.**

See response to 19.15.36.17.B.(3) NMAC.

- (8) A secondary liner may be a synthetic liner or an alternative liner approved by the division. Secondary liners constructed with compacted soil membranes, i.e., natural or processed clay and other soils, shall be at least three feet thick, placed in six-inch lifts and compacted to 95 percent of the material's standard proctor density, or equivalent. Compacted soil membranes used in a liner shall undergo permeability testing in conformity with ASTM standards and methods approved by the division before and after construction. Compacted soil membranes shall have a hydraulic conductivity of no greater than 1×10^{-8} cm/sec. The operator shall submit results of pre-construction testing to the division for approval prior to construction.**

OWL is not proposing a secondary alternate liner constructed of a soil component. OWL proposes to utilize a secondary liner option consisting of 60-mil HDPE. See response to 19.15.36.17.B(4) NMAC.

- (9) **The operator shall place a leak detection system between the lower and upper geomembrane liners that consists of two feet of compacted soil with a saturated hydraulic conductivity of 1×10^{-5} cm/sec or greater to facilitate drainage. The leak detection system shall consist of a properly designed drainage and collection and removal system placed above the lower geomembrane liner in depressions and sloped so as to facilitate the earliest possible leak detection. Piping used shall be designed to withstand chemical attack from oil field waste or leachate; structural loading from stresses and disturbances from overlying oil field waste, cover materials, equipment operation or expansion or contraction; and to facilitate clean-out maintenance. The material placed between the pipes and laterals shall be sufficiently permeable to allow the transport of fluids to the drainage pipe. The slope of the interior sub-grade and of drainage lines and laterals shall be at least a two percent grade, i.e., two feet vertical drop per 100 horizontal feet. The piping collection system shall be comprised of solid and perforated pipe having a minimum diameter of four inches and a minimum wall thickness of schedule 80. The operator shall seal a solid sidewall riser pipe to convey collected fluids to a collection, observation and disposal system located outside the perimeter of the pit or pond. The operator may install alternative methods as approved by the division.**

OWL is proposing to install an alternative leak detection system consisting of a 200-mil geonet between the primary and secondary liners. The geocomposite will have a minimum k value of 10 cm/sec. Calculations, compatibility, demonstrations and technical properties of the leak detection system are included in Volume III. The Permit Plans (Volume III.1) provide design elements of the leak detection system including:

- *Minimum 2.8% slope on the liner and leak detection system*
- *Sump and riser pipe details*
- *Composite liner (i.e., FML/GCL) under each leak detection sump*

The Engineering Design and the Permit Plans (Volume III.1) provide detailed specifications for the piping collection systems demonstrating that the materials exceed the prescriptive standards.

- (10) **The operator shall notify the division at least 72 hours prior to the primary liner's installation so that a division representative may inspect the leak detection system before it is covered.**

OWL will provide a milestone schedule to OCD in advance of liner construction, and notify OCD at least 72 hours prior to geosynthetics installation.

- (11) The operator shall construct pits and ponds in a manner that prevents overtopping due to wave action or rainfall, and maintain a three foot freeboard at all times.**

OWL will comply with this requirement. Volume III provides detailed calculations demonstrating compliance with wave action, rainfall, and freeboard standards.

- (12) The maximum size of an evaporation or storage pond shall not exceed 10 acre-feet.**

OWL will comply with this requirement. The proposed ponds are each approximately 9.5 acre-ft in capacity, not including freeboard. Volume III.1, Engineering Design provides detailed calculations regarding capacity.

C. Operating standards.

- (1) The operator shall ensure that only produced fluids or non-hazardous waste are discharged into or stored in a pit or pond; and that no measurable or visible oil layer is allowed to accumulate or remain anywhere on a pit's surface except an approved skimmer pit.**

The Oil Field Waste Management Plan (Volume II.2) provides detailed procedures to ensure that only produced fluids or non-hazardous waste are placed into or stored in a pit or pond, including load rejection procedures. The Operations, Inspection, and Maintenance Plan (Volume II.1, Section 6.2) addresses measurable or visible oil layer.

- (2) The operator shall monitor leak detection systems pursuant to the approved surface waste management facility permit conditions, maintain monitoring records in a form readily accessible for division inspection and report discovery of liquids in the leak detection system to the division within 24 hours.**

OWL will comply with this requirement. The Operations, Inspection, and Maintenance Plan (Volume II.1) provides a more detailed description of monitoring, recordkeeping and procedures for management of liquids in the leak detection system.

- (3) Fencing and netting. The operator shall fence or enclose pits or ponds to prevent unauthorized access and maintain fences in good repair. Fences are not required if there is an adequate perimeter fence surrounding the surface waste management facility. The operator shall screen, net, cover or otherwise render non-hazardous to migratory birds tanks exceeding**

eight feet in diameter and exposed pits and ponds. Upon written application, the division may grant an exception to screening, netting or covering requirements upon the operator's showing that an alternative method will adequately protect migratory birds or that the tank or pit is not hazardous to migratory birds.

*The perimeter of the OWL Facility (i.e., the Processing Area and the Landfill) will be enclosed with barbed wire fencing and locking gates. The **Permit Plans, Sheet 3 (Volume III.1)** graphically describes the proposed locations of the existing and proposed perimeter fencing.*

*OWL requests an alternate method to the prescriptive migratory bird screening requirement. The **Migratory Bird Protection Plan (Volume II.6)** describes the proposed alternate methodology to the screening requirement of the storage ponds. This Plan describes visual inspections and migratory bird retrieval and clean-up procedures in the unlikely event that birds require decontamination.*

- (4) The division may approve spray systems to enhance natural evaporation. The operator shall submit engineering designs for spray systems to the division's environmental bureau for approval prior to installation. The operator shall ensure that spray evaporation systems are operated so that spray-borne suspended or dissolved solids remain within the perimeter of the pond's lined portion.**

*OWL proposes to install a spray system utilizing mechanical evaporators to enhance natural evaporation in the proposed ponds. The **Operations, Inspection, and Maintenance Plan (Volume II.1)** provides the design, operation and maintenance of the proposed system. The proposed mechanical evaporation system is designed to prevent spray-borne suspended or dissolved solids from exiting the perimeter of the pond's liner area. In addition, this system will not be operated when wind velocity exceeds twelve miles per hour (sustained) via automatic shut-off mechanisms. There is also a minimum setback between the ponds and the property line of 200 ft. The prevailing wind direction from the southeast would potentially propel mist toward the lined west perimeter berm.*

- (5) **The operator shall use skimmer pits or tanks to separate oil from produced water prior to water discharge into a pond. The operator shall install a trap device in connected ponds to prevent solids and oils from transferring from one pond to another unless approved in the surface waste management facility permit.**

OWL will utilize receiving and settling tanks to process water accepted at the Facility that requires separation of oil from water as described in the Operations, Inspection, and Maintenance Plan (Volume II.1). No oil processing is proposed in open pits, and oil residues will be removed from water prior to discharging into the evaporation ponds.

D. Below-grade tanks and sumps.

- (1) **The operator shall construct below-grade tanks with secondary containment and leak detection. The operator shall not allow below-grade tanks to overflow. The operator shall install only below-grade tanks of materials resistant to the tank's particular contents and to damage from sunlight.**

OWL does not propose to construct or operate below-grade tanks at the proposed Facility.

- (2) **The operator shall test sumps' integrity annually, and shall promptly repair or replace a sump that does not demonstrate integrity. The operator may test sumps that can be removed from their emplacements by visual inspection. The operator shall test other sumps by appropriate mechanical means. The operator shall maintain records of sump inspection and testing and make such records available for division inspection.**

The OWL Facility design includes below-grade sumps. The tank farm, landfill and evaporation pond containment will include leak detection systems and sumps which will be monitored in compliance with 19.15.36.17.D(2) NMAC.

E. Closure required. The operator shall properly close pits, ponds and below-grade tanks within six months after cessation of use.

OWL will comply with this requirement. The Closure/Post-closure Plan (Volume II.4) describes closure timeframes in detail.

19.15.36.18 CLOSURE AND POST CLOSURE:

A. Surface waste management facility closure by operator.

- (1) The operator shall notify the division's environmental bureau at least 60 days prior to cessation of operations at the surface waste management facility and provide a proposed schedule for closure. Upon receipt of such notice and proposed schedule, the division shall review the current closure plan for adequacy and inspect the surface waste management facility.**

OWL will comply with this requirement. The Closure/Post-closure Plan (Volume II.4) describes closure notification requirements in detail.

- (2) The division shall notify the operator within 60 days after the date of cessation of operations specified in the operator's closure notice of modifications of the closure plan and proposed schedule or additional requirements that it determines are necessary for the protection of fresh water, public health, safety or the environment.**

No response required.

- (3) If the division does not notify the operator of additional closure requirements within 60 days as provided, the operator may proceed with closure in accordance with the approved closure plan; provided that the director may, for good cause, extend the time for the division's response for an additional period not to exceed 60 days by written notice to the operator.**

OWL will comply with this requirement.

- (4) The operator shall be entitled to a hearing concerning a modification or additional requirement the division seeks to impose if it files an application for a hearing within 10 days after receipt of written notice of the proposed modifications or additional requirements.**

OWL will comply with this requirement.

- (5) Closure shall proceed in accordance with the approved closure plan and schedule and modifications or additional requirements the division imposes. During closure operations the operator shall maintain the surface waste management facility to protect fresh water, public health, safety and the environment.**

OWL will comply with this requirement.

- (6) Upon completion of closure, the operator shall re-vegetate the site unless the division has approved an alternative site use plan as provided in Subsection G of 19.15.36.18 NMAC. Re-vegetation, except for landfill cells, shall consist of establishment of a vegetative cover equal to 70 percent of the native perennial vegetative cover (un-impacted by overgrazing, fire or other intrusion damaging to native vegetation) or scientifically documented ecological description consisting of at least three native plant species, including at least one grass, but not including noxious weeds, and maintenance of that cover through two successive growing seasons.

OWL will comply with this requirement. The Closure/Post-closure Plan (Volume II.4) describes in detail revegetation and maintenance plans for the Facility. Volume II.4 includes OWL's request for an exception to the vegetation requirements to allow the option for alternative methods of final cover stabilization.

B. Release of financial assurance.

- (1) When the division determines that closure is complete it shall release the financial assurance, except for the amount needed to maintain monitoring wells for the applicable post closure care period, to perform semi-annual analyses of such monitoring wells and to re-vegetate the site. Prior to the partial release of the financial assurance covering the surface waste management facility, the division shall inspect the site to determine that closure is complete.

The Closure/Post-closure Plan (Volume II.4) provides the estimated amount, in current dollars, required for Post-closure care and maintenance.

- (2) After the applicable post closure care period has expired, the division shall release the remainder of the financial assurance if the monitoring wells show no contamination and the re-vegetation in accordance with Paragraph (6) of Subsection A of 19.15.36.18 NMAC is successful. If monitoring wells or other monitoring or leak detection systems reveal contamination during the surface waste management facility's operation or in the applicable post closure care period following the surface waste management facility's closure the division shall not release the financial assurance until the contamination is remediated in accordance with 19.15.30 NMAC and 19.15.29 NMAC, as applicable.

OWL will comply with this requirement.

- (3) In any event, the division shall not finally release the financial assurance until it determines that the operator has successfully revegetated the site in accordance with Paragraph (6) of Subsection A of 19.15.36.18 NMAC, or, if the division has approved an alternative site use plan, until the landowner has obtained the necessary regulatory approvals and begun implementation of the use.**

No response required.

C. Surface waste management facility closure initiated by the division. Forfeiture of financial assurance.

- (1) For good cause, the division may, after notice to the operator and an opportunity for a hearing, order immediate cessation of a surface waste management facility's operation when it appears that cessation is necessary to protect fresh water, public health, safety or the environment, or to assure compliance with statutes or division rules and orders. The division may order closure without notice and an opportunity for hearing in the event of an emergency, subject to NMSA 1978, Section 70-2-23, as amended.**

No response required.

- (2) If the operator refuses or is unable to conduct operations at a surface waste management facility in a manner that protects fresh water, public health, safety and the environment; refuses or is unable to conduct or complete an approved closure plan; is in material breach of the terms and conditions of its surface waste management facility permit; or the operator defaults on the conditions under which the division accepted the surface waste management facility's financial assurance; or if disposal operations have ceased and there has been no significant activity at the surface waste management facility for six months the division may take the following actions to forfeit all or part of the financial assurance:**

 - (a) send written notice by certified mail, return receipt requested, to the operator and the surety, if any, informing them of the decision to close the surface waste management facility and to forfeit the financial assurance, including the reasons for the forfeiture and the amount to be forfeited, and notifying the operator and surety that a hearing request or other response shall be made within 10 days of receipt of the notice; and**
 - (b) advise the operator and surety of the conditions under which they may avoid the forfeiture; such conditions may include but are not limited to an agreement by the operator or another party to perform closure and post closure operations in accordance with the surface waste management facility permit conditions, the closure plan (including modifications or additional requirements**

imposed by the division) and division rules, and satisfactory demonstration that the operator or other party has the ability to perform such agreement.

OWL will collaborate with OCD concerning this requirement and does not foresee any instance in which the Facility will not be operated in compliance with the Permit or Permit Conditions.

- (3) The division may allow a surety to perform closure if the surety can demonstrate an ability to timely complete the closure and post closure in accordance with the approved plan.**

No response required.

- (4) If the operator and the surety do not respond to a notice of proposed forfeiture within the time provided, or fail to satisfy the specified conditions for non-forfeiture, the division shall proceed, after hearing if the operator or surety has timely requested a hearing, to declare the financial assurance's forfeiture. The division may then proceed to collect the forfeited amount and use the funds to complete the closure, or, at the division's election, to close the surface waste management facility and collect the forfeited amount as reimbursement.**
- (a) The division shall deposit amounts collected as a result of forfeiture of financial assurance in the oil and gas reclamation fund.**
- (b) In the event the amount forfeited and collected is insufficient for closure, the operator shall be liable for the deficiency. The division may complete or authorize completion of closure and post closure and may recover from the operator reasonably incurred costs of closure and forfeiture in excess of the amount collected pursuant to the forfeiture.**
- (c) In the event the amount collected pursuant to the forfeiture was more than the amount necessary to complete closure, including remediation costs, and forfeiture costs, the division shall return the excess to the operator or surety, as applicable, reserving such amount as may be reasonably necessary for post closure monitoring and re-vegetation in accordance with Paragraph (6) of Subsection A of 19.15.36.18 NMAC. The division shall return excess of the amount retained over the actual cost of post closure monitoring and re-vegetation to the operator or surety at the later of the conclusion of the applicable post closure period or when the site re-vegetation in accordance with Paragraph (6) of Subsection A of 19.15.36.18 NMAC is successful.**

No response required. The conditions listed are not anticipated.

- (5) **If the operator abandons the surface waste management facility or cannot fulfill the conditions and obligations of the surface waste management facility permit or division rules, the state of New Mexico, its agencies, officers, employees, agents, contractors and other entities designated by the state shall have all rights of entry into, over and upon the surface waste management facility property, including all necessary and convenient rights of ingress and egress with all materials and equipment to conduct operation, termination and closure of the surface waste management facility, including but not limited to the temporary storage of equipment and materials, the right to borrow or dispose of materials and all other rights necessary for the surface waste management facility's operation, termination and closure in accordance with the surface waste management facility permit and to conduct post closure monitoring.**

No response required. The conditions listed are not required.

D. Surface waste management facility and cell closure and post closure standards. The following minimum standards shall apply to closure and post closure of the installations indicated, whether the entire surface waste management facility is being closed or only a part of the surface waste management facility.

- (1) **Oil treating plant closure. The operator shall ensure that:**
 - (a) **tanks and equipment used for oil treatment are cleaned and oil field waste is disposed of at a division-approved surface waste management facility (the operator shall reuse, recycle or remove tanks and equipment from the site within 90 days of closure);**
 - (b) **the site is sampled, in accordance with the procedures specified in chapter nine of EPA publication SW-846, test methods for evaluating solid waste, physical/chemical methods, for TPH, BTEX, major cations and anions and RCRA metals, in accordance with a gridded plat of the site containing at least four equal sections that the division has approved; and**
 - (c) **sample results are submitted to the environmental bureau in the division's Santa Fe office.**

OWL will implement the Closure/Post-closure Plan (Volume II.4) for closure activities in compliance with 19.15.36.18.D NMAC.

- (2) **Landfill cell closure.**
 - (a) **The operator shall properly close landfill cells, covering the cell with a top cover pursuant to Paragraph (8) of Subsection C of 19.15.36.14 NMAC, with soil contoured to promote drainage of precipitation; side slopes shall not exceed a 25 percent grade (four**

feet horizontal to one foot vertical), such that the final cover of the landfill's top portion has a gradient of two percent to five percent, and the slopes are sufficient to prevent the ponding of water and erosion of the cover material.

- (b) The operator shall re-vegetate the area overlying the cell with native grass covering at least 70 percent of the landfill cover and surrounding areas, consisting of at least two grasses and not including noxious weeds or deep rooted shrubs or trees, and maintain that cover through the post closure period.

OWL will implement the Closure/Post-closure Plan (Volume II.4) for the Landfill cells. The Permit Plans, Sheet 5 provides the engineering design for the overall final grading contours for the Landfill. OWL proposed to install an alternate cover on the crown and sideslopes per 19.15.36.14.C(9) NMAC, which is an evapotranspiration ("ET") cap design ideally suited for the arid climate and using sustainable on-site soils. The side slopes will be no greater than 16% and the top crown will be constructed to a design grade of 2%. The alternate crown and sideslope final cover includes 12-inches of compacted impermeable materials (intermediate cover) overlain with a 6-inch thick barrier (infiltration layer; $k \leq 4.2 \times 10^{-5}$ cm/sec) that is capped with a 24-inch vegetative (erosion) layer, all graded to drain. The Landfill final cover details are shown in Figure II.4.3 and on the Permit Plans, Sheet 10. The final cover, as well as other disturbed areas of the site, will be seeded with native vegetation, or stabilized with proven alternative technologies. Vegetation on the site will be established during the optimum planting period, whenever possible. Examples of seed types have been identified as recommended by the NRCS.

- (3) **Landfill post closure. Following landfill closure, the post closure care period for a landfill shall be 30 years.**
 - (a) **A post closure care and monitoring plan shall include maintenance of cover integrity, maintenance and operation of a leak detection system and leachate collection and removal system and operation of gas and ground water monitoring systems.**
 - (b) **The operator or other responsible entity shall sample existing ground water monitoring wells annually and submit reports of monitoring performance and data collected within 45 days after the end of each calendar year. The operator shall report any exceedance of a ground water standard that it discovers during monitoring pursuant to 19.15.29 NMAC.**

OWL will implement the Closure/Post-closure Plan, (Volume II.4) for the post-closure care and monitoring required.

(4) Landfarm closure. The operator shall ensure that:

Not applicable; OWL is not proposing landfarm facilities.

E. Pond and pit closure. The operator shall ensure that:

- (1) liquids in the ponds or pits are removed and disposed of in a division-approved surface waste management facility;**
- (2) liners are disposed of in a division-approved surface waste management facility;**
- (3) equipment associated with the surface waste management facility is removed;**
- (4) the site is sampled, in accordance with the procedures specified in chapter nine of EPA publication SW-846, test methods for evaluating solid waste, physical/chemical methods for TPH, BTEX, metals and other inorganics listed in Subsections A and B of 20.6.2.3103 NMAC, in accordance with a gridded plat of the site containing at least four equal sections that the division has approved; and**
- (5) sample results are submitted to the environmental bureau in the division's Santa Fe office.**

OWL will comply with this requirement. The Closure/Post-closure Plan (Volume II.4) describes in detail facility decommissioning, including liquid, liner and equipment disposal; as well as sampling, testing, and reporting when closure of the Facility is implemented.

F. Landfarm and pond and pit post closure. The post-closure care period for a landfarm or pond or pit shall be three years if the operator has achieved clean closure. During that period the operator or other responsible entity shall regularly inspect and maintain required revegetation. If there has been a release to the vadose zone or to ground water, then the operator shall comply with the applicable requirements of 19.15.30 NMAC and 19.15.29 NMAC.

No response required.

G. Alternatives to re-vegetation. If the landowner contemplates use of the land where a cell or surface waste management facility is located for purposes inconsistent with re-vegetation, the landowner may, with division approval, implement an alternative surface treatment appropriate for the contemplated use, provided that the alternative treatment will effectively prevent erosion. If the division approves an alternative to re-vegetation, it shall not release the portion of the operator's financial assurance reserved for post-closure until the

landowner has obtained necessary regulatory approvals and begun implementation of such alternative use.

If applicable, OWL will comply with this requirement.

19.15.36.19 EXCEPTIONS AND WAIVERS:

A. In a surface waste management facility permit application, the applicant may propose alternatives to requirements of 19.15.36 NMAC, and the division may approve such alternatives if it determines that the proposed alternatives will provide equivalent protection of fresh water, public health, safety and the environment.

OWL is requesting alternatives to the requirements consistent with the flexibility provided for:

- *LFG Control requirements per 19.15.36.13.O NMAC (this Volume)*
- *Groundwater monitoring per 19.15.36.14.B(1-2) NMAC (Volumes II.9 and IV.2)*
- *Geonet Detection and Drainage Layers per 19.15.36.14.C (Volume III.4)*
- *Final Cover per 19.15.36.14.C(9) NMAC (Volume III.4)*
- *Bird Control Alternatives per 19.15.36.13.I and 19.15.36.17.C(3) NMAC (Volume II.6)*
- *Intermediate cover stabilization per 19.15.36.14.A(7) NMAC (Attachment II.4.A)*
- *Final cover stabilization per 19.15.36.18.D(2)(b) NMAC (Attachment II.4.A)*

Demonstrations and justifications have been provided in the referenced sections and associated technical documentation.

B. The division may grant exceptions to, or waivers of, or approve alternatives to requirements of 19.15.36 NMAC in an emergency without notice or hearing. The operator requesting an exception or waiver, except in an emergency, shall apply for a surface waste management facility permit modification in accordance with Subsection C of 19.15.36.8 NMAC. If the requested modification is a major modification, the operator shall provide notice of the request in accordance with 19.15.36.9 NMAC.

OWL will comply with this requirement.

19.15.36.20 TRANSITIONAL PROVISIONS:

OWL is a proposed new Surface Waste Management Facility. No response required.

**APPLICATION FOR PERMIT
OWL LANDFILL SERVICES, LLC**

**VOLUME I: PERMIT APPLICATION TEXT
PART 36: SURFACE WASTE MANAGEMENT FACILITIES**

**ATTACHMENT I.A
PUBLIC NOTIFICATION**

NOTICE OF APPLICATION
OWL LANDFILL SERVICES, LLC (OWL) – SURFACE WASTE MANAGEMENT FACILITY

Pursuant to 19.15.36, Oil Conservation Division Surface Waste Management Facilities regulations, OWL Landfill Services, LLC (OWL) is providing notice that the Oil Conservation Division (OCD) has deemed administratively complete a revised Application for Permit for a new Surface Waste Management Facility (OWL Facility). The Application for Permit was originally submitted to OCD by OWL on October __, 2016. Comments regarding the Application may be submitted to OCD within 30 days of Notice.

1. **Applicant's name and address:** OWL Landfill Services, LLC, 8214 Westchester, Suite 850, Dallas, TX 75225; Telephone: (214) 206-3940.
2. **Facility location and address:** The proposed OWL Facility is located approximately 22 miles northwest of Jal, adjacent to the south of NM 128 in Lea County, NM. The OWL site is comprised of a 560-acre ± tract of land located within a portion of Section 23, Township 24 South, Range 33 East, in Lea County, NM. The Surface Waste Management Facility will comprise 500 acres ± of the OWL site.
3. **Brief description of surface waste management facility:** The proposed OWL Facility will include a liquid oil field waste Processing Area (81 acres ±) and an oil field waste Landfill (224 acres ±), and related infrastructure (195 acres±). At full build-out, the Processing Area may include an oil treatment facility consisting of an estimated 9 produced water load-out points, 12 produced water receiving tanks, 48 produced water settling tanks, 10 evaporation ponds, 5 crude oil recovery tanks, and 5 oil sales tanks; as well as 1 stabilization and solidification area; and 1 customer jet wash (6 bays). The Landfill disposal footprint is 224 acres ± with a waste capacity (airspace) of approximately 38.3 million cubic yards. In addition, various support facilities, including: a Scalehouse, waste acceptance/security features, roads, emergency shower and eyewash station, and stormwater detention basins are proposed for the OWL Facility.
4. **Depth and quality of shallowest aquifer:** Based upon information projected from water wells in the region of the OWL site, as well as an on-site water well, the shallowest potential aquifer in the vicinity is the Santa Rosa Sandstone (lower Triassic Chinle), the water-bearing zones for which are approximately 500 feet (ft) below ground surface (bgs) at the OWL site. In addition, the OWL site characterization boring investigation results demonstrate that no shallow groundwater is present above a depth of 160 ft bgs at any of the boring locations. The on-site water supply well is completed in Triassic bedrock, presumed to be Santa Rosa Sandstone. A chemical analysis of this well indicates a total dissolved solids concentration of 507 milligrams per liter (mg/L) and a sulfate concentration of 99 mg/L.

Interested parties may contact Mr. Jim Griswold, Bureau Chief, Oil Conservation Division at (505) 476-3465 for further information.

TABLE I.A
Surface Owners of Record within 1/2-mile of the OWL Site¹
OWL Landfill Services, LLC

OWNER	UPC	ADDRESS	CITY	STATE	ZIP
Mark Mc Cloy Trust ²	4000516950004	P.O. Box 795	Tatum	NM	88267
	4940212112255				
	400006810008				
Southwestern Public Service Co. ²	4000516950003	P.O. Box 1979	Denver	CO	80201
Bert Madera ²	4000517890002	P.O. Box 2795	Ruidoso	NM	88355
	4000517890003				
Bureau of Land Management ²	NA ⁵	620 E. Greene St.	Carlsbad	NM	88220
New Mexico State Land Office ²	NA ⁵	P.O. Box 1148	Santa Fe	NM	87504-1148
Lea County Commission ³	NA ⁵	100 N. Main St.	Lovington	NM	88260
Lea County Manager ³	NA ⁵	100 N. Main St.	Lovington	NM	88260
City of Jal Manager ⁴	NA ⁵	P.O. Drawer 340	Jal	NM	88251

Notes:

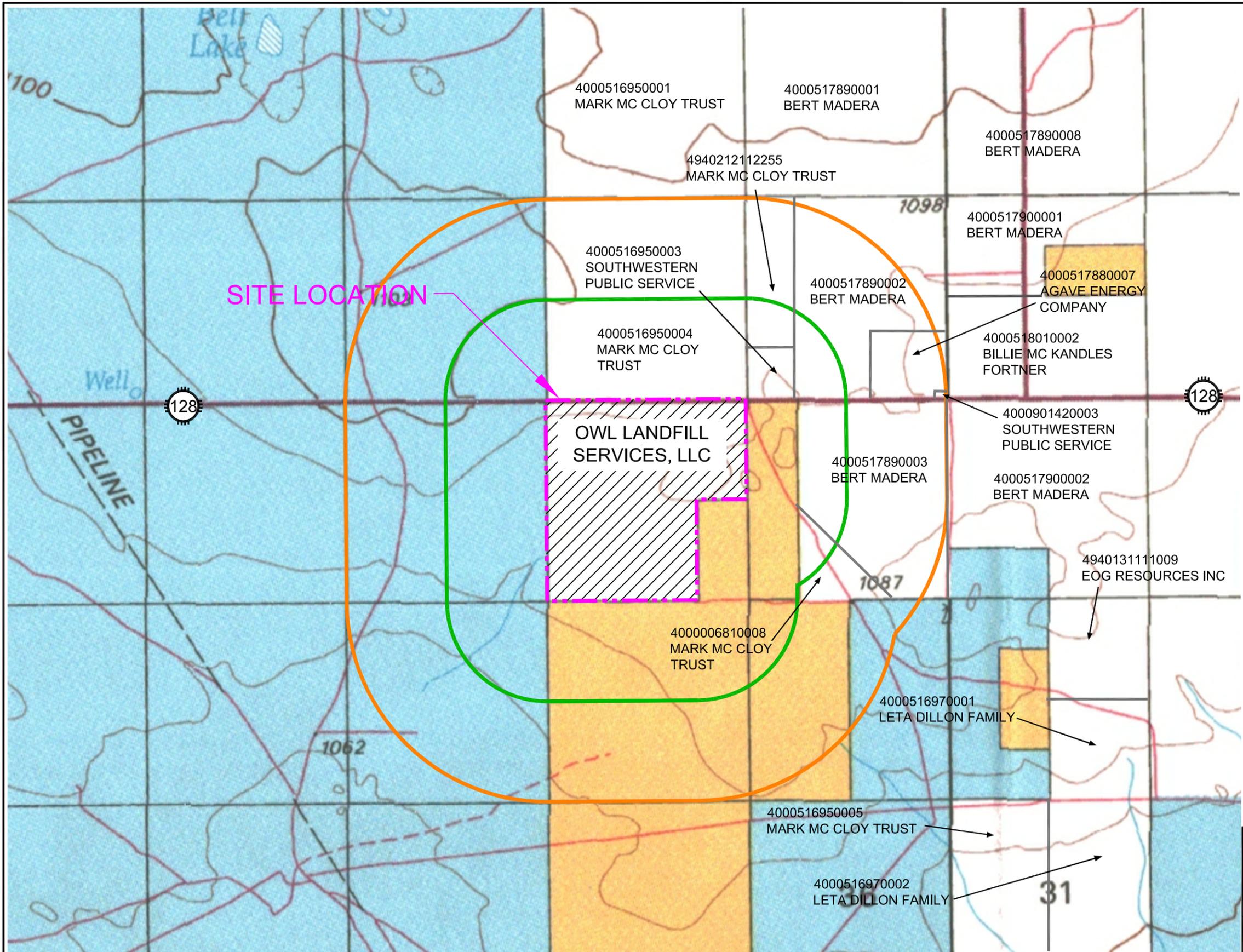
¹ Data provided by Lea County Assessor's Office.

² Surface owner of record within 1/2-mile of OWL site.

³ County Government of the county in which OWL is located (Lea County).

⁴ Courtesy Notice to closest municipality.

⁵ NA - Notified party is not associated with a specific Parcel Code (i.e., UPC).

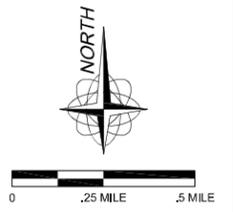


LEGEND

- - - SITE LOCATION
- PUBLIC LANDS AND MONUMENTS (ADMIN. BY BLM)
- STATE LANDS
- PRIVATE LANDS
- 1/2 MILE RADIUS (PUBLIC NOTICE)
- 1 MILE RADIUS

BERT MADERA OWNER NAME
 4000517890002 UPC CODE

- NOTES:
- 1) LAND OWNERSHIP DATA PROVIDED BY THE LEA COUNTY ASSESSORS OFFICE AND IS CURRENT AS OF NOV 30, 2015. ([HTTP://EMAPS.EMAPSPUS.COM/STANDARD/LEACONM.HTML](http://EMAPS.EMAPSPUS.COM/STANDARD/LEACONM.HTML)).
 - 2) LAND OWNERSHIP MAP DERIVED FROM THE BLM EDITION 2002 SURFACE MANAGEMENT STATUS 1:100,000 SCALE. UPDATED WITH STATE OF NEW MEXICO SURFACE OWNERSHIP 2014 DATA.



ONE AND 1/2 MILE RADIUS MAP
 OWL LANDFILL SERVICES, LLC
 LEA COUNTY, NEW MEXICO

Gordon Environmental, Inc.
 Consulting Engineers
 213 S. Camino del Pueblo
 Bernalillo, New Mexico, USA
 Phone: 505-867-6990
 Fax: 505-867-6991

DATE: 09/19/2016	CAD: LAND OWNERSHIP.dwg	PROJECT #: 560.01.02
DRAWN BY: DMI	REVIEWED BY: DRT	ATTACHMENT I.A
APPROVED BY: IKG	gei@gordonenvironmental.com	

Drawing: P:\acad 2003\560.01.02\PERMIT FIGURES\HALF MILE RADIUS MAP.dwg
 Date/Time: Sep. 20, 2016-07:42:32 ; LAYOUT: B (LS)
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**APPLICATION FOR PERMIT
OWL LANDFILL SERVICES, LLC**

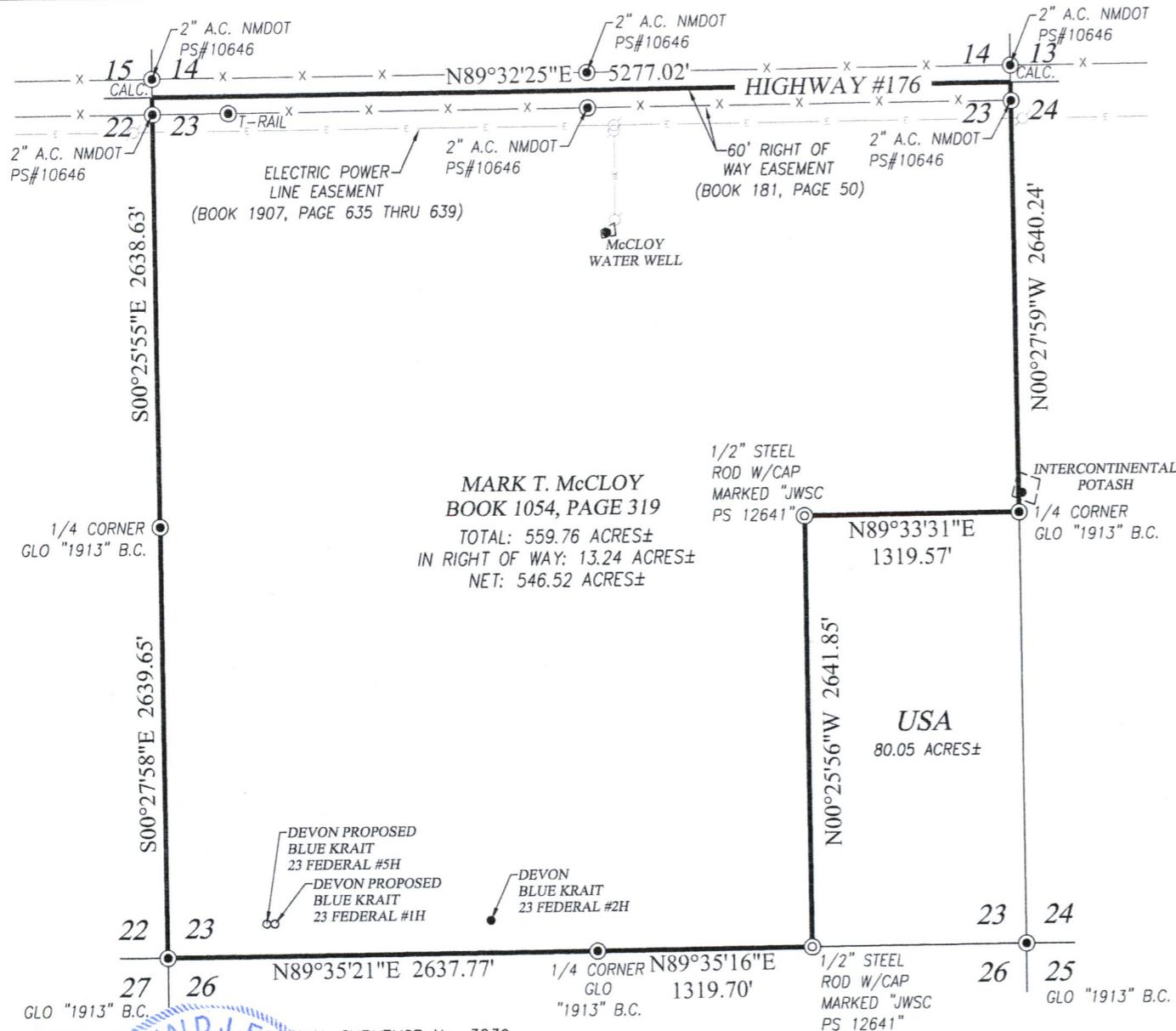
**VOLUME I: PERMIT APPLICATION TEXT
PART 36: SURFACE WASTE MANAGEMENT FACILITIES**

**ATTACHMENT I.B
FINANCIAL ASSURANCE
(TO BE PROVIDED UPON PERMIT APPROVAL)**

**APPLICATION FOR PERMIT
OWL LANDFILL SERVICES, LLC**

**VOLUME I: PERMIT APPLICATION TEXT
PART 36: SURFACE WASTE MANAGEMENT FACILITIES**

**ATTACHMENT I.C
SURVEY PLAT
(JOHN WEST SURVEYING COMPANY, 08/31/2015)**



Legal Description:

All of Section 23, Less the East Half of the Southeast Quarter, Township 24 South, Range 33 East, N.M.P.M. Lea County, New Mexico.



NOTE

BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

LEGEND:

- - DENOTES FOUND CORNER AS NOTED
 - ⊙ - DENOTES SET CORNER AS NOTED
 - - DENOTES ELECTRIC POLE
 - E — - DENOTES OVERHEAD ELECTRIC LINE
 - UE — - DENOTES UNDERGROUND ELECTRIC LINE
- 1000 0 1000 2000 Feet
Scale: 1"=1000'

I, RONALD J. EIDSON, NEW MEXICO PROFESSIONAL SURVEYOR No. 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

RONALD J. EIDSON *Ronald J. Eidson*

DATE: 08/31/2015

PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO HOBBS, N.M. 88240
(575) 393-3117 www.jwsc.biz
TBPLS# 10021000

OILFIELD WATER LOGISTICS
SURVEY TO SET OR LOCATE CORNERS OF SECTION 23,
LESS THE EAST HALF OF THE SOUTHEAST QUARTER,
TOWNSHIP 24 SOUTH, RANGE 33 EAST, N.M.P.M.
LEA COUNTY, NEW MEXICO

Survey Date: 5/7/15	CAD Date: 5/20/15	Drawn By: ACK
W.O. No.: 15110565	Rev: 8/31/15	Rel. W.O.:

Sheet 1 of 1