

NM1-62

**Permit
Application**

**Addendum
12/21/16**

December 21, 2016

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

**Re: Sundance West Surface Waste Management Facility [530.06.01]
Addendum No. 1 to Application for Permit**

Dear Mr. Griswold:

On behalf of our client, Sundance West, Inc. (Sundance West), Gordon Environmental/PSC. (Gordon/PSC) is pleased to submit this Addendum to the Application for Permit (the Application) for the proposed Sundance West Surface Waste Management Facility to the Oil Conservation Division (OCD).

Based on our meeting with you on 12/19/2016, we understand that the Division would like clarification regarding three items for the Sundance West Application for Permit: the radius of exposure, the curve numbers, and the Closure/Post-Closure (CPC) Cost Estimate. Additional information is provided below:

1. The “radius of exposure” discussed in the Hydrogen Sulfide Prevention and Contingency Plan needs to be included on a map.

Response: We have updated the text page II.3-7 of Volume II, Section 3 – Hydrogen Sulfide Prevention and Contingency Plan (**Attachment 1**). The RP-55 limit of 30 ppm will result in a radius of exposure (ROE) of 250 ft from the point of release (assuming a release rate of 100 SCFH on Figure C-2 of RP-55). Potential points-of-release are most likely to include the jet-out, the oil-water separators, or the produced water load out; however, in order to be conservative, we have identified an ROE of 250 ft from the property boundary, and this ROE is depicted on the updated Figure II.3.1 (**Attachment 2**). Please replace page II.3-7 and Figure II.3.1 of the Hydrogen Sulfide Prevention and Contingency Plan (Volume II, Section 3) with the updated versions, attached.

2. CPC Cost Estimate – identify when updated cost estimates will be provided to the OCD.

Response: Language was added to page II.4-14 of Volume II, Section 4 (Closure/Post-Closure Plan; (**Attachment 3**)) to clarify that as phases of Sundance West construction and operations are implemented, the cost estimate will be revised and submitted to OCD for approval 30 days prior to implementation. Please replace

page II.4-14 of the Closure/Post-Closure Plan (Volume II, Section 4) with the updated version, attached.

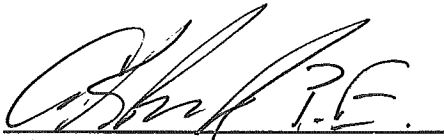
3. The curve number (CN) used in the HELP Model was different from the CN for the drainage calculations – provide justification.

Response: Justification is provided in **Attachment 4**.


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

Sincerely,

GORDON ENVIRONMENTAL / PSC

By  P.E.

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

By 

Dacia R. Tucholke
Project Manager

Attachments:

1. Replacement Page II.3-7 of Volume II, Section 3 – Hydrogen Sulfide Prevention and Contingency Plan
2. Replacement Figure II.3.1 of Volume II, Section 3 – Hydrogen Sulfide Prevention and Contingency Plan
3. Replacement Page II.4-14 of Volume II, Section 4 – Closure/Post-Closure Plan
4. Justification for Curve Numbers

cc: Honorable Andrew L. Wambsganss, Brown Pruitt Wambsganss Ferrill Dean P.C.

Attachment 1

Replacement Page II.3-7 of Volume II, Section 3 – Hydrogen Sulfide Prevention and Contingency Plan

- Constant evaporation pond testing
- Employee training

The cornerstone of this Plan consists of routine H₂S monitoring conducted for the Facility evaporation ponds and incoming waste streams to ensure that the regulatory limits for H₂S are not exceeded. The monitoring is intended to confirm that the H₂S concentration being accepted at the Facility is less than 1 ppm. This approach to monitoring and treatment has proven effective in reducing H₂S concentrations and successful in eliminating the need for H₂S Contingency Plan implementation as described in 19.15.11.9 NMAC (i.e., to address H₂S > 100 ppm). In addition, this Plan follows American Petroleum Institute (API) Recommended Practice 55 (RP-55), paragraph 7.6 to address H₂S >30 ppm (**Table II.3.4**).

1.5 Regulatory Requirements: 19.15.36 NMAC and 19.15.11 NMAC

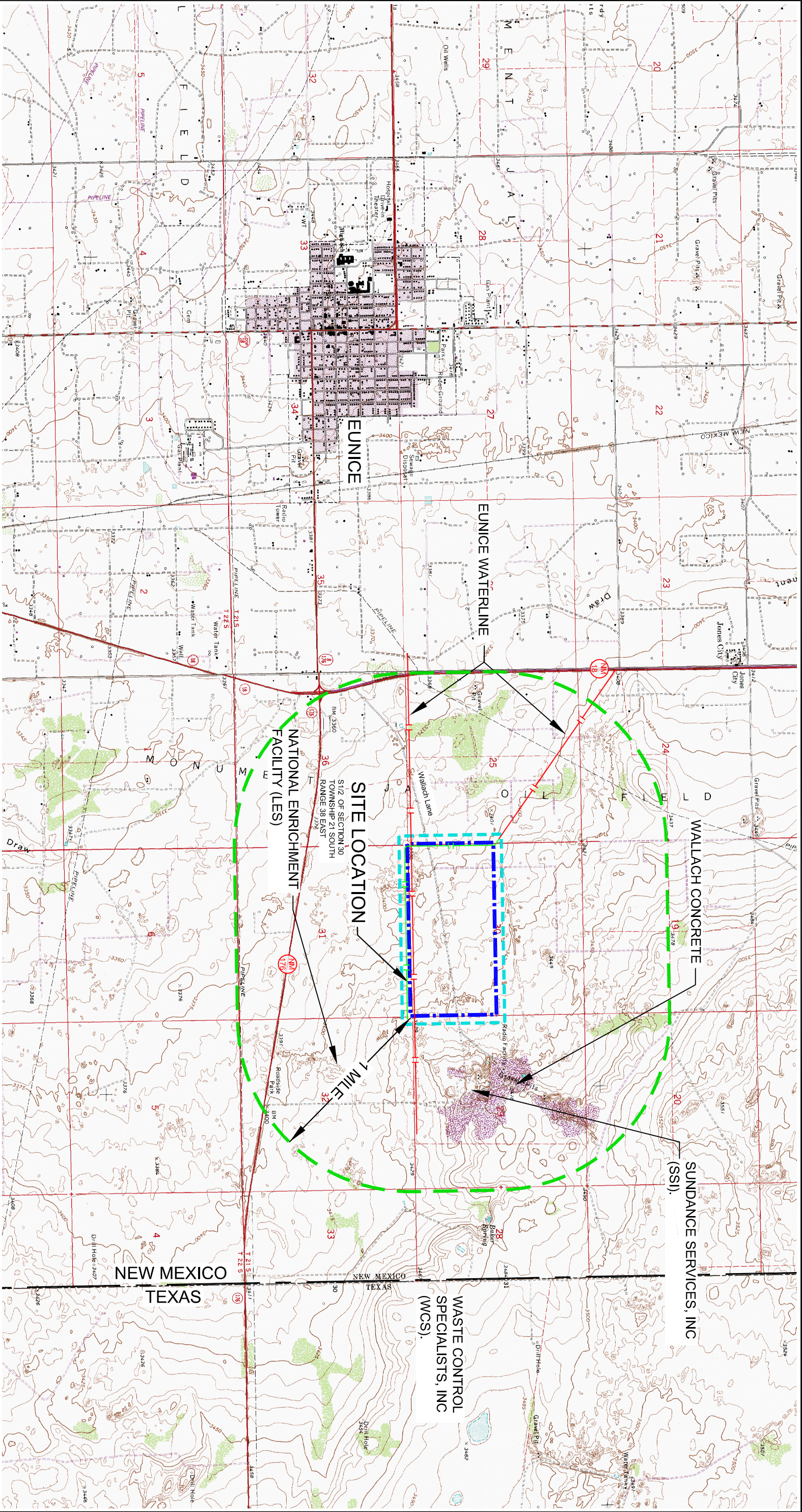
The Rules for Surface Waste Management Facilities (19.15.36 NMAC) address the monitoring and management of H₂S in 19.15.36.8.C.(8):

19.15.36.8 SURFACE WASTE MANAGEMENT FACILITY PERMITS AND APPLICATION REQUIREMENTS

- 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:*
- (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;*

Additionally, this H₂S monitoring program is intended to demonstrate compliance with 19.15.36.8.C.(8) NMAC (Surface Waste Management), and the requirements of 19.15.11 NMAC (Hydrogen Sulfide Gas), as well as, other permit conditions that may apply to this Facility. Should monitoring results identify unexpected concentrations of H₂S in excess of 30 ppm (RP-55 limit) in a public area, the requirements of 19.15.11.8.C NMAC will be implemented and this Plan, developed specifically to be responsive to 19.15.11.9 NMAC, will be implemented as required with proper notification. The RP-55 limit of 30 ppm will result in a radius of exposure (ROE) of 250 ft from the point of release (assuming a release rate of 100 SCFH on Figure C-2 of RP-55). Potential points-of-release are most likely to include: the Jet-out, the oil-water separators, or the produced water load out; however, in order to be conservative we have identified an ROE of 250 ft from the property boundary. This ROE is depicted on **Figure II.3.1**, and there are no “public areas” or “public roads” (per 19.15.11.7(I) and (J) NMAC) within this ROE.

Attachment 2
Replacement Figure II.3.1 of Volume II, Section 3 – Hydrogen Sulfide Prevention and
Contingency Plan



LEGEND

- SITE BOUNDARY
- 250-FT RADIUS OF EXPOSURE (CONSERVATIVE)
- 1 MILE RADIUS

Based on Eunice NE, TX.- NM (1969) Photorevised (1979);
Eunice, NM (1969) Photorevised (1978);
Quadrangles, USGS 7.5 SERIES (1:24,000 Scale)
Drawing/Placed: 2003/30,06,01/REVISED FIGURES(RAI)/SITE LOC 250 FT RADIUS REVISED 11.XT.7AWG
Date/Time:Dec. 20, 2016-08:00:02 : LAYOUT: B (LS)
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NOTE:
NO STREAMS, SPRINGS OR WATER COURSES WITHIN
1/2 MILE OF SITE

SITE LOCATION MAP

SUNDANCE WEST
SURFACE WASTE MANAGEMENT FACILITY
LEA COUNTY, NEW MEXICO



Gordon Environmental, Inc. Consulting Engineers			2713 S. Camino del Pueblo Bernalillo, New Mexico, USA Phone: 505-867-6990 Fax: 505-867-6991
DATE: 12/20/2016	CAD: 250' RADIUS.dwg	PROJECT #: 530.06.01	
DRAWN BY: DMI	REVIEWED BY: CWF	FIGURE II.3.1	
APPROVED BY: IKG	gk@gordoneirromental.com		

Attachment 3

Replacement Page II.4-14 of Volume II, Section 4 – Closure/Post-Closure Plan

3.2 Reporting

Reports of post-closure activities including, but not limited to site inspection data and maintenance procedures will be submitted to OCD within 45 days from the end of each calendar year or as otherwise required.

4.0 FINANCIAL ASSURANCE

4.1 Closure/Post Closure Cost Estimate

The Cost Estimate (**Attachment II.4.A**) for the closure and post-closure activities described in this C/PC Plan is presented in current dollars and conservatively assumes that third party contractors will perform closure and post closure activities at the site, as required by 19.15.36.8.C.(9) NMAC. Preparation of the C/PC Cost Estimate also assumes that no contamination or remedial activities are required due to releases into the environment. The current estimate for Phase I (**Table II.4.1**) of Sundance West closure construction and post-closure operations is provided as **Attachment II.4.A**.

This estimate will be revised accordingly as additional Phases (**Table II.4.1**) of Sundance West construction and operations are implemented, and will be submitted to the OCD for approval 30 days prior to implementation or should unforeseen conditions arise, as well as annually once Phase Development is complete. Upon Division approval of the requested permit, Sundance West will elect a financial assurance mechanism pursuant to 19.15.36.11.E NMAC and submit the appropriate documentation to OCD based on the estimates provided in this Plan.

4.2 Release of Financial Assurance

Upon successful completion of closure activities for the entire Facility, or portions of the operation (i.e., sections of the Landfill that have reached final grade; components of the process that have ceased operation); and after OCD concurrence; Sundance West will request the release of the financial assurance mechanism in-place for that component of closure of the Facility. After the post-closure periods have expired (i.e., 3 years for waste processing pits/ponds, and 30 years for the Landfill), provided there is no contamination evident and the site has established re-vegetation in accordance with the regulations, Sundance West will request release from the remaining financial assurance requirements for the Facility or portions that have been successfully closed.

Attachment 4
Justification for Curve Numbers

Justification for Curve Numbers Sundance West Surface Waste Management Facility

1.0 HELP Model Runoff Curve Numbers

Attachment III.4.C contains the HELP Model Users Guide for Version 3. The model is intended to predict leachate generation and to provide design parameters for leachate control. The model requires three general types of input data: weather data, soil data and design data. Runoff Curve Number (CN) is computed by the HELP program based on surface slope, slope length, default soil texture, and quality of vegetative cover. A landfill cover system is designed with specific layers each modeled with the intent of limiting potential rainfall from percolating through the system. The HELP program models the flow of water through the layers in different ways. The designer can select soil characteristics to a layer using default options (soil textures) that most closely represent site-specific Unified Soil Classifications System (USCS) soils. When selecting the applicable soil texture, the designer also considers saturated hydraulic conductivity test results for the soil selected. Soil moisture retention characteristics are provided as total porosity, field capacity and wilting point for each layer soil texture assigned. The available default soil textures limit selection to approximately 25 soil materials. The program adjusts the top layers of the liner system to account for root depth, susceptibility to water erosion, vegetative cover and other factors. Unlike Version 2 of the HELP model, Version 3 accounts for surface slope effects on CN and runoff. The CN is computed by the HELP model based on landfill surface slope, slope length, soil texture of the top layer, and the vegetative cover. The program is designed to provide a conservative CN that is generally of a higher value than the CN used for drainage calculations. Based on soil texture 9, with a poor stand of grass and various final surface slopes, the HELP model produced slope-adjusted CN values ranging from 87.3 to 88.

2.0 Drainage Calculation Runoff Curve Numbers

Drainage calculations evaluate on-site runoff and off-site run-on management. The storm and sanitary analysis program used to model the post-development network uses an iterative process for projecting the effects and sizing of the control components including drainage channels and stormwater basins. The curve number is selected by the designer from one of four hydrologic soil groups under a series of cover descriptions. Group B soils, i.e., soils with moderate infiltration rates when wetted; moderately well drained to well drained; and moderately fine to moderately coarse textures, in western desert urban areas with natural desert landscaping, produces a CN of 77 (**Table 3-1 of Attachment III.3.A**). The model looks at each drainage catchment based on sheet flow with a maximum flow length of 100-feet. The model then uses the CN, rainfall data, and time of concentration to derive the total runoff that must be managed.

3.0 Curve Number Justification

In each of the two calculation sets evaluated, the use of the curve number (CN) in the overall model is derived for different purposes of conservative design. The HELP model derives a slope-adjusted curve number (CN) using a soil texture that approximates on-site soils with specific design parameters. While somewhat limited in default conditions, the program considers the overall liner system as an engineered element to meet specific design goals. Drainage calculations do not consider potential percolation and leachate generation. The calculations provide a basis for drainage channels and stormwater basins using limited and generalized soil characteristics. When considering the applications of each model, it is logical that the slope-adjusted CN value be higher (increased runoff potential) than when used for drainage calculations and are derived appropriately.