



November 29, 2024

File #: LU-24-027
Address: 28972 Coffin Butte Rd,
Corvallis, OR 97330

Dear Mr. Condit,

Thank you for submitting a revised conditional use application for a proposed expansion of the Coffin Butte Landfill, originally submitted on July 19, 2024. Community Development and third-party consultants Winterbrook Planning, Maul Foster & Alongi (MFA), Columbia West Engineering, Inc., and Landfill Fire Control Inc. have reviewed your revised application to determine if sufficient materials have been provided to evaluate compliance with the Benton County code. Our review indicates that we still need additional information to prepare adequate findings and process your application. Therefore, your application continues to be deemed **Incomplete** as of **November 29, 2024**.

The following pages and the attached letter from MFA provide a detailed review of the needed items and advisory comments from the third-party reviewers.

Pursuant to Subsection 51.535(2)(a) through (c) of the Benton County Code (BCC), your application will be void unless one of the following is submitted by **January 15, 2025** (within 180 days of the date the application was submitted):

- All the missing information;
- Some of the missing information and written notice from the applicant that no other information will be provided; or
- Written notice from the applicant that none of the missing information will be provided

You may reapply if you are still interested in obtaining this conditional use permit after the application is void. If you respond with all or some of the missing information, you must submit the items as a single packet to the Community Development Department.

Please contact Petra Schuetz at petra.schuetz@bentoncountyor.gov if you have any questions.

Sincerely,

Petra Schuetz, Planning Director

Information and Materials Needed

Criteria/ Standard	Information required
Conditional Use criteria (BCC 53.215)	• Provide a zoning map in Exhibit 2 showing the zone designations of the development site, all applicant-owned property, and property adjacent to applicant-owned property. Label tax lot ID numbers on the map and indicate which are owned by the applicant. • Define and identify the location of current uses on property adjacent to the development site, all other property owned by the applicant, and property adjacent to the applicant-owned property. • Update odor modeling maps (Exhibit 14) so that the metrics and color scheme in the map legend are consistent between scenarios.
Conditional Use criteria (BCC 60.220)	• Define and identify the location of current uses on development site land with an FC designation, including identification of accepted farm and forest practices on this land. • Provide evidence to support conclusions. Specifically relating to results from reducing the amount of land available for farm/forest uses and the current farm or forest activities on the development site (page 51 of Burden of Proof document).
Siting Standards and Requirements (BCC 60.405)	• Define and identify the location of forest operations and accepted farm practices on property adjacent to the development site, all property owned by the applicant, and property adjacent to the applicant-owned property. • Clarify details of the proposed “shop maintenance” area. Confirm tax lot for this area, and whether the proposal includes a new structure. If the proposal includes a new structure, address how it can meet the standards of BCC 60.405.
Conditional Use Review (BCC 77.310)	• Define and identify the location of the current uses on land adjacent to the development site owned by the applicant and the land adjacent to lands owned by the applicant.
Sensitive Land Standards (BCC 99.105 through .205)	• Respond to these sections and provide related evidence.
Stormwater Management Standards (BCC 99.670)	• Applicant must update the Burden of Proof document with the current BCC subsection title and text, and provide an updated response. Include responses to the current standards of the sub-section, as necessary.

Engineering Review	• See the attached letter from Maul Foster & Alongi.
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Application Information	
File #:	LU-24-027
Address:	28972 Coffin Butte Rd, Corvallis, OR 97330
Application submitted:	July 19, 2024
Date deemed incomplete:	August 16, 2024
Deadline for submittal of missing information (180 days from submittal):	January 15, 2025
Staff contact	Petra Schuetz, Planning Director



November 27, 2024

Project No. M2880.01.001

Via Benton County

Sent only electronically to: petra.schuetz@bentoncountyor.gov

Jeffery Condit

Miller Nash LLP

1140 SW Washington St, Ste 700

Portland, Oregon 97205

Re: Third-Party Completeness Review: Coffin Butte Landfill Submittal

Dear Jeffery Condit:

Maul Foster & Alongi, Inc. (MFA), under a subcontract with Winterbrook Planning, is contracted with Benton County (County) to perform third-party engineering review of the Coffin Butte Landfill land use application. This letter provides a completeness review of a portion of the correspondence and exhibits prepared by Valley Landfills, Inc. (Applicant), and submitted to the County on October 30, 2024. This completeness review is intended to be an initial and preliminary review of the engineering elements of the submitted documents to establish their land use completeness prior to proceeding with the final technical review of the documents. MFA's scope of review was limited to Exhibits 2, 5, 6, 11 through 14, 16 through 18, 20, 22, and 27 through 30.

Completeness Review of Submitted Exhibits

Exhibit 2: Engineering Plans

MFA has the following comments on this exhibit:

- Multiple Sheets:
 - Grading and other proposed landfill-related improvements are shown extending past the property lines of the Applicant's site and into what appears to be the right-of-way of Coffin Butte Road. All landfill-related improvements and ground-disturbing activities should be completely contained on the Applicant's site, including adequate room for the temporary erosion and sediment controls and best management practices that would be needed during future construction. Any drainage components or conveyance features needing to be in the road right-of-way to maintain the existing drainage patterns—such as culverts, ditches, or swales—would need to be coordinated and approved through the appropriate County permit process.
- Drawing No. 6:
 - The detail shows a 6-inch-thick gravel underdrain layer meant to collect and convey groundwater away from the rest of the liner system. An analysis for determining this thickness was not provided. As hydrostatic pressures can cause damage to the liner system, this analysis should be completed and provided in the revised engineering plans.

- Information on the extent of the bottom liner and liner termination (i.e., anchor trench alignment, section) details are missing in the submittal package.
- Information on the material type and thickness for the proposed geomembrane was not provided.
- Specifications for the underdrain and leachate collection and recovery layer gravel were not provided.
- Drawing No. 9:
 - This drawing shows a proposed septic tank; however, no supporting information (test holes, calculations, etc.) was provided in the material supplied to MFA to evaluate the feasibility, sizing, or location of this proposed septic tank.
- Drawings Nos. 11 and 12:
 - The total surplus cut volume presented on these drawings is approximately 3.5 million cubic yards and the notes state that this excess material will be hauled to the neighboring quarry and stockpiled for future use. A more detailed soil management plan should be developed for the site using the estimated volumes. The soil stockpile location as shown on Drawing No. 19 does not appear to represent the volumes stated in stated in Drawings Nos. 11 and 12. Also, Exhibit 16, Environmental and Operational Considerations, quotes a much smaller amount on page 13. A more detailed description of how surplus soils will be managed would help the County better understand how the stockpile plan will work.
 - Additional information on the Applicant's plans for upgrading the existing landfill gas (LFG) management facility should be provided. This would include detailing any proposed connections to the existing LFG management facility as well as the LFG collection and conveyance for the proposed expansion area.
- Drawing No. 17:
 - The Applicant should provide additional information on the anticipated capacities of the drainage pathways indicate by the series of flow arrows on this sheet. Erosion protection, such as riprap, may be necessary and should be sized appropriately.
 - Calculations supporting the sizing of the riprap protection for the emergency overflow and the Manhole No. 1 (MH-1) discharge should be provided.
- Drawing No. 21:
 - The Applicant should provide additional information as to how the pond outlet is intended to function with pipes running to and from MH-1 and the single valve on the lower pipe. In addition, the rim elevation of MH-1 is several feet lower than the detention pond maximum water surface elevation. There may be additional detail needed to determine whether there is a potential for slope erosion downhill from the rim of MH-1.

Exhibits 5, 6, and 30

A review of this group of documents was provided by Columbia West Engineering, Inc. (CWE), as a geotechnical subconsultant to MFA. MFA's and CWE's comments are summarized below, while the entire CWE letter is provided as Attachment A.

- Exhibit 5:
 - The scope of the subsurface exploration and laboratory testing programs described is generally aligned with the planned analysis. However, we recommend completing at least

one seismic survey at the site to evaluate shear wave velocity to a minimum depth of 100 feet below ground surface. Collecting this additional data will help the design team perform a more accurate assessment of the seismic hazard at the site.

- Exhibit 6:
 - This exhibit appears to be sufficiently complete for proceeding with technical review. Note that CWE does not recommend using these logs to estimate parameters for geotechnical engineering analysis or design. MFA, however, finds that these logs are useful for reviewing existing groundwater conditions from a land use perspective.
- Exhibit 30:
 - The landfill seismic design memorandum provides a high-level overview of the proposed seismic design methodology sufficient for a pre-design review process.

Exhibit 11: Noise Study

MFA has the following comments on this exhibit:

- This exhibit appears to be sufficiently complete for proceeding with technical review. The report does not explicitly state that the noise sampling methods conform with the Oregon Department of Environmental Quality (DEQ) Sound Measurement Procedures Manual (NPCS-1) per OAR 340-035-0035(3)(a). The content appears generally consistent with the rules; however, NPCS-1 is over 40 years old and doesn't consider modern technology. MFA recommends that the Applicant verify that the proposed noise study methodology is consistent with DEQ's protocols and requirements and state that in the report.

Exhibit 12: Findings on Odor

This exhibit appears to be sufficiently complete for proceeding with technical review, with any updates needed to reflect comments provided for Exhibit 14.

Exhibit 13: Memo Regarding Odor, Methane, and Hydrogen Sulfide Control

This exhibit appears to be sufficiently complete for proceeding with technical review.

Exhibit 14: Odor Dispersion Modeling Study for Landfill Expansion

MFA has the following comments on this exhibit:

- AERMOD dispersion model input (*.ADI), output (*.ADO file), and plot (*.PLT) files are required to verify the setup and results of the Study.
- Raw surface and upper air meteorological data files for the on-site weather station, Corvallis Municipal Airport, and the Salem-McNary Regional Airport for the period from January 1, 2018, to December 31, 2023, are required to verify the completeness of the meteorological datasets included in the study.

The following elements in Exhibit 14 require further review and analysis:

- Although there are no regulatory frameworks or required protocols for odor evaluations in Oregon, MFA disagrees with the odor emission rates included in the study. The odor emission rates included in the study were derived by multiplying a conservative dilutions-to-threshold ratio

of 500 by an estimated LFG fugitives flow rate of 0.0001 meters per second. The resulting value (0.05 meters per second) does not represent an emissions rate that can be modeled to predict off-site concentrations that can be compared to published odor detection thresholds by individual compound. MFA recommends the study be reevaluated using actual/predicted emission rates in units of grams per second for volatile organic compounds and potentially odorous toxic air contaminants from each of the permitted emission units included in the Title V Operating Permit issued to the landfill. Using actual/predicted emission rates will result in predicted off-site concentration isopleths that can be directly evaluated against published odor detection thresholds by individual compounds to determine whether emissions from the landfill may be detectable in residential or commercial land use areas.

- Only LFG fugitives from the working face were included in the study. MFA recommends the study incorporate emissions from each permitted emissions unit at the landfill, including, but not limited to, the LFG flares, the diesel-fueled tipper, leachate ponds, and petroleum contaminated soils.
- Each emissions unit added to the study will require new source parameters to be modeled. If point source representations are added (e.g., the LFG flare and/or diesel-fueled tipper) to the dispersion model, nearby buildings and structures will need to be evaluated for potential downwash impacts.
- MFA recommends correlating the meteorological data collected from the on-site weather station to historical odor complaints to identify potential correlations and trends in weather patterns leading to past odor complaints.

Exhibit 16: Environmental and Operational Considerations

MFA has the following comments on this exhibit:

- As noted above, the Applicant should address the discrepancy in the reported volume of excavated material to be stockpiled.
- Page 3: There are multiple references to Tampico Ridge in this document. However, Tampico Ridge is not shown on Figure 4. It would be helpful to show this location in the figure.
- Pages 7–9: Water Quality Monitoring Program.
 - The expanded monitoring network section in Chapter 8 lists multiple new monitoring networks and shows them in Figure 4. The section also discusses leak detection sampling locations beneath the leachate ponds but does not provide nomenclature for them nor show them on Figure 4. Consider either including this information or adding a sentence clarifying that the locations of these are yet to be determined.

Exhibit 17: Preliminary Drainage Report

MFA has the following comments on this exhibit:

- The comments noted on Exhibit 2 above should also be addressed in this document.
- The pond design elevations noted in Exhibit 2 (specifically Drawings Nos. 17 and 20) do not match the elevations presented in this report and should be revised to be consistent throughout.
- The drainage discussion does not address what happens with excess water from storms larger than the 25-year 24-hour design storm. The plans show a riprap slope leading to a natural drainage system but there is no discussion about the downstream capacity of the drainage

system leading to a proposed 12-inch culvert under Coffin Butte Road. Considering the likelihood that rain events will exceed the design storm, this should be addressed in the application.

- A drainage basin map should be provided to clarify the evaluated drainage basins. It would be helpful to include similar relevant information in the Current Surface Water Drainage section of Exhibit 16.
- Hydrological calculations should be provided for the estimation of run-on flow (from upstream of the proposed expansion area) as well as for the sizing of the culvert (24-inch) to demonstrate that there is available capacity in the conveyance swale that is proposed to divert run-on flow from the expansion footprint and routing it to the proposed stormwater pond.

Exhibit 18: Aerial Renderings of Coffin Butte Landfill

This exhibit appears to be sufficiently complete for proceeding with technical review.

Exhibit 20: Fire Risk Assessment of Coffin Butte Landfill

MFA and our subconsultant, Dr. Tony Sperling of Landfill Fire Control Inc. (LFCI), have the following comments on this exhibit:

- Page 2: History of Prior Landfill Fires
 - This report only references three fire events occurring at the landfill since 1999. However, the County has indicated that there have been at least two additional fire events on this site in the past year or so. The cause of these recent fires and the actions taken should be included in this portion of the document.
- Page 3: Fire Mitigation Plans
 - The first paragraph indicates that water would be used as the primary means of extinguishing a fire. LFCI notes that the most effective and current industry standard for the primary method of fire suppression for a landfill fire is smothering with 12 inches of soil. The Applicant should provide justification for the primary use of water for their initial response.
 - With consideration to the preceding comment, LFCI recommends that the second paragraph describe the action plan in the case of a landfill fire to first control the fire (using soil or water), then assess and take further steps to extinguish the fire.
 - The document refers to the availability of public water on site, but the narrative does not indicate the amount of on-site stored volume and/or refilling capacity of the water system available for fire suppression activities. This information should be included to better understand the firefighting capabilities of the existing system, as no improvements appear to be proposed. LFCI recommends a minimum sustained flow of 1,000 gallons per minute be available for fire suppression and further information be provided on how the Applicant will provide the logistics for maintaining this flow rate (e.g. available hydrant connections, tanker shuttles).
- Page 4: Landfill Fire Sources, Risk Profiles, and Specific Mitigation Measures
 - Battery fires are increasingly becoming a source of landfill fires and should be addressed in this document. Reactive and banned materials should be identified.
 - For Working Face Fires, LFCI recommends the inclusion of bar hole punch for monitoring the subsurface carbon monoxide (CO) and temperature, as well as infrared camera inspections.

- For Grassland Fires, LFCI recommends that this document specify a measurable fire buffer distance between the landfill and surrounding grasslands. This fire buffer should be adequately maintained at all times. In addition, fire watch provisions or infrared monitoring should be implemented to manage ignition risks during off hours.
- For Gas Well Fires, LFCI recommends preventive monitoring, including monitoring for CO levels, targeted maximum oxygen concentrations, and balancing gas levels to prevent aerobic decomposition. In addition, the Applicant should provide standard operating procedures for handling high-temperature wells and specify operating temperature thresholds.
- Other recommendations from MFA and LFCI include the following:
 - Spontaneous combustion fires are not addressed in this document, except in relation to gas wells. LFCI notes that spontaneous combustion on slopes is a fire risk that should be included.
 - Typical landfill construction has an inherent risk of capturing LFG at the edges of geomembrane sheets and should be addressed in this document.
 - Smoking should only be allowed in designated areas and prohibited elsewhere on site.
 - The use of bird deterrent flares should be avoided.
 - Annual fire safety and firefighting training should be undertaken for all employees who would respond to a fire along with regular cross-training with Adair Rural Fire & Rescue.

Exhibit 22: Reclamation Plan for Expansion Area

This exhibit appears to be sufficiently complete for proceeding with technical review, other than that the comments provided for Exhibit 2 above still apply and may require revisions to the sheets provided with this document.

Exhibit 27: Leachate Management Summary

MFA has the following comments on this exhibit:

- The summary does not address the quantitative aspects of leachate generation, storage, and disposal. The addition of a new cell and new leachate storage ponds should be addressed with specific information on peak generation, storage requirements, transportation capacity, and disposal.
- Discussion on decommissioning of the existing leachate collection and treatment system, rerouting of the existing leachate collection/conveyance system, and construction of the new facility is missing. Provide details for proposed sequencing for leachate storage ponds, rerouting of the leachate conveyance, and then the decommissioning of the existing facilities.
- While the document references agreements with local wastewater treatment plants in Corvallis and Salem, Oregon, to take the excess leachate, the terms of those agreements are not included in the document. The Applicant should specifically note any expiration dates or limitations on quantity in these agreements and address any further contingency plan that would be needed for leachate disposal.
- Page 2:
 - Paragraph 1: The text of reads “since MSW leachate is not found on any of the four [listed waste] lists, it would have to be characterized as a listed hazardous waste.” Please confirm

whether the statement should be rewritten to say, “it would not have to be characterized as a listed hazardous waste.”

- Paragraph 3: The referenced toxicity sample is from August 2023. It would be helpful if the Applicant provided a more recent data point or data trend from prior tests noting any exceedances.

Exhibit 28: Letter to County Regarding Methane Emissions

MFA has the following comments on this exhibit:

- At the time of the 2022 U.S. Environmental Protection Agency inspection (EPA), Coffin Butte Landfill was in the middle of a construction project to install new horizontal and vertical collection wells. It would be helpful to provide a list or figure showing how many of the 61 exceedances documented by the EPA during the inspection were in the construction area.

Exhibit 29: Letter to County Related to Arsenic

MFA has the following comments on this exhibit:

- Consider including a table comparing background concentrations for this constituent to the exceedances discussed throughout the letter.
- The letter states that MW-59 was due to be sampled in calendar year 2024. If this sampling has taken place, consider discussing the findings.

General Observations

DEQ would be expected to require an update to the current Operations Plan as part of any solid waste permit modification process. The document provides detailed information about the facility's proposed solid waste operations in the landfill expansion area and could be valuable for the County to review in assessing compliance with the permitted use and in understanding the potential impacts on neighboring properties as a result of operational changes. It was not included in the review package provided to MFA. In lieu of submitting a draft Operation Plan, a narrative description of the proposed changes to the Operation Plan could be prepared by the Applicant for review and concurrence with the County.

Summary of Review

The information presented above represents the summary of MFA and our subconsultants' completeness review. We recommend that the Applicant's submittal be considered incomplete until these items are addressed or the associated documents in the referenced exhibits are revised and resubmitted. This completeness review is being undertaken to advise the Applicant of informational or data gaps found in the submitted materials prior to proceeding with a more substantial technical review of the application package. Once the application package is deemed complete, the future technical review will begin and will be more in-depth. Any deficiencies identified during the technical review may also result in a request to resubmit portions of the submittal to address data gaps or comments.

Please contact MFA if you have any questions or need any additional information regarding this preliminary completeness review.

Sincerely,

Maul Foster & Alongi, Inc.



Erik Bakkom, PE
Principal Engineer



Cem Gokcora, PE
Senior Engineer

Attachment

Limitations

A—Review Letter from Columbia West Engineering, Inc.

Limitations

The services undertaken in completing this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this report.

Attachment A

Review Letter from Columbia West Engineering, Inc.



MAUL
FOSTER
ALONGI

November 22, 2024

Maul Foster & Alongi, Inc.
601 East Front Avenue, Suite 202
Coeur d' Alene, ID 83814

Attn: Ellery Howard, PE

**Re: Geotechnical Pre-Design Completeness Review
Coffin Butte Landfill Seismic Design
28972 Coffin Butte Road
Corvallis, Oregon
CWE Project: MFA-7-01-1**

INTRODUCTION

Columbia West Engineering, Inc. (Columbia West) is pleased to submit this letter summarizing our pre-design review of the seismic design approach for the new cell at the Coffin Butte Landfill in Corvallis, Oregon. The purpose of our review was to provide feedback regarding the "completeness" of the seismic pre-design narrative and supporting geotechnical data. Our objective was to identify missing key information or data that could hinder the more formal pre-design review that will be completed by the local jurisdictional authority. We reviewed the following provided documents:

- Exhibit 30: Proposed Coffin Butte Landfill Seismic Design
- Exhibit 6: Well Logs for PW-2 and Berkland Well
- Exhibit 5: Phase II Geotechnical Exploration Report and Addendum to the South Expansion Area, including the Narrative Report and Appendices A through F

A summary of our review and conclusions are provided below.

REVIEW

SEISMIC DESIGN METHODOLOGY

Exhibit 30 contains a memorandum by Civil and Environmental Consultants, Inc. that contains an overall description of the proposed seismic design procedure. It includes the following:

- Regulatory references at the federal and state levels that serve as the design basis
- A discussion of the key landfill components that will be considered in the seismic design
- A discussion of geotechnical and geological constraints associated with the location of the landfill cell (distance to active faults and the maximum allowable side slopes)
- A general description of the seismic hazard that will be used for design
- Key considerations for the slope stability analysis

GEOTECHNICAL DATA

The Phase II Geotechnical Exploration Report dated July 15, 2024 (Exhibit 5), includes the following:

- Nineteen borings drilled to depths between 25.1 and 165 feet below ground surface (BGS)
- Fifteen test pits excavated to depths between 7 and 12 feet BGS
- Nine cone penetration tests (CPTs) advanced to depths between 10 and 65 feet BGS, shear wave velocity test in CPT-08 to approximately 20 feet BGS
- Nine Geoprobe® adjacent to the CPTs for sampling
- Two piezometers converted from borings
- Laboratory testing, including a suite of moisture content tests, a suite of Atterberg limits test, a suite of grain-size analyses, 31 rock point load tests, 4 one-dimensional consolidation tests, 2 unconsolidated-undrained triaxial tests, 1 consolidated undrained triaxial test, 2 consolidated drained triaxial tests, 3 consolidated drained direct shear test, and 1 flexible wall permeability test

Overall, the subsurface exploration and laboratory testing programs appear sufficient to support the proposed seismic design for the new landfill. However, geophysical data (specifically, shear wave velocity measurements) were collected in only one CPT to a depth of approximately 20 feet BGS. In our opinion, the project would benefit from collecting additional geophysical data.

Exhibit 6 includes two water well logs. We do not recommend using these logs to estimate parameters for engineering analysis or design.

CONCLUSIONS AND RECOMMENDATIONS

Based on our completeness review of the provided documents, we conclude that the landfill seismic design memorandum in Exhibit 30 provides a high-level overview of the proposed seismic design methodology sufficient for a pre-design review process. Furthermore, the scope of the subsurface exploration and laboratory testing programs described in Exhibit 5 is generally aligned with the planned analysis. However, we recommend completing at least one seismic survey at the site to evaluate shear wave velocity to a minimum depth of 100 feet BGS. Collecting this additional data will help the design team perform a more accurate assessment of the seismic hazard at the site. We would be happy to discuss this recommendation further at your convenience.



We appreciate the opportunity to be of service to you. Please call if you have questions concerning this letter or if we can provide additional services.

Sincerely,



Jonathan A. Nasr, PE
Project Engineer



Shawn M. Dimke, PE, GE
Principal Engineer

JAN:SMD:kat

Document ID: MFA-7-01-1-112224-geol.docx