To: Benton County Staff

From: Paul Nietfeld

Subject: LU-24-047 Reconsideration

Attachment files for Nietfeld 03Feb2026 testimony

Date: February 3, 2026

Dear Benton County Staff:

My 03Feb2026 testimony in the LU-24-027 Reconsideration matter before the Benton County Board of Commissioners involves a number of files that I am providing by attachment. These files are being supplied via the SFTP portal created in my name, within the "Attachments_03Feb2026" subfolder. The list of filenames is below:

These files are referenced in the body of my testimony document, which I am also providing via the SFTP portal.

My contact information is

Paul Nietfeld

37049 Moss Rock Dr.

Corvallis, OR 97330

pnietfeld@gmail.com

Thank you,

Paul Nietfeld

February 3, 2026

Benton County Board of Commissioners
4500 SW Research Way
Corvallis, OR 97333

RE: LU-24-027
Information in response to Applicant testimony A0007
Paul Nietfeld, Benton County resident

Chair Malone and Commissioners Wyse and Shepherd:

Applicant has submitted testimony (A0007 - Jan 27, 2026 - January27LetterToBOC SUBMISSION, Appendix A January 16 Letter to BOC) indicating that the current landfill controlling owner is either considering or is actually denying to some extent responsibility for the performance issues with the Coffin Butte landfill Gas Collection and Control System (GCCS) as documented in the ODEQ PEN issued Nov. 6, 2025. From Page 1 of this Applicant testimony [highlight added]:

> "By its own terms the PEN relates to the monitoring of existing surface emissions, the legacy gas collection and control system inherited by (and improved by) the Applicant, and sufficiency of cover at the existing landfill."

My testimony contains a brief overview of information that provides context on the degree to which the current landfill controlling owner (Republic Services, Inc.) is in fact responsible for the majority of the landfill gas generated currently by the landfill:

- More than 57% of the waste in place volume was placed by Republic Services.
- More than 78% of the calculated total landfill gas emissions in the year 2024 resulted from waste placed by Republic Services (this was the year of the second inspection that ultimately resulted in the Nov. 6 ODEQ PEN).

The magnitude of this gas generation, exacerbated by the apparent the failure of the operator to scale up the GCCS in response to the dramatic increase in intake volume seen in 2017-2019, underlies the gas emission issues documented in the Nov. 6 PEN.

Note this testimony makes no attempt to address non-technical issues such as the obligation of Republic Services to assume the responsibilities and liabilities of Allied Waste as part of its 2008 merger with that entity, or the fact that the current landfill operator (Valley Waste, Inc.) has been in place since at least 1981 (see 1981 Landfill Disposal Franchise Agreement, attached). It also does not address maintenance and/or operational shortcomings or failures such as GCCS issues, tarp integrity problems, etc.

Waste in Place

From a volume standpoint, at the end of 2007 (the year prior to the merger of Allied Waste Industries, Inc. and Republic Services, Inc.) 11,142,692 cubic yards had been consumed (2007 Coffin Butte Annual Report, attached, Page 3).

At the end of 2023 a total of 24,013,893 cubic yards had been consumed (2023 Coffin Butte Annual Report, attached, Page 5). Thus, up to the end of 2023 Republic had placed 12,871,201 cubic yards.

The 2024 and 2025 Coffin Butte Annual Report is not yet been released. In lieu of precise information, it is reasonable to estimate that in both 2024 and 2025 approximately 1,000,000 cubic yards were emplaced each year, for a Republic Services emplacement of 14,871,201 cubic yards out of a total of 26,013,893, or **57.2% of the total waste in place volume to date.**

Gas Generation

The October 2025 LandGEM report produced by the applicant's consultant provides the estimated landfill gas production totals for two sequential waste streams: (a) 1953-2009, and (b) 2010 and later (see attachment document in BOC4_T0783 - Jan 27, 2026 - NIETFELD Paul).

Because the transition boundary of 2009/2010 was chosen for the two streams, the latter (2010 and later) can be used as a rough proxy for the waste emplaced by Republic Services. Due to the significant volume step up beginning in 2017, this stream will include the vast majority of the total waste placed by Republic Services starting in mid-2008, although it does slightly underestimate the total Republic Services contribution.

From the October 2025 LandGEM report, the contribution of the two streams and the resultant total is:

Year	**1953-2009 Waste** Gas Generation (cubic meters/year)	**2010 – Later Waste** Gas Generation (cubic meters/year)	**Total Waste** Gas Generation (cubic meters/year)
2024	21,023,809	77,113,279	98,137,088
Percentage	21.4%	78.6%	100%

Thus, **approximately 78.6% of the total landfill gas generated in CY2024 is due to waste emplaced by Republic Services.** This percentage will increase over time as the total deposited by Republic Services increases, and the gas contribution by the older (pre-2010) waste declines.

Author information

The author is a retired electrical engineer (MSEE) and served on the Benton County Solid Waste Process workgroup (“BCTT”) as a member of the subcommittee tasked with documenting the landfill intake volume history and estimating its forward operational life.

COFFIN BUTTE LANDFILL

2007 Summary of Operations and Environmental Monitoring

This report provides a summary of the following aspects of Coffin Butte Landfill operational and environmental status for calendar year 2007:

- Landfill Capacity
- Future Landfill Cell and Infrastructure Development
- Summary of Annual Groundwater Monitoring Report
- Summary of Annual Leachate Management Report
- Summary of Title V Air Monitoring Report
- Summary of Landfill Users by County of Origin, Tonnage and Total Vehicles
- Status of Environmental Trust Fund and Insurance
- Summary of Environmental and Regulatory Permits
- Summary of Customer Complaints at Coffin Butte Landfill
- Summary of Processing and Recovery Center Activity

VALLEY LANDFILLS, INC.
28972 Coffin Butte Road Corvallis, Oregon 97330
541-745-2018

LANDFILL CAPACITY

Coffin Butte Landfill has permitted airspace of 39,594,002 cubic yards (including consumed). During 2007 the landfill accepted 546,996.41 tons of solid waste. Based on historical aerial fly-over data, the average effective density of the in-place waste at the Coffin Butte Landfill is 0.80 tons/cy.[1] Therefore, an estimated 683,746 cubic yards of airspace was used for the year. A total of 11,142,696 cubic yards have been consumed up to December 31, 2007.

The remaining capacity for the entire permitted landfill footprint as of the end of 2007 was approximately 28,451,306 cubic yards. This information is updated annually with aerial flyovers. Using 0.80 tons/cy, the remaining available landfill space expressed in tons is about 22,761,045 tons. Using the current disposal rate of approximately 600,000 tons per year, there is about 37.9 years of landfill space available.

FUTURE INFRASTRUCTURE DEVELOPMENT

The following projects and estimated timing for construction are anticipated for the upcoming year:

- The second phase of landfill Cell 3D will be constructed in the summer of 2008. Design work and DEQ review will be completed in winter of 2008.
- The U. S. Army Corps of Engineers and the Oregon Division of State Lands approved the wetlands mitigation plan. The plan calls for development an area just east of Soap Creek, south of Coffin Butte Road. Construction activities will be extended to the summer of 2008. Our wetlands mitigation obligations will be fulfilled when this project is completed.
- Approximately 26 vertical landfill gas extraction wells are scheduled for installation on Cells 3B and 3C during the spring of 2008.

[1] Effective density incorporates the effects of daily and intermediate soil cover usage. It is calculated by measuring the amount of airspace occupied between successive aerial flyovers using photogrammetric maps, and dividing that volume into the number of tons of waste received at the gate.

SUMMARY OF ANNUAL GROUNDWATER MONITORING REPORT

This annual report provides a summary of the water quality monitoring activities at Coffin Butte Landfill during 2007. Coffin Butte Landfill, located in Benton County, Oregon, is a municipal solid waste landfill owned and operated by Valley Landfills, Inc. (VLI). Environmental monitoring and associated reporting is required by the landfill's solid waste disposal permit number 306, issued and administered by the Oregon Department of Environmental Quality (DEQ).

During 2007, no significant changes in water quality were measured. Volatile organic compound (VOC) concentrations in wells along the compliance boundary were below primary drinking water standards with the exception of MW-12S, where tetrachloroethene (PCE) was detected above the drinking water standard; the trend in MW-12S since 2000 appears to have stabilized. Vinyl chloride was not detected in any of the site monitoring wells and represents continued depletion of VOCs in the aquifer. Other than PCE, seven VOCs were detected at low concentrations (below 4 µg/L) and several inorganic parameters were present above background concentrations. Since the landfill cover was installed on Cells 1/1A in 1996 and LFG removal wells were installed in Cell 1 in 1994, the number and concentrations of VOCs have declined in compliance wells. Groundwater conditions at the detection wells (MW-17, MW-18, MW-19, and P-8), 300 to 400 feet downgradient of the compliance boundary, reflect background water quality.

At the compliance boundary for Cell 2, no primary drinking water standards were exceeded and concentrations of monitored parameters are stable at concentrations below the permit-specific concentration limits.

Downgradient of the closed landfill, groundwater quality trends are stable as well. Based on the age of the landfill, it is expected that the existing low level impacts will diminish with time.

Leachate production for the water year 2006-2007 was estimated at 29.9 million gallons of leachate. This was generated by Cells 1, 2, and 3 during the water year ending September 30, 2006. VLI continues to monitor the secondary leachate collection system (SLCS) beneath Cell 2. The rate of liquid infiltrating to the system declined in 2007 to below that of the previous year.

The text portion of the groundwater report is presented in Appendix A.

SUMMARY OF ANNUAL LEACHATE MANAGEMENT REPORT

Leachate production and management for the water-year October 2006 to October 2007 is discussed in a report by Thiel Engineering (2008). The text portion of the leachate report is presented in Appendix B.

SUMMARY OF ANNUAL TITLE V AIR MONITORING REPORT

Air emissions generated at the Coffin Butte Landfill in 2007 were summarized in a report on DEQ forms prepared by Valley Landfills. The air emissions generated in 2007 were less than the plant site emission limits (PSELs) allowed under the Title V Operating Permit and there were not any deviations from the Title V Operating Permit conditions.

The landfill received, responded to, documented and reported 120 odor complaints to DEQ. Semi-annual meetings with the public are conducted as part of Title V permit. The meetings give the public and Coffin Butte Landfill an opportunity to discuss improvements being made to address the odor issues.

SUMMARY OF LANDFILL USERS BY COUNTY OF ORGIN, TONNAGE AND TOTAL VEHICLES

Tables showing the 2006 and 2007 landfill users by vehicle class, tonnage and county of origin are presented in Appendix C.

STATUS OF ENVIRONMENTAL TRUST FUND AND INSURANCE

The value of the Environmental Trust on 12/31/2007 was $6,841,458.

The value of the Environmental Trust on 12/31/2006 was $6,472,396.

The value of the Environmental Trust on 12/31/2005 was $5,711,097.

A copy of the Certificate of Liability Insurance, showing Benton County as an additional insured is presented in Appendix D.

SUMMARY OF ENVIRONMENTAL AND REGULATORY PERMITS

Permit Number	Permit Type	Permit Terms	Renewal Date	Enforcement Actions - 2007	Comments
SWDP # 306	Solid Waste	10 Year	March 1, 2009	None	10 Year Review (2009)
# 1200Z	NPDES Stormwater	5 Year	June 30, 2007	None	Renewal Application Submitted
#101545	NPDES Leachate Treatment	5 Year	September 30, 2008	None	
#02-9502	Title V Air Quality	5 Year	February 1, 2010	None	

SUMMARY OF CUSTOMER COMPLAINTS – COFFIN BUTTE

Customer Complaints at Coffin Butte Landfill and the Process & Recovery Center - 2007

Price	Public Tipping Area	Process and Recovery Center
1	1	8

The table was compiled from the verbal complaints logged at the Coffin Butte and the Process and Recovery Center scale houses. The landfill also received positive compliments related to the public tipping area and assistance at the public tipping.

SUMMARY OF PROCESSING AND RECOVERY CENTER ACTIVITY 2007

Green waste and urban wood waste recycling activity at the Processing and Recovery Center (PRC), including and compost and hog fuel sales are presented in Appendix E.

REFERENCES

2007 Annual Monitoring Report for the Coffin Butte Landfill. Prepared by Kennec and submitted to the DEQ on March 2008.

2006-07 Annual Leachate Management Report for Coffin Butte. Prepared by Thiel Engineering, and submitted to DEQ on January 2008.

Annual Report for Year 2007, Oregon Title V Operating Permit Number 02-9502, Coffin Butte Landfill. Prepared by Valley Landfills, Inc. and submitted to the DEQ February 2008. This annual report provides a summary of the air quality monitoring activities at Coffin Butte Landfill during 2006. Coffin Butte Landfill, located in Benton County, Oregon, is a municipal solid waste landfill owned and operated by Valley Landfills, Inc. (VLI) a subsidiary of Allied Waste. Environmental monitoring and associated reporting is required by the landfill's Title V permit, issued and administered by the Oregon Department of Environmental Quality (DEQ).

Appendix A

Text Portion of Annual Groundwater Monitoring Report

2007 ANNUAL MONITORING REPORT
COFFIN BUTTE LANDFILL

Benton County, Oregon

Prepared for:

Valley Landfills, Inc.

March 24, 2008

Prepared by:

KENNEC

12725 SW 66th Avenue, Suite 202
Portland, Oregon 97223
503.619.0501
503.597.1495 fax

Kennec Project No. C031.001.0701

2007 Annual Monitoring Report
Coffin Butte Landfill
Benton County, Oregon

The material and data in this report were prepared under the supervision and direction of the undersigned.

Kennec, Inc.

Eric J. Tuppan, R.G.

Table of Contents

Tables

Figures

EXECUTIVE SUMMARY

This annual report provides a summary of the water quality monitoring activities at Coffin Butte Landfill during 2007. Coffin Butte Landfill, located in Benton County, Oregon, is a municipal solid waste landfill owned and operated by Valley Landfills, Inc. (VLI). Environmental monitoring and associated reporting is required by the landfill's solid waste disposal permit number 306, issued and administered by the Oregon Department of Environmental Quality (DEQ).

During 2007, no significant changes in water quality were measured. Volatile organic compound (VOC) concentrations in wells along the compliance boundary were below primary drinking water standards with the exception of MW-12S, where tetrachloroethene (PCE) was detected above the drinking water standard; the trend in MW-12S since 2000 appears to have stabilized. Vinyl chloride was not detected in any of the site monitoring wells and represents continued depletion of VOCs in the aquifer. Other than PCE, seven VOCs were detected at low concentrations (below 4 µg/L) and several inorganic parameters were present above background concentrations. Since the landfill cover was installed on Cells 1/1A in 1996 and LFG removal wells were installed in Cell 1 in 1994, the number and concentrations of VOCs have declined in compliance wells. Groundwater conditions at the detection wells (MW-17, MW-18, MW-19, and P-8), 300 to 400 feet downgradient of the compliance boundary, reflect background water quality.

At the compliance boundary for Cell 2, no primary drinking water standards were exceeded and concentrations of monitored parameters are stable at concentrations below the permit-specific concentration limits.

Downgradient of the closed landfill, groundwater quality trends are stable as well. Based on the age of the landfill, it is expected that the existing low level impacts will diminish with time.

Leachate production for the water year 2006-2007 was estimated at 29.9 million gallons of leachate. This was generated by Cells 1, 2, and 3 during the water year ending September 30, 2006. VLI continues to monitor the secondary leachate collection system (SLCS) beneath Cell 2. The rate of liquid infiltrating to the system declined in 2007 to below that of the previous year.

1.0 INTRODUCTION

This report presents results of water quality and landfill gas probe monitoring during the 2007 calendar year at the Coffin Butte Landfill in Benton County, Oregon (Figure 1-1), operated by Valley Landfills, Inc. (VLI). Water quality sampling and report preparation for the landfill in 2007 was performed by Kennec, Inc. (KENNEC). Annual reporting is required by Section 17.2 of the landfill's solid waste disposal permit number 306, issued by Oregon Department of Environmental Quality (DEQ) on March 9, 1999.

In late 2004 and 2005, the process for selecting and approving a remedy for the west side of the site and for setting concentration limits for the east side of the site was completed. The solid waste permit was amended November 4, 2004, to incorporate concentration limits for the east side and cleanup levels for the west side. The DEQ signed the Record of Decision (ROD) on November 2, 2005 (DEQ, 2005). Subsequent to issuing the ROD, VLI updated and revised the Environmental Monitoring Plan (TC, 2005b), which describes methods of evaluating water quality data and updates the practical aspects of monitoring at the site. The Environmental Monitoring Plan (EMP) also outlines the manner in which water quality data is used to evaluate the remedy performance and describes types of response actions that would be implemented if concentrations at east-side compliance well MW-22 were exceeded.

As defined in the EMP, the annual report serves as the mechanism to (1) collate and report analytical data for the past year, (2) assess achievement of remedial goals for the west side, and (3) evaluate detection monitoring data for east-side cells which bears on the performance of the engineered liner systems for the active waste management units. The last two items will be discussed in Section 4 of the annual report.

For the west side, the purpose of the report is to assess (1) the effect of remedial actions on groundwater quality (i.e., assess progress of cleanup) and (2) protection of potential human health receptors. Consequently, the intent of the report focuses data evaluation on the following objectives:

- Assess aquifer restoration and contaminant removal rates based on concentration trends.
- Evaluate the effectiveness of source control.
- Evaluate stabilization of the plume based on the extent and concentration of volatile organic compounds (VOCs).

- Discuss results of protectiveness monitoring at domestic wells and at early warning detection wells.

For the east side, the report compares analytical results to site concentration limits (referred to as permit specific concentration limits [PSCLs]) and examines the data for indications of a significant change as described in Section 4.2.2. Results are also compared to relevant water quality standards.

Consistent with solid waste permit requirements, municipal solid waste guidance (DEQ, 1996), and the updated EMP, the annual report contains the following:

- A cover letter that
  - — Compares the analytical results with relevant monitoring standards.
  - — States whether or not federal or state standards were exceeded for the relevant media.
  - — States whether or not a significant change in water quality occurred.

- An executive summary.

- Assessment of the current status of the environmental monitoring network and recommendations for improvements.

- Data analysis and evaluation, based on the following:
  - — Updated groundwater elevation information for each sampling event and monitored unit, depicting groundwater flow velocities and direction, and piezometric water contours.
  - — Data evaluation tools (e.g., time-series plots, box plots, trilinear diagrams) as appropriate, for selected constituents of concern; to be used in assessing data.
  - — Summary of results of monitoring for the year, including a table that compares results with water quality standards.

- Description of activities resulting from exceeding a relevant standard or significant change in water quality, such as resampling or additional investigation.

- Results of LFG probe monitoring (monitoring related to operations of the gas-to-electric plant are not reported as part of the environmental monitoring program).

- Summary of sampling and analysis, field quality assurance and quality control (QA/QC), and laboratory QA/QC techniques implemented during the year.

- Copies of applicable information, including field data, laboratory analytical reports, and chain-of-custody reports; data are cross-referenced and labeled with the designated field sampling location.

2.0 WATER QUALITY MONITORING

2.1 *Monitoring Network*

The water quality monitoring network has five components: (1) groundwater monitoring wells, which include compliance and detection wells, (2) water level observation wells and piezometers, (3) the secondary leachate collection system (SLCS), (4) leachate sumps, and (5) surface water monitoring points. In addition to water quality, landfill gas is monitored at probes surrounding the landfill, and in buildings or structures near the landfill. The rationale for the network design and the media monitored were presented in the updated EMP (TC, 2005b). The water quality monitoring locations are summarized on Table 2-1. A summary of the well construction, survey information, and lithologic completion interval is provided in Table 2-2. With construction of the supplemental leachate holding pond in summer 2004, nomenclature for sampling points was revised. The older 4-million gallon leachate surge pond was renamed the West Leachate Pond and the new pond will be referred to as the East Leachate Pond. Sampling points for the secondary leachate collection system for each pond will be referred to as LDS-WLP and LDS-ELP, respectively.

2.2 *Sample and Analysis Program*

Monitoring in 2007 was conducted consistent with the updated EMP for Coffin Butte Landfill (TC, 2005b). The EMP presents monitoring rationale, sampling and analysis parameters, locations, and a schedule. The DEQ approved the plan by letter (DEQ, 2006). The frequency of monitoring, the sampling points, and the analytical parameters in 2007 are summarized in Table 2-3.

Water was sampled consistent with procedures described in the site sampling and analysis plan in Appendix C of the EMP. Samples were submitted to Columbia Analytical Services, Inc., of Kelso, Washington, for analysis of the April sampling event. For the October sampling event, VLI used the analytical services of TestAmerica's laboratory in Denver, Colorado.

In 2007, samples could not be collected from several locations as follows:

- Second Quarter: S-U2 was dry and no sample was collected.
- Fourth Quarter: MW-17, S-3, S-U2, and SU-4 were not sampled due to insufficient water or recharge; LDS-ELP pump fitting needed replacement and could not be sampled.

Memoranda that document field sampling procedures and measurements for the sampling events are provided in Appendix A, reviews of laboratory quality control data can be found in Appendix B, and laboratory reports are included in PDF format on a compact disc (CD) attached to the inside back cover of the report binder.

3.0 FINDINGS

The discussion of hydrogeology is summarized from sections on site characterization in past reports and the EMP (EMCON, 1994, 1996, 2000; TC, 2003a,b, 2005b).

3.1 Hydrogeology

The landfill is situated along the south flank of Coffin Butte. The upper third (approximately) of the butte consists of steep grass-covered slopes, the middle third of exposed bedrock with little vegetation, and the lower third of gentle, soil-covered slopes. Generally, the steeper slopes are underlain by basalt bedrock and the lower, flatter slopes on the flanks of Coffin Butte are underlain by alluvium that generally consist of silty clay to clayey silt with variable amounts of thin, interbedded sands and silty to sandy gravels (commonly referred to as Willamette Silt).

There are two principal water-bearing units: unconsolidated alluvium, and bedrock volcanics. Groundwater occurs in both units, although the alluvial deposits are absent or unsaturated over much of the site where landfill occurs. Where both units are present, they are hydraulically connected. The two units are monitored separately by groundwater monitoring wells.

3.1.1 Groundwater Occurrence and Flow

Depth to groundwater depends on season and topography. In site wells, the groundwater depths range from over 80 feet below the ground surface midway up the slopes of Coffin Butte (in bedrock) to less than 1 foot in the flat lowland area southeast of the butte (in alluvium). East of Cell 2, potentiometric elevations measured during the wet winter and spring months are near or higher than the ground surface elevation, indicating the potential for groundwater to discharge in this area.

Table 3-1 summarizes the groundwater elevations for 2007. Seasonal fluctuations vary, depending on the hydrogeologic position of the monitoring point. Consistent with past years, the seasonal changes in 2007 ranged from less than 1 foot in MW-15, MW-16, P-16, and P-17, to more than 20 feet in well MW-13. Figures 3-1 to 3-4 illustrate seasonal fluctuations for typical site wells in similar hydrogeologic positions. The average site-wide fluctuation in monitoring wells and piezometers was approximately 3 feet, with the lowest groundwater elevations in late summer to fall and the highest in winter and spring.

The direction of groundwater flow is controlled by the topographic setting of Coffin Butte and Poison Oak Hill and the intervening low areas. Groundwater in the bedrock generally flows downslope from the hills until it reaches a groundwater divide near the southeast corner of Cell 1. At the divide, groundwater flows toward the east and west, generally following the long axes of the valleys. Groundwater flow direction in the saturated portion of the alluvium mimics the underlying bedrock.

Groundwater contours for the site are illustrated on Figures 3-5 and 3-6. The groundwater elevations are from wells screened either in the alluvium or the bedrock. With the relatively large topographic relief between wells, any vertical gradients (generally small) between hydrogeologic units at monitoring locations are insignificant, and therefore do not substantially affect the site's groundwater flow pattern or horizontal gradients.

Factors affecting the groundwater gradients include the topographic slope, hydrogeologic material, and the season. The steepest horizontal gradients measured at the site are on the flanks of Coffin Butte. These range from approximately 0.035 to 0.06 foot per foot (ft/ft) downslope of well MW-13, to 0.15 ft/ft downslope of piezometer P-17. Smaller gradients are an order of magnitude lower, approximately 0.012 ft/ft, downgradient of Cell 2 (in alluvium between MW-23 and MW-9S), and between 0.004 and 0.007 ft/ft downgradient of Cells 1 and 1A. Downgradient of the Closed Landfill, the gradient is relatively consistent between seasons at approximately 0.06 to 0.075 ft/ft.

3.1.2 Groundwater Velocity

Groundwater velocity depends on hydraulic conductivity, horizontal hydraulic gradient, and effective porosity of the water-bearing medium. The horizontal velocity (V_h) of groundwater is calculated by the following equation:

$$V_h = \frac{Ki}{n_e}$$

where

V_h = horizontal groundwater velocity.

K = hydraulic conductivity.

i = horizontal hydraulic gradient.

n_e = effective porosity.

Estimates of V_h were calculated at the Coffin Butte Landfill for three areas: on the east side downgradient of Cell 2, and on the west side downgradient

of Cell 1 and the Closed Landfill. Near Cell 2, estimates of V_h are fairly consistent between seasons because the gradient does not change significantly (low slopes and alluvium). V_h is calculated at approximately 1.1 feet per year (ft/yr), given a hydraulic conductivity of 6.3×10^{-2} feet per day (ft/day) for the alluvium (EMCON, 1994), an estimated effective porosity of 25 percent (Morris and Johnson, 1967), and a hydraulic gradient of 0.012 ft/ft.

Downgradient of Cell 1, estimates for V_h are 40 to 200 ft/yr in the spring and 20 to 110 ft/yr in the fall. Assumptions include an average hydraulic conductivity of 4 ft/day for the bedrock (EMCON, 1994), an estimated effective porosity of between 5 and 25 percent (Morris and Johnson, 1967), and an average hydraulic gradient of 0.007 ft/ft in the spring and 0.004 ft/ft in the fall.

Downgradient of the Closed Landfill, estimates for V_h are approximately 5 ft/yr for the alluvium, and 350 to 450 ft/yr in the bedrock. Assumptions include the hydraulic conductivities for alluvium and bedrock noted above, an estimated effective porosity of 25 percent both for alluvium and weathered bedrock (Morris and Johnson, 1967), and an average hydraulic gradient of 0.06 ft/ft.

3.2 Water Quality

Water quality summary tables for 2007 can be found in Appendix C. The tables organize the monitoring points by wells, surface water stations, leachate (Cell 1, Cell 2, or Cell 3), and the SLCS (LDS monitoring points). Historical data can be provided as an Access 2003 database on request.

3.2.1 Data Quality

Results of laboratory quality assurance and quality control data indicate acceptable results (see data review memoranda in Appendix B). For the October sampling results, the method reporting limits (MRLs) were above project-specific goals for antimony, arsenic, and selenium. VLI is working with the laboratory to report lower MRLs, although for these constituents, it may require qualifying the data as estimated since the resultant value will be below the standard laboratory MRL, but above the method detection limit. Qualified data are discussed in the memoranda and listed in the summary tables in Appendix C.

3.2.2 Groundwater

This section evaluates groundwater quality at Coffin Butte Landfill by examining trends that can be used to predict or assess subtle changes in water quality or which track parameter concentrations used to assess areas with existing impacts. This qualitative examination is complemented with quantitative comparisons in Section 4 to assess remedy performance for the west side, or whether water quality meets concentration limits for the east side.

The following discussion is divided into geographic areas on the basis of trend evaluation. At the compliance boundary for Cell 2, baseline data for background water quality were characterized in the compliance well (no upgradient background well can be feasibly located) as part of an intrawell evaluation approach.

Parameters evaluated for Cell 2 include site-specific indicator parameters that are tested semiannually and a group of site-specific trace metals that are tested annually. For Cells 1 and 1A, parameter evaluation focuses on the same suite of indicators and selected VOCs that have been consistently detected over the years. Water quality evaluation downgradient of the Closed Landfill focuses on site indicator compounds and three historically detected VOCs. A list of wells and time-series concentration plots by parameter can be found in Appendix D.

Time-series concentration plots for groundwater wells that monitor the former leachate irrigation Fields B and C document recovery of groundwater quality since leachate irrigation was discontinued in 1998. Plots for these wells can also be found in Appendix D.

KENNEC visually examined groundwater quality trends and summarized those findings in Tables 3-2, 3-4, 3-5, and 3-6. These tables show the most recent trend (approximately the last five years) and indicate the general range of parameter concentrations for that period. Trend information from decommissioned wells (e.g., MW-6, MW-7S/7D, and MW-16) can be found in annual reports from 2004 and earlier (e.g., TC, 2005a). Descriptive evaluation terms include the following:

- Upward: generally upward trend during the last five years; these cells are shaded in the tables.
- Downward: generally downward trend during the last five years; there may have been earlier periods of water quality variability.
- Stable: indicates that the water quality varies within a range (variable depending on well or parameter) and that no long-term upward or downward trend is apparent.

- Peaked: concentrations have peaked and are now either declining or appear to have stabilized, suggesting that water quality is beginning to improve.

3.2.2.1 West Side

Cells 1 and 1A. Groundwater in this area is characterized by elevated concentrations of inorganic compounds downgradient of Cell 1A and low concentrations of inorganic compounds downgradient of Cell 1. Except for MW-12S at Cell 1, VOCs in this area have generally declined to below 3 µg/L (Table 3-3) and continue to trend downward. Trace metals concentrations are low to nondetect and generally follow stable trends.

Downgradient of Cell 1A, inorganic trends are mixed (Table 3-2), but there are fewer wells with upward trends than in previous years and several, such as bicarbonate in MW-10S and calcium in MW-11D, appear to have peaked and stabilized in the last few years. In well MW-10S, chloride appears to have peaked and is now declining, while calcium (Ca) and magnesium (Mg) have peaked and stabilized. Bicarbonate and manganese (Mn), which had increased through 2003, appear to be abating. In MW-10D, each of the inorganic parameters is declining. Sodium (Na) is generally stable to declining in both wells while iron (Fe) has been nondetect for five years. In well pair MW-11S/11D, bicarbonate was up, but Ca and Mg began to peak in MW-11D and were stable to declining in MW-11S. Na appears to have peaked and stabilized. Chloride continues downward, Fe is stable, and Mn appears to have peaked.

Wells downgradient of Cell 1 have much lower inorganic concentrations than those downgradient of Cell 1A and the magnitude of any increases described is slight. Chloride in well MW-3D, which had increased since 1987 to 17.8 milligrams per liter (mg/L), peaked in the fall of 1999 and now appears to be stabilized at lower concentrations. Conversely, chloride in well MW-1D decreased in concentration, from approximately 13 to 5 mg/L over the past 10 years, and appears to have stabilized at background levels. Bicarbonate in both wells is up slightly since 1997 but appears to have peaked in MW-3D this past year. Bicarbonate, chloride, Ca, Mg, and Na have increased slightly over the past few years in MW-12S although the increase has slowed in the last few years and appears to have peaked. Overall, the inorganic concentrations downgradient of Cell 1 are considerably lower than in well pairs MW-10 or MW-11 (downgradient of Cell 1A), and chloride concentrations are more than an order of magnitude less than the secondary drinking water standard (250 mg/L).

Of the four VOCs historically detected in well pair MW-10S/10D downgradient of Cell 1A (see Tables 3-3 and 3-4), concentrations of *cis*-1,2-dichloroethene

(*cis*-1,2,-DCE) and 1,1-dichloroethane (1,1-DCA) continue to decline. Vinyl chloride was not detected in either well in 2007, and chloroethane was only detected once in MW-10S in April. No VOCs were detected in MW-11S in 2007 and in MW-11D, only trace concentrations of two VOCs were detected: chloroethane at 0.51 µg/L in April and 1,1-DCA at 0.53 µg/L in October. Downgradient of Cell 1, PCE had been routinely detected in well MW-12S, and since 1994 had shown an upward trend. In October 2000, the concentration peaked at 25 µg/L. Since then, concentrations appear to have stabilized at approximately 20 µg/L. Trichloroethene (TCE) is also still being detected in MW-12S at concentrations up to 4 µg/L, likely as a degradation product of PCE. In deep well MW-12D, PCE was detected both sampling events at less than 1 µg/L.

Finally, a trace of bromoform was reported at 0.9 µg/L in a sample from MW-1D in April. Bromoform has never been detected in a monitoring well at the site. The Agency for Toxic Substances and Disease Registry (ATSDR) states that most of the bromoform that enters the environment is formed as a byproduct when chlorine is added to drinking water to kill bacteria. It further states that this chemical is primarily used as a laboratory reagent. For this reason, the reported value may be a result of laboratory contamination rather than its presence in the groundwater.

Closed Landfill. The closed landfill is monitored by two monitoring wells designated as compliance wells in the solid waste permit addendum: one completed in the alluvium (MW-20) and one completed in bedrock (MW-21). The alluvial well typically shows variable water quality associated with seasonal fluctuations of the water table. Within that variability, water quality for the selected indicator parameters has been stable to downward. Trends are summarized in Table 3-5.

In the bedrock well, bicarbonate alkalinity, which showed an increasing concentration before 2001, appears to have peaked; the other indicator compounds appear stable the past 5 years. Of the three historically detected VOCs in MW-21, *cis*-1,2-DCE has not been detected since May 1995, 1,2-dichlorobenzene has been nondetect since 1999, and chlorobenzene was last detected at 0.62 µg/L in 2006. No VOCs were detected in either well in 2007.

3.2.2.2 East Side

Cell 2 - Compliance Well MW-22 and Detection Wells MW-24, MW-25. Wells near Cell 2 include compliance well MW-22 downgradient of Cell 2, detection well MW-24 at the upgradient edge of Cell 2A, and MW-25 which is downgradient of the southeast corner of Cell 2B, but upgradient of MW-22. Both MW-22 and MW-25 are completed in shallow alluvium and MW-24 is

completed in shallow weathered bedrock. Piezometer P-16, which is sampled once a year, was added to the trend plots to supplement information on natural water quality variability in the alluvium.

Trends for each parameter (Table 3-6) at the compliance well were stable through 2007. Parameters tested in MW-24 and MW-25 are stable, and reflect natural water quality in the area. Of those two wells, MW-25 (completed in alluvium) is more similar in water quality to MW-22. Subtle differences, though, are present, for instance lower bicarbonate and calcium, and higher natural chloride and arsenic in MW-25 than in MW-22.

Cell 2 – Detection Well MW-23. Detection well MW-23 had shown increases since monitoring began in mid-1994 for bicarbonate alkalinity, chloride, hardness, total dissolved solids (TDS), for five of the major dissolved metals, and for arsenic (As). This had been attributed to localized seepage of leachate from the south side of the landfill. The other parameters were relatively stable or varied seasonally (e.g., sulfate). Since 2000 to 2001, the upward trends for bicarbonate, chloride, hardness, TDS, Ca, Fe, Mg, Mn, Na, and As have peaked and are currently declining. Of those, the cations, bicarbonate, and chloride continue to demonstrate seasonality with higher concentrations in the fall and lower concentrations in the spring.

3.2.2.3 Former Leachate Irrigation Fields

Field B (East Side). In Field B wells MW-8S and MW-15, concentrations of inorganic indicator continue longer-term trends of past years (see time-series concentration plots in Appendix D).[1] At MW-8S, an earlier increasing trend for chloride peaked in 2001 and is declining, while Na has remained relatively consistent in concentration.

Inorganic parameters in wells MW-15 (downgradient) and MW-16 (upgradient) do not show sustained upward or downward trends although concentrations of chloride and Na are higher in MW-15 than in MW-16. This could be related to naturally occurring saline, connate water in the fine-grained sediments in this area, in which MW-15 is screened. This water quality contrasts with MW-16, which was screened in fresh bedrock, and had naturally lower concentrations for those indicators than the alluvium.

Trace metals in Field B wells were detected at low to trace concentrations, or were not detected in 2007. Historically, trend plots show distinctly lower concentrations beginning with the fall 1996 sampling event (e.g., barium, lead and nickel). That was the first sampling event in which dedicated

[1] Monitoring well MW-16 was decommissioned in May 2004 but is retained on the plots for comparative water quality information.

bladder pumps were used, and the results for trace metals reflect lower suspended solids in the water samples. Since then, concentrations have remained low with more limited variability. None of the wells shows a trend indicating effects of past leachate irrigation. No VOCs were detected.

Field C (West Side). Past leachate irrigation in Field C appears to have mildly affected the concentrations of some inorganic parameters over the last few years. Since irrigation stopped in 1998, levels appear to be recovering to pre-irrigation conditions, although some variability persists (see time-series concentration plots in Appendix D). It is possible that this minor variability could be related to amending the field with lime to improve agricultural production or more recently, to disruption of the surface soils in creating wetlands in the area, especially near well MW-19 which has seen increased concentrations.

As with Field B, trace metals were not detected in Field C wells or were detected at low to trace concentrations. Where detected, none of the wells showed a trend indicative of past leachate irrigation. No VOCs were detected in former irrigation field wells except for a trace of dichlorodifluoromethane (Freon 12) in MW-19 (1.4 µg/L). Freon 12 has been detected in this well several times (in 1998, 2002, 2004-2006) at concentrations below 1.5 µg/L. It had historically been detected upgradient in MW-11S/11D until 1999, ranging in concentration from 0.7 to 3.8 µg/L. It is believed that the residual occurrence of Freon 12 in this isolated well is temporary and will dissipate with time.

3.2.3 Surface Water

Surface water is monitored upstream (S-1) and downstream (S-2 and S-4) in Soap Creek to test for potential impacts from the west side of the facility, and for residual impacts from spray irrigation on Field C. Surface water is also monitored on the east side, where an intermittent creek crosses the landfill access road (S-3). In 2007, water flowed at this point during the April sampling event, but no sample could be collected in October when it was dry.

At the Soap Creek monitoring points, year 2007 results for biological oxygen demand (BOD), total Kjeldahl nitrogen, total phosphorus, and orthophosphate were either nondetect or were virtually identical in concentration between the upstream and downstream monitoring points. This is similar to past years.

The other inorganic parameters (chloride, Ca, Fe, Mg, Mn, and Na) showed seasonal changes in concentration, with low concentrations in April (high stream flow) and higher concentrations in October (low stream flow). There

were no significant differences between upstream and downstream points for those parameters, with most concentration differences less than 1 mg/L. Differences in concentration between seasons are typically greater, from 8 to 11 mg/L (e.g., for chloride).

3.2.4 Underdrains

Results of sampling the underdrains for Cell 3 (S-U3) and from below the East Leachate Pond (S-U4) are shown in Tables 3-7 and 3-8. The Cell 2C/D subdrain was not sampled because no water flowed at the sampling point. For Cell 3, the data provides a baseline to evaluate future monitoring results. Elevated concentrations for some of the inorganic parameters for Cell 3 in the October 2003 and subsequent sampling events are likely related to construction activities in the area during the summers of 2003 to 2005. Water quality from the East Leachate Pond underdrain represents baseline concentrations and is similar to groundwater quality in MW-16, which had been completed in the same area.

3.3 Secondary Leachate Collection System

The SLCS was monitored by riser pipes at four locations: beneath the Cell 2 sump in the southeast corner of that cell (LDS-2B), beneath the west and east leachate ponds (LDS-WLP and LDS-ELP, respectively), and beneath the Cell 3 sump (LDS-3). Results for liquid quantity and quality are shown graphically in Appendix E.

3.3.1 Cell 2

Historical variations in the concentrations of indicator parameters measured for LDS-2B reflect changes to the volume and liquid chemistry from different sources. These had varied (1) seasonally as the amount of leachate generated changed, surface water runoff changed, and groundwater levels fluctuated, and (2) from year to year as sources had been eliminated through reconstruction. Increased concentrations were generally attributed to a greater volume of leachate-dominated sources, while decreases reflected a greater ratio of surface water or groundwater to leachate. Currently, the liquid quality primarily reflects a leachate source with comparable concentrations of inorganic parameters, metals and VOC in samples collected from the primary and secondary sumps. Trend plots of indicator parameters for both the SLCS and Cell 2 leachate can be found in Appendix E.

The volume of liquid that infiltrated into the SLCS for the water years since 1995 is shown in Table 3-9. Cumulative water purged from the system is shown in Figure E-1. For the 2006-2007 water year, an infiltration

performance value of 12.8 gallons per acre per day (gpad) was calculated. This is comparable to the 20 gpad action level generally suggested in the literature, and used by the USEPA and several states (Thiel, 2001).

Liquid levels in the primary and secondary leachate collections systems are not illustrated for the past year because the telemetry system malfunctioned and did not produce reliable data. It is currently being evaluated and VLI hopes to have the system on line by second quarter 2007.

3.3.2 Leachate Ponds

Both leachate ponds were used to store leachate this past year, although the West Leachate Pond is the primary one. The detection system underlying the West Leachate Pond (previously referred to as the leachate surge pond) was outfitted with a pump in first quarter 1999. Except for purging during sampling events, no liquid was pumped from the LDS-WLP in 2007. The 5-million-gallon East Leachate Pond was constructed in 2004. No liquid was pumped from the secondary system except to collect samples. Sample quality results are listed on the water quality summaries in Appendix C. For the leachate pond SLCSs, the liquid is generally high in inorganic indicators such as chloride, bicarbonate, dissolved calcium, magnesium, and sodium with detections of several VOCs, such as benzene, toluene, ethylbenzene, xylenes, acetone, and 2-butanone.

3.4 Leachate Production

Leachate production for the water year 2006-2007 was discussed in a report by Thiel Engineering (Thiel, 2008). An estimated 29.5 million gallons of leachate as calculated by volumetrics (29.9 million gallons as estimated by flowmeters) were generated by Cells 1, 2, and 3 during the water year. Tabular and graphical weekly leachate production data from totalizing flowmeters are used to illustrate overall seasonal trends in the data (Appendix E).

3.5 Landfill Gas Monitoring

VLI routinely monitors a total of six landfill gas monitoring probes around the perimeter of the landfill (GP-2 through GP-6), in addition to the interior of twelve site structures. Monitored parameters include lower explosive limit (LEL), methane, and oxygen. Levels of percent LEL and methane were zero for all monitoring events. Results of 2007 gas monitoring are shown in Table 3-10.

4.0 DISCUSSION

Monitoring wells at Coffin Butte Landfill are sited to assess a number of different areas around the landfill. For older areas that have undergone a focused risk assessment and feasibility study (TC, 2003a), the purpose of monitoring is to evaluate the performance of the remedy in protecting potential receptors and in restoring groundwater quality. The purpose of evaluating groundwater data at the east-side landfill cells is to determine if engineering controls (e.g., the landfill liner, cover, leachate or landfill gas [LFG] collection and removal systems) and operations are effective in preventing the release of landfill-derived compounds to the environment. In some instances, early identification of a release can mitigate those impacts relatively quickly, as documented for the impacts in MW-23 (see discussion in Section 4.2.3).

Consequently, the approach to evaluating monitoring data is slightly different for each area. For older areas, the monitoring objective is to assess the performance of the remedy in restoring groundwater quality to RACLs and in protecting potential receptors. For the active landfill on the east side, monitoring is classified as detection monitoring—in essence, to identify whether the landfill is leaking. Instrumental to this purpose is comparing monitoring results of indicator parameters with PSCLs and assessing the data for significant change.

4.1 West Side

For the west side, the purpose of the report is to assess (1) the effect of remedial actions on groundwater quality (i.e., assess progress of cleanup) and (2) protection of potential human health receptors. These are discussed in the following sections.

4.1.1 Aquifer Restoration-Contaminant Removal

Areas downgradient of the landfills on the west side rely on containment and control of the source with natural attenuation in groundwater downgradient. Contaminant removal occurs through natural processes and is measured with respect to trends of constituent concentrations with time. Cleanup levels referred to as RACLs, are the long term goals of aquifer restoration.

4.1.1.1 Cells 1/1A

Groundwater quality along the compliance boundary of Cells 1 and 1A has been relatively stable the past few years. Fewer inorganic indicator

parameters exhibit upward trends (e.g., bicarbonate, likely as a result of dissolution of carbonate minerals lining fractures or in pores driven by carbon dioxide produced through the metabolism of microorganisms in breaking down VOCs), and most have peaked or show downward trends.

Only a few inorganic compounds (chloride and manganese) exceed their RACLs, and their trends, which are declining, are encouraging. Trends of VOC have peaked and are stable or declining in each of the compliance wells (many are now nondetect), and except for PCE at MW-12S, none exceeded its RACL (Table 4-1). For the eighth year, vinyl chloride was not detected at concentrations above its MCL, nor was it detected at any monitoring well in 2007. Approximately 300 to 400 feet downgradient of the compliance boundary, groundwater quality represents background conditions in detection wells MW-17 through MW-19, indicating that contaminants attenuate between the compliance boundary and the downgradient detection wells.

4.1.1.2 Closed Landfill

Trends of monitored parameters downgradient of the closed landfill are stable and reflect a steady improvement in groundwater quality. None of the parameters measured in 2007 indicated increases in concentration or levels of concern with respect to water quality standards; each was below its respective RACL except for manganese. On the basis of the landfill's age (20 to 50 years) and its low potential for significant leachate generation, it is expected that existing low level impacts to the aquifer will diminish with time.

4.1.2 Source Control Effectiveness

Source control includes the final cover at the landfill, leachate removal, and active landfill gas recovery to control the migration of landfill gas that contains methane and VOCs. Effectiveness can be measured quantitatively by examining (1) the trends and number of VOCs at downgradient monitoring wells and (2) the volume of landfill gas migrating in perimeter gas probes.

Groundwater Quality. Since the landfill cover was installed on Cells 1/1A in 1996 and LFG removal wells installed in Cell 1 in 1994, the number and concentrations of VOCs have declined in compliance wells. This is illustrated by Table 4-2 in which the number of VOCs are tallied for five periods beginning in 1990 (last column on table) and ending with 2006-07. At each well along the compliance boundary, the total number of VOCs has decreased since 1990. In 2005 for the first time, no VOCs were detected in one of the wells, MW-11S. Concentrations continue to decline in each of the other wells, except for MW-12S, where PCE and TCE concentrations appear stable.

The reduction in the number and decrease in concentration of VOCs can be partly attributed[2] to removal of landfill gas, which contains VOCs, and covering the landfill to prevent infiltration of rainwater to the waste pile.

Other source control measures for Cell 1 include leachate removal, which has been relatively constant the past few years in terms of volume and quality. Cell 1A does not have leachate removal but it has been shown that the base elevation of that cell is above the groundwater table and therefore, it is unlikely to generate a significant amount of leachate, if any.

LFG Probe Results. Probe monitoring shows that LFG does not migrate laterally away from the landfill, but is being contained by the gas recovery wells. Gas recovery rates for Cell 1 are monitored routinely by Pacific Northwest Generating Cooperative as part of optimizing flow and maximizing methane recovery for the gas-to-energy plant.

4.1.3 Plume Stabilization

The stability of the VOC plume can be evaluated qualitatively by examining whether concentrations at impacted wells are increasing and whether monitoring wells downgradient of the VOC plume detect VOCs. Both criteria suggest a stable to shrinking plume as concentrations are declining within the plume and wells outside the plume have not detected VOCs. (One exception was MW-19 in which a residual trace concentration of Freon 12 was detected.) Continued retraction of the extent of VOCs is further indicated by recent declines to nondetect within the last few years for:

- 1,1-DCA in MW-10S, MW-11S and MW-11D
- Chloroethane in MW-10D and MW-11S
- Cis-1,2-DCE in MW-11D and MW-11S
- Vinyl chloride in MW-10S/10D and MW-11S/11D

4.1.4 Protectiveness Monitoring

Protectiveness is assessed at two locations: at the Phillips well and at P-8, which is between the domestic well and the landfill. Trend plots for indicator parameters for these wells can be found in Appendix D. Analytical results for the Phillips well were either nondetect or significantly below safe drinking water standards for inorganics and metals (see tables in Appendix C). No VOCs were detected. Trends of indicator parameters do not show signs of continued upward movement suggestive of impacts from the landfill.

---

[2] VOC removal is also attributed to natural attenuation as described in Section 4.1.1.1.

Early warning detection monitoring well P-8 is located between the landfill and the Phillips well, near the hydrogeologic divide that protects the domestic well from landfill-contaminant migration. None of the indicator parameter trends for that well suggest changes in groundwater quality, and no VOCs were detected in 2007.

4.2 East Side

For the east side, the report compares analytical results to PSCLs established in the solid waste permit addendum, and examines the data for indications of a significant increase. Results are compared to relevant water quality standards in Section 4.3.

4.2.1 Comparison to Concentration Limits

Permit-specific concentration limits were formalized for eight indicator parameters in the solid waste permit addendum. PSCLs apply to compliance well MW-22 for the east-side multiunit landfill, and are based on intrawell statistics (TC, 2003b). Table 4-3 compares analytical results since October 2000 with the PSCLs. None of the values was above a concentration limit, although the sodium concentration was comparable to its PSCL of 27 mg/L in October. Previously, sodium in that well had been detected up to 26.8 mg/L. Given the low statistical variability of historical sodium concentrations for this well, it is expected that, from time to time, sampling results will be near or equivalent to the PSCL. Concentrations for each of the indicator parameters was within the historical range of variability as illustrated on the trend plots in Appendix D (trend plots also show the PSCLs as a dashed line).

4.2.2 Indications of Significant Change

Sample results that could indicate an increase above what are considered to be natural background concentrations are evaluated to determine their significance with regard to operations or potential receptors. Potential actions taken in response to significant change are discussed in the Section 5.1.2 of the EMP. Examples of significant change include:

- Exceedance of a Safe Drinking Water Standard (primary MCL), unless historical water quality also exceeds that value (i.e., background is elevated). An example of elevated background concentration is arsenic which exceeds its MCL of 10 µg/L, but whose statistical background concentration is 12.1 µg/L.

- Detection at a concentration an order of magnitude higher than the historical trend.

- Detection of a previously undetected VOC.

None of these criteria were met in 2007 for analytical results from MW-22.

4.2.3 Trends

Downgradient of the active landfill cell on the east side, parameter concentrations are stable in detection monitoring well MW-22. In well MW-23, inorganic parameters had historically exhibited upward concentration trends. To mitigate possible causes of those increases, VLI constructed a toe drain in the summer of 1997 along the entire southern perimeter of Cells 2A and 2B, to contain leachate that had seeped from the landfill sideslope and that may have infiltrated to the groundwater. In the summer of 1999, VLI improved the stormwater drainage and berm along the southern perimeter. Monitoring results over the last three to six years show positive indications (i.e., trends for inorganic parameters and dissolved metals have leveled off and are mostly declining in concentration) of improved groundwater quality as a result of mitigation efforts. The toe drain was decommissioned in the summer 2007 as part of site improvements along that slope which included adding a veneer of soil and construction of new stormwater benches.

Other detection monitoring wells along the perimeter of Cell 2 (e.g., MW-24 and MW-25) have stable trends for each parameter tested.

4.3 Comparison to Water Quality Standards

Water quality standards are discussed with respect to detection and compliance wells on the east side and west side. Table 4-4 lists monitoring results that exceeded a water quality standard. Additionally, the water quality summary tables in Appendix D list relevant water quality standards at the head of each column.

Primary Maximum Contaminant Levels (MCLs). No federal or state primary MCLs (health-based) were exceeded at eastside compliance well MW-22. The arsenic concentration in detection monitoring well MW-23 exceeded the primary MCL of 10 µg/L in October, but was below in April. Arsenic has declined in this well since approximately 2000 to background levels, but still shows some seasonal variability. The primary MCL for PCE was exceeded downgradient of Cell 1 along the west-side compliance boundary in MW-12S. VOCs were not detected in a detection monitoring well (P-8) approximately 250 feet downgradient of MW-12S. No other primary MCLs were exceeded at west-side wells for VOCs, trace metals or inorganic parameters.

Secondary MCLs. Federal and state secondary MCLs (non-health-based) were exceeded at eastside compliance well MW-22 for Fe and Mn, downgradient of Cell 2. Concentrations for those compounds are stable and reflect natural background conditions for this part of the site. Secondary MCLs for Fe and Mn were also exceeded at detection wells MW-23 and MW-25. Concentrations at MW-25 represent natural conditions for this part of the site.

At the west-side compliance boundary, the secondary MCL for chloride was exceeded at MW-10S where the trend is declining. The secondary MCL for Mn was exceeded at well pair MW-10S/10D in April. These values are consistent with historical concentrations for those wells. Groundwater samples from compliance wells MW-20 and MW-21 (downgradient of the closed landfill) exceeded the secondary MCL for manganese in October.

5.0 MONITORING PLAN MODIFICATIONS AND RECOMMENDATIONS

There are no changes planned for the landfill monitoring network or the monitoring program in 2008 other than repairing the telemetry system that relays depth of liquid information for the primary and secondary sumps in Cells 2 and 3. Downgradient of the landfill, in the field south of Cells 1 and 1A, VLI installed 6 shallow piezometers in January 2008. The purpose of the installing the piezometers was to characterize the thickness of clay soils and to measure depth to shallow groundwater. This information is being used to design and construct wetlands in the area bordering Soap Creek.

6.0 REFERENCES

DEQ. 1996. Solid waste guidance, municipal solid waste landfills. Oregon Department of Environmental Quality. September 1.

DEQ. 2005. Record of Decision for Coffin Butte Landfill. Oregon Department of Environmental Quality. Issued October, signed November 2.

DEQ. 2006. Letter (re: Environmental Monitoring Plan Approval, Coffin Butte Landfill, SWDP No. 306, Benton County) to B. May, Valley Landfills, Inc., Corvallis, Oregon, from H. Gao, Oregon Department of Environmental Quality, Eugene, Oregon. February 28.

EMCON. 1994. Remedial investigation and additional hydrogeologic investigation report, Coffin Butte Landfill, Benton County, Oregon. Prepared for Valley Landfills, Inc., by EMCON Northwest, Inc., Portland, Oregon. February 4.

EMCON. 1996. Remedial investigation addendum, Coffin Butte Landfill, Benton County, Oregon. Prepared for Valley Landfills, Inc., by EMCON, Portland, Oregon. February 28.

EMCON/OWT. 2000. Letter (re: addendum to site characterization – Cell 3, Coffin Butte Landfill, solid waste permit 306, Benton County) to M. Morshed, Oregon Department of Environmental Quality, Salem, Oregon, from E. Tuppan, EMCON/OWT, Portland. May 15.

Morris, D. A., and Johnson, A. I. 1967. Summary of hydrologic and physical properties of rock and soil materials, as analyzed by the hydrologic laboratory of the U.S. Geological Survey, 1948-60. U.S. Geological Survey Water-Supply Paper 1839-D.

TC. 2003a. Focused risk assessment and feasibility study, Coffin Butte Landfill, Benton County, Oregon. Prepared for Valley Landfills, Inc. Corvallis, by Tuppan Consultants LLC, Lake Oswego, Oregon. September 23.

TC. 2003b. Letter (re: Permit-Specific Concentration Limits for Coffin Butte Landfill, Solid Waste Permit 306, Benton County, Oregon) to G. Hargreaves, Oregon Department of Environmental Quality, Salem, from E. Tuppan, Tuppan Consultants LLC, Lake Oswego, Oregon. November 5.

TC. 2005a. 2004 Annual Monitoring Report, Coffin Butte Landfill, Benton County, Oregon. Prepared for Valley Landfills, Inc., by Tuppan Consultants LLC, Lake Oswego, Oregon. March 28

TC. 2005b. Environmental Monitoring Plan, Coffin Butte Landfill, Benton County, Oregon. Prepared for Valley Landfills, Inc., by Tuppan Consultants LLC, Lake Oswego, Oregon. December 16.

Thiel. 2001. Annual Leachate Management Report, Coffin Butte Landfill, Benton County, Oregon. Prepared for Valley Landfills, Inc., by Thiel Engineering, Oregon House, California. January 15.

Thiel. 2008. Letter (re: 2006-07 Annual Leachate Management Report for Coffin Butte) to B. May, Valley Landfills, Inc., Corvallis, Oregon from R. Thiel, Thiel Engineering, Oregon House, California. January.

7.0 LIMITATIONS

The services described in 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, nor the use of segregated portions of this report.

The purpose of a geologic/hydrogeologic study is to reasonably characterize existing site conditions based on the geology/hydrogeology of the area. In performing such a study, it is understood that a balance must be struck between a reasonable inquiry into the site conditions and an exhaustive analysis of each conceivable environmental characteristic. The following paragraphs discuss the assumptions and parameters under which such an opinion is rendered.

No investigation is thorough enough to describe all geologic/ hydrogeologic conditions of interest at a given site. If conditions have not been identified during the study, such a finding should not therefore be construed as a guarantee of the absence of such conditions at the site, but rather as the result of the services performed within the scope, limitations, and cost of the work performed.

We are unable to report on or accurately predict events that may change the site conditions after the described services are performed, whether occurring naturally or caused by external forces. We assume no responsibility for conditions we were not authorized to evaluate, or conditions not generally recognized as predictable when services were performed.

Geologic/hydrogeologic conditions may exist at the site that cannot be identified solely by visual observation. Where subsurface exploratory work was performed, our professional opinions are based in part on interpretation of data from discrete sampling locations that may not represent actual conditions at unsampled locations.

EXPLANATION

- MONITORING WELL
- PRIVATE WELL
- OBSERVATION WELL/PIEZOMETER
- LANDFILL WATER SUPPLY WELL
- SURFACE WATER MONITORING STATION
- GAS PROBE
- LEACHATE SUMP
- LEAK DETECTION SYSTEM
- PROPERTY LINE

0 500 1000

SCALE IN FEET

Tuppan Consultants LLC
680 Iran Mountain Blvd.
Lake Oswego, Or 97034
Ph. 503.675.9103 Fax. 503.675.9107

DATE 11-30-05
DWN GRH
APP ET
REV 12/6/06
PROJECT NO.
VL1-001-005

FIGURE 2-1
COFFIN BUTTE LANDFILL
BENTON COUNTY, OREGON

SITE MAP AND MONITORING LOCATIONS

Nov. 11, J5
C:\000Projects\00Tuppan\Coffin Butte\Envir. mon. plan 2005\fig2-1.dwg

Appendix B

Text Portion of Annual Leachate Management Report for Coffin Butte

Thiel
Engineering

Brian May
Valley Landfills, Inc.
28972 Coffin Butte Rd.
Corvallis, OR 97330

January, 2008

Re: 2006-07 Annual Leachate Management Report for Coffin Butte

Dear Brian:

This letter-report is being sent to you to fulfill the condition in Solid Waste Disposal Permit No. 306, Section 17.5, that an annual leachate management report for the Coffin Butte landfill be submitted for the previous water year. Information contained in this report is a summary of information provided by your staff to Thiel Engineering. This report covers the 2006-07 water year, from approximately October 1, 2006 to October 1, 2007.

1. OVERVIEW OF LEACHATE MANAGEMENT FOR THE 2006-07 WATER YEAR

During the 2006-07 rain year, leachate was generated from Cells 1, 2, and 3. Leachate from all sources was pumped into one of two leachate surge ponds on the south side of Coffin Butte Road. Leachate was treated by the following methods:

- Irrigation of leachate onto the waste mass in accordance with a DEQ-approved plan.
- Trucking leachate to the waste-water treatment plant in Corvallis. This year Corvallis was the only POTW to which leachate was hauled, and none was hauled to either Albany or Pacific Power Vac in Portland.

2. PRIMARY LEACHATE MANAGEMENT

Section 17.5 of the site's solid waste permit No. 306 lists the information that is to be included in the annual leachate management report. The six items to be reported are described in the following paragraphs.

2.1 Yearly Totals by Month

The permit requests that monthly totals be reported for (a) leachate volume generated from the landfill sumps and (b) leachate volume treated. These two values would be expected to be similar taking into account the difference in pond volume at the

US Mail: PO Box 1010 *Physical address*: 9768 Yuba Ranch Way Oregon House, CA 95962 (530) 692-9114 *fax* (530) 692-9115 *email:* Richard@rthiel.com

beginning and end of the water year, and any rain that falls into an active leachate pond.

There are two ways to estimate the volume of leachate generated. One is to use flow meters on the discharge lines from the leachate sumps. The other is use the volume treated (volumetrics). Both methods were used and are presented in Table 1.

The flow meters indicated that 29.9 million gallons (MG) of leachate were generated during the reporting period (compared to 29.0 MG last year). The volumetrics indicated 1% less volume at 29.5 million gallons, which is an excellent correlation, as it was excellent the previous year.

Attachment 1 provides raw data on volumes of leachate treated, flow-meter data, and rainfall records.

The volume of leachate from the secondary leachate collection system (SLCS) in Cell 2 is not itemized separately on Table 1 because this liquid was pumped directly into the primary Cell 2 sump (the volumes are tracked for internal use). In Cell 3, a minimal amount of liquid from the SLCS was pumped directly to the primary Cell 3 sump and therefore not itemized as a separate volume. From the point of view of leachate management, the total volume of leachate managed from the primary Cells 2 and 3 sumps are inclusive of the SLCS volume. The volume that was extracted from the SLCS is discussed separately later in the report.

Table 1 - Summary of Coffin Butte Landfilll 2006-2007 Leachate Volumes

2006-2007 Leachate Management Summary

Coffin Butte Landfill

Month	Corvallis WWTP	Leachate Irrigation onto Landfill	Treatment Plant	Pond Vol at Start of Month	Rainfall (inches)	Cell 1 Flowmeter	Cell 2 Flowmeter	Diaphragm Pumps	Downwell Pumps	Cell 3 Flowmeter	No. of days irrig. occurred	Avg irrig. per day
Oct-06	900,000	308,200	0	1,590,000	1.10	94,798	510,000			591,650	10	30,820
Nov-06	1,746,000	0	0	1,910,000	16.12	166,328	1,927,200			3,049,740	0	0
Dec-06	2,502,100	110,100	0	5,380,000	7.88	229,022	1,865,300			2,098,070	3	36,700
Jan-07	4,140,226	33,700	0	6,970,000	3.12	240,829	1,632,900			1,473,660	3	11,233
Feb-07	2,969,882	0	0	5,990,000	6.10	231,631	1,541,400			1,324,860	0	0
Mar-07	2,555,560	0	0	6,010,000	1.87	231,422	1,912,200			915,660	0	0
Apr-07	2,624,158	0	0	6,440,000	0.20	171,511	942,506		250,994	662,540	0	0
May-07	2,633,687	0	0	5,700,000	1.59	174,301	653,517	205,835	230,748	730,330	0	0
Jun-07	2,301,208	0	0	4,940,000	0.21	136,319	507,360	356,936	161,504	574,910	0	0
Jul-07	1,596,011	0	0	4,260,000	0.23	161,037	414,930	268,162	150,808	516,480	0	0
Aug-07	1,535,198	0	0	4,200,000	0.55	163,289	368,468	201,425	138,832	513,216	0	0
Sep-07	1,419,628	0	0	3,990,000	1.99	151,335	359,623	181,382	106,471	440,004	0	0
Oct-07				3,750,000								
Totals	26,923,658	452,000			40.96	2,151,821	12,635,403	1,213,741	1,039,357	12,891,120	16	

2006/2007 TOTAL LEACHATE VOLUME TREATED:	27,375,658
LEACHATE GENERATED FROM VOLUMETRICS:	29,535,658
LEACHATE GENERATED FROM FLOWMETERS:	29,931,441
Ratio of flowmeters to volumetrics:	1.01

Notes: 1.) All values in gallons unless noted

2.) Leachate season Oct 1 to Oct 1

2.2 Review of Significant Leachate Management Events That Occurred During the Last Water Year

Significant events for the 2006-07 water year are noted in the points below.

- Rainfall of 41.0 inches which is normal average precipitation (normal at Hyslop is approx 41 inches).
- Leachate volumes generated were nearly equal to the previous year.
- No cell construction event took place in 2007. Four acres of the south permanent slope of Cell 3 received permanent final cover.
- The temporary plastic tarp on the east slope of Cell 2 was removed and replaced by a few feet of soil for interim cover on that slope.

2.3 Review of Leachate Monitoring Network and Recommendations for Improvements

The leachate monitoring network includes the following components:

- Volume estimates for each of the treatment methods are made using a range of techniques such as flow meters, or truck counts.
- Leachate irrigation is monitored qualitatively by noting the presence of gas production changes, waste saturation and side-slope seeps. Very little leachate irrigation was performed this year and this program has currently been phased out.
- Monitoring effluent quality of the on-site treatment plant is performed in accordance with the site's NPDES permit (none performed in 2007).
- Leachate quality monitoring is performed for the POTWs and for the solid waste permit in the annual groundwater monitoring report.
- Monitoring of head levels in the landfill primary and secondary sumps (for Cell 2) is performed using transducers and automatic recording. The transducers and telemetry system had significant technical problems this past year, and no head-data is available. This situation is actively being corrected, and data will be available for the next report. Based on settings for the on/off switch for the pumps in the primary and secondary sumps, and the fact that the pumps operated normally, without any pump failures, it can be inferred that, on average, the head levels in the sumps met permit requirements.
- Monitoring of pond levels (volumes) is recorded regularly using manual dip-sticks in the leachate holding ponds. West Pond is manual dipped. The East pond volume is estimated from the flow meters. The inventory of both ponds combined is included in Table 1.

- The regular maintenance for the leachate sumps (pumping sediment well, pump, check valves, and flowmeters) was performed on April 18 and July 17, 2007.

2.4 Summary of Site Conditions and Compilation of Monitoring and Analysis Data

Table 2 provides a summary of the monitoring and analysis data references. Site conditions relative to leachate management in the 2006-07 water year were efficient and well-managed, with the exception of a telemetry system breakdown.

Table 2 - Monitoring and Analysis Summary Data References

Monitoring or Analysis Item	Reference
Flow meters from landfill sumps	Significant amounts of useful data over the reporting period, summarized in Att. 1.
Volumes handled by various methods	Table 1.
Gas production changes, waste saturation, and side-slope seeps in waste irrigation areas	Report of Leachate Irrigation on Cell 3 is described later in this report.
Effluent quality from treatment plant	Monthly monitoring reports sent to DEQ (Water Quality Dept) for NPDES compliance (reported "No Discharge" each month this year).
Leachate quality	Annual Water Quality Monitoring Report to be issued by March 31 of each year.
Head level in Cell 2 primary and secondary leachate sumps. Head Level in Cell 3 primary and secondary.	Technical problems with the transducers and/or telemetry equipment occurred this year.
Rainfall	Recorded automatically by site weather station.
Pond levels (volumes)	Table 1 for beginning and ending volumes; monitored weekly.

2.5 Summary of Reports for Monitoring Irrigation on Waste

The leachate irrigation program was phased out and put on indefinite hold at the beginning of the 2006-07 water-year. A modest 450,000 gallons of total leachate volume was irrigated over a period of 16 days in the first four months. This only represents 1.5% of the total leachate volume.

The irrigation program was conducted in accordance with the past procedures as follows:

- Leachate irrigation was set back at least 80 feet from the top edge of slopes.
- Irrigation occurred on 16 days of the 365-day water year, with an average application rate of approximately 28,000 gallons per day on the days when it occurred.

- No irrigation occurred over the Cell 2A footprint.
- Daily cover requirements were met.
- Volume records and sketches of the irrigation areas are provided in Attachment 3.

Given the relatively minor participation of leachate irrigation this past year, no further elaboration regarding observations or program management are deemed necessary for this report.

2.6 Proposed Plans/Changes for Upcoming Leachate Management

The strategy for future leachate management is as follows:

- Continue with aggressive landfill operations and cover procedures to reduce leachate generation from precipitation to the extent possible.
- Continue to maintain all management options for treating leachate.

LEACHATE COLLECTED FROM THE SECONDARY LEACHATE COLLECTION SYSTEM (SLCS)

The amount pumped from the Cell 2 SLCS for the water year was approximately 126,030 gallons. This is almost half the amount that was collected the previous water year (227,760 gallons). Production from Cell 3 SLCS was not recorded for the water year because it was minimal. Volumes from the Cell 3 SLCS will be recorded and reported in 2007-08. A plot of the 90-day running average of the volume from the Cell 2 SLCS is presented in Appendix B.

If there are any questions concerning the contents of this report, please call me at 530/692-9114.

Sincerely,
Thiel Engineering

R Thiel

Richard Thiel, P.E.
Oregon RCE # 14894

Attachments:

1. Site data for leachate volumes handled, flow meters, and rainfall.
2. 90-day running average of volume pumped from Cell 2 SLCS
3. Monthly sketches for leachate irrigation on waste.

Appendix C

Summary of Landfill Users by County of Origin, Tonnage and Total Vehicles

Coffin Butte Landfill Vehicles by Class and Tons Disposed - Total for Year 2007

	Commecial Vehicles Intercompany Franchised &		Private Vehicles	Total Vehicles	Total Tons
	MSW	C&D	(Includes Special Waste, Asbestos, & Public)		
County	Tons	Tons	Tons		
Benton	45,888.36	7,905.09	7,246.46	26,268	61,039.91
Linn	105,373.22	5,649.96	17,794.66	25,393	128,817.84
Polk	29,004.33	2,430.29	4,024.95	13,507	35,459.57
Marion	63,054.04	3,764.88	4,385.40	6,874	71,204.32
Lane	1,453.22	200.38	2,345.90	389	3,999.50
Tillamook	24,448.75	-	923.99	1,176	25,372.74
Yamhill	21.57	0.54	44.48	16	66.59
Lincoln	28,897.99	32.74	569.59	1,399	29,500.32
Coos	23,385.64	-	1,163.40	1,011	24,549.04
Washington	76,600.68	3.86	16,443.70	3,783	93,048.24
Jackson	-	-	0.13	1	0.13
Multnomah	58.21	8.82	22,457.36	922	22,524.39
Douglas	0.00	54.62	914.87	67	969.49
Clackamas	7,496.30	0.33	29,475.62	1,946	36,972.25
Columbia	-	-	13,152.56	459	13,152.56
Harney	0.60	0.00	0.49	3	1.09
Gilliam	0.21	-	0.00	1	0.21
Sherman	-	-	0.20	1	0.20
Deschutes	-	8.36	0.00	3	8.36
Baker		3.89	3.70	12	7.59
Malheur	0.64	-	0.00	1	0.64
Lake	-	2.70	4.04	3	6.74
King, WA	1.02	0.00	0.00	1	1.02
Cowlitz, WA	120.98	0.00	123.12	10	244.10
Pierce, WA	2.70	2.80	0.00	8	5.50
Snohomish, WA	-	-	44.07	8	44.07
Totals	**405,808.46**	**20,069.26**	**121,118.69**	**83,262**	**546,996.41**

Coffin Butte Landfill Vehicles by Class and Tons Disposed - Total for Year 2006

	Commecial Vehicles Intercompany Franchised &		Private Vehicles	Total Vehicles	Total Tons
	MSW	C&D	(Includes Special Waste, Asbestos, & Public)		
County	Tons	Tons	Tons		
Benton	44,277.11	7,783.25	13,246.64	27,194	65,307.00
Linn	95,176.14	9,284.11	21,780.65	25,445	126,240.90
Polk	26,887.11	2,617.64	5,267.34	14,541	34,772.09
Marion	60,214.58	5,742.69	16,629.61	7,926	82,586.88
Lane	881.02	1,468.97	10,848.14	934	13,198.13
Tillamook	24,422.74	-	-	943	24,422.74
Yamhill	2.06	12.01	3,958.24	135	3,972.31
Lincoln	28,019.39	152.81	121.78	1,398	28,293.98
Coos	22,615.31	1.14	5,039.94	1,220	27,656.39
Washington	108,401.16	63.45	15,607.39	5,218	124,072.00
Jackson	-	-	15.26	5	15.26
Multnomah	95.74	21.60	22,758.36	862	22,875.70
Douglas	6.70	52.07	12,387.42	475	12,446.19
Clackamas	158.92	169.67	25,315.16	1,429	25,643.75
Columbia	-	-	10,232.89	332	10,232.89
Harney	-	6.15	0.78	4	6.93
Gilliam	-	-	0.56	2	0.56
Baker	-	0.41	8.96	19	9.37
Malheur	-	-	1.04	1	1.04
Lake	-	-	1.89	5	1.89
					0.00
Clark,WA	74.71	288.80	12,454.17	568	12,817.68
Cowlitz, WA	-	8.12	333.22	14	341.34
Lewis, WA	-	-	3,321.42	150	3,321.42
Pierce, WA	-	-	89.76	13	89.76
Misc. County	-	-	13.62	2	13.62
Totals	**411,232.69**	**27,672.89**	**179,434.24**	**88,835**	**618,339.82**

Appendix D

Certificate of Liability Insurance Showing Benton County as Additional Insured

MARSH

CERTIFICATE OF INSURANCE

CERTIFICATE NUMBER
HOU-000690885-03

PRODUCER
Marsh USA Inc.
1000 Main Street, Suite 3000
Houston, TX 77002

016022-1-PLL-06-08 F32

INSURED
Allied Waste North America, Inc.
(Named Insured Continued Below)
18500 North Allied Way
Phoenix, AZ 85054

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER OTHER THAN THOSE PROVIDED IN THE POLICY. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES DESCRIBED HEREIN.

COMPANIES AFFORDING COVERAGE

COMPANY A AMERICAN INTERNATIONAL SPECIALTY LINES INS CO

COMPANY B

COMPANY C

COMPANY D

COVERAGES This certificate supersedes and replaces any previously issued certificate for the policy period noted below. 4

THIS IS TO CERTIFY THAT POLICIES OF INSURANCE DESCRIBED HEREIN HAVE BEEN ISSUED TO THE INSURED NAMED HEREIN FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THE CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, CONDITIONS AND EXCLUSIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
	GENERAL LIABILITY				GENERAL AGGREGATE	$
	COMMERCIAL GENERAL LIABILITY				PRODUCTS - COMP/OP AGG	$
	CLAIMS MADE OCCUR				PERSONAL & ADV INJURY	$
	OWNER'S & CONTRACTOR'S PROT				EACH OCCURRENCE	$
					FIRE DAMAGE (Any one fire)	$
					MED EXP (Any one person)	$
	AUTOMOBILE LIABILITY				COMBINED SINGLE LIMIT	$
	ANY AUTO					
	ALL OWNED AUTOS				BODILY INJURY (Per person)	$
	SCHEDULED AUTOS					
	HIRED AUTOS				BODILY INJURY (Per accident)	$
	NON-OWNED AUTOS					
					PROPERTY DAMAGE	$
	GARAGE LIABILITY				AUTO ONLY - EA ACCIDENT	$
	ANY AUTO				OTHER THAN AUTO ONLY:	
					EACH ACCIDENT	$
					AGGREGATE	$
	EXCESS LIABILITY				EACH OCCURRENCE	$
	UMBRELLA FORM				AGGREGATE	$
	OTHER THAN UMBRELLA FORM					$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY				WC STATU-TORY LIMITS / OTH-ER	
	THE PROPRIETOR/ PARTNERS/EXECUTIVE OFFICERS ARE: INCL / EXCL				EL EACH ACCIDENT	$
					EL DISEASE-POLICY LIMIT	$
					EL DISEASE-EACH EMPLOYEE	$
A	OTHER Pollution Legal Liability	PLS 1897971	06/01/06	06/01/08	Each Incident Limit	5,000,000
					Aggregate	5,000,000
					Self-Insured Retention	5,000,000

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS
Named Insured Includes Valley Landfills, Inc, DIV# F32

CERTIFICATE HOLDER

Benton County, Oregon
Chairman of the Board of Commissioners
408 SW Monroe Avenue, Suite 111
PO Box 3020
Corvallis, OR 97339-3020

CANCELLATION

SHOULD ANY OF THE POLICIES DESCRIBED HEREIN BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE INSURER AFFORDING COVERAGE WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED HEREIN, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER AFFORDING COVERAGE, ITS AGENTS OR REPRESENTATIVES, OR THE ISSUER OF THIS CERTIFICATE.

AUTHORIZED REPRESENTATIVE
Marsh USA Inc.
BY: Stephanie S. Story

MM1(3/02)

VALID AS OF: 04/10/08

Appendix E

Summary of Processing and Recovery Center Activity 2006 - 2007

Summary of Processing and Recovery Center Activity 2007

Recycling					Sales		
	Green Waste		Urban Wood Waste		Wood Chips	Hog Fuel	Compost
	Cubic Yards	Tons	Cubic Yards	Tons	Cubic Yards	Tons	Tons
Inbound	17,335.50	18,780.32	8,550.00	7,040.00			
Outbound					0.00	10,381.67	17,178.55
Totals	**17,335.50**	**18,780.32**	**8,550.00**	**7,040.00**	**0.00**	**10,381.67**	**17,178.55**

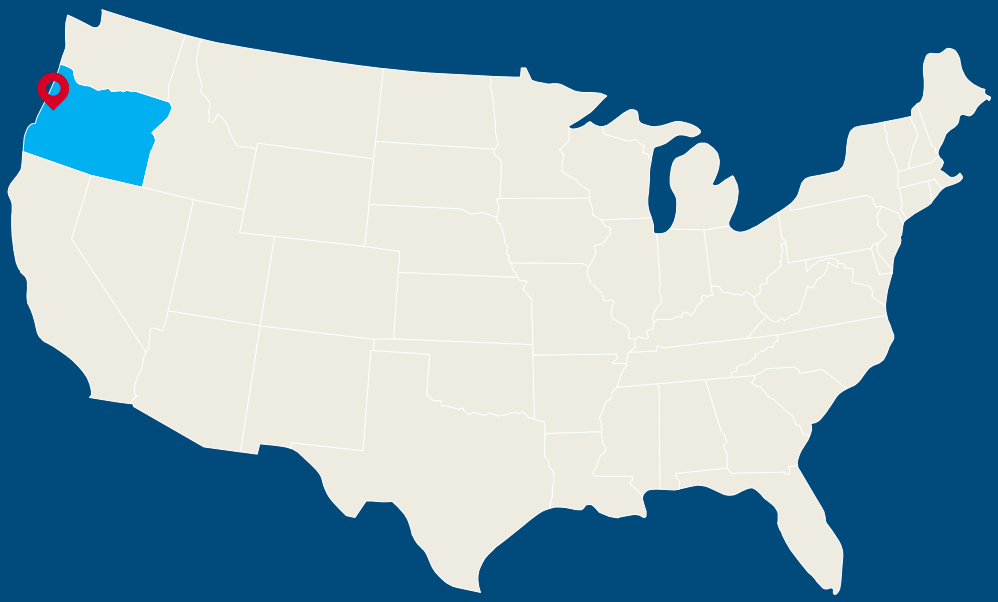
Summary of Processing and Recovery Center Activity 2006							
Recycling					Sales		
	Green Waste		Urban Wood Waste		Hog Fuel		Compost Commercial & Public
	Cubic Yards	Tons	Cubic Yards	Tons	Cubic Yards	Tons	Tons
Inbound	19,660.00	17,545.94	13,824.00	10,088.51			
Outbound					3.00	10291.14	16070.50
Totals	**19,660.00**	**17,545.94**	**13,824.00**	**10,088.51**	**3.00**	**10,291.14**	**16,070.50**

REPUBLIC SERVICES

Sustainability in Action

Coffin Butte Landfill and Pacific Region Compost Annual Report

Benton County
2023



Sustainability in Action

Letter from Management

August 28, 2024

Commissioners Augerot, Malone and Wyse
County Administrator McEneny
Benton County Staff

Dear Commissioners, Administrator McEneny and Staff,

Republic Services is pleased to submit this updated version of the Coffin Butte Landfill Annual Report for 2023. It contains operating, environmental compliance and sustainability updates and information for your review. Per our discussion at the Board of Commissioner's meeting on Tuesday, August 6, you'll find additional information regarding odor complaints and methane mitigation, among other topics. Commissioners also requested that we include information about our odor reporting portal in this document. That was included in the original version but has been highlighted on page 11.

This report also includes airspace and landfill capacity forecasting, as well as highlights from our forthcoming expansion request.

We welcome your feedback and look forward to continuing our strong partnership in the years to come.

Please feel free to contact me or Environmental Manager Ian Macnab for more information.

Best Regards,
Bret Davis
General Manager

Sustainability in Action

Sustainability in Action

Executive Summary

Republic Services is pleased to submit its amended annual report, summarizing our annual operations for the 2023 calendar year at Coffin Butte Landfill and the Pacific Region Compost facility.

As always, we are ready to answer questions from, and engage with, the community.

In our 2022 annual report, we estimated that Coffin Butte Landfill had 14.6 years of total capacity (life) remaining. In this report, we projected that at the end of 2023, the Landfill had 13.4 years of airspace remaining.

Our current estimates, based on airspace used since the beginning of this calendar year, is that Coffin Butte Landfill has 12.9 years of life remaining. As you know, unforeseen events, including natural or manmade disasters, can have a direct impact on airspace.

All estimates assume eventual use of the airspace in the Quarry, which is still being excavated. As of June 2024, there are only eight months of disposal life remaining in the fully constructed and permitted portion of the Landfill.

This report is being presented to you as we prepare responses to the County's feedback on our conditional use proposal (CUP) request for the Landfill. This request comes three years after our original proposal. In the interim, it has been substantially revised, based on considerable community and stakeholder feedback and engagement.

Our 2024 expansion proposal would add approximately six years of additional life to Coffin Butte. By contrast, our previous application sought an expansion that would have yielded 12 years. We believe the proposal also reflects additional input received during the Benton County Talks Trash Process, while ensuring a sustainable and cost-effective path for providing safe and reliable waste disposal for Benton County and its residents.

Further details can be found on page 2 of this annual report.

Our Promise

Sustainability in Action

Our Vision

Partnering with customers to create a more sustainable world

Table of Contents

Landfill Capacity

Coffin Butte Landfill has permitted airspace of 39,006,573 cubic yards (including what has already been consumed by waste disposal). During 2023 the landfill accepted 1,032,214 tons of solid waste. Based on historical aerial fly-over data, the average effective density of the in-place waste at the Coffin Butte Landfill is 0.98 tons/cy (1,965 lbs/cy – 2023 Operational Density).* Therefore, an estimated 1,051,134 cubic yards of airspace was used for the year. A total of 24,013,893 cubic yards has been consumed as of December 31, 2023, leaving a remaining capacity of 14,992,680 cubic yards of permitted air space.

What does that mean in terms of remaining life at Coffin Butte? At the end of 2023, we projected the Landfill had 13.4 years of life remaining. As of today (June 2024), we project about 12.9 years of life remaining – 95 percent of which is in the Quarry and is still being excavated.

As noted in the executive summary of this report, we are proposing an expansion that would add six years of life to Coffin Butte. When the proposed expansion airspace is combined with the not-yet-accessible airspace in the Quarry, the total estimated life at Coffin Butte is anticipated to be about 18.5 years.

We are actively depositing waste in a cell on the northern side of the Landfill, known as Cell 5E. We estimate that that cell will be completely full by February 2025. As you are aware, we have been working aggressively to construct a new cell in the eastern corner of the Quarry to ensure that the county's waste disposal needs can be met without service disruptions. That new cell, called 6A, will begin accepting waste in early 2025, based on current estimates, and we anticipate it will be full by September 2026.

*Effective density incorporates the effects of daily and intermediate soil cover usage. It is calculated by measuring the amount of airspace occupied between successive aerial flyovers using photogrammetric maps and dividing that volume into the number of tons of waste received at the gate.

2024 Expansion Request

Coffin Butte Landfill has started the process for requesting a Conditional Use Permit (CUP). Its purpose is to expand the waste disposal area of the landfill on to an existing parcel of property, south of Coffin Butte Road.

This request is considerably different than the 2021 expansion proposal and is the result of more than two years of listening, dialogue and collaboration among key stakeholders, including community leaders, landfill neighbors, NGOs, local governments, state leaders and Benton County Staff.

Our CUP request proposes adding six years of life to Coffin Butte Landfill – about half of what we requested in 2021. As noted previously in this report, there is currently about eight months of airspace remaining in the cell currently being used for waste disposal.

An approved CUP would ensure continuity of disposal services while the county works to develop a Solid Materials Management Plan. We are requesting this CUP now because **industry best practice is to start working on an expansion project when there is 10-12 years of life remaining at a site**. This is a prudent timeframe given that it takes an average of three years or longer to complete the local land use process. After the land use process is complete, it could take an additional three years or longer to obtain the permits required from various state agencies and then to initiate and complete construction of the disposal cells.

While we remain eager to participate in a sold materials management plan that will help meet Benton County's sustainability and recovery goals, **we need to begin permitting and constructing new disposal cells now to ensure continuous, safe, reliable and affordable disposal of the county's waste.**

Expansion Proposal Highlights

- A **50 percent smaller expansion** than the 2021 proposal (6 years versus 12)
- **Improves Coffin Butte Road** and adds bike lanes
- **Increased transparency, communication** and community responsiveness
- **Improved vegetative screening** along major travel corridors
- Containment of the landfill's working face and disposal **area to the Landfill Site (LS) zone**

Landfill Infrastructure Enhancements

We continually invest in Coffin Butte's infrastructure to ensure we are providing best-in-class service and environmental stewardship to the County. The following pages summarize work completed through 2023.

Gas Collection System

Coffin Butte Landfill's gas infrastructure is best-in-class. Since 2019 we have invested $9.4 million in the gas control and collection system, installing 57 vertical wells and 22,700 feet of horizontal gas collection piping.

Further investments are scheduled for this year, including installation of an additional 18 horizontal wells and 14 vertical wells, at an estimated cost of $1.2 million.

Coffin Butte's gas collection infrastructure is 3x the industry standard and is critical to controlling emissions, as required by the EPA. Coffin Butte already meets or exceeds the tightened requirements that were set forth under the U.S. Methane Emissions Reduction Plan.

For example, since 1995, Coffin Butte has captured methane gas to generate electricity for 4,000 area homes, via a partnership with PNGC Power. In addition, we operate the Pacific Region Compost facility, which processed more than 124,000 tons of organic material in 2023 from Benton and surrounding counties.

By the numbers

124K

tons of organics processed annually at the PRC

3x

industry standard for gas collection wells

$9.4M

invested in landfill gas collection system since 2019

Infrastructure (continued)

Cell Construction

In 2023, we completed construction on Cell 5E, which is located on the northern edge of the landfill, as noted in the aerial photo below. We are currently depositing waste in this 3.5-acre cell and expect it to be full by early 2025.

Given the limited remaining airspace remaining in Cell 5E, we are working aggressively to construct Cell 6A in the Quarry. We anticipate spending $9 million this year to construct the liner system for this next phase of the landfill to ensure it will be ready for waste disposal next spring. The cell is approximately 10.5 acres, and, based on current annual tonnage, will be capable of accepting waste through mid-2026.

Leachate Management

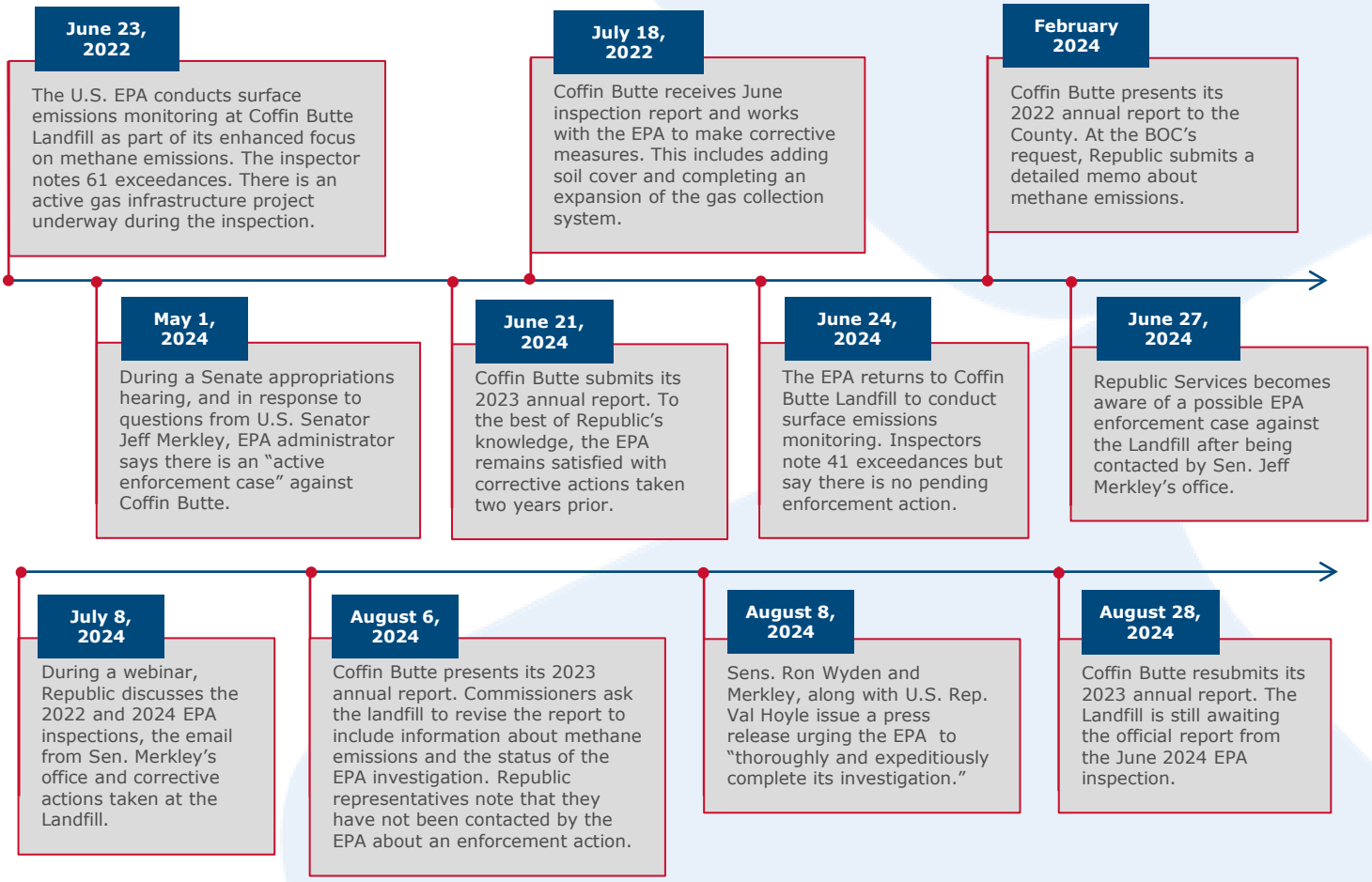
Each year we utilize an extensive network of geosynthetic covers to better capture the rain and reduce the impact it has on decomposing waste. These covers reduce the volume of leachate that is produced and then must be treated, which saves energy, reduces costs, and is better for the environment. In addition, the landfill has a robust groundwater monitoring system comprised of 35 wells, which are regularly checked to ensure peak performance and compliance with our regulatory permits.

This year we also plan a $100,000 project that will add additional areas of membrane cover to better divert storm water.

Methane and the EPA

We understand there has been significant discourse about methane emissions at Coffin Butte Landfill. The following two slides provide a detailed overview of the events of the past 18 months. We hope they also rectify confusion regarding the status of our discussions with federal regulators and our ongoing mitigation efforts.

We have included the below timeline of events to provide transparency and clarity on the events to date.

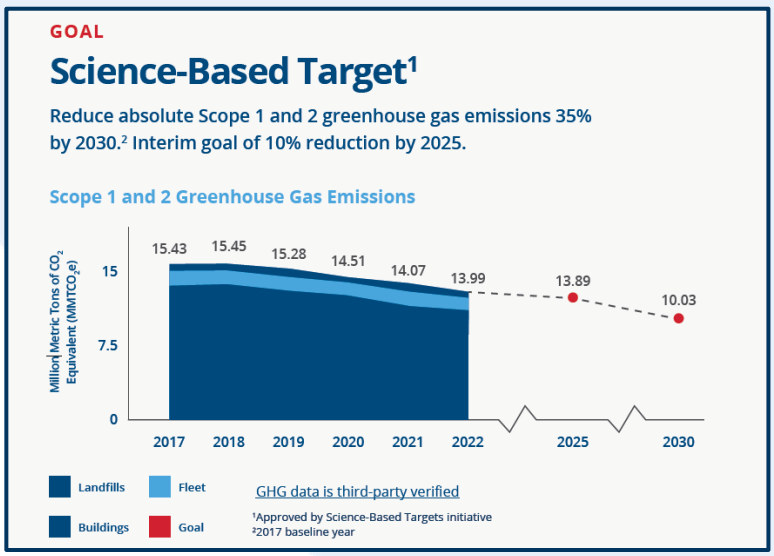


2023 ANNUAL REPORT UPDATES – METHANE AND THE EPA

EPA SURFACE EMISSIONS MONITORING

Republic Services is the first U.S. recycling and solid waste services provider to have its emissions reduction target approved by the Science Based Targets Initiative (SBTi). At our core, we are a sustainability company, and we understand the community's concerns about methane emissions.

It's important to note that Coffin Butte is no different than other landfills across the country when it comes to EPA inspections. The current administration has included landfills as part of its strategic plan to mitigate climate change by reducing methane– a known greenhouse gas.



EPA's priorities have resulted in increased inspections across the U.S., and a key focus of those inspections is Surface Emissions Monitoring.

Compliance is high priority for Republic Services and the waste industry. As such, industry representatives sat down with the EPA to clarify its approach and expectations. EPA representatives indicated that they will sometimes go beyond the regulations while conducting monitoring so they can bring to our attention the areas in which we can improve.

2022 CORRECTIVE ACTIONS

Republic Services took immediate corrective action following the 2022 EPA inspection, including adding cover soil and additional soil along the edges of tarps.

We strengthened seals around the gas collection piping and completed work on an expansion of the Landfill's gas collection and control system, adding 6 new vertical wells and 9 horizontal well collectors.

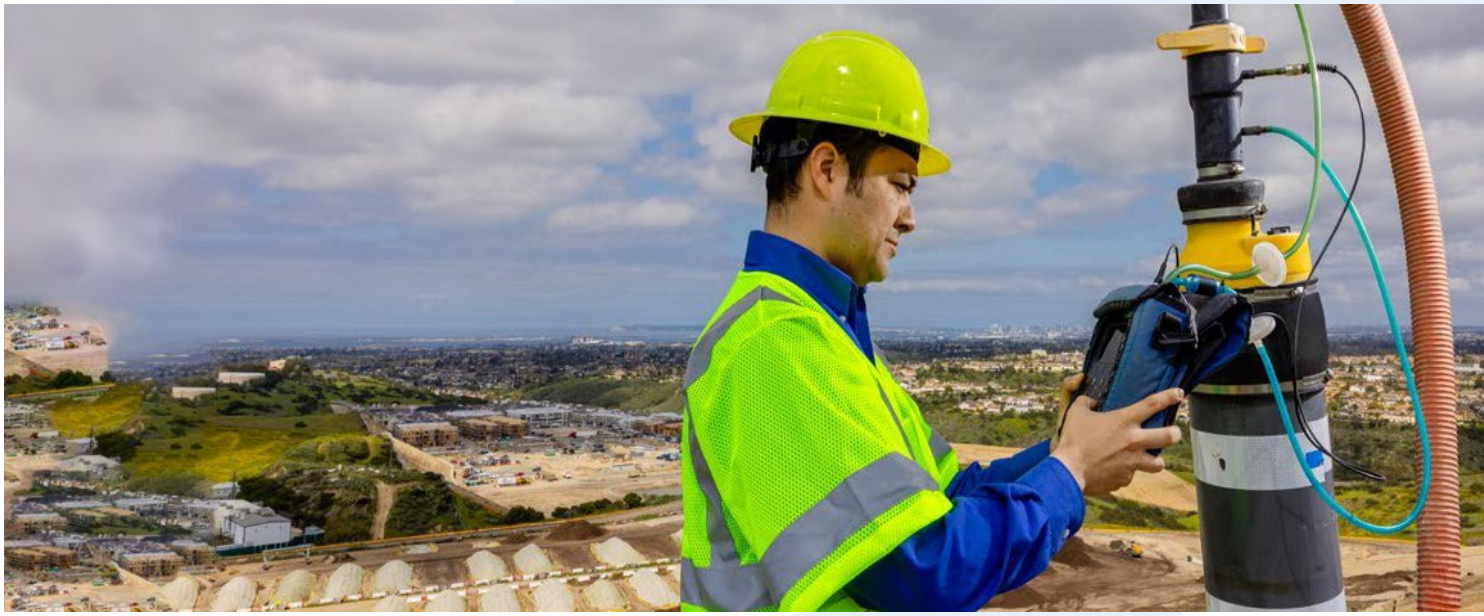
As of this submittal, the EPA has given us no indication that it is not satisfied with those mitigation efforts.

2023 REPORT UPDATES – METHANE AND THE EPA

2024 INSPECTION

In June 2024, Coffin Butte was the subject of a no-notice inspection by the EPA. Once again, inspectors conducted surface emissions monitoring at the landfill. While we have not received the EPA's final report from that inspection, we do know that inspectors noted 41 surface exceedances. The Landfill has already taken corrective actions, including patching tears in the cover tarps and, once again, expanding the Landfill's gas collection and control system.

At the time of the June emissions monitoring, EPA inspectors said Coffin Butte was not the subject of an enforcement action.



In addition to the Landfill's gas control and collection system, Coffin Butte diverts methane-producing organics out of the waste stream by processing more than 140,000 tons of organic material each year at the Pacific Region Compost facility.

The landfill also partners with PNGC power to generate electricity from gas produced at the site – enough to power 4,000 homes.

ENCLOSED FLARE

Coffin Butte also utilizes flares to burn off excess gas as part of its gas collection system. On July 10, 2024, DEQ sent a pre-enforcement warning letter to the Landfill stating that it needed to replace the existing flare system with a new, enclosed flare to meet regulatory requirements.
That flare has been installed, the old flare has been decommissioned, and testing on the new flare will be completed in the coming weeks.

Infrastructure (continued)

Understanding and Managing PFAS

Because PFAS is ubiquitous in the products we all use, it is present in landfills, including at Coffin Butte. It eventually ends up in landfill leachate – a byproduct of waste decomposition that results from rainwater filtering through waste mass – and is properly collected and pumped to an on-site storage tank. From there, leachate is safely transported to the Corvallis and Salem wastewater treatment plants (WWTPs) – along with other wastewater – where it is treated and discharged per regulatory guidelines.

Some key facts about PFAS at Coffin Butte are below:

- **Coffin Butte does not generate PFAS; instead, it receives it**. Our main focus is safely managing PFAS through proper landfill operations and partnering with the DEQ to ensure compliance
- Little can be done to reduce PFAS in leachate at the landfill, but **manufacturers can reduce future levels by limiting the chemicals in manufactured products**
- **Coffin Butte works closely with our partners – the Cities of Corvallis and Salem, and their WWTPs** – to treat leachate generated at the Landfill
- The 29.7M gallons of **leachate generated by Coffin Butte in 2023 is a small percentage of the overall wastewater treated** at our partners' facilities. The **landfill is in compliance** with its permits and regulatory requirements.

Coffin Butte remains engaged at the state and local levels and continues working with DEQ and WWTPs as regulations evolve. We are committed to serving this community safely and providing a sustainable disposal solution centered on environmental responsibility.

Environmental Impact and Monitoring

Annual Environmental Monitoring Report (Groundwater)

Valley Landfills, Inc., as owner and operator of Coffin Butte Landfill, is committed to being a good neighbor and a steward of the environment. We prioritize safe and responsible operations, sustainability, and collaboration with regulators at the local, state and federal level.

In 2023, Coffin Butte landfill was inspected six times by a variety of agencies, including DEQ's Division of Material Management, Metro Regional Government, and the cities of Corvallis and Salem. In addition, we submitted annual, semi-annual, quarterly and monthly reports to federal, state and local regulators, in accordance with our operational and environmental permits.

The landfill is – and remains – in compliance with its permits and regulatory requirements and was not issued any notices of violation by EPA or the Oregon Department of Environmental Quality in 2023.

The following section of the annual report provides a summary of the water quality monitoring activities at the landfill. Environmental monitoring and reporting is required by Coffin Butte's solid waste disposal permit number 306, which is issued and administered by the Oregon DEQ.

Coffin Butte Landfill conducted groundwater sampling in April and October 2023 and completed its annual environmental testing of leachate produced by all active and closed waste disposal cells.

No significant changes in water quality were measured. We test for 60 volatile organic compounds in our wells along the west-side compliance boundary, and all concentrations were below primary drinking water standards. This includes well MW-12S, which is located on the edge of Cell 1, and is the barometer for ensuring that the remediation efforts enacted in the 1990s continue to be effective.

Sampling shows that the long-term trend for tetrachloroethene (PCE) at that same well also continues to decrease. Other VOC concentrations have declined to trace levels at west-side compliance wells and several inorganic parameters were present above background concentrations. Since the landfill cover was installed on Cells 1/1A in 1996 and landfill gas removal wells were installed in Cell 1 in 1994, the number and concentrations of VOCs have declined.

Downgradient of the former Closed Landfill, groundwater quality trends are stable as well. The contaminants in these areas were from the waste deposited in the old "Burn Dump." Coffin Butte completed the removal of this waste in 2022, eliminating the source of the contaminates. Based on the age of the landfill and completion of source removal, it is expected that the residual low level impacts will diminish with time. In addition, piezometer P-9, a monitoring well that's used to measure water levels to created the groundwater contour maps, was re-drilled and replaced on July 26, 2023.

At the compliance boundary for Cells 4 and 5 on the east side, the primary drinking water standard for arsenic was exceeded, but these concentrations represent natural background conditions. In other words, these wells are newer, and we are required to test for existing materials (including hard metals, such as arsenic) in the water to establish a baseline. These results do not represent a compliance issue at the landfill.

We have re-attached the arsenic memo, previously submitted to Benton County on February 15, 2024, as "Appendix D" to this report.

Environmental Impact (continued)

Sampling results at MW-26 and MW-27 were below statistically calculated site-specific limits (SSLs) for most of the indicator parameters. Manganese was marginally above the limit at MW-27 for both sampling events. An exceedance for magnesium and manganese occurred at MW-26 in April, but concentrations returned to normal and below the SSLs in October. DEQ does not require action because monitoring is only required if three results from a single well exceed the SSLs.

Annual Environmental Monitoring Report (Groundwater)

Leachate production for the water year 2022-2023 was estimated at approximately 29.7 million gallons. This was generated by Cells 1 through 5 during the water year ending September 30, 2023. VLI continues to monitor the secondary leachate collection systems (SLCS) beneath Cells 2, 3, 4, and 5 .

The text portion of the Annual Environmental Monitoring Report (AEMR), trend plots for groundwater quality parameters described above, and data tables for east side groundwater monitoring wells are presented in Appendix A. The remaining tables, figures and appendices discussed in the text portion of the report are on file at the Benton County Health Department.

Annual Environmental Monitoring Report (Leachate Management)

The AEMR includes information and data from the leachate management program. Leachate production and management for the water-year October 2022 to September 2023 is discussed in the report. The text portion of the leachate report can be found in section 3.4 of the AEMR.

Again, this is on file at the Benton County Health Department.

Title V Air Monitoring Report

While we discussed our gas collection system in detail earlier in this report, it's important to talk specifically about our compliance with our air monitoring (Title V) permit. Air emissions generated at the Coffin Butte Landfill in 2023 were detailed in a report to DEQ using forms and templates that the agency provided. Highlights are included here:

1. The air emissions generated in 2023 were less than the plant site emission limits (PSELs) allowed under the Title V Operating Permit.
2. There were no deviations from the Title V Operating Permit conditions.
3. The landfill did not receive any odor complaints from the public in 2023.

However, DEQ gave us an accounting of nine odor complaints it received during the calendar year. These complaints were compiled and sent to us on three occasions, as noted on the chart that appears on the following page. This marks a significant decrease from 2022, when DEQ sent a total of 30 odor complaints, compiled and sent on three separate occasions.

Occupational Safety and Health Administration

Coffin Butte will continue to engage with the county in a timely and transparent fashion when it comes to key inspections and other noteworthy landfill operations. As you are aware, Coffin Butte was inspected twice in the last twelve months by OSHA representatives. These inspections occurred in October 2023 and February 2024 and resulted in three citations and fines totaling $580.

All concerns were immediately addressed, including OSHA's request that we provide additional respiratory safety training for our employees. While that training has already been completed, Coffin Butte has taken the additional – and voluntary – step to hire a third-party industrial hygienist to conduct air monitoring around the landfill. We will follow up when those results become available.

Coffin Butte places the highest priority on worker safety, and we are committed to providing a safe environment for our employees.

Coffin Butte Landfill Odor Notices

Coffin Butte makes every effort to control the potential for offsite odor and takes all odor complaints seriously. During previous community engagement, stakeholders requested that Coffin Butte and the County work together to create an improved process for receiving, tracking and resolving complaints, including odor.

We are happy to work with the County on this effort. Because we can investigate more effectively if the report is received in real time, we have created a new odor reporting portal on our website, coffinbuttelandfill.com.

The portal allows residents to notify us, via email, if they detect odor that they believe could be attributed to the landfill, and includes key informational fields, including location, time of day and ambient weather or air conditions.

Month	2016	2017	2018	2019	2020	2021	2022	2023
January	2	0	0	0	0	0	0	0
February	0	0	0	0	2	2	25*	0
March	0	0	0	0	0	0	0	0
April	0	0	0	1	1	0	0	0
May	0	0	0	0	0	0	0	0
June	0	0	0	0	0	0	0	0
July	0	0	0	0	0	0	0	0
August	0	0	0	0	0	0	4**	0
September	0	0	0	0	0	1	0	1
October	0	0	0	0	1	0	0	0
November	0	0	0	0	0	1	0	2
December	0	0	0	0	0	1	1	6***

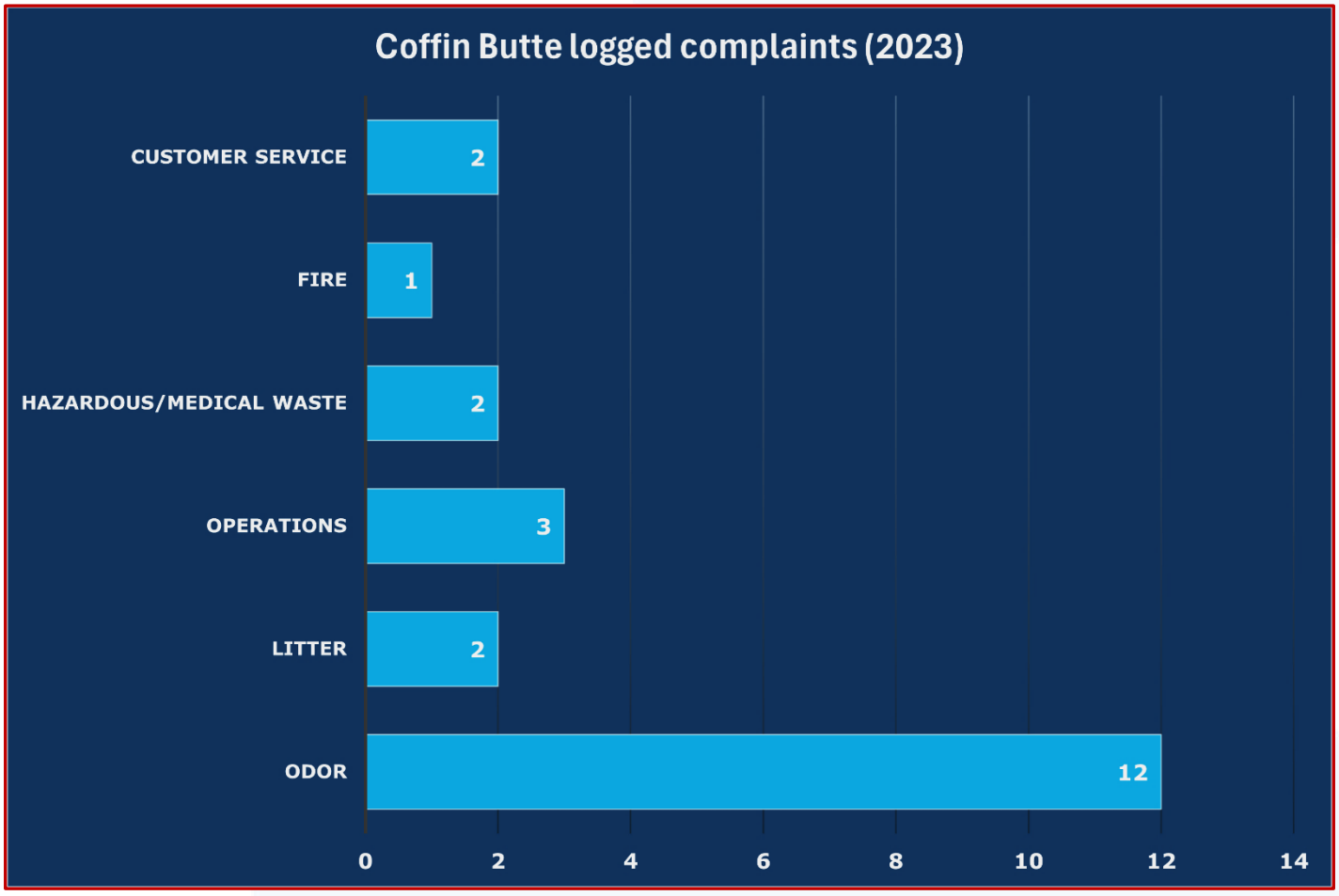
*DEQ sent single notification of 25 complaints received between 11/8/21 and 2/7/22
**DEQ sent single notification of 4 odor complaints received from 7/1/22 to 8/16/22
***DEQ sent a single notification of 6 odor complaints in December 2023.

Odor complaints

As noted on the previous page, there is not a single, comprehensive system for receiving and following up on operation-related complaints at Coffin Butte Landfill.

In addition to the DEQ logs, Benton County provided Coffin Butte Landfill with an excel spreadsheet detailing 22 odor complaints received during calendar year 2023. The chart below shows a breakdown of those complaints.

Approximately 54 percent related to odor concerns. These comments were submitted to the county in various ways, including telephone, email and via public comment during SWAC and DSAC committee meetings. *(Note: The "other" category doesn't include odor. These comments focused on operating hours, lighting and noise.)*



Data provided by Benton County

We never want – nor should we have – offsite odor. We work aggressively to control odor onsite and minimize offsite impacts. As stated elsewhere in the report, we are continually investing in the landfill's gas control and collection system to ensure we capture as much gas as possible.

2023 REPORT UPDATES - ODOR

ODOR MITIGATION

Our other major tool in controlling odors is ensuring that daily cover is in place, as required by our permit. Daily cover is a layer of soil, usually six inches deep, or an alternative cover approved by DEQ and placed over all compacted refuse received during the day.

In addition to reducing odors, daily cover helps prevent water entry, controls both insects and animals feeding on the refuse and reduces wind-blown debris traveling from the working face.

Finally, we keep our working face (the area in which we are actively depositing waste) very small; this helps minimize potential offsite impacts from our daily operations.

COMPLAINT LOG BREAKDOWN

At right is a complete accounting of operational complaints/concerns logged by Benton County in 2023.

Below, is a list of Coffin Butte's ongoing mitigation efforts that directly address some of these concerns.

- One to two roadside cleanups per month
- Special waste screening and manifests
- Six annual hazardous household waste events (four in Benton County and two in Linn County)
- Waste disposal spot checks
- Third-party wildlife study to evaluate Great Heron Rookeries
- 550 acres dedicated to preservation and non-landfill operations

Table 1 – 2023 Coffin Butte Landfill Community Concerns Log

Table 1 - 2023 Coffin Butte Landfill Community Concern Log				
#	Date	Concern Summary	Received By	Status
1	1/5/2023	Glass collection inconsistent	Written comment	Responded
2	1/11/2023	Landfill Lighting impacting Wildlife and CUP	Written comment	Responded
3	1/12/2023	Methane Smell at Landfill	Written comment	Responded
4	2/26/2023	Roadside Litter and debris along Hwy 99	Written comment	Received
5	2/27/2023	Lack of communication and response from collection franchisee regarding disruption in collection service due to Snow storm	Written comment	Responded (by BOC)
6	5/22/2023	Unsecured garbage from Republic vehicle, roadside tire fragments from Republic vehicle, landfill odor, exposed uncovered waste at landfill	Written comment	Received by staff, and Republic Services was included on email
7	7/26/2023	Drilling sounds near landfill property	Written comment	Initial Site Visit Complete, Follow up complaint received and responded
8	9/14/2023	Types of waste accepted at the landfill	Written comment	Received
9	9/14/23	Coffin Butte odors	Written comment	Received, Responded
10	9/27/2023	Landfill operating outside of CUP allowed business hours, Noise	Written comment	Received, Responded
11	10/6/23	HHW at CVHS	Written comment	Received, Responded
12	10/31/2023	Smoke/fire at PRC	Written comment	Received, Responded
13	11/17/2023	Landfill odor	Phone call	Received, Responded
14	11/17/2023	Landfill odor	Phone call	Received, Responded
15	11/19/2023	Landfill odor	Written comment	Received, Responded
16	11/19/23	Landfill odor	Written comment	Received, Responded
17	12/1/2023	Landfill odor	Phone call	Received, Responded
18	12/13/23	Coffin Butte odors	Phone call	Received, Responded
19	12/21/23	Coffin Butte odors	Phone call	Received, Responded
20	12/23/23	Coffin Butte odors and pollution	Written comment	Received, Responded
21	12/25/23	Coffin Butte odors	Written comment	Received, Responded
22	12/28/23	Coffin Butte odors	Written comment	Received, Responded

Summary of Landfill Users

(By County of Origin)

SUMMARY OF LANDFILL USERS BY COUNTY OF ORIGIN

Coffin Butte Landfill Tonnage by Type and County - Total for Year 2023

		Commercial							Public			Alternate Daily Cover				Compost	
County	Vehicles	MSW	C&D	Asbestos	Agricultural Waste	Industrial Waste	Sludge	Totals	MSW	Other	Totals	Contaminated Soil	Covanta Ash	Shaker Fines	Totals	Yard Waste Received	Compost Sales (Yds)
Benton	43,210	50,791.66	7,672.54	124.90	2.21	18,025.69	-	76,617.00	9,432.29	-	9,432.29	16,024.73	-	-	16,024.73	2,686.70	715.30
Linn	31,644	79,294.20	4,209.07	159.41	95.77	32,139.44	12,504.38	128,402.27	6,021.67	-	6,021.67	5,179.93	-	-	5,179.93	923.15	50.00
Polk	16,626	40,388.34	1,567.19	122.61	892.71	2,402.03	6,218.74	51,591.62	3,367.85	-	3,367.85	2,286.80	-	-	2,286.80	250.00	68.25
Marion	12,094	213,992.44	519.86	276.56	108.43	5,616.35	40.66	220,554.30	973.46	-	973.46	6,445.89	25,199.96	-	31,645.85	76.90	12.00
Lane	2,207	4,184.63	150.20	3.50	-	23,781.64	-	28,119.97	50.56	-	50.56	16,343.08	-	-	16,343.08	0.56	4.00
Tillamook	1,609	29,378.48	-	0.02	1,695.73	727.94	7,335.06	39,137.23	71.14	-	71.14	-	-	-	-	-	-
Yamhill	4,518	95,502.05	259.41	20.87	1,251.94	416.28	-	97,450.55	474.37	-	474.37	25.07	-	-	25.07	3.12	-
Lincoln	5,264	44,661.45	111.82	67.04	-	42,384.61	63,932.31	151,157.23	80.03	-	80.03	719.89	-	-	719.89	1.81	-
Coos	7	-	-	-	-	-	4.57	4.57	-	-	-	48.96	-	-	48.96	-	-
Pierce, WA	21	1.11	-	-	314.81	17.31	-	333.23	-	-	-	-	-	-	-	-	-
Washington	6,956	178,437.10	0.47	45.82	171.72	281.70	-	178,936.81	1.26	-	1.26	-	-	2,788.72	2,788.72	-	-
Jackson	5	0.62	-	-	-	0.07	-	0.69	-	-	-	5.11	-	-	5.11	-	-
Multnomah	221	2,556.81	-	52.75	-	394.60	-	3,004.16	-	-	-	414.85	-	-	414.85	-	-
Douglas	396	10,969.37	-	5.17	-	1.90	-	10,976.44	4.74	-	4.74	149.99	-	-	149.99	-	-
Clackamas	1,053	13,503.89	2.78	175.59	1,656.56	2,382.62	2,245.84	19,967.28	5.97	-	5.97	3.54	-	-	3.54	-	-
Columbia	1	-	-	6.73	-	-	-	6.73	-	-	-	-	-	-	-	-	-
Curry	1	-	-	-	-	-	-	-	-	-	-	9.11	-	-	9.11	-	-
Jefferson	1	-	-	-	1.42	-	-	1.42	-	-	-	-	-	-	-	-	-
Clatstop	21	0.05	-	-	-	598.00	-	598.05	-	-	-	0.20	-	-	0.20	-	-
Lake	5	0.57	-	-	-	-	-	0.57	-	-	-	-	-	-	-	-	-
Cowlitz, WA	11	-	-	-	-	281.14	-	281.14	-	-	-	-	-	-	-	-	-
Deschutes	7	0.80	-	15.43	-	-	-	16.23	-	-	-	1.01	-	-	1.01	-	-
Baker	269	3.92	-	412.39	-	1,781.63	2.50	2,200.44	-	-	-	1,101.17	-	-	1,101.17	1.70	-
Malheur	2	1.19	-	-	-	-	-	1.19	-	-	-	-	-	-	-	-	-
Josephine	2	0.26	-	-	-	-	-	0.26	-	-	-	5.33	-	-	5.33	-	-
Misc. County	20	-	-	-	-	0.27	-	0.27	576.39	-	576.39	0.15	-	-	0.15	-	-
Clark, WA	135	0.10	-	-	-	1,794.64	-	1,794.74	-	-	-	-	-	-	-	-	-
Totals	126,306							1,011,154.39			21,059.73				76,753.49		

Landfill Environment Trust Fund

Environmental responsibility is one of our core values.

The Environmental Trust Fund was created more than 20 years ago as a mechanism to safeguard long-term environmental health at the site.

The Landfill Franchise Agreement specifies how the Trust Fund is to be maintained and requires that all accrued earnings and interest remain in the Trust. The value of the fund tends to ebb and flow with the economy but has increased significantly since its inception.

- The Value of the Environmental Trust on 12/31/2023 was **$16,868,032.**
- The Value of the Environmental Trust on 12/31/2022 was **$14,443,964.**
- The Value of the Environmental Trust on 12/31/2021 was **$16,224,175.**
- The Value of the Environmental Trust on 12/31/2020 was **$14,646,697**.
- The Value of the Environmental Trust on 12/31/2019 was **$12,919,311**.
- The Value of the Environmental Trust on 12/31/2018 was **$10,622,923.**

A copy of the Certificate of Liability Insurance, showing Benton County as an additional insured is presented in Appendix C.

Environmental and Regulatory Permits

Permit Number	Permit Type	Permit Terms	Renewal Date	Enforcement Actions - 2020	Comments
SWDP # 306	Solid Waste	10 Year	June 30, 2030	None	
# 1200Z	NPDES Stormwater	5 Year	June 30, 2026	None	
#101545	NPDES Leachate Treatment	5 Year	September 30, 2017	None	Renewal Application Submitted-Administratively Extended
#02-9502	Title V Air Quality	5 Year	October 1, 2014	None	Renewal Application Submitted-Administratively Extended
#5	Industrial Wastewater Discharge	2 Year	May 31, 2025	None	City of Corvallis Leachate Disposal
#8679	Wastewater Discharge Permit	5 Year	December 31, 2027	None	City of Salem Leachate Disposal

Summary of Customer Complaints

Valley Landfills, Inc. 2023 Complaint Log

This table was compiled from the verbal complains logged at both Coffin Butte Landfill and the Pacific Region Compost scale houses.

Month	Price	Public Tipping Area (Coffin Butte)	Other	Pacific Region Compost	Monthly Total
January	0	0	0	0	0
February	0	0	0	0	0
March	0	0	1	0	0
April	0	0	0	0	0
May	0	0	0	0	0
June	0	0	0	0	0
July	0	0	0	0	0
August	0	0	1	0	0
September	0	0	0	0	0
October	0	0	0	0	0
November	0	0	0	0	0
December	0	0	0	0	0

Pacific Region Compost Activity

Pacific Region Compost (PRC) operates under a Solid Waste Disposal Site Permit (Composting Facility No. 1418) issued by the Oregon Department of Environmental Quality (DEQ) on January 2, 2020.

The permit allows PRC to compost Food Waste (Type III Feed Stocks). Below is a list of the inbound and outbound materials at PRC in 2022 and 2023.

PRC did see a drop in both materials processed and in compost sales in 2023, compared with the previous year. This is due largely to the termination of a customer contract. We are actively seeking/engaging with potential customers in 2024.

Summary of Pacific Region Compost Activity 2023								
	Recycling						Sales	
	Green Waste		Urban Wood Waste		Food Waste		Hog Fuel	Compost
	Cubic Yards	Tons	Cubic Yards	Tons	Residential (Tons)	Commercial (Tons)	Tons	Cubic Yards
Inbound	124,211.00	0.00	0.00	0.00	0.00	2,959.00		
Outbound							0.00	49,685.00
Totals	124,211.00	0.00	0.00	0.00	0.00	2,959.00	0.00	49,685.00

Summary of Pacific Region Compost Activity 2022								
	Recycling						Sales	
	Green Waste		Urban Wood Waste		Food Waste		Hog Fuel	Compost
	Cubic Yards	Tons	Cubic Yards	Tons	Residential (Tons)	Commercial (Tons)	Tons	Cubic Yards
Inbound	141,868.00	0.0	0.00	0.00	0.00	2,890.00		
Outbound							0.00	78,485.50
Totals	141,868.00	0.00	0.00	0.00	0.00	2,890.00	0.00	78,485.50

Pacific Region Compost Odor Notices

The PRC received, responded to and documented 0 odor notifications in 2023.

Pacific Region Compost Odor Notices								
Month	2016	2017	2018	2019	2020	2021	2022	2023
Jan	5	2	2	1	0	0	0	0
Feb	7	2	0	0	1	0	0	0
Mar	12	3	0	0	0	0	0	0
Apr	18	3	2	0	3	0	0	0
May	15	10	5	3	7	1	0	0
Jun	2	2	0	4	5	1	1	0
Jul	6	1	0	2	5	3	1	0
Aug	2	1	0	1	3	0	0	0
Sep	0	0	0	3	0	1	0	0
Oct	1	2	1	5	1	0	0	0
Nov	2	0	0	4	0	1	0	0
Dec	3	0	4	9	0	0	0	0
Total	73	26	14	32	25	7	2	0

Appendix A

Annual Environmental Monitoring Report (AEMR) and Executive Summary Trend Plots

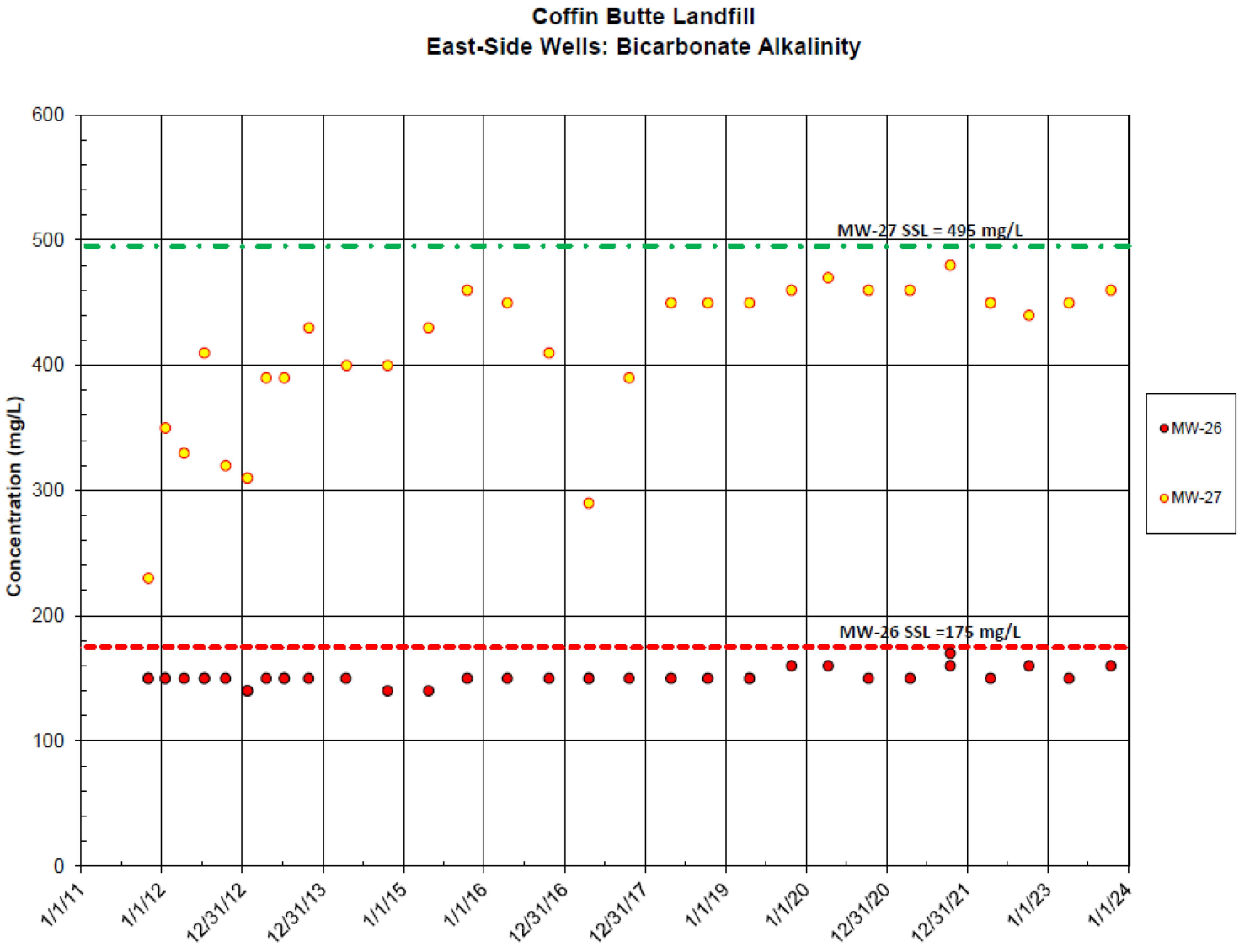
REPUBLIC SERVICES

Sustainability in Action

Table 4-2: Comparison Sampling Results with SSLs//East Side Compliance Wells
2023 Annual Environmental Monitoring Report – Coffin Butte

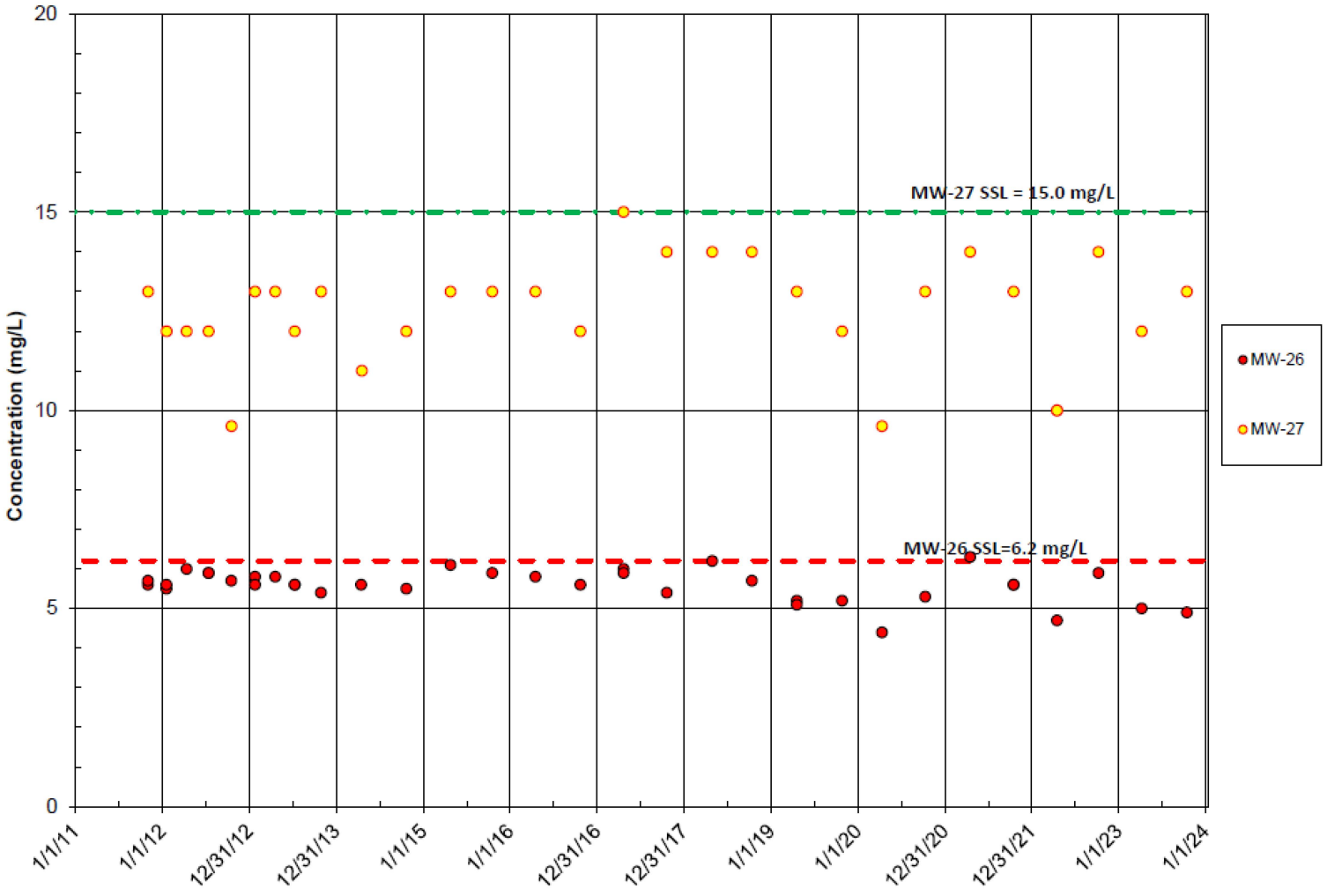
	Indicator Parameters							
	Bicarbonate Alkalinity	Chloride	TDS	Calcium	Iron	Magnesium	Manganese	Sodium
Units	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(µg/L)
MW-26 SSL	**175**	**6.2**	**246**	**32**	**4.5**	**10.1**	**0.74**	**30**
4/15/14	150	5.6	180	23	0.35	8.3	0.46	28
4/15/14 DEQ	142	6.2	192	24.7	0.401	9.1	0.534	27.8
10/21/14	140	5.5	190	24	0.51	9.8	0.64	29
4/25/15	140	6.1	190	23	0.29	9.3	0.45	28
10/17/15	150	5.9	200	26	1.1	9.9	0.66	30
4/16/16	150	5.8	180	24	0.19	9.1	0.53	27
10/22/16	150	5.6 J	190	24	0.53	9.4	0.65	26
4/21/17	150	6.0	180	24	0.36	8.6	0.41	27
10/20/17	150	5.4	210	23	0.51	10.0	0.62	27
4/28/18	150	6.2	190	24	0.17	8.1	0.37	25
10/12/18	150	5.7	190	25	0.37	9.3	0.56	25
4/19/19	150	5.2	190	26	0.13	10.0	0.25	27
10/26/19	160	5.2	200	23	0.44	9.0	0.67	25
4/12/20	160	4.4	200	26	0.28	9.8	0.69	26
10/9/20	150	5.3	180	26	0.61	10.0	**0.79**	27
4/16/21	150	**6.3**	200	24	0.21	8.4	0.46	26
10/15/21	170	5.6	190	26	0.51	10.0	0.71	27
10/15/21 (dup)	160	5.6	190	25	0.50	9.9	0.70	26
4/16/22	150	4.7	200	24	0.18	9.2	0.32	26
10/7/22	160	5.9	180	24	0.50	9.2	0.68	25
4/7/23	150	5.0	140	28	0.97	**11.0**	**0.87**	30
10/14/23	160	4.9	190	26	0.35	10.0	0.61	27
MW-27 SSL	**495**	**15.0**	**499**	**100**	**17.6**	**46**	**8.9**	**44.4**
4/18/14	400	11	420	88	16	41	8.1	40
10/21/14	400	12	460	87	13	39	6.8	40
4/25/15	430	13	470	86	13	42	8.2	40
10/17/15	460	13	490	92	13	41	8.2	42
4/16/16	450	13	480	86	5.3	40	7.2	37
10/22/16	410	12 J	440	79	4.9	34	6.8	35
4/21/17	290	15	310	45	0.49	19	3.1	28
10/20/17	390	14	430	61	4.0	29	5.4	32
4/28/18	450	14	460	71	5.1	31	6.8	35
10/12/18	450	14	460	82	9.0	35	7.9	35
4/19/19	450	13	470	87	8.9	40	**9.1**	37
10/26/19	460	12	470	80	3.3	34	7.6	35
4/12/20	470	10	470	91	8.6	38	**9.4**	36
10/9/20	460	13	480	89	8.7	38	**9.7**	37
4/16/21	460	14	480	87	7.6	37	**9.5**	36
10/15/21	480	13	470	89	5.7	39	**9.6**	37
4/16/22	450	10	480	91	8.1	39	**11**	38
10/7/22	440	14	460	85	6.3	36	**9.6**	35
4/7/23	450	12	430	91	2.9	39	**9.5**	40
10/14/23	460	13	480	94	7.4	41	**11**	38

Note:
SSL: site specific limit; J: estimated value.
Bold Values: above SSL.

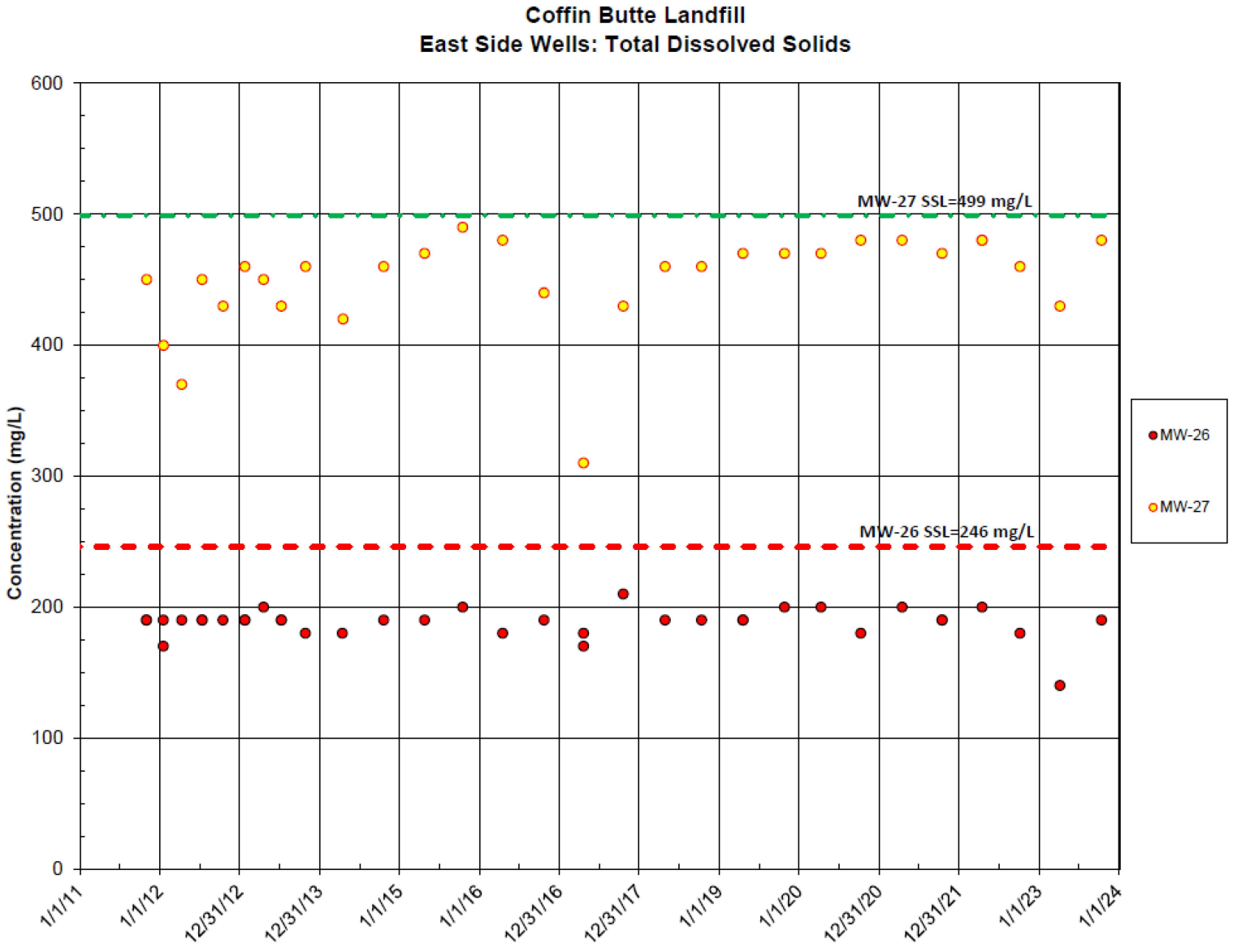


MW-26-27_new SSLs.xls/HCO3 (SSL)

Coffin Butte Landfill
East-Side Wells: Chloride

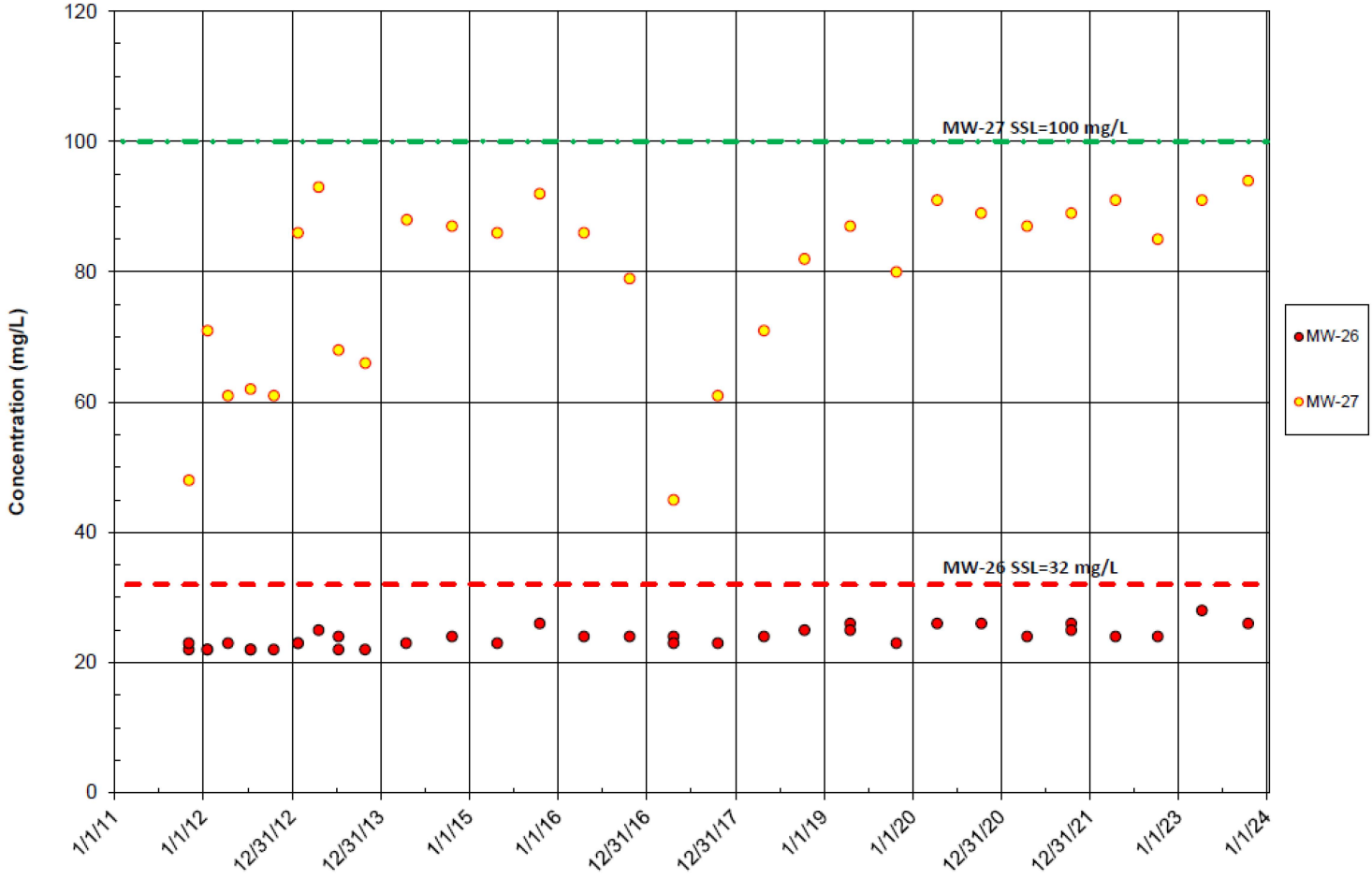


MW-26-27_new SSLs.xls/CL (SSL)



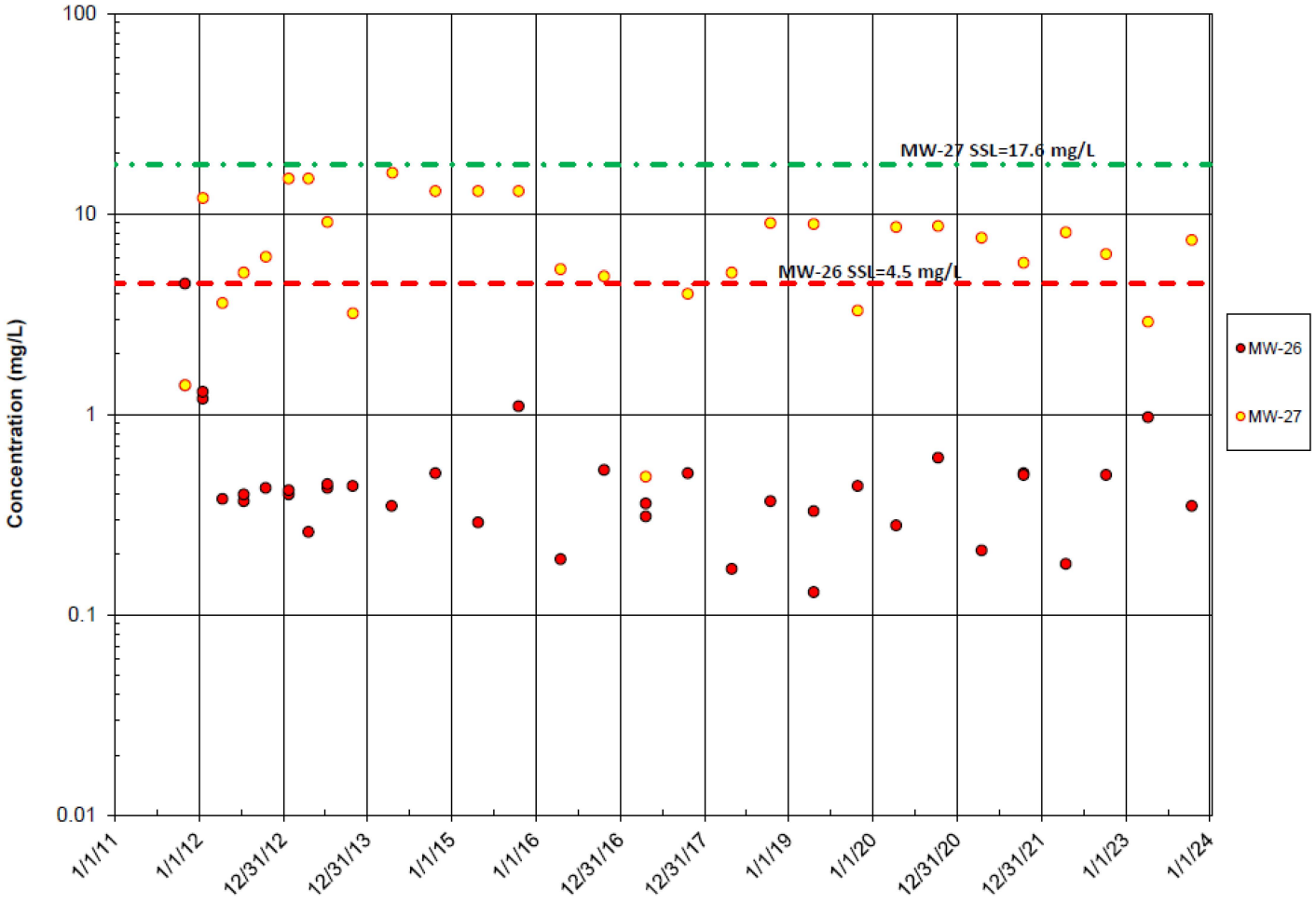
MW-26-27_new SSLs.xls/TDS (SSL) (2)

Coffin Butte Landfill
East-Side Wells: Calcium



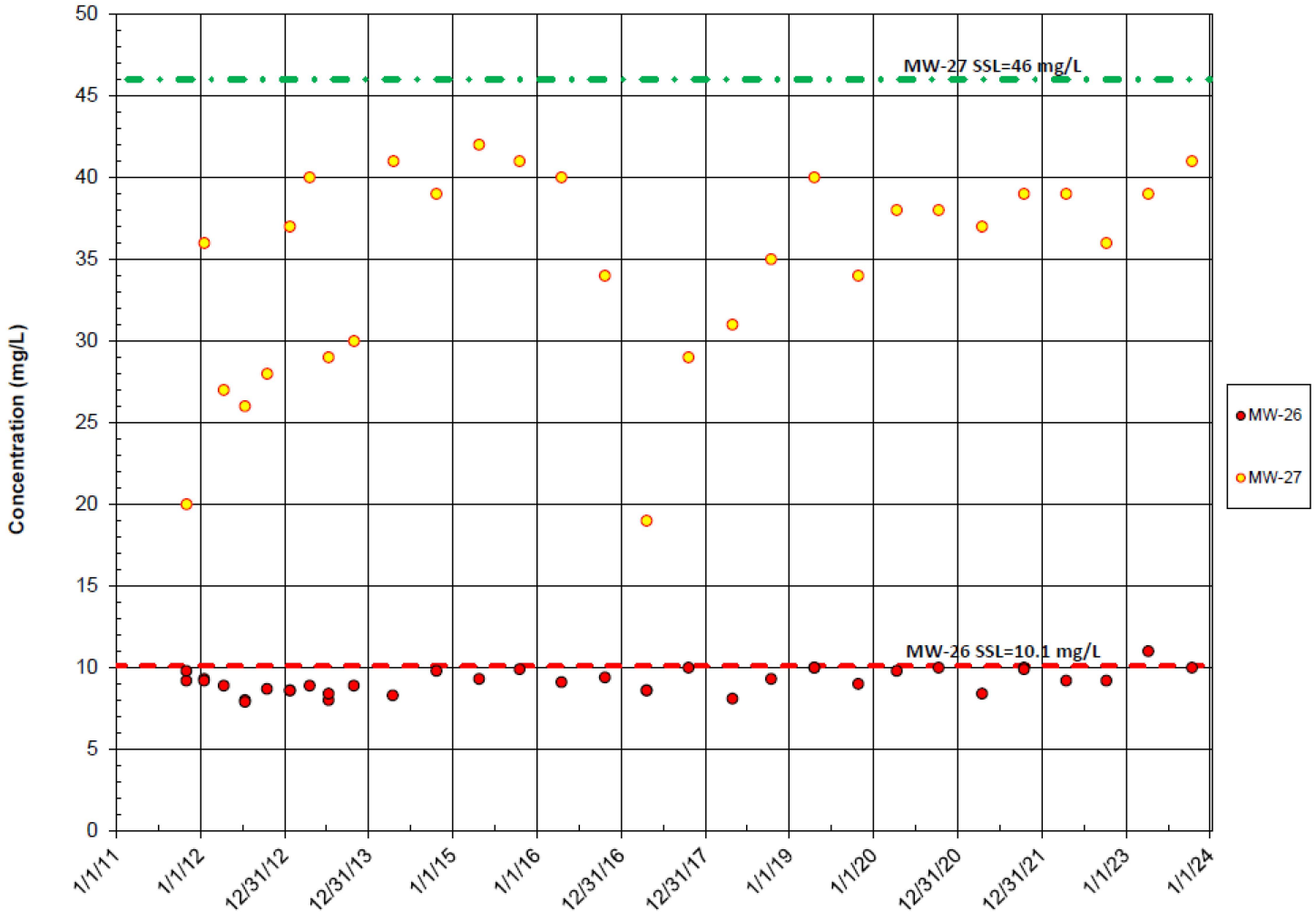
MW-26-27_ppm__new PSCLs.xlsx/Calcium (SSL)

Coffin Butte Landfill
East-Side Wells: Iron



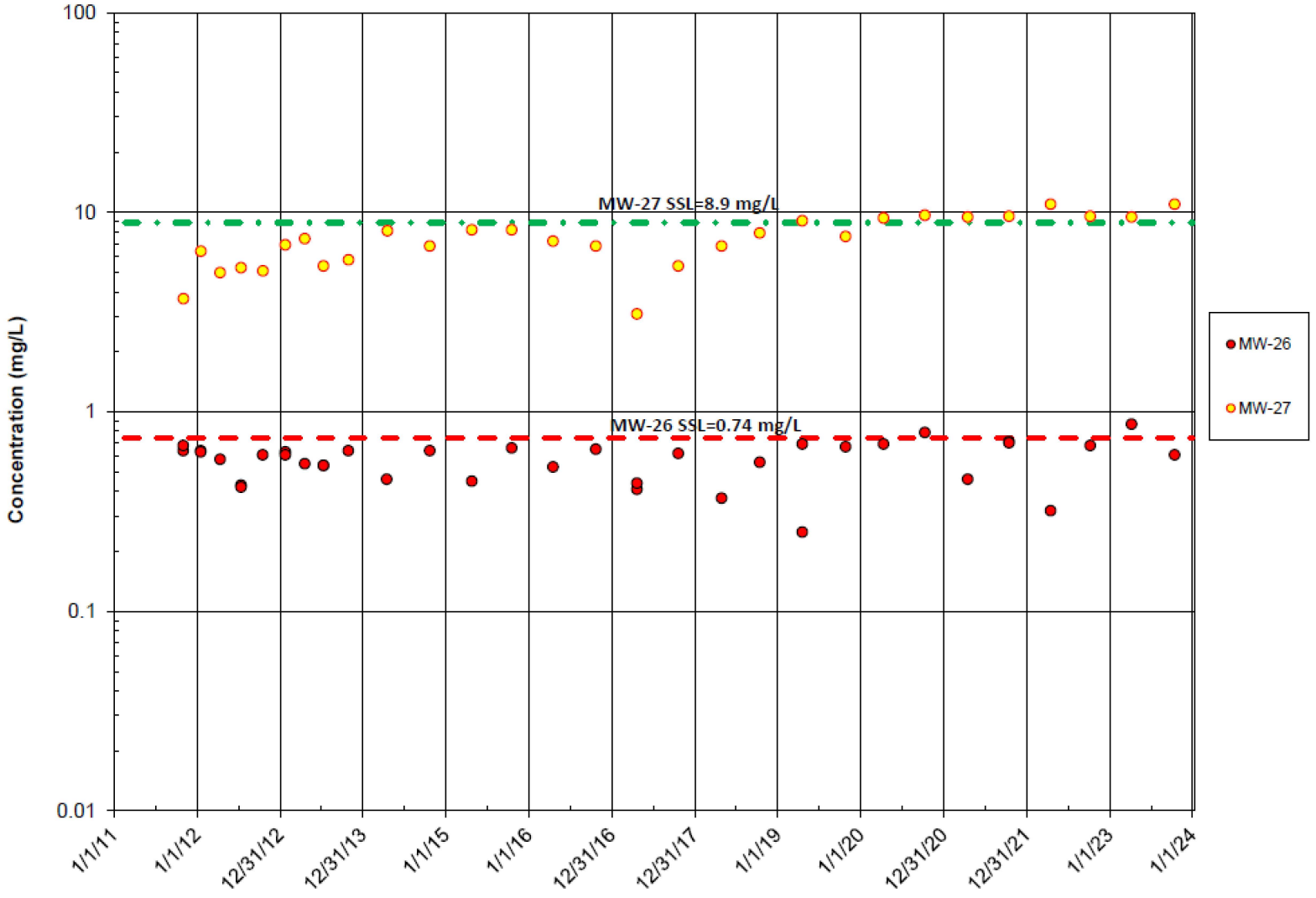
MW-26-27_ppm__new PSCLs.xlsx/Iron (SSL)

Coffin Butte Landfill
East-Side Wells: Magnesium



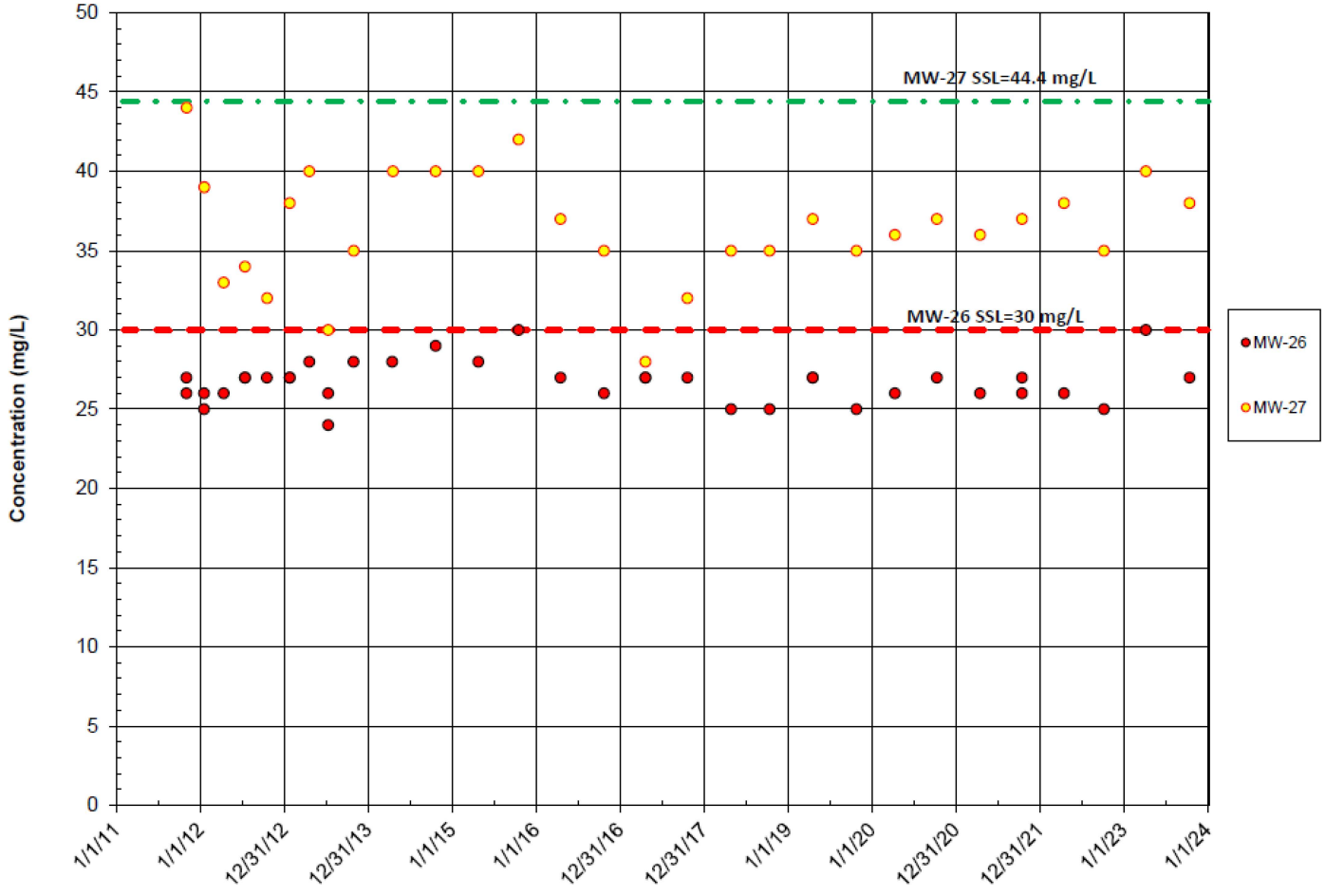
MW-26-27_ppm__new PSCLs.xlsx/Magnesium (SSL)

Coffin Butte Landfill
East-Side Wells: Manganese



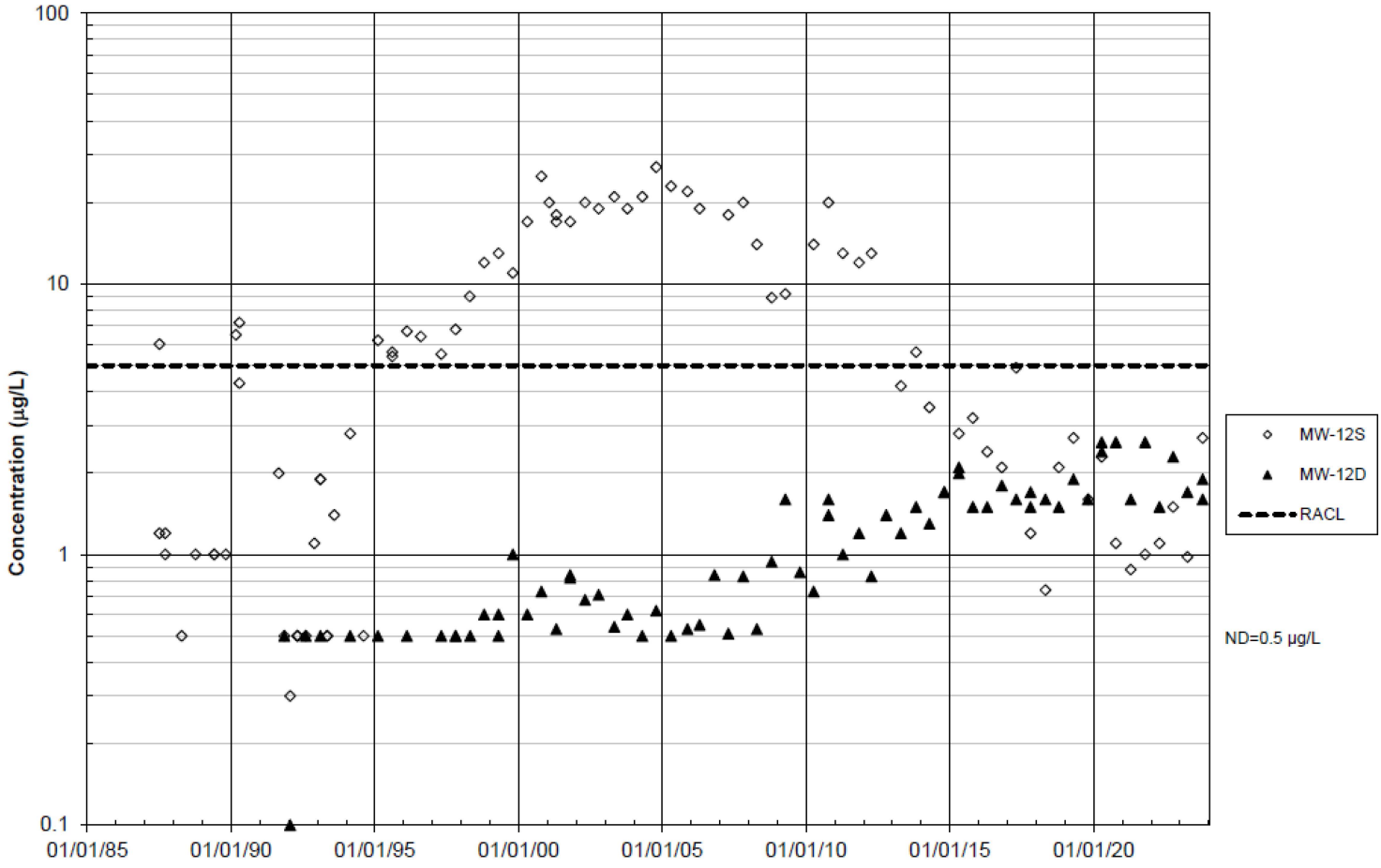
MW-26-27_ppm__new PSCLs.xlsx/Manganese (SSL)

Coffin Butte Landfill
East-Side Wells: Sodium



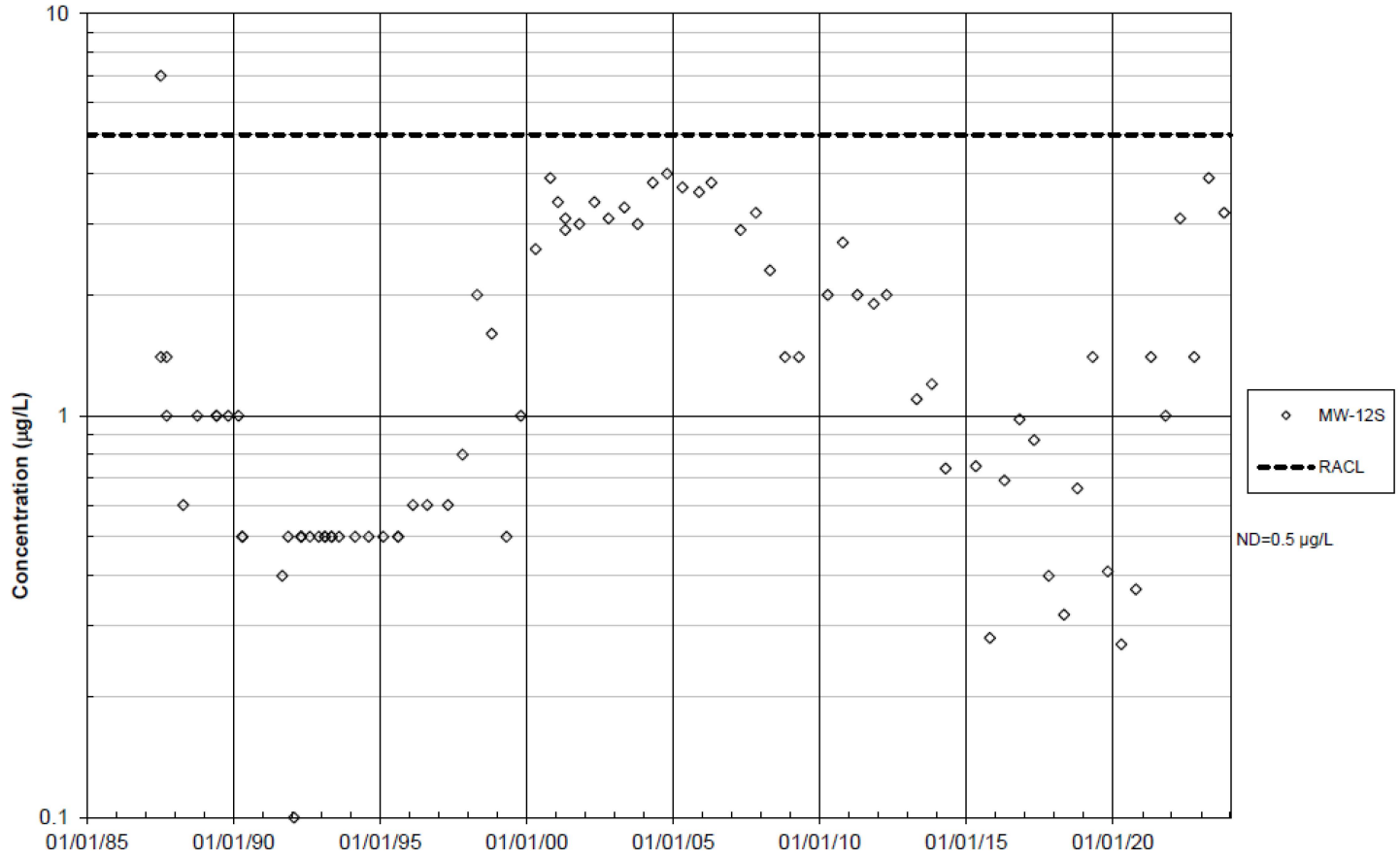
MW-26-27_ppm__new PSCLs.xlsx/Sodium (SSL)

Coffin Butte Landfill
MW-2S/12S and MW-2D/12D: PCE



W-2&12S.XLS/PCE

Coffin Butte Landfill
MW-2S and MW-12S: TCE



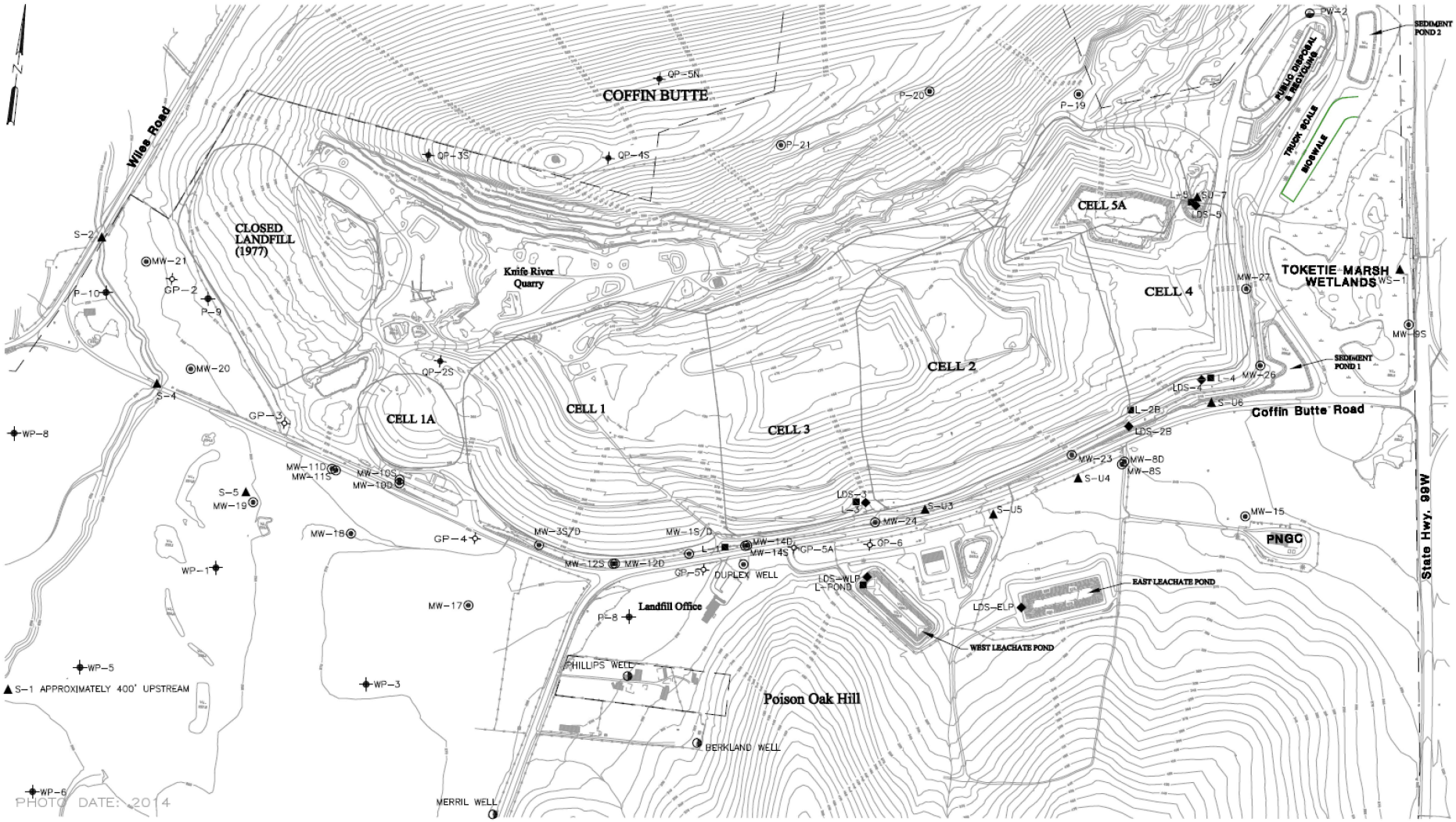
W-2&12S.XLS/TCE

Appendix B

Site Map and Well Locations

REPUBLIC SERVICES

Sustainability in Action



0 500 1000

SCALE IN FEET

- MONITORING WELL/PIEZOMETER
- OBSERVATION WELL/PIEZOMETER
- LANDFILL WATER SUPPLY WELL
- GAS PROBE
- PRIVATE WELL
- LEACHATE SUMP
- LEAK DETECTION SYSTEM
- SURFACE WATER MONITORING STATION

Tuppan Consultants LLC
460 Second Street, Suite 103
Lake Oswego, Or 97034
Ph. 503.675.1335

DATE 6-26-14
DWN GRH
APP
REV
PROJECT NO.
VLI-001-005

FIGURE 2-1
COFFIN BUTTE LANDFILL
BENTON COUNTY, OREGON

Site Map and Monitoring Locations

June 26th, 2014
D:\Tuppan\Coffin Butte\Site Map and Monitoring Locations 2014.dwg

Appendix C

Certificate of Insurance

REPUBLIC SERVICES

Sustainability in Action

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 06/30/2023

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER
CANNON COCHRAN MANAGEMENT SERVICES, INC.
17015 NORTH SCOTTSDALE ROAD
SCOTTSDALE, AZ 85255

CONTACT NAME:

PHONE (A/C No.Ext): | **FAX (A/C No.Ext):**

E-MAIL ADDRESS: certificateteam@ccmsi.com

INSURER(S) AFFORDING COVERAGE		NAIC #
INSURER A:	ACE American Insurance Co.	22667
INSURER B:	Indemnity Insurance Co. of North America	43575
INSURER C:	Illinois Union Insurance Company	27960
INSURER D:	ACE Property & Casualty Insurance Company	20699
INSURER E:		
INSURER F:		

INSURED
REPUBLIC SERVICES, INC.
18500 N. ALLIED WAY
PHOENIX, AZ 85054

COVERAGES **CERTIFICATE NUMBER: 2335137** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	[X] COMMERCIAL GENERAL LIABILITY [ ] CLAIMS-MADE [X] OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: [ ] POLICY [ ] PROJECT [ ] LOC [ ] OTHER:			HDO G47334433	06/30/2023	06/30/2024	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS -COMP/OP AGG	$ 5,000,000 $ 5,000,000 $ 5,000,000 $ 30,000,000 $ 20,000,000
A	AUTOMOBILE LIABILITY [X] ANY AUTO [X] OWNED AUTOS ONLY [X] SCHEDULED AUTOS [X] HIRED AUTOS ONLY [X] NON-OWNED AUTOS ONLY			ISA H10735786	06/30/2023	06/30/2024	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY(Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ 10,000,000
D	[X] UMBRELLA LIAB [X] OCCUR EXCESS LIAB [ ] CLAIMS-MADE [ ] DED [ ] RETENTION $			G46782148 007	06/30/2023	06/30/2024	EACH OCCURRENCE AGGREGATE	$ 10,000,000 $ 10,000,000
B A A C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y/N ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? [N] (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N/A		WLR C50710397 - AOS WLR C50710324 - OR SCF C5071049A - WI WCU C50710555 - OH XS TNS C66934172 - TX NS/XS	06/30/2023 06/30/2023 06/30/2023 06/30/2023 06/30/2023	06/30/2024 06/30/2024 06/30/2024 06/30/2024 06/30/2024	[X] PER STATUTE [ ] OTHER E.L. EACH ACCIDENT E.L. DISEASE -EA EMPLOYEE E.L. DISEASE -POLICY LIMIT	 $ 3,000,000 $ 3,000,000 $ 3,000,000
	X Contractor's Pollution Liability:			See page 2 for details	06/30/2023	06/30/2024		

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Division Number: 4125 - Named Insured Includes: Valley Landfills, Inc. - Dba: Coffin Butte LF

CERTIFICATE HOLDER

Benton County, Oregon, Chairman of the Board of Commissioners

408 SW Monroe Avenue, Suite 111
PO Box 3020

Corvallis, OR 97339-3020
United States

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

AGENCY CUSTOMER ID: _____

LOC #: _____

ADDITIONAL REMARKS SCHEDULE

AGENCY	NAMED INSURED
	REPUBLIC SERVICES, INC. 18500 N. ALLIED WAY PHOENIX, AZ 85054
POLICY NUMBER See First Page	
CARRIER See First Page / NAIC CODE	EFFECTIVE DATE:

ADDITIONAL REMARKS **CERTIFICATE NUMBER: 2335137**

THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACORD FORM.

FORM NUMBER: 25 FORM TITLE: CERTIFICATE OF LIABILITY INSURANCE

The following provisions apply when required by written contract. As used below, the term certificate holder also includes any person or organization that the insured has become obligated to include as a result of an executed contract or agreement.

GENERAL LIABILITY:
Certificate holder is Additional Insured including on-going and completed operations when required by written contract.
Coverage is primary and non-contributory when required by written contract.
Waiver of Subrogation in favor of the certificate holder is included when required by written contract.

AUTO LIABILITY:
Certificate holder is Additional Insured when required by written contract.
Coverage is primary and non-contributory when required by written contract.
Waiver of Subrogation in favor of the certificate holder is included when required by written contract.

WORKERS COMPENSATION AND EMPLOYERS LIABILITY:
Waiver of Subrogation in favor of the certificate holder is included when required by written contract where allowed by state law.

Stop gap coverage for ND and WA is covered under policy no. WLR C50710397 and stop gap coverage for OH is covered under policy no. WCU C50710555 as noted on page 1 of this certificate.

TEXAS EXCESS INDEMNITY AND EMPLOYERS LIABILITY:
Insured is a registered non-subscriber to the Texas Workers Compensation Act. Insured has filed an approved Indemnity Plan with the Texas Department of Insurance which offers an alternative in benefits to employees rather than the traditional Workers Compensation Insurance in Texas. The excess policy (#TNS C66934172) shown on this certificate provides excess Indemnity and Employers Liability coverage for the approved Indemnity Plan.

Contractual Liability is included in the General Liability and Automobile Liability coverage forms. The General Liability and Automobile Liability policies do not contain endorsements excluding Contractual Liability.

Separation of Insured (Cross Liability) coverage is provided to the Additional Insured, when required by written contract, per the Conditions of the Commercial General Liability Coverage form and the Automobile Liability Coverage form.

Umbrella/Excess Liability provides additional limits over the underlying General Liability, Automobile Liability and Employer's Liability policies shown on this certificate.

Contractor's Pollution Liability Details of Cover:

Steadfast Insurance Company (Zurich) (NAIC # 26387) - Policy No. PEC 0792830-00 - $25MM -- 06/30/23 - 06/30/24

Applicable to Contractor's Pollution Liability Coverage Parts Only:
$25,000,000 - Damage Limit for Each Occurrence, Claim or Pollution Condition
$25,000,000 - Claims Expense Limit for Each Claim
$25,000,000 - General Aggregate Limit
$25,000,000 - Claims Expense Aggregate Limit

Applicable to Professional Liability Coverage Parts Only:
$25,000,000 - Damage Limit for Each Claim or Wrongful Act
$25,000,000 - Claims Expense Limit for Each Claim
$25,000,000 - General Aggregate Limit

Appendix D

Arsenic Memo

REPUBLIC SERVICES

Sustainability in Action

REPUBLIC SERVICES

Sustainability in Action

To: Benton County Commissioners

Date: 2/15/2024

Dear Commissioner Augerot,

During Republic Services' annual report presentation on Feb. 6, you asked that we follow up with you on three topics. In this email, I'd like to address your questions regarding arsenic levels in the monitoring wells at Coffin Butte Landfill. Thank you for giving me the time and opportunity to come back to you with additional information.

We noted in our landfill annual report (page 9) that "the primary drinking water standard for arsenic was exceeded" at the compliance boundary for Cells 4 and 5 on the landfill's east side, but that these "concentrations represent natural background conditions."

This week, we asked our Coffin Butte Landfill consultant, Eric Tuppan, for additional detail. Tuppan, a registered geologist, and owner/operator of Tuppan Consultants, LLC., has 40 years of industry experience. He founded his Oregon-based geology, hydrogeology, and environmental consulting firm consulting firm in 2003.

In summary:

- The presence of arsenic in soil and rock in Oregon has been documented by the Oregon Department of Environmental Quality with background concentrations specific to geographic regions.
- In the Portland Basin, the background concentration is 8.8 milligrams per kilogram; in the Cascade Range it is 19 milligrams per kilogram; and in the South Willamette Valley (where Coffin Butte is located) it is 18 milligrams per kilogram.
- Arsenic has been detected in three areas of the landfill since sampling first began in 1991. These are described in the text that follows.
- There is no data to suggest that the existing arsenic levels are anything other than what is naturally occurring in the soil, or that leachate is impacting the environment or public health.

As you noted during the Feb. 6 meeting, there was a seepage event that occurred at the Landfill in the 1990s. Valley Landfills Inc. (VLI) discovered this issue in 1994, after groundwater monitoring samples in well MW-23, located on the south side of Cell 2, showed elevated levels of arsenic.

At the time of the investigation, VLI determined that increased concentrations of arsenic, chloride, sodium, and bicarbonate were due to leachate seeping from the south slope of Cell 2. Corrective measures, including excavating the south slope of the landfill and installing a gravel drain, fixed the issue and allowed groundwater quality to recover over time.

REPUBLIC SERVICES

Sustainability in Action

The groundwater sampling referenced in our 2022 annual report was taken from two wells on the eastern side of the landfill, more than 1,000 feet away from the well that's located south of Cell 2.

These two compliance wells, which were installed in 2011, have had stable arsenic readings for the past 20 years, averaging 14.2 micrograms per liter at one site, and 13.3 micrograms per liter for the other.

Both these averages are consistent with the background concentrations of arsenic in the Willamette Valley, as documented by the Department of Environmental Quality. The steady readings over time indicate there have been no leachate releases or impacts on groundwater at these locations.

Arsenic testing at Coffin Butte initially began in April 1991, in well MW-S9 on the landfill's northeast side. This third location has historically had higher concentrations of arsenic, ranging from 27 to 41.8 micrograms per liter over the past 30 years.

However, it is important to note that the initial sampling at this well – which established baseline arsenic levels in background concentrations - occurred prior to the completion of Cell 2 construction or any landfilling on the east side of Coffin Butte.

Because this well is more than 1,800 feet away from MW-23, and because sampling occurred prior to the construction of Cell 2, it is implausible for the readings at this location to have been impacted by leachate.

Coffin Butte conducts groundwater sampling twice a year, in April and October, in a set number of locations as outlined in our DEQ-approved Environmental Monitoring Plan. That plan also specifies the frequency of testing at each well. The most recent sampling at well MW-S9 occurred in 2019 in collaboration with DEQ; it is set to be tested again later this year.

As noted in our 2022 annual report, the Landfill was inspected seven times by a variety of agencies, including the EPA, DEQ's Division of Material Management, DEQ's Division of Air Quality and the cities of Corvallis and Salem. In addition, we submitted annual, semi-annual, quarterly, and monthly reports to federal, state, and local regulators. Coffin Butte remains in compliance with all our permits and regulatory requirements.

I hope this email provides you with the information you requested. Should you have any follow-up questions, please don't hesitate to contact me directly at grough@republicservices.com.

Thank you,
Ginger Rough, Sr. Manager for Public Affairs

REPUBLIC SERVICES

Sustainability in Action

MF 32614-81

BEFORE THE BOARD OF COMMISSIONERS
FOR BENTON COUNTY, STATE OF OREGON

In the Matter of Issuance of a Franchise to Provide Service at Coffin Butte Landfill Pursuant to the "Benton County Solid Waste Management Ordinance"

ORDER Expires 9/30/06

WHEREAS, pursuant to the "Benton County Solid Waste Management Ordinance" the existing solid waste franchise will expire on September 30, 1981; and

WHEREAS, Valley Landfills, Inc. has applied for the renewal of their landfill disposal franchise to operate the Coffin Butte site; and

WHEREAS, the Board has reviewed the application and has made other investigations into the present and proposed operation of the disposal site.

BE IT RESOLVED, that the application for a franchise is hereby granted relevant to the application submitted and subject to the following conditions:

1) The franchisee shall comply with all applicable provisions of the "Benton County Solid Waste Management Ordinance" and all agreements contained in the application for service.

2) The duration of the franchise shall be for twenty-five (25) years subject to renewal pursuant to the "Benton County Solid Waste Management Ordinance". In the event the service area for the Coffin Butte landfill is altered or the methods of disposal are substantially changed, the Board shall, upon written notice to the franchisee, reevaluate the term of the franchise.

3) The franchisee shall comply with all conditions set forth in the Department of Environmental Quality's disposal site permit.

4) The franchisee is found to have adequate experience and a performance bond is hereby waived.

5) The franchisee shall pay to Benton County a five hundred dollar ($500.) annual fee for the cost of monitoring the franchised site. Such fee shall be reviewed annually or at the discretion of the Board.

6) Benton County encourages the franchisee in the promotion of waste reduction activities.

7) The granting of a franchise is further conditioned upon the applicant executing a written agreement which shall be attached to this Order marked "Exhibit A" and by this reference is hereby incorporated herein.

BENTON COUNTY BOARD OF COMMISSIONERS

Dale D. Schrock, Chairman

Barbara Ross 9/30/81
Barbara Ross, Commissioner

Charline R. Carr
Charline R. Carr, Commissioner

Signed this 30th day of September 1981

Adopted this 30th day of September 1981

Approved As to Form:

Richard T. Ligon
Richard T. Ligon, County Counsel

ATTACHMENTS:
EXHIBIT A - WRITTEN ACCEPTANCE

EXHIBIT A

BENTON COUNTY, OREGON

AGREEMENT FOR PROVIDING SOLID WASTE SERVICE

THIS AGREEMENT is made and entered into this 30th day of September, 1981, by and between Benton County, Oregon, hereinafter called "County" and Valley Landfills, Inc., herein called "Franchisee".

WHEREAS, the "Benton County Solid Waste Management Ordinance" requires a written agreement to be entered into as set forth in Section 6(3D) and Section 16; and

WHEREAS, the Board of Commissioners of Benton County has reviewed the renewal application of the franchisee and has found that the applicant is qualified; and

WHEREAS, based upon this review, the Board has issued an Order, dated 30 September 1981, granting the franchisee's application for a Landfill Disposal Franchise at Coffin Butte, subject to the terms and limitations in that Order and subject further to entering into this agreement, NOW, THEREFORE,

IN CONSIDERATION of the mutual promises and covenants set out herein, County and franchisee do hereby agree as follows:

1) Franchisee shall provide the solid waste services at Coffin Butte as applied for subject to the conditions stated in Board Order dated 30 September 1981.

2) Franchisee shall comply with all agreements contained in the application for service, an executed copy of which is attached hereto, marked "Exhibit B" and by this reference is hereby incorporated herein. *

3) Franchisee shall comply with all provisions of the "Benton County Solid Waste Management Ordinance".

4) Franchisee agrees to hold harmless and indemnify Benton County from and against any claim or award for damages to any person or property caused as a result of any act of franchisee pursuant to this agreement.

IN WITNESS WHEREOF, the parties herein have executed this agreement on this 30th day of September 1981.

VALLEY LANDFILLS, INC.

Title Asst Sec

BENTON COUNTY BOARD OF COMMISSIONERS

Dale D. Schrock, Commissioner

Barbara Ross, Commissioner

Charline R. Carr, Commissioner

Approved As to Form:

Richard T. Ligon, County Counsel

ATTACHMENTS:
Exhibit B - Signed Application

2. BUSINESS FORM (CONTINUED)

CORPORATION X SUBCHAPTER S _____

NAMES OF PRINCIPAL SHAREHOLDERS Robert Bunn, Daniel Bunn
John Condon, Richard Brentano
Charles Spady

3. YOU ARE APPLYING FOR ONE OR MORE OF THE FOLLOWING. CHECK EACH ITEM FOR WHICH APPLICATION IS MADE:

APPLYING FOR		COMPLETE FORM FOR NEW OR RENEWAL	PAGES
A. COLLECTION FRANCHISE	NEW ___	A	A1-A5
	RENEWAL ___	A	A1-A5
B. PERMIT FOR DEPOT TYPE RECYCLING COLLECTION CENTER	NEW ___	B	B1-B3
	RENEWAL ___	B	B1-B3
C. RECYCLING COLLECTION PERMIT	NEW ___	C	C1-C4
	RENEWAL ___	C	C1-C4
D. CERTIFICATE FOR PURCHASE OF TOTALLY SOURCE SEPARATED MATERIALS FOR FAIR MARKET VALUE	NEW ___	D	D1-D2
	RENEWAL ___	D	D1-D2
E. TRANSFER STATION FRANCHISE	NEW ___	E	E1-E7
	RENEWAL ___	E	E1-E7
F. LANDFILL DISPOSAL SITE FRANCHISE	NEW ___	F	F1-F6
	RENEWAL X	F	F1-F6
G. RESOURCE RECOVERY FACILITY FRANCHISE	NEW ___	G	G1-G7
	RENEWAL ___	G	G1-G7
H. EXEMPTION FROM THE REQUIREMENTS OF THE SOLID WASTE ORDINANCE	NEW ___	H	H1-H6
	RENEWAL ___	H	H1-H6

3. (CONTINUED)

I. TRANSFER OF: FRANCHISE — A,E,F or G as appropriate
CERTIFICATE — D
PERMIT — B or C as appropriate

J. OTHER, SPECIFY _____ CONSULT WITH _____

_____ AT _____

4. WHO WILL BE RESPONSIBLE FOR:

A. MANAGING THE BUSINESS AND COMPLIANCE WITH THE ORDINANCE

Bill Webber
Name

765 N.W. 5th, P. O. Box 807
Address

Corvallis, OR. 97330
Zip Code

Telephone 757-9067

B. ANSWERING CUSTOMER COMPLAINTS AND PROVIDING INFORMATION

Bill Webber
Name

765 N.W. 5th, P. O. Box 807
Address

Corvallis, OR. 97330
Zip Code

Telephone 757-9067

5. THE APPLICANT AGREES THAT I OR WE:

A. HAVE READ THE APPLICABLE PROVISIONS OF THE BENTON COUNTY SOLID WASTE MANAGEMENT ORDINANCE AND WILL COMPLY WITH THAT ORDINANCE AND REGULATIONS ADOPTED UNDER IT.

B. AM/ARE COMMITTED TO PROVIDING THE BEST SERVICE THAT IS TECHNOLOGICALLY, ECONOMICALLY AND LEGALLY FEASIBLE.

C. WILL FULLY COOPERATE WITH THE DEPARTMENT, THE SOLID WASTE ADVISORY COUNCIL AND THE BOARD IN CARRYING OUT THE DUTIES AND RESPONSIBILITIES SPECIFICALLY SET FORTH IN THE ORDINANCE AND ANY FRANCHISE, PERMIT OR CERTIFICATE GRANTED TO APPLICANT.

D. WILL MAKE ANY REQUIRED PAYMENTS TO BENTON COUNTY ON TIME AND IN THE MANNER PRESCRIBED.

E. WILL MAKE A REASONABLE EFFORT TO RESOLVE CUSTOMER COMPLAINTS

6. VERIFICATION:

THIS APPLICATION IS, TO THE BEST OF APPLICANT'S KNOWLEDGE, TRUE, CORRECT AND COMPLETE. IT IS UNDERSTOOD AND AGREED THAT MATERIALLY MISREPRESENTED FACTS OR INFORMATION GIVEN IN THIS APPLICATION IS CAUSE FOR SUSPENSION, REVOCATION, REFUSAL TO RENEW, DENIAL OF MODIFICATION OF ANY FRANCHISE, PERMIT OR CERTIFICATE COVERED BY THIS APPLICATION.

SIGNED THIS 18 DAY OF May, 1981.

Charles J. Grady

Applicant's Signature (President of Corporation; or Owner of Sole Proprietorship)

Additional Partners' Signatures for Partnership

FORM F DISPOSAL SITE FRANCHISE

1. THIS IS FOR A NEW FRANCHISE_____ RENEWAL X TRANSFER____

2. SERVICE AREA:

   A. ATTACH A LEGAL DESCRIPTION OF THE PROPERTY INVOLVED.

   B. ATTACH A MAP SHOWING GENERAL LOCATION; STREETS, ROADS OR HIGHWAYS; ACCESS; AND, ADJACENT LAND USES.

   C. DESCRIBE THE APPROXIMATE SERVICE AREA TO BE SERVED. THIS MAY BE DONE BY ATTACHING A COUNTY MAP SHOWING ROUGHLY THE MAXIMUM DISTANCES FROM WHICH YOU WOULD EXPECT TO DRAW CUSTOMERS TO THE DISPOSAL SITE.

   D. DISTANCE TO NEAREST DISPOSAL SITE OR SITES. INDICATE THE NAMES OR LOCATIONS OF THE NEAREST DISPOSAL SITE OR SITES PROVIDING SERVICE TO THE SAME CUSTOMERS FOR WHICH YOU ARE PROVIDING OR WOULD PROVIDE SERVICE. THIS MAY BE SERVICE TO THE GENERAL PUBLIC ONLY, GENERAL PUBLIC FOR LIMITED TYPES OR QUANTITIES OF WASTES, REFUSE COLLECTORS ONLY OR A COMBINATION OF THESE.

   None _____ _____
   (NAME OR LOCATION OF DISPOSAL SITE) (DISTANCE)

   _____ _____
   (NAME OR LOCATION OF DISPOSAL SITE) (DISTANCE)

   E. LANE USE:

   (1) IN WHAT ZONE OR ZONES IS THE PROPERTY LOCATED?
   Forest Conservation 40

   (2) IS ANY PART OF THIS SITE LOCATED ON LAND ZONED FOR EXCLUSIVE FARM USE? YES___ NO X .

E. LAND USE (CONTINUED)

(3) IS A DISPOSAL SITE ALLOWED IN THIS ZONE OR ZONES? YES X NO ___. IF YES, CHECK WHETHER IT IS A PERMITTED USE ___ OR CONDITIONAL USE X.

(4) DOES THIS USE COMPLY WITH THE COMPREHENSIVE PLAN FOR BENTON COUNTY? YES X NO ___. IF NO, BRIEFLY STATE THE CONFLICT WITH THE PLAN: _____

(5) IS ANY PART OF THIS SITE LOCATED WITHIN A FLOODPLAIN? YES ___ NO X. WITHIN A FLOODWAY? YES ___ NO ___. IF THE ANSWER TO EITHER IS YES, INDICATE WHICH RIVER OR STREAM AND BRIEFLY DESCRIBE. _____

F. SOLID WASTE PLAN. DOES THIS DISPOSAL SITE COMPLY WITH ANY ADOPTED BENTON COUNTY OR REGIONAL SOLID WASTE MANAGEMENT PLAN? YES X NO ___. IF NO, BRIEFLY STATE THE CONFLICT WITH THE PLAN: _____

G. HAVE YOU APPLIED FOR AN OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY PERMIT? YES X NO ___. IF YES, ATTACH A COPY OF YOUR APPLICATION AND ANY PERMIT THAT MAY HAVE BEEN ISSUED BY THE DEPARTMENT.

3. SERVICES:

A. HOURS AND DAYS OF SERVICE. STATE THE HOURS AND DAYS TO BE OPEN FOR SERVICE. Monday-Saturday 8:00 am - 5:00 pm
Sunday 12:00 noon - 5:00 pm

B. TYPE OF SERVICE APPLIED FOR. IN THE LEFT HAND COLUMN, CHECK ALL THE SERVICES TO BE PROVIDED. IN THE RIGHT HAND COLUMN, INDICATE THE YEARS OF EXPERIENCE THAT YOU HAVE IN PROVIDING THIS SERVICE IN BENTON COUNTY. IF YOUR EXPERIENCE HAS BEEN OUTSIDE BENTON COUNTY, ATTACH EXPLANATION OF WHERE AND NUMBER OF YEARS EXPERIENCE:

	TYPE OF SERVICES APPLIED FOR	YEARS EXPERIENCE
	GENERAL PUBLIC	
X	Residential Wastes	40 years
X	Commercial Wastes	40 years
X	Industrial Wastes	40 years
X	Demolition & Construction Wastes	40 years
	Hazardous Waste Collection Facility (Special review will be required between applicant, Benton County and Ore. Dept. of Environmental Quality)	
X	Brush	40 years
X	Stumps	40 years
X	Tires	40 years
X	Appliances	40 years

3. SERVICES: B. (CONTINUED) YEARS EXPERII

_____ Other Wastes, Specify:

_____	_____
_____	_____
_____	_____
_____	_____

_____ Load is Limited to _____ Yards Maximum

__X__ Recycling Provided for:

__X__	Glass, clear	4 years
__X__	Glass, three colors	4 years
__X__	Tin Cans	4 years
__X__	Aluminum	4 years
__X__	Cardboard	20 years
__X__	Waste Oil	4 years
__X__	Others, Specify:	
	Newspaper	4 years
	_____	_____
	_____	_____
	_____	_____

__X__ The Following Wastes are Prohibited, Specify:

Hazardous Waste
Large Dead Animals
Liquid Waste
_____

FRANCHISED SOLID WASTE COLLECTORS

__X__	Residential Wastes	40 years
__x__	Commercial Wastes	40 years
__X__	Industrial Wastes	40 years
__X__	Demolition & Construction Wastes	40 years
_____	Hazardous Waste Collection Facility (Special review will be required between applicant, Benton County and Ore. Dept. of Environmental Quality)	_____
__X__	Brush	40 years
__X__	Stumps	40 years
__X__	Tires	40 years
__X__	Appliances	40 years
__X__	Household Furniture	40 years

X

_____ Other Wastes, Specify:

_____	_____
_____	_____
_____	_____
_____	_____

BOOK 50, PAGE 331

3. SERVICES: B. (CONTINUED)

YEARS EXPERIE:

_____ Load is Limited to _____ Yards Maximum
_____ Recycling Provided for:

_____ Glass, clear
_____ Glass, three colors
_____ Tin Cans
_____ Aluminum
_____ Cardboard
_____ Waste Oil
_____ Others, Specify:

_____
_____
_____
_____

X The Following Wastes are Prohibited, Specify:
All Hazardous Waste
All Liquid Waste
Large Dead Animals

TRANSFERRED WASTES

X FROM RELOAD FACILITY
X FROM TRANSFER STATION
X FROM NAME Monroe LOCATION Monroe, Oregon
_____ FROM TRANSFER STATION
_____ FROM NAME _____ LOCATION _____

TRUCK WASHING FACILITY PROVIDED? YES ___ NO X .

Collectors have own facilities at shops.

4. SUBCONTRACTS. ATTACH COPY OF SUBCONTRACTS FOR ANY OF SERVICES LISTED IN THIS FRANCHISE APPLICATION. WRITTEN PERMISSION IS REQUIRED BY THE DEPARTMENT. FRANCHISEE REMAINS RESPONSIBLE FOR THE SERVICE.

5. RATES. IF RATES HAVE BEEN APPROVED BY BENTON COUNTY, ATTACH SCHEDULE. IF NOT, ATTACH SCHEDULE OF PROPOSED RATES.

FOR NONSCHEDULED SERVICES, YOU MAY INCLUDE A STATEMENT ON THE RATE SCHEDULE THAT: "NONSCHEDULED SERVICES PROVIDED BY THE FRANCHISEE WILL BE CHARGED AT THE REASONABLE COST OF PROVIDING THE SERVICE AND WITH A REASONABLE RETURN TO THE FRANCHISEE."

6. SERVICE DATE:

SERVICE IS CURRENTLY BEING PROVIDED. YES X NO ___. IF SERVICE IS NOT PROVIDED NOW, PROPOSED SERVICE WILL BEGIN ON

_____.
(DATE)

FORM I-5

7. NUMBER OF EMPLOYEES:

2 MANAGEMENT
2 LANDFILL OPERATIONS
2 OFFICE
_____ SHOP
1 COLLECTION ATTENDANT
_____ OTHER

8. FACILITIES. DO YOU PROVIDE YOUR OWN EQUIPMENT REPAIR FACILITY?
YES___ NO X . Dallas Equipment Repair of Rickreall provides within-the-hour response to repair needs.

9. EQUIPMENT AND FACILITIES TO BE USED:

A. ATTACH PLAN SHOWING BUILDINGS, FACILITIES, STRUCTURES, EQUIPMENT, ON-SITE ROADS AND ROUTES, ELEVATED OR DEPRESSED AREAS, DUMPING AREA OR AREAS AND SYSTEM TO BE USED.

B. CHECK ALL OF THE FOLLOWING THAT APPLY:

Public dumping is:

X On open pad - summer
X Down into ~~box, trailer, receiving pit or~~ trench. - winter

Collector dumping is:

X On open pad - summer
X Down into ~~box, trailer, receiving pit or~~ trench. - win

Number and type of motor vehicles provided:

Number and type of cats, compactors, earth movers, loaders or other operating equipment indicating size and capacity. Also indicate whether the equipment is new or used.
3 D-8 Caterpillars (35 ton) Used
1 988 Landfill Compactor - Caterpillar (50 ton) Used
1 Pull Scraper - 18 cu. yd. Used

Briefly describe any other operating equipment used.
2 Pump and irrigation systems for collected leachate
1 1500 gallon tanker for fire control and cleaning equipment.

Briefly describe buildings, structures or fixtures to be used. 7 Groundwater monitoring wells; 1 Water Production Well; 2 1500 Gallon Water Storage Tanks; 1 Office Trailer; 2 Grease & Oil Storage Sheds.

BOOK 50, PAGE 332

C. ESTIMATED VOLUME OF MATERIALS TO BE HANDLED ANNUALLY IN CUBIC YARDS:

X	Residential type wastes	80,005 cu. yd.	
X	Commercial type wastes	54,537	Actual cubic yards delivered to sites in 1980.
X	Industrial type wastes	261,376	
X	Other type wastes- Public	76,089	
		472,007 cu. yd.	

D. BACKUP:

WOULD YOUR CUSTOMERS HAVE A BACKUP DISPOSAL SITE OR OTHER FACILITY TO USE IF YOU WERE CLOSED? YES___ NO X .
IF YES, WHAT FACILITY?_____

IF YES, DESCRIBE ARRANGEMENT YOU HAVE MADE WITH THE OWNER OR OPERATOR OF THAT FACILITY FOR BACKUP SERVICE:

_____

_____

_____

10. BOND. IF THE BOARD FINDS THAT YOU DO NOT HAVE ADEQUATE EXPERIENCE IN PROVIDING THE REQUIRED SERVICE, IT MAY REQUIRE A PERFORMANCE BOND.

11. INSURANCE. ATTACH A CERTIFICATE OF INSURANCE OR SIGN BELOW. INSURANCE MINIMUM IS PROVIDED BY ORDINANCE OR BY ORDER OF THE BOARD. THE CERTIFICATE SHALL NAME BENTON COUNTY AS ADDITIONAL INSURED.

I WILL PROVIDE THE REQUIRED INSURANCE CERTIFICATE PRIOR TO COMMENCING OPERATIONS_____.
(YOUR SIGNATURE)

12. ADEQUATE PUBLIC SERVICE. PROVIDE ALL REQUIRED INFORMATION ON ADEQUATE PUBLIC SERVICE FROM THE FORM ON PAGES 6-7.

13. YOU MAY BE REQUIRED TO FILE A FINANCIAL STATEMENT AND PROSPECTUS COVERING THE INVESTMENT IN THE TRANSFER STATION, FACILITIES AND EQUIPMENT TOGETHER WITH FINANCIAL CAPABILITY TO ESTABLISH OR MAINTAIN AND TO CONTINUE THE SERVICE.

NOTE: Valley Landfills currently owns the ground on which the site is located. That ownership is not necessary to the operation of the landfill. Salem, Woodburn, Lebanon, Newberg, McMinnville, Newport, Pendleton, LaGrande and many other sites in the state are operated on leased property. Under new federal legislation it may be advantageous to have another person or corporation own the land. Any transfer would be subject to use as a landfill for the maximum term permitted by county franchise, DEQ permit and other applicable laws, rules and regulations.