COMMUNITY MONITOR ANNUAL REPORT 2022
ALTAMONT LANDFILL AND RESOURCE RECOVERY FACILITY
Livermore, California

Prepared For:

ALRRF Community Monitor Committee

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1.0 INTRODUCTION

1.1 Background: Settlement Agreement

In December 1999, a Settlement Agreement was reached among parties involved in a lawsuit regarding the proposed expansion of the Altamont Landfill and Resource Recovery Facility (ALRRF). The settlement limited the expansion to a second permitted operational area, known as Fill Area 2 (FA2), adjacent to the existing Fill Area 1 (FA1). The Settlement Agreement established the Community Monitor Committee (CMC) and a funding mechanism for its technical consultant, the Community Monitor (CM).

The Settlement Agreement defines the purview of the CMC and the CM. The CM's scope of work is further defined in a contract between the CM and the CMC. The City of Livermore provides staff and administrative support to the CMC, as well as management of the CM contract and space for CMC meetings. The City also acts as financial agent for the CMC, pursuant to a letter agreement dated July 6, 2004.

In broad terms, the CM is to review certain reports and information, as defined; monitor incoming traffic by conducting truck counts, as described in the Settlement Agreement; and inspect the ALRRF site no more than twelve times each year. The Settlement Agreement describes the CM's Scope of Work to include "issuing a written report each year summarizing the ALRRF's compliance record for the period since the last such report with respect to all applicable environmental laws and regulations." This Annual Report provides that summary for 2022.

The Settlement Agreement also requires that the ALRRF operator, Waste Management of Alameda County (WMAC), pay invoices submitted by the CM to the CMC, if the work represented in those invoices is consistent with the CM's scope of work and role as defined in the Settlement Agreement.

1.2 Prior Community Monitor Work

Records indicate that the CMC retained a technical consultant as the CM from 2005 through part of 2007.

In mid-2007, the CMC selected the current CM team of Environmental Science Associates (ESA) and Langan (formerly Treadwell & Rollo). This team began work in February 2008. From 2008 through 2019, the team carried out report reviews, Class 2 soil analysis file review, and site inspections as defined in the Settlement Agreement. From 2020, after a public procurement process to select a continuing CM, the CM team of Langan and ESA switched roles, with Langan

as the primary CM and ESA as a sub-contractor to Langan. The CM team continues to carry out report reviews, Class 2 soil analysis file review, and site inspections (when allowed), as defined in the Settlement Agreement.

- In 2008, the primary concern was the rate at which groundwater monitoring wells were purged during sampling. This was resolved satisfactorily.
- In 2009, the CM team took a close look at the methodology used by ALRRF and its consultants to track variations in groundwater quality. No Areas of Concern (AOCs) were identified.
- In 2010, landfill gas perimeter probes were installed to comply with new regulations, and one of those probes detected landfill gas at levels that exceeded regulatory limits. This was abated by installing several gas extraction wells close to those probes.
- In 2011, the ALRRF sought to use fine material[1] from the Davis Street Material Recovery Facility (MRF) as Alternative Daily Cover. The use of this material was approved by the LEA through a special study in 2013.
- In 2012, two ongoing problems, windblown litter and seagull activity, became more severe; and while the gull problem has varied seasonally, the litter problem has continued.

Since mid-2013, the CM's observations and document reviews have included the construction of FA2 and related mitigation measures. The excavation and preparation of the Phase 1 portion of FA2, together with related improvements, were monitored in 2014 and 2015.

In 2015, the Five-Year Permit Review process began when the Alameda County Department of Environmental Health, the Local Enforcement Agency (LEA), requested the ALRRF to submit an application and a revised draft of its Joint Technical Document[2] (JTD), which contains a detailed description of FA2 development plans, design details, and operating procedures. On July 31, 2015, the revised JTD was submitted to the LEA and the Central Valley Regional Water Quality Control Board (CVRWQCB). The Five-Year Permit Review process was completed in 2020. Waste Discharge Requirements (WDRs) and Ceased and Deist Orders (CDOs) were issued by the CVRWQCB in mid-2016.

1 MRF fines: Fine material produced by sorting systems that recover materials at the Davis Street Transfer Station.

2 Under California regulations, a Joint Technical Document (JTD) is a detailed description of all of the means and methods by which a disposal site will satisfy State requirements to protect water resources and safely dispose of permitted wastes.

Throughout this process, the LEA held its permit review in abeyance while CVRWQCB staff prepared, and the CVRWQCB adopted, the WDRs. Subsequently, the LEA's review required more than four years to complete. It was difficult for the ALRRF to refine its JTD to conform to the requirements of the WDRs and subsequent directives from CVRWQCB staff, and the sheer size and complexity of the JTD itself also impeded progress. The JTD, after several revisions, was finalized on April 30, 2020. The Five-Year Solid Waste Facility Permit (SWFP) was finalized and issued on September 2, 2020.

In 2021, as a result of COVID-19 health emergency and the statewide Shelter-in-Place Order issued in early March 2020, the CM site visits were suspended from January through March 2021.

1.3 Regional Context and Landfill Capacity Needs

Events in the landfill disposal industry and demographic shifts within the greater Bay Area have affected, and may continue to affect, operations and future developments at the ALRRF. Prior Annual Reports have discussed impending landfill capacity changes and changes in landfill usage that could directly affect the life expectancy of regional landfills including the ALRRF.

Those issues have largely abated, but legislative and regulatory developments have resulted in new implications for landfill life in the region and statewide. The bellwether for this trend was AB 1594, which was passed in 2014. As of January 1, 2020, the use of green material as alternate daily cover (ADC) does not constitute diversion through recycling and is considered disposal for purposes of measuring a jurisdiction's 50 percent per capita disposal rate.

The 2015-2016 legislative session in California gave rise to several new laws that are intended to dramatically reduce the disposal to landfill of organic wastes (plant debris, food scraps and similar materials that readily decompose and produce methane, a potent greenhouse gas). In Alameda County, this material is approximately 30% of the waste stream[3,4].

The two pieces of 2016 legislation with the most direct effect are SB 1383 and AB 901. SB 1383 established targets to achieve a 50 percent reduction in the statewide disposal of organic waste from the 2014 level by 2020, and a 75 percent reduction by 2025. AB 901 changed how disposal and recycling is reported to California Department of Resources Recycling and Recovery

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[3] CalRecycle 2014 Waste Characterization Study: https://www2.calrecycle.ca.gov/WasteCharacterization/ , accessed December 2017.

[4] Alameda County 2017-2018 Waste Characterization Study: http://www.stopwaste.org/sites/default/files/2017-18%20Alameda%20County%20Waste%20Characterization%20Study.pdf , accessed December 2018.

(CalRecycle). The intended effect is to provide a more accurate assessment of progress toward State goals. Regulations that implement these measures are now in place, and CalRecycle is providing resource documents and workshops to support implementation[5].

One result of this activity has been a tangible commitment by waste industries in California to provide additional organics diversion facilities. In Alameda County, two examples are the 500 tons per day Covered Aerated Static Pile (CASP) facility at the ALRRF, and the implementation of 100 tons per day of anaerobic digestion and subsequent composting capacity at the Davis Street Transfer Station. Taken together, these could reduce disposal at the ALRRF by up to 600 tons per day, which would be a 25% reduction in the current rate of disposal there. This reduction may be offset somewhat by the need for disposal of contaminants and oversize materials from compost operations.

Related State legislation passed in the 2017-2018 session provided further support for waste reduction through product stewardship, packaging, and enhanced organics-diversion requirements. The legislation passed in the first year of the 2019-2020 session has continued to focus on product stewardship while also removing some requirements to provide buy-back recycling centers.

Against this backdrop, the ALRRF began operation in FA2 on March 25, 2019. This triggered several constraints on the types, quantities and sources of materials received; these are described in the next section of this report. On April 27, 2022 the CVRWQCB conducted a final inspection and onsite meeting for FA2 Phase 4. This has been the active face of the landfill since.

1.4 Site-Specific Constraints and Opportunities

The 1999 Settlement Agreement added constraints on operations, by adding new conditions to the Conditional Use Permit for the ALRRF. Solid wastes from out-of-county sources were strictly limited to those covered by existing disposal agreements. During peak traffic hours, the number of refuse trucks entering the landfill is limited. Numerous conditions intended to protect natural resources on the ALRRF property were imposed. These were extensively refined during the development of permit conditions from the State and Federal natural resource agencies with permit authority: The US Army Corps of Engineers, the US Fish and Wildlife Service, the California Department of Fish and Wildlife, and the (CVRWQCB). This process required several years and concluded in 2012.

[5] https://calrecycle.ca.gov/organics/slcp/education

Some of these conditions did not take effect until FA2 began to receive refuse, on March 25, 2019. These conditions include limitations on the amounts of sludge, inert waste and special waste accepted from certain Bay Area counties, as well as self-hauled wastes from Contra Costa County. The specific restrictions are:

- Wastes collected for disposal under a municipal franchise may only be received from Alameda County, San Francisco, and the City of San Ramon in Contra Costa County. San Francisco and San Ramon wastes can only be received if those jurisdictions meet specified waste diversion goals.

- Non-franchise waste may only be received for disposal from Alameda County and San Francisco, plus up to 25,000 tons per year of sludge, inert waste and special waste from the other seven Bay Area counties. In addition, up to 25,000 tons per year of self-hauled wastes from Contra Costa County may be disposed.

Also, under the Settlement Agreement the size of the future expansion area was limited to 40 million tons of capacity, with a footprint of approximately 250 acres. In addition to Conditional Use Permit conditions, the Settlement Agreement established the CMC and the CM role, as described above; and it established mitigation funding related to the landfill expansion.

The physical setting of the ALRRF site presents certain constraints and opportunities. Canyons provide convenient high-volume fill sites, but hilly terrain and local high winds in the Altamont area require constant attention to windblown litter, especially film plastic. As FA1 neared its final elevation, windblown litter continued to be a problem due to the exposure of the landfill's active face to wind. That problem increased through 2019, despite the move to FA2 at a lower elevation. Although the ALRRF's litter collection crew has been able to repeatedly remove litter from large expanses of the ALRRF property, high-wind events in 2019 and 2020 quickly replenished windblown litter in those areas, requiring repeated cleanups. In 2021, the landfill experienced record wind speeds, exacerbating the existing windblown littler issue further around FA2. As a result, a section of the fencing was knocked down and windblown litter covered large expanses of the ALRRF property as well as neighboring properties, including Bethany Reservoir. The landfill has added additional staff dedicated to litter cleanup, has repaired and increased the perimeter fencing downwind of FA2, and is communicating frequently with CalRecycle and the LEA to provide updates on removal of the windblown litter. In 2022, CVRWQCB conducted a targeted inspection of the landfill. In summary, the CVRWQCB outlined 13 Areas of Concern required to maintain compliance with the WDRs and Title 27. On September 1, the CVRWQCB issued a violation for windblown litter outside of the waste management units, within the property. The CVRWQCB noted litter was reported in the July 28, 2022 LEA inspection and observed by

CVRWQCB staff in their 4 August inspection. The CVRWQCB requested WMAC takes appropriate measures to maintain compliance with the WDRs and Title 27, and to notify the CVRWQCB staff when all the windblown material has been returned to the appropriate waste management unit and is under approved cover material. A confirmation inspection was scheduled following completion of the windblown material removal. The CM provides an updated table of the CVRWQCB requests in the quarterly packets, including the requirements outlined in the Cease and Desist Order (CDO) R5-2021-0020, AOCs and Violations, the expected completion timeline and progress that has been made on each item. WMAC has continuously sent letters from their external counsel in response to the investigative order issued by the CVRWQCB in October 2021, objecting the technical reporting requested regarding windblown litter, and informing on the number of litter bags that have been picked-up outside of the property boundary since July 2021.

1.5 Overview of Operations, Regulations and Permits

1.5.1 Operational Functions and Requirements

Like most large landfills throughout California, the ALRRF performs a variety of functions that support the region's management of solid wastes. These functions continue to evolve as increasing emphasis is placed on reducing and recovering wastes, but the primary function of the site continues to be the safe disposal of solid wastes by placing, compacting and covering these materials. Federal, State and local regulations require that at the ALRRF:

- Wastes are covered to control litter, prevent fire, and prevent the spread of disease.
- Wastes are placed and compacted to be physically stable.
- Plant debris is not to be disposed; if received, it must be separated and reclaimed by composting or other methods. The CASP compost system adjacent to the landfill provides a convenient location for plant debris that is inadvertently delivered to the landfill.
- A liner and liquid recovery system is in place to prevent groundwater contamination by leachate.
- Landfill gas (LFG) is controlled by an extraction system. Currently the gas is used to produce fuel (liquefied and compressed natural gas, LNG/CNG) and electrical energy.
- Emissions from combustion and processing (diesel engines and landfill gas systems) are controlled to meet Bay Area Air Quality Management District (BAAQMD) standards.
- Other air pollutants and nuisances (dust, odor, litter, etc.) are prevented.

- Stormwater erosion is controlled and stormwater runoff is tested for pollutants.

Compliance with these requirements protects the environment and public health, and it also presents opportunities to develop and support innovative methods for improved waste management. Currently, such activities at the ALRRF include:

- Using LFG to produce electricity and fuel (LNG/CNG);
- Stockpiling and processing materials for beneficial use on site, such as using demolished concrete for wet-weather roads and access pads;
- Blending liquids with dry materials in a solidification process to make a product that can be landfilled or used as cover;
- Using contaminated soils and other wastes (biosolids, shredded tires, MRF fines, treated auto shredder fluff, etc.) for cover material, as permitted;
- Stockpiling construction and demolition (C&D) materials and scrap metal for processing elsewhere;
- Providing an area for the separation of plant debris from other wastes, to avoid landfilling plant debris; and
- Hosting site visits, by prior arrangement, for public education.

The ALRRF property covers more than three square miles. Within that area, the portion that is delineated as landfill is divided into FA1 and FA2. FA1 covers approximately 235 acres, including an Asbestos-Containing Waste landfill operation which occupies several acres within the FA1 footprint. The FA2 footprint is approximately 250 acres. Although refuse and cover material are currently being delivered to FA2, FA1 has not closed, and it will likely receive additional refuse to reach its permitted final elevation. It is currently the site of the active asbestos landfill and two solidification basins. The solidification basins are proposed to be relocated to FA2 in 2023.

Lands surrounding FA1 and FA2 are mainly grazing land and some construction-support activities related to the continuing construction of FA2, which will take place in phases over several years. These surrounding lands include a Conservation Plan Area, protected with a permanent easement that provides suitable habitat for several special status species.

Much of the work done by the CM involves the review of data and reports required of the ALRRF by regulatory and permitting agencies, as described below.

1.5.1.1 Water

In California, the State Water Resources Control Board (SWRCB) and its Regional Water Quality Control Boards (RWQCBs) protect groundwater and surface water resources through laws, regulations and permit requirements. Because most of the ALRRF property drains into the Central Valley, the CVRWQCB issues and administers the WDRs for the site. These WDRs set various operating requirements, and they also define the programs that monitor water quality by periodically testing groundwater wells as well as storm water basin contents and discharges. The CVRWQCB also requires the ALRRF to address incidents that increase risk to groundwater, such as the inadvertent receipt of wastes that contain unpermitted levels of hazardous materials. The CM reviews semiannual groundwater monitoring reports, the stormwater pollution prevention plan, annual stormwater monitoring reports, and the annual Winterization Plan update, as well as correspondence and required reports that the CVRWQCB posts on its GeoTracker web site[6].

1.5.1.2 Air

The BAAQMD administers its own regulations, including Regulation 8 Rule 34 regarding landfill gas control, as well as relevant State and Federal regulations. At the Federal level these are referred to as Title V requirements. The operation of (and especially the air emissions from) the landfill gas control systems, various diesel engines, and other processes that produce air emissions are regulated through permit requirements. Every six months the ALRRF submits a comprehensive "Title V report" to the BAAQMD. This report summarizes emission test results and landfill gas control system performance as required. The CM reviews these reports as they are issued. The landfill also produces an annual estimate of greenhouse gas (GHG) emissions, as required by Federal regulations. The most recent data available, for 2021, indicate that the ALRRF is the third highest GHG-emitting landfill in California, with 34,865 metric tons of total carbon dioxide ("greenhouse gas as carbon dioxide equivalent") emitted, behind the Kiefer Landfill in Sacramento County (114,051) metric tons of carbon dioxide emitted) and the Puente Hills landfill in Los Angeles County (110,292) metric tons of total carbon dioxide emitted).[7]

1.5.1.3 Disposed Wastes

Two agencies regulate solid waste disposal in Alameda County. At the county level, the LEA, and at the State level, CalRecycle which supports and oversees the LEA. The LEA is the main

[6] ALRRF's profile can be accessed through: https://geotracker.waterboards.ca.gov/profile_report?global_id=L10005834311

[7] Air Resources Board file https://ww2.arb.ca.gov/mrr-data, accessed December 14, 2022.

enforcement agency for the Solid Waste Facility Permit (SWFP) that governs many aspects of operations at the ALRRF, such as operating hours, landfill cover materials and cover frequency, types of materials that are allowed to be disposed, etc. The SWFP is reviewed and updated every five years, and the CMC and CM closely follow that process, as required by the Settlement Agreement. The CM also reviews ALRRF inspection reports made by the LEA, as those reports become publicly available; and each year at least four of the monthly CM site inspections are done in conjunction with the LEA, as required in the CM's Scope of Work. The CM conducted 12 site visits in 2022 as required by the scope of work. Section 2.1 provides more details. Five of the 12 CM site visits in 2022 were performed with the LEA.

1.5.1.4 Land Use

Concurrently with the Settlement Agreement, Land Use Permit C-5512 for the ALRRF site was updated to incorporate mitigations specified by the Settlement Agreement. These modifications include restrictions on waste quantities, limits on truck traffic, and other operational constraints, as well as certain biological resource protection measures discussed in Section 1.5.2 below. The CM tracks compliance through site visits, review of data from ALRRF operations, and review of periodic reports submitted to regulatory agencies by the ALRRF, including the annual Mitigation Monitoring Report submitted to County Planning. Annual monitoring surveys of the on-site Conservation Plan Area are also reviewed by the CM.

An additional Land Use Permit (PLN 2010-00041) was approved by Alameda County in March of 2013 for the future development and use of composting and material recovery operations at the ALRRF. In April 2018, the ALRRF began operation of its CASP compost facility northeast of FA1. Currently, Waste Management's position is that the CASP facility is not within the purview of the CMC. However, the CMC has taken the position that the additional permit *is* within its purview.

1.5.1.5 Waste Diversion Requirements

At the local level, the Alameda County Waste Management Authority and the Alameda County Source Reduction and Recycling Board formed StopWaste as a joint powers agency to pursue local and state waste reduction and diversion goals. StopWaste has implemented mandatory separation of recyclables and compostables at businesses and multifamily properties throughout the county, and it provides public education, training and other assistance. In addition, StopWaste has developed, and all of its member agencies have adopted, a single-use bag ban ordinance; and StopWaste has adopted a countywide ban on the disposal of plant debris in local landfills.

Section 1.3 of this Annual Report describes recent State legislation that requires increased solid waste diversion (or reduction) and more comprehensive reporting of disposed and diverted quantities.

1.5.2 Requirements for FA2 Development and Use

1.5.2.1 Background

In 2011, the last major permits for the development of FA2 were obtained after agreement was reached between regulatory agencies and WMAC regarding mitigation for the loss of a wetland channel and the loss of habitat for special status species. Mitigations were established through Alameda County Conditional Use Permit C-5512 and permits from several State and Federal agencies:

- US Army Corps of Engineers, which had jurisdiction over wetlands.
- US Fish and Wildlife Service (USFWS), which consulted on wildlife protective measures.
- CVRWQCB, which certified that the mitigations would protect water quality.
- California Department of Fish and Wildlife (CDFW), which concurred with the USFWS' Biological Opinion and placed specific conditions on work in the wetland channel.

The fundamental requirements of these permits are:

- The dedication of 750 acres of ALRRF land as a Conservation Easement, in perpetuity.
- The creation of additional wetlands, in the form of a new pond between FA2 and the Eastern Alkali Wetland.
- The enhancement of a riparian channel approximately the same size as the channel to be displaced by FA2.

To guide these efforts and many related requirements, the ALRRF and its consultants prepared the following documents:

- Conservation Management Plan
- Pest Management Plan
- Grazing Plan
- Waters and Wetlands Mitigation Plan

The ALRRF dedicated the 991.6-acre Conservation Easement in 2012 and built the mitigation wetland pond in 2013. In late 2017, the ALRRF executed an agreement with the Cosumnes Floodplain Mitigation Bank to fund river channel restoration and preservation in southern Sacramento County. The current status of these efforts is described in Section 1.5.2.3 below.

1.5.2.2 Corridors and Connectivity

The Biological Opinion from the USFWS describes the need for wildlife connectivity and wildlife corridors in eastern Alameda County to provide for wildlife movement and thereby enhance species health by preventing inbreeding. The Biological Opinion states that this need exists for three of the four protected species in the area: San Joaquin Kit Fox, California Red-Legged Frog, and California Tiger Salamander. The fourth federally threatened species is the valley elderberry longhorn beetle. ALRRF has no direct or indirect adverse effects toward this species. The ALRRF's Conservation Management Plan contains the following requirements in the Minimization and Mitigation sections of the document:

> MIN-31 – The project proponent will contribute funding to conduct a research study of wildlife passage at local over- and under- crossings to determine if these conduits provide conductivity [sic] for wildlife through the Interstate 580 corridor. The study will entail the periodic placement of motion-activated camera station, track plates, and other approved sampling method. The project proponent will provide the Service and/or CDFW with as much as $50,000 to perform the study. With the approval of the Service and CDFW, the project proponent may contract the study to an approved third party.
>
> MIT-7 – The mitigation pond/wetland will be constructed in an upland area […] immediately upstream from the Eastern Alkali Wetland. […] This area provides suitable upland refugial habitat for tiger salamanders and suitable dispersal habitat for red-legged frogs to the Eastern Alkali Wetland and the Southern Alkali Wetland.

These requirements are also stated in the USFWS Biological Opinion, which in turn is referenced by the CDFW Consistency Determination.

1.5.2.3 Current Status

Unfortunately, the wetland mitigation pond built in 2013 was badly damaged by sediment inflow due to unusually heavy rainfall in early 2014. Also, the channel enhancement was put on hold due to the drought that occurred between 2011 and 2016. To remedy this situation, the ALRRF has purchased off-site wetland channel mitigation credits from the Cosumnes Floodplain Mitigation Bank in southern Sacramento County and had the pond rebuilt and replanted in 2018.

Also, to protect the pond from sediment inflow, in late 2018 the very extensive sedimentation basin SB-H was constructed between the pond and Fill Area 2. This basin SB-H performed well throughout the 2018-2019 wet season. In the pond itself, it appears that there has been some mortality among the plants that were installed in late 2018. ALRRF management has stated that this is being addressed. In 2021 and 2022, the wetland mitigation pond was irrigated, shallow water was observed in the pond and vegetation grew.

In 2017, the CM reviewed a summary report describing wetland and wildlife mitigation activities and issues. Wetland and wildlife mitigation activities continued in 2018, 2019 and 2020 and 2021 with monitoring of construction areas and wildlife protection measures (e.g., relocating sensitive species such as California Tiger Salamander, when encountered). In 2021, the CM received the 2019 and 2020 Annual Status Reports that describe conservation activities. In 2022, the CM received the 2021 Annual Report by Kleinfelder.

The CM also reviews the ALRRF annual mitigation monitoring progress report, which briefly summarizes the status of compliance with each of the 106 conditions in Conditional Use Permit C-5512.

2.0 COMMUNITY MONITOR ACTIVITIES AND ISSUES

2.1 Introduction

Under the Settlement Agreement, the CM has three ongoing duties:

- Review reports, data and information that are required to be submitted by WMAC to regulatory agencies, or that provide information regarding the ALRRF's compliance with applicable environmental laws and regulations (Settlement Agreement Sections 5.7.1.-5.7.3)
- Conduct inspections of the ALRRF facility up to 12 times per year (Sections 5.7.7, 5.8)
- Review the records of testing and acceptance of "Class 2 soils", i.e. soils known to come from a contaminated site (Section 5.7.9)

Throughout 2022 the COVID-19 restrictions that had been imposed in 2020 and 2021 were lifted and the CM was active in each of these areas, as described below.

2.2 Monitoring of Improvements and Changes

Through report reviews and site visits, several new developments in ALRRF facilities and operations were monitored in 2022:

- On April 27, 2022 the CVRWQCB conducted a final inspection and onsite meeting for FA2 Phase 4. On July 1, 2022 the CVRWQCB authorized construction of FA2 Phase 5 cell and stormwater improvements. Construction is expected to be completed spring 2023.

- Beginning February 14, 2022, WMAC began destroying wells PC-1A, PC-1B and PC-1C at the landfill. The PC-1 well cluster is located in the middle of the FA2 Phase 5 footprint and needed to be destroyed in order to accommodate grading for the continued construction of the landfill. In October 2021, the Phase 4 interim point of compliance wells MW-30, MW-32, MW-33 and MW-36 were installed and will continue to provide monitoring at the downgradient extent of Phase 4 through the 1st semi-annual monitoring event of 2022. The interim point of compliance wells for FA2 Phase 5 will be installed prior to the 2nd semi-annual monitoring event in 2022. These wells will replace the monitoring historically provided by the PC-1 well cluster. In the Amended Report of Waste Discharge for MW-38 prepared December 13, 2022, the CVRWQCB approved of the installation of two new multi-level soil gas probes (UGP-15 and UGP-16) and the installation of one new downgradient well (MW-58).

- In May of 2021, FA2 Phase 4 groundwater monitoring wells MW-13A, MW-13B, MW-24, MW-25, MW-26 and gas probe VP-3, located in the excavation footprint of Phase 4 of FA2 were destroyed to allow construction of the landfill to proceed. The wells were replaced by FA2 Phase 4 monitoring wells MW-30, MW-32, MW-33 and MW-36 and gas probe VP-4. In addition, four new groundwater monitoring wells (MW-37, MW-38, MW-39, and MW-4) and seven new multi-depth soil gas probes (UGP-2, UGP-3, UGP-4, UGP-5, UGP-6, UGP 7, and UGP-8) were installed in FA1 as required under the CDO adopted on April 22, 2021. E-05 was installed in 1985, had a 33 year old dedicated QED bladder pump installed in 1987, and had an obstruction 6 feet below the top of casing that potentially could be associated with root intrusion, a kink or break in the well casing, or other defect. E-05 was replaced to allow for further evaluation of the groundwater quality in the area.

- In the 12 months from June 2021 through May 2022, 13 poorly-performing landfill gas wells were decommissioned and 33 new landfill gas extraction wells were brought on line. Wells with higher than normal gas temperatures were monitored for possible subsurface combustion. Well 799 showed high temperatures and was decommissioned on March 21, 2022. Additionally, three wells (well 835, 836 and 837) showed high temperatures. A total of 13 existing wells were decommissioned, i.e., shut down and disconnected from the gas extraction system because they had become unproductive. During surface emission monitoring, there were 98 exceedances of the 500 parts per million by volume (ppmv) methane threshold total. All of the corrective actions to block these emissions were successful and passed their 10-day and 30-day follow-up tests. Methane exceeding regulatory threshold of 5% was not found in any of the 50 perimeter probes installed around Fill Areas 1 and 2. Probe GP-20C and probe GP-8C, both have historically had higher methane values that have been proven to be naturally occurring and not related to landfill operations. No exceedances were detected during this

monitoring event. The landfill gas wells nearest to groundwater monitoring wells E-05/E-07, E-20B, and MW-4A continued to be operated. This was an effort to prevent landfill gas from reaching those groundwater wells, where low concentrations of VOCs have been detected. Currently the operating emission control devices for landfill gas at the ALRRF consist of two turbines (S-6 and S-7) and two flares (A-15 and A-16). The two turbines were tested for compliance with emission limits in January and December 2021, while the main flare, A-16, and the back-up flare, A-15, and were tested in March and April 2021. All four devices passed by the BAAQMD under Permits (8-34-412 and 8-34-301.1) and Condition Numbers (18773 and 19235).

- In 2022, efforts continued to be made to reduce stormwater pollution. Drop inlets that were fitted in 2019 with "Ertec" filter cloth barriers to screen out silt had been damaged and accumulated sediment around the down drain. The sediment was removed and damaged guards were replaced as part of the 2021 winterization plan. In 2019, specialized Filtrexx™ wattles, designed to trap metals and hydrocarbons, were placed in ditches and along the bases of slopes, to trap hydrocarbons and other pollutants. The year old Filtrexx™ wattles were displaced with debris accumulation in certain locations. The debris was removed and the wattles replaced where necessary. Wattles were also installed upslope of certain concrete open channels. Inlets that were obstructed by vegetation, debris were removed and Filtrexx™ wattles were installed in preparation for rainy weather. Turf reinforcement mats (TRMs) and rip rap were installed within channels in the Phase 3 excavated area. The Winterization Plan for 2022-2023 was not available for review at the time of this annual report.

- During the 2021-2022 wet season, stormwater was sampled upstream of the FA1 stormwater basins, in an effort to identify the sources of volatile organic compounds (VOCs) that have previously been detected in the basins. It was not possible to identify specific sources, however; only low to non-detect concentrations and a single below reporting limit (RL) concentration of acetone were reported in samples. Acetone has historically been detected in equipment and field blanks associated with sampling. In addition, a single below RL concentration of acetone in a sample does not trigger either of the non-statistical indicators. Ketones also continue to be detected in interior stormwater samples upstream of the basins. Overall, the detections of VOCs were less frequent, presumably due to additional Best Management Practices (BMPs) put in place along the storm water conveyances. SCS Engineers and WMAC proposed that the 2014 Industrial Activities Storm Water General Permit (IGP) Order No. 2014-0057-DWQ for storm water samples no longer be analyzed for VOCs and that SW (interior locations of the site) storm water samples no longer be collected. For the time being, storm water samples will continue to be analyzed for VOCs.

- The 10-acre Evapotranspirative (ET) Cover Test area was observed during the May site visit. In general, most of the cover area had vegetation, with the exception of segments of the upper swale banks in the southern portion of the site, the southwestern and

northwestern corners of upper flat area, and the northern end of the lower bench of the ET cover area, which had no vegetation. Native species were observed throughout the ET cover. The visit occurred later in the year than normal, which resulted in fewer observation of flowering plants. There were only a few cracks observed on the surface, which were less than a 1/8-inch wide and appeared to be shallow. Approximately three erosional rills were observed on the slope between Ditch 1 and Ditch 2 along the ET Cover's northwestern boundary. This area did not support high vegetation establishment. It is recommended the erosional features in this area be addressed before hydroseed is reapplied. A negligible amount of windblown litter was observed at the ET cover. The plans for the ET Cover Test Area include annual monitoring, followed by a report to the CVRWQCB at the conclusion of the four-year study period. Since the ET Cover was completed on November 14, 2018, submittal of the Performance Monitoring report is scheduled for April 1, 2024.

- The Mitigation Pond had water present during the site visit conducted in May of 2022. A moderate amount of submerged vegetation is present in the pond, enough to support a breeding habitat for amphibians. ESA could not confirm whether or not the pond is on track to meet the goal of retaining 20 inches of water in the deepest end by the end of August. During the August visit there was no water observed at the Mitigation Pond. The CDFW Consistency Determination recommends monitoring reports be submitted to CDFW and USFWS to inform the agencies of the mitigation pond habitat conditions specifically for California red-legged frog and California tiger salamander that are being monitored.

- The windblown litter issue was reduced during 2022. The LEA issued a violation on June 29, 2022 as litter was observed outside of the property boundary in quantities larger than observed in other 2022 inspections. WMAC cleaned up the litter and the violation was reduced to an AOC on July 29, 2022. The LEA continued to inspect the landfill twice per month. On September 29, 2022 the LEA inspected the landfill and removed the AOC. Perimeter fencing has been installed to control the issues and continuous staffing of litter pickers to prevent litter from leaving the property boundary. The windblown litter issues appear to be improving.

- In the period from January through November 2022, the ratio of **Class 2 cover soil** to municipal solid waste increased to 23%. In 2021 that ratio had increased to 21% from 20% in 2020.

2.3 Compliance and Significant Incidents

As noted above, the Settlement Agreement defines the CM's Scope of Work to include "issuing a written report each year summarizing the ALRRF's compliance record for the period since the last such report with respect to all applicable environmental laws and regulations." This Annual

Report provides that summary. The regulatory agencies that administer these laws and regulations, and the environmental permits held by the ALRRF, include the following:

- Alameda County Planning Department
- Alameda County Department of Environmental Health
- Bay Area Air Quality Management District
- US Environmental Protection Agency
- California Department of Resources Recycling and Recovery
- Central Valley Regional Water Quality Control Board
- California Department of Fish and Wildlife
- US Army Corps of Engineers
- US Fish and Wildlife Service

To determine if there are trends in the compliance record, a list of compliance issues has been compiled; issues from 2016-2022 are shown in Table 2-1, below. Persistent issues appear in the upper part of the table, followed by infrequent or one-time issues. Past issues from 2011–2015 are shown in the 2017 Annual Report.

To compile this table, the CM reviewed publicly available data from the regulatory agencies listed above, ALRRF correspondence with those agencies, and the CM's monthly site inspection reports. The severity of the issues was rated subjectively by the CM using the 1 to 5 scale shown below Table 2-1. Issues that were judged to be beyond the control of the ALRRF are not included in the annual total of severity scores but are listed below the total line.

For the purposes of this report and table, incidents involving the delivery of hazardous materials with incorrect profiles (showing them as non-hazardous) are considered to be beyond ALRRF's control; but the CVRWQCB's position appears to be that ALRRF is responsible nevertheless. Fortunately, no such issues occurred in 2022.

The total severity score for 2022 is slightly lower compared to 2021.

Two types of incidents that are of particular concern occurred in 2022:

- **End-dump Truck Overturns**. Within the ALRRF operating area, six dump-trucks

overturned in 2022. No injuries were reported. The average number of overturns per year from 2012 through 2019 was six. This is a tiny fraction of the roughly 16,000 truckloads of Class 2 soil and treated auto shredder fluff brought to the facility each year, but the risk of injury and damage in such incidents continues to be a concern for CMC members and ALRRF management. In 2019, the ALRRF increased its oversight of end-dump truck unloading and provides spotters for drivers to dump safely, which moderated the problem but did not eliminate it. Most of the dump truck accidents have been attributed to inexperienced or negligent drivers.

- **Windblown Litter**. This may be the single most persistent problem at the ALRRF. With the move of refuse fill operations from the FA1 hilltop into the FA2 canyon, additional fencing lining the perimeter of FA2 and the site, a reduction in windblown litter was expected. Windblown litter dispersed across site improved throughout 2022. During site visits, no windblown litter was observed in the Back-40, or at Bethany Reservoir when visited with LEA. However, ALRRF received an AOC and then a notice of violation (NOV) due to the amount of windblown litter deposited outside of the property. The litter cleanup crew has been enlarged (13) and is now a permanent part of the ALRRF work force. When necessary, the crew removes litter from neighboring properties to the east of the ALRRF. This is described further in section 2.2 above and section 2.3.1 and 2.3.2.1 below.

2.3.1 Compliance Issues Documented by the LEA

In 2022, one AOC notice and NOV were issued by the LEA. LEA inspection reports indicate concerns about the following:

- **Windblown Litter:** On June 28, 2022, CVRWQCB conducted an inspection of ALRRF and observed windblown waste outside of FA2 and as far east as the Frog Pond, near the eastern boundary of the Facility and as far south as the mitigated wetland. On July 28, 2022, LEA staff conducted an inspection of the ALRRF and observed significant amounts of windblown waste east of the active face in FA2 with litter observed as far east as the Back-40, near the eastern limit of ALRRF. The Alameda County staff also observed litter beyond the limits of site. Onsite accumulations of litter and offsite migration of litter, as observed during inspections, is a violation of the California Code of Regulations.

Table 2-1
Compliance Issues Ranked by Severity

Issue	2016	2017	2018	2019	2020	2021	2022
Contamination at E-05, E-07, E-20B	2	2	2	2	2	2	2
Stormwater contamination	3	3	3	3	2	2	1
Windblown Litter	4	2	3	4	3	5	4
Birds	2	2	2	2	2	2	2
Erosion	2	1	-	3	2	2	1
Cover thin / absent	-	-	-	1	1	1	2
Worker injury	2	1	-	1	1	-	-
Condensate/Leachate Leakage	-	3	3	3	2	2	2
Ponding in low-lying area of landfill	-	-	1	2	2	2	1
Sediment in Wetland Mitigation Area	3	2	-	-	-	-	-
Odor, on site	1	-	-	1	-	-	-
Leachate Seeps	1	2	-	4	2	2	1
Erosion control (sitewide)	4	-	-	3	2	1	1
Waste outside active area (trash, pallets)	4	-	-	-	-	-	-
Leachate Leak Disposal	-	4	-	-	-	-	3
Contaminants at monitoring well MW-4A	-	4	-	-	-	3	2
Contaminants at monitoring well MW-38	-	-	-	-	-	-	2
Windblown litter beyond last litter fence	-	-	4	2	2	5	3
Disposal of liquid into pond without prior approval	-	-	4	5	2	-	-
Lack of means to record liquid level in ponds [cleared]	-	-	4	-	-	-	1
Failure to monitor landfill gas well	-	-	4	-	-	-	-
Incomplete groundwater monitoring report	-	-	4	-	-	-	-
Liquid separation not implemented, Fill Area 1				4	-	-	-
Medical waste (sharps) manifest issue	-	-	-	-	2	-	-
Totals	**36**	**28**	**44**	**40**	**27**	**29**	**28**
Issues Beyond Control of / Refuted by ALRRF							
Truck overturn	3	3	3	2	2	2	2
Methane Gas at Perimeter Probe(s) [cleared]	4	-	-	4	4	-	-
Fire in refuse &/or stored material	3	1	-	3	3	3	
Fire on ALRRF property, outside active areas	-	2	2	3	2	-	1
Positive COVID case	-	-	-	-	-	1	1

Indicates that a violation was issued by a regulatory agency.

Severity Criteria

1: Minor or ongoing issue having little potential to harm environmental or public health; below regulatory thresholds.

2: Issue having some potential to harm environmental or public health; below regulatory thresholds; being addressed.

3: Issue having potential to harm environmental or public health; below regulatory thresholds; not improving, or new.

4: Issue having significant potential to harm environmental or public health, or resulting in a violation being issued.
5: Issue having significant potential to harm environmental or public health; violation issued; willful non-compliance.
- : Not applicable/not evaluated

2.3.2 CVRWQCB Violations and Concerns

2.3.2.1 2022 Violations

Litter Control: In September, the CVRWQCB issued a NOV in response to the excessive litter that was reported to be escaping from ALRRF property. The NOV requested weekly reporting. To address the violations, the CVRWQCB requested that ALRRF take appropriate measures to maintain compliance with the WDRs and Title 27 including immediately ceasing the discharge of windblown waste beyond the extent of the active Fill Area; notify the CVRWQCB staff when all the windblown material has been returned to the appropriate unit and is under approved cover material, so a confirmation inspection can be scheduled. On January 5, 2023, the CVRWQCB issued a letter notifying the NOV had been lifted.

2.3.2.2 2022 Areas of Concern

On June 28, 2022, CVRWQCB conducted a targeted inspection of the Altamont Landfill. The report provides a summary of inspection and outlines Areas of Concern, required to maintain compliance with the WDRs and Title 27. WM has resolved these Areas of Concern, and they are listed here as for reference. The Areas of Concern included in the report are listed below:

1. The leachate line from FA1/U1 to LSI-1 had become clogged and the line needs to be replaced. In the interim, trucks were being used to batch extract and move leachate from the FA1/U1 leachate sump to LSI-1. WMAC was reportedly actively working to replace the line.
2. The FA2 Leachate Collection and Remove System (LCRS) discharge line was connected to a small holding tank and not LSI-3. Trucks were being used to batch extract and move leachate from the small holding tank. WMAC stated that the FA2 LCRS line to LSI-3 would be completed before this wet season, similarly to the lines that had been constructed in the past wet seasons.
3. The culvert that directs storm water run-off from the eastern side of FA1, including from Basin D and the area around E-20B, was partially obstructed and had no designed outfall containment structures or Best Management Practices (BMPs). As construction continues in FA2, storm water run-off from this location will be rerouted around FA2, and WMAC was reportedly working to complete this before the 2022/2023 wet season.
4. CVRWQCB staff observed waste worked into soil east of the Maintenance Shop. Site maps indicated the area is located within the limits of FA1/U1, where 12-inches of intermediate cover, void of waste, should be present. The observed waste quantity at the time of the inspection may expose FA1, and its unlined unit. CVRWQCB requested to address the lack of cover.

5. There was no collection tank for the FA2 under drainpipe. Liquid was detected in the FA2 underdrain in 2017, 2019 and 2020; therefore some type of holding tank is needed for the storage and sampling of this liquid, should it begin to flow again prior to final disposal.
6. Significant erosion was observed in the downstream containment berm of storm water retention basin SB-F.
7. Cattails were observed in LSI-3. Vegetation should be removed before the roots reach the liner.
8. The labels on the FA1/U1 LCRS, underdrain, and vadose zone access points have become faded and/or fallen off. Labels on all three site's surfaces impoundment access points: LCRS, leak detection and vadose zone locations were not clearly labeled.
9. The freeboard measurement markings on the LSI-1 and LSI-2 have faded and are illegible.
10. Improvements need to be made to the northeastern corner of the LSI-1, to prevent windblown leachate foam to be over topped. Additionally, leachate-stained sandbags and hay bales were present along the northeastern corner of LSI-1.
11. No exposed surface seeps were observed at any of the three primary FA1 seep locations. However, two large patches of green vegetative growth were observed on the closed portion of FA1/U1. The area should be investigated to determine whether seeps are occurring at this location.
12. Large areas of exposed soil remain atop and on the side slopes of FA1 and large areas of exposed soil remain within and around FA2.
13. CVRWQCB staff observed windblown litter east of FA2, as far east as the Frog Pond, and as far south as the mitigation wetland. WMAC is reportedly actively mitigating windblown waste.

2.3.2.2 CDO

The CVRWQCB issued CDO R5-2021-001 for the ALRRF on April 22, 2021. In the CDO, the CVRWQCB alleges the ALRRF is being operated outside of applicable federal and state regulations, and the WDRs. The CDO provides a list of various items the Discharger (ALRRF) has performed out of compliance and also provides a time schedule with specific requirements to compel the Discharger to resolve past compliance issues, achieve compliance with Title 27 and the WDRs, and conform to its Notice of Applicability (NOA) in a time frame acceptable to the CVRWQCB. The items identified are not new and had been discussed during the past years with the CM, but the CDO raises the severity of the issues.

Requirements Outlined in the CDO include the following:

<u>Implementation of FA2 Unit 1 Detection Monitoring Program</u>

The CDO requires the Discharger to implement a CVRWQCB approved detection monitoring network. The Discharger has proposed and installed monitoring devices for FA2, nevertheless the CDO notes that it does not meet all the requirements outlined in the WDRs.

The following requirements will resolve this item:

- Installation of interim point of compliance (POC) wells in FA2 Unit 1.
- Installation of final permanent FA2 limit wells.
- Implementation of a Water Quality Monitoring and Response Program for FA2 Unit 1.

MW-4A Evaluation Monitoring Program

In May 2017, MW-4A, located in the northeastern limit of FA1, reported exceedances of bicarbonate, calcium and five VOCs. Additional sampling confirmed a release in this area, which has been attributed to landfill gas. The Discharger has implemented focused extraction of landfill gas in this area and conducted additional investigation to define the extent of the release. A similar release had been documented in the vicinity of E-20B, which had implemented similar corrective actions. The CDO requires the Discharger to complete the MW-4A evaluation monitoring program addressing the following items:

- Monitoring of the nature and extent of the documented releases at MW-4A and E-20B
- Monitoring the effectiveness of corrective action near MW-4A and E-20B
- Establishment of a detection monitoring program along the northern and eastern (upgradient) limits of FA1

Continued implementation of the FA1 Corrective Action Program

The Discharger has chosen landfill gas extraction as the corrective action measure to address landfill gas effects (as described above). The CDO requires continued implementation of the Corrective Action Program, and to submit the following:

Report outlining the Corrective Action Program (landfill gas extraction)

Continued operation of solidification basins

Title 27 and the WDRs require that the solidification process does not result in the introduction of liquids into a solid waste management unit (WMU) in excess of the moisture holding capacity of the unit. The solidification basins at ALRRF are operated atop of FA1 Unit 2. These solidification basins do not comply with the WDR requirements. To bring this item back into compliance, the CVRWQCB included the following requirements in the CDO:

- The operation of the two solidification basins atop of FA1 Unit 2 can continue until new solidification basins are constructed

- The new solidification basins shall be moved outside of the existing WMUs, shall be completed as double lined containment systems, with a leachate recovery system (LCRS) installed between the liners, and a monitoring system

On October 19, 2021, in accordance with the CDO, Golder Associates Inc. (Golder) prepared the Report of Waste Discharge (ROWD) for the proposed concrete-lined, Solidification Basins that will be re-located near Fill Area 2 (FA2) at the ALRRF. The basins will be constructed as Class 2 liquid waste management units and will be underlain by a geomembrane liner to provide a double containment system with a leachate collection and recirculation system (LCRS). A pan lysimeter will be constructed underneath the sump. On November 8, 2022, a monitoring plan for the solidification basins was prepared by Geosyntec. Once these plans are approved by the CVRWQCB, the construction of the new solidification basins can be completed.

Water Board Tracking Timeline

The timeline for the requirements and deliverables requested in the CDO are summarized below:

- Update the Sampling and Analysis Plan for the interim POC detection monitoring program no later than 90 days after adoption of the CDO (March 4, 2022).

- Revise the background water quality values and update the concentration limits (CLs) no later than one year after adoption of the CDO (April 21, 2022).

- Work plan to install the soil gas monitoring wells (interim and final) for FA1 and FA2 no later than 90 days after adoption of the CDO.

- Report installation within 60 days of installing any new groundwater monitoring well or soil gas monitoring well.

- Work plan to conduct surface water monitoring for surface water flowing out of FA2 no later than 90 days after adoption of the CDO.

- Notify the CVRWQCB 30 days prior to removal of interim monitoring devices.

- Document the results of the MW-4A evaluation monitoring program (including groundwater and soil gas sampling) in separate Corrective Action Progress reports to be submitted semi-annually by 1 August and 1 February each year.

- Update corrective action financial assurance cost estimates for FA1 and FA2 no later than 90 days after adoption of the CDO (Submitted February 25, 2022).

- Report the installation and operation of new off-waste footprint solidification basins no later than 12 months from approval of the Report of Waste Discharge (depending on approval, estimated June, 2023).

The CDO also provides items associated with the Composting General Order, which have been included below for information.

- The leachate storage capacity at the composting facility has to comply with the requirement for storage for the 100-year wet year. The Discharger is required to submit an updated Permit Design Package for Contact Water Pond 2 or an alternative treatment or storage approach within 90 days from adoption of the CDO (Revised March 28, 2022).

- The composting general order regulates the characteristics of detention ponds at composting facilities. The CASP detention pond was designed to meet the 25-year, 24-peak storm event. The CDO requires additional compost leachate storage capacity.

The majority of the tasks listed in the CDO have been completed on or before the due date included in the CDO. However, some items have not been completed; this issue will continue to be tracked. The CM presents a table that lists updates of the requirements outlined in the CDO, the expected completion timeline and progress that has been made on each item on each quarterly packet.

Following an inspection dated July 1, 2022, the CVRWQCB has 13 requests pertaining to AOCs at the landfill. The timeline for the requirements and deliverables requested are summarized below:

- Repair clogged leachate line from FA1/U1 (Before onset wet season 2022/2023).

- Connect FA2 LCRS line to LSI-3 (Before onset wet season 2022/2023).

- Reroute obstructed culvert that directs storm water from FA1, Basin D and E-20B (Before onset wet season 2022/2023).

- Address lack of cover at FA1/U1. 12 inches of immediate cover should be present (Completed, submitted report September 30, 2022).

- No collection tank was observed for the FA2 under drainpipe. CVRWQCB requires some kind of holding tank for the storage and sampling of this liquid, should it begin to flow again (Reportedly completed October 15, 2022, pending report on Geotracker).

- Significant erosion was observed in the downstream containment berm of storm water retention basin SB-F (Reportedly completed, pending report on Geotracker).

- Cattails were observed in the LSI-3. Vegetation should be removed before the roots reach

the liner (Completed September 30, 2022).

- The freeboard measurement markings on the LSI-1 and LSI-2 have faded and are illegible (Completed September 30, 2022).

- Improvements to be made to northeastern corner of the LSI-1, to prevent windblown leachate foam from over topped. Leachate-stained sandbags and hay bales were present (End of October, 2022)

- Two large patches of vegetative growth observed on closed portion of FA1/U1. Area should be investigated to determine if seeps are occurring at this location (Completed September 30, 2022).

- Large areas of exposed soil remain atop and on the side slopes of FA1 and large areas of exposed soil remain within and around FA2 (October 31, 2022; Resubmitted by November 15, 2022, reportedly completed, pending report on Geotracker).

- Windblown litter observed east of FA2 as far east as Frog Pond and as far south as the mitigation wetland (Reportedly completed).

Additionally, following the July 1, 2022, inspection the CVRWQCB issued a Notice of Violation (NOV):

- Notify the CVRWQCB staff when all the windblown material has been returned to the appropriate unit and is under approved cover material to schedule an inspection.

2.3.2.4 Other Concerns

There are several open issues that have arisen between the ALRRF and the CVRWQCB since the current WDRs were finalized in July 2016. They are briefly described below. Most of these issues were included in the CDO issued by the CVRWQCB in 2021, and described in section 2.3.2.3.

Identifying Sources of VOCs in Storm Water – During 2021-2022, acetone was the only VOC detected above the RL concentrations in samples. Additionally, acetone was detected in samples in Basin C and in SB-F at below RL concentrations and in SB-H at an above RL concentration. These detections are likely due to field or laboratory cross contamination. Below RL concentrations of tert-butyl alcohol and carbon disulphide were detected in Basin C. It appears the detections of VOCs have decreased since 2020-2021 sampling events.

Deviations from baseline concentration limits – A two year update to concentration limits (CLs) for monitoring parameters for FA1 and FA2 groundwater detection monitoring wells (per

the 2016 WDR's) was provided on October 27, 2022 and a FA2 CLs update report was presented ion May 13, 2022 per the requirements of CDO. It is anticipated the 2024 update combines CLs for the complete well network. For FA 2, the CLs were established for three groundwater zones for monitoring wells: alluvial, weather bedrock and unweathered bedrock. The updated CLs are based on historical baseline monitoring data through 2021 for the CDO wells and through June 2022 for the WDR wells). CLs are established for each constituent and were statistically calculated using the intrawell data evaluation procedure[8]. The 2022 updated CLs were similar to the previous CLs, which had been presented in 2016, 2018 and 2020.

2.3.3 Other Incidents

The following information is based on reports filed in the site's Special Occurrences Log and on Community Monitor site inspections.

2.3.3.1 Vehicular Incidents

Within the ALRRF operating area, six dump-trucks overturned in 2022. No injuries were reported.

2.3.3.2 Fire

Within the ALRRF operating area, one fire occurred at the ALRRF site in 2022. On June 11, 2022, a fire started on the active face of FA2. After three hours the fire was completely extinguished. ALRRF staff contained the fire, and notified the LEA and BAQQMD. The fire was said to have been started by a hot load.

2.4 Review of Reports

2.4.1 Groundwater

Two groundwater monitoring reports were reviewed in 2022. The first covered the period from July through December of 2021; the second covered January through June of 2022.

The data in these reports indicate that most monitoring wells with VOC contamination are still fluctuating and a clear trend cannot be determined. However, all wells have VOC concentrations below the historical average for both the Second Semiannual 2021 and First Semiannual 2022 sampling events and it appears that VOCs are decreasing over time. These trends will continue to be tracked.

[8] 2020 2-Year Groundwater Concentration Limits Update for Fill Areas 1 & 2 Report by GeoChem Applications, dated October 2020

A new development in 2020 that has continued into 2022 has been an increase in concentrations of inorganic constituents (dissolved calcium, chloride, sulfate, total dissolved solids, and bicarbonate alkalinity). The concentrations of bicarbonate alkalinity at MW-4A have fluctuated from slightly below to slightly above the statistical concentration limit. In the First Semiannual 2022 sampling event, MW-2A and MW-6 in FA 1 contained elevated chemical oxygen demand while MW-10 in FA-2 had elevated chloride. During the First Semiannual 2022 sampling event, LFG-related VOCs were detected in POC monitoring well MW-38. On February 15, 2022, the CVRWQCB indicated that the monitoring of water quality in the MW-38 area (including newly installed downgradient well MW-53) should be included in the CDO status report for corrective action areas. An Amended Report of Waste Discharge for MW-38 was submitted by WMAC on May 13, 2022 which recommended LFG extraction and additional perimeter monitoring in the area. On December 13, 2022 the CVRWQCB requested a more holistic corrective action program in the entire northeastern side of FA 1 to remediate groundwater impacts.

In the First Semiannual 2021 sampling event the following wells has one or more VOCs above the RL or two or more VOCs below the RL: MW-38, MW-40, MW-41A, MW-41B, MW-49B, and MW-34B. CVRWQCB was notified that the following wells were resampled and VOCs were confirmed: MW-38, MW-40, MW-41A, MW-49B. In each case either an AROWD or ODR was submitted.

The Second Semiannual 2021 sampling event had a similarly concerning number of QA/QC issues as the previous reporting period. The QA/QC issues include field sampling and laboratory practices: contaminated trip and equipment blanks, hold time exceedances, and an increasing number of VOCs attributed to laboratory contamination. The first Semiannual 2022 sampling event had a reduced number of QA/QC issues.

2.4.2 Storm Water

A new set of annual requirements for industrial storm water monitoring and reporting took effect throughout California on July 1, 2015. Stormwater samples are to be taken when a "qualifying storm event"[9] (QSE) occurs. Up to four such QSE's are to be sampled at each discharge point during a stormwater year (July through June). For each type of industrial facility, certain key pollutants must be monitored; and if concentrations of those pollutants exceed specified Numeric Action Levels (NALs), the facility must make a plan that describes Exceedance Response Actions (ERAs) to be implemented. In the first year of exceedance, "Level 1" ERAs are selected, which

9 a precipitation event that: (1) produces a discharge for at least one drainage area; and, (2) is preceded by 48 hours with no discharge from any drainage area.

emphasize minimum BMPs. These are low-cost measures such as improving housekeeping, cleaning drain pipes, etc. If the exceedance continues into its second consecutive year, Level 2 ERAs must be developed, and these typically involve advanced BMPs such as specialized equipment, paving projects, etc.

Stormwater monitoring and reporting is especially complex at a landfill site, and even more so at a site that is expanding, like the ALRRF. The Monitoring and Reporting Program (MRP) developed for ALRRF required storm water sampling inside sedimentation basins on a semiannual basis. In the 2019 – 2020 wet season, ALRRF implemented new and improved BMPs. The landfill has implemented all applicable minimum BMPs and several types of advanced BMPs, including additional straw wattles, Filtrexx™ SiltSoxx wattles, flocculent logs, and rock dams. The ALRRF has also been tracking the presence of VOCs in stormwater, under a separate requirement in the WDRs. Data from previous year's wet season sampling indicated improvement in the stormwater quality. During the 2018-2019, 2019-2020, and 2020-2021 wet periods, only low to non-detect VOCs were reported in Basin samples. However, ketones continued to be detected in interior stormwater samples. During 2021-2022, acetone was detected above the RL concentrations in samples from in Basin A and in Basin C. Additionally, acetone was detected in samples in Basin C and in SB-F at below RL concentrations and in SB-H at an above RL concentration. These detections are likely due to field or laboratory cross contamination. Below RL concentrations of tert-butyl alcohol and carbon disulphide were detected in Basin C.

2.4.3 Air Quality

Title V is one of several programs authorized by the U.S. Congress in the 1990 Amendments to the federal Clean Air Act. The Bay Area Air Quality Management District (BAAQMD) administers Title V requirements for the ALRRF. Title V operating permits incorporate the requirements of all applicable air quality regulations. Hence, the semi-annual Title V reports provide a comprehensive review of compliance with BAAQMD permits and regulations.

In 2022, the CM received the Title V reports for the periods June – November 2021, and December 2021 – May 2022. These reports describe landfill gas control operations and source testing, and they also document new or unique developments at the site that can have an effect on air emissions. Results from the current reporting year are similar to those from the previous year:

- The required surface emissions monitoring (checking for methane leaks through the landfill cap) continued to occur, and although exceedances of methane were found, they were typically remedied on the first try, without the need for repeated repairs.

- From June 2021 – November 2021, 8 landfill gas wells were decommissioned, and 21 new wells were installed and began operation.

- From December 2021 – May 2022, 5 landfill gas wells were decommissioned, and 11 new wells were installed and began operation.

- The LNG plant continued to operate at a fairly steady production rate. There were a few brief unscheduled down-time events due to maintenance and planned utility shutdowns from June 2021 to November 2021, but after each of those problems was resolved, the gas plant returned to steady production. From December 2021 to May 2022, there were shut downs due to maintenance, testing, shutdowns due to high oxygen in the feed, a power outage and control failures, a flare blow out, as well as to repair a faulty regulator. The frequency of major shut downs was approximately the same compared to previous reporting periods. After each of the problems was resolved, the gas plant returned to steady production.

- All control devices passed their latest emissions tests without incident.

2.4.4 Mitigation Monitoring

The Mitigation Monitoring and Reporting Program Annual Progress Report, covering calendar year 2021, was reviewed by the CM during the third quarter of 2022. It is a table that lists each of the conditions described in the current Conditional Use Permit (CUP-5512), followed by a description of the implementation status of that condition or mitigation. The status descriptions together with the verification notes generally reflected the current status of each mitigation measure. Updates to this table from the previous year are listed below, with reference to the applicable CUP Condition number.

- Condition 4.4: This condition limits the amount of sludges, inert waste, and special waste accepted for disposal at ALRRF from outside Alameda County and San Francisco to not exceed 25,000 tons per calendar year. This condition is monitored through the life of ALRRF, and was not exceeded during year 2021. 159 additional loads (135 tons) were accepted inadvertently from outside the Nine Bay Area Counties in 2021. In 2022, WM has maintained compliance with this condition. ALRRF has noted that additional training and procedural review have been implemented for scale house personnel and sales department to address such issues in the future.

- Condition 47: Seeps were encountered during Phase 4 construction on the western sideslopes, which were anticipated and mitigated by the Phase 4 design that incorporates geocomposite underdrains to intercept and convey groundwater to the underdrain system. No seeps were encountered on the floor, so finger drain trenches were not

needed to supplement the underdrain gravel layer that extends across the entire Phase 4 floor.

In addition to the Annual Progress Report described above, in prior years the ALRRF has prepared reports to inform the natural-resource agencies about progress on their permit requirements for Fill Area 2 expansion: establishing the Conservation Plan Area, constructing the wetland mitigation project, protecting existing wetlands and surface waters, etc. The CM received the 2021 Annual Status Report for Mitigation Wetland Report prepared by Kleinfelder. ESA noted that conditions in the wetland had improved with respect to previous years following the reconstruction of the wetland in 2018. Additional comments from the 2021 Annual Status Report for Mitigation Wetland include:

- "Given the comprised hydrology over the last two years due to below average rainfall, implementation of the Wetland Mitigation Plan (WMP) Remedial Action 1a (modification of pond to optimize hydrology) or Conservation Management Plan (CMP) Remedial Action 1a (translocate surplus egg-masses and/or larvae from viable ponds on or off the ALRRF site during next winter) are not recommended at this time. However, if limited hydrology persists over summer 2023, remedial action should be considered."

- "CMP Remediation Action 1a required notification to the United States Fish and Wildlife Services (USFWS) and CDFW if California red-legged frog (CRLF) and California tiger salamander egg-masses, and five or more CRLF during the non-breeding season, are not present within a three-year period. The WMP includes similar performance criteria and notification obligation to the Corps… Given the re-construction of the mitigation pond was completed in December 2018, it is assumed the first monitoring year of a full CLRF breeding season begins November 2019… It is not recommended at this time however it should be considered in the future if performance standards are not met."

2020 Annual Progress Report for the Evapotranspirative Cover report prepared by Geosyntec documents biological surveys conducted in the Conservation Plan Area. The CM review yielded the following comments on the report, which were provided to WMAC:

- ESA recommends the timing of the percent cover or percent bare cover estimate based on field observations and aerial imagery to occur in February to April, or May at the latest. In the 2020 Annual Report (report) Section 2.2.2 documents percent bare cover was estimated from an aerial photo of the ET Cover site in June 2020 and ground photos of the vegetation taken by Geosyntec in June, July and September. The Work Plan allows

"percent cover (of the converse, percent bare area) will be assess by visual field sampling via aerial photography." Completing the assessment in the spring would provide a more accurate estimate of the plant cover that is present.

- ESA recommends the monitor take photos along the edge of the lower perimeter at regular interval to document plant growth.

2.5 Review of Records

Several types of site records were reviewed by the CM in 2022. The CM's scope of work requires the periodic review of files that contain lab analyses and other descriptions of **Class 2 soils** (considered non-hazardous) that are brought to the site for use as cover soil.

The **Special Occurrences Log** for the ALRRF was examined four times during the year and summarized for the Committee. The **LEA's monthly inspection reports** are publicly available on the CalRecycle web site and were checked by the CM every month, to note any new issues that may have been identified by the LEA.

2.5.1 Class 2 Soils

An ongoing CM task is the periodic review of files containing profiles (sample analyses) for Class 2 soils that are imported for use as cover soil in the Class 2 portion of the ALRRF. For efficiency, this is generally conducted two to three times per year, and it requires at least one full day for a qualified specialist to review each file to be sure that it is complete and within the regulatory limits for Class 2 materials. This review was conducted twice in 2022, on June 23 and July 14, for Class 2 soils accepted in through May 2022, and on December 7, for Class 2 soils accepted through November 2022. The files are made accessible electronically from WMAC's Livermore office.

A total of 90 profiles were reviewed on June 23, 2022 and July 14, 2022 that corresponded to Class 2 soil accepted at the landfill between December 21, 2022 and May 31, 2022 that were not reviewed previously. A total of 94 soil profiles were reviewed on December 7, 2022 that corresponded to Class 2 soil accepted at the landfill between June 1, 2022 and November 30, 2022. During each review, no out-of-compliance profiles were found.

2.5.2 Special Occurrences Log

Each permitted solid waste disposal site in California must keep a Log of Special Occurrences to document unusual and potentially disruptive incidents, including fires, injury and property damage, accidents, explosions, receipt or rejection of prohibited wastes, lack of sufficient

number of personnel, flooding, earthquake damage and other unusual occurrences. The ALRRF log was either checked by the CM in person during site visits or requested via email. Six dump trucks overturned in 2022. Two trucks were involved in an accident in FA2, no injuries were reported. One fire was reported on the working face of the landfill (FA2). It was reported to be started from a hot load and was fully extinguished within three hours.

2.5.3 LEA Inspection Reports

In 2022, there was one type of AOC noted in these reports. It pertained to high winds and increased windblown litter within the property boundaries as well as on surrounding properties. The LEA has requested for ALRRF to provide daily updates of litter collection and control activities in reports including photos, wind speed/direction, map of the collection area, amounts of waste collected, number of litter collection employees, and the number of hours worked.

2.6 Monthly Site Visits

Twelve site visits were held during 2022. The visit day and time were as shown in Table 2-2 below.

In general, satisfactory conditions were observed, although windblown litter and bird (seagull) presence were persistent issues. Minor problems generally were rectified prior to the next inspection. Details are available in the monthly site visit reports provided in CMC meeting packets. Distinct operations, such as the stockpiling and processing of specific materials, took place in well-defined areas. No instances of unpermitted activities were noted. There were no new problems seen regarding refuse placement, public safety or traffic management, whether on hours or off hours. Throughout these visits, staff and management were forthcoming regarding operating practices and current conditions.

Table 2-2
2022 Site Visit Summary

Date	Day of Week	Visit Time	Announced in Advance?	With LEA staff?
January 25	Tues	10:30 AM	no	yes
February 08	Tues	10:30 AM	yes	no
March 29	Tues	1:30 PM	yes	no
April 29	Fri	2:45 PM	yes	no
May 19	Thurs	11:30 PM	yes	no
June 29	Wed	10:00 AM	no	yes
July 28	Thurs	12:00 PM	yes	yes
August 23	Tues	10:00 AM	yes	no

September 20	Tues	9:00 AM	no	yes
October 19	Wed	10:00 AM	yes	no
November 17	Thurs	11:30 AM	yes	no
December 01	Thurs	9:00 AM	no	yes

In 2022, observations by the CM focused on:

- The operations in Fill Area 2.
- Additional perimeter and active phase fencing to mitigate litter effluent
- Completion and maintenance of the mitigation pond.
- Plant growth and soil conditions in the evapotranspirative cover test area.
- Storm drainage and erosion control.
- Observation of issues of ongoing concern, including the presence of large numbers of seagulls and management of windblown litter east of FA 2.
- Construction of FA 2 phases 5 and 6.
- Changes at the site that could harm the environment or public health.

No truck traffic counts were conducted in 2022, because ALRRF data on tonnage and traffic made it clear that the traffic volume requirements of the Conditional Use Permit were being met.

2.7 Per- and Polyfluoroalkyl Substances (PFAS) Updates

The PFAS Order was given by the SWRCB as part of a statewide effort to obtain a preliminary understanding of PFAS compounds concentrations in groundwater and leachate at various landfills. The Order indicates this sampling is necessary to determine if PFAS compounds are present in and near waters that could be used for drinking water purposes. The SWRCB and RWQCBs will evaluate the data collected, and use it to support of any regulatory action to be implemented.

To be representative, samples were collected in November 2019 from a background well, a downgradient well, and a composite leachate sampling location, where possible. PFAS compounds were reported at higher concentrations in groundwater monitoring wells in the

previously affected assessment and corrective action areas (E-05, E-07, E-20B, and MW-20) than the background or the detection monitoring program (DMP) wells. The highest PFAS concentrations in groundwater were reported in corrective action wells E-05 and E-07, located immediately downgradient of the old permitted unlined portion of FA 1. Relative to corrective action wells E-05 and E-07, lower concentrations of PFAS compounds were reported in the E-20B corrective action area, situated adjacent to the old unlined FA 1.

No additional PFAS sampling is proposed or required at this time. The SWRCB is analyzing the compiled data in airports, landfills and drinking water supply systems to aid in the development of Public Health Goals in drinking water. The concentrations reported at the ALRRF were below the maximum concentrations for groundwater and leachate at other landfills covered by the PFAS Order, and within the middle of the concentration ranges.

In 2021-2022 the United States Environmental Protection Agency (EPA) made several announcements regarding its goals for investigating, regulating, and remediating PFAS in consumer products and across environmental media, including the following:

- Emergency Planning and Community Right-to-Know Act and Toxic Substances Control Act Regulation. In 2022, EPA intends to propose rulemakings to (1) categorize PFAS on the Toxic Release Inventory list as "Chemicals of Special Concern" and remove the de-minimis eligibility from supplier notification requirements for all "Chemicals of Special Concern" and (2) add additional PFAS constituents to the Toxic Release Inventory. It also intends to finalize, by the end of 2022, an already proposed rule to collect data on PFAS that has been manufactured since 2011.

- Safe Drinking Water Act Regulation. The EPA plans to propose a rule setting national primary drinking water standards for two PFAS constituents, Perfluorooctanoic acid (PFOA) and Perfluorooctane sulfonic acid (PFOS), by fall 2022, with the intention of finalizing these standards by fall 2023.

- Clean Water Act Regulation. The EPA plans to propose a rule in summer 2023 that will restrict PFAS discharges from the organic chemicals, plastics and synthetic fibers, metal finishing, and electroplating industries. EPA also plans to continue to collect data and, where supported, initiate rulemakings that will restrict PFAS discharges from additional industrial categories, including electrical and electronic components, textile mills, landfills, leather tanning and finishing, plastics molding and forming, paint formulating, pulp, paper, paperboard, and airports.

- On October 26, 2021, the EPA built upon its PFAS Strategic Roadmap by announcing plans to initiate two proposed rulemakings; (1) to add PFOA, PFOS, Perfluorobutane sulfonic acid (PFBS) and GenX[10] to the list of Resource Conservation and Recovery Act (RCRA) Hazardous Constituents, which would result in these chemicals being regulated as hazardous waste under RCRA and (2) clarify that constituents classified as RCRA hazardous wastes, such as these four chemicals, can be cleaned up through the RCRA corrective action process.[11] On July 30, 2021, related state information was released providing further support for PFAS regulation and remediation. The California Environmental Protection Agency's Office of Environmental Health Hazard Assessment (OEHHA) announced the availability of a draft technical support document for proposed Public Health Goals (PHGs) for PFOA and PFOS in drinking water. The public comment period for the draft ended on October 28, 2021. The intended effect once PFAS regulation and guidance is finalized at the Federal and State level is to comprehensively regulate and remediate PFAS.

- On May 18, 2022, the U.S. Environmental Protection Agency (EPA) added five PFAS to a list of risk-based values for site cleanups. These levels are used by the EPA and other agencies in the investigations of contaminated sites. No updates to the risk-based values have occurred for PFAS since May 2022.

- On June 15, 2022 the EPA announced new drinking water health advisories for PFAS[12]. The EPA issued interim, updated drinking water health advisories for two substances and final health advisories for two additional substances. These health advisories inform the maximum contaminant levels allowed in drinking water, and would not have an effect at this moment on landfills.

- On August 17, 2022 the Division of Drinking Water presented at the State Water Resource Control Board meeting on the Notification and Response Levels for Perfluorohexane Sulfonic Acid[13]. There is continued progress through the discussion of this topic. On August 26, 2022 the EPA announced under the Administrator Regan's PFAS Strategic Roadmap, significant action to protect communities health from the risks posed by certain PFAS's. The EPA is proposing that PFAS become designated as a hazardous

[10] GenX is the trademark name for a short-chain PFAS that is being marketed as a replacement for PFOA.
[11] The National Law Review: EPA Makes PFAS Announcements, Issues PFAS Strategic Roadmap and Planned RCRA Hazardous Waste Designations https://www.natlawreview.com/article/epa-makes-pfas-announcements-issues-pfas-strategic-roadmap-and-planned-rcra, accessed November 2021.
[12] https://www.epa.gov/newsreleases/epa-announces-new-drinking-water-health-advisories-pfas-chemicals-1-billion-bipartisan
[13] https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/pfas.html

substance under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), or "Superfund." This would increase transparency around the releases of PFAS and help hold polluters accountable for the cleanup. This proposal applies toward PFOA and PFOS.

- On August 26, 2022 the EPA announced under the Administrator Regan's PFAS Strategic Roadmap, significant action to protect communities health from the risks posed by certain PFAS's[14]. The EPA is proposing that PFAS become designated as a hazardous substance under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), or "Superfund." This would increase transparency around the releases of PFAS and help hold polluters accountable for the cleanup. This proposal applies toward PFOA and PFOS.

- On March 14, 2023, the EPA announced proposed national primary drinking water maximum contaminant levels (MCLs) for six PFAS (PFOA and PFOS as individual contaminants, and four contaminants as a PFAS mixture). The proposed regulation would require public water systems to monitor, notify the public of the contaminant levels, and treat drinking water to reduce the levels of these PFAS if they exceed the proposed MCLs. California-specific MCLs[15] for PFAS have not yet been established as of March 2023[16].

Current and proposed regulations have focused on drinking water. Future developments may include additional monitoring for landfill and other disposal facilities.

3.0 LOOKING AHEAD: ANTICIPATED EFFORTS AND ISSUES

3.1 Introduction

The 2020 contract year was the beginning of a new Community Monitor contract, with Langan providing CM services, assisted by ESA. The CM team will continue to perform report reviews, site inspections and Class 2 soils file reviews. In 2020, COVID-19 health emergency and the resulting Shelter-in-Place orders brought changes in the way the CM conducts monitoring of the landfill activities. Two Emergency Waivers, one for the COVID-19 emergency and the other for wildfires, were requested and received by the ALRRF.

[14] https://www.epa.gov/newsreleases/epa-proposes-designating-certain-pfas-chemicals-hazardous-substances-under-superfund
[15] https://www.epa.gov/sdwa/and-polyfluoroalkyl-substances-pfas
[16] https://www.epa.gov/sdwa/and-polyfluoroalkyl-substances-pfas

The four-year test of evapotranspirative (ET) cover methods is ongoing; the liquids separation system continued to operate; and ALRRF proposed that storm water samples no longer be analyzed for VOCs and that SW storm water samples no longer be collected. Exceedances at several monitoring wells and windblown litter issues will continue to be tracked.

3.2 Issues to be Tracked in 2023

3.2.1 Ongoing Review

The following issues will continue to be monitored in the coming year:

- Concurrence of natural-resource agencies with off-site wetland mitigations.
- Groundwater monitoring methods and data quality.
- Groundwater quality, including the vadose zone below the landfill liners.
- Stormwater quality and management practices.
- Performance of the landfill gas system; decommissioning and installation of gas wells.
- Effects of composting or material recovery development or operations on the landfill.
- Refuse truck traffic counts, if needed.
- Performance of the 10-acre ET cover test site.
- Compliance with the CDO.
- Reduction of windblown litter on and off ALRRF property.
- Track new developments related to PFAS.

3.2.2 Site Assessments

All operations will continue to be observed, with close attention to the following areas.

3.2.2.1 Landfill Gas Control System

This system protects both air and groundwater quality, and it operates within a complex regulatory framework involving Federal permits, local permits, State regulations, and ALRRF CUP conditions. Physical changes to this system are likely to include the further addition of landfill gas extraction wells, decommissioning of wells that are no longer productive, and ongoing operation of the LNG plant, turbines, flares, etc. In 2023, four topics will be of special interest:

- The effect of the gas system on the concentrations of contaminants in wells E-20B and MW-4A.
- Implementation of the corrective action program in the MW-38 area.
- Gas temperatures, particularly in the high-temperature cluster of wells in FA 1 Unit 2.
- Implementation of gas collection in FA 2.

3.2.2.2 Stormwater Controls and Monitoring

Throughout the year, and especially during wet weather months, the CM will monitor conditions at all stormwater basins. The new additions to the stormwater pollution controls – skimmers, flocculant addition, Filtrexx™ check dams, and additional discharge points appear to have reduced contamination, although sporadic VOCs are still detected.

3.2.2.3 Windblown Litter

This will likely continue to be an issue for FA 2 and downwind areas. ALRRF has installed additional fences and maintained a 13-man crew to perform litter clean up as prevention to litter disposal offsite during 2022 through 2023.

3.2.2.4 New Systems

The CM will directly observe, and review available performance data, for:

- The ET cover test area
- The wetland mitigation pond
- Tipper and truck wash equipment in FA 2
- The liquids separation system
- Relocation of the solidification operations

In addition, monitoring reports on the Mitigation Wetland and the Conservation Plan Area, will be reviewed as they are provided.

3.2.2.5 Groundwater Contaminants and Groundwater Data

The CM team will continue to check concentrations of VOCs which show an increase. The team will also monitor data from wells E-20B, MW-4, MW-12, MW-20, MW-38 and other wells that have shown evidence of contamination. The quality of the groundwater sampling and analyses,

especially the occurrence of contaminants in quality-control samples and field samples, will also continue to be monitored.

3.2.3 Class 2 Soils File Review

As required by the Scope of Work, the CM will conduct this review at least twice during 2023.

3.2.4 Permit Requirements

In the Settlement Agreement, Section 4.3 defines the Expansion Date as "the date of the first deposition of solid waste in [Fill Area 2]." That occurred on March 25, 2019, triggering specific requirements in Conditional Use Permit C-5512, and in the resource-protection permit conditions that were imposed through the mitigations in the landfill-expansion EIR and the associated natural-resource-agency permits (Army Corps wetland permit, USFWS Biological Opinion, etc.; see Section 1.5.2, above).

3.2.4.1 Tonnage Limitations

Section 4 of the Settlement Agreement contains numerous restrictions on the types and source jurisdictions of wastes that can be brought to the ALRRF during specified time frames prior to and after the Expansion Date. Specifically:

- After the Expansion Date, the amounts of Sludges, Inert Waste and Special Waste from outside San Francisco and Alameda Counties is limited to 25,000 tons per year, and these materials may only originate within the nine Bay Area counties.
- Self-Hauled wastes (of all types) from Contra Costa County are limited to 25,000 tons per year.
- Materials brought for disposal may only originate from Alameda County, San Francisco, and San Ramon.

3.2.4.2 Natural Resource Protections and Reporting

The natural resource permits issued in connection with the ALRRF expansion contain over 80 explicit permit conditions, too many to enumerate here. In the near term, the following monitoring and reporting conditions are especially significant for the CMC:

- Every four years after the start of construction of FA 2 (which began in 2015), the CDFW is to receive a status report on the required periodic surveys of the Conservation Plan Area. The wildlife surveys focus on Western Burrowing Owl, San Joaquin Kit Fox, California Red-legged Frog, and California Tiger Salamander.

- Annual wetland monitoring reports are required by the Lake and Streambed Alteration Agreement, which was issued by the CDFW, for the first five years of operation of the wetland mitigations, i.e. the constructed pond.

- Reconnaissance survey reports for the Conservation Plan Area are also required by the CDFW. These include baseline and periodic surveys for sensitive wildlife species (see list above), and annual rangeland and general reconnaissance surveys. These are due on January 15 of the calendar year following the survey.

In 2022, we received and reviewed the 2021 Annual Progress Report. We will continue to request progress reports in the future.