DEPARTMENT OF PUBLIC WORKS
TROY K. TANIGAWA, P.E., COUNTY ENGINEER
BOYD GAYAGAS, DEPUTY COUNTY ENGINEER

DEREK S.K. KAWAKAMI, MAYOR
REIKO MATSUYAMA, MANAGING DIRECTOR

November 22, 2023

Mr. Glenn Haae, Acting Chief
State of Hawaii Department of Health
Environmental Management Division
Solid and Hazardous Waste Branch
P.O. Box 3378
Honolulu, Hawaii 96801-3378

RE: KEKAHA MUNICIPAL SOLID WASTE LANDFILL - PERMIT APPLICATION FOR SOLID WASTE MANAGEMENT FACILITY – PERMIT NUMBER (LF-0042-16)

Dear Mr. Haae,

The Solid Waste Management Permit for the Kekaha Municipal Landfill, located in Kekaha, Kaua'i, is set to expire on September 12, 2024. With this letter, the County of Kaua'i, Department of Public Works (County/DPW), Solid Waste Division transmits herein an application for a Solid Waste Management Permit renewal and modification for the proposed Kekaha Municipal Landfill Phase II Vertical Expansion project. The County/DPW is proposing a vertical expansion to extend Phase II upward from the currently permitted maximum elevation of 120 feet above mean sea level (msl) to a new permitted maximum elevation of 171.5 feet above msl. The proposed expansion would provide additional air space volume for placement of refuse while the siting, designing, and construction phases for a new landfill facility or other long term landfill capacity solutions are completed.

In accordance with the requirements of Hawaii Administrative Rules (HAR), Title 11, Chapter 58.1, this permit application has been prepared to include the following attachments:

- Attachment P-1 – Location Drawing and Site Plan
- Attachment P-2 – Public Interest Statement
- Attachment P-3 – Site Analysis, Engineering Report, Operations Manual, and Groundwater Monitoring Plan
- Attachment P-4 – Closure/Post-Closure Plan
- Attachment P-5 – Zoning Clearance Form
- Attachment P-6 – Property Owner Approval Form

The County/DPW, owner and operator of the Kekaha Municipal Landfill, certify that all information contained in this permit application package to renew and modify the Solid Waste Management Permit is accurate and true, to the best of our knowledge and belief. Should you have any questions, please contact Allison Fraley at (808) 241-4837. We look forward to your response.

Sincerely,

Troy Tanigawa, P.E.
County Engineer

4444 Rice Street, Suite 275 • Lihu'e, Hawai'i 96766 • (808) 241-4992 (b) • (808) 241-6604 (f)

STATE OF HAWAII
DEPARTMENT OF HEALTH
ENVIRONMENTAL MANAGEMENT DIVISION
SOLID AND HAZARDOUS WASTE BRANCH

PERMIT APPLICATION FOR SOLID WASTE MANAGEMENT FACILITY (NOT FOR PERMIT BY RULE)

This permit application was developed in accordance with the requirements of Hawaii Administrative Rules (HAR), Title 11, Chapter 58.1. **In order for this application to be considered complete, completed Attachments P-1 through P-6 and filing fee must accompany this application form.** Please read the general instructions before completing.

I. Type of Application (check all that apply)

- A. ____ Permit to establish a new facility
- B. X Permit to modify an existing facility
- C. ____ Permit renewal with no modification
- D. X Permit renewal with modification
- E. ____ Change in ownership
- F. ____ Other

Describe ____

II. Existing pollution control permits and/or variances issued to facility:

LF-0073-93 (Initial for Phase II, to 37 feet msl), LF-0027-98 (Vertical Expansion to 60 ft msl), LF-0101-04 (Vertical Expansion to 85 ft msl), LF-0053-09 (Cell 1 Lateral Expansion of Phase II), LF-0052-13 (Vertical Expansion to 120 ft msl), LF-0042-16 (Phase II, Cell 2 construction)

III. General Information

A. Name and address of the owner of the solid waste facility:

County of Kauaʻi Department of Public Works Solid Waste Division
4444 Rice Street Moʻikeha Building, Suite 275
Līhuʻe, HI 96766 Telephone: (808) 241-4996

B. Name and address of the operator of the solid waste facility:

County of Kauaʻi Department of Public Works Solid Waste Division
4444 Rice Street Moʻikeha Building, Suite 275
Līhuʻe, HI 96766 Telephone: (808) 241-4996

C. Name and address of individual authorized to act for the owner and operator:

County of Kauaʻi Department of Public Works Solid Waste Division (Allison Fraley)
4444 Rice Street Moʻikeha Building, Suite 275
Līhuʻe, HI 96766 Telephone: (808) 241-4994

D. Name and address of landowner (If landowner is other than the owner/operator of the solid waste facility, include Attachment P-6):

____
____
____ Telephone: ____

E. Name and address of lessee, if appropriate:

_____

_____

_____Telephone:_____

F. Facility Name and Location:

Name: Kekaha Municipal Solid Waste Landfill

Address: 6900-D Kaumualii Highway

Lihue, HI 96766

Tax Map Key: 1-2-02: Por. 1

(if appropriate)

Latitude: 21 ° 59 ' 01 " N

Longitude: 159 ° 44 ' 52 " W

UTM Coordinates: Zone 4 East 422,800 North 422,800

G. Type of Facility (check all that apply)

1. Landfill
   - MSW (daily tonnage 250) X
   - C&D (daily tonnage_____) _____
2. Incinerator (daily tonnage_____) _____
3. Solid Waste Processing
   - Transfer Station (daily tonnage_____) _____
   - Recycling/materials recovery _____
   - Salvage _____
4. Reclamation Facility
   - Composting _____
   - Remediation _____
5. Special Waste
   - Special waste landfill _____
   - Medical waste _____
   - Foreign waste _____
   - Other Non-Specified Technology _____
   - Please briefly explain _____

     _____
6. Waste Treatment/Processing/Storage for Disposal _____

IV. Normal Operating Schedule

A. Shifts Worked: HOURS OF DAY

1. From: 08:00 To: 16:00
2. From:_____ To:_____
3. From:_____ To:_____

B. Days per week: 7

C. Weeks per year: 52

D. Operation is seasonal or irregular, describe:

_____

V. For Permit Renewals and Modifications: Is the existing facility in compliance with Hawaii Revised Statutes (HRS) 342G, 342H and 342I; and Hawaii Administrative Rules (HAR), Title 11, Chapter 58.1, "Solid Waste Management Control"?

Yes__X__ No_____

If the existing facility is not in compliance with HRS 342G, H and/or I; and/or HAR, Title 11, Chapter 58.1, "Solid Waste Management Control", provide a detailed implementation plan as an attachment to the application. The implementation plan should include but is not limited to areas of noncompliance, reason for noncompliance, proposed actions towards achieving compliance, and implementation schedule, as an attachment to the application.

VI. Certification by owner and operator:

We, Troy Tanigawa (name), County Engineer (title) (owner)

and _____ (name), _____ (title) (operator)

certify that we have knowledge of the facts hereby submitted and that the same are true and correct to the best of our knowledge and belief, and that all information not identified as confidential in nature shall be treated by the Department of Health as public record. We further state that we will assume responsibility for the construction, modification, operation, maintenance, closure and post-closure of the facility in accordance with Hawaii Revised Statutes, 342G, H and I; and Hawaii Administrative Rules, Title 11, Chapter 58.1, and any permit issued thereof. As co-permittees, we understand that we share joint and several liability for compliance with aforementioned statutes, regulations, and permits.

If the owner/operator is a partnership or group other than a corporation or a county, one individual who is a member of the group shall sign the application. If the applicant is a corporation or a county, an officer of the corporation, general manager of the facility, or an authorized representative of the county shall sign the application.

Date: 11/30/23 Owner:
Signature: _____
Title: County Engineer
Company Name: County of Kauai, Dept. of Public Works
Address: 4444 Rice Street Mo'ikeha Building, Suite 275
Telephone: (808) 241-4994

Date: _____ Operator:
Signature: _____
Title: _____
Company Name: County of Kauai, Dept. of Public Works
Address: 4444 Rice Street Mo'ikeha Building, Suite 275
Telephone: (808) 241-4994

DO NOT WRITE BELOW ----- FOR AGENCY USE ONLY

VII. Date application received:_____

VIII. Received by:_____

IX. Application number:_____

X. Evaluating Official:_____

XI. Filing fee attached: Yes_____ No_____

XII. Plans and specifications attached: Yes_____ No_____

Attachment P-1	Yes_____	No_____
Attachment P-2	Yes_____	No_____
Attachment P-3	Yes_____	No_____
Attachment P-4	Yes_____	No_____
Attachment P-5	Yes_____	No_____
Attachment P-6	Yes_____	No_____

XIII. Action on application: Approved:_____
Disapproved:_____
Conditional Approved:_____

XIV. Date of action on application:_____

XV. Permit number:_____

INSTRUCTIONS FOR COMPLETING THE FORMS:
ATTACHMENTS P-1 THROUGH P-6

Provide the information specified in the forms, Attachments P-1 through P-6. Each form is described below.

☒ **Attachment P-1, Location Drawing and Site Plan**. This application packet includes eight (8) different versions of Attachment P-1, based on the type of facility you plan to operate. Choose the Attachment P-1 that corresponds to your facility, and submit drawings that show the information specified. The 8 different versions are for:

- ☒ **Attachment P-1(A):** Landfill facility (municipal solid waste / construction & demolition waste / special waste)
- ☐ **Attachment P-1(B):** Solid waste incineration and refuse-derived fuel processing facility
- ☐ **Attachment P-1(C):** Transfer station facility
- ☐ **Attachment P-1(D):** Recycling / salvage materials recovery facility
- ☐ **Attachment P-1(E):** Composting facility
- ☐ **Attachment P-1(F):** Remediation facility
- ☐ **Attachment P-1(G):** Medical / foreign waste treatment and disposal facility
- ☐ **Attachment P-1(H):** Waste treatment/processing/storage for disposal facility

If your facility is comprised of more than one of the above categories, your application should clearly state this information. In addition, the location drawing and site plan should include the requested information for all applicable categories.

☒ **Attachment P-2, Public Interest Statement**. The information specified on Attachment P-2, Public Interest Statement must be provided by all applicants.

☒ **Attachment P-3, Site Analysis, Facility Design, Operations Plan, and Groundwater Monitoring Plan (if applicable).** This application packet includes 10 different versions of Attachment P-3, based on the type of facility you plan to operate. Choose the Attachment P-3 that corresponds to your facility, and submit the information specified on that form. The 10 different versions are for:

- ☒ **Attachment P-3(A1):** Municipal solid waste landfill facility
- ☐ **Attachment P-3(A2):** Construction & demolition waste landfill facility
- ☐ **Attachment P-3(A3):** Special waste landfill facility
- ☐ **Attachment P-3(B):** Solid waste incineration and refuse-derived fuel processing facility
- ☐ **Attachment P-3(C):** Transfer station facility
- ☐ **Attachment P-3(D):** Recycling / salvage materials recovery facility
- ☐ **Attachment P-3(E):** Composting facility
- ☐ **Attachment P-3(F):** Remediation facility
- ☐ **Attachment P-3(G):** Medical / foreign waste treatment and disposal facility
- ☐ **Attachment P-3(H):** Waste treatment/processing/storage for disposal facility

INSTRUCTIONS FOR COMPLETING THE FORMS:
ATTACHMENTS P-1 THROUGH P-6

If your facility is comprised of more than one of the above categories, your application should clearly state this information. In addition, the submission should include the requested information for all applicable categories.

☐ **Supplement to Attachment P-3, For New Innovative Technologies Facility**. The information on this form, Supplement to Attachment P-3, should be provided with any permit applications for the use of new innovative technologies in the treatment and disposal of solid waste. This form is only required if you have a new innovative technology, e.g. gasification, plasma.

☒ **Attachment P-4, Closure Plan.** This application packet includes two (2) different versions of Attachment P-4, based on the type of facility you plan to operate. Choose the Attachment P-4 that corresponds to your facility, and submit the required information. The two different versions are for:

- ☒ **Attachment P-4(A):** Closure and post-closure plan for landfill facility (municipal solid waste/ construction & demolition waste /special waste)
- ☐ **Attachment P-4(B)**: Closure plan for:
  - Solid waste incineration and refuse-derived fuel processing facility,
  - Transfer station facility,
  - Recycling / salvage materials recovery facility,
  - Composting facility,
  - Remediation facility,
  - Medical / foreign waste treatment and disposal facility,
  - Waste treatment/processing/storage for disposal facility.

If your facility is comprised of a landfill and another non-landfilling type of operation, provide the information indicated on both of the above Attachment P-4s.

☒ **Attachment P-5, Zoning Clearance Form**. A completed Attachment P-5, Zoning Clearance Form, must be provided by all applicants.

☒ **Attachment P-6, Property Owner Approval Form**. A completed Attachment P-6, Property Owner Approval Form, must be provided by all applicants when the property owner is other than the facility's owner/operator.

Attachment P-1
Location Drawing and Site Plan

ATTACHMENT P-1 (A)
LOCATION DRAWING AND SITE PLAN

LANDFILL FACILITY (MSW / C&D WASTE / SPECIAL WASTE)
SOLID WASTE PERMIT APPLICATION

The following facility drawings shall be submitted, drawn to a reasonable scale and showing the following information (show north arrow and scale drawing):

1. Location Drawing(s)

Provide location drawing(s) indicating the property involved, topographic data, the zoning of the property, and the outline of all structures, access, and fences. Identify property lines plainly. Indicate the location of the property and equipment in relation to nearby streets and all adjacent properties. The location drawing should also identify the name, nature of business, and zoning of all properties adjacent to the applicant's property lines (Private residences may be identifies as residences, unless they are also used as a place of business).

Using USGS Quadrangle Maps, identify all drainage systems and bodies of surface or marine waters, or other sensitive environmental areas within 500 feet of the property lines; and any active groundwater resources with 1000 feet of the facility.

2. Site Plan

Provide a site plan identifying property lines, all solid waste activities, structures and equipment on the property, ingress/egress to the solid waste operations, and vehicle queing area. Locate waste screening, storage and disposal areas; environmental control systems (i.e. ditches, basins, monitoring systems); and maintenance area. Indicate limits of proposed permitted limit of waste disposal, limits of currently placed waste, and locations of special waste disposal areas (i.e. animal carcasses, asbestos). If the facility is a municipal solid waste management facility, also indicate the limits of waste placed prior to October 9, 1993. If the facility is a construction and demolition waste landfill, also indicate the limits of waste placed prior to January 13, 1994.

LEGEND

- Approximate Extent of the Proposed Vertical Expansion
- TMK Parcel Boundary
- Phase I Limit
- Phase II Limit
- Cell 1 Limit
- Cell 2 Limit

REFERENCE MAP

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

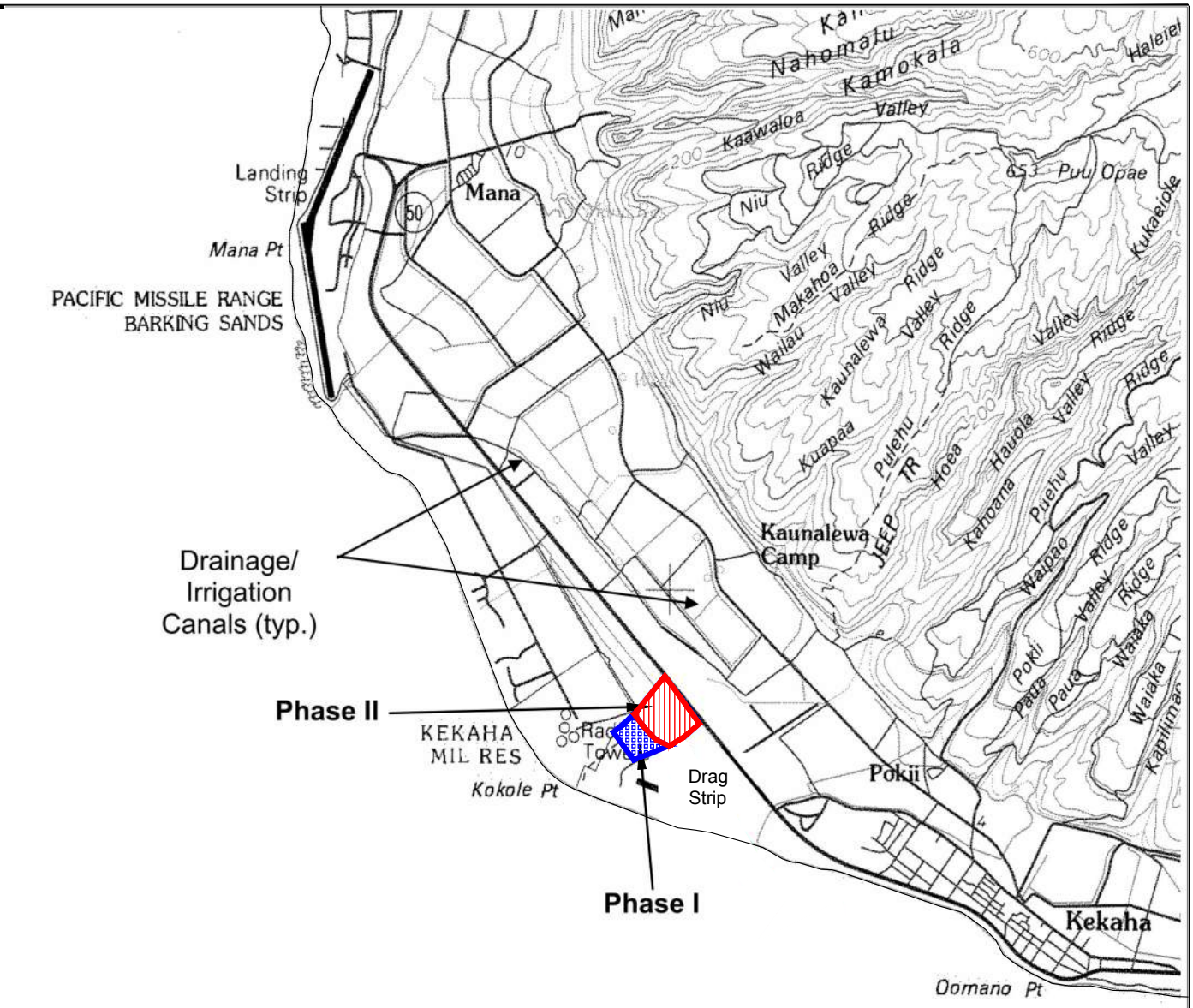
DATE: NOV. 2023

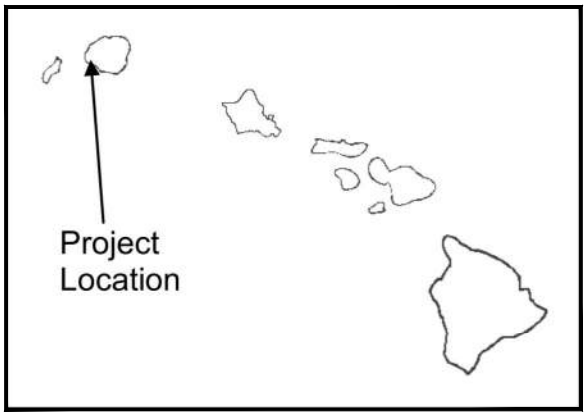
COUNTY OF KAUAI - KEKAHA MUNICIPAL SOLID WASTE LANDFILL

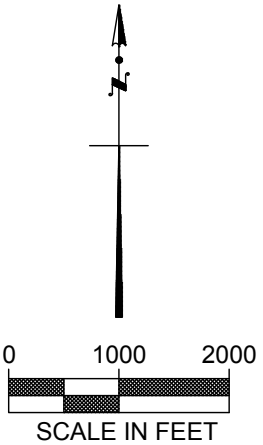
SITE LOCATION MAP

FIGURE 1

G:\dwg\Kauai County\Kekaha Vertical Expansion\CAD\SheetFiles\Figures\Figure 1 Site Location Map







MAP SOURCE: AECOM, 2017 (USGS: KEKAHA QUADRANGLE, 7.5 MIN SERIES)

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

KEKAHA MUNICIPAL SOLID WASTE LANDFILL

NEARBY WATERWAYS

FIGURE 2

G:\DWG\KAUAI COUNTY\KEKAHA VERTICAL EXPANSION\CAD\SHEETFILES\FIGURES\FIGURE 2 NEARBY WATERWAYS.DWG 11/28/2023 2:04 PM

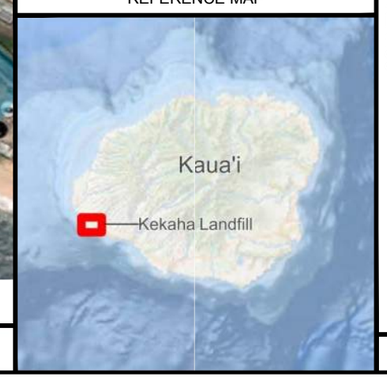
LEGEND

	Land Owner	User
A	State of Hawaii (DLNR)	County of Kauai
B	State of Hawaii (DLNR)	Hawaii National Guard
C	State of Hawaii (HDOA)	Syngenta Seed
D	State of Hawaii (ADC)	Various
E	State of Hawaii (HDOA)	Kekaha Agriculture Park
F	U.S. Federal Government	Department of Defense
G	U.S. Federal Government	U.S. Lighthouse Service
H	State of Hawaii	Kauai Raceway Park

1:12,000 WGS 1984 UTM Zone 4N

0 0.25 0.5 1 Miles

REFERENCE MAP



TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

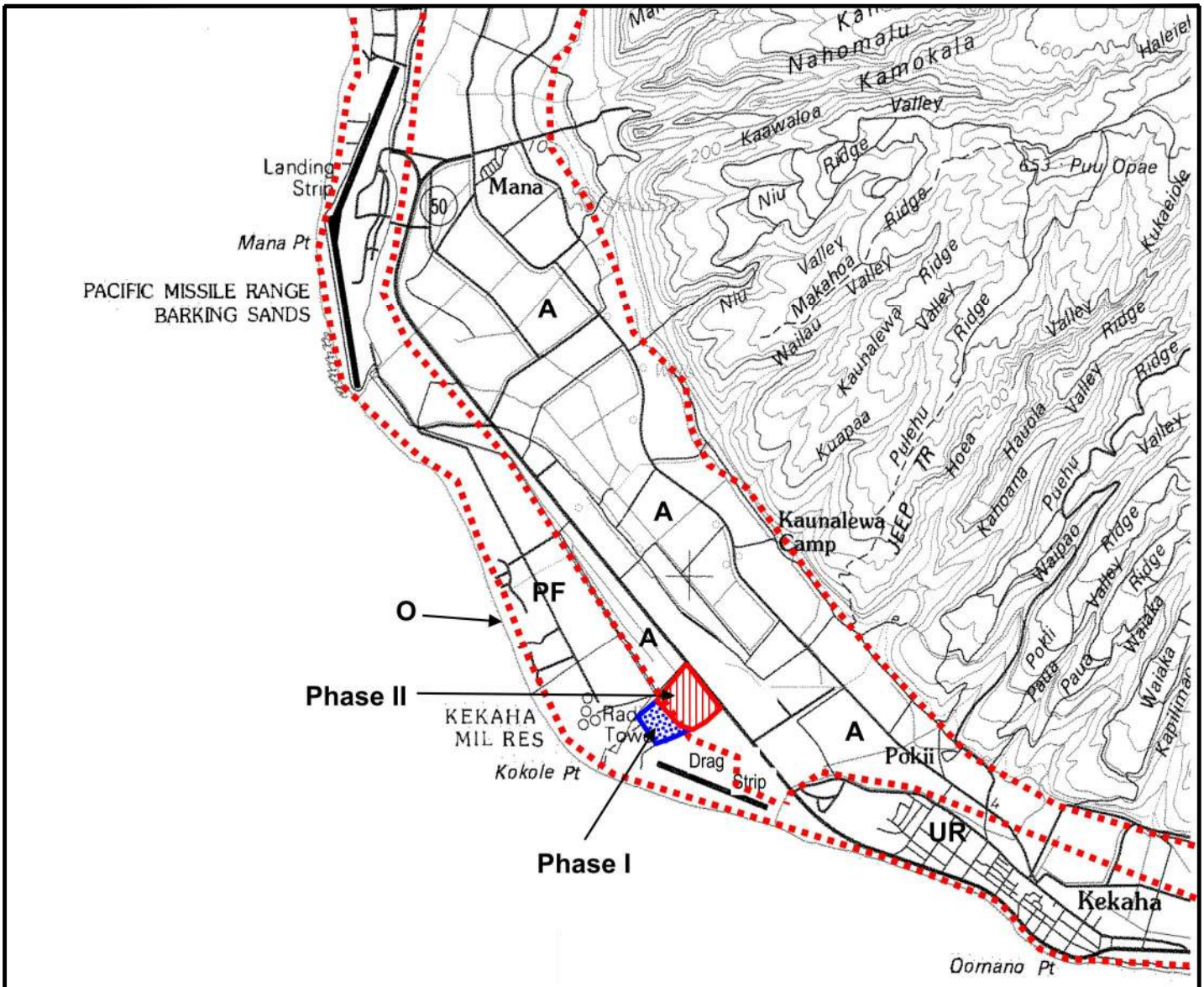
DATE: NOV. 2023

COUNTY OF KAUAI - KEKAHA MUNICIPAL SOLID WASTE LANDFILL

LAND OWNERSHIP AND USER

FIGURE 3

G:\dwg\Kauai County\Kekaha Vertical Expansion\CAD\SheetFiles\Figures\Figure 3 Land Ownership And User



MAP SOURCE: AECOM, 2017 (USGS: KEKAHA QUADRANGLE, 7.5 MIN SERIES)

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

KEKAHA MUNICIPAL SOLID WASTE LANDFILL

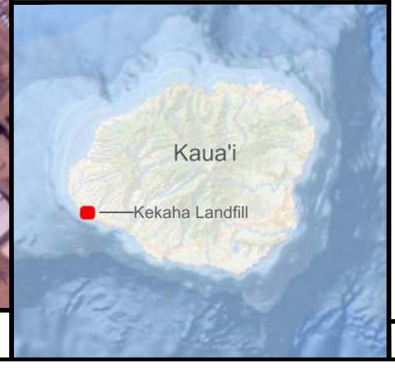
COUNTY OF KAUA'I LAND USE DISTRICTS

FIGURE 4

LEGEND

- Cell 1 Limit
- Cell 2 Limit
- Phase II Limit
- Phase I Limit
- TMK Parcel Boundary
- Approximate Extent of the Proposed Vertical Expansion
- Special Management Area
- County Agriculture Zone

REFERENCE MAP



1:4,000

WGS 1984 UTM Zone 4N

0 0.13 0.25 Miles

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

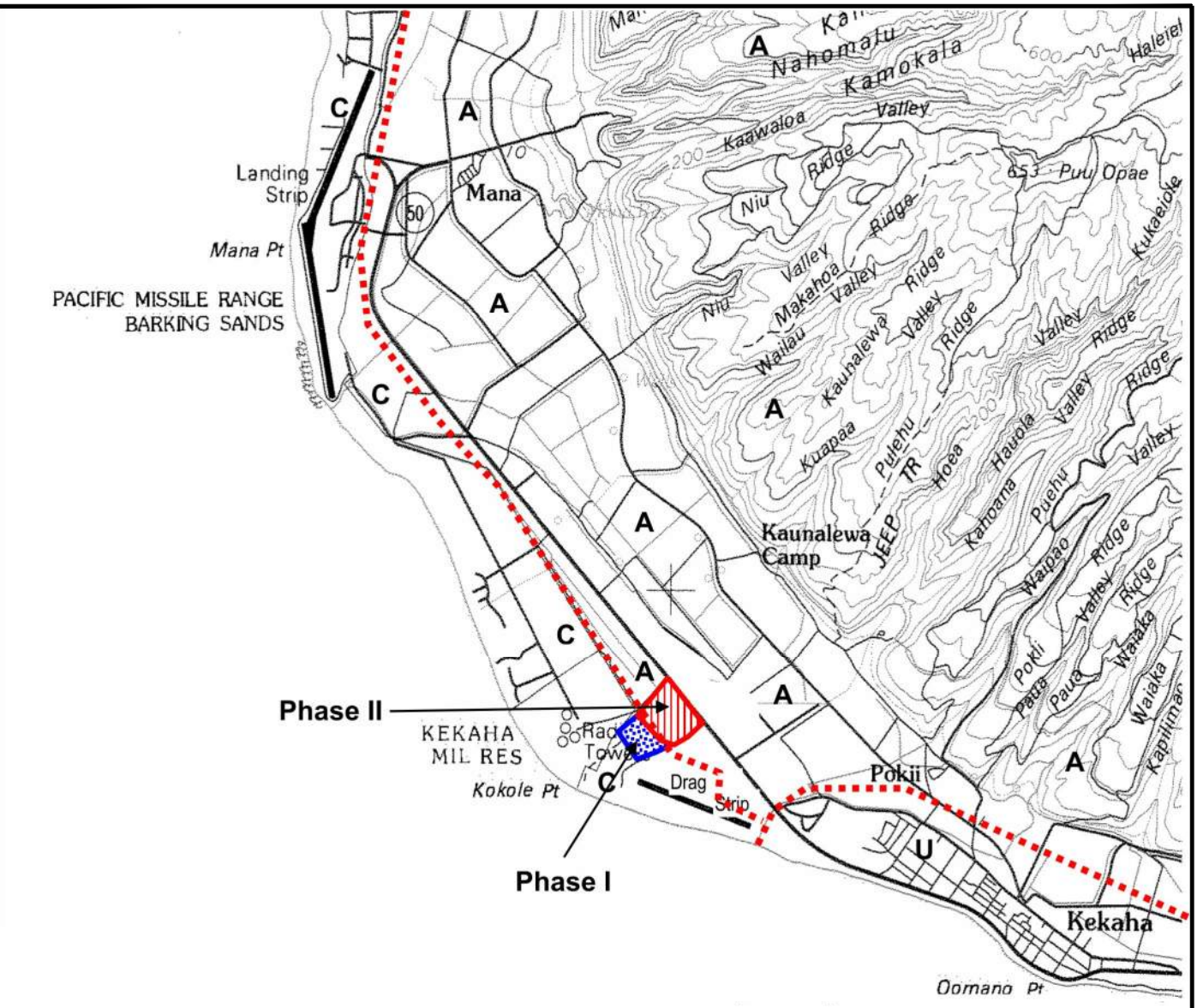
DATE: NOV. 2023

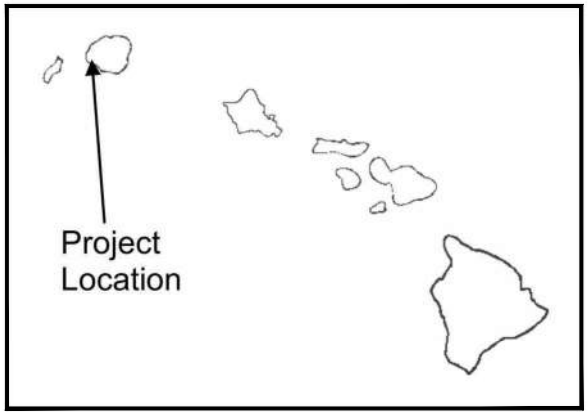
COUNTY OF KAUAI - KEKAHA MUNICIPAL SOLID WASTE LANDFILL

COUNTY ZONING AND SPECIAL MANAGEMENT AREA

FIGURE 4A

G:\dwg\Kauai County\Kekaha Vertical Expansion\CAD\SheetFiles\Figures\Figure 4A CountyZoning And Special Management Area





Legend

- **A Agricultural**
- **C Conservation**
- **U Urban**
- **Land Use District Boundary**
- **Special Permit (issued May 28, 1993)**

N

0 1000 2000

SCALE IN FEET

MAP SOURCE: AECOM, 2017 (USGS: KEKAHA QUADRANGLE, 7.5 MIN SERIES)

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

KEKAHA MUNICIPAL SOLID WASTE LANDFILL

STATE LAND USE DISTRICTS

FIGURE 5

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

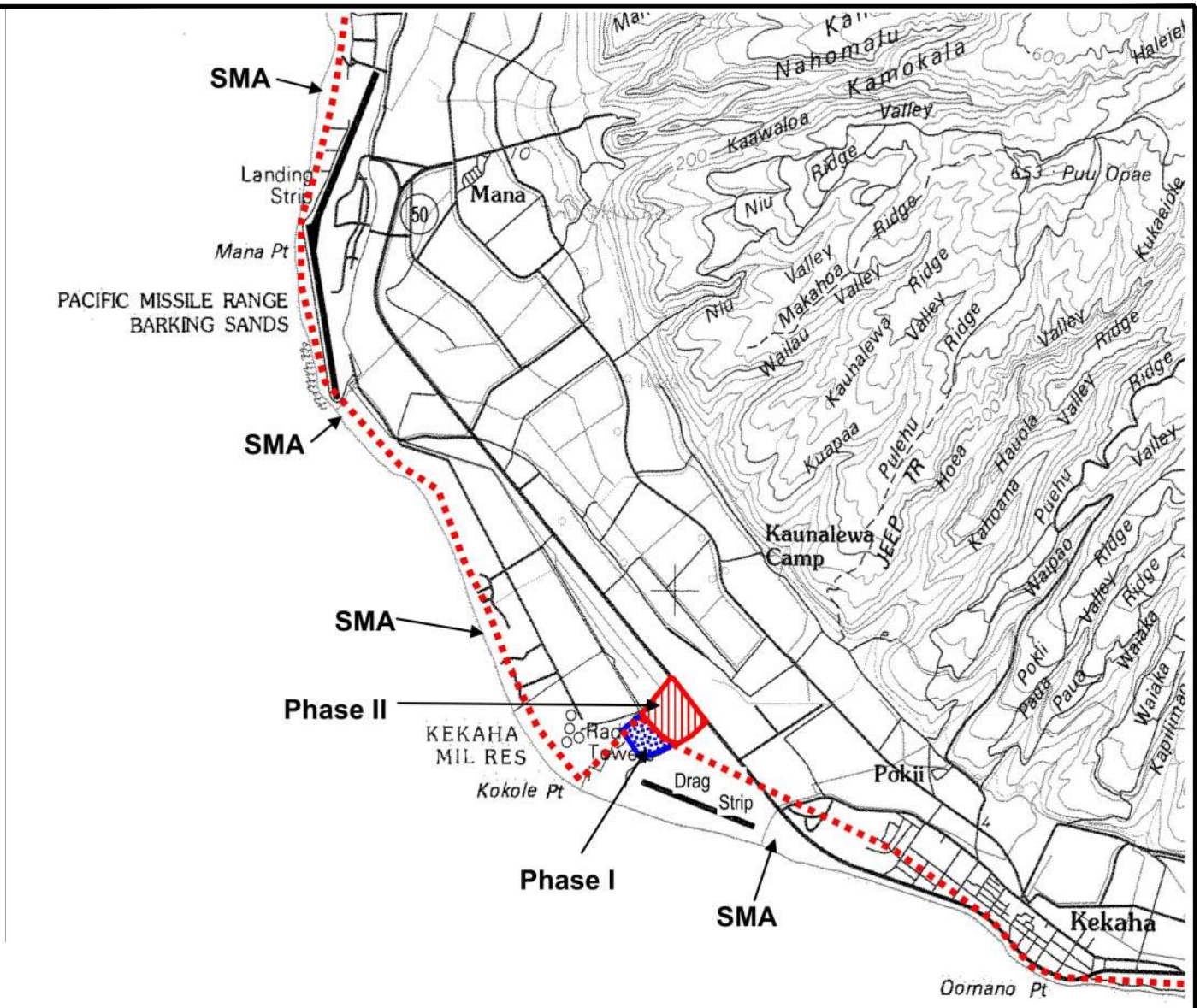
DATE: NOV. 2023

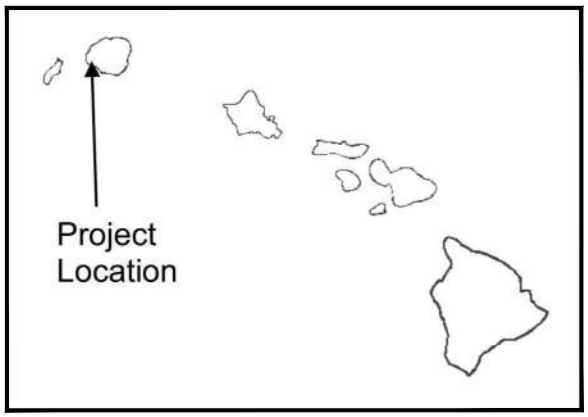
COUNTY OF KAUAI - KEKAHA MUNICIPAL SOLID WASTE LANDFILL

STATE LAND USE DISTRICTS (DETAILED CLOSE UP)

FIGURE 5A

G:\dwg\Kauai County\Kekaha Vertical Expansion\CAD\SheetFiles\Figures\Figure 5A Land Use Districts (Detailed Close Up)





Legend

SMA **Special Management Area**

SMA Boundary

0 1000 2000

SCALE IN FEET

MAP SOURCE: AECOM, 2017 (USGS: KEKAHA QUADRANGLE, 7.5 MIN SERIES)

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KEKAHA MUNICIPAL SOLID WASTE LANDFILL

SPECIAL MANAGEMENT AREA

FIGURE 6

G:\DWG\KAUAI COUNTY\KEKAHA VERTICAL EXPANSION\CAD\SHEETFILES\FIGURES\FIGURE 6 SPECIAL MANAGEMENT AREA.DWG 11/28/2023 1:46 PM

EXISTING PHASE I

EXISTING PHASE II, CELL 1

EXISTING PHASE II, CELL 2

EXISTING PHASE II

SITE ENTRANCE / EXIT

INFILTRATION BASIN

SCALE HOUSE / INITIAL WASTE SCREENING AREA

LEACHATE EVAPORATION POND

PUBLIC DROP-OFF AREA

OFFICE

MAINTENANCE BUILDING

Kaumualii Hwy

State Hwy 50

Rte 50

Rte 5

0 120 240

SCALE:1"= 240'

LEGEND

- APPROXIMATE LIMIT OF PROPERTY LINE
- LIMIT OF REFUSE
- CELL LIMIT
- GRADE BREAK
- UNPAVED ROAD / BENCH
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PERMIT FINAL COVER MAJOR CONTOUR
- PERMIT FINAL COVER MINOR CONTOUR
- DRAINAGE STRUCTURE
- HORIZONTAL LIMITS OF VERTICAL EXPANSION
- FENCE
- INGRESS / EGRESS
- APPROXIMATE EXTENTS OF INFILTRATION DITCH
- PHASE I LIMIT / PRE-1993 WASTE LIMITS
- PHASE II LIMIT

NOTES:

1. TOPOGRAPHIC CONTOURS PREPARED BY WALKER ASSOCIATES. DATE OF PHOTOGRAPHY: OCTOBER 2022.
2. HORIZONTAL DATUM IS BASED ON NAD83 (1986) HAWAII STATE PLANE ZONE 4. VERTICAL DATUM BASED ON LOCAL TIDAL.

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

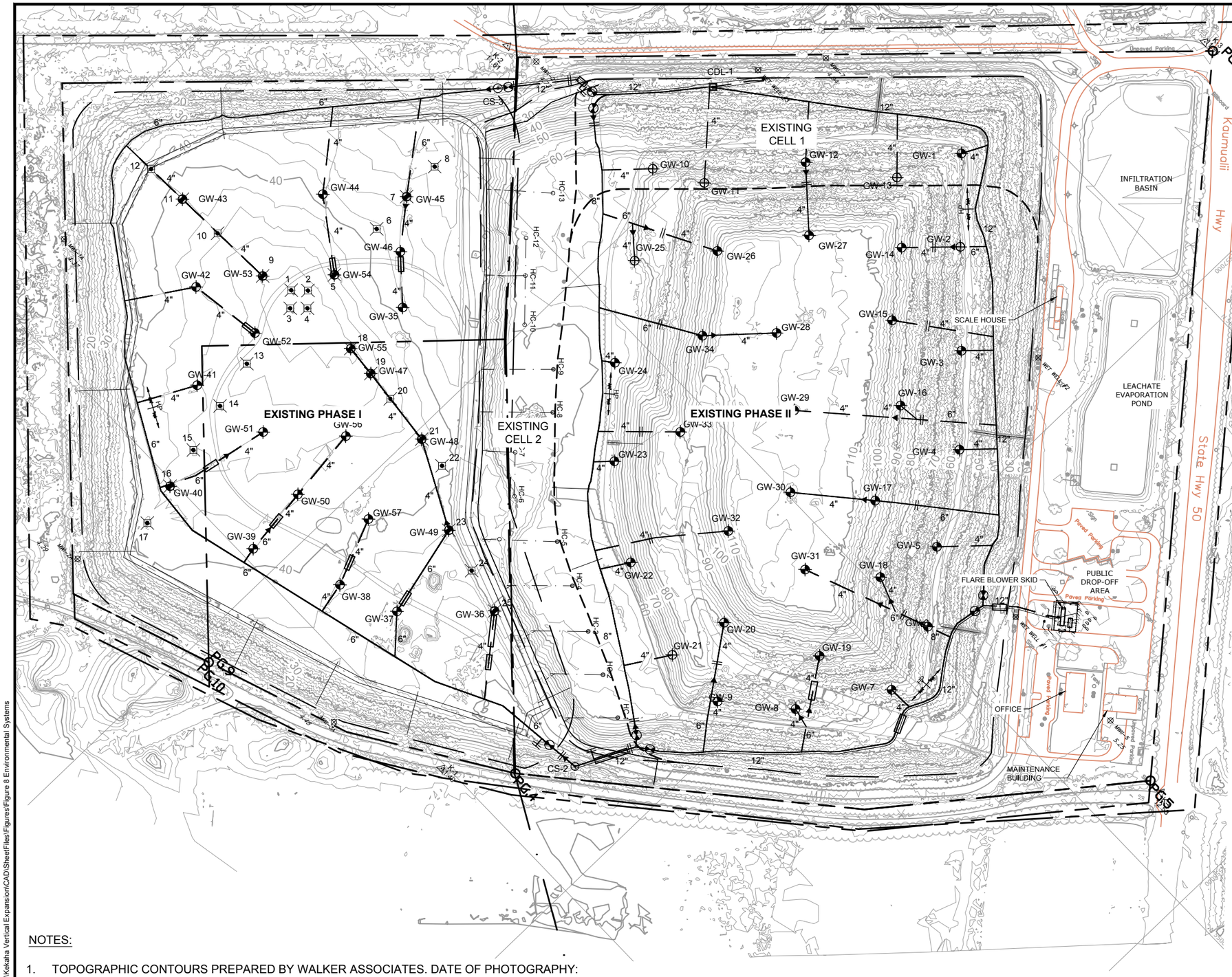
DATE: NOV. 2023

COUNTY OF KAUAI - KEKAHA MUNICIPAL SOLID WASTE LANDFILL

SITE PLAN

FIGURE 7

G:\dwg\Kauai County\Kekaha Vertical Expansion\CAD\SheetFiles\Figures\Figure 7 Site Plan



0 120 240

SCALE:1"= 240'

LEGEND

- APPROXIMATE LIMIT OF PROPERTY LINE
- LIMIT OF REFUSE
- EXISTING CELL LIMIT
- GRADE BREAK
- UNPAVED ROAD / BENCH
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- MWI-3A 4.48 — GROUNDWATER MONITORING WELL & WSEL
- WET WELL #2 — WET WELL
- HP — HIGH POINT IN HEADER
- LANDFILL HORIZONTAL COLLECTOR WITH CLEANOUT RISER
- LANDFILL GAS COLLECTION BELOW GRADE HEADER/LATERAL
- CONDENSATE LINE
- CONDENSATE SUMP
- BLIND FLANGE
- FLANGE
- GW-30 — GAS EXTRACTION WELL
- VALVE
- REDUCER
- 18 GW-55 — EXISTING LANDFILL GAS VENT WITH WELLHEAD
- DRIPLEG
- EXISTING ROAD CROSSING
- 24 — EXISTING GAS VENT

NOTES:

1. TOPOGRAPHIC CONTOURS PREPARED BY WALKER ASSOCIATES. DATE OF PHOTOGRAPHY: OCTOBER 2022.
2. HORIZONTAL DATUM IS BASED ON NAD83 (1986) HAWAII STATE PLANE ZONE 4. VERTICAL DATUM BASED ON LOCAL TIDAL.

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DATE: NOV. 2023

COUNTY OF KAUAI - KEKAHA MUNICIPAL SOLID WASTE LANDFILL

ENVIRONMENTAL SYSTEMS

FIGURE 8

G:\dwg\Kauai County\Kekaha Vertical Expansion\CAD\SheetFiles\Figures\Figure 8 Environmental Systems

Attachment P-2

Public Interest Statement

ATTACHMENT P-2
PUBLIC INTEREST

SOLID WASTE PERMIT APPLICATION

Hawaii Revised Statutes (HRS), Chapter 342H, Section 4(c), *Solid Waste Pollution*, requires that the Director of Health approve permits only for those facilities that are in the public interest. This is in addition to those conditions for permit approval as contained in Hawaii Administrative Rules Chapter 11-58.1, *Solid Waste Management Control*. Therefore, the applicant shall submit information regarding the environmental implications of the proposed action, which shall include all relevant and feasible consequences of that action. This information must be submitted by the applicant in the form of a written discussion addressing each of the following major topics:

1. **Environmental impact of the proposed action.** Explain why the facility is in the public interest in terms of the need for the service; the population and area to be served; the characteristics, quantity and source of materials to be processed; the use and distribution of the processed materials and the method of processed residue disposal. Include discussions of the current waste management system, the environmental cost/benefits of the proposed action and the impacts on current and future land use.

2. **Any adverse environmental effects, which cannot be avoided, should the proposed action be implemented.** Discuss any potential impacts the facility may have on public health and the environment from items such as air emissions, leachate, drainage, vector attraction, fires, waste storage and processed residue disposal. Discuss how and to what extent those impacts on public health and the environment will be mitigated through the design and operation of the facility. Discuss plans for emergency operating procedures to protect public health and the environment from unplanned releases.

3. **Alternatives to the proposed action.** Discuss other known alternatives that could feasibly attain the same objective. Explain why they were rejected. Explain why the proposed action represents the Best Practical Technology (BPT). Particular attention must be focused on alternative actions that would reduce or avoid adverse environmental risk and provide a greater cost/benefit to the community. The analysis shall represent a comparative evaluation of the environmental benefits, costs and risks of the proposed action and support the conclusion that it represents BPT.

4. **The relationship between local short-term uses of the environment and the maintenance and enhancement of long-term productivity.** Discuss the effect the operation will have on the site and on the environment on a long-term basis. Discuss the ultimate use of land and surrounding areas as indicated by local zoning codes. Discuss how plans for emergency procedures, final site closure or other steps may mitigate the long-term effects of pollutants. Discuss the long-term impacts the project may have on other waste management alternatives.

5. **Any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.** Identify unavoidable impacts and the extent to which the proposed action makes use of non-renewable resources.

6. **Optimum balance between economic development and environmental quality.** Discuss whether the proposed action promotes the optimum balance between economic development and environmental quality.

7. **Consistency with the State Integrated Solid Waste Management Act (HRS 342G) and the County's Approved Integrated Solid Waste Management (ISWM) Plan.** Address the project's conformance with the State waste diversion goals and hierarchy. Discuss the project's impact on the State's current or proposed waste diversion efforts, and the County's overall integrated solid waste management plan.

8. **Public input relating to the impact of the facility on public health and the environment.** Address any requirements for public comment period or hearing under HRS Chapter 343 (Environmental Impact Statement) or local land use ordinances. The applicant should solicit public input on the proposed project. Public input may be solicited through the use public hearings, public informational meetings coordinated with the appropriate community boards or associations or other approved mechanisms. The location of the meetings should be held in the district in which the project will be located. A copy of the meeting minutes should be submitted to the Department as part of this solid waste permit application.

   For municipal solid waste management facilities, a minimum a 30-day public notice is required.

Attachment P-2 addresses the environmental implications of the proposed Kekaha vertical expansion in Phase II, including all relevant and feasible consequences of that action. An Environmental Assessment (EA) was submitted in August 2023 for the proposed vertical expansion in Phase II, and included a public meeting held in Kekaha on August 31, 2023. The EA will be finalized in December 2023 followed by publication of a Finding of No Significant Impact (FONSI).

1. Environmental impact of the proposed action.

Explain why the facility is in the public interest in terms of the need for the service and the population and area to be served; the characteristics, quantity and source of materials to be processed; the use and distribution of the processed materials and the method of processed residue disposal. Include discussions of the current waste management system, the environmental cost/benefits of the proposed action and the impacts on current and future land use.

The County has an island-wide system of solid waste collection and disposal that serves its resident and visitor populations. The two primary components of the Kaua‘i solid waste management system are the Kekaha Municipal Solid Waste Landfill (KLF) and refuse transfer stations. The County operates four refuse transfer stations, located in Hanalei, Kāpa‘a, Līhu‘e, and Hanapēpē, where solid waste is collected, sorted, and transferred to the appropriate location depending upon whether it is recyclable material, green waste, or municipal solid waste (MSW). The County also maintains island-wide neighborhood recycling centers. The KLF facility plays an essential role for the island of Kaua‘i by providing a site where MSW can be legally placed. Without the KLF, illegal disposal of municipal MSW would create health hazards from piles of garbage, increase rodent and insect populations and liability for landowners, and decrease property values. It would also result in unkempt areas that would profoundly alter the aesthetic quality of the island.

The KLF is situated on approximately 98 acres of land and is comprised of two distinct refuse fill areas identified as Phase I, approximately 33 acres, and Phase II, approximately 38 acres. Phase I began operations in 1953 and continued until operations ceased on October 8, 1993. Phase I has no liner system beneath the refuse as there was no requirement for one at that time. Phase II began operations on October 9, 1993 after the closure of Phase I. Phase II of the KLF was constructed to meet Resource Conservation and Recovery Act (RCRA) Subtitle D criteria and is currently the only active, permitted MSW landfill on the island of Kaua‘i.

KLF Phase II was initially permitted for a maximum elevation of 37 feet above mean sea level (msl). However, to accommodate waste generated by Hurricane Iniki in 1992, a vertical expansion was required and approved in 1998 raising the maximum fill elevation to 60 feet above msl. The first vertical expansion added an additional 6 years of use to the site. A second vertical expansion was subsequently required and approved in 2005 to raise the maximum fill elevation to 85 feet above msl. In 2010, a horizontal expansion of Phase II, designated Cell 1, was completed and began receiving waste in July of that year. A third vertical expansion of Phase II, including Cell 1, was approved in 2013 to raise the maximum fill elevation to 120 feet above msl. Another horizontal expansion for Phase II, Cell 2 was constructed in 2020. The current Phase II landfill (including the Cell 2 expansion) is expected to reach capacity in 2027.

The Phase II landfill containment system consists of a landfill liner, leachate collection system, and an evaporation pond. The base liner consists of a geosynthetic clay layer (bentonite [clay with high shrink-swell properties]) overlain by a geomembrane liner (60 millimeter thick high density polyethylene [HDPE]). Above the base liner, there is a 2-foot layer of sand containing perforated HDPE pipes at 100-foot intervals. These pipes direct leachate into collection manholes at the perimeter of the landfill unit. Leachate from these manholes is then directed via a pump station to the lined leachate evaporation pond. Sensors detect manhole leachate levels and automatically activate pumps when the leachate reaches a predetermined level. The leachate pond area covers 2 acres and is lined (bottom to top) with 6 inch compacted fill subbase, 60 mil DST geomembrane, GCL, 60 mil DST geomembrane, GCL, 60 mil DST geomembrane, 16 oz/sy cushion geotextile, 12 inch ops layer, 6 oz/sy filter geotextile, 2 inch granular protection layer. On the sideslope, a geocell system with granular fill replaces the ops/filter/protection layers. Two floating aerators are used to accelerate evaporation.

Garbage deliveries to the KLF are primarily delivered by approximately 30 commercial waste collection trucks on average each day. A few small loads are dropped off by residential and commercial self-haulers. Approximately 225 tons of waste is delivered per day.

Currently, daily operations require spreading the waste in 2-foot layers, with a typical slope of 5:1 (H:V), to a height of 10 feet, and maintaining a maximum working face of 100 feet by 75 feet. Filling near the surface of the final slopes, waste is placed at 3.5:1. The 2-foot layers are then compacted. To minimize exposure of the working face to the elements, the waste is covered with a geosynthetic tarp and/or soil. This cover helps to mitigate problems with odors, vectors, leachate, and windblown trash and complies with Hawaii Administrative Rules (HAR) Title 11, Chapter 58.1. The geosynthetic tarp is used as a temporary daily cover before the design grade is met, which helps to minimize soil use and maximize the landfill capacity. Soil for daily cover will come from multiples sources during the remaining life of the site.

The purpose of the proposed action is to vertically expand Phase II, thereby prolonging the life of the KLF as it is the only permitted MSW landfill on the island of Kaua‘i. The need arises because Phase II is projected to reach capacity in 2027, at which time the island of Kaua‘i would be without a permitted landfill for the disposal of MSW. The lack of a permitted MSW landfill would result in adverse effects on the environment and public health. Waste would not be properly disposed of and unsanitary conditions would propagate vectors and pose a serious risk to public health and the environment.

Proposed Action. The proposed action consists of vertically expanding the current Phase II fill area to a maximum height of 171.5 feet above msl. The Phase II vertical expansion would provide the KLF with capacity for approximately 408,000 cubic yards of additional net airspace. Based on the current landfill waste mass density, the proposed Cell 2 expansion is expected to add approximately 2 to 4 years to the useful site life of Phase II, depending on waste intake rates and waste diversion strategies.

The proposed Phase II expansion is the preferred alternative for continuing to provide for safe disposal of waste on Kaua’i for several reasons:

- The existing leachate evaporation pond does not require any modifications as no additional leachate will be generated by the vertical expansion and surface water management systems will only require minimal modifications.

- There will be no new cell construction nor is there any new ground to be disturbed. Therefore, the overall cost and environmental impacts of the expansion would be minimal. Any adverse impacts on flora, fauna, and potential archaeological/cultural sites will therefore be avoided.

- It will provide additional time for the County to pursue the following expansion options they are currently analyzing to add landfill capacity in the Kekaha LF Phase I fill area:

    - Reconsolidation of a portion of the existing waste in Phase I to provide adequate base grades for construction of an overliner with a leachate collection and removal system to provide additional vertical airspace above Phase I.

    - Excavation of all waste in Phase I, mining of soil and recyclables, and disposal of the residual in Phase II to make way for construction of a new base liner and leachate collection and removal system on native soil to provide additional airspace in the Phase I area.

- The alternative of siting a new landfill facility would cost significantly more and could have adverse impacts on existing flora, fauna, and potential archaeological/cultural areas associated with a new site.

2. Any adverse environmental effects, which cannot be avoided, should the proposed action be implemented.

Discuss any potential impacts the facility may have on public health and the environment from items such as air emissions, leachate, drainage, vector attraction, fires, waste storage and processed residue disposal. Discuss how and to what extent those impacts on public health and the environment will be mitigated through the design and operation of the facility. Discuss plans for emergency operating procedures to protect public health and the environment from unplanned releases.

Air Emissions. The proposed vertical expansion of Phase II would operate utilizing the existing gas collection and control system (GCCS) to minimize air emissions at KLF. KLF's existing GCCS consists of a collection network of HDPE pipes, gas collection devices (i.e., gas wells), and an enclosed landfill gas flare that is designed to minimize and control emissions. Due to the additional waste tonnage to be accepted as a result of the Proposed Action, the total landfill gas generation rate and landfill gas collected in the GCCS would increase. Tetra Tech, Inc. (Tetra Tech), conducted an engineering analysis of the GCCS for the proposed project; the analysis concluded that the existing GCCS is adequately sized to accommodate the anticipated increase in landfill gas flow (Tetra Tech 2022).

Existing GCCS infrastructure located within the vertical expansion footprint would be impacted by the additional fill. To address this, two phases of improvements would maintain gas collection as the vertical expansion is constructed (Tetra Tech 2022). The first phase would occur prior to placement of fill and would include raising the existing vertical landfill

gas extraction wells in areas where a relatively minimal amount of fill is anticipated and, where more significant amounts of fill are anticipated, relocating existing vertical landfill gas extraction wells to outside of the limits of the vertical expansion. The second phase would occur when the final fill limit is reached (or just before) and would include the addition of vertical landfill gas extraction wells and related lateral piping to provide landfill gas collection for new waste placed within the vertically expanded area. The proposed GCCS modifications would tie into the existing GCCS.

Odor Control*.* The odor control program at KLF Phase II consists of identification and special handling of odorous wastes, effective application of daily and intermediate cover, and management of LFG, as described below.

Management of Odorous Wastes. Wastes capable of creating offsite odor problems receive special handling to minimize potential odor problems. Odorous waste includes sewage sludge and grits; dead animals; grease trap pumping waste; and food wastes. At the scale house, these wastes are designated as odorous loads and directed to a designated part of the active disposal area. A bulldozer excavates a trench or pit in previously placed solid waste known to contain no odorous special wastes and the odorous load is discharged into the pit. The bulldozer immediately covers the odorous material with solid waste excavated to create the pit and compacts it firmly. Daily cover soil is placed and compacted above the solid waste. These practices would be continued with implementation of the proposed action. Therefore, with respect to odors, the proposed expansion is not expected to significantly change the existing environmental impacts.

Daily Cover Soil. The most effective means of preventing odors from general solid waste activities is by application of daily and intermediate cover soil over the MSW. A minimum of 6 inches of soil material or Alternative Daily Cover (ADC) is placed daily on all waste fills. Per the Department of Health (DOH) Solid Waste Management Permit, the KLF is approved to use tarps as ADC for a period not to exceed 24 hours. Intermediate cover, consisting of an additional 6 inches of soil material, further controls odors on a long-term basis. Regular inspection and maintenance of cover to eliminate cracks and fissures in cover soil is routinely conducted as an important element of odor control. These practices would be continued with implementation of the proposed action, and therefore the proposed expansion is not expected to significantly change the existing environmental impacts.

Landfill Gas Control. Odorous conditions at landfills are often associated with uncontrolled LFG. The existing GCCS and the planned modifications to the system for the Phase II vertical expansion discussed above will continue to minimize potential odors from LFG.

Fugitive Dust. KLF Phase II personnel are responsible for preventing the emissions of excessive dust from the facility. The site's water truck is used during dry weather to spray water on access roads and other areas generating wind-blown dust. The volume of water and frequency of spraying is increased as needed during particularly dry and windy conditions. These practices would be continued with implementation of the proposed action. Therefore, with respect to fugitive dust, the proposed expansion is not expected to significantly change the existing environmental impacts.

Due to ongoing landfill practices that effectively mitigate dust and odors, and the continued operation and planned modifications to the GCCS, the proposed Phase II vertical expansion is not expected to significantly change the existing environmental impacts with respect to air emissions.

Leachate. Currently, the KLF Phase II area has a leachate management system consisting of a landfill liner, leachate collection system, collection sumps, and an evaporation pond to prevent groundwater contamination from the leachate. No additional leachate will be generated by the vertical expansion as the additional waste will be placed atop the existing liner and LCRS, with no additional lateral expansion proposed. The leachate evaporation pond has the capacity to treat leachate from the existing Phase II lined area. The proposed expansion is not expected to significantly change existing leachate-related environmental impacts.

Drainage. Runoff from the top of the closed Phase I flows radially off the landfill and is collected at a series of inlet pipe slope drains located around the perimeter of the landfill. These drains discharge to an infiltration ditch surrounding the closed Phase I landfill.

Phase II contains the active landfill area and site facilities (including the scale house, waste drop-off bins, maintenance shop, and offices). The active tipping face is segregated from the remainder of the area by an earthen berm. Drainage from the tipping face is collected in the leachate collection system.

Stormwater from the fill area is currently managed at the KLF by controlled grading on the surface of the landfill and by maintaining an engineered system of diversion berms and benches which convey runoff to riprapped down drains (i.e., flumes). The down drains convey runoff to infiltration ditches around the perimeter of the landfill and to an existing stormwater infiltration basin. Surface water drainage features would need to be modified slightly (i.e., extended upwards) to accommodate the increase in side slope lengths and corresponding runoff flow velocities due to the proposed vertical expansion. The upper end of the down drains in each of the four existing drainage areas affected by the vertical expansion will be extended upward as necessary and tied into the proposed diversion berms and benches from the proposed vertical expansion. The proposed surface water management system would tie into the existing permitted system at the limits of the vertical expansion. No changes to the existing perimeter infiltration ditches or stormwater infiltration basin are warranted or proposed as total quantities of run-off will not increase due to the vertical expansion.

Runoff from paved parking areas is collected and discharged to an infiltration ditch along the landfill access road. Runoff from the maintenance building area and administrative parking lot pass through oil/water separators prior to discharge to the septic system drain field for onsite wastewater treatment.

The existing surface- and storm-water management system has sufficient capacity to accommodate the proposed Phase II vertical expansion. Therefore, with respect to drainage, the proposed expansion is not expected to significantly change the existing environmental impacts.

Vector Attraction Prevention and Waste Storage. Waste placed in the KLF is covered with a geosynthetic tarp and/or soil on a daily basis. The daily cover helps to mitigate problems with odors, vectors, leachate, and windblown trash. Since waste placed in the landfill would continue to be covered, vector attraction will continue to be minimized. The proposed vertical expansion will not extend the current landfill footprint, and there would be no significant changes to landfill operations or impacts to the surrounding community and the environment. Therefore, with respect to vectors, the proposed expansion is not expected to significantly change the existing environmental impacts.

Visual Resources. Visual and scenic resources were evaluated in the *Environmental Assessment, Kekaha Municipal Landfill Phase II Vertical Expansion* (Tetra Tech 2023). Potential short- and long-term impacts to visual resources expected from the implementation of the Proposed Action are discussed below.

The County proposes to vertically expand Phase II by 51.5 ft to a maximum height of 171.5 ft above msl. The Phase II landfill is currently permitted to receive waste up to 120 ft above msl and is currently in active use for landfilling operations. During operations, the Proposed Action would look substantially the same as existing landfill operations. Only one landfill cell would be open and operational at a time and debris would be spread, compacted, and covered each night with daily cover. Under the Proposed Action, the Phase II landfill would continue to appear as an earthen mound.

The line-of-sight to Phase II is currently partially visible from both the northwest bound and southeast bound direction of Kaumualiʻi Highway and from the shoreline southeast of the landfill. The shoreline is currently not visible from Kaumualiʻi Highway in the vicinity of the KLF due to intervening vegetation and the highway's distance from the shoreline. The maximum height of the facility would increase by 51.5 ft with the Proposed Action, thus potentially increasing visibility of the site from surrounding areas. No scenic resources or corridors have been identified at or in the vicinity of the KLF in either the Kauaʻi County General Plan (County of Kauaʻi 2018) or the West Kauaʻi Community Plan (County of Kauaʻi 2020). The existing KLF is not within a view plane that exhibits a high degree of intactness and does not block scenic landforms, scenic view planes, or shoreline views, as defined in the Kauaʻi County General Plan. The 51.5 foot increase to the maximum permitted height of the Phase II landfill (i.e. the Proposed Action) is not anticipated to cause a significant change in the existing view planes in the vicinity of the KLF and would not block scenic landforms, scenic view planes, or shoreline views, as defined in the Kauaʻi County General Plan and therefore, the Proposed Action does not conflict with County policies for the protection of scenic resources.

After the landfill is closed, the landfill surface would be covered with an engineered cap and soil and then planted with vegetation. Closure plans for the Proposed Action would include a landscaping and revegetation program for revegetation of the landfill base and slopes and landscaping at the site entrance to minimize visual impacts to the public. The top of the landfill would likely be vegetated primarily with native grasses due to shallow soils. Random groups of shrubs and low trees may be planted on the landfill slopes, where the soil depth would be greater and where taller plants may be used without penetrating the engineered cap. A variety of native trees and shrubs could be selected, with an understory of native species. Varying plant heights on the landfill top and side slopes and planting with native species would serve to break up the engineered topography of the landfill final cover grade and provide for a more natural appearance. Plant densities, depth of planting, and species composition for landscaping at the site entrance would be adapted to ensure adequate screening and consistency of plantings with the surrounding environment and to select against significant maintenance requirements. With implementation of the landscaping and revegetation measures described above, no significant short- and long-term adverse impacts to visual resources are anticipated.

Litter Control*.* KLF uses permanent litter fences, portable screens, and routine site cleanup operations to prevent wind-blown litter from leaving the landfill premises and creating nuisance conditions in the area. Portable skid-mounted litter screens, typically 8 feet high, are located in downwind locations near the active MSW disposal area as the first

line of defense against litter. The screens are relocated frequently as the active area moves across the site. Temporary litter fences, consisting of reusable fence posts and poultry wire, are near the working face in places where they will not hinder traffic control. The chain link fence surrounding the entire KLF property provides a final level of physical containment of any litter that leaves the active working area.

Routine site cleanup and litter collection are the final elements of the litter control program. KLF personnel remove litter from portable screens, permanent fences, and other locations around the landfill daily. Daily inspections and litter cleanup activities are also conducted along the access road leading to the back gate of the Pacific Missile Range Facility, and the access road to the drag strip, firing range, and nearby beach. These measures would continue with implementation of the proposed action. The trucks that haul the MSW to the landfill would also continue to be monitored on a routine basis to ensure they are not contributing to litter along the truck haul routes and, if they were determined to be, corrective actions would be implemented immediately.

With respect to litter control, the proposed expansion is not expected to significantly change the existing environmental impacts.

Fire Prevention. Daily operational procedures consist of compacting and applying approved cover material to the MSW, which limits the supply of oxygen needed for the combustion of landfill gases and underground fires. Daily operations also include checking incoming loads to prevent potentially combustible material from going into the landfill. It is anticipated that there would not be any significant impacts from landfill fires in the KLF because of these daily operational procedures and fire suppression methods. The proposed Phase II vertical expansion will not require any changes to the ongoing fire suppression methods.

With respect to fire prevention, the proposed expansion is not expected to significantly change the existing environmental impacts.

Emergency Operating Procedures. The updated *Operations Manual, Kekaha Landfill Phase II* (Geosyntec 2023) is provided in Attachment P-3, and under separate cover. The Operations Manual documents emergency operating procedures associated with waste storage in the event of a spill or release in a *Spill Prevention, Containment, and Countermeasure Plan, Kekaha Landfill* (Geosyntec 2022). In the event of a spill or release, the Emergency Coordinator shall be immediately notified, and following an expedient assessment of the situation shall determine the response activities that are necessary. The Emergency Coordinator shall also contact the Hawaii DOH to ensure that plans for cleanup meet state requirements. Cleanup activities will employ the best available methods to achieve the lowest practicable level of potential contamination. If the spill is determined to be of a magnitude that cannot be safely and effectively controlled by facility personnel, the Emergency Coordinator will notify outside emergency response agencies to implement control and cleanup. These emergency procedures would continue with the implementation of the proposed action.

With respect to emergency operations, the proposed expansion is not expected to significantly change the existing environmental impacts.

3. Alternatives to the proposed action.

Discuss other known alternatives that could feasibly attain the same objective. Explain why they were rejected. Explain why the proposed action represents the Best Practical Technology (BPT). Particular attention must be focused on alternative actions that would reduce or avoid adverse environmental risk and provide a greater cost/benefit to the community. The analysis shall represent a comparative evaluation of the environmental benefits, costs and risks of the proposed action and support the conclusion that it represents the BPT.

Alternatives for disposing of solid waste were evaluated in the Final EA (Tetra Tech 2023). The alternatives considered in the EA were:

Item	Estimated Implementation Timeline	Meets Purpose and Need?[1]
Proposed Action	2025/2026	Yes
No Action Alternative	N/A	No - Retained to Compare Baseline Conditions
Siting and Constructing a New Landfill Facility	2033	No - Dismissed
Off-island Disposal	2025/2026	No - Dismissed

1. The purpose of the Proposed Action is to prolong the life of the Kekaha Municipal Solid Waste Landfill (KLF) prior to exhausting the island's only permitted landfill airspace and to provide safe disposal capacity of municipal solid waste (MSW) in Kaua'i County while a long-term MSW capacity solution can be identified. The need arises because the currently permitted KLF Phase II is projected to reach capacity in 2027.

No Action. Under the no action alternative, Phase II would not be vertically expanded, resulting in the closure of the landfill in 2027 when the currently permitted landfill capacity would be reached. The Island of Kaua'i would be left without a permitted facility for the safe disposal of MSW.

Siting and Constructing a New Landfill Facility. As described in the Project Description of the EA, the County has a long history of actions attempting to site and permit a new MSW landfill at another location on the island. While the County is currently working on the task of siting a new landfill facility on Kaua'i, this cannot be accomplished prior to 2027, when the KLF Phase II is projected to reach capacity. Siting a new landfill involves numerous steps and substantial time. An implementation schedule presenting the steps and time required to site, permit, and construct a new landfill is presented in the table below. These are estimated durations; actual durations may vary.

Implementation Schedule to Site, Permit, and Construct a New Landfill

Item	Duration
Prepare Initial Site Report and Environmental Impact Statement	2 years
Acquire Land	2 years
Prepare Feasibility Report	1 year
Prepare Operations Plan and Design	1 year
Land Use Permit(s) (if required)	1 year
HDOH Permits	1 year
Award Construction Contract and Construct MSW Landfill	2 years
Total Time Duration	~ 10 years
HDOH = Hawai‘i Department of Health; MSW = municipal solid waste	

With this implementation schedule, the County expects that a new landfill cannot reasonably be sited in less than 10 years. If there are significant regulatory, technical, or community issues to overcome, siting a new facility could take much longer (e.g., greater than 10 years). Because this alternative does not meet the Project purpose of providing permitted landfill airspace before the existing permitted landfill airspace is exhausted, it was not carried forward in this analysis. However, the County is still proceeding with plans to site a new landfill as part of its long-term planning objectives.

Off-Island Disposal. MSW would be shipped from Kaua‘i to off-island landfills or to H-POWER on O‘ahu. Such a plan would require a transfer station and additional funds to support the transfer costs (i.e., inter-island shipping and off-island hauling). The high cost associated with off-island disposal would raise waste disposal facility costs and fees and could result in widespread illegal disposal of MSW throughout rural Kaua‘i. Transporting solid waste off-island would also proportionally increase the likelihood of accidental releases during transport. This option carries the risk that disposal facilities owned and operated by others could become unavailable, leaving the County without a safe disposal option. Additionally, the facilities probably would not accept all forms of MSW generated, which would have to be otherwise managed. For the foregoing reasons, this alternative was eliminated from further consideration.

Conclusion. Based on the comparative analysis presented, extending the longevity of the KLF with minimal additional environmental or other impacts by vertical expansion represents the BPT and will comply with HAR Chapter 11-58.1, *Solid Waste Management Control*.

4. The relationship between local short-term uses of the environment and the maintenance and enhancement of long-term productivity.

Discuss the effect the operation will have on the site and on the environment on a long-term basis. Discuss the ultimate use of land and surrounding areas as indicated by local zoning codes. Discuss how plans for emergency procedures, final site closure or other steps may mitigate the long-term effects of pollutants. Discuss the long-term impacts the project may have on other waste management alternatives.

The proposed expansion would have little additional effects on the site and the environment on a long-term basis, since the KLF has already been constructed and the proposed expansion would be entirely located over the existing Phase II portion of the landfill, and would merely extend the current impacts associated with the current landfill. As discussed below, the proposed expansion meets the long-term goals of both the State of Hawai'i and the County of Kaua'i.

State of Hawai'i Plan. The Hawaii State Plan provides guidelines for the long-range development of the State in Chapter 226, Hawaii Revised Statutes (HRS). Because solid waste and the disposal of solid waste directly impact many aspects of the long-range development of the state of Hawai'i from public health to aesthetics to economics, the State has developed a section of the plan that is devoted to solid waste:

> *Section 226-15.*
>
> *Objectives and policies for facility systems – Solid and Liquid wastes.*
>
> a. *Planning for the State Facility systems with regard to solid and liquid wastes shall be directed toward the achievement of the following objectives:*
>
> 1. *Maintenance of basic public health and sanitation standards relating to treatment and disposal of solid and liquid wastes.*
>
> b. *To achieve solid and liquid waste objectives, it shall be the policy of this state to:*
>
> 1. *Promote re-use and recycling to reduce solid and liquid wastes and employ a conservation ethic.*
>
> 2. *Promote research to develop more efficient and economical treatment of solid and liquid wastes.*

The proposed expansion for the KLF would meet the objective and policy in Section 226-15(a) since it would provide a means to maintain the basic public health and sanitation standards relating to the disposal of solid wastes. The County continues to further the objectives of Section 226-15(b) in its other ongoing efforts, which are not specifically related to the proposed landfill expansion project.

County of Kaua'i General Plan. In 2018, the County of Kaua'i Planning Department updated the Kaua'i General Plan. This plan describes the County's 20-year vision for Kaua'i and sets policies for achieving that vision.

The Kaua'i General Plan describes objectives and actions by sector. *Sector IV. Critical Infrastructure* is the most applicable to the Proposed Action and includes the County's solid waste management objective "To provide environmentally-sound waste disposal and collection services with a goal to reduce the solid waste stream by 70 percent" (County of Kaua'i 2018). The Proposed Action would be consistent with this objective as it would meet the county's immediate need for "environmentally-sound waste disposal" be increasing landfill capacity at KLF and would provide an overall benefit to the solid waste management services for the island of Kaua'i. The Proposed Action aims to maximize the use of the existing facility (and the county's investment) to the extent practical and would continue to implement engineering and operational controls to minimize and avoid adverse impacts to

the environment. As detailed in the Kaua'i ISWMP update (Jacobs 2021), a key component of the County's solid waste management system is source reduction, reuse, and recycling. Implementation of recycling and waste diversion programs are dependent on the ability to safety dispose of unrecyclable materials in the landfill.

The proposed expansion is consistent with Sector IV objectives in the Kaua'i General Plan because it provides an environmentally sound and cost-effective way to provide a timely and orderly expansion of the KLF for continued waste disposal on Kaua'i.

Land Use Plans. The County of Kaua`i developed the comprehensive zoning ordinance (CZO) as an implementing tool for the Kaua`i General Plan to address long-range growth and development. The CZO establishes several land districts and delineates the respective types of permitted uses and development that can take place in those districts. As shown in Figure 3-6, the Proposed Action is located within the county agricultural district. Permissible uses within the county agricultural district are listed in CZO § 8-2.4. Solid waste management operations and landfills are not listed in this section; however, pursuant to CZO § 8-2.4(r)(15), the county may allow "any other use or structure which the Planning Director finds to be similar in nature to those listed in this Section and appropriate to the District," with issuance of a use permit. Pursuant to CZO § 8-8.4(4)(a), a class IV permit shall also be obtained for any construction or development on an agricultural zoned parcel for which a use permit is required.

The Kaua'i County Planning Commission issued use permit U-93-56 and class IV zoning permit Z-IV-93-64 in 1993 to allow for the construction and operation of the Phase II landfill within the county agricultural district. Based on consultation with Kaua'i County Department of Planning, the Proposed Action is permissible under the existing use permit and class IV zoning permit (K. Hull, County of Kaua`i Planning Department. personal communication–email to A. Fraley, June 15, 2023). No changes to the land-use designations are warranted or proposed.

Mitigation of Long-Term Landfill Effects. Since the proposed expansion would only extend the operation of the landfill, the same safety measures (operating procedures, emergency response procedures, surface water and spill control management, leachate control system, etc.) would continue to be used to protect human health and the environment. Final site closure measures (see the *Closure/Post-Closure Plan* in Attachment P-4) would also protect human health and the environment by installing a final cover and appurtenances, which would prevent the infiltration of rainwater, erosion of the outer protective layer, and facilitate the collection and extraction of landfill gases and leachate.

The KLF is an integral part of the County of Kaua'i's solid waste collection and disposal program. The proposed expansion would allow KLF Phase II to continue to serve the County of Kaua'i by providing a site where solid waste can safely and legally be placed. The protective measures already in place, along with those proposed in this application are expected to mitigate potential long term effects due to the landfill expansion.

5. Any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.

Identify unavoidable impacts and the extent to which the proposed action makes use of non-renewable resources.

Since the proposed expansion makes use of an existing landfill site and would only extend the use of the landfill, no additional consumption of resources (i.e., energy, water) is required, and no loss or destruction of any natural or cultural resources is anticipated. The landfill's footprint would not extend outside of the existing facility and no new areas would be altered.

The area surrounding the landfill is used for agricultural purposes, such as aquaculture, sugar, and seed production. The landfill has already removed the use of the land from future agricultural purposes. Since the proposed vertical expansion would not expand the footprint of the landfill outside of the existing facility, no further removal of land from agricultural purposes is anticipated.

6. Optimum balance between economic development and environmental quality.

Discuss whether the proposed action promotes the optimum balance between economic development and environmental quality.

The proposed expansion would not restrict the range of beneficial uses of the environment or significantly impact the economic welfare of the community or state. The site is currently being used as a landfill and the proposed expansion would only extend the use of the landfill, therefore, there are no cumulative adverse effects on the environment or the need for larger actions on the site. Since the footprint of the landfill would not change, no new land would need to be purchased or utilized, and no new site would have to be developed. Therefore, the additional costs would be minimal to keep the County of Kaua`i's only operating sanitary landfill open.

7. Consistency with the State Integrated Solid Waste Management Act (HRS 342G) and the County's Approved Integrated Solid Waste Management (ISWM) plan.

Address the project's conformance with the State waste diversion goals and hierarchy. Discuss the project's impact on the State's current or proposed waste diversion efforts, and the County's overall integrated solid waste management plan.

The *County of Kaua'i Integrated Solid Waste Management Plan* (Jacobs 2021) was updated in accordance with the State of Hawai'i Solid Waste Management Act of 1991, and sets the guidelines for the County to reach the following goals:

- Reduce the amount of waste generated.
- Recycle and compost materials.
- Landfill and incinerate the remainder.

Landfilling is the final deposition of materials that are not recycled or reused, thus necessitating the continuing need and dependence upon long-term landfill operations. Options to meet this need are outlined in the *Integrated Solid Waste Management Plan* (Jacobs 2021) and include an additional Phase II vertical expansion similar to the current proposal, as well as the siting of a new landfill.

The proposed Phase II vertical expansion would provide additional time to pursue the overliner option for Phase I and site a new landfill and other diversion facilities and would be consistent with the landfill plans and goals in the County's 2021 *Integrated Solid Waste Management Plan*.

8. Public input relating to the impact of the facility on public health and the environment.

Address any requirements for public comment period or hearing under HRS Chapter 343 (Environmental Impact Statement) or local land use ordinances. The applicant should solicit public input on the proposed project. Public input may be solicited through the use of public hearings, public informational meetings coordinated with the appropriate community boards or associations or other approved mechanisms. The location of the meetings should be held in the district in which the project will be located. A copy of the meeting minutes should be submitted to the Department as part of this solid waste permit application.

Availability of the Draft EA for the KLF expansion was announced in the August 8, 2023 edition of the Office of Environmental Quality Control's *Environmental Notice*, which initiated a 30-day public comment period. Copies of the Draft EA were provided to state and county agencies, public libraries, community organizations, and interested individuals. A public informational meeting was hosted by the County on August 31, 2023 at the Kekaha Neighborhood Center. All comments received during the 30-day public comment period of August 8, 2023 through September 7, 2023 were considered during preparation of the Final EA, which is anticipated to be published by the Environmental Review Program in December 2023 (Tetra Tech 2023).

References

County of Kauaʻi. 2018. *Kauaʻi Kākoa Kauaʻi County General Plan. Adopted February 2018*. https://drive.google.com/file/d/131_c8upwnluedpOflnXcT3NHHscLUpbT/view (accessed April 2023)

County of Kauaʻi. 2020. *West Kauaʻi Community Plan. Adopted December 2020*. https://www.kauai.gov/Government/Departments-Agencies/Planning-Department/Long-Range-Division (accessed April 2023).

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Attachment P-3

Site Analysis, Facility Design, Operations Plan, Groundwater and Leachate Monitoring Plan

ATTACHMENT P-3 (A1)
SITE ANALYSIS, FACILITY DESIGN, OPERATIONS PLAN AND GROUNDWATER MONITORING PLAN

MUNICIPAL SOLID WASTE LANDFILL FACILITY
SOLID WASTE PERMIT APPLICATION

Submit a Site Analysis, Engineering Report, Operations Plan and Groundwater Monitoring Plan for the facility. The design, construction and operation of the facility shall be in accordance with the most current EPA Technical Guidance document for MSWLFs. Any information requested below that is not applicable should be justified.

1. **Site Analysis.** Submit a site analysis of the facility demonstrating that all siting requirements are met in accordance to Hawaii Administrative Rules (HAR) 11-58.1-13. The site analysis review is intended to prevent the construction of facilities in environmentally inappropriate locations. At a minimum the following topics listed in HAR 11-58.1-13 shall be addressed: airport safety, floodplains, wetlands, fault areas, seismic impact zone, unstable areas, and tidal wave zone.

2. **Facility Design (Engineering Report).** Submit an engineering report that describes the basis of design, with supporting engineering calculations, construction drawings and specifications. The engineering report, and construction plans and specifications shall be prepared under the supervision of a professional engineer licensed in the state of Hawaii. The engineering report should document that the facility design meets the requirements of HAR 11-58.1-14 and includes at a minimum discussions of the following:

   a. A general description of the facility, including proposed size, capacity, estimate life, and disposal rate of the landfill, vehicle access, and other relevant design concepts.

   b. Landfill grades. Discussion should include proposed side slopes, landfill stability, and fill sequencing.

   c. Liner and leachate collection system, including subgrade preparation and operations layer, design that meets the requirements of HAR 11-58.1-14. If proposing an alternative liner design, the applicant shall submit a Point of Compliance Assessment in accordance with HAR 11-58.1-14(b)(1) and (e). Please be aware that the department will require the collection of climatic data to validate leachate generation models. If the applicant wishes to claim exemption from design requirements because it receives less than 20 tons/day, the applicant must also submit the *Application for Small Landfill Exemption*. However, applicants of small landfills must still provide a description of the liner, leachate collection and operations layer utilized or proposed for the facility.

   d. Leachate and surface water management systems. Discussion should include how the collected leachate will be managed, and the design basis for the surface water collection and management systems.

   e. Gas collection systems. Explain whether Title V of the Clean Air Act applies to the site, and whether the gas system is designed to meet the requirements of this requirement.

3. **Operations Plan.** Submit an operations plan that provides detailed procedures for landfill operators that complies with the requirements outlined in HAR 11-58.1-15 and 11-58.1-16. The operating requirements include a special and hazardous waste exclusion program, cover material requirements, a disease vector control program, an explosive gases control program, air criteria requirements, access control requirements, run-on and run-off control systems, surface water requirements, a liquids restrictions program, a litter control program, sequencing plan, and record-keeping requirements, and other requirements as deemed necessary by the

Director of Health to protect public health and the environment. At a minimum, the Operations Plan shall contain the following elements:

a. General site description, which shall include information on the location, size, elevation and waste limits of the facility; types of and quantities of waste accepted and received per day; users of the facility; description on the overall utilization of the site; traffic flow, unloading procedures, and method of operation at the landfill; and discussions on the climate and site conditions.

b. Equipment and personnel requirements should be detailed to include the number and type of equipment and the personnel with their respective titles needed to operate the facility at nominal and peak disposal rates. The facility shall have a Site Manager and Environmental compliance Officer who should be identified by name and their duties described. Describe the types of annual training provided to all employees.

c. Hazardous waste exclusion and special waste screening program. The screening program shall identify procedures and personnel responsible for identifying hazardous and special waste, by testing or reviewing data submitted by waste generators. The hazardous waste exclusion program shall exclude and properly manage regulated hazardous waste (40 CFR Part 261, HAR 11-261) and regulated TSCA waste (defined by 40 CFR Part 761). At a minimum, the hazardous waste exclusion program shall include random inspections, documentation of the inspections, training, and notification to the State Department of Health, in accordance with HAR 11-58.1-15(a).

   The program should also specify special handling procedures for identified special wastes, which include and are not limited to the following waste subgroups:
   (1) Asbestos (procedure should be in accordance with 40 CFR Part 61);
   (2) Water separation, car and equipment washes;
   (3) Sewage sludge;
   (4) Off specification and outdated products;
   (5) Underground storage tank and other sludges;
   (6) Resins and chemical debris;
   (7) Petroleum and other contaminated soils;
   (8) Petroluem fuel contaminated debris;
   (9) Sandblast grits;
   (10) Baghouse dusts;
   (11) Inorganic filter cakes;
   (12) Paint waste from removal, construction and demolition;
   (13) Treated poles and lumber;
   (14) Empty containers;
   (15) Infectious Waste (commercial waste shall be treated in accordance with HAR 11-104);
   (16) Food waste, cooking oils, and grease trap waste (shall meet liquids restriction criteria);
   (17) Dead animals and offal;
   (18) Materials that are of toxic nature, such as insecticides, pesticides, poisons, or radioactive material, unless properly managed or treated prior to disposal; and
   (19) Other contaminated solid waste that are non-hazardous, non-TSCA regulated waste.

d. Greenwaste, scrap automobile, white goods, and tires diversion and exclusion program. Submit a plan to ban or require source separation of green waste from entering the landfill. If, based on data submitted, 75% of all commercially generated greenwaste and 50% of all residential green waste are not achieved, then all commercial and residential greenwaste

shall be banned for the landfill. Scrap automobiles, white goods and tires shall not be accepted by the landfill. Submit a plan to implement this ban.

e. Temporary storage and final disposition of unacceptable items may be provided at the facility. Discuss whether temporary storage will be provided, for what types of waste, the maxiumum capacity and duration of the storage, how the waste will be stored, and the final disposition of each type of waste stream.

f. Cover material requirements of HAR 11-58.1-15(b) requires the placement of six inches of earthen material, or an alternative approved by the director, at the end of each operating day or more frequently as necessary. In addition, inactive waste areas that do not receive waste within a 30 day period shall be covered with intermediate cover, consisting a minimum of 12 inches of earthen material, including daily cover. Intermediate cover shall also be placed over areas that are to have vehicular traffic. Explain the source of daily and intermediate cover material, and the means to ensure adequate quantity and placement of daily and intermediate cover material.

g. Disease vector control. The landfill shall provide measure to evaluate, prevent or control on-site populations of disease vectors and minimize nuisance conditions. Identify the equipment and methods to be used.

h. Explosive gases control shall be provided to ensure that the concentration of methane gas does not exceed 25% LEL in facility structures, and does not exceed the LEL at the property boundary. Provide a detailed monitoring plan to ensure that these concentrations will not be exceeded. The plan shall specify the frequency of the monitoring, which is based on the soil, hydraulic and hydrogeologic conditions of the surrounding area and the location of facility structures and property boundaries, and shall at a minimum be quarterly.

i. Air criteria. The applicant is responsible for obtaining permits and maintaining compliance with any state or federal clean air regulations. Explain whether the landfill is required to meet any requirements of state or federal clean air regulations and generally what procedures and/or equipment will be utilized to ensure compliance with these requirements.

j. Access control shall be provided to control public access, prevent unauthorized vehicular traffic and illegal dumping of wastes in accordance with HAR 11-58.1. Explain how facility access will be controlled.

k. Run-on/Run-off control systems shall be designed, constructed and maintained to prevent surface water flow onto the active protion of the landfill during the peak discharge from a 25-year storm, and to collect and control surface water from the active portion of the landfill from a minimum 24-hour, 25-year storm event. Provide designs drawings, a waste sequencing plan, and written procedures to ensure these control systems are properly designed, constructed and maintained. Any surface water that comes into contact with waste shall be treated as leachate.

l. Surface water requirements. The applicant is responsible for obtaining permits and maintaining compliance with any state or federal clean water regulations. Explain whether the landfill is required to meet any requirements of state or federal clean water regulations and generally what procedures and/or structures will be utilized to ensure compliance with these requirements.

m. Liquids restrictions. In accordance with HAR 11-58.1-15(i), bulk or noncontainerized liquid are restricted from disposal. Explain the procedures that will be taken to ensure bulk or nonconatinerized liquids are not accepted.

n. Litter control mechanisms shall be designed and implemented to minimize free litter in the landfill and prevent its occurrence beyond the property line of the facility. Identify methods and equipment to be utilized. At a minimum, explain the:
   1. Design of portable litter screens, the number of screens available at the site, and a description of how they will be deployed under various operating conditions;
   2. Design and location of permanent or semi-permanent litter screens or fences; and
   3. Procedures for litter prevention and cleanup during the course of a normal workday, and in the event of a major windstorm or other incident in which litter escapes the litter containment systems.

o. Mud and dust prevention program that minimizes the tracking of mud onto public roads, and the generation of dust from vehicular traffic and landfill operations, shall be developed. The program should contain measures related to on-site road maintenance and cleaning, wet-weather disposal area, and truck washdown or truck wheel cleaning area to remove mud prior to leaving the site. Possible methods include rumble strips, drive-through tire wash, trash clean-out pad or wash pad. Describe the method(s), equipment and procedures that will be utilized to prevent off-site tracking of mud and the generation of dust.

p. Odor control program that details procedures for monitoring, documenting, and mitigating odors at the landfill should be developed.

q. Emergency operating procedures should be prepared for the following minimum situations:

   1. Above ground fires,
   2. Below ground fires,
   3. Rain and inclement weather, and
   4. Hazardous material spills.

   Explain the procedures that will be followed to prevent and respond to these situations. If these procedures requires the use of equipment or supplies, discuss the availability of these equipment/supplies and maintenance of such equipment to ensure its proper function.

r. Recordkeeping requirements. In addition to the recordkeeping requirements of HAR 11-58.1-15(j), the facility should also document the volume or weight of each type of waste received, rejected, and/or disposed; the source of waste; the number of vehicles disposing of waste; the management of the accepted waste if required special handling; quantities of leachate generated and how it was disposed; and major incidents, such as fires, explosions or heavy rain conditions, and procedures taken. An annual report shall be submitted to the Department reporting the quantities and types of waste received and processed; the and the ultimate disposal site.

4. **Groundwater Monitoring Plan**. Submit a groundwater monitoring plan that provides detailed procedures that complies with the requirements outlined in HAR 11-58.1-16 and the *Hawaii Landfill Groundwater Monitoring Guidance Document*, dated September 2002. The guidance document may be found at http://www.state.hi.us/health/environmental/waste/sw/index.html. The groundwater monitoring plan shall be prepared by a qualified groundwater scientist. The

plan shall clearly describe and justify the validity of the monitoring well network, including the number of wells, locations and depths; monitoring well construction; and certification by the qualified groundwater scientist that the system is representative of groundwater quality.

The plan shall also describe the detection and assessment monitoring programs, and corrective action steps. The detection and assessment programs shall include specific procedures to be followed throughout the detection and assessment periods, including by not limited to, sample collection, sample preservation and shipment, analytical procedures, chain of custody control, quality assurance and quality control, sample frequency, result validation, result evalution and statistical assessment. The corrective action plan shall include but is not limited to procedures relating to notification, selection of remedy, schedule, and financial assurance mechanisms for corrective action.

Attachment P-3.1

Site Analysis

Site Analysis

The proposed vertical expansion in Phase II is being made to an existing landfill already sited and constructed. A site analysis of the Kekaha Municipal Solid Waste Landfill (KLF) Phase II will be completed in the Final Environmental Assessment (EA) anticipated for finalization and publication in December 2023 and will contain a finding of no significant impact (FONSI). In accordance with HAR 11-58.1-13, the KLF is not located in the areas described below.

(a) (1) Within 10,000 feet of any runway used by turbojet aircraft or 5,000 feet of an airport runway used by piston-type aircraft.

The nearest active runway of any kind is located at the Navy's Pacific Missile Range Facility (PMRF) Barking Sands to the northwest. As Shown in Figure P-3.1, the runway is more than 15,000 ft from the proposed Phase II vertical expansion. The proposed Phase II vertical expansion is not located within 10,000 feet of any runway used by aircraft of any kind.

(a) (2) Within a five-mile radius of any airport runway end used by turbojet or piston-type aircraft, notify the affected airport and the Federal Aviation Administration (FAA).

HAR 11-58.1 defines an airport as a "public-use airport open to the public without prior permission and without restrictions." There are no such "public-use" runways within five miles of the KLF. The nearest active runway of any kind is located at the Navy's PMRF Barking Sands to the northwest. The PMRF is not a "public-use" airport as defined by the HAR 11-58.1. As shown in Figure P-3.1, the runway is approximately three miles (i.e., less than five miles) from the proposed Phase II vertical expansion. While the proposed Phase II vertical expansion is not located within five miles of any "public-use" runway, the PMRF will nevertheless be notified by the County. The County will consult with the FAA and PMRF as necessary to evaluate any potential impacts of the landfill expansion due to the facility's proximity to the airport.

(b) Within a 100-year floodplain area as delineated by the Federal Emergency Management Agency of the Federal Insurance Administration (FEMA).

As shown in Figure P-3.2 the Phase II vertical expansion is located in FEMA flood insurance rate zone X, i.e., outside of the 100-year floodplain. According to FEMA, "No based flood elevations or depths are shown within this zone." The proposed Phase II vertical expansion is not located within the 100-year floodplain area as delineated by FEMA.

(c) In or near a wetland.

No surface water features (including wetlands, streams, ditches) are identified by the National Wetlands Inventory, National Hydrography Dataset, or by the State of Hawai'i Division of Aquatic Resources within the KLF site. Wetlands and ponds are identified adjacent to the KLF north of Kaumuali'i Highway and within the PMRF. The Pacific Ocean is approximately 2,800 ft makai of the Phase II area.

(d) Within 200 feet of a fault having had displacement in Holocene times.

No faulting has occurred in the Kekaha area in Holocene times (G. A. Macdonald, D. A. Davis, and D. C. Cox. 1960. *Geology And Ground-Water Resources Of The Island Of Kauai, Hawaii. Bulletin 13 Hawaii Division of Hydrography*). The proposed Phase II vertical expansion is not located within 200 feet of a fault having had displacement in Holocene times.

(e) In a seismic impact zone.

HAR 11-58.1-03 defines a seismic impact zone as:

> *an area with a ten per cent or greater probability that the maximum horizontal acceleration in lithified earth material, expressed as a per cent of the earth's gravitational pull(g), will exceed 0.10g in two hundred fifty years.*

Kaua‘i is an older Hawaiian Island with dormant volcanic activity. It is not particularly prone to seismic activity and no large earthquakes are recorded on Kaua‘i (Tetra Tech 2021). The KLF is not located in a seismic impact zone as defined under HAR § 11-58.1-13(e) and the Subtitle D regulations for MSW landfills (40 CFR Part 258.14). Based on 2021 USGS National Seismic Hazard Model (NSHM) updates, there has been minimal changes between the 2021 model and earlier NSHM modeling on Kaua‘i and in the area of the KLF. To date, the KLF facility has not sustained any earthquake-related damage (K. Aki, DPW, personal communication, June 20, 2023).

(f) Near any known unstable areas.

As was the case during other site investigations conducted in recent decades at the site, the site geotechnical investigation (see permit application Attachment P-3.2 – Engineering Report) did not indicate unsuitable soils, geologic, or geomorphologic features, geological faults or rifts, or other unsuitable artificial features. The Phase II vertical expansion is not expected to be affected by unstable areas.

(g) Within a tsunami hazard or floodway.

HAR 11-58.1-13(g) defines a tsunami hazard area as follows:

> *(g) Tidal wave (tsunami) zone. New MSWLFs and lateral expansions shall not be located in possible tsunami inundation areas.*
>
> > *(1) Tsunami inundation areas on the islands of Oahu, Hawaii, Maui, and Kauai are those areas delineated in a report entitled "Hawaii Tsunami Inundation Evacuation Map Project" by George D. Curtis, University of Hawaii Joint Institute for Marine and Atmospheric Research [JIMAR], dated April 19, 1991.*
> >
> > *(2) … other islands…*

The County obtained a copy of the 1991 Curtis report; however, it does not include the Tsunami Inundation Map for the project vicinity. For Kaua‘i, the report only displays draft Tsunami Inundation zones in the vicinity of Kapa‘a and Kealia (Curtis, page 10). The report

also states that "in cooperation with County Civil Defense staffs, a final [evacuation zone] line will always be drawn mauka of our [inundation zone] limit, located at physically identifiable landmarks" (Curtis, page 21; emphasis added). The report states that the Kauai Inundation Maps were expected to be published shortly after the report, "in June, 1991" (Curtis, page 14).

SOEST and JIMAR, the author of the report, indicate that the map was completed and the Inundation Map formed the basis of the Evacuation Zone Map; however, the Tsunami Inundation Maps were since lost by both SOEST and JIMAR. The Evacuation Zone Map was drawn based on, and mauka of, the Inundation Map. The Evacuation Zone was drawn at the Highway, just mauka of the Phase II landfill. However, this map specifically states that "evacuation boundaries are drawn along streets and roadways, they are considered to be safe from wave action," again indicating that the evacuation zone (i.e., the highway) is located some safe distance mauka of the inundation zone, for public safety reasons and for clarity of communication with the public. Therefore, the inundation zone referred to in HAR §11-58.1-13(g) was located somewhere makai of the highway. Given the site topography, there is negligible elevation change between the highway and the coastal dunes. The Curtis 1991 tsunami inundation zone was therefore very likely located makai of the proposed Phase II vertical expansion.

Because the 1991 report referenced by the regulations did not map tsunami inundation zones in the Kekaha area, available information from other sources, including FEMA, was researched. FEMA's most recent Flood Insurance Study[1] includes flood hazard information due to a variety of sources, including tsunamis, for the County of Kaua'i. According to FEMA, tsunami and hurricane storm data were included in the delineation of flood hazards for areas of coastline subject to significant wave attack and surge; in fact tsunamis and hurricanes were conservatively considered *coincidently* in drawing the flood zones:

> *Previous mapping of the tsunami hazard was merged with the detailed hurricane coastal hazard study in this revision. This was accomplished by comparing the zone type, base flood elevation, and inland flooding extent of coincident tsunami and hurricane storm surge hazards. The higher of the two elevations was retained and presented on the Flood Insurance Rate Map. If in a tsunami hazard dominated area, the inland limit of the hurricane storm surge flooding extends further landward than the tsunami hazard, the Tsunami base flood elevation is shown and the flooding extent is extended to where the hurricane hazard is mapped. This is to reflect the increased hazard generated by the use of updated topographic data. The VE Zone was extended and mapped to the inland limit of the Primary Frontal Dune for both tsunami and hurricane hazards. In cases where elevations were similar, engineering judgment was applied to facilitate the most appropriate representation of the higher hazard.*
>
> (Flood Insurance Study, Volume 1 of 2, Kauai County, 2012, page 47).

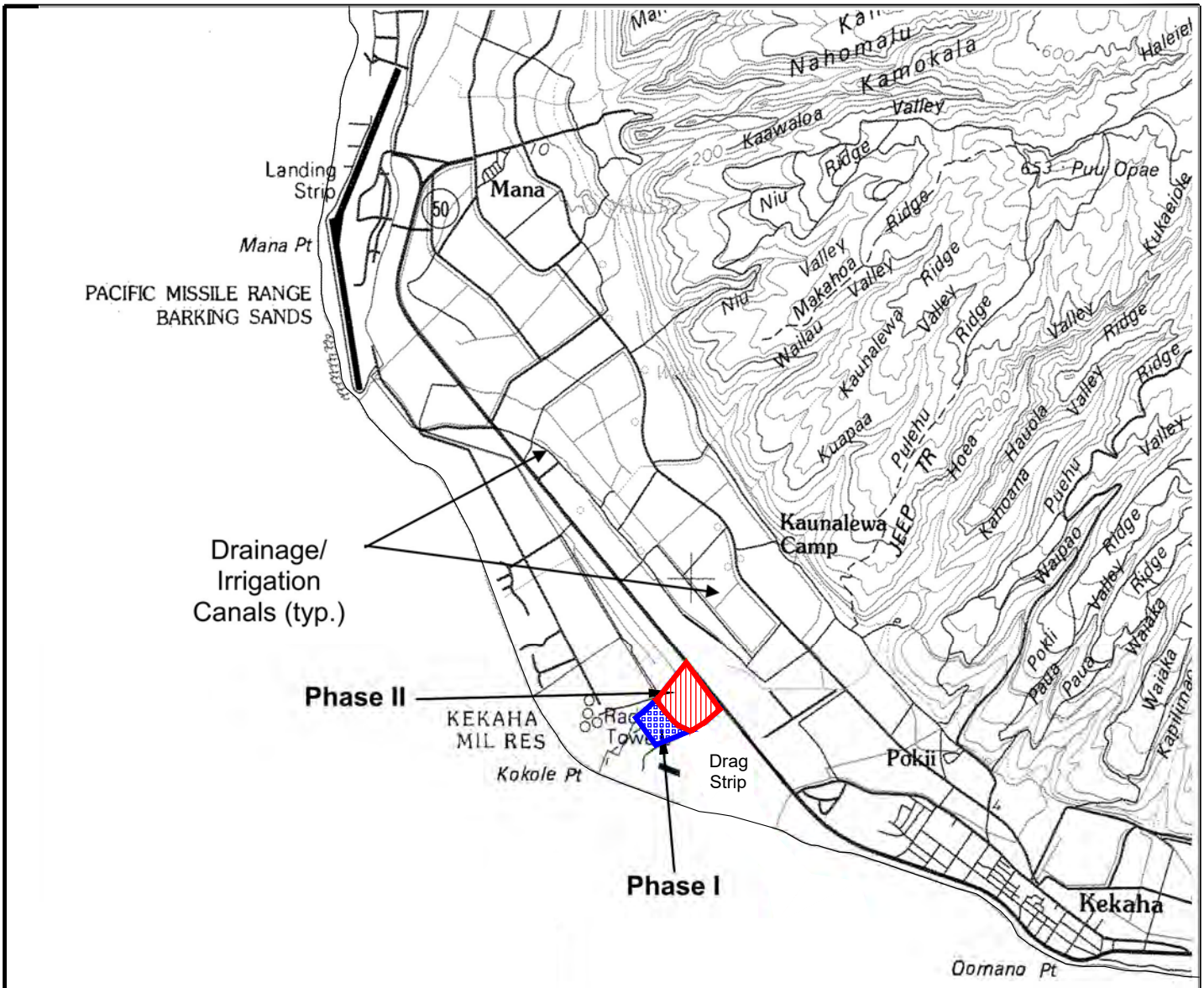
[1] *Flood Insurance Study, Volume 1 of 2, Kauai County, Hawaii*, Revised: November 26, 2010, Federal Emergency Management Agency, Community Number-150002V001C.

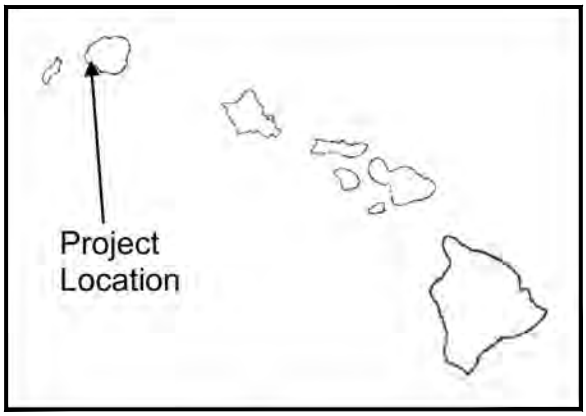
Figure P-3.2 shows the FEMA coastal flood zone and flooding limit designated by FEMA as being at risk of flooding due to tsunamis (i.e., "VE" Zones). The FEMA tsunami hazard zone is located approximately 2,400 feet from Phase II, near the large dune barrier that runs along the shoreline in the project vicinity.

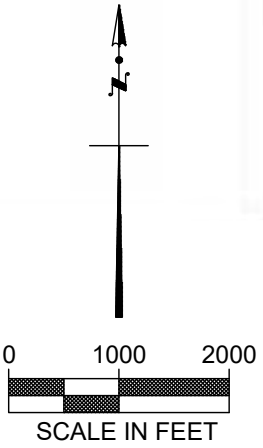
The proposed Phase II vertical expansion is not located within a Tsunami Inundation Zone mapped either by the 1991 Curtis report referenced in the regulations or by FEMA.

References

Tetra Tech (Tetra Tech, Inc.). 2021. Multi-hazard Mitigation and Resilience Plan. Prepared for County of Kaua'i. May. https://kauaicounty-my.sharepoint.com/personal/csakai_kauai_gov/_layouts/15/onedrive.aspx?id=%2Fpersonal%2Fcsakai%5Fkauai%5Fgov%2FDocuments%2F2020%20Mitigation%20Plan%20Update%2F2021%2D05%2D04%5FKauaiCountyHMP%2DVol%2E1%5FFinal%2Epdf&parent=%2Fpersonal%2Fcsakai%5Fkauai%5Fgov%2FDocuments%2F2020%20Mitigation%20Plan%20Update&ga=1 (accessed April 2023).







MAP SOURCE: AECOM, 2017 (USGS: KEKAHA QUADRANGLE, 7.5 MIN SERIES)

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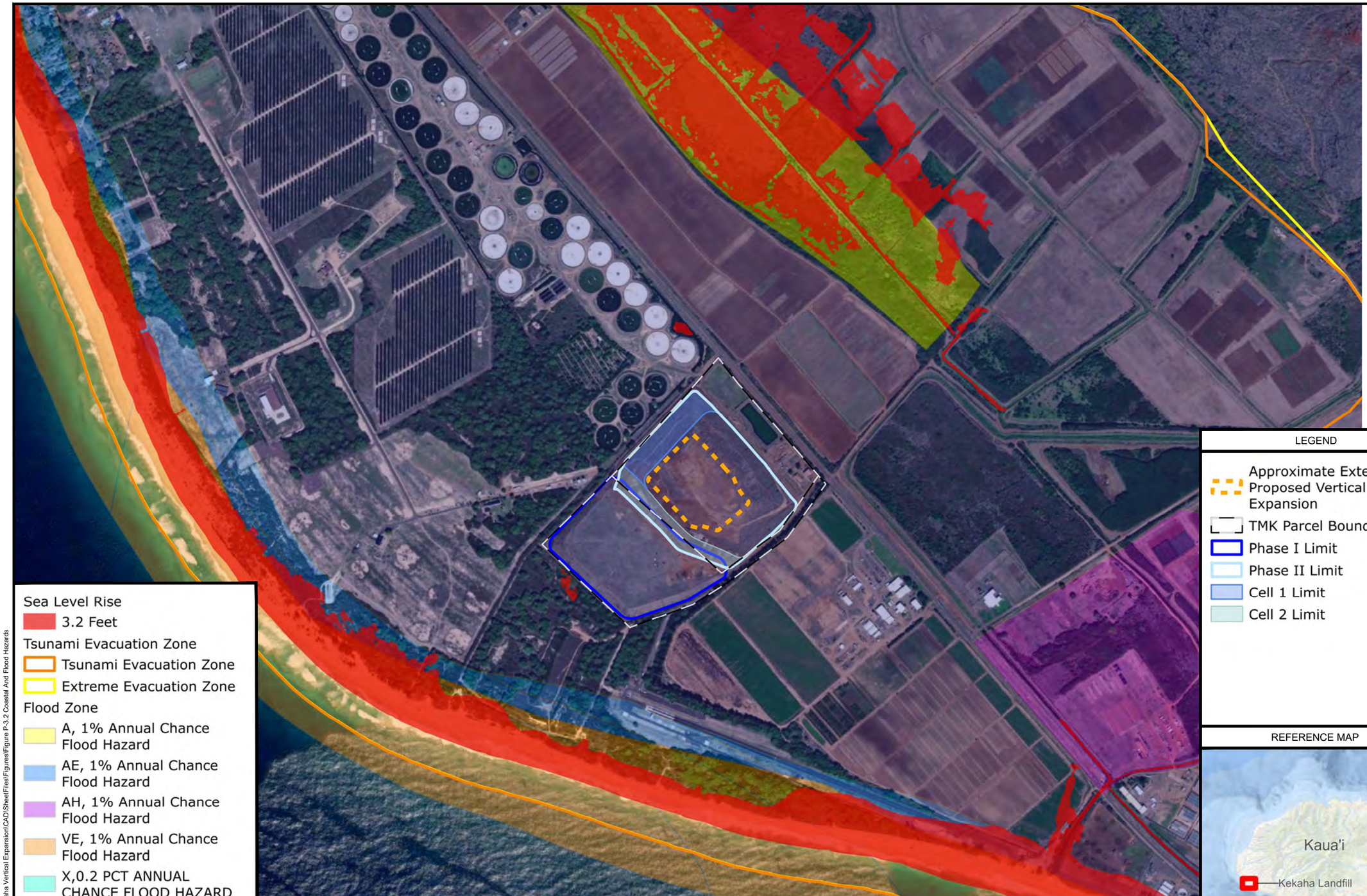
KEKAHA MUNICIPAL SOLID WASTE LANDFILL

SITE LOCATION MAP

FIGURE P-3.1

G:\DWG\KAUAI COUNTY\KEKAHA VERTICAL EXPANSION\CAD\SHEETFILES\FIGURES\FIGURE P-3.1 SITE LOCATION MAP.DWG 11/28/2023 1:45 PM



Source: Hawai'i Climate Change Mitigation and Adaptation Comission. 2021. State of Hawai'i Sea Level Rise Viewer. Version 1.09. Prepared by the Pacific Islands Ocean Observing System (PacIOOS) for the University of Hawai'i Sea Grant College Program and the State of Hawai'i Deparrtment of Land and Natural Resources, Office of Conservation and Coastal Lands. /"http://hawaiisealevelriseviewer.org (accessed April 2023).

G:\dwg\Kauai County\Kekaha Vertical Expansion\CAD\SheetFiles\Figures\Figure P-3.2 Coastal And Flood Hazards

TETRA TECH
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DATE: NOV. 2023

COUNTY OF KAUAI - KEKAHA MUNICIPAL SOLID WASTE LANDFILL

COASTAL AND FLOOD HAZARDS

FIGURE P-3.2

Attachment P-3.2

Facility Design (Engineering Report)

Submitted as separate pdf.

Attachment P-3.3

Operations Plan (Operations Manual)

Submitted as separate pdf.

Attachment P-3.4

Groundwater and Leachate Monitoring Plan

Submitted as separate pdf.

Attachment P-4

Closure Plan

Submitted as separate pdf.

ATTACHMENT P-4 (A)
CLOSURE AND POST-CLOSURE PLAN
LANDFILL FACILITY (MSW / C&D WASTE / SPECIAL WASTE)
SOLID WASTE PERMIT APPLICATION

All landfill facilities are required to prepare and maintain a closure and post-closure plan. Municipal solid waste (MSW) and construction/demolition (C&D) landfills and ash monofills shall meet the requirements of Hawaii Administrative Rules (HAR) Section 11-58.1-17, and are also required to have financial assurance in accordance with HAR Section 11-58.1-18. **The closure plan** shall include, but is not limited to, the following information:

1. A description of the steps necessary to close all landfill units at any point during its active life.

2. A description of the final cover design and the methods/procedures for cover installation. For MSW and C&D landfills, the design shall be in accordance with Hawaii Administrative Rules (HAR) Section 11-58.1-17(a). For special waste landfills, the final cover system shall provide protection to human health and the environment, based on the risks associated with the disposed waste.

3. An estimate of the largest area of the landfill unit ever requiring a final cover, at any time during its active life.

4. An estimate of the maximum inventory of wastes (in weight and volume) ever on-site over the active life of the landfill facility.

5. A contaminant release log during the life of the site and results of any environmental sampling at the site should be included as part of the closure planning. The Director of Health may require complete and detailed plans or reports (i.e. site assessment, remediation plans) on solid waste facilities in the event of any releases and/or incidences at the facility.

6. A schedule for completing all activities necessary to satisfy the closure plan. The facility must comply with the scheduling requirements provided in HAR 11-58.1-17(a) for MSW and C&D landfills.

The post-closure plan shall include, but is not limited, to the following information:

1. A description and frequency of the monitoring and maintenance activities associated with integrity and effectiveness of the final cover system, operation of the leachate collection and surface water systems, and monitoring of groundwater and landfill gas.

2. Name, address, and telephone number of the person or office to contact about the facility during the post-closure period.

3. A description of the planned uses of the property during the post-closure periods. The post-closure use shall not impact the integrity of the cover system and any of the monitoring systems.

Copies of **financial assurance documents** demonstrating compliance with HAR 11-58.1-18 shall be submitted for all MSW and C&D landfills, and ash monofills, except those owned and operated by the state or federal government. The documents shall include the cost estimates, in current dollars, of the cost of hiring a third party to close the largest area of all the landfill units at any time of its active life; the cost of hiring a third party to conduct post-closure care activities throughout the post-closure care period; and a demonstration that the funds necessary to meet the costs of closure and post-closure care will be available whenever needed. The demonstration provided is limited to the allowable mechanisms listed in HAR 11-58.1-18.

Attachment P-5
Zoning Clearance Form

ATTACHMENT P-5
ZONING CLEARANCE FORM
SOLID WASTE PERMIT APPLICATION

TO THE APPLICANT:

Please be advised that a requirement for the issuance of a solid waste management permit in Hawaii is that the facility meets local ordinances and zoning requirements, including the recording of its disposal facility with the Bureau of Conveyances.

In order that the SHWB may determine whether the facility is in compliance with local land use policy, **we require that this attachment be completed and signed by the appropriate county land use/planning agency** (on Oahu, contact the Department of Planning and Permitting). No permit will be issued unless this form has been properly completed and returned. If a Use Permit or SMA Permit is required, submit a copy of said permit with this form.

Name of Applicant: County of Kauai, Department of Public Works

Name and phone number of primary contact for applicant:
Ka'āina S. Hull (808) 241-4059

Address of proposed facility:
6900-D Kaumualii Highway, Kekaha, HI 96752

Tax Map Key: (4) 1-2-02: Por. 1

Description of proposed facility [e.g., waste processing, waste storage (indoor or outdoor), recycling, composting, waste disposal, etc.): Sanitary landfill

COUNTY AGENCY APPROVAL:

The Current Zoning of the Proposed site for the Proposed Activity / Facility / Operation is:

X Allowed — Identify Approved Use Permit/SMA, other Restrictions/Limitations: State Land Use Commission Special Permit issued July 1993

_____ Not Allowed — Reason (ex: Use Permit/SMA required, application pending, etc.):

Name: Ka'āina S. Hull

Title: Director

Agency: Department of Planning, County of Kauai

Signature: [signature] Date: 10/2/23

Attachment P-6

Property Owner Approval Form

ATTACHMENT P-6
PROPERTY OWNER APPROVAL FORM
SOLID WASTE PERMIT APPLICATION

TO THE APPLICANT:

In order that the SHWB may determine whether the property owner and/or master lessee is knowingly allowing the proposed solid waste activity, we require that this attachment be completed and signed by the property owner and the master lessee, if appropriate. **No permit will be issued unless this form has been properly completed and returned.**

Name of Applicant: County of Kauai, Department of Public Works

Name and phone number of primary contact for applicant:

Troy Tanigawa (808) 241-4993

Address of proposed facility:
6900-D Kaumualii Highway, Kekaha, HI 96752

Tax Map Key: (4) 1-2-02: Por. 1

Description of proposed facility [e.g., waste processing, waste storage (indoor or outdoor), recycling, composting, waste disposal, etc.): Sanitary landfill

PROPERTY OWNER / MASTER LESSEE APPROVAL:

I/We certify that I/we have knowledge and approve of the applicant's proposed solid waste management facility for the subject location. I/We further certify that I/we fully understand the requirements under HAR Chapter 11-58.1, Subchapter 6, such that I/we am/are also responsible for the aesthetic, nonhazardous, sanitary storage, and removal of solid waste to approved solid waste management facilities.

If the property owner/master lessee is a partnership or group other than a corporation, a county, or state entity, one individual who is a member of the group shall sign this form. If the property owner/master lessee is a corporation, a county, or a state entity, an officer of the corporation, or an authorized representative of the county or state shall sign this form.

Property Owner:
Name of Authorized Representative: Troy Tanigawa
Signature: _____ Date: 10·2·23
Title: County Engineer Telephone: (808) 241-4993
Company Name: County of Kauai Termination date of
Address: 4444 Rice Street, Lihue, HI 96766 lease/approval: _____

Master Lessee:
Name of Authorized Representative: _____
Signature: _____ Date: _____
Title: _____ Telephone: _____
Company Name: _____ Termination date of
Address: _____ lease/approval: _____